# Environmental and Social Impact Assessment (ESIA) for the Proposed Sampur - Kappalthurai Transmission Infrastructure Development Project

## Final Report

July 2025

Submitted to:

Asian Infrastructure Investment Bank (AIIB)

Submitted by:

Ceylon Electricity Board

Prepared by:

EcoPulse Solutions (Pvt) Ltd

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# List of Abbreviations

| | | |
|---|---|---|
| **°C** | - | Celsius |
| **°F** | - | Fahrenheit |
| **°N** | - | degrees North |
| **A/L** | - | Advanced Level |
| **AC** | - | Alternating Current |
| **ACSR/AW** | - | Aluminum-Clad Steel Reinforced/All Weather |
| **AG** | - | Agricultural lands |
| **AIIB** | - | Asian Infrastructure Investment Bank |
| **ALARP** | - | As Low as Reasonably Practicable |
| **AoA** | - | Area of Analysis |
| **AoI** | - | Area of Influence |
| **AP** | - | Angle Point or Angle Pol |
| **ARAP** | - | Abbreviated Resettlement Action Plan. |
| **ASTM** | - | American Society for Testing and Materials. |
| **AT** | - | Angle Towers |
| **AZE** | - | Alliance for Zero Extinction |
| **BAU** | - | Business-As-Usual |
| **BOI** | - | Board of Investment |
| **BrR** | - | Breeding Resident |
| **BS-EN** | - | British Standard-European Norm (Standard) |
| **C** | - | Climber or Creeper |
| **CA** | - | Canals |
| **CAP** | - | Corrective Action Plan |
| **CAR** | - | Climate Assessment Report |
| **CBD** | - | Convention on Biological Diversity |
| **CBO** | - | Community-Based Organization |
| **CCTV** | - | Closed-Circuit Television |
| **CEA** | - | Central Environmental Authority |
| **CEB** | - | Ceylon Electricity Board |
| **CGS** | - | Collector Grid Substation |
| **CHA** | - | Critical Habitat Assessment |
| **CIA** | - | Chemical Index of Alteration |
| **CMCS** | - | Central Monitoring and Control Station |
| **CO** | - | Carbon Monoxide |
| **Co. Ltd** | - | Company Limited |
| **$CO_3$** | | Carbonate Ion |
| **CR** | - | Critically Endangered |
| **CR(PE)** | - | Critically Endangered Possibly Extinct |
| **CRAA** | - | Climate Risk and Adaptation Assessment |
| **CRIP** | - | Climate Resilience Improvement Project |
| **CSO** | - | Civil Society Organization |
| **CSR** | - | Corporate Social Responsibility |
| **CTs** | - | Current Transformers |
| **CWMP** | - | Construction Waste Management Plan |
| **DAD** | - | Department of Agrarian Development |
| **dB** | - | decibel |
| **DBIP** | - | Development of Basin Investment Plans |
| **DC** | - | Direct Current |
| **DCPT** | - | Dynamic Cone Penetration Test |
| **DD** | - | Data Deficient |
| **DEM** | - | Digital Elevation Model |
| **DF** | - | Disturbed Dry Mixed Evergreen Forests |
| **DFO** | - | Divisional Forest Officer |
| **DL** | - | Dry Zone Low Country |
| **DO** | - | Dissolved Oxygen |
| **DS** | - | Divisional Secretariat |
| **DSD** | - | Divisional Secretariat Division |
| **DWC** | - | Department of Wildlife Conservation |
| **E** | - | Number of Endemic Species |
| **E & S** | - | Environmental and Social |
| **EAAA** | - | Ecologically Appropriate Area of Analysis |
| **EC** | - | Electrical Conductivity |

| | | |
|---|---|---|
| **EE** | - | Environmental Engineer |
| **EMP** | - | Environmental Management Plan |
| **EN** | - | Endangered |
| **END** | - | Endemic |
| **EOO** | - | Extent of Occurrence |
| **EPL** | - | Environmental Protection Licensing |
| **ESDD** | - | Environmental and Social Due Diligence |
| **ESEL** | - | Environmental and Social Exclusion List |
| **ESF** | - | Environmental and Social Framework |
| **ESIA** | - | Environmental and Social Impact Assessment |
| **ESMoP** | - | Environmental and Social Monitoring Plan |
| **ESMP** | - | Environmental and Social Management Plan |
| **ESMPF** | - | Environmental and Social Management Planning Framework |
| **ESP** | - | Environmental and Social Policy |
| **ESS** | - | Environmental and Social Standards |
| **ESSO** | - | Environmental and Social Safeguards Officer |
| **FD** | - | Department of Forest Conservation |
| **$Fe_2O_3$** | - | Iron Oxide |
| **FGDs** | - | Focus Group Discussions |
| **GBV** | - | Gender-Based Violence |
| **GC** | - | Grievance Committee |
| **GCE** | - | General Certificate of Education |
| **GCS** | - | Global Conservation Status |
| **GHG** | - | Greenhouse Gas |
| **GIS** | - | Geographic Information System/Gas-insulated switchgear |
| **GN** | - | Grama Niladhari |
| **GND** | - | Grama Niladhari Division |
| **GPS** | - | Global Positioning System |
| **GRC** | - | Grievance Redress Mechanism |
| **GRM** | - | Grievance Redress Mechanism |
| **GSS** | - | Grid Substation/Global Conservation Status |
| **GT** | - | Globally Threatened |
| **GW** | - | Groundwater |
| **GWh** | - | Gigawatt hour |
| **H** | - | Herbaceous |
| **Ha** | - | Hectares |
| **HA** | - | Habit |
| **HAZID** | - | Hazard Identification |
| **HEC** | - | Human-Elephant Conflict |
| **HEC HMS** | - | Hydrologic Engineering Center – Hydrologic Modeling System |
| **HEC RAS** | - | Hydrologic Engineering Center – River Analysis System |
| **HG** | - | Home Gardens |
| **HIRA** | - | Hazard Identification and Risk Assessment |
| **HV** | - | High Voltage |
| **HVAC** | - | Heating, Ventilation, and Air Conditioning |
| **IBAT** | - | Integrated Biodiversity Assessment Tool |
| **IC** | - | Incident Category |
| **ID** | - | Irrigation Department |
| **IDPs** | - | Internally Displaced Persons |
| **IEC** | - | International Electrotechnical Commission |
| **IEE** | - | Initial Environmental Examination |
| **IEEE** | - | Institute of Electrical and Electronics Engineers |
| **IEER** | - | Initial Environmental Examination Report |
| **IFC** | - | International Finance Corporation |
| **ILO** | - | International Labour Organization |
| **IPCC** | - | Intergovernmental Panel on Climate Change |
| **IPS** | - | Indigenous Peoples |
| **IQAir** | - | Information Quality on Air |
| **IUCN** | - | International Union for Conservation of Nature |
| **Iv** | - | Invasive Species |

| | | |
|---|---|---|
| **KBA** | - | Key Biodiversity Areas |
| **KH** | - | Kappalthurai |
| **km** | - | Kilometre |
| **KML** | - | Keyhole Markup Language |
| **kV** | - | Kilovolt |
| **LC** | - | Least Concern |
| **LTI** | - | Lost Time Injury |
| **M** | - | Migratory |
| **MG** | - | Mangroves |
| **MMD & E** | - | Ministry of Mahaweli Development and Environment |
| **MOE** | - | Ministry of Environment |
| **MSW** | - | Municipal Solid Waste |
| **MT** | - | Floodplain Wetlands |
| **MTI** | - | Medical Treatment Injury |
| **MW** | - | Megawatt |
| **N** | - | Native Species |
| **NAP** | - | National Adaptation Plan |
| **NBRO** | - | National Building Research Organization |
| **NCCAS** | - | National Climate Change Adaptation Strategy |
| **NCS** | - | National Conservation Status |
| **ND** | - | Not detected |
| **NDC** | - | Nationally Determined Contribution |
| **NE** | - | North-East/Not Evaluated |
| **NEA** | - | National Environmental Act |
| **NGOs** | - | Non-Governmental Organizations |
| **NIL** | - | No Information Listed |
| **NIOSH** | - | National Institute of Occupational Safety and Health |
| **NIRP** | - | National Involuntary Resettlement Policy |
| **$NO_2$** | - | Nitrogen Dioxide |
| **$NO_x$** | - | Nitrogen Oxide |
| **NP** | - | National Parks |
| **NR** | - | Not reported |
| **NS** | - | National Conservation Status |
| **NSR** | - | Noise-Sensitive Receptors |
| **NT** | - | Near Threatened |
| **NTPC** | - | National Thermal Power Corporation Limited |
| **NTU** | - | Nephelometric Turbidity Unit |
| **O & M** | - | Operations and Maintenance |
| **O/L** | - | Ordinary Level |
| **$O_3$** | - | Ozone |
| **Ohm** | - | Unit of Electrical Resistance |
| **OHS** | - | Occupational Health and Safety |
| **OM** | - | Organic Matter |
| **OPGW** | - | Optical Ground Wire |
| **OTDR** | - | Optical Time Domain Reflectometry |
| **PAA** | - | Project Approving Agency |
| **PAHs** | - | Polycyclic Aromatic Hydrocarbons |
| **PAP** | - | Project Affected Persons |
| **PD** | - | Project Director |
| **PIU** | - | Project Implementation Unit |
| **$PM_{2.5}$** | - | Particulate Matter |
| **PMU** | - | Project Management Unit |
| **PP** | - | Project Proponent |
| **PPE** | - | Personal Protective Equipment |
| **PPM** | - | Project-Affected People's Mechanism |
| **PRDA** | - | Provincial Road Development Authority |
| **PS** | - | Pradeshiya Sabha |
| **PS6** | - | Performance Standard 6 |
| **PSS** | - | Pooling Substation |
| **PTs** | - | Potential Transformers |
| **PUCSL** | - | Public Utilities Commission of Sri Lanka |
| **PV** | - | Photovoltaic |
| **Pvt** | - | Private |
| **RAP** | - | Resettlement Action Plan |
| **RCC** | - | Reinforced Cement Concrete |
| **RCP** | - | Representative Concentration Pathways |
| **RDA** | - | Road Development Authority |

| | | |
|---|---|---|
| **RoW** | - | Right of Way |
| **RPF** | - | Resettlement Policy Framework |
| **RR** | - | Streams/Rivers and Associated Vegetation |
| **S** | - | Shrub |
| **SC** | - | Thorn Forests (Scrublands) |
| **SCADA** | - | Supervisory Control and Data Acquisition. |
| **SDG** | - | Sustainable Development Goals |
| **SEA** | - | Sexual Exploitation and Abuse |
| **SH** | - | Sexual Harassment |
| **$SiO_2$** | - | Silicon Dioxide |
| **SLD 99** | - | Sri Lanka Datum 1999 |
| **SLO** | - | State Lands Ordinance |
| **SLPA** | - | Sri Lanka Ports Authority |
| **SLRs** | - | Sri Lanka Railways |
| **SLSEA** | - | Sri Lanka Sustainable Energy Authority |
| **SMS** | - | Short Message Service |
| **SNR** | - | Strict Nature Reserve |
| **$SO_2$** | - | Sulfur Dioxide |
| **SRTM DEM** | - | Shuttle Radar Topography Mission – Digital Elevation Model |
| **STC** | - | State Timber Cooperation |
| **SW** | - | Surface Water |
| **T** | - | Tree |
| **TA** | - | Tanks |
| **TD** | - | Tension/Degree Towers |
| **TDE** | - | Transmission Design & Environment |
| **TDL** | - | Tension/Degree Line Towers |
| **TL** | - | Transmission Line |
| **TMP** | - | Traffic Management Plan |
| **TN** | - | Minimum Night -Time Temperature |
| **TN10P** | - | Cold nights |
| **TN90P** | - | Hot nights |
| **ToR** | - | Terms of Reference |
| **TPCL** | - | Trincomalee Power Company Limited |
| **TS** | - | Taxonomic Status |
| **TT** | - | Terminal Tower |
| **UDA** | - | Urban Development Authority |
| **UNFCCC** | - | United Nations Framework Convention on Climate Change |
| **UNHCR** | - | United Nations High Commissioner for Refugees |
| **USD** | - | United States Dollar |
| **VOC** | - | Volatile Organic Compounds |
| **VP** | - | Vantage Point |
| **VTs** | - | Voltage Transformers |
| **VU** | - | Vulnerable |
| **WHH** | - | Women-Headed Households |
| **WHO** | - | World Health Organization |

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# Executive Summary

## Project Overview

The Ceylon Electricity Board (CEB) proposes the development of a 220 kV high-voltage transmission line that will span approximately 37.6 kilometers from the proposed Sampur Collector Grid Substation (CGS) to the existing Kappalthurai GS in the Trincomalee District, Sri Lanka. This strategic infrastructure project is designed to evacuate electricity generated by the Sampur Solar Power Park, which is initially planned at 50 MW and will later be expanded to 120 MW. The project plays a critical role in Sri Lanka's broader energy sector development goals, including expanding renewable energy capacity, reducing dependency on fossil fuels, and strengthening electricity supply in the Eastern Province. Funded by the Asian Infrastructure Investment Bank (AIIB), the project demonstrates a national commitment to sustainable, climate-resilient energy infrastructure.

## Purpose of the Environmental and Social Impact Assessment (ESIA) and Project Scope

The ESIA has been developed to systematically identify, assess, and manage the environmental and social risks and impacts associated with the proposed transmission line, Sampur CGS, Kappalthurai GS, and Associated facility (Solar park). The proposed 220 kV Transmission line from proposed Sampur CGS to the Kappalthurai GS will be 37.6 km in length. The existing Kappalthurai GS is located in an area of 6.8037 ha (16.8123 acres) and the area earmarked for the proposed Sampur CGS land is 8.4ha (20.76 acres). The solar park which is an associated facility to the project will be located in an area of 204.3663 ha (505 acres). is the ESIA was prepared in compliance with Sri Lanka's national environmental regulations as well as the requirements of the AIIB Environmental and Social Framework (ESF). The ESIA also evaluates the project's associated facilities, most notably, the 50 MW Sampur Solar Power Project, to present a comprehensive picture of the cumulative environmental and social footprint, and associated mitigation action.

## Project Justification

Over the past two decades, Sri Lanka has experienced a consistent increase in electricity demand at an average annual rate of 5-6%, driven by expanding urbanization, industrial growth, and increasing per capita energy consumption. To address this demand sustainably, the government has prioritized the development of renewable energy sources. The Sampur Solar Park, with a planned generation capacity of up to 120MW, will contribute significantly to meeting national renewable energy targets. The proposed transmission line is critical for evacuating electricity from this facility and delivering it reliably to end-users through the national grid. Without this transmission line, the solar park would not be operationally viable, making the project not only necessary but integral to the country's energy future. Since the project activities will be carried out adhering to the local and AIIB standards, its environmental consequences will be minimal. Hence the project is justified.

**Environmental and Social Baseline Conditions**

The project area falls within the dry and arid lowlands floristic zone of north-eastern Sri Lanka and the transmission line traverses a diverse landscape including cultivated paddy fields, abandoned agricultural lands, dry-mixed evergreen forests, degraded lands, riverine ecosystems, scrublands and mangroves. The area supports a variety of flora and fauna, including endemic and nationally/ globally threatened species. According to the Critical Habitat Assessment (CHA), some sections of the line traverse critical habitats. The socio-economic context is predominantly rural, with livelihood largely dependent on agriculture, livestock, and fishing. Basic social infrastructures, such as religious sites, community centers, and public roads are present within the project area and its influence area. Seasonal flooding is a common phenomenon affecting the baseline environment. These baseline conditions were identified through extensive site reconnaissance, household surveys, and community and line agency consultations. Community and line agency concerns were thoroughly investigated, during these reconnaissance missions.

**Key Environmental and Social Impacts**

**Physical Environment:** During the construction phase, the potential impacts include dust generation, noise pollution, and localized degradation of air and water quality. Soil erosion and surface runoff could increase if mitigation measures are not properly implemented, especially during access path and foundation construction. Although flooding is a baseline condition, flood aggravation due to the project interventions is insignificant. There could be hindrances to drainage paths during construction. These risks will be addressed through best engineering practices and site-specific environmental controls, through a well-planned Environmental and Social Management Plan (ESMP).

**Biological Environment:** Although the project does not intersect any nationally protected areas, the clearing of the right-of-way (RoW) will result in the clearing of vegetation, including forests, riverine ecosystems, scrublands, and mangroves, and the removal of 454 trees. The project area contains dry-zone vegetation with several endemic and nationally/ globally threatened species. Biodiversity impacts are manageable, and those will be mitigated through proposed mitigation measures and continuous ecological monitoring.

**Aquatic Resources:** The transmission line crosses multiple perennial and seasonal water bodies, streams, and segments of the Mahaweli River basin. Tower placement has been optimized to minimize disruption to aquatic ecosystems and streams, and sedimentation controls will be implemented during construction.

**Social Impacts:** The project does not involve any physical displacement of households. This is very much due to the upfront design adjustments (mitigation-by-design). The use of the land for tower foundations, access roads, stringing, and safety clearances may lead to minor livelihood disturbances and permanent loss of land for tower foundations. Affected landowners and users, mainly farmers, will be compensated following the regulations under the Electricity Act No.20 of 2009 and its Amendment Act No.31 of 2013, and AIIB policies/ guidelines. Mitigation measures to address issues related to community health and safety, labor influx, and temporary local traffic disruptions are included in the ESMP.

**Cultural Heritage:** No known archaeological or heritage sites lie within the transmission corridor. Nevertheless, a "chance find" protocol has been incorporated into the ESMP to address any unexpected discoveries during construction.

**Climate Risk and Resilience:** A comprehensive climate risk assessment was undertaken using flood modeling and climate change studies using standard climate change scenarios (e.g., RCP 5.5 and 8.5). The project area is subject to seasonal droughts and yearly flooding. Accordingly, the transmission towers and infrastructure have been designed for long-term resilience against extreme weather, temperature rise, and flood levels.

**Associated Facilities**

The 50MW Sampur Solar Power Project, which will be expanded to 120 MW, is identified as the primary associated facility under this ESIA. While it is being developed separately, its operational success is entirely dependent on the proposed transmission line. Environmental concerns related to the solar park include alteration of land cover, removal of scrubland vegetation, potential disruption to faunal species, and short-term impacts during construction. These impacts have been evaluated from a cumulative and landscape-level perspective and are integrated into the ESIA to ensure consistency with AIIB's due diligence requirements.

**Mitigation Measures and Environmental and Social Management Plan (ESMP)**

Various mitigation measures were suggested to alleviate the possible impacts, including upfront design adjustments, especially to mitigate social, ecological, and hydrological impacts. Provision of compensation to affected stakeholders, ecological mitigation (including protection of mangroves by increasing pylon height, species translocations, offsite habitat enrichments), and strengthening the pylon and string components to have resilience to climate change impacts are among them. CEB has already identified the directly affected landowners, and the required details to pay compensation have been collected through a right-of-way survey.

An Environmental and Social Management Plan has been prepared outlining the key environmental and social impacts, proposed mitigatory actions, responsibilities, implementation schedules, and costs for mitigating identified impacts. Key elements of the ESMP include:

- Implementation of ecological mitigations.
- Implementation of erosion and sediment control systems and temporary drainage structures, such as temporary culvert crossings across access paths.
- Compensation for affected land, primary and auxiliary structures, livelihoods and trees and crops at replacement cost
- Public health & safety, occupational health & safety, and community risk management protocols
- Gender-sensitive labor management procedures
- Enhanced stakeholder consultation throughout the project lifecycle
- Transparent and accessible Grievance Redress Mechanism (GRM)
- CSR Activities such as providing fruit plants, community hall improvements, etc.

Monitoring will be conducted regularly to ensure compliance with the ESMP, and the project performance standards. Environmental indicators (air, noise, vibration, water quality), ecological health, social welfare metrics, and community feedback will be reviewed and reported as per the Environmental and Social Monitoring Plan (ESMoP).

**Institutional Arrangements**

CEB will lead project implementation through a dedicated Project Management Unit (PMU), which includes an Environmental and Social (E&S) Unit responsible for ensuring compliance with the ESMP and overseeing safeguard measures throughout the project lifecycle. This unit will work in coordination with contractors, local authorities, and oversight agencies such as the Divisional Secretariats, Department of Wildlife Conservation, Department of Forest Conservation, and the Central Environmental Authority. Field-level environmental divisions will handle daily monitoring and coordination at site level, while institutional strengthening through capacity-building programs will be carried out for CEB staff, contractors, and relevant stakeholders to enhance implementation effectiveness. In line with the AIIB requirements, a third-party monitoring agency will be engaged to independently verify compliance and project performance, ensuring transparency, adaptive management, timely grievance redress, and stakeholder engagement throughout the project duration.

**Stakeholder Engagement**

Extensive consultations were conducted with local communities, administrative bodies such as divisional secretariats, environmental regulating authorities, including forest and wildlife authorities, and civil society representatives. The concerns raised included monetary compensation requirements for land and vegetation/crop loss in home gardens and paddy fields, access disruptions, and potential ecological disturbances such as tree removal. These concerns have been incorporated into the proposed mitigation measures and the ESMP, and a multi-tiered GRM has been established to ensure grievances are effectively communicated, addressed, and reduced. Continuous stakeholder engagement and information disclosure are necessary throughout the project cycle to share project related information with the stakeholders including affected persons, and to receive their feedback on project activities and their impacts.

**Conclusion and Recommendations**

This ESIA concludes that the proposed 220kV transmission line project, including Sampur CGS, Kappalthurai GS, and Sampur Solar Park, are environmentally and socially feasible, with proper implementation of proposed mitigation measures. No irreversible impacts are anticipated, and all potential adverse effects can be effectively managed through the proposed mitigation measures outlined in the report which includes the ESMP. The project will enhance renewable energy access, improve grid reliability in the Eastern Province, and make meaningful and timely contributions to Sri Lanka's sustainable energy goals. It is recommended that project implementation proceed with:

- Strict adherence to environmental and social safeguards,
- Continued stakeholder engagement,
- Robust institutional coordination,

- Comprehensive monitoring and adaptive management practices.

As the project falls in category ‘B’ as per the AIIB ESF guidelines, and under the NEA, the CEA has already given conditional approval in December 2023, for the project based on the IEE submitted to the CEA. Therefore, consultants recommended that the project be approved for AIIB funding.

# 1 Introduction

The Environmental and Social Impact Assessment (ESIA) report provides an updated overview of the proposed 220 kV transmission line project, from the Sampur Collector Grid Substation (CGS) to the Kappalthurai Grid Substation. The transmission line (37.6 km) component and Sampur CGS were originally proposed by the Ceylon Electricity Board (CEB) in 2015, to connect the planned Sampur Coal Power Plant to the national grid, and the project has since been realigned due to a shift in the energy policy by the then governments. The land initially designated for the coal power plant is now intended for a 120MW solar park, and this ESIA report has been updated to reflect these new project objectives, of the proposed transmission line from Sampur Solar Park (considered as an associated facility although the Initial Environmental Examination (IEE) for it has already been carried out) to the existing Kappalthurai GS.

The CEB, established to oversee the generation, transmission, and distribution of electrical energy in Sri Lanka, operates under six distinct licenses for each core function. Currently, the CEB's generation division supplies about 66% of the total power to the national grid. The transmission network comprises 55 GS across various voltage levels (132/33 kV, 220/132/33 kV, 220/132 kV, and 132/11 kV) and spans approximately 2,236 kilometers of high-voltage (HV) transmission lines, both 220 kV and 132 kV.

The Central Environmental Authority (CEA) has already given conditional approval on the 27$^{th}$ of December 2023, based on the Updated Initial Environmental Examination Report (IEER) for the proposed 220kV Transmission Line from Sampur CGS to Kappalthurai GS, submitted to the CEA by the CEB in October 2023. The Project has already received the local IEE approvals along with the line agency consent according to the country's environmental policy, legal, and regulatory framework.

This updated context shows the importance of this transmission line project in meeting Sri Lanka's current and future energy demands while supporting the shift towards renewable energy targets and Nationally Determined Contributions (NDCs). The ESIA process addressed the environmental and social implications of the project, ensuring that the project will adhere to the Environmental and Social Framework (ESF) of the Asian Infrastructure Investment Bank (AIIB) following both national and international policy and framework, as AIIB will be funding the project. EcoPulse Solutions (Pvt) Ltd carried out the ESIA and prepared the ESIA Report for the project adhering to the relevant regulations and guidelines with its well-experienced team of consultants and staff.

## 1.1 Objectives and Justification of the Project

The primary objective of the proposed 220kV transmission line project is to facilitate the evacuation of power generated at the Sampur Renewable Energy Park to the local load centers. This project aims to meet the growing electricity demand in the Trincomalee area by ensuring a reliable and high-quality power supply, while also promoting the economic operation of the transmission network.

Over the past two decades, electricity demand in Sri Lanka has been increasing, as illustrated in Figure 1.1, and this trend is expected to continue in the foreseeable future. According to the

mission statement of the CEB, the CEB's mandate is to develop and maintain an efficient, coordinated, and economical electricity supply system for all of Sri Lanka, while upholding its core values. To fulfill this mandate, CEB must invest in new generating facilities or purchase electricity to meet the increasing demand and to replace outdated thermal plants scheduled for retirement. While achieving and facilitating the 70% renewable energy targets and adhering to new policies of the country.

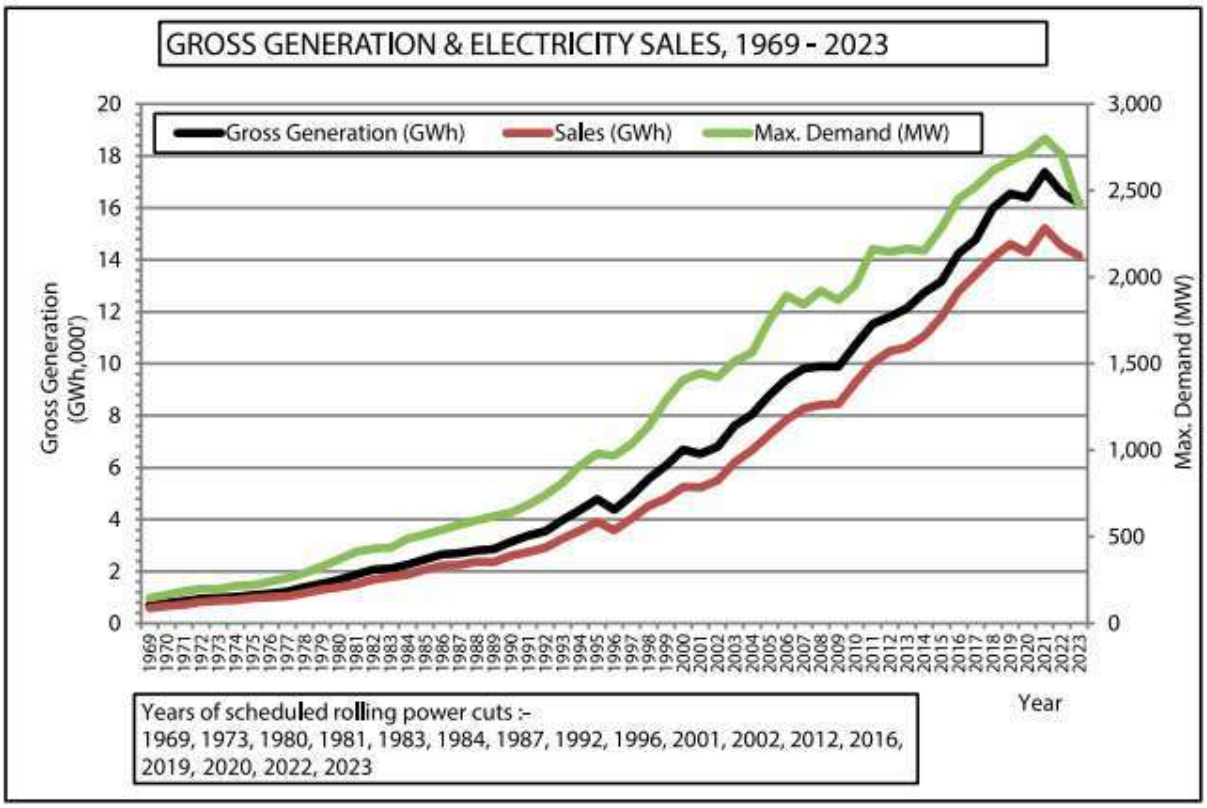


**Figure 1.1 - Gross Generation and Electricity Sales, 1969 - 2023**

(Source: Sales and generation data book 2023, Ceylon Electricity Board)

At present, CEB relies on its hydropower plants, the 300MWx3 coal power plant in Norochcholai, Puttalam, as well as oil-fired combined cycle, diesel, and gas turbine power plants to meet the growing electricity demand. However, with the development of projects such as Upper Kotmale, Uma Oya, Broadlands, and Morogolla hydropower stations, the potential for further hydropower development is becoming limited.

According to the Long-Term Generation Expansion Plan for 2023 - 2042, a number of renewable energy generation projects were planned, including fully facilitated solar parks are planned for development in the Eastern Province, which includes the Sampur Solar Park. This necessitates strengthening the transmission network to efficiently transport power from the generation facilities to the load centers while adhering to planning criteria that ensure the quality, reliability, and economic operation of the transmission system.

The Sampur Solar Park interconnection will be developed in stages. Phase I will connect the first 50 MW of the solar park in early 2028, followed by Phase II (70MW) in later stages. There are

several proposed renewable energy projects in the area with a total capacity of 700MW which are under the initial approval process.

The locations of the Sampur and Kappalthurai substations, along with the proposed transmission line, are depicted on the map of Sri Lanka's transmission network (Figure 1.2).

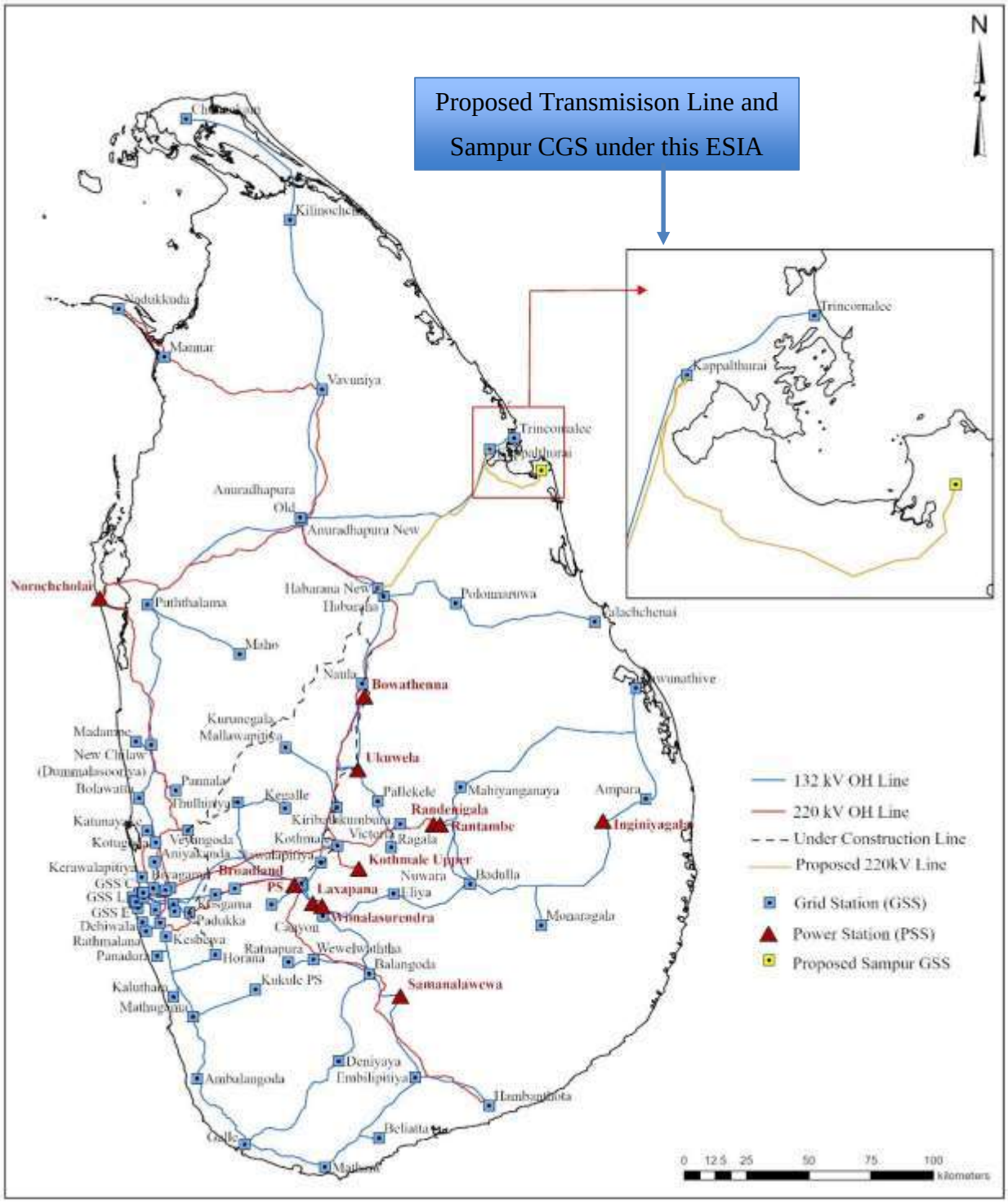


**Figure 1.2 -Map of Sri Lanka transmission line network**

(Source: Prepared based on data from Ceylon Electricity Board)

## 1.2 Project Location

The proposed 220kV transmission line is planned to be constructed from the proposed Sampur CGS to the existing Kappalthurai GS. Figure 1.3 shows the location of the project. A detailed location map, indicating the transmission line along with the proposed Sampur CGS and the existing Kappalthurai GS, is appended on 1:50,000 topographic sheets in Appendix 15.10. The geographic coordinates of all the tower points of the proposed route of the transmission line are provided in Appendix 15.21.

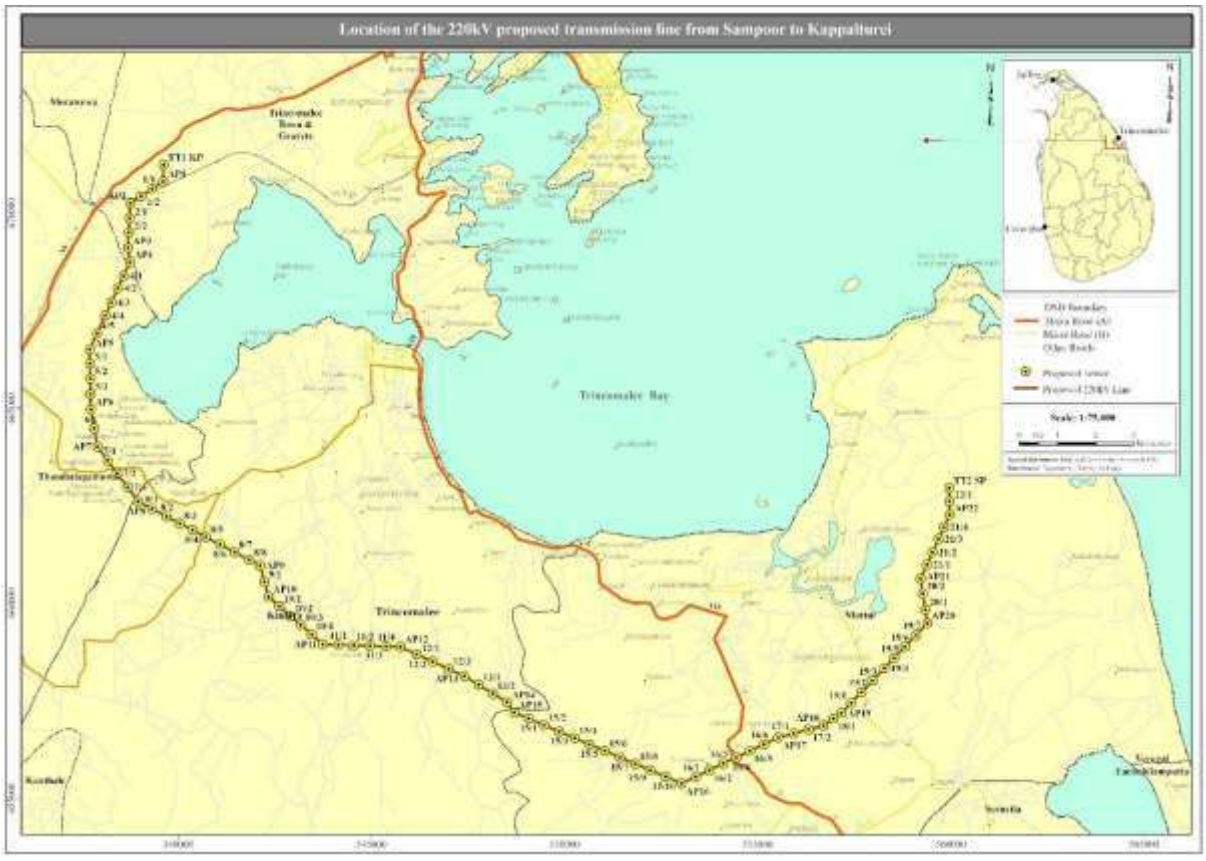


**Figure 1.3 - Location of the proposed transmission line in Trincomalee district, Sri Lanka**

(Source: Prepared based on 1:50,000 data, Survey Department, Sri Lanka)

## 1.3 Scope of the Study

The scope of the study encompassed the **Kappalthurai GS**, the **proposed Sampur CGS**, and the **proposed transmission line route**, including a **17.5-meter corridor on either side** of the transmission line. This defined corridor was assessed to evaluate potential environmental and social impacts associated with the project's implementation. The Sampur Solar Park which will have 120 MW total capacity once fully functioned was also studied as an associated facility under this ESIA.

However, the study area was not strictly confined to these locations. Based on identified environmental and social concerns, the study was extended beyond the designated project area where necessary. Additional areas were included to assess indirect and cumulative impacts, considering aspects such as ecological connectivity, socio-economic dependencies, and potential influences on surrounding communities and natural habitats.

## 1.4 Project Objectives and Scope

**Objective Clarification:** Identified the specific objectives of the ESIA, which included understanding the environmental and social impacts and determining mitigation and management strategies.

**Project Scope and Boundaries:** Defined the geographic and thematic scope, set boundaries for the Area of Influence (AoI) and Area of Analysis (AoA), and ensured all potential direct, indirect, and cumulative impacts were covered. 1:50,000 digital maps issued by the survey department, Google Earth images verified thorough ground verifications were used to define the project boundaries.

**The primary objectives of the Environment and Social Impact Assessment are as follows:**

- Document existing environmental and social baseline information in the project area and surrounding areas in sufficient detail.
- Outline project activities that will be undertaken during the implementation of the sub-project.
- Conduct public consultations including consultation with the home garden owners, farmer community, and women groups, and document the disclosure activities and gathered concerns undertaken.
- Identify adverse environmental and social impacts of the project and propose mitigation measures to address such impacts.
- Consult all relevant line agencies which have jurisdiction in the project area. The key line agencies to be consulted are the Forest Department, the Department of Wildlife Conservation, Divisional Secretaries, the Central Environmental Authority, the Department of Agrarian Development, Road Development Authority and the Sri Lanka Railways.
- Continual liaison with the Ceylon Electricity Board which is the Project Proponent, and the AIIB which is the funding agency.
- Prepare an Environmental and Social Management Plan (ESMP), as a part of the ESIA, with the clearly defined institutional structure that will oversee the implementation of the ESMP and the necessary extra funding for the implementation of the mitigation measures to alleviate induced environmental and social impacts.
- Conduct due diligence on the main and associated facilities to the requirements of the ESF of the AIIB.
- Address international and national legislative, regulation, and policy considerations in the physical, social, and ecological environmental subdomains.
- Carry out a detailed hydrological study.
- Carry out a Climate Risk and Adaptation Assessment (CRAA).
- Carry out a Critical Habitat Assessment.

The construction of this power line will not cause any physical resettlement (displacement of people) except for nominal land occupancy for the transmission towers and tree removal to make way for the proposed facility.

## 1.5 Methodology of the ESIA Study

### 1.5.1 Outline of the Approach and Methodology

The methodology and approach outlined the initial framework and roadmap for the Environmental and Social Impact Assessment (ESIA) for the proposed 220kV transmission line project connecting Sampur CGS to Kappalthurai GS. This included the augmentation of Kappalthurai GS and the construction of Sampur CGS. The assessment further considered the associated facilities of the project, including the proposed 50MW solar park. The primary goal was to develop a structured plan that ensured all environmental and social aspects were comprehensively assessed, with adherence to both local regulations and AIIB Environmental and Social Standards. The methodology for this ESIA involved a combination of qualitative and quantitative approaches, including data collection, stakeholder consultations, and impact analysis, which will address the project objective and scope, is detailed as follows:

### 1.5.2 Gap Analysis

As the local regulatory and reporting requirements differed from the AIIB requirements, when the ESIA was prepared for AIIB requirements, inheriting the already collected information from the IEE, it was necessary to identify the missing information as gaps. The following were used to identify the gaps and to obtain data to fill such gaps.

**IEE Report:** The IEE report approved by the CEA and the conditional approval letter issued by the CEA were evaluated to identify the available data and the gaps in the IEE to prepare the ESIA.

**Other Available Data:** Other data sources that were useful for preparing the ESIA report were also identified. For example, CEB conducted consultations with affected parties at the individual level and obtained wayleave, which included the ESIA for the proposed transmission line from Sampur CGS to Kappalthurai GS, along with consent to allocate their land for the transmission towers and wire stringing over their lands.

The major secondary data sources reviewed to support the ESIA preparation are as follows

- Consultation records and wayleave agreements maintained by the Ceylon Electricity Board (CEB), particularly concerning the affected parties along the proposed transmission line from Sampur CGS to Kappalthurai GS.
- Previous EIA/IEE reports prepared for regional infrastructure projects.
- Topographic and land use maps from the Survey Department of Sri Lanka.
- Socioeconomic statistics from the relevant DS offices.
- Biodiversity information and flora/fauna inventories from the relevant agencies

**Additional Data Collected in the Field by the ESIA Team:** The ESIA team members collected additional gap-filler data on socioeconomics, ecology, hydrology, geology, land use, etc., which were included in the report. Additionally, there were community consultations to obtain

community concerns, as well as line agency consultations regarding the concerns on the project and the roles of line agencies in the Grievance Redress Mechanism.

The areas surveyed during the IEE stage were mapped out to identify which locations still needed to be assessed to address the issues of gaps. During this exercise, the locations and parameters required for additional surveys were identified.

Missing information on the physical environment, such as air and noise, water and groundwater, and details of GHG emissions. However, no additional baseline measurements were conducted at this stage, and the required additional measurements (e.g., noise, water quality, etc.) were proposed under the ESMP as just-in-time measurements (i.e., immediately before construction).

Identified gaps were listed to collect data relevant to such gaps from the field surveys and other line agencies, where necessary. A comprehensive gap analysis was carried out by the ESIA team with the assistance of the AIIB representatives and the CEB staff. Tabulated gaps and the necessary actions needed to fill the gaps and prepare the ESIA report, including the extra details required to meet the standards as per the AIIB ESF. The identification of data gaps provided a strong foundation for the successful execution of the subsequent field activities and assessments, ensuring a thorough understanding of the project requirements while minimizing repetition.

All these gaps were addressed under different sections of the ESIA, detailing additional secondary data sources for review and the methodologies for site-based activities. This gap inclusion in the ESIA report ensured a structured and efficient approach to the assessment by clearly defining the required areas.

### 1.5.3 Regulatory and Legislative Review

**Policy and Regulatory Analysis:** Reviewed all relevant environmental and social regulations at the national, regional, and local levels, ensuring project alignment with legal requirements. This included national environmental regulations, social protection laws, and international commitments, as well as AIIB ESF.

**Permit and Compliance Strategy:** Identified necessary permits and approvals required for project implementation. It was observed that most of the required permits from line agencies were already available, including the CEA conditions, which had been formulated based on the IEE findings and line agency requirements. What was required was the compliance strategy during implementation. Procedures for timely and efficient compliance with all applicable environmental and social regulations were documented.

The regulatory and legislative framework relevant to the proposed project has been thoroughly reviewed in Chapter 2 of this Environmental and Social Impact Assessment (ESIA). This section outlines the key national and international laws, regulations, policies, and institutional responsibilities governing environmental management and project implementation. It provides a comprehensive understanding of the legal context within which the project will operate, ensuring compliance with applicable statutory requirements and best practices.

### 1.5.4 Analysis of Alternatives

**Alternative Analysis Framework:** Developed criteria for assessing different project alternatives, including considerations for environmental impact, social acceptability, economic viability, and technical feasibility.

**Comparison of Project Options:** Conducted a comparative analysis to determine the most appropriate project approach, focusing on minimizing environmental and social risks and optimizing project sustainability.

### 1.5.5 Inclusion of the Associated Facilities on Due Diligence

Under AIIB requirements, due diligence was required not only for the primary facility—the transmission line—but also for the associated facilities. These include the proposed Sampur Solar Park, located adjacent to the proposed Sampur Collector Grid Substation (CGS) site, and the proposed augmentation/extension of the Kappalthurai Grid Substation, which is planned to be carried out within the existing substation premises.

### 1.5.6 Methodology for Physical Environment Assessment

#### 1.5.6.1 GIS and Remote Sensing Applications

The 220kV transmission line route was mapped using GPS coordinates of angle and suspension towers provided by CEB to identify the alignment across the Trincomalee District. The locations of the Kappalthurai Grid Substation and the proposed Sampur Grid Substation were also identified using these coordinates. Digital geospatial data and land use maps were prepared at a 1:50,000 scale, and a 35-meter buffer zone was established along the 37.6 km corridor to support the assessment. All maps were developed in the local coordinate system (SLD 99).

The following thematic maps were prepared to support field assessments:

I. Administration areas (DSD, Local Authorities, Grama Niladhari (GND))
II. Declared forest areas under the Forest Department Sri Lanka and Other State Forest areas
III. Wildlife areas including National Parks (NP), Sanctuary, Strict Nature Reserve (SNR), and Jungle Corridors where applicable
IV. Surface water bodies such as waterholes, rivers, and streams
V. Topography
VI. Soil
VII. Geology
VIII. Social service facilities, schools, public places, and religious places
IX. Houses and home gardens
X. Climate Regions and Land Use Zones

Using the initial maps and digital spatial data (Google Earth KML), field teams conducted multiple site visits to verify the transmission line route, tower locations, and land use features within the defined buffer zone. Additional spatial and GPS data collected during fieldwork such as household locations, ecological features, reforestation areas, and tree survey points were integrated into the base maps. These updated geospatial layers were shared with the ecological and social assessment

teams to ensure comprehensive field coverage. All relevant map outputs are provided in Appendix 15.10.

#### 1.5.6.2 Land use

The original 1:50,000 land use map of the proposed transmission line corridor was updated using field-verified data, Sentinel-2 (10 m) satellite imagery, and Google Earth images, as presented in Map 15.10.6 (Sheet 1) and Map 15.10.7 (Sheet 2) of Appendix 15.10. Geospatial analysis was applied to quantify the percentage of major land use types intersected by the 35 m-wide corridor (Table 5.1), including paddy fields, scrubland, sparse forest, marshlands, and home gardens. All spatial layers were projected to the local coordinate system (SLD 99) before analysis. Land use information between angle towers was also included for comprehensive coverage.

**Impact on Land Use**

The impact on land use was analyzed based on the detailed 1:50,000-scale land use map. Spatial intersections were analyzed to identify the types and extent of land uses directly affected by construction activities such as tower erection, vegetation clearance, and access road development. To identify existing land use patterns and assess potential disruptions, primary data collected during field surveys were also utilized. Particular attention was given to areas of ecological or agricultural significance such as marshlands, home gardens, and abandoned paddy fields where land use conversion or restriction may have long-term implications. The assessment was based on spatial analysis, tower-specific land-use observations, and qualitative evaluation of potential land disturbances during both construction and operational phases.

#### 1.5.6.3 Topography

Topographic characteristics were assessed using Digital Elevation Models (DEM), contour maps, and field data. Elevation, slope, and aspect were analyzed to identify areas of significant variation.

**Impact on Topography**

The impact on topography was analyzed based on georeferenced elevation data of the transmission line corridor, tower locations, and GS sites. Field observations were used to verify slope variations, terrain modifications, and micro-relief features, particularly in low-lying areas such as marshlands and floodplains. Special attention was given to areas requiring grading, leveling, or cut-and-fill activities during construction.

#### 1.5.6.4 Geology and Soil

The geological and soil profile along the proposed transmission line corridor was assessed using regional geological maps, soil distribution data, and field verification. Detailed distribution maps of underlying geological formations and soil types are illustrated in Map 15.10.8 and Map 15.10.9, respectively, within Appendix 15.10. Furthermore, existing geological and geotechnical datasets, including borehole core logs, DCPT results (Appendix 15.20), and relevant information from the approved IEE report, were critically reviewed to characterize the geological and soil conditions along the transmission line corridor. Geo-hazard risks were also assessed based on the same data.

**Impact on Geology and Soil**

The impact on geology and soil was carried out by identifying the geological formations and soil types along the transmission line corridor using regional geological and soil maps, field verification data, and georeferenced tower location information. Specific impact zones were noted based on the intersection of tower locations with soft soils, floodplains, saline-prone areas, and hard rock formations. Construction-related activities such as excavation, blasting, and equipment movement were reviewed to identify potential disturbances to soil structure, erosion risks, and contamination points. Impacts during both construction and operational phases were described qualitatively, based on observed conditions and known soil/geological sensitivities in each area.

### 1.5.6.5 Hazards, Vulnerability and Risk Assessment

The Hazard, Vulnerability, and Risk Assessment was conducted using a structured Hazard Identification and Risk Assessment (HIRA) methodology. This process began with the identification of potential hazards across all construction activities, including routine, non-routine, and emergency scenarios. Hazards were classified under various categories such as physical, chemical, biological, mechanical, ergonomic, and psychological.

Each hazard was then evaluated based on its probability of occurrence and severity of impact, using a risk matrix to determine the overall risk level. Based on the risk rating, appropriate control measures were implemented - ranging from elimination and substitution to engineering controls, administrative procedures, and use of personal protective equipment (PPE). These controls aimed to bring all risks down to levels that are As Low As Reasonably Practicable (ALARP).

This assessment ensured that all foreseeable hazards were systematically addressed to safeguard the health and safety of workers, the public, and the environment during the project. A detailed description of the Hazard Identification and Risk Assessment (HIRA) is provided in Appendix 15.9.

### 1.5.6.6 Climate and Meteorology

Rainfall patterns, temperature, relative humidity, wind patterns, and lightning and thunderstorm characteristics were analyzed using available data from the IEE report and relevant secondary sources.

The methodology of the Climate Risk and Adaptation Assessment is discussed in Section 1.5.7.10.

### 1.5.6.7 Hydrological Assessment

**Surface Water and Groundwater Availability and Quality**

Major surface water bodies, including tanks, irrigation canals, and streams, within or near the transmission corridor were identified using satellite imagery and confirmed through field visits (Appendix 15.10, Map 15.10.7). Tower-to-waterbody distances were measured in Google Earth Pro using the ruler tool. Surface and groundwater quality along the transmission line was assessed using secondary data from the approved IEE report (October 2023) and the IEE report for the

proposed 50 MW Sampur Solar Power Project. Sampling locations near the solar project are shown in Figure 1.4.

While no primary sampling was conducted for this ESIA, existing physicochemical data were reviewed to establish baseline water quality. The Solar Power Project's IEE included surface water samples from Pulvan Kulam (W1), Sampukkali Kulam (W2), and Sambu Kulam (W3), and a groundwater sample from a well at Shivashakthi Vidyalaya (W4). Sampling was done on 13 January 2023 from 09:30 to 16:10 hrs, using 2 L polyethylene bottles (chemical analysis), 300 mL sterilized glass bottles (microbiological), and 1 L glass bottles (oil and grease). Groundwater quality was further assessed using regional hydrogeological data and prior geotechnical studies from the IEE.

**Figure 1.4 - Surface and groundwater sampling locations near the proposed solar power plant**

### Impact on Hydrological Environment

Hydrological impacts were assessed using georeferenced tower data, stream proximity information, and stream reservation guidelines issued by relevant authorities (e.g., the Irrigation Department and the State Lands Ordinance), along with site-specific correspondence from CEA. Google Earth was used to measure distances to water bodies and identify intrusions into buffer zones. Potential impacts on surface water and groundwater were evaluated based on site-specific factors, including flood susceptibility, aquifer type, and proximity to tanks. The assessment focused on identifying risks from excavation, dewatering, and material storage, without applying hydrological or groundwater modeling.

### Flood Study for the Transmission Line and the Sampur CGS

A two-dimensional flood model HEC RAS 2D model (an open-source software of the US Corps of Engineers) was formulated to identify the flood impact of the proposed transmission line and

the Sampur CGS. The model for the transmission line was detailed between the upstream and downstream boundaries, which are the Manampitiya Bridge and sea, to obtain the spatial flood depths and flood levels for the pre and post-project scenarios.

For the flood model of the GS the upstream boundaries were provided using the hydrologic input discharge from the upper catchments and the "Normal Depth Boundary" was used as the downstream boundary.

The detailed methodology for the hydrological studies of the transmission line and the Sampur CGS is presented in Annex 15.7.

**Assessment of Drainage Impacts**

The drainage congestion impact was assessed by checking the position of each pylon concerning streams using Google Earth satellite imagery. The proximity of pylons to the streams was examined; if the pylon footing is close to the streams, during construction there are chances for drainage blockage. Also, when the pylon footings are close to the stream banks, the distance from the stream bank to the edge of the pylon footing should not be within the reservation limits set out by the Irrigation Department.

### 1.5.6.8 Ambient Air Quality

Ambient air quality was assessed using secondary data sources, including 2024 $PM_{2.5}$ concentration records obtained from IQAir for the Trincomalee District. This data was used to understand seasonal variation and baseline pollutant levels relative to national standards.

**Impact on Air Quality**

Construction-phase impacts were evaluated by identifying dust- and emission-generating activities such as excavation, material transport, and operation of diesel-powered equipment, with consideration of meteorological factors influencing dispersion. For the operational phase, potential emissions from periodic maintenance activities, unpaved road use, vegetation clearance, and corona discharges were qualitatively assessed. No air dispersion modeling was conducted; instead, the assessment qualitatively identified potential impact zones based on the nature of activities and the surrounding land use characteristics.

### 1.5.6.9 Noise Quality

The assessment of noise quality for the proposed transmission line project is based on existing baseline data obtained from the approved IEE report prepared for the adjacent Sampur Solar Power Plant project. A baseline noise measurement survey was conducted at selected locations representing noise-sensitive receptors in close proximity to the project site. Monitoring was carried out during both daytime (5:00–18:00 hours) and nighttime (18:00–24:00 hours), in accordance with national regulatory guidelines.

Sivashakthi Vidyalaya (School) and Santhosam Pre-School, identified as the primary noise-sensitive receptors, are located adjacent to each other within the project boundary. Accordingly, baseline noise measurements were conducted at their shared boundary to represent the ambient acoustic environment. The noise measurement location is presented in Figure 1.5. Although these

measurements were taken approximately 1.2 km from the proposed transmission line alignment, they offer preliminary insight into the background noise environment in the area.

Furthermore, additional noise-sensitive receptors have been identified along the transmission line corridor using satellite imagery. These receptors include educational institutions, healthcare facilities, religious places, and residential settlements within 500 m of the alignment. Therefore, additional site-specific noise monitoring is recommended closer to the transmission line corridor to ensure an accurate and comprehensive assessment, particularly during the construction phase. Since vibration impacts are expected to be minimal during the pre-construction phase, monitoring during the construction phase is advised to capture any potential impacts from vibration-generating activities (chiseling or controlled blasting, use of concrete vibrators, reinforcement works, and the movement of heavy machinery) near sensitive receptors.

**Figure 1.5 - Noise measurement location**

**Impact on Noise Quality**

The assessment of noise and vibration impacts was carried out qualitatively based on the identification of specific noise- and vibration-emitting activities associated with the construction and operation phases. These activities included vegetation clearance using chainsaws, foundation excavation involving chiseling or controlled blasting, concrete mixing, and vibration, and the movement of heavy vehicles and machinery along unpaved roads. During the operational phase, corona discharge, mechanical vegetation management, and maintenance vehicle movement were considered. The analysis referred to the ambient noise standards under Sri Lanka's National Environmental (Noise Control) Regulations No. 1 of 1996. No real-time noise monitoring or acoustic modeling was performed; instead, the assessment was based on published literature and standard noise level ranges associated with similar equipment and activities**.**

#### 1.5.6.10 Climate Risk and Adaptation Assessment (CRAA)

**A: General Methodology for the CRAA**

The general methodology for the CRAA is given in Section 7.0.1 under the CRAA. The detailed methodology is presented in Annex 15.8 Climate Risk Adaptation Assessment.

### 1.5.7 Methodology for Biological Environment Assessment

#### 1.5.7.1 Study Area

The Right-of-Way (ROW) of the proposed transmission line, along with 500 m on either side, was designated as the study area. All natural and anthropogenic habitats (including wetlands, forests, and scrublands) within the selected study area were surveyed for fauna and flora species.

#### 1.5.7.2 Field Assessment of Fauna and Flora

A reconnaissance survey was conducted in the non-migratory (birds) and dry seasons along the proposed transmission line route to identify both natural and modified habitats in the study area. The ecological study was conducted during the daytime within the identified habitat types in the study area in order to assess the biological (ecological) environment, prepare a species inventory, identify existing environmental issues, assess possible ecological impacts, propose mitigation measures, and develop a monitoring mechanism. This ecological study included a field assessment of both aquatic and terrestrial fauna and flora, utilizing a variety of methods and techniques suitable for ecological assessment and outlined below.

Gradient Directed Transects (Gradsects), Point Counts, and Active Searching survey methods were used to assess the terrestrial and aquatic fauna and flora within the identified habitat types of the study area. Information on selected taxonomic groups, including vascular plants (ferns and seed plants), land snails, dragonflies, butterflies, herpetofauna (reptiles and amphibians), birds, and mammals, was collected during the ecological study. Direct (Visual) and indirect (Signs, Tracks, Calls or Sounds, Scats, Dung, Pellets, Pugmarks or Footmarks, etc.) observations were made to collect information. Opportunistic observations on fauna and flora species were also taken into consideration.

In addition, a literature review of recent, related published and unpublished materials, as well as a collection of secondary information through personal communication with villagers and relevant officers, was carried out to gather further information on biodiversity and environmental issues in the study area.

#### 1.5.7.3 Species Identification and Nomenclature

Identification of the observed flora species was based on published descriptions and taxonomic keys provided by Dassanayake and Fosberg (1980 – 1991), Dassanayake, Fosberg, and Clayton (1994 – 1995), Dassanayake and Clayton (1996 – 2000), and Dassanayake, Clayton, and Shaffer-Fehre (2006).

The observed fauna species were identified by using the most recent published descriptions and taxonomic keys provided by van der Poorten and van der Poorten (2018 and 2016), Jayasinghe et al. (2015), D'Abrera (1998), Bedjanic et al. (2014), Bedjanic et al. (2007), Warakagoda et al. (2012), Grimmett et al. (2011), Harrison and Worfolk (2011), Yapa (2025), Yapa & Ratnavira (2013), Phillips (1935), Somaweera et al. (2023), Das and De Silva (2011), Somaweera and

Someweera (2009), De Silva et al. (2021), De Silva (2009), Manamendra-Arachchi and Pethiyagoda (2006), Raheem & Naggs (2006), Naggs & Raheem (2000), and Naggs & Raheem (2002). In addition to the above, published taxonomic papers were also used for identification purposes.

#### 1.5.7.4 Red List Status and Invasive Status of Species

Taxonomic status (Endemic, Native, Exotic), national conservation status/red list status (Critically Endangered, Endangered, Vulnerable, Near Threatened), and the nomenclature of the observed flora species were recorded according to the National Red List 2020 of Sri Lanka (MOE, 2020). The taxonomic status and nomenclature of flora species, not listed in the 2020 national red list, subject to nomenclatural changes, were recorded according to the most recent related published literature or Senaratna (2001).

Taxonomic status (Endemic, Native, Exotic), national conservation status/red list status (Critically Endangered, Endangered, Vulnerable, Near Threatened), and the nomenclature of the fauna species were recorded according to the National Red List 2012 of Sri Lanka (MOE 2012), and The National Red List 2021: Conservation Status of the Birds of Sri Lanka (MOE 2021). The taxonomic status, national conservation status, and nomenclature of fauna species, not listed in the 2012 and 2021 (for Birds) national red lists, subject to nomenclatural changes, were recorded according to the most recent published literature related to these updates.

The invasive status of fauna and flora species were recorded according to A Descriptive Guide to Invasive Alien Species of Sri Lanka: A Descriptive Account of National Priority and Potentially Invasive Alien Species (MMD & E 2015) and Invasive Alien Species in Sri Lanka: Training Manual for Managers and Policy Makers (MMD & E 2015).

Details of the above-listed literature are given in Appendix 15.2.a.

### 1.5.8 Methodology for the Critical Habitat Assessment

#### 1.5.8.1 The Process

To design the overall scope of a critical habitat assessment, three broad-level steps are outlined in the International Finance Corporation's (IFC's) Guidance Note 6 (updated June 27, 2019) to Performance Standard 6, which are outlined below.

- **Step 1:** Stakeholder Consultation/Initial Literature Review
  **Aim:** To obtain an understanding of biodiversity within the landscape from the perspective of all relevant stakeholders.
  **Process:** Field consultation exercises and desktop research.
- **Step 2:** Field Data Collection and Verification of Available Information
  **Aim:** To collect field data and verify available detailed information necessary for the critical habitat assessment.
  **Process:** Engage qualified specialists to collect field data as necessary, both within and outside of the ecologically appropriate Area of Analysis (AoA).
- **Step 3:** Critical Habitat Determination
  **Aim:** Determine whether the project is situated in a critical habitat.

**Process:** Analysis and interpretation of the desktop and field data collected.

Based on the data obtained during steps 1 and 2, biodiversity values in the Area of Analysis (AoA) were screened using Critical Habitat Criteria and Thresholds. This determination of Critical Habitats is independent of the project type, impacts, or mitigation strategy.

#### 1.5.8.2 Critical Habitat Criteria

The International Finance Corporation's (IFC's) Guidance Note 6 (updated June 27, 2019) to Performance Standard 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources, 2012) sets five criteria to determine critical habitats in an Area of Analysis. Three of the five criteria (criteria 1-3) relate to species, while criteria 4 and 5 relate to ecosystems and evolutionary processes, respectively.

To facilitate Critical Habitat determination, numerical thresholds were also defined for the first four critical habitat criteria in the IFC's Guidance Note 6 (updated June 27, 2019). However, these thresholds are indicative and serve as a guideline for decision-making only. Therefore, the involvement of experts and project-specific assessments are more important, especially when data is limited. For Criterion 5, no numerical thresholds, available scientific information, and expert opinion should be used for Critical Habitat determination. Five criteria and thresholds in the IFC's Guidance Note 6 are listed in the Appendix 15.4.4.

#### 1.5.8.3 Determination of Critical Habitats

##### 1.5.8.3.1 Area of Analysis (AoA)

The ecological assessment, aimed at determining critical habitats, was conducted along the proposed transmission line route and 500 m on either side (i.e., AoI). Therefore, approximately a 1 km corridor was surveyed for ecological resources. Hence, this corridor was taken as the minimum limit of the AoA. However, areas beyond this minimum limit were also taken as the AoA if a place has continuous natural habitats. In such cases, the actual end of the habitat or ecological barrier (rivers, canals, lagoons, sea, etc.) is taken as the end of the AoA. Therefore, the AoA is greater than the AoI. However, the width of the AoA along the transmission line varies with the existing natural habitats. Therefore, no maximum or upper limits to the AoA, it ends sometimes at the minimum limit (i.e., 500 m from the RoW), and sometimes it goes more than 1km from the RoW.

##### 1.5.8.3.2 Data Sources

Three data sources were selected to determine the Critical Habitats in the project area.

1. **Primary Data – Findings of the Ecological Assessment**
   An Ecological assessment was conducted in June 2025 as part of the ESIA, following the requirements of nationally and internationally recognized standards and guidance documents. The findings of the ecological assessment are included in section 5.3 of the ESIA report. The primary information/ data collected through field surveys in the project area is used to assess critical habitats within the project area.

However, only qualitative data on flora and fauna species were collected during the ecological assessment, as the study was conducted within a limited period. Therefore, no population estimates of species are available for criteria 1a, 1b, 2a, 3a, and 3b to asses' critical habitats.

2. **Secondary Data - Data Generated from the Integrated Biodiversity Assessment Tool (IBAT)**

Species data included in the two IBAT Reports (220KV KAPPALTHURAI SAMPOOR_03112022 and PROXIMITY REPORT KP-SP LINE TOWER) were used to assess critical habitats in the project area. These reports were generated through IBAT for the proposed transmission line route (8.5, 81.2) by the Asian Infrastructure Investment Bank on 04 April 2025.

However, the availability of these species in the Area of Analysis (AoA) needs to be verified before use to asses' critical habitats. No secondary data on population densities of species in the AoA are available, as most research is either limited to a small area or collects only qualitative data. Therefore, no population estimates of species are available for criteria 1a, 1b, 2a, 3a, and 3b to asses' critical habitats.

3. **National Red Lists**

Only the categories in the national red lists were used to assess critical habitats in the project area. Red listing of fauna and flora species using IUCN Red List Criteria in Sri Lanka has been a continuous process since 2007. After a detailed assessment, the first comprehensive national-level IUCN Red List was published in 2012. The red list categories of the 2012 national red list were updated in 2020 (for flora and fish) and 2021 (for birds) after a detailed assessment. Therefore, national-level red list categories are more meaningful and reliable in a national context to assess critical habitats.

Also, some of the flora and fauna species in the country are not evaluated in the global IUCN Red List and, therefore, cannot use global categories for those species or groups. Further, some rare species in the country are globally common and categorized as Least Concern (LC) species in the global red list, and some globally Endangered (EN) species are common in the country and categorized as Least Concern (LC) species in the national red list. The first scenario can impact the existence of the specified species in the country if such species are destroyed due to development activities or other reasons, although it is a globally common species. Hence, IUCN Red List categories for species were taken from the National Red lists given below.

- The National Red List 2020 of Sri Lanka (MOE 2020) – for Flora
- The National Red List of Sri Lanka: Assessment of the Threat Status of the Freshwater Fishes of Sri Lanka 2020 (IUCN & MOE 2020) – for Fish
- The National Red List 2021: Conservation Status of the Birds of Sri Lanka (MOE 2021) – for Birds
- The National Red List 2012 of Sri Lanka (MOE 2012) – for other Fauna

### 1.5.9 Methodology for Socio-Cultural Assessment

The social impact assessment for the ESIA was conducted using a variety of sociological methods and tools. They included walk-over surveys, key-informant interviews, focus group discussions, stakeholder consultations, a socioeconomic impact survey, and collecting secondary data. Project impact areas i.e. corridor of the proposed transmission line from Kappalthurai - Sampur, and sites earmarked for the construction of the Sampur CGS, and the 50 MW solar park – were initially screened through satellite images and the using the shape files prepared by the Survey Department. Several maps related to landscape and land use patterns in the project area were prepared based on this initial screening, this followed a physical verification of the data entered in the maps through walk-over surveys and additional data collection. The maps were updated accordingly. CEB provided the geographical coordinates and other technical guidance for site locations including the transmission tower locations. Both the maps and the walk-over surveys were used to prepare the inventories for each site which included geographical and administrative boundaries of the project's AoI, structures, crops and cultivations, road infrastructure, tanks, streams and rivers, and forest areas located within the AoI. The inventories served as a baseline to explain the existing conditions in the AoI. No in-depth assessment was conducted for the Sampur Solar Park as it constitutes only an Associated Facility for the present project, and also because of a standalone ESIA for the solar park to be commissioned soon. Hence, the present assessment of the solar park was confined only to the social due diligence of the solar park.

Secondary data collection included technical reports, lists of project-affected parties, lists of standing trees to be removed, tree values for compensation, etc. obtained from CEB and relevant stakeholders, data extracted from the census and survey reports published by the Department of Census and Statistics, and records and data sheets maintained by the Divisional Secretaries, Grama Niladharies, planning officers, etc.

Stakeholders were consulted through focus group discussions and individual interviews. Consultations were conducted with both men and women in the communities falling within the AoI including the persons affected, and the government agencies at the national and regional level who have a stake in the project as project approving agencies or collaborative agencies in the project implementation, and other interested parties.

Finally, a socioeconomic impact survey was conducted covering a sample of 64 project-affected persons living within the AoI.
The social impact assessment was conducted from 09.12.2024 to 04.06.2025, with a team of researchers led by a social expert.

#### 1.5.9.1 Resettlement Action Plan (RAP)

**Since this project currently has no resettlements according to the finalized line route, a Resettlement Action Plan was not developed**. However, it was recognized that it is premature to conclude that resettlement will not be required. If design modifications cannot meet clearance requirements or route deviations cannot be found, any residential or other structures located under the transmission line would need to be relocated. Additional consultations were conducted with potentially affected parties regarding risks, impacts, and resettlement options. In consultation with

the CEB, the route was reexamined to explore possibilities for further heightening the line to achieve the specified vertical clearance or the need for additional route deviations.

**Payment of Compensation:** A detailed Entitlement Matrix was prepared for the project based on the general procedure currently adopted by the CEB. Compensation was determined at replacement cost based on the assessment of economic losses to affected persons, subject to approval by the relevant Divisional Secretary.

1. **Institutional Capacity Analysis**
    - **Institutional Review:** The capacity of local institutions to implement the ESMP was assessed. This included identifying any capacity gaps in managing and monitoring environmental and socio-cultural impacts.
    - **Capacity-Building Recommendations:** Training and resource requirements were proposed for local institutions and project staff to effectively manage and monitor environmental and social impacts, ensuring compliance with national and international standards.
2. **Monitoring and Evaluation Framework**
    - **Developing Monitoring Indicators:** Create key indicators to monitor environmental, social, and cultural impacts during the project period, including during construction, operation, and post-construction.
    - **Grievance Redress Mechanism (GRM):** Establish a Grievance Redress Mechanism (GRM) in line with the AIIB policy to address concerns and complaints raised by project affected persons and other stakeholders. The GRM should be accessible, transparent, and inclusive, ensuring all community members, including vulnerable groups, can report grievances without fear of retaliation. In addition to the GRM, implement mechanisms for ongoing stakeholder feedback to capture community responses and enable adaptive management. This dual approach will ensure that project implementation remains responsive to community needs and concerns while fostering trust and accountability. The GRM will be presented to the stakeholders and the line agency officers, especially the DSs and GNs on their role in the implementation of the GRM. In addition, the contractor will establish a Workers' GRM to address the grievances of the construction workers.
    - **Periodic Reporting:** Schedule regular reporting of socio-cultural impacts, providing updates to CEB, relevant authorities, and local communities.

      By following this methodology, the socio-cultural assessment will offer a holistic understanding of the social and cultural status of the communities affected by the project. This ensures that the project respects local values, minimizes adverse social risks and impacts, and promotes sustainable social and cultural benefits.

### 1.5.10 Description of Environmental Impacts and Proposed Mitigatory Measures

There will be negative impacts on the surrounding environment due to the high capacity of the project construction and its operation. A detailed study of the project is needed to suggest necessary mitigatory measures and to further optimize the objectives of the proposed work, particularly its construction layout, to avoid the environmentally and socially sensitive areas where mitigatory measures cannot be applied.

Therefore, the major health and safety consequences of the project during its construction, operational, and maintenance stages would have been identified as given above and would have been summarized as an impact hypothesis that would have drawn on the results of earlier studies of Health and Safety characteristics and their variability. The assessment of some of the potential impacts would have required predictive techniques, and if necessary, appropriate mathematical models would have been used. A concise summary of the effects would have been produced after the assessment. With the detailed study of project interventions and their consequences, consultants would have found structured mechanisms for the identification, collection, classification, and display of health and safety impact data. Starting with the impact matrix, all actions located across the top of the matrix that were part of the proposed project would have been identified. Under each of the proposed actions, a slash would have been placed at the intersection with each item on the side of the matrix if an impact was possible.

### 1.5.11 Conclusions and Recommendations

The conclusions reached after the study on the physical, ecological, and social environmental subdomains, along with suitable recommendations, especially on mitigation measures such as compensation for land loss, reforestation for tree loss, and social inclusivity, were provided.

## 1.6 Implementation Arrangements and Timeframe

The study timeline outlined the key phases and activities undertaken during the Environmental and Social Impact Assessment (ESIA) process. These activities were carried out systematically to ensure thorough data collection, analysis, and reporting, aligning with the project's overall schedule and regulatory requirements. The process was conducted from October 2024 to June 2025.

- Initial consultations were conducted with stakeholders and project proponents.
- Existing data, reports, and baseline information were reviewed.
- The Inception Report was prepared, detailing the methodology, scope, and work plan.
- Site visits were carried out for ecological, hydrological, and socio-cultural surveys.
- Rapid biodiversity assessments were conducted, and the flora and fauna lists were validated and updated.
- Data on physical, biological, and social environments was systematically collected.
- Potential environmental and social impacts were identified and analyzed.
- Critical Habitat Assessment (CHA) and hydrological modeling were completed.
- Land use changes and community impacts within the Project Area of Influence (AoI) were assessed.
- Focused Group Discussions and public consultations were held with affected communities.
- Concerns raised by stakeholders were documented and addressed.
- Feedback from consultations was incorporated into the assessment process.
- Feasible mitigation measures were developed to address identified impacts.
- The Environmental and Social Management Plan (ESMP) and Entitlement Matrix were prepared.
- Recommendations for capacity building and institutional strengthening were developed.

- The Draft ESIA Report was prepared and submitted for review.
- Feedback from stakeholders and regulatory authorities was incorporated into the report.
- The Final ESIA Report, including all supporting documentation, was completed and submitted.

The construction activities for the proposed project are expected to commence in January 2026, with completion and commissioning targeted for December 2027. This timeline is strategically aligned to ensure the timely evacuation of power generated from the initial 50 MW phase of the Sampur Solar Power Park, as well as to support its future expansion to 120 MW. Moreover, the transmission infrastructure will provide the necessary grid connectivity to accommodate additional renewable energy projects anticipated to be developed in the region in the coming years, thereby strengthening Sri Lanka's long-term renewable energy transition and regional energy security. The detailed phased implementation schedule is given in the appendix 15.18.a.

## 1.7 Study Limitations

This study was conducted comprehensively to develop a detailed report identifying the environmental and social impacts of the proposed project and recommending appropriate mitigation measures. The study was supported by previous reports available for the same project, including the Initial Environmental Examination (IEE) Report. The ESIA team identified major gaps and conducted necessary assessments to ensure the quality and reliability of the findings.

However, the study was limited due to the following factors:

- **Time Constraints:** The study was conducted within a limited timeframe, which may have affected the ability to conduct long-term monitoring and assess seasonal variations in environmental and social conditions.
- **Data Availability:** Some secondary data, including historical environmental trends and socio-economic statistics, were either outdated or unavailable, requiring reliance on estimates or alternative sources.
- **Stakeholder Availability:** While extensive consultations were conducted, some key stakeholders, including specific community groups and government agencies, were unavailable or had limited participation, which may have influenced the completeness of stakeholder prospects.

Despite these limitations, the ESIA team made their fullest effort to ensure the accuracy and comprehensiveness of the study by employing a combination of field assessments, expert consultations, and stakeholder engagement.

The study team successfully addressed all the aforementioned challenges by conducting additional field surveys, targeted stakeholder consultations, and technical assessments. These supplementary efforts allowed the team to fill data gaps, validate baseline conditions, and incorporate site-specific social and environmental concerns into the assessment. As a result, a comprehensive and robust Environmental and Social Impact Assessment (ESIA) was produced, ensuring that the report meets both national regulatory requirements and the Asian Infrastructure Investment Bank (AIIB)'s Environmental and Social Framework (ESF) standards.

# 2 Policy, Legal and Administrative Framework

## 2.1 Overview of Applicable Policies, Laws, and Regulations

This section provides an overview of the legal and policy framework applicable to the proposed project. The project must adhere to national regulations, sectoral policies, and international commitments, ensuring compliance with environmental and social safeguards. The key laws governing land acquisition, compensation, environmental conservation, energy development, and social protection are outlined.

### 2.1.1 National Energy Policy and Strategies of Sri Lanka

The overarching energy policy of the country is designed to ensure energy security by providing energy that is clean, secure, economical, and reliable. Its ultimate goal is to deliver convenient and affordable energy services that support socially equitable and sustainable development across the nation.

This policy was formally made public through the Gazette Notification Extraordinary No. 1553/10 dated 10th June 2008[1], and it outlines a comprehensive framework consisting of policy elements, strategic implementation plans, specific targets, milestones, and clear institutional responsibilities to effectively meet the growing energy demand.
A significant focus of the policy is the protection of society and the environment from the negative impacts of energy sector activities. It particularly notes that the electricity and petroleum sub-sectors have historically not given sufficient attention to environmental and social consequences. In response, the policy emphasizes that it is the state's prime responsibility to safeguard the public and energy sector workers in this regard.

The policy is structured around 10 key pillars, which guide its approach to addressing the intersection of energy with society, economy, and environment. Among these, the most relevant to infrastructure projects are:

**2.** Providing Access to Energy Services
**3.** Providing Energy Services at the Optimum Cost to the National Economy
**6.** Caring for the Environment
**7.** Enhancing the Share of Renewable Energy

Through this framework, the energy policy ensures that development in the sector happens in a manner that is sustainable, responsible, and aligned with national environmental goals, while also securing long-term energy needs and Enhancing the Share of Renewable Energy.

### 2.1.2 National Environmental Act

The National Environmental Act No. 47 of 1980, amended by Acts No. 56 of 1988 and No. 53 of 2000, is the primary legal framework for environmental protection in Sri Lanka. It established the CEA to oversee and enforce environmental regulations.

[1] https://www.energy.gov.lk/images/resources/downloads/national-energy-policy-2019-en.pdf

The Environmental Impact Assessment (EIA) Regulations in Sri Lanka, introduced through the amendment to the National Environmental Act No. 47 of 1980 (amended by Act No. 56 of 1988), provide a legal framework for assessing the potential environmental effects of proposed development projects. These regulations apply specifically to "prescribed projects" - identified in Gazette No. 772/22 of 1993 and its amendments - that are likely to cause significant environmental impacts. Under these regulations, project proponents must obtain prior environmental clearance from the Central Environmental Authority (CEA) or a designated Project Approving Agency. Depending on the scale and nature of the project, an Initial Environmental Examination (IEE) or a more detailed Environmental Impact Assessment (EIA) is required. Approval is granted only after a thorough review to ensure that adverse environmental impacts are either avoided or minimized through appropriate mitigation measures, thereby promoting environmentally sustainable development.

The CEA has already given the conditional approval (Appendices 15.14) on 27$^{th}$ of December 2023 for this project, based on the Updated IEER for proposed 220kV Transmission Line from Sampur CGS to Kappalthurai GS submitted by CEB (October 2023). CEB has to fulfill the conditions laid by the CEA as per the conditional approval, including submit the quarterly reports within the construction period to the CEA with respect to progress of the project and implementation of the ESMP for monitoring purposes.

### 2.1.3 Other acts, regulations and policies

The following policies and statutory provisions are applicable to the project:

- Sri Lanka Electricity Act, No. 20 of 2009 amended by Act No. 31 of 2013;
- Ceylon Electricity Board Act No. 17 of 1969
- National Thoroughfares Act, No. 40 of 2008 Motor Traffic (Speed Limits) Regulations, No. 1 of 2012;
- Motor Traffic (Amendment) Act, No. 8 of 2009;
- National Environmental Act No. 47 of 1980. National Environmental (Noise Control) Regulations No.1 1996; National Environmental (Ambient Air Quality) Regulations, National Environmental (Protection & Quality) Regulations & Interim Standard on Vibration Pollution Control for Sri Lanka
- Road Development Authority Act No. 73 of 1981 & Road Development Authority (Special Provisions) Act No. 5 of 1985;
- Mahaweli Authority of Sri Lanka Act no 23 of 1979;
- Pradeshiya Sabha Act No. 15 of 1987;
- Nuisance Ordinance Chapter 230 No. 15 of 1862
- Irrigation Ordinance No. 32 of 1946, Act No.1 of 1951 and No. 48 of 1968, Law No. 37 of 1973;
- Factories Ordinance of Sri Lanka;
- National Minimum Wage Ordinance
- Occupational Health and Safety Policy 2014
- Public Utilities Commission of Sri Lanka (PUCSL) Act, No. 35 of 2002
- National Involuntary Resettlement Policy (NIRP) 2001
- Agrarian Development Act. No. 46 of 2000;

- The Shop and Office Employees' Act No. 19 of 1954 and amendments (Nos. 60 of 1957 and 28 of 1962)
- Employment of Women, Young Persons and Children's Act No. 47 of 1956 and its amendment Act No. 29 of 1973
- Sri Lankan Manual on Traffic Control Devices (Part II - Road Work Areas);
- Fauna and Flora Protection Ordinance as amended by Act No. 49 of 1993 and subsequent amends.
- The Antiquities Ordinance, No.9 of 1940 (This is now an Act) and the subsequent amendments; particularly the Antiquities (Amendment) Act No. 24 of 1998;
- Crown Land Ordinance Nos,8 of 1947,9 of 1947, and Act Nos,13 of 1949

The relevant provisions in the above Acts and the Ordinances and their applicability to the project are summarized in Table 2.1 below:

**Table 2.1 - A Summary of the Legal/ Regulatory Provisions Related to the Project**

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| 1 | Sri Lanka Electricity Act, No. 20 of 2009, amended by Act No. 31 of 2013. | The electricity sector in Sri Lanka is governed under this Act. Chapter 111, Part 1 provides for the generation, transmission, and distribution of electricity. It also stipulates that no person other than the Ceylon Electricity Board, established by the Ceylon Electricity Board Act, No. 17 of 1969 shall be eligible to apply for the issue of a transmission license. | The planning and design of the transmission network and its implementation are carried out by the CEB under the said provisions. |
| 2 | Ceylon Electricity Board Act No. 17 of 1969 | Ceylon Electricity Board (CEB) was established under this Act and is under legal obligation to develop and maintain an efficient, coordinated, and economical system of electricity supply in accordance with the Licenses issued. CEB is responsible for most of the generation and distribution licenses while being the sole licensee for transmission. The Act provides for the regulations of:<br>● generation,<br>● transmission,<br>● distribution,<br>● supply and use of electricity. | CEB is responsible for the implementation of the project and for the compliance with environmental and social impact mitigation measures, monitoring of the environmental and social management plans, grievance handling, and payment of any compensation that may be required during the pre-construction, construction, and operational phases of the transmission line and GS. |
| 3 | National Environmental Act No. 47 of 1980 and its amendments (Act Numbers 56 of 1988 and 53 of 2000) and the following Regulations | This Act is the overarching legislation enacted for the protection of the environment and natural resources and provides for the establishment of the Central Environmental Authority. NEA provides for enforcement of regulations to protect and improve quality of the environment. (Part IV B). Regulations | The following regulations should be adhered to during the construction phase:<br>Taking into consideration this Act and the Regulations described, the Contractor's works (under the supervision of the CEB as the Developer) shall be carried out in such a way that; |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| | ▪ National Environmental (Noise Control) Regulations No.1 1996- Gazette Notification Number 924/12 dated 23rd May 1996. (Stipulates maximum allowable noise levels for construction activities during proposed project activities)<br>▪ National Environmental (Ambient Air Quality) Regulations, 1994, published in Gazette Extraordinary, No. 850/4 of December 1994 and amendment gazette No. 1562/22 of 2008<br>▪ National Environmental (Protection & Quality) Regulations, No.1 2008 (Gazette Notification No. 1534/18 dated February 1st, 2008) amended by Gazette Notification No. 2264/17 dated January 27th, 2022)<br>▪ Interim Standard on Vibration Pollution Control for Sri Lanka (2001) | have been gazetted to protect against pollution of Inland waters (water quality), atmosphere (Noise dust and Vibration, etc.); soil etc. | ▪ Noise emissions will not exceed the stipulated limits of 75 dB(A) and 50 dB(A) for daytime and night-time respectively during the construction works.<br>▪ There is no deterioration in ambient air quality such that the limits specified in Gazette No. 1562/22 dated August 15th, 2008 for different air pollutants are not exceeded and fugitive emissions too are well controlled considering Schedule IV (Fugitive Dust Emission Standards) of the National Environmental (Stationary Sources Emission Control) Regulations No. 01 of 2019 (Gazette No. 2126/36 – June 5th, 2019)<br>▪ Construction works do not generate significant vibration causing damages (i.e., not exceeding the interim vibration standards for built structures) to the nearest built structures and causing inconvenience to occupants.<br>▪ Construction works will not cause siltation and pollution of nearest waterways such that the limits specified in Gazette No. 2148/20 – dated November 5th, 2019, for different categories of water use (Beneficial Uses) are not exceeded. |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| | ▪ National Environmental (Ambient Water Quality) Regulations, No.1 of 2019 (Gazette No. 2148/20 – dated November 5th, 2019).<br>▪ National Environmental (Prohibition of open burning of refuse and other combustible matters, inclusive of plastics) Regulations No.1 of 2017<br>▪ National Environmental (Municipal Solid Waste) Regulations No.1 of 2009 (Gazette Notification No. 1627/19 dated November 10th, 2009) | | ▪ Construction works will not generate or dispose of hazardous wastes, such that it will cause pollution of the environment (soil, water, and air).<br>▪ Contractor will not be permitted to openly burn any refuse or other combustible matter, inclusive of plastics. Contractor will be prohibited from dumping solid wastes (MSW) in sensitive environments and roads/highways, other than places designated for dumping by the relevant local authorities |
| 4 | Road Development Authority Act No. 73 of 1981 & Road Development Authority (Special Provisions) Act No. 5 of 1985 | The Road Development Authority (RDA) was incorporated as a statutory body under the Ministry of Highways by the RDA Act No.73 of 1981. The functions of the RDA were expanded in 1986 when it became the successor to the Department of Highways. Since then, the RDA has been responsible for the maintenance, development and upgrading of the National Road network of Sri Lanka. | Permission should be obtained from the RDA for the areas that cross the national highways keeping adequate space for their future expansions. |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| 5 | Sri Lankan Manual on Traffic Control Devices (Part II - Road Work Areas) | This manual includes requirements for traffic control devices and signing of road work areas during trenching of roads. It also prescribes the essential safety measures to ensure the safety of road users and workmen, during day and night. | A Traffic Management Plan has to be prepared and implemented by the project using the guidelines published by the RDA in Manual on Traffic Control Devices Part 2 Road Work Areas. This is required as part of the ESMP. |
| 6 | Pradeshiya Sabha Act No. 15 of 1987 | Pradeshiya Sabhas (PS) are empowered to formulate by-laws for the governance of the areas under their jurisdiction on the subjects devolved to them under the Pradeshiya Sabha Act No. 15 of 1987. Some activities falling under this Project, such as waste disposal, need approval. | Permission should be obtained from the relevant local authorities for the disposal of waste. |
| 7 | Nuisance Ordinance Chapter 230 No. 15 of 1862 | This provides for the preservation of public health and the suppression of various types of nuisances. | The project actions should not cause a nuisance to the neighboring settlers. |
| 8 | Irrigation Ordinance No. 32 of 1946, Act No.1 of 1951 and No. 48 of 1968, Law No. 37 of 1973 | The Ordinance and the subsequent amendments vested power and authority with the Department of Irrigation and the Provincial Irrigation Department to manage all major and minor irrigation systems in Sri Lanka. | Contractors should comply with any measures required by the Irrigation Department to protect the canal network encountered during the construction period. |
| 9 | Factories Ordinance (No. 45 of 1942); and its amendments (1945, 1946, 1961, 1965, 1971, 1976, 1984, 1998, 2000, 2002, and 2021) | This Ordinance, supplemented by 15 Regulations, has been designed to prevent work-related accidents and to protect their health and safety in the workplace (construction sites and operating facilities will be applicable).<br>Some of the special provisions of the Ordinance applicable to this project will include safeguarding machinery and equipment including statutory examination of lifting equipment such as hoists (Section 27), chains, ropes and lifting tackles | Civil contractors will be required to comply with guidelines such as provision of PPE and secure safe working environment for the employees. A health and Safety Plan should be prepared and implemented by the Civil Contractor. |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| | | (Section 28), machinery such as cranes and other lifting mechanisms (Section 29), safe procedures to be adopted when working in confined spaces (Section 32), provision and maintenance of potable/drinking water for workers (Section 46), appropriate first aid stations (Section 50), implementation of measures to protect workers against inhalation of dust or fumes or other impurities injurious to health (Section 51), prevent eye injuries (Section 53), protect workers against radiation and vibration (Section 54), high noise (Section 58A) and lifting excess weights (Section 58), etc. There are also General conditions as to the hours of employment of women and young persons including overtime matters (generally, the total hours worked, exclusive of intervals allowed for meals and rest, shall neither exceed nine in any day not exceed forty-eight in any week, except in the case of young persons, who are defined in the Ordinance as persons who have attained the age of 16, but under the age of 18), employment of women at night, restriction of employment inside, and outside working areas (Section 67) and overtime employment of women and young persons over sixteen (Section 68).<br>Additionally, the following Regulations (but not limited to) under this Ordinance will be applicable to this project. | |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| | | a.<br>Factories (General Standards of Lighting) Regulations, 1965. | |
| 10 | National Occupational Safety and Health Policy 2014 | This is formulated by the Ministry of Labour and Foreign Employment and it applies to all workplaces in all sectors of the economy and all forms of work. It is guided by national laws (e.g., Factories Ordinance and Workmen's Compensation Ordinance) and policies, other relevant International Labour standards, and conventions related to occupational safety and health. | Civil contractors will be required to comply with this Policy. In this respect, there needs to be a Safety Culture and the establishment of a Safety Committee for continual improvement in OHS management matters. It needs to include provisions for training, education, and awareness of good OHS measures, etc. Top Management commitment is essential with adequate financial, technological, and human resources allocated for OHS compliances, etc. |
| 11 | Workmen's Compensation Ordinance No 19 of 1934 and its amendments (1957, 1959, 1966, 1990, 2005, 2022). | This Ordinance together with the Factories Ordinance covers the Civil Contractor's responsibilities regarding employee's occupational health and safety.<br>Workmen's Compensation Ordinance provides for the payment of compensation for injuries faced by workers while working. The administrator of this Ordinance is the Commissioner for Workmen's Compensation | Civil contractors will be required to comply with this Ordinance. Therefore, insurance of workers/employees against accidents and ill-health, etc. occurring during or as a result of work is mandatory |
| 12 | The Shop and Office Employees' Act No. 19 of 1954 and amendments (Nos. 60 of 1957 and 28 of 1962) | The maximum number of working hours is 9 in a day, including a 1-hour meal break and 45 hours in a week. A rest break will also be given to employees if they work for more than 8 hours. This rest break must be given between 11 am and 2 pm during the | This needs to be adhered to by the Civil Contractor concerning the employment of executives and above (both contract and permanent staff). |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| | | day and the rest break for employees working during the night should be given between 7 pm and 10 pm. | |
| 13 | Employment of Women, Young Persons and Children's Act No. 47 of 1956 and its amendment Act No. 29 of 1973 | A special law which states that no person shall employ at any time during the night a person under the age of eighteen years in a public or private industrial undertaking or a branch thereof.<br>Furthermore, this law has special provisions safeguarding women; for example, no woman shall be compelled to work at night against her will or after 10 pm unless written permission has been obtained by the Civil Contractor from the Labour Commissioner and there shall be appointed female wardens to see to the welfare of women workers who work at night etc. | Civil Contractor is required to abide by this law. Therefore, as a rule, the Contractor must not employ any person less than 18 years of age (hence copies of birth certificates and national identity cards must be maintained at the Site Office and with the relevant staff at the Head Office of the Contractor).<br>This law does not apply to women holding responsible positions of a managerial or technical character. |
| 14 | National Minimum Wage of Workers Act No. 3 of 2016 | Requires that employees should be paid minimum monthly/daily wages as stipulated by the government. (Note: Minimum wage in Sri Lanka - Rs. 27,000 per month / Rs. 1080 per day, which will be increased to Rs. 30,000 per month / Rs. 1,200 per day from the year 2026) | Civil contractors should comply with minimum wage requirements when engaging unskilled workers. |
| 15 | Fauna and Flora Protection Ordinance as amended by Act No. 49 of 1993 and subsequent amendments. | This provides for protection, conservation, prevention of commercial and other misuse of the fauna and flora and their habitats, and conservation of biodiversity, and makes provision for the establishment of protected areas, and regulates human involvement in such areas and their fauna and flora. | The project will have a significant impact on the biodiversity of the project lands and the nearby aquatic plants or species. The contractor shall strictly adhere to the ESMP and ESMoP to avoid any issues related to biodiversity. |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| 16 | The Antiquities Ordinance, No.9 of 1940 (now Act) and the subsequent amendments; particularly the Antiquities (Amendment) Act No. 24 of 1998 is the primary Act | Section 43 stipulates the necessity to carry out an impact assessment of any development activity if it causes consequences on the antiquarian, historical, or archeological aspects of the land in question or any antiquities in it. | The project will not have an impact on the archeologically and historically valuable buildings along the pathway, but still, a chance find procedure has been identified in the ESMP for compliance by the contractor in the event any archeologically valuable items are found during the trench excavation. |
| 17 | Crown Land Ordinance Nos,8 of 1947,9 of 1947, and Act Nos,13 of 1949 | A Crown reservation for any one or more of the following public purposes: -<br>(1) the protection of the source, course, or bed of any public stream ;(2) the protection of springs, tanks, reservoirs, lakes, ponds, lagoons, creeks, canals, aqueducts, elas, channels (whether natural or artificial), paddy fields and land suitable for paddy cultivation | The transmission line traverses areas where there are streams, and other water bodies, e.g. village tanks. The project should take appropriate measures to protect such reservations and water bodies. |
| 18 | Land Acquisition Act No. 09 of 1950 and Regulations under the Act. | The Land Acquisition Act provides the legal framework for acquiring privately owned land for public purposes. It empowers the government to acquire land while ensuring that affected persons are compensated at fair market value. The Act outlines the process for notification, valuation, inquiry, award of compensation, and taking possession of land. Recent amendments and related regulations aim to make acquisitions more transparent and just. Key provisions include Section 2 (Notice of intended acquisition), Section 4 (Preliminary investigations), Section 7 (Objections), and Section 17 (Determination of compensation). | Although the project avoids physical displacement of people through design adjustments, some portions of private and state land will be used permanently or temporarily for tower foundations, access paths, and safety clearances. Therefore, acquisition of land is only for tower foundations.t. Compensation must be paid to all eligible affected landowners and users for loss of land, structures, crops, and economic activities. The CEB, as the implementing agency, is responsible for initiating and overseeing land acquisition in compliance with the Act, and |

| | Name of the Act/ Policy / Regulation | Legal/ Regulatory Provisions | Applicability to the project |
|---|---|---|---|
| | | | ensuring that all landowners receive timely and fair compensation. |
| 19 | National Involuntary Resettlement Policy (NIRP), 2001 | The National Involuntary Resettlement Policy (NIRP) was approved by the Government of Sri Lanka in 2001 to address gaps in the Land Acquisition Act concerning socio-economic and livelihood impacts. NIRP applies to all development-induced land acquisition that causes displacement—physical or economic—regardless of the number of people affected. The policy emphasizes minimizing involuntary resettlement through project design, ensuring fair and adequate compensation, restoring and improving livelihoods, and providing resettlement support and grievance redress mechanisms. It mandates meaningful consultation with affected persons and preparation of a Resettlement Action Plan (RAP) or Abbreviated RAP (ARAP), depending on the scale of impacts. | Even though no physical resettlement is anticipated in this project, temporary and permanent use of land for towers, stringing activities, and access roads may lead to partial loss of land and income sources, particularly for farmers and land users. Therefore, NIRP is applicable to address economic displacement, ensuring that all project-affected persons are consulted, compensated for loss of income, crops, or land use, and supported in restoring their livelihoods. The project follows a "mitigation-by-design" approach to minimize displacement but must also comply with NIRP to provide livelihood restoration, stakeholder engagement, and access to a grievance redress mechanism as outlined in the Environmental and Social Management Plan (ESMP). |

## 2.2 National Regulatory Framework

The National Regulatory Framework comprises laws and regulations designed to mitigate environmental and social impacts. This framework ensures that infrastructure development projects adhere to sustainable environmental practices while safeguarding affected communities.

Key components include:

- **Environmental Safeguards:** Projects requiring environmental clearance must undergo Environmental Impact Assessments (EIA) or Initial Environmental Examinations (IEE), as mandated by the National Environmental Act.
- **Social Safeguards:** Land acquisition and involuntary resettlement are guided by the Land Acquisition Act and the National Involuntary Resettlement Policy (NIRP), ensuring affected communities receive fair compensation and rehabilitation support.
- **Biodiversity Protection:** Regulations such as the Fauna and Flora Protection Ordinance and the Forest Ordinance protect wildlife and forest reserves, requiring project developers to obtain necessary permits.
- **Health and Safety Standards:** Governing labor laws of the country, including the Factories Ordinance and Occupational Health and Safety Policy 2014, mandate worker safety measures and environmental quality standards.

## 2.3 International Legal Framework and Treaty Obligations

Sri Lanka is a signatory to several international treaties and agreements related to environmental and social safeguards. These international obligations influence the implementation of the project to ensure global best practices.

Key agreements include:

- **Convention on Biological Diversity (CBD):** Sri Lanka signed in June 1992 and ratified the Convention in March 1994, requires measures to protect biodiversity and ecosystems impacted by infrastructure projects.

- **United Nations Framework Convention on Climate Change (UNFCCC):** Sri Lanka ratified the United Nations Framework Convention on Climate Change (UNFCCC) by a cabinet decision in November 1993 and is among the first 50 countries that have ratified it. Ensures project activities consider climate change mitigation and adaptation strategies.

- **ILO Conventions on Labour Rights:** Sri Lanka has signed several labor-related conventions and follows international labor standards to protect workers' rights, health, and safety.[2]

- **Ramsar Convention:** Sri Lanka became a party to the Ramsar Convention in October 1990. Protects wetlands, ensuring project activities do not degrade these critical ecosystems.

[2] https://normlex.ilo.org/dyn/nrmlx_en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:103172

Currently, there are six Ramsar wetlands in Sri Lanka extending for the total surface area of 198.172 ha.[3]

## 2.4 Comparison of Borrower's Framework with AIIB ESF

This section compares Sri Lanka's regulatory framework with the AIIB ESF.

**Table 2.2 - Comparative Assessment Matrix: AIIB ESF vs. Sri Lanka's National Regulatory Framework**

| | AIIB ESF Requirement | Corresponding National Regulatory Requirement (Sri Lanka) | Level of Alignment | Actions to Bridge Gaps |
|---|---|---|---|---|
| 1 | **Environmental and Social Assessment-** Conduct an environmental and social assessment to identify direct, indirect, cumulative and induced Project-related risks to and impacts on physical, biological, socioeconomic and cultural resources in the Project's area of influence | Environmental Impact Assessment (EIA) regulations under NEA No. 47 of 1980 (as amended); Gazette No. 772/22 of 1993 | **Partially Aligned** because the EIA regulations apply only for 'prescribed projects'. | Preparation of ESIA as per the AIIB ESF |
| 2 | **Stakeholder Engagement and Information Disclosure -** Carry out meaningful consultation with Project-affected people and other stakeholders and facilitate their informed participation in the consultations | NEA requires public disclosure of EIAs and public hearing. | **Partially Aligned** because the regulatory framework does not require mandatory stakeholder engagement. | Preparation and implementation of a Stakeholder Consultation and Information Disclosure plan. |
| 3 | **Labor and Working Conditions -** Provide a sound labor management relations system for Project workers. | Factories Ordinance, Shop and Office Employees Act, Employment of Women, Young | **Fully Aligned** – Sri Lanka has a comprehensive set of labor policies and | No action needed. |

[3] https://www.ramsar.org/country-profile/sri-lanka

| | | | | |
|---|---|---|---|---|
| | Assess health and safety risks to Project workers and Project-affected communities.<br>Implement the measures designed to provide Project workers with safe and healthy working conditions | Persons and Children Act | regulations to protect the workers. | |
| 4 | **Resource Efficiency and Pollution Prevention** | NEA (Air, Water, and Noise Regulations); CEA standards for emissions/discharges | **Fully Aligned** | Ensure regular updating and enforcement of pollution control standards in line with international best practices. |
| 5 | **Community Health, Safety, and Security** | Limited provisions under EIA and sectoral guidelines (e.g., disaster management, industrial safety) | **Partially Aligned** | Addressing community health and safety risks and adhere to the HIRA |
| 6 | **Biodiversity Conservation and Sustainable Management of Living Natural Resources** | Fauna and Flora Protection Ordinance, Forest Ordinance, EIA regulations | **Fully Aligned** | Improve enforcement and monitoring mechanisms; promote the use of biodiversity offsets. |
| 7 | **Cultural Heritage** | Antiquities Ordinance, protected monuments list; provisions under EIA | **Partially Aligned** | Strengthen mechanisms for community involvement in cultural heritage protection. Adhere to the conditions given by the Department of Archaeology on 20th November 2023. |
| 8 | **Grievance Redress Mechanisms**<br>-Establish, in accordance with the ESP and applicable ESSs, a suitable Project-level GRM to receive and facilitate resolution of the concerns and complaints of people who believe they have been adversely | National Regulatory Framework does not require establishing a GRM | **Not Aligned** | Establish a project based GRM and a Workers' GRM as per the requirements of AIIB ESP & ESF. |

| | | | | |
|---|---|---|---|---|
| | affected by the Project's environmental or social impacts, and to inform Project-affected people of its availability. | | | |
| 9 | **Monitoring and Reporting**<br>-Monitor progress on implementation of ESMF/ESMP and obligations; identify and implement necessary corrective actions; document monitoring results and corrective actions taken; prepare and furnish to the Bank periodic monitoring reports according to a time frame agreed with the Bank on the Client's environmental and social performance under the Project; and disclose the monitoring reports in accordance with the applicable provisions | Except for CEA's mandatory requirement to monitor the implementation of IEE/EIA and periodic reporting to CEA by the project proponent during project implementation, country's regulatory framework in general does not have the mandatory requirements for project-specific monitoring and reporting | **Partially Aligned** | Establish a project based environmental and social monitoring system with clear indicators and monitoring responsibilities. |

**Asian Infrastructure Investment Bank (AIIB) Safeguard Policies**: The Bank assigned each proposed project to one of four categories in proportionate to the project's risks and impacts, and determined the type of assessment and instrument required, as noted below and further elaborated throughout this ESP. According to AIIB policies, these project interventions fell into **Category B**.

**Table 2.3 - Safeguard policies**

| | Safeguard Policies Triggered by the Project | Yes | No |
|---|---|---|---|
| ESS 1 | Environmental and Social Assessment | [x] | [] |
| ESS 2 | Land Acquisition and Involuntary Resettlement | [x] | [] |
| ESS 3 | Indigenous Peoples | [] | [x] |

**Category B.**

a) **Categorization:** AIIB Environmental and Social Policy (ESP), including the Environmental and Social Standards (ESSs) and the Environmental and Social Exclusion List (ESEL), applies to this project. The ES Standards applicable to the project are ESS1

(Environmental and Social Assessment and Management) and ESS2 (Land Acquisition and Involuntary Resettlement). ESS3 (Indigenous Peoples) is not applicable as the project area is outside the settlements of IPs. The project has been classified as **Category B** following the ESF, as there are a number of limited potentially adverse impacts, however, the impacts are not unprecedented or irreversible and can be managed through the implementation of international good practice.

**Assessment and Instrument:** An Initial Environmental Examination (IEE) was prepared in 2023 based on national regulations and requirements, and currently, consultants have been mobilized to prepare an Environmental and Social Impact Assessment (ESIA) to supplement gaps in compliance with AIIB ESF, including an Environmental and Social Management Plan (ESMP). Solar Park is an Associated Facility of the project that is located within the same land and is being built primarily to evacuate the power generated by Solar. An Environmental and Social Due Diligence (ESDD) will be undertaken to look at the possible risks and impacts of the proposed solar project.

## 2.5 Approvals, Clearances, and Permits received

The following approvals and clearances were already received for the project as per the below table.

**Table 2.4 - Approvals, Clearances, and Permits received**

| Type of Approval/ Clearance | Approving Agency | Status |
|---|---|---|
| IEE approval for the 220kV Transmission Line from Sampur to Kappalthurai | Central Environmental Authority, Eastern Province Office, Kanthale | Conditional approval was granted on 27th December 2023. |
| IEE approval for the proposed 50MW solar power plant at Sampur, Muthur in Trincomalee District | Central Environmental Authority, Eastern Province Office, Kanthale | Conditional approval was granted on 1st June 2023. |
| Consent of the Department of National Planning | Department of National Planning | Consent letter dated 14th July 2023 |
| Consent of the Department of Forest Conservation | Department of Forest Conservation, Divisional Forest Office, Trincomalee | Consent letter dated 01st December 2015[4] |
| Consent of the Sri Lanka Railways | Sri Lanka Railways | Consent / no objection letter dated 19th May 2023 |
| Consent of the Urban Development Authority | Urban Development Authority | Consent letter dated 24th August 2022 |
| Consent of the Road Development Authority | Road Development Authority | Consent letter dated 31st August 2023 |

[4] The Department of Forest Conservation granted conditional approval in 2015, which included provisions for project implementation and subsequent tree removal. Based on this, tree removal approval was issued, and the list was forwarded to the State Timber Corporation for action. (Appendix 15.14)

| Type of Approval/ Clearance | Approving Agency | Status |
|---|---|---|
| Consent of the Sri Lanka Sustainable Energy Authority | Sri Lanka Sustainable Energy Authority | Consent letter dated 20th December 2024 |
| Consent of the Department of Archaeology | Department of Archaeology | Consent letter dated 20th November 2023 |
| Consent of Sri Lanka Ports Authority | Sri Lanka Ports Authority | Consent letter dated 31st May 2023 |
| Approval from the Department of Forest Conservation to remove the trees in Forest Areas | Department of Forest Conservation | Approval letter and 26th November 2024 |
| Consent letter from Mahaweli Authority of Sri Lanka | Mahaweli Authority of Sri Lanka | No objection letter issued on 18th June 2025 |
| Consent/guidelines related to Wildlife issues at the Proposed Solar Park | Department of Wildlife Conservation | Consent letter/ guidelines Pending |
| Consent of the Irrigation Department | Irrigation Department | Consent letter issued on 30th June 2025 |
| Consent of the Department of Agrarian Development | Department of Agrarian Development | Consent letter pending |

All the pending approvals has been already discussed and finalized with relevant authorities by the CEB; formal approval / consent letters will be included in the supplementary ESIA for the project. All the available letters are attached in Appendix 15.14.

## 2.6 Institutional Roles and Responsibilities

The successful implementation of the project requires coordination among multiple institutions, each with specific roles and responsibilities.

- **Ministry of Power and Energy:** Oversees energy policy implementation and ensures alignment with national strategies. The development of the solar park instead of the originally proposed coal power plant for Sampur is an example of how national strategies and policies of the ministry are influencing.
- **Ceylon Electricity Board (CEB):** This is the key organization responsible for the design, construction, and operation of the project, ensuring compliance with environmental and social safeguards including the proper implementation of the ESMP and ESMoP during the construction period. As the project proponent, the involvement of CEB in the planning, implementation, and monitoring stages is significant. The transmission design unit of the CEB conducts designs related to the project, their project management unit takes care of the implementing stage of the project, and the transmission operation unit has the responsibility to operate the transmission line and GSs.
- **Central Environmental Authority (CEA):** Provides environmental approvals, monitors compliance with regulations, and enforces penalties for non-compliance. Local

environmental approval for the project was secured by CEA, which is a mandatory requirement for implementing a new project within the country's legal framework.

- **Public Utilities Commission of Sri Lanka (PUCSL):** Regulates the electricity sector and ensures compensation mechanisms are fair, and CEB must follow the guidelines given by PUCSL at the design and implementation stages of the project with minimum damages to the community living in the area. The determination of safety standards for the transmission line, consumer protection, and rights are managed by the PUCSL. Determination of the width of the way leave corridor for the 220kV transmission line was also determined by the PUCSL as per their guidelines.
- **Local Authorities (Pradeshiya Sabha):** Approve construction permits and oversee compliance with local regulations including waste management at the construction sites. Any building constructions for example, control room buildings under the project should be approved by the governing local authority of the area.
- **Department of Wildlife Conservation:** Ensures project activities do not harm protected wildlife areas while frequent coordination with DWLC will be important to avoid any human animal conflicts during the construction period. During the implementation stage, conditions given in the DWLC must be strictly adhered to.
- **Department of Forest Conservation:** FD has a vital role in the project since it has to approve the removal of trees belonging to the government with the support of State Timber Corporation (as per the appendix 15.14), as well as it shall carry out the replanting program to compensate for the loss of biodiversity due to the project. During the implementation stage, conditions given in the FD must be strictly adhered to. CEB shall ensure, that their contractors are fully aware of these conditions.
- **Sri Lanka Railways**: If the transmission line route or access paths intersect railway lines or railway reserves, Sri Lanka Railways must approve. Clearance procedures include safety assessments and scheduling coordination to avoid disruption of railway operations. CEB must liaise with Sri Lanka Railways to ensure tower placement, material transport, and construction activities do not interfere with railway infrastructure or schedules.
- **Irrigation Department:** Where the transmission line crosses irrigation canals, tanks, or other water management infrastructure, the Irrigation Department must be consulted. The Department has authority over the protection and continued operation of both major and minor irrigation systems. CEB and its contractors must implement protective measures (e.g., culverts, and temporary crossings) and obtain necessary permissions to prevent any damage or obstruction during construction.
- **Urban Development Authority (UDA):** In areas under UDA jurisdiction - particularly near urban or semi-urban zones - CEB must obtain planning clearance for construction activities. UDA ensures that developments are consistent with zoning regulations, urban planning guidelines, and infrastructure integration plans. UDA's input is especially relevant for substations, control buildings, and transmission line segments that fall within urban development areas.

# 3 Project Description

## 3.1 Overview of the Proposed Project

The proposed project comprises the construction of a 220 kV double circuit transmission line spanning 37.6 km between the proposed Sampur CGS and the existing Kappalthurai GS in the Trincomalee District of Sri Lanka. The land extent allocated for the proposed Sampur CGS and its future expansions is 8.4ha, and the existing Kappalthurai GS is located in an area of 6.8037ha. This infrastructure project is a key component of the national strategy to evacuate power - principally from the 50 MW Sampur Solar Park, which is part of the broader North Eastern Renewable Energy Zone - to the national grid.

The total estimated cost for the implementation of the Transmission Line Project is approximately USD 26.85 million. This cost includes expenses related to engineering design, procurement, construction, environmental and social safeguards implementation, supervision, and contingency provisions.

The project is proposed to be co-financed through a combination of internal funding from the Ceylon Electricity Board (CEB) and external development financing. Specifically:

**CEB Contribution:** CEB will finance approximately USD 4.85 million, which will cover a portion of the project's infrastructure and preliminary implementation costs, including land acquisition, utility adjustments, and other preparatory activities.

**AIIB Financing:** The remaining USD 22 million is proposed to be financed by the AIIB under its sovereign-backed loan facility. The AIIB contribution will primarily support the procurement of transmission infrastructure (towers, conductors, insulators), construction works, and capacity-building efforts related to environmental and social management.

## 3.2 Geographic and Environmental Context

The transmission line will traverse through the DS Divisions of Town and Gravets, Thambalagamuwa, Kinniya, and Muthur, covering 15 Grama Niladhari Divisions. The route crosses diverse landscapes including scrublands, dry-mixed evergreen forests, riverine forests (notably along the Mahaweli and Uppu Aru rivers), paddy fields, home gardens, seasonal tanks, and abandoned agricultural lands. Notably, the transmission line avoids nationally designated protected areas such as National Parks, Sanctuaries, and Conservation Forests.

## 3.3 Technical Specifications and Infrastructure Components

The proposed transmission infrastructure for the Sampur–Kappalthurai project consists of a 220 kilovolt (kV), double-circuit transmission line designed to evacuate renewable power from the Sampur Solar Park to the national grid. The system will utilize Zebra conductors, a widely used high-capacity conductor type made of Aluminum Conductor Aluminum-Clad Steel Reinforced (ACSR/AW) material. This conductor type is specifically chosen for its durability, thermal performance, and efficiency in transmitting large volumes of electricity over long distances with

minimal energy losses. The entire transmission line will extend over a total distance of approximately 37.6 kilometers, traversing agricultural lands, forest patches, scrubland, and various other land uses in the Trincomalee District.

To maintain safe operation, the line will be constructed within a designated RoW of 35 meters, which includes a clearance of 17.5 meters on either side of the centerline. This corridor is essential to ensure adequate safety distances from vegetation, buildings, and human activity, following national and international electrical safety standards. The total land area affected under this Row amounts to approximately 131.6 hectares, which will be subject to restrictions on the construction of permanent structures and vegetation with significant height. While ownership of land may not always be transferred, certain rights of use, also known as wayleaves, will be acquired to facilitate tower construction, maintenance, and line clearance.

A total of 95 transmission towers will be constructed to support the line. These towers include 22 angle towers, classified as TD1, TD3, and TD6 types, depending on the degree of angular deviation required in the line path. These angle towers are typically placed at turning points or where directional changes are necessary due to topographical or land-use constraints. Additionally, the line will use 71 suspension towers of the TDL type, which are installed along relatively straight segments of the route and primarily serve to support the conductors with minimal tension. At either end of the line, 2 terminal towers (TT) will be erected to connect the transmission line to the substations—Sampur CGS and Kappalthurai GS.

The minimum height of each tower will be 35 meters, though this may increase depending on the terrain, crossing requirements (e.g., roads, canals), vegetation height, and required ground clearance. The variation in tower height ensures safety for nearby communities and protection from ground-level interference. Angle towers, being more robust and handling higher mechanical loads, typically require larger base footprints—on average 15 meters by 15 meters per tower. Suspension towers generally occupy a smaller footprint due to their lighter load and simpler structure. Each tower base will require site preparation, including excavation, concrete foundation works, and access paths for construction equipment.

The design and layout of the transmission towers have been optimized to minimize environmental and social impact while ensuring structural safety and operational reliability. The careful selection of tower locations, supported by field surveys and geotechnical studies, will reduce the need for major resettlement, minimize interference with sensitive ecosystems, and avoid critical infrastructure and community facilities wherever possible

## 3.4 Land Ownership and Land Use

The land allocated for the proposed Sampur CGS (8.4 ha) is owned by the CEB and consists mainly of scrubland and abandoned paddy lands. The transmission line route passes through a mix of private land (paddy fields and home gardens), state forest lands (managed by the Forest Department), and government-reserved lands. The Kappalthurai GS, located at the northern end of the line, was commissioned in 2022 and is already operational. Appendices 15.15 provide the documents in support of the land ownership details of both GS sites. However, additional land

abutting the Kappalthurai GS has been allocated for the electrical infrastructure of the candidate transmission line.

## 3.5 Offsite Infrastructure and Associated Facilities

- **Access Roads:** Temporary access tracks may be constructed during the installation phase, mostly along existing farm tracks or minor roads.
- **Support Facilities:** No permanent housing, raw material storage, or new road networks are proposed as part of the project.
- **Associated Facility:** The 50 MW Sampur Solar Park, located south of the proposed substation site, is under phased development. The proposed transmission line is essential for evacuating power generated from this associated facility.

## 3.6 Affected Resources

The transmission line will intersect a variety of land uses:

- Agricultural lands (paddy fields – both active and abandoned)
- Natural and secondary forests
- Riverine vegetation along the Uppu Aru and Mahaweli rivers
- Seasonal tanks and floodplains
- Scrublands and degraded lands
- Community areas including a few home gardens and proximity to schools and roads

There are no identified critical habitats, archaeological sites, or nationally protected areas within the 35 m study corridor.

## 3.7 Method of Construction

A summary of the method of construction is given below. Method statement for construction of Transmission Line Tower Foundations (Appendices 15.16), Method statement for Tower Erection (Appendices 15.17), and Method Statement for stringing activity (Appendices 15.18) are detailed in the respective appendices.

### 3.7.1 Site Preparation and Planning

#### 3.7.1.1 Preliminaries

The initial phase of transmission line construction involves comprehensive site preparation and planning activities to ensure smooth and safe implementation. This begins with the execution of preliminary surveys along the entire transmission route to verify key parameters such as the RoW boundaries, topographical features, terrain characteristics, existing access roads, and soil conditions at proposed tower locations. These surveys are essential to identify any deviations from the planned route and to make necessary adjustments before groundworks begin.

Following survey verification, the tower schedule, foundation types, and line profile drawings are reviewed and confirmed to match the conditions on the ground. This includes validating the

placement of angle and suspension towers, assessing terrain slopes, water crossings, and identifying any areas requiring special foundation design due to soil instability or environmental sensitivity.

Once planning is complete, the next step involves the mobilization of resources. This includes deploying construction crews, transporting materials (such as steel tower components, concrete materials, and conductors), and arranging for necessary machinery such as excavators, cranes, and vehicles. Resource mobilization must align with the approved construction schedule and logistics plan to avoid delays and ensure efficiency.

Simultaneously, environmental and social safeguard measures are initiated. This includes conducting stakeholder consultations with local communities to inform them about the upcoming construction, potential disturbances, safety precautions, and grievance redress mechanisms. Necessary permits and approvals, such as those related to environmental clearance, land access, and tree removal, must be obtained from relevant authorities before physical work. In addition, safety briefings and induction programs are conducted for all site workers to ensure awareness of occupational health and safety protocols, community engagement procedures, and environmental compliance requirements.

#### 3.7.1.2 Drainage Planning

There could be blockage of existing drainage paths, streams, etc., on access roads and tower foundations. These streams could get blocked by the access roads, tower foundations, or temporary filling material. Such blockages will be avoided through construction planning. If there are streams/drainage paths through the proposed access routes, temporary crossings (concrete pipes) will be provided. The streams will be surveyed, and the tower foundations will be placed away from the specified stream reservations of the Irrigation Department. If the specified reservations are violated in the preset design, necessary adjustments should be made in the detailed design before construction, as the next step for the violation of the stream reservations.
During construction, soil, debris, or any other construction materials will be placed away from the streams or drainage paths so as not to block drainage flow.

### 3.7.2 Foundation Construction

#### 3.7.2.1 Pit Marking and Excavation

The first stage in tower foundation construction involves accurately marking the tower leg pit positions based on the approved foundation layout drawings. This is done using triangulation techniques and pit marking templates to ensure precise spatial orientation. Once pit locations are marked, the soil type at each location is assessed and classified—for example, as dry, wet, black cotton soil, sandy, or rocky. The foundation design and excavation method must match the specific soil characteristics to ensure structural integrity. In rocky areas, excavation may require chiseling or controlled blasting, while in collapsible or sandy soils, proper shoring techniques must be adopted to prevent pit collapse. In areas with high water tables or wet conditions, dewatering measures such as sump pumps may be used to ensure a dry working environment before proceeding to further steps.

#### 3.7.2.2 Setting of Templates and Stubs

Once the excavation is completed, stub-setting templates are positioned and aligned within the pits using jacks, plumb lines, and measuring tools. These templates ensure that the tower legs, also known as stubs, are correctly placed at the designated depth, spacing, and angles as per engineering specifications. Precise alignment is critical for structural performance and proper load distribution. Fixing the stubs firmly and accurately during this stage is essential to avoid deviations that could affect the tower's geometry and stability.

#### 3.7.2.3 Reinforcement and Formwork

Following stub setting, reinforcement cages are fabricated and installed inside the pits according to structural drawings and standards. These reinforcement bars provide the required tensile strength to the concrete foundation. For sections such as the chimney and pyramid of the foundation, rigid and well-designed formwork is installed using approved former box designs to shape the concrete appropriately and withstand the hydrostatic pressure during pouring. Proper tying and spacing of reinforcement are ensured to maintain cover and alignment throughout.

#### 3.7.2.4 Concreting and Curing

Concrete is then poured into the foundation pit with due attention to mix design, slump control, and vibration to remove air voids and ensure compaction. In flood-prone or low-lying areas, the concrete is extended above ground level to protect the foundation during seasonal waterlogging. The curing process is initiated immediately after the initial setting and continued for a minimum of 14 days to achieve the required strength. Moisture retention techniques, such as wet burlap or polythene sheets, are used to prevent premature drying. Strength tests are performed on concrete samples, and the compaction ratio is verified to exceed 95%, ensuring a stable and durable foundation.

#### 3.7.2.5 Backfilling

After the concrete has gained enough strength, the pit is backfilled using approved excavated soil. The backfilling is done in layers not exceeding 200 mm, with each layer compacted thoroughly to avoid settlement. Care is taken to exclude any organic matter, peat, or unsuitable fill materials that could compromise the foundation's stability. In waterlogged conditions, additional dewatering may be necessary during backfilling to prevent soil saturation and loss of compaction.

### 3.7.3 Tower Erection

#### 3.7.3.1 Pre-Erection Preparation

Prior to the start of tower erection, all required steel tower parts are transported to the site and arranged in sequence according to the erection plan. Each part is visually inspected for physical defects, bends, cracks, or damage to galvanization. Any compromised components are either repaired using zinc-rich paint to restore corrosion protection or replaced as needed. Proper sorting and quality checks at this stage help avoid delays and ensure the safety and stability of the final structure.

#### 3.7.3.2 Erection Method

Towers may be erected using either the Section Method or the Build-Up Method depending on the site condition and tower type. In both methods, towers are assembled section by section, typically using gin poles, winches, or cranes for lifting. Adequate guying and anchoring are ensured during each stage to stabilize the partially erected structure. Cross-arms and other components are often pre-assembled on the ground and then hoisted into position using rope and pulley systems. Strict adherence to engineering and safety protocols is essential throughout the process.

#### 3.7.3.3 Tightening, Punching, and Final Checks

Once the tower is fully erected, all bolts are tightened using calibrated torque wrenches, and spring washers are installed to maintain joint integrity. As per specifications, selected bolts may be punched, or tack-welded to prevent loosening over time. The vertical alignment of the entire tower is verified using a theodolite, with acceptable tolerances limited to a deviation of 1 in 360. Finally, identification accessories such as nameplates, anti-climbing devices, and phase plates are installed to complete the erection.

### 3.7.4 Stringing Activities

#### 3.7.4.1 Planning and Setup

Before commencing conductor stringing, all relevant towers must be confirmed as ready, and tension sections must be identified. Necessary hardware, including insulators, clamps, and vibration dampers, should be available at the site. Equipment such as tensioners, pullers, and conductor reels are then placed at the appropriate anchor points, and securely anchored. Permits for crossings (e.g., roads, canals, or railway lines) must be obtained and safety signage installed in coordination with respective authorities.

#### 3.7.4.2 Insulator and Sheave Installation

Polymer insulator strings are assembled and installed on the designated suspension and tension towers. Pulley wheels (sheaves) are securely mounted to allow the smooth passage of pilot wires and conductors. The integrity and balance of these sheaves are essential for damage-free stringing operations.

#### 3.7.4.3 Pilot Wire and Conductor Stringing

Pilot wires are laid manually or with mechanical aids, depending on the terrain and section length. Once the pilot wire is in place, the main conductors are attached using pulling grips. The conductors are then pulled through the sheaves with continuous radio communication between the pulling and tensioning teams to ensure synchronization and avoid wire damage.

#### 3.7.4.4 Sagging and Clamping

Initially, a rough sag is applied to the conductors followed by final sagging using instruments like a sag scope or dynamometer to achieve precise tensioning. After verifying sag alignment, conductors are clamped securely at the dead-end towers and mid-span joints and vibration dampers are installed. Jumpers and dropper connections are fixed at tension and terminal towers to complete the circuit.

#### 3.7.4.5 OPGW Stringing (If Applicable)

Where applicable, Optical Ground Wire (OPGW) stringing is carried out for fiber-optic communication and grounding. Optical Time Domain Reflectometry (OTDR) tests are performed on each OPGW drum before use to verify cable integrity. Stringing is done with specialized equipment while maintaining a minimum bending radius to protect fiber optics. After installation, splicing and optical performance testing are conducted. Accessories such as down-lead clamps, vibration dampers, and aviation warning spheres are fixed to finalize the setup.

#### 3.7.4.6 Final Inspection and Handover

Upon completion of all structural and electrical works, a comprehensive walkthrough is conducted along the entire transmission route. Inspectors check for missing hardware, loose fittings, improper grounding, and any safety hazards. Identified deficiencies are rectified promptly before offering the completed section for formal client inspection. Final deliverables include as-built drawings, technical records, test results, and documentation necessary for the handover and commissioning phase.

### 3.7.5 Safety Measures

Safety is a critical component throughout all construction and erection activities. All personnel must wear appropriate personal protective equipment (PPE), including helmets, safety harnesses, gloves, and protective footwear. Daily toolbox meetings are conducted to communicate hazards, assign responsibilities, and review work plans. Safety drills and mock exercises are conducted to ensure emergency preparedness. Fall arrest systems and guide ropes are mandatory during work at height. Construction activities are strictly prohibited during adverse weather conditions such as thunderstorms, heavy rain, or high winds. Each site must have accessible first aid facilities and a trained emergency response team ready to act in case of injury or accident.

## 3.8 Construction of GS

Under this project, there will be two GSs, namely Kappalthurai GS and Sampur CGS. Part of the Kappalthurai GS is already constructed and in operation, there will be some augmentation works to facilitate the connection of the Sampur - Kappalthurai 220 kV line to the Kappalthurai GS. Sampur CGS will be fully constructed under this project. The layout plans of the Kappalthurai GS and Sampur CGS are given in Figures 3.1,3.2 & 3.3.

### 3.8.1 Method of Construction for GS

The construction of a 220 kV Grid Substation (GS) is a critical infrastructure component required for stepping up or stepping down the voltage in the transmission network, facilitating efficient power flow, protection, and control. The proposed 220 kV GS for Sampur CGS and Augmentation of Kappalthurai GS will be carried out on selected locations, depending on location, and will be constructed in compliance with relevant national electrical codes and the technical guidelines of the Ceylon Electricity Board (CEB).

The substation will be configured as a double busbar system (or alternative configuration as per the detailed design), allowing for flexible operations and ease of maintenance without interrupting

the power supply. The major construction components and activities involved in the development of the 220 kV GS are described below:

#### 3.8.1.1 Site Preparation and Earthworks

The construction process begins with the clearing and grading of the substation site. This includes the removal of vegetation, topsoil stripping, and leveling to the design elevation. Excavation will be carried out for cable trenches, equipment foundations, drainage channels, and grounding grids. A boundary walls or secure fencing with access gates will be installed around the perimeter of the site to control access and ensure safety.

#### 3.8.1.2 Civil and Structural Works

This includes the construction of all foundations and structural elements required for the installation of electrical equipment. Key civil works components include:

- Equipment foundations for transformers, circuit breakers, isolators, busbars, and gantries.
- Transformer oil containment pits with drainage systems and oil-water separators.
- Control building(s) for housing protection panels, control systems, batteries, and communication equipment.
- Internal roads, cable trenches (precast and RCC), culverts, and surface water drainage systems.
- Guard rooms, utility services, and auxiliary buildings as needed.
- Concrete and reinforcement works will follow the approved structural designs, and quality assurance tests will be conducted on all materials used.

#### 3.8.1.3 Electrical and Mechanical Installation

After completion of civil works, the mechanical and electrical erection phase will commence. This includes:

- Installation of 220 kV and 132/33 kV equipment, such as power transformers, circuit breakers, current transformers (CTs), potential transformers (PTs), lightning arresters, and busbars.
- Erection of steel gantries and bus structures.
- Installation of substation earthing grid laid at required depth and spacing to ensure personnel safety and equipment protection.
- Installation of insulated control and power cables and wiring of relay and protection systems.
- Testing and installation of control panels, battery banks, battery chargers, SCADA systems, and communication equipment in the control room.
- Provision of HVAC, lighting, and fire protection systems within the control building.

#### 3.8.1.4 Testing and Commissioning

Upon installation of all electrical components, comprehensive testing and commissioning will be conducted to verify the functionality, protection coordination, and reliability of all systems. Tests will include:

- Insulation resistance, polarity, and ratio tests for transformers and CTs/VTs.
- Functional testing of control and protection systems.
- SCADA integration testing with remote grid operation centers.
- High-voltage withstand tests and continuity checks.
- Earthing resistance verification to meet safety standards.

Only upon successful completion of all tests will the GS be energized and brought into operation.

#### 3.8.1.5 Environmental and Social Safeguards During Construction

Throughout the construction process, the contractor will implement environmental and social safeguards in line with the Environmental and Social Management Plan (ESMP). This includes dust and noise control, waste management, spill prevention, soil erosion control, health and safety measures for workers, and grievance redress mechanisms for surrounding communities. Necessary approvals and inspections from regulatory agencies (e.g., CEA, PUCSL) will be coordinated as required.

#### 3.8.1.6 Safety and Security Measures

A comprehensive safety plan will be enforced on-site, including the use of PPE, safety signage, fire extinguishers, and emergency procedures. The substation will have perimeter fencing, 24/7 security, and CCTV monitoring systems to ensure asset protection and prevent unauthorized access.

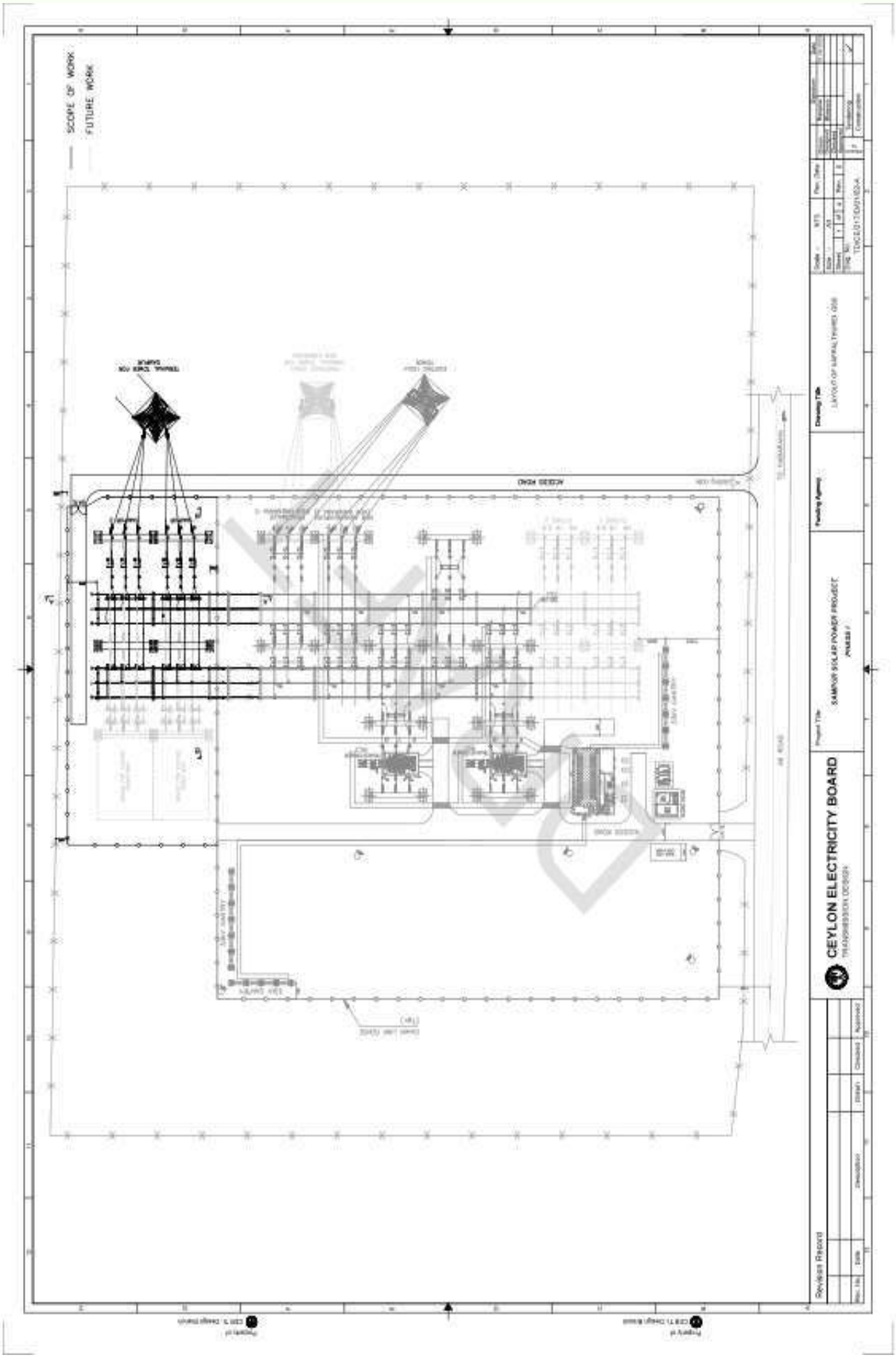


**Figure 3.1 - Layout Plan of Kappalthurai GS (Full Layout)**

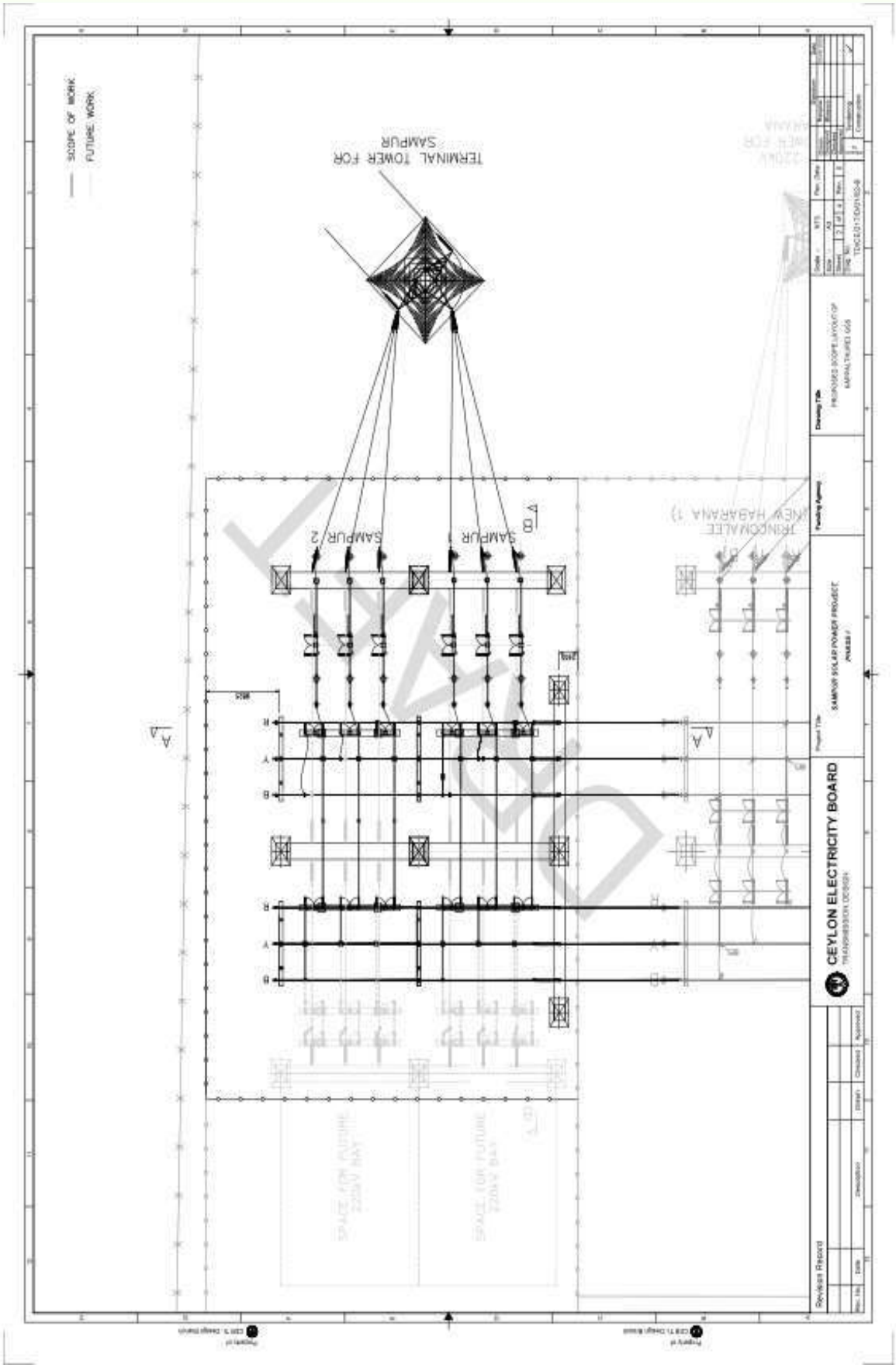


**Figure 3.2 - Layout Plan of Kappalthurai GS (Connecting TL from Sampur CGS)**

**Figure 3.3 - Layout Plan of Sampur CGS**

**Plate 3.1 - Existing Kappalthurai GS**

## 3.9 Drainage Layout

The transmission line traverses the entire relatively flat terrain of the floodplain of the Mahaweli River. Since the area is close to seeing, the transmission line crosses the Mahaweli River and its major tributaries e.g. Uppu Aru. Also, the transmission line crosses independent non-perennial streams and streamlets that originate locally and fall to the sea. Many major streams are branches of the Mahaweli River within the project corridor. The drainage layouts for the transmission line and the Sampur CGS are given in Figures 3.4 and 3.5. Further drainage map is available in Annex 15.7.

**Figure 3.4 - Drainage Layout for the Transmission Line**

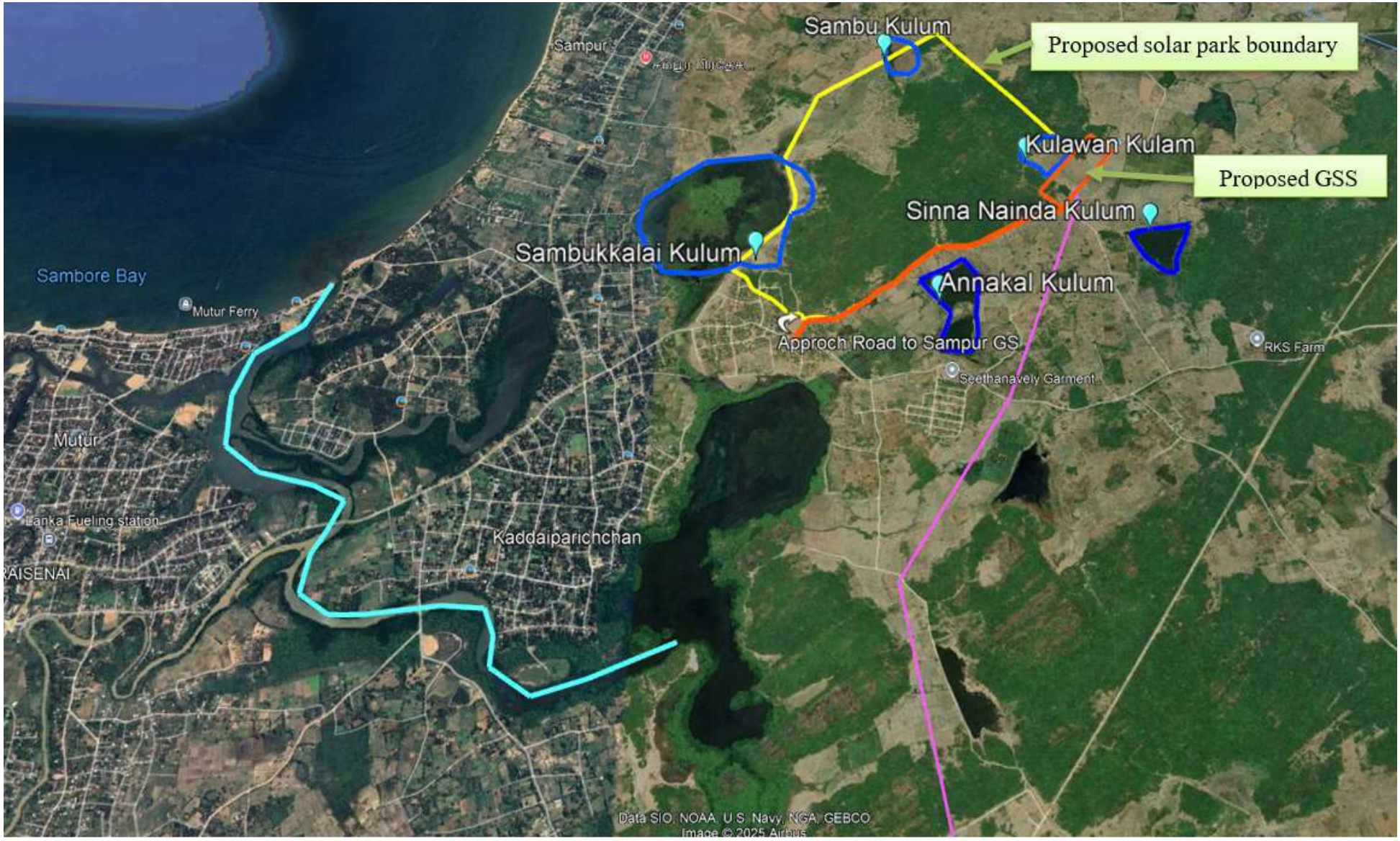


**Figure 3.5 - Drainage Layout for the Sampur CGS**

# 4 Associated Facilities

## 4.1 Introduction

This section outlines the associated facilities linked to the proposed 220 kV transmission line from Kappalthurai Grid Substation (GS) to the proposed Sampur CGS, as defined under the Asian Infrastructure Investment Bank (AIIB) Environmental and Social Framework (ESF). In particular, it aligns with the requirements outlined in the Environmental and Social Policy (ESP) and Environmental and Social Standard 1 (ESS 1): Environmental and Social Assessment and Management. According to the AIIB ESF, associated facilities are those that are not directly financed by AIIB as part of the primary investment but are essential for the successful operation of the main project. These facilities are typically constructed concurrently or within a close timeframe and are functionally and materially linked to the core project.

In this context, the Sampur Solar Power Park is identified as the primary associated facility to the proposed transmission line. The solar park, while financed and implemented under a separate project arrangement, is entirely dependent on the 220 kV transmission line for evacuating the generated electricity to the national grid. Without the transmission infrastructure, the solar park would not be operationally viable, underscoring its direct and material relevance to the transmission line project.

The land selected for the solar park comprises 204.3663 hectares (approximately 505 acres) located in the Sampur area of the Trincomalee District. This same land was previously allocated for the Trincomalee Coal Power Plant, a project that was later abandoned due to environmental, social, and policy considerations, including Sri Lanka's transition toward cleaner energy sources. The repurposing of this land for renewable energy generation demonstrates the government's strategic shift from fossil fuel-based generation to sustainable alternatives in alignment with national climate and energy goals.

The proposed solar park is scheduled to be implemented in stages, with an initial installed capacity of 50 MW, and a future planned expansion up to 120 MW. Construction of the park will proceed in parallel with the development of the transmission infrastructure. As such, both the solar park and the transmission line are being assessed together to ensure that the cumulative environmental and social impacts are properly identified and addressed. The detailed Survey Plan of the Proposed Solar Park has been included as Appendix 15.15 of this report for reference and verification.

Environmental and social risks associated with the solar park—such as vegetation clearance, land use change, dust and noise during construction, potential impacts on local biodiversity, and minor livelihood disturbances—have been considered in the overall impact assessment. While the solar park does not involve physical displacement, proper attention must be paid to temporary access restrictions and impacts on ecosystem services. These risks are addressed through mitigation measures aligned with the ESMP and are consistent with AIIB's safeguards.
The integration of this associated facility within the ESIA framework ensures that both the generation and evacuation components of the project are planned, assessed, and managed holistically, thereby promoting environmental sustainability, social accountability, and operational efficiency throughout the project lifecycle.

### 4.1.1 Sampur Solar Park Layout

The proposed Sampur Solar Power Project is strategically planned over a land extent of approximately 204.3663 hectares (505 acres), located in the Trincomalee District. The layout is organized to accommodate both the initial 50 MW development under Phase I and a future expansion area designated as Phase II. The design carefully integrates technical infrastructure with natural site features while ensuring operational efficiency and environmental considerations.

#### 4.1.1.1 Phase I – 50 MW Development

The southern section of the site is allocated for Phase I, which encompasses:

- Multiple blocks of solar photovoltaic (PV) modules are arranged in a grid-like structure (shown in blue).
- Marked internal roads allowing maintenance access between solar panel rows.
- Inverter stations are strategically placed to convert DC output from PV modules to AC for grid compatibility.
- A periphery road encircles the Phase I solar arrays, enhancing vehicular access and boundary security.

#### 4.1.1.2 Phase II – Future Expansion

The northern portion of the site is marked as Phase II, which remains undeveloped at this stage. This area is reserved for the solar park's future expansion (potentially bringing total capacity up to 120 MW). The layout preserves ecological buffers and corridors that traverse this section, minimizing disturbance to surrounding habitats.

#### 4.1.1.3 Proposed Substation and Control Facilities

To the east of the layout, adjacent to Phase I, lies the proposed location for the Pooling Substation (PSS). This area also includes the CMCS (Central Monitoring and Control Station) Room and Office Area, which will host operational and administrative functions. These facilities are centrally placed to ensure efficient control, monitoring, and grid connectivity.

#### 4.1.1.4 Corridors and Environmental Buffers

The layout includes several environmentally sensitive areas and designated corridors:

- A 100-meter corridor runs along the northern edge, possibly serving as a buffer zone or utility access route.
- 50-meter and 20-meter corridors are indicated along the eastern and southern sides, maintaining ecological continuity and access.
- Low-lying areas (marked in purple) such as R3 to the southwest are excluded from direct development, preserving natural drainage and biodiversity. Similarly, smaller ecological reserves R1 and R2 within the site are buffered and kept outside direct construction zones.

#### 4.1.1.5 Topography and Natural Integration

The layout design takes into account existing topographic and ecological constraints, ensuring that low-lying and sensitive zones are preserved. The planned solar modules and infrastructure are confined to relatively elevated and stable land, avoiding interference with drainage paths and minimizing flood risk.

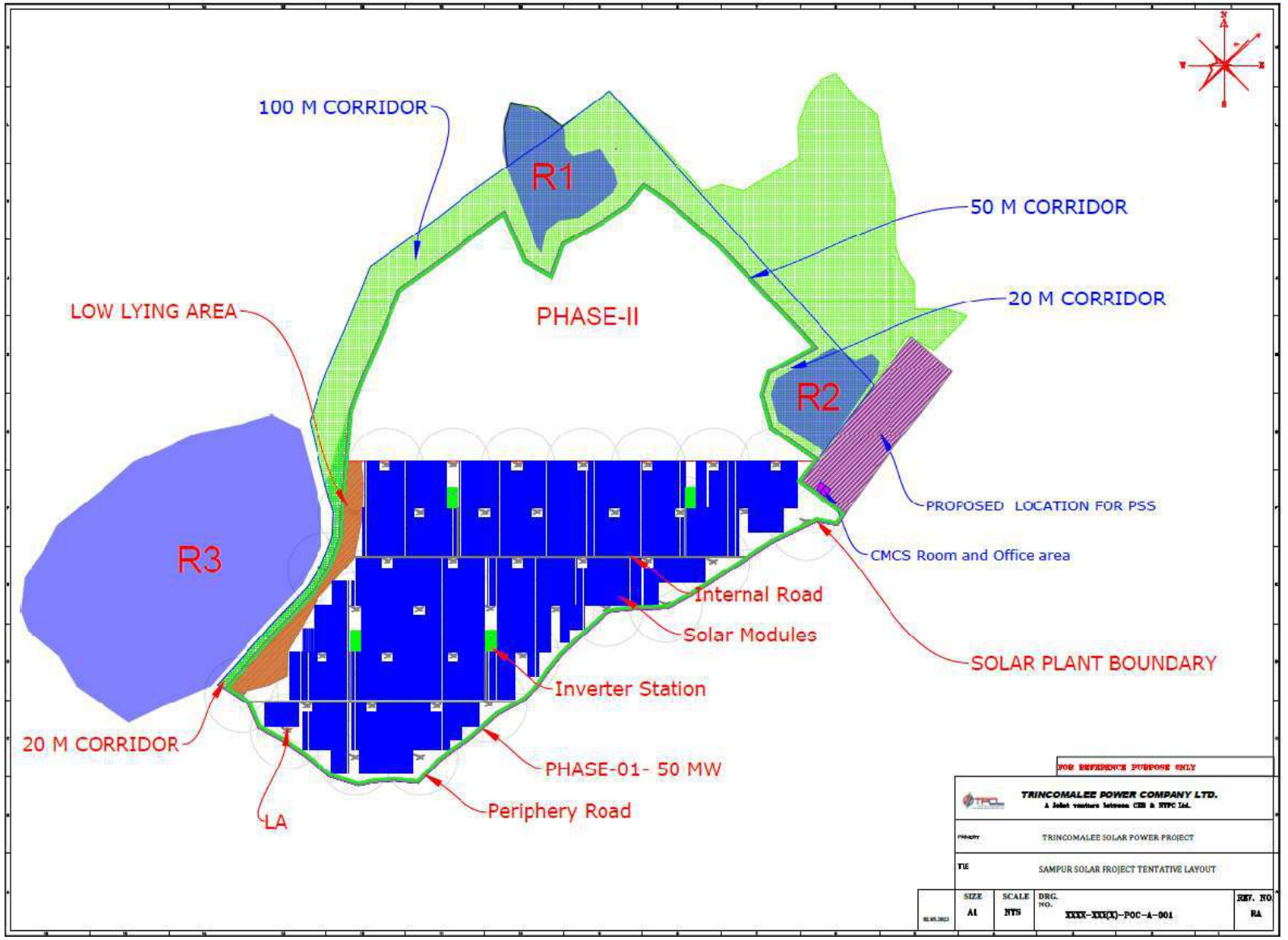


**Figure 4.1 - Proposed layout plan for Phase I (50 MW) Solar Project**

(Source: Final IEE Report for the Proposed 50MW Solar Power Project at Sampur, Trincomalee) R1 – Sambu Kulam Tank, R2 – Pulavan Kulam Tank, R3 – Sampukkali Kulam Tank

## 4.2 Identification and Justification of Associated Facilities

The primarily associated facility identified for this transmission line project is the 50 MW Sampur Solar Power Project (which will be later expanded up to 120 MW). While not included within the transmission line construction scope, this solar power plant is the direct source of the electricity to be evacuated via the proposed 220 kV line. The transmission infrastructure will provide the only grid interconnection for the solar plant, and as such, the solar project would not be viable in the absence of this transmission line. Similarly, the justification for constructing the transmission line hinges on the need to connect the solar park to the national grid.

The Sampur Solar Power Project is in the Trincomalee District and is designed to contribute to the Government of Sri Lanka's renewable energy goals. It is developed in phases, with Phase I (50 MW) scheduled to be commissioned by 2026. The solar plant and transmission line are therefore functionally and temporally linked and must be assessed together for their combined environmental and social impacts.

**Plate 4.1 - Board erected at the proposed site**

**Plate 4.2 - Villagers with collected firewood from the Proposed Solar Parkland**

**Plate 4.3 - ESIA Team visiting the Solar Park during the field visits**

**Plate 4.4 - Damaged fence at Proposed Solar Park**

## 4.3 Environmental and Social Risks and Impacts of Associated Facilities

The Sampur Solar Power Park, although undergoing a separate environmental assessment, is an associated facility to the proposed 220 kV transmission line under AIIB's Environmental and Social Framework (ESF), particularly Environmental and Social Standard (ESS) 1. While it is not directly financed under the same investment, its successful operation is entirely dependent on the construction and energizing of the transmission line. As such, the environmental and social risks and impacts from the solar park contribute to the overall cumulative project footprint and are briefly summarized below based on-site assessments and available planning data.

### 4.3.1 Land Use Change

The development of the 204.37-hectare solar park involves the conversion of previously unused scrublands, dry-mixed evergreen vegetation, and abandoned paddy fields into built-up infrastructure zones, including solar panel arrays, access roads, and control buildings. This land use transformation will result in the permanent loss of low-intensity agricultural land, shrubland vegetation, and natural ground cover, thereby altering the ecological character and local land use pattern. Community reliance on informal access to these lands for firewood collection and livestock grazing will also be restricted, leading to localized disruptions in subsistence-based rural livelihoods.

### 4.3.2 Habitat Fragmentation

The clearing of large blocks of natural scrub and edge habitat for solar panel installation will lead to fragmentation of wildlife corridors, potentially affecting the movement of native species, including leopards and elephants, both of which are known to traverse the greater Trincomalee

landscape. The solar site lies adjacent to previously used elephant migratory paths and forest patches that support leopard populations. While the transmission line is designed with sufficient ground clearance and does not introduce continuous barriers, the solar park's perimeter fencing and infrastructure pose more significant restrictions. These impacts will be assessed and managed in detail within the solar ESIA and Biodiversity Management Plan, which will propose mitigations such as wildlife corridors, buffer zones, and fencing designs that minimize obstruction to fauna movement.

### 4.3.3 Air Quality and Noise Impacts

Construction activities at the solar park, including site clearance, road construction, concrete works, and equipment delivery, will generate localized dust and exhaust emissions, especially during the dry season. Nearby sensitive receptors, such as villages and schools in the project's area of influence, are expected to be temporarily impacted by increased noise levels and air pollution during daytime construction hours. Noise from machinery such as pile drivers, graders, and transport vehicles is projected to exceed ambient noise thresholds, requiring the adoption of noise mitigation strategies such as work-hour restrictions, acoustic barriers, and dust suppression measures.

### 4.3.4 Water Use and Local Resource Strain

While the operational water demand of the solar park is low, periodic water use for solar panel cleaning, particularly during dry months, may place additional stress on local groundwater sources. In water-scarce conditions, this could reduce the availability of water for nearby agricultural or domestic use. A water management plan is required to balance solar operations with community needs and hydrological sustainability.

### 4.3.5 Waste Management

Construction and operational phases will generate solid and hazardous waste, including packing materials, metal scraps, used oils, and chemical containers from maintenance activities. If not managed properly, these waste streams pose risks of soil and water contamination. Temporary waste storage yards, segregation protocols, and disposal via licensed recyclers or waste handlers must be implemented to prevent environmental degradation and community health impacts.

### 4.3.6 Glint and Glare

The installation of large-scale PV arrays can lead to glint and glare effects caused by sunlight reflection from the panels. This visual disturbance can affect drivers on nearby roads, workers at the site, and potentially residents in adjacent settlements. A glint and glare analysis should be undertaken as part of the solar ESIA to guide panel orientation and screening measures.

### 4.3.7 Traffic and Access Disruptions

During construction, the movement of heavy vehicles transporting panels, machinery, and construction materials will increase local road traffic, potentially causing temporary congestion, road safety risks, and dust generation along access routes shared with rural communities. Schoolchildren, cyclists, and pedestrians in the vicinity will face elevated risks unless proper traffic management measures, warning signage, and construction schedules are enforced. The internal road development within the park will also generate short-term noise and access constraints for adjacent land users.

### 4.3.8 Social Impacts and Community Relations

Land allocation for the solar park will restrict the traditional use of the area by local communities for grazing, firewood collection, and seasonal livelihoods. Though there is no physical displacement, economic displacement is anticipated and must be addressed through livelihood support, compensation, and stakeholder engagement. Ongoing community involvement, transparent communication, and grievance redress mechanisms are essential to maintaining local support and minimizing conflicts.

### 4.3.9 Cumulative Environmental and Social Impacts

As both the transmission line and solar park are to be constructed and operated within the same geographic area and timeline, their cumulative environmental and social impacts are significant. The combined activities will result in the concurrent clearance of vegetation, increased labor influx, higher levels of construction noise, dust, and vehicular movement, and shared pressures on local resources and infrastructure. Additionally, the presence of multiple infrastructure footprints (transmission towers, substations, solar arrays) within a limited landscape amplifies the fragmentation of land use and ecological connectivity.

Both components, generation (solar park) and transmission, will overlap in terms of land access requirements, environmental sensitivity, and community exposure. Cumulative effects include amplified disturbance to wildlife, increased load on waste disposal systems, and heightened risk of community grievances due to land restrictions and competing needs. Therefore, the environmental and social management plans (ESMPs) for both facilities must be aligned, cross-referenced, and implemented in coordination, with periodic joint monitoring and reporting mechanisms in place to capture and respond to emerging issues in an integrated manner.

## 4.4 Level of Control and Influence of the Implementing Entity

The 220 kV transmission line is being implemented by the CEB. The 50 MW Sampur Solar Power Project is being developed by Trincomalee Power Company Limited (TPCL), in which CEB holds a 50% equity stake, and NTPC Limited, which is a Government of India Enterprise holds the balance 50% of equity. As a result, CEB has significant strategic influence over the planning and implementation of the associated solar facility. This influence supports the integration of environmental and social safeguards across both projects, promoting alignment in stakeholder engagement, impact mitigation, and monitoring.

# 5 Baseline Environmental and Socio-Economic Data

## 5.1 Project Boundary

The proposed project involves the development of a 220kV transmission line from Sampur CGS to Kappalthurai GS in Trincomalee District, Sri Lanka. The project footprint includes the transmission line corridor (approximately 35 meters wide and 37.6 km in length), the proposed Sampur CGS, the augmentation area at Kappalthurai GS, and associated construction access paths. The project site traverses a mosaic of land uses including cultivated paddy fields, scrublands, degraded dry forests, mangroves, streams and rivers.

### 5.1.1 Project Area of Influence (AoI)

The AoI includes the project's direct physical footprint as well as areas that may experience indirect, induced, or cumulative environmental and social impacts during the construction and operational phases. The AoI encompasses:

- **Direct Impacts:** The 35-meter corridor of the transmission line, GS sites, and immediate construction areas.
- **Indirect Impacts:** Areas adjacent to the RoW that may be affected by noise, dust, vibrations, habitat fragmentation, or edge effects.
- **Cumulative Impacts:** Landscapes surrounding the project may face combined impacts due to the proposed 50 MW Sampur Solar Park and future renewable energy projects planned in the region.
- **Induced Impacts:** Local access paths and economic/livelihood shifts arising from temporary employment or land-use changes.

The total AoI considered extends up to 500 m on either side of the transmission corridor and around associated facilities, aligning with AIIB ESS 1 for defining areas of social and environmental influence.

### 5.1.2 Area of Analysis (AoA)

In accordance with IFC Performance Standard 6 (PS6) and its 2019 Guidance Note, the AoA is defined not only by the AoI but also by broader ecological units and habitat systems potentially impacted by the project. This includes:

- **Ecological Boundaries:** The dry-mixed evergreen forest ecosystem, riverine habitats linked to the Mahaweli and Uppu Aru river basins, seasonal wetlands, mangroves, and scrublands that may be impacted by landscape-level effects.
- **Hydrological Features:** The floodplain of the Mahaweli River which the transmission line crosses, and associated catchments contribute to seasonal streams.
- **Migratory Corridors:** Zones are used by elephants and avifauna, especially near water bodies and forest/ scrub patches.

Given that the AoA already incorporates a landscape-level ecological assessment covering all critical habitats, species movement corridors, and hydrological systems that may be impacted, it is considered equivalent to the Ecological Area of Analysis (EAAA).

The AoA, as defined, captures the full extent of ecological processes and biodiversity values relevant to the project's potential impacts and risks, thereby aligning with the objectives and scope typically assigned to an EAAA.

This avoids duplication and ensures the assessment remains coherent while still adhering to both AIIB ESS1 and IFC PS6 guidance.

The AoA includes habitat units beyond the immediate project area and covers a landscape-scale unit around the project corridor for assessing critical habitat connectivity.

### 5.1.3 Legally Protected Areas and Key Biodiversity Areas (KBAs)

The project does not intersect any legally protected area or designated KBA. However, the following conservation-sensitive areas were considered within the broader AoA:

- **Mahaweli River Corridor and Uppu Aru River Corridor:** Identified as a potential conservation corridor and river basin management zone; intersected by the transmission line.
- **Thambalagamuwa Bay**: Identified as a potential conservation area for mangroves and migratory birds.

No Ramsar Sites, Marine Protected Areas, or World Heritage Natural Sites are located within the AoA. Mapping and GIS-based reviews confirmed no overlap with Alliance for Zero Extinction (AZE) sites or Endemic Bird Areas (EBAs).

The AoI and AoA have been delineated using ecological, hydrological, and land use criteria in line with AIIB ESS1 and IFC PS6. The AoA ensures that all potentially affected ecological values, including terrestrial and freshwater biodiversity, are adequately considered in the assessment. This approach facilitates sound decision-making for biodiversity management and ensures alignment with AIIB environmental and social due diligence requirements.

## 5.2 Physical Environment

### 5.2.1 Land use

#### 5.2.1.1 Land use of the transmission line corridor

The variations in land use along the proposed transmission line corridor are illustrated on detailed 1:50,000-scale land use map sheets, included in Appendix 15.10 (Map 15.10.6 sheet 1 and sheet 2). Based on these maps and field observations, the proposed 35 m wide corridor primarily intersects paddy fields, home gardens, forest areas, scrublands, and marshlands. There are no protected areas such as National Parks, Wildlife Sanctuaries, or Conservation Forests managed by the Department of Wildlife Conservation or the Forest Department within the 35 m RoW of the

proposed transmission line. Table 5.1 summarizes the area and percentage of each land use type intersected by the corridor.

**Table 5.1 - Area of land use intersected by the transmission line corridor (35m) and length of transmission line in different land use type**

| Land use | Area (Acres) | Percentage of Total Area % | Length of the transmission line (km) |
|---|---|---|---|
| Sparse Forest | 14.298 | 4.44 | 1.73 |
| Home Garden | 2.058 | 0.64 | 0.18 |
| Marsh | 18.003 | 5.59 | 4.10 |
| Paddy | **220.824** | 68.60 | **25.69** |
| Scrubs Lands | **48.042** | 14.93 | **3.49** |
| Streams | 9.709 | 3.02 | 1.09 |
| Paddy (Abandoned) | 8.886 | 2.76 | 1.02 |
| Major Road | 0.06 | 0.02 | 0.24 |
| Total | **321.88** | 100.00 | **37.57** |

(Source: Calculations derived from geospatial digital data of prepared 1:50,000 Land use maps based on field observation, Satellite imagery, and data from Survey Department, Sri Lanka)

According to the geospatial calculations, the transmission line corridor primarily covers a high percentage of paddy fields and scrublands, while a lower percentage is occupied by forests and home gardens. Paddy fields are the most dominant land use type along the proposed transmission line corridor. Approximately 68.60% of the corridor area is covered by paddy fields, with 25.69 km of the transmission line running over them. Additionally, 14 angle towers and 52 suspension towers are proposed to be located within paddy fields.

Based on field observations, approximately 8.89 acres of paddy fields along the transmission line corridor have been abandoned. According to the Land Use Plan – Trincomalee District by the Ministry of Lands, the total area of abandoned paddy lands in the district is around 5,458.06 acres. Specifically, Thambalagamuwa DS Division accounts for 548.57 acres, Kinniya for 1,101.42 acres, and Muthur for 1,612.76 acres. The primary reasons for abandonment include the impacts of civil conflict, limited water availability, soil salinity, and poor soil conditions. Suspension tower 21/4 and angle tower 22 (AP22) are proposed to be sited within these abandoned fields.

The proposed line also crosses several home garden areas. Most of these home gardens are cultivated with perennial crops such as coconut, papaya, mango, jackfruit, and citrus. Additionally, some home gardens contain short-term vegetable crops. Certain areas of these home gardens also include timber and agroforestry species such as teak and mahogany. No large-scale plantations were observed along the proposed line corridor; however, a small teak plantation area can be observed near the Kappalthurai GS area. Approximately 0.64% of the corridor area is covered by home gardens, with 0.18 km of the transmission line running over these areas. Suspension tower 12/3 is proposed to be located within a home garden area.

A few sparse forest areas are observed along the proposed line corridor (e.g., from TT1 to AP2 and from AP13 to AP14). These areas, as noted during field visits, are characterized by low tree density, widely spaced trees, and open canopies (Plate 5.1). The open canopies allow sunlight to reach the ground, promoting the growth of shrubs, grasses, and small plants. Approximately 4.44% of the land area used for the transmission line corridor is covered by sparse forest, with 1.73 km of the transmission line running through these areas. In total, 02 angle towers and 02 suspension towers are proposed to be located within these sparse forest areas.

Scrublands are the second most dominant land use type in the corridor. These areas consist of bushes and small trees, with some areas used for chena cultivation. Scrubland covers 14.93% of the land area within the transmission line corridor, with 3.45 km of the transmission line running over these areas. There are 02 angle towers, and 05 suspension towers are proposed to be located in the scrublands.

The transmission line crosses several major streams, including the Mahaweli Ganga, Valavachar Aru, Kaddaiparichchan Aru, Verical Aru, Uppu Aru, Palam Podda Aru, and Par Aru (Peru Aru) (further explained in the Section 5.2.4.1 Surface Water Availability). Field observations indicate thick river sediments in broad floodplains and paleo-river deposits in certain paddy field areas, which are partially used for sand extraction. Portions of the floodplains consist of clay and silt rich in organic matter, making them suitable for cultivation. Unconsolidated sand is also present in some sections, increasing their susceptibility to contamination. In contrast, some floodplains, particularly those near the Mahaweli River crossing, have transitioned into scrubland and open forests due to their high nutrient content.

Marshlands are observed at several tower locations (4/3, 4/4, 4/5, near AP9, AP14, and between AP15 and 15/7) along the proposed transmission line corridor. These marshlands have developed due to a combination of tidal influence, flooding from the Mahaweli and Uppu Aru rivers, monsoonal rainfall, and geomorphological factors. The deposition of alluvium and sediments in these areas contributes to marshland formation. Additionally, human activities such as water storage in paddy fields have also influenced their development. Marshlands are ecologically important as they support biodiversity, including mangroves, and provide hydrological and climate regulation by controlling floods, recharging groundwater, and preventing erosion. Approximately 5.59% of the land area along the transmission line corridor is covered by marshland, with 4.10 km of the line traversing these areas. Three angle towers and ten suspension towers are proposed to be located within these marshland zones.

Several tanks are located close to the proposed transmission line corridor. Pulavan Kulam, Sinna Nainda Kulam, Sampukkali Kulam, Mallumalai Kulam, and Nariyilanthan Kulam are situated between AP 20 and TT 2, while Amman Kulam and Pariarei Kulam are located between AP 2 and AP 4. Except for Pattiyanoottru Kulam, which is intersected at its outer edge by towers 10/3 and 10/4, none of these tanks are directly crossed by the transmission line (further explained in Section 5.2.4.1 Surface Water Availability)

The proposed transmission line corridor intersects several roadways, including two major roads: The Trincomalee–Batticaloa Road (A15) between tower locations 16/4 and 16/5 (Figure 5.1), and the Thambalagamuwa–Kinniya Road (B541) between 7/1 and 7/2 (Figure 5.2). Additionally, the

line crosses various segments of the Trincomalee Ring Road at AP15–15/1, AP16–16/1, 16/5–16/6, and 8/3–8/4, as well as the Mollipothana–Soorangai Road between 8/5 and 8/6. Other road crossings along the alignment include: 1/2–AP2, AP3–AP4, 6/1–AP7, 8/7–AP9, 11/1–11/2, 11/4–AP12, AP12–AP12/1, 15/7–15/8, 15/9–15/10, 16/1–16/2, 17/1–17/2, AP19–19/1, 19/3–19/4, 20/1–AP21, 21/3–21/4, and 22/1–TT2.

**Figure 5.1 - Location where the proposed transmission line crosses the Trincomalee–Batticaloa Road (A15)**

**Figure 5.2 - Location where the proposed transmission line crosses the Thambalagamuwa–Kinniya Road (B541)**

**Land use of the Kappalthurai GS**

The Kappalthurai GS has already been constructed and is currently operational (Plate 5.1). The proposed TT1 terminal tower will be located within the new line bay area, adjacent to the existing line bays. The Kappalthurai GS is situated in an area primarily characterized by scrubland and sparse vegetation. Based on field observations and land use maps, the surrounding land exhibits low-intensity usage with minimal agricultural activity. Additionally, teak plantations and a BOI (Board of Investment) zone are located adjacent to the GS. The land is relatively flat and undeveloped. No sensitive environmental features such as marshlands or water bodies were found within the immediate vicinity of the GS location.

### 5.2.1.2 Land use of the Sampur CGS

Scrublands have been predominantly observed within the proposed Sampur CGS area, while the proposed Sampur Grid Substation site is primarily covered by abandoned paddy lands. Additionally, several associated tanks (e.g., Annaikal Kulam) are located outside the proposed Sampur CGS area. The village tank Kulawan Kulam is just outside the GS, but its two LB and RB irrigation canals are within the GS boundary.
Sinna Nainda Kulum is about 415m downstream of the GS and Kulawan Kulum village tank bund is just upstream of the GS upper boundary. All other surrounding tanks given in the figure are more than 500m from the GS boundaries.

**Figure 5.3 - Tanks near Sampur CGS**

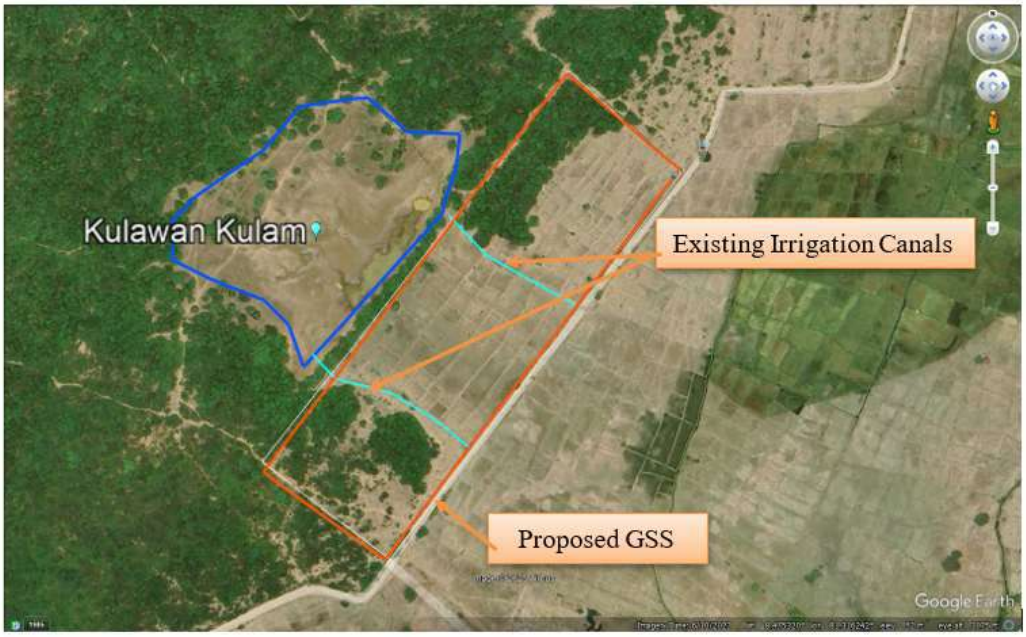


**Figure 5.4 - Pulawan Kulum Tank and its Irrigation Canals through the GS**

The Sampur CGS is accessible via two access roads, which will require further development (Plate 5.1). The TT2 tower location is observed inside this proposed GS area.

#### 5.2.1.3 Land use of the associated solar park

The project site spans 505 acres. The land is uninhabited and predominantly covered by scrub forest, with approximately 20% consisting of seasonal tanks and abandoned paddy fields. Within the site, three small tanks, Sampukkulam, Pulavan Kulam, and Iluppankulam—which are under the jurisdiction of the Department of Agrarian Development. Several associated tanks, such as Annaikal Kulam, Sinna Naida Kulam, Sambu Kulam, and Vempy Kulam, are observed near the boundary edge of the solar park project area. Approximately 2 km of the site's extended perimeter is bordered by an earthen road, including a 350 m section used by the Santhosapuram community, while the remaining 3.2 km are adjacent to paddy fields or scrub forest. The 505-acre parcel was leased by the Government of Sri Lanka to the project developer in 2014 for a period of 40 years under Section 02 of the State Lands Ordinance No. 08 of 1947.

| Paddy fields (16/3 to 16/4 & A7 to 7/1) |
| --- |
| |
| Spares forests and Scrublands (15/5 to 15/6) |
| |

Mahaweli River crossing and floodplains (AP14 to AP15)

Marshlands (15/6 to 15/7)

Home gardens (6/1 to AP7)

Major Rods and Trincomalee Ring Road (AP16 to 16/1)

| Kappalthurai GS (TT1) |
| --- |
| |
| Proposed Sampur CGS area (TT2) |
| |

| Associated proposed solar park area |
| --- |
| |

**Plate 5.1 - Land use observations**

**Figure 5.5 - Land use map of the proposed transmission line corridor**

(Source: Prepared based on field data, Sentinel images and 1:50,000 land use data, Survey Department, Sri Lanka)

### 5.2.2 Topography

#### 5.2.2.1 Transmission Line Corridor

The elevation profile along the entire 37.6 km route of the proposed 220 kV transmission line reflects a predominantly flat terrain with minor to moderate undulations. Elevation across the alignment ranges from approximately 0–30 m above mean sea level, with an average elevation of about 10.8 m. The maximum slope recorded is 10.0%, while the average slope remains low, at approximately 1.7% in ascent and –1.5% in descent. The lowest elevation point is observed near the 15.7 km mark. Figure 5.6 illustrates the elevation profile along the transmission line corridor.

Given this flat terrain, factors such as slope, aspect, and elevation do not significantly influence the alignment or construction feasibility of the transmission line. Isolated rock outcrops are the only notable topographic features within the broader project area. Some of these formations reach up to 90 m in elevation; however, they are located away from the proposed alignment and do not interfere with tower placements or construction activities. The terrain features and the Digital Elevation Model (DEM) of the area along the transmission line are illustrated in Map 15.10.11 and Map 15.10.12 in Appendix 15.10

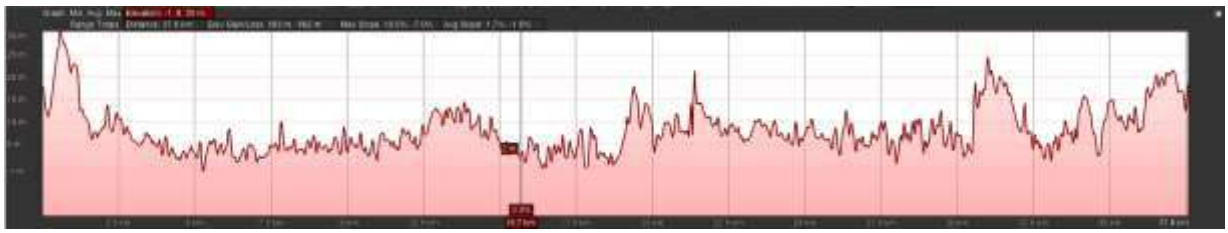

**Figure 5.6 - Elevation profile along the transmission line corridor**

(Source: Google Earth)

#### 5.2.2.2 Sampur CGS and Associated Solar Park

The elevation profile of the Sampur CGS and the associated solar park indicates moderately undulating terrain. The Elevation in this section ranges from 4 to 26 m above mean sea level, with an average elevation of 16 m. The slope analysis shows a maximum incline of 10.4% and a maximum decline of –11.4%, while the average slopes during ascent and descent are 3.9% and –3.8%, respectively. These values reflect gradual but noticeable elevation changes across the landscape. Although the broader region is classified as flat terrain, this profile highlights local variations. The elevation profile is illustrated in Figure 5.7.

**Figure 5.7 - Elevation profile along the Sampur CGS and associated solar park**

(Source: Google Earth)

#### 5.2.2.3 Kappalthurai GS

The elevation profile indicates a generally flat to gently undulating terrain, with elevations ranging from approximately 16 to 22 m above mean sea level. The average elevation is around 18 m. The terrain remains relatively stable throughout the segment, except for a short section near the end where the slope reaches a maximum of 18.3%. The average slopes in ascent and descent are 4.2% and 1.5%, respectively. The elevation profile is illustrated in Figure 5.8.

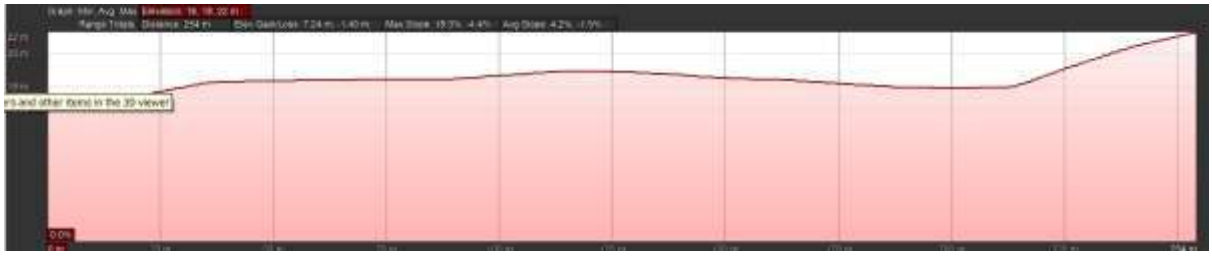

**Figure 5.8 - Elevation profile along the proposed line bay area in Kappalthurai GS**

(Source: Google Earth)

### 5.2.3 Climate and Meteorology

#### 5.2.3.1 Rainfall Pattern

The proposed transmission line is located within the eastern part of Sri Lanka's dry zone, specifically falling under the DL1, DL2b, and DL2–DL4 agroecological regions. These regions are typically characterized by low annual rainfall and high mean temperatures, with rainfall predominantly received during the Northeast monsoon (December–February), and the two inter-monsoon periods (March–April and October–November). According to agroecological data, DL1 receives about 900 mm of annual rainfall, while DL2b receives approximately 1100 mm (source: Department of Agriculture). Five-year climatological data from the three major stations around the proposed transmission line are presented in Table 5.2.

Recent rainfall data from 2019 to 2023 for three representative meteorological stations, Palampoddaru, Kantalai, and Allai, reflect the variability and seasonality typical of the region. Notably, all three stations show peak rainfall during the Northeast monsoon, especially in November and December. In contrast, the Yala season (May to September) shows significantly lower rainfall, with multiple months recording zero or near-zero precipitation.

**Table 5.2 - Average monthly rainfall at the three major stations from 2019 to 2023 (Source: Department of Meteorology, Sri Lanka)**

| | Palampoddaru | | | | | Kantalai | | | | | Allai | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Jan | 53.0 | 29.3 | 227.4 | 108.8 | 99.7 | 28.0 | 50.0 | 302.7 | 201.2 | 128.9 | 18.3 | 40.0 | 404.3 | 280.4 | 161.1 |
| Feb | 104.3 | 14.3 | 15.0 | 82.5 | 20.5 | 97.0 | DNA | 98.1 | 221.6 | 259.8 | 103.8 | 40.5 | 67.4 | 142.5 | 80.6 |
| Mar | 0.0 | 0.0 | 15.0 | 45.0 | 26.2 | 0.0 | 0.0 | 36.9 | 82.0 | - | 1.3 | 0.0 | 59.9 | 99.9 | 39.9 |

| | Palampoddaru | | | | | Kantalai | | | | | Allai | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| April | 0.0 | 0.0 | 36.4 | 7.0 | 4.2 | 21.0 | 5.0 | 58.7 | 222.0 | - | 8.8 | 20.3 | 143.3 | 129.2 | 59.8 |
| May | 0.0 | 62.8 | 0.0 | 0.0 | 59.8 | 0.0 | 155.6 | 70.3 | 40.5 | 208.7 | 20.0 | 126.4 | 32.7 | - | 75.7 |
| June | 0.0 | 5.5 | 0.0 | 16.0 | 0.0 | 54.0 | 8.0 | 50.4 | 77.1 | 6.5 | 17.3 | 92.7 | 38.4 | 66.2 | 7.4 |
| July | 39.8 | 24.7 | 24.2 | 0.0 | 0.0 | 10.0 | 57.4 | 54.4 | 105.9 | 0.0 | 36.9 | 64.2 | 32.7 | 93.4 | 1.0 |
| Aug | 27.3 | 0.0 | 19.0 | 20.1 | 45.5 | 0.0 | 9.4 | 115.9 | 125.9 | 139.6 | 63.1 | 34.9 | 121.1 | 62.1 | 166.4 |
| Sep | 100.0 | 79.6 | 58.0 | 25.0 | 42.4 | 117.5 | 133.3 | 196.0 | 85.7 | 61.0 | 144.9 | 18.0 | 90.9 | 103.0 | 76.0 |
| Oct | 130.6 | 10.3 | 137.5 | 163.4 | - | 195.8 | 26.7 | 311.8 | 351.2 | 420.0 | 193.8 | 81.4 | 294.9 | 197.0 | 808.2 |
| Nov | 264.1 | 191.8 | 185.7 | 120.3 | 197.2 | 335.2 | - | 418.7 | 255.1 | 384.9 | 278.0 | 230.3 | 229.6 | 153.5 | 199.8 |
| Dec | 379.1 | 393.9 | 64.1 | 211.9 | 219.4 | 496.0 | 559.7 | 259.1 | 314.5 | 418.1 | 633.2 | 591.9 | 211.8 | 342.7 | 383.1 |

### 5.2.3.2 Temperature

Trincomalee experiences relatively high temperatures throughout the year, typical of Sri Lanka's dry zone climate. Average monthly temperatures range from 25.3 °C in January to a peak of 29.4 °C in June, with minimal variation across seasons. Maximum daily temperatures consistently exceed 30 °C during April to September, reaching up to 33.5 °C in June, while minimum temperatures remain above 24 °C year-round. This stable thermal profile reflects a warm, tropical environment.

### 5.2.3.3 Relative Humidity

Relative humidity varies with seasonal rainfall, showing higher levels during the monsoon periods and lower levels during the drier months. Humidity levels drop to their lowest in June (68%) and July (66%), coinciding with high temperatures and low rainfall, while the highest humidity occurs in November (83%) and December (81%), corresponding with the northeast monsoon season (Figure 5.9).

**Figure 5.9 - Climate data for Trincomalee**

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avg. Temperature °C (°F) | 25.3 °C (77.6) °F | 25.9 °C (78.7) °F | 27.2 °C (81) °F | 28.4 °C (83.2) °F | 29.3 °C (84.8) °F | 29.4 °C (84.9) °F | 29.1 °C (84.4) °F | 28.7 °C (83.7) °F | 28.6 °C (83.4) °F | 27.3 °C (81.1) °F | 26 °C (78.8) °F | 25.6 °C (78) °F |
| Min. Temperature °C (°F) | 24 °C (75.2) °F | 24.3 °C (75.7) °F | 25 °C (77.1) °F | 26 °C (78.9) °F | 26.6 °C (79.8) °F | 26.5 °C (79.8) °F | 26.3 °C (79.3) °F | 25.9 °C (78.7) °F | 25.8 °C (78.4) °F | 25.1 °C (77.2) °F | 24.4 °C (76) °F | 24.2 °C (75.6) °F |
| Max. Temperature °C (°F) | 26.8 °C (80.3) °F | 27.8 °C (82.1) °F | 29.9 °C (85.8) °F | 31.6 °C (88.9) °F | 33.5 °C (92.2) °F | 33.9 °C (92.9) °F | 33.7 °C (92.6) °F | 33.2 °C (91.8) °F | 33.1 °C (91.5) °F | 30.7 °C (87.2) °F | 28 °C (82.4) °F | 27.1 °C (80.8) °F |
| Precipitation / Rainfall mm (in) | 136 (5) | 80 (3) | 47 (1) | 63 (2) | 50 (1) | 18 (0) | 31 (1) | 50 (1) | 69 (2) | 196 (7) | 303 (11) | 275 (10) |
| Humidity(%) | 78% | 77% | 76% | 76% | 70% | 66% | 66% | 67% | 68% | 77% | 83% | 81% |
| Rainy days (d) | 11 | 8 | 7 | 9 | 6 | 2 | 4 | 6 | 8 | 14 | 17 | 16 |
| avg. Sun hours (hours) | 6.4 | 7.5 | 8.7 | 9.8 | 10.2 | 10.5 | 10.5 | 10.3 | 9.9 | 9.0 | 7.4 | 6.8 |

Data: 1991 - 2021 Min. Temperature °C (°F), Max. Temperature °C (°F), Precipitation / Rainfall mm (in), Humidity, Rainy days. Data: 1999 - 2019: avg. Sun hours

(Source:Climate-data.org)

### 5.2.3.4 Wind Pattern

Wind conditions along the proposed transmission line corridor are influenced by both seasonal climatic patterns and local terrain morphology. According to wind rose data developed by the Department of Meteorology (Figure 5.10 and Table 5.3), prevailing wind directions vary significantly throughout the year. During the northeast monsoon (December to February), winds are generally stronger and moisture-laden, coinciding with periods of heavy rainfall. In contrast,

the southwest monsoon (May to September) is characterized by drier wind patterns, with wind flow often shaped by the undulating terrain. These variations are critical for transmission line design, particularly in determining tower stability, line sag, and conductor tension.

**Table 5.3 - Summary of major wind directions**

| Month | Direction | Wind speed |
|---|---|---|
| May | South/ south-west | 12–19 km/h (max. in June) |
| June | | |
| July | | |
| August | | |
| September | | |
| December | North/ north-east | 6–11 km/h |
| January | | |
| February | | |
| March | South/ south-east | 6–11 km/h |
| April | | |
| October | | |
| November | | |

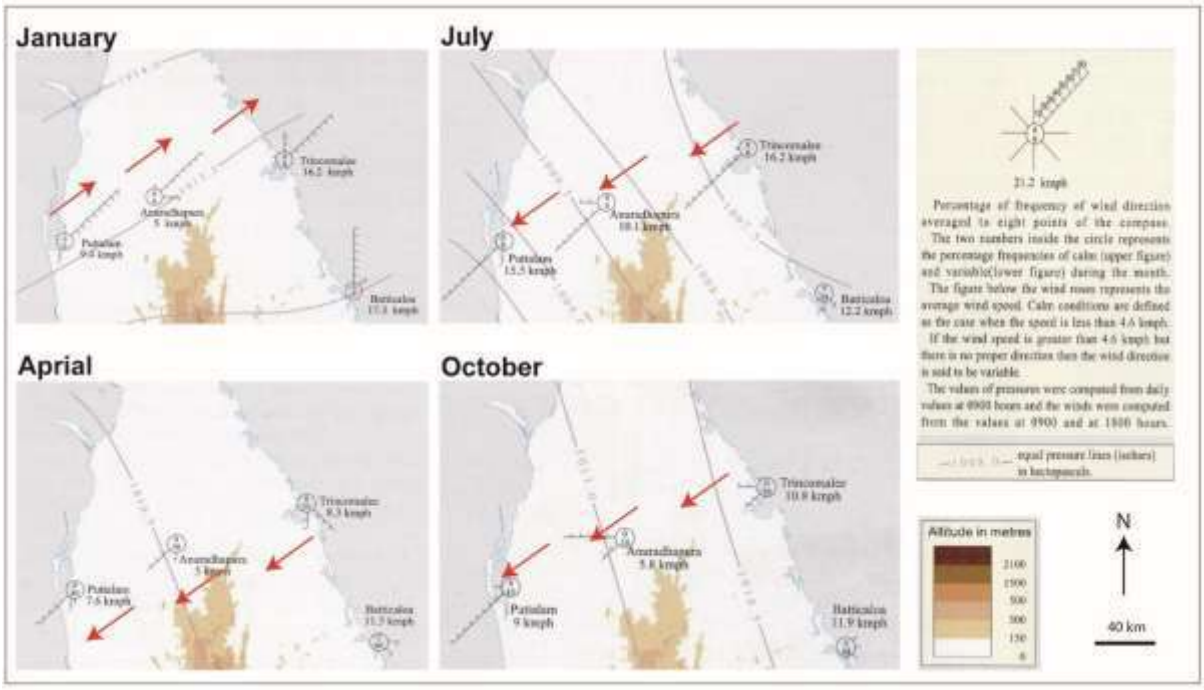


**Figure 5.10 - Wind directions around the proposed transmission line**

### 5.2.3.5 Lightning and Thunderstorm Activity

Trincomalee District experiences moderate lightning and thunderstorm activity. According to the study conducted by Sonnadara et al. (2019), the mean annual number of thunderstorm days in Trincomalee is approximately 69.8, while the mean annual lightning flash density is about 6.9 ±

1.2 flashes year$^{-1}$ km$^{-2}$. These values indicate that while lightning activity is not as intense as in the wet zone—where the average flash density is nearly double—it is still a significant climatic factor to consider. The spatial distributions of lightning activity during the two lightning seasons are presented in Figure 5.11.

Lightning activity in Trincomalee is strongly seasonal, with the highest frequency occurring during the inter-monsoon periods, particularly in April and October. In contrast, during the northeast monsoon (December–February), which characterizes the regional climate, lightning intensity tends to decrease, although isolated convective storms may still produce hazardous events. Although the overall flash density in the dry zone is lower, sporadic high-intensity thunderstorms, especially during transitional months, can pose risks to overhead infrastructure.

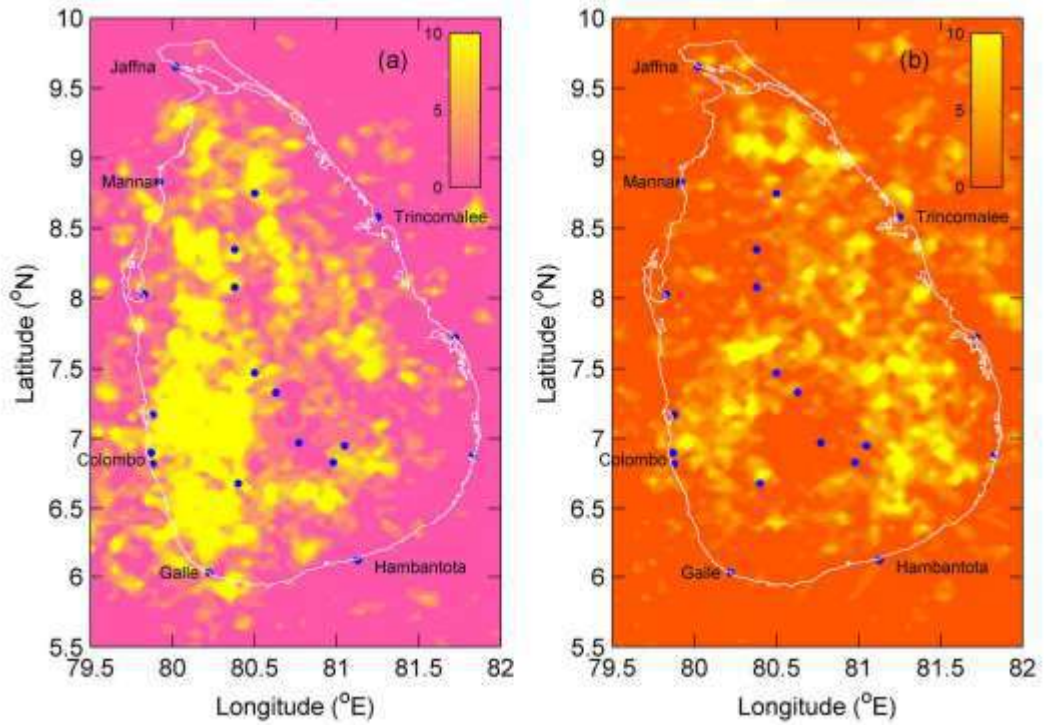


**Figure 5.11 - Spatial distributions of lightning activities during the two lightning seasons based on annual cycle. a) Season 1: February 25–May 15. b) Season 2: July 31–November 19**

(Source: Sonnadara, U., Jayawardena, W., & Fernando, M. (2019). Climatology of lightning flash activities over Sri Lanka. *Theoretical and Applied Climatology*, *137*(3), 3173-3182. https://doi.org/10.1007/s00704-019-02808-w)

### 5.2.4 Hydrology

#### 5.2.4.1 Surface Water Availability

The proposed transmission line intersects several significant surface water sources, including major rivers, and their tributaries. The area is rich in small tributaries, largely due to delta formation along the river channels. Meandering and braided river formations are prominent throughout the region, particularly around the proposed route. The region's flat topography results in slow-moving water, which has contributed to the accumulation of alluvial deposits around these

meandering and braided river formations. While the major rivers maintain consistent water flow throughout both dry and rainy seasons, the tributaries are only active during the rainy season.

Mahaweli Ganga, Valavachar Aru, Kaddaiparichchan Aru, Verical Aru, Uppu Aru, Palam Podda Aru, and Par Aru (Peru Aru) are the rivers intersecting the proposed transmission line route. Several tributaries of these rivers also flow through the surrounding area. The exact tower spans where the transmission line crosses each water body are summarized in Table 5.4. Several towers are located within short distances from key water bodies. Notably, AP 15 is 68 m from Mahaweli Ganga, 11/4 is 60 m from Uppu Aru, 15/7 is 45 m from Verical Aru, AP 3 is 36 m from Palam Podda Aru, 8/1 is 34 m from Par Aru, and 8/5 is 43 m from its tributary. Additional tower-to-waterbody distances are provided in Table 5.4. Each distance represents an approximate linear measurement taken from the center of the tower to the riverbank, based on estimations using Google Earth. Figures 5.12 to 5.22 present the approximate distances and spatial layout of each surface water crossing along the proposed transmission line.

Based on the current alignment and tower layout, no transmission towers are proposed to be installed within the river. Instead, towers are strategically located on stable ground away from the watercourses, allowing the conductors to span across the rivers and streams without any in-stream construction.

As per Land Development Ordinance No.19 of 1935 and Land Regulations No 9912 of 15.10.1948, stream reservation widths must be maintained based on stream width: 20 m for streams <4.6 m, 40 m for 4.6–15.2 m, and 60 m for >15.2 m wide streams. The CEA, in consultation with the Agrarian Services Department, approved the Sampur project under specific conditions (letter dated 01/06/2023). A 40 m buffer must be maintained from the High Flood Line of Sampukulam Tank, and 20 m buffers from Pulawankulam and Illuppankulam Tanks.

Several towers are sited within the required stream reservation zones, including AP3 (36 m from Palam Podda Aru), AP4 (53 m), 15/7 (45 m from Verical Aru), 8/1 (34 m from Par Aru), AP 11 (52 m from a tributary of Uppu Aru), and 16/3 (37 m from Valavachar Aru). The details of the stream reservations near the transmission line are presented in Table 6.1 in Chapter 6. For towers located within stream reservations (AP3, AP4, 15/7, 8/1, AP11, 16/3), it is recommended to reevaluate tower siting to ensure compliance with the Land Development Ordinance No. 19 of 193, Land Regulations No. 9912 dated 15.10.1948 and the buffer zone requirements stipulated by the CEA.

**Table 5.4 - Summary of water bodies intersected by the proposed transmission line**

| Name of water body | Transmission line segment crossing each water body (identified by tower numbers) | Shortest distance to the river bank (from the center of each tower) | The distance along the transmission line to the river bank (from the center of each tower) |
|---|---|---|---|
| Mahaweli Ganga | AP 14 and AP 15 | AP 14 – 88 m<br>AP 15 – 68 m | AP 14 – 88 m<br>AP 15 – 68 m |
| Verical Aru | 15/7 and 15/8 | 15/7 – 45 m<br>15/8 – 293 m | 15/7 – 45 m<br>15/8 – 293 m |

| Name of water body | Transmission line segment crossing each water body (identified by tower numbers) | Shortest distance to the river bank (from the center of each tower) | The distance along the transmission line to the river bank (from the center of each tower) |
|---|---|---|---|
| Uppu Aru | 11/4 and AP 12 | 11/4 – 60 m<br>AP 12 – 65 m | 11/4 – 60 m<br>AP 12 – 65 m |
| Tributary of Uppu Aru | AP 11 and 11/1 | AP 11 – 52 m<br>11/1 – 271 m | AP 11 – 64 m<br>11/1 – 271 m |
| Kaddaiparichchan Aru | 17/1 and 17/2 | 17/1 – 106 m<br>17/2 – 98 m | 17/1 – 230 m<br>17/2 – 138 m |
| Valavachar Aru | 15/9 and 16/3 | 15/9 – 78 m<br>15/10 – 230 m<br>AP 16 – 186 m<br>16/1 – 173 m<br>16/2 – 145 m<br>16/3 – 37 m | 15/9 – 150 m<br>15/10 – 230 m<br>AP 16 – 204 m<br>16/1 – 173 m<br>16/2 – 207 m<br>16/3 – 58 m |
| Palam Podda Aru | 2/2 and AP 3<br>AP 3 and AP 4 | 2/2 – 91 m<br>AP 3 – 36 m<br>AP 4 – 53 m | 2/2 – 91 m<br>AP 3 – 94 m<br>AP 4 – 117 m |
| Par Aru (Peru Aru) | AP 8 and 8/1 | AP 8 – 333 m<br>8/1 – 34 m | AP 8 – 359 m<br>8/1 – 34 m |
| Tributary of Par Aru | 8/5 and 8/6 | 8/5 – 43 m<br>8/6 – 333 m | 8/5 – 62 m<br>8/6 – 333 m |
| Pattiyanoottru kulam | 10/2 and 10/3 | 10/2 – 85 m<br>10/3 – 171 m | 10/2 – 96 m<br>10/3 – 197 m |

Several man-made tanks are located close to the proposed transmission line corridor, although many appear to be abandoned or underutilized. Pulavan Kulam, Sinna Nainda Kulam, Sampukkali Kulam, Mallumalai Kulam, and Nariyilanthan Kulam are situated between AP 20 and TT 2, while Amman Kulam and Pariarei Kulam are located between AP 2 and AP 4. Except for Pattiyanoottru Kulam, which is intersected at its outer edge by towers 10/3 and 10/4, none of these tanks are directly crossed by the transmission line. However, several tanks are situated within 500 m of the alignment, including Mallumalai Kulam (177 m from tower 21/2), Amman Kulam (426 m from tower 2/1), and Pattiyanoottru Kulam (118 m from tower 10/2), among others. A summary of these tanks, their nearest towers, and approximate distances is presented in Table 5.5. Although the tower foundations do not physically intersect these tanks, they remain ecologically and hydrologically important, especially due to their connection with local irrigation systems.

**Table 5.5 - Tanks situated in proximity to the transmission line alignment**

| Tank Name | Nearest Tower | Approximate Distance (m) |
|---|---|---|
| Amman Kulam | 2/1 | 426 |
| Pariarei Kulam | AP 3 | 759 |
| Sunglankuli Kulam | AP 10 | 1339 |
| Pattiyanoottru Kulam | 10/2 | 118 |
| Kayamundan Kulam | 17/2 | 1028 |

| Tank Name | Nearest Tower | Approximate Distance (m) |
|---|---|---|
| Nariyilanthan Kulam | AP 20 | 352 |
| Sinna Naindu Kulam | 22/1 | 480 |
| Mallumalai Kulam | 21/2 | 177 |
| Annaikal Kulam | AP 22 | 404 |
| Puliyan Kulam | TT2 | 1361 |
| Periya Naindu Kulam | TT2 | 1080 |
| Pulavan Kulam | TT2 | 959 |
| Sambu Kulam | TT2 | 1061 |
| Vempy Kulam | TT2 | 924 |
| Sampukkali Kulam | TT2 | 1439 |

**Figure 5.12 - Mahaweli Ganga crossing along the proposed transmission line**

**Figure 5.13 - Verical Aru crossing along the proposed transmission line**

**Figure 5.14 - Uppu Aru river crossing along the proposed transmission line**

**Figure 5.15 - Tributary of Uppu Aru crossing along the proposed transmission line**

**Figure 5.16 - Kaddaiparichchan Aru river crossing along the proposed transmission line**

**Figure 5.17 - Valavachar Aru river crossing along the proposed transmission line (map 1)**

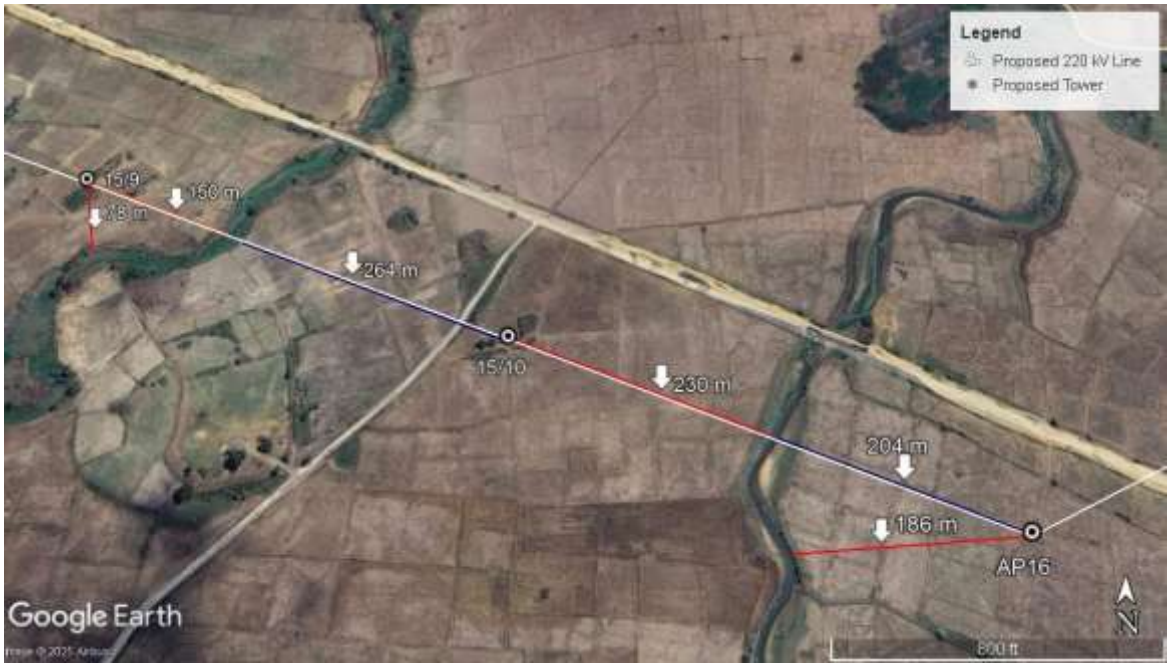


**Figure 5.18 - Valavachar Aru river crossing along the proposed transmission line (map 2)**

**Figure 5.19 - Palam Podda Aru river crossing along the proposed transmission line**

**Figure 5.20 - Par Aru crossing along the proposed transmission**

**Figure 5.21 - Tributary of Par Aru crossing along the proposed transmission Line**

**Figure 5.22 - Pattiyanoottru kulam tank crossing along the proposed transmission line**

#### 5.2.4.2 Groundwater Availability

The major groundwater-bearing formation along the proposed transmission line route is an unconfined alluvial aquifer, characterized by high permeability and shallow water tables. Shallow sandy aquifers are found near the berm and beach areas. Shallow regolith aquifers occur a few kilometers inland. These aquifers collectively support the region's groundwater supply, which, along with surface water sources, constitutes the main water resource in the area.

The groundwater recharge rate appears to be relatively high, largely due to the continuous freshwater flow from the Mahaweli River and other nearby water bodies. As a result, groundwater in the project area is typically shallow and unconfined, making it particularly susceptible to contamination from anthropogenic activities.

#### 5.2.4.3 Surface and Groundwater Quality

Surface and groundwater samples collected around the proposed transmission line and the 50 MW Solar Power Project at Sampur exhibit varying physicochemical characteristics. These parameters were reviewed in the context of Sri Lankan Ambient Water Quality Standards outlined in Gazette Extraordinary No. 2148/20 (2019), in alignment with the AIIB ESF's commitment to health and environmental protection. Surface water was compared under Category E (water suitable for irrigation), and groundwater under Category A (water requiring simple treatment for drinking purposes).

Surface water samples from locations such as Rakuli SW, Sampur SW, and Mahaweli SW generally exhibited pH values within the acceptable range (6.5–8.5). However, $W_2$ exceeds the upper limit, suggesting localized alkalinity issues. Temperature ranged from 27 °C to 32.7 °C, which is typical for ambient surface water bodies in tropical climates. Turbidity values ranged from 0 to 3 NTU; although there is no strict limit for irrigation, low turbidity generally indicates lower particulate load and better water quality. All surface water samples—except $W_1$, $W_2$, and

$W_3$, exceeded the recommended EC limit of 700 µS/cm for irrigation use, pointing to salinity intrusion or mineral enrichment. Chloride levels were particularly high at Valavachar SW (820 mg/L), exceeding the irrigation standard limit of 600 mg/L. DO levels were satisfactory in all available samples, with $W_2$ showing a high value of 10.2 mg/L, indicative of good aeration. These variations suggest localized water quality concerns, especially in low-lying or saline-prone areas, warranting continued monitoring. A summary of the surface water and groundwater quality is presented in Tables 5.6 and 5.7.

Sample $W_4$ recorded elevated EC (948 µS/cm) and total hardness (320 mg/L as $CaCO_3$), indicating mineral-rich water that may require softening. This elevated hardness is likely due to the dissolution of calcium and magnesium-bearing minerals—such as calcite and dolomite—from marble and alluvial deposits in the area, which are geologically consistent with the Highland Complex and Mahaweli-derived sediments. Iron levels in Mahaweli and Alluvial GW (0.04 and 0.24 mg/L) remained within the desirable limit (0.3 mg/L), and nitrate levels (e.g., 5 mg/L in Mahaweli GW) were well below the threshold of 10 mg/L. However, total alkalinity values in Mahaweli GW (1050 mg/L) and Alluvial GW (450 mg/L) were significantly elevated. While the groundwater is largely compliant with standards, the high mineral content necessitates appropriate treatment to meet potable water requirements.

The available baseline data, collected in 2023, provide a reasonably accurate picture of past surface and groundwater quality conditions. However, to obtain an accurate understanding of the current conditions, it is recommended to conduct surface and groundwater quality monitoring during the construction phase. The proposed water quality monitoring locations are shown in Figures 8.1 to 8.4.

**Table 5.6 - Summary of the surface water and groundwater quality around the proposed transmission line**

| Parameter | Rakuli SW | Sampur SW | Mahaweli SW | Valavachar SW | Mahaweli GW | Aluvial GW | Sampur GW |
|---|---|---|---|---|---|---|---|
| **Appearance** | Clear | Clear | Clear | Clear | Clear | Clear | Clear |
| **Temperature (°C)** | 27 | 27 | 27 | 27 | 28 | 28 | 26 |
| **Turbidity (NTU)** | 1.5 | 1.6 | 0 | 3 | 2 | 0 | 2 |
| **pH** | 7.4 | 7.5 | 7.9 | 6.8 | 7.1 | 7.3 | 7.4 |
| **TDS (mg/L)** | 12.3 | 10.1 | 1.1 | 104.2 | 12.3 | 10.4 | 1 |
| **EC (mS/cm)** | 18.4 | 2.82 | 1.58 | 155.5 | 12.53 | 3.15 | 1.64 |
| **Calcium $Ca^{2+}$ (mg/L)** | 64 | 64 | 45 | 221 | 48 | 328 | 69 |
| **Iron $Fe^{2+}$ (mg/L)** | 0.02 | 0.48 | ND | 3.76 | 0.04 | 0.24 | ND |
| **Lead $Pb^{2+}$ (mg/L)** | 0.03 | ND | 0.04 | ND | 0.01 | ND | 0.01 |
| **Magnesium $Mg^{2+}$ (mg/L)** | 121 | 100 | 30 | 34 | 41 | 266 | 41 |
| **Potassium $K^{+}$ (mg/L)** | 32 | 5 | 6 | 228 | 18 | 8 | 2 |
| **Sodium $Na^{+}$ (mg/L)** | 211 | 203 | 104 | 274 | 203 | 126 | 37 |

| Parameter | Rakuli SW | Sampur SW | Mahaweli SW | Valavachar SW | Mahaweli GW | Aluvial GW | Sampur GW |
|---|---|---|---|---|---|---|---|
| **Phosphate $PO_4^{3-}$ (mg/L)** | ND | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| **Nitrate $NO_3^-$ (mg/L)** | 1 | 5 | ND | ND | 5 | NA | ND |
| **Fluoride $F^-$ (mg/L)** | 1.5 | 0.9 | 0.5 | 0.7 | 0.8 | 0.5 | 0.6 |
| **Chloride $Cl^-$ (mg/L)** | 304 | 81 | 35 | 820 | 510 | 45 | 40 |
| **Sulfate $SO_4^{2-}$ (mg/L)** | 591 | 49 | 200 | 115 | 318 | 4365 | 167 |
| **Carbonate $CO_3^{2-}$ (mg/L)** | 0.18 | 0.19 | 0 | 1.25 | 0.1 | 0.07 | 0.93 |
| **Bicarbonate $HCO_3^-$ (mg/L)** | 74.81 | 798.49 | 349.06 | 249.93 | 1049.01 | 448.98 | 648.74 |
| **Total Alkalinity (mg/L)** | 75 | 800 | 350 | 250 | 1050 | 450 | 650 |

(Source: IEE report for Sampur to Kappalthurai 220kV Transmission Line)

**Table 5.7 - Summary of the surface water and groundwater quality around the proposed 50 MW Solar Power Project**

| Parameter | $W_1$ | $W_2$ | $W_3$ | $W_4$ |
|---|---|---|---|---|
| **Appearance** | Slightly turbid, Yellow color | Clear Pale yellow | Clear Colorless | Clear Colorless |
| **pH** | 6.7 | 9.2 | 8.0 | 7.4 |
| **Temperature (°C)** | 27.9 | 32.7 | 29.6 | 28.9 |
| **EC (µS/cm)** | 67 | 581 | 118 | 948 |
| **DO (mg/L)** | 6.1 | 10.2 | 6.7 | 3.9 |
| **Salinity (ppt)** | 0.03 | 0.28 | 0.05 | 0.46 |
| **TSS (mg/L)** | 23 | 3 | 7 | ND |
| **Total Hardness (as $CaCO_3$) (mg/L)** | 20 | 84 | 36 | 320 |
| **Total Alkalinity (as $CaCO_3$) (mg/L)** | 16 | 94 | 24 | 240 |
| **Turbidity (NTU)** | NR | | | 0.29 |
| **TDS (mg/L)** | | | | 444 |
| **Nitrate $NO_3^-$ (mg/L)** | | | | 0.4 |
| **Chloride $Cl^-$ (mg/L)** | | | | 18 |
| **Oil & Grease (mg/L)** | 0.4 | 0.2 | 0.2 | NM |

ND – Not detected NR – Not reported

(Source: IEE report for the proposed 50 MW Solar Power Project at Sampur)

### 5.2.5 Geology

The Trincomalee region is underlain by rocks of the Highland Complex, predominantly composed of high-grade metamorphic gneisses of both meta-sedimentary and meta-igneous origin. The area is structurally complex, featuring large-scale geological structures such as the Mahaweli shear

zone, which significantly influences regional lithology and geomorphology. These structural characteristics have contributed to the development of notable landforms, including the Trincomalee Submarine Canyon—an incised feature formed through a combination of tectonic deformation and long-term erosional processes.

#### 5.2.5.1 Geology Around Transmission Line Corridor

Along the proposed 220 kV transmission line corridor from Sampur CGS to Kappalthurai GS, the surface geology is predominantly covered by unconsolidated alluvial deposits, which limit the visibility of underlying bedrock. Despite this, subsurface investigations and regional geological mapping indicate the presence of various lithological units along the alignment, including charnockitic gneiss, undifferentiated charnockitic gneiss, garnet-sillimanite-biotite gneiss, quartzite, and marble. These formations are characteristic of the Highland Complex and reflect the region's intricate metamorphic and tectonic history. The geological distribution along the transmission line is illustrated in Figure 5.23.

**Alluvial deposits**

Alluvial deposits represent a major component of the surficial geology in the Trincomalee area. These deposits, derived from the weathering and erosion of surrounding Highland Complex metamorphic rocks, primarily consist of unconsolidated materials transported and deposited by rivers, lagoons, and coastal processes. They provide valuable insights into paleoenvironmental conditions, including sea level fluctuations and sedimentary dynamics, particularly in areas influenced by the Mahaweli River.

The composition of these deposits includes clay, silt, sand, and minor amounts of gravel, with particle sizes varying by depositional environment—from fine-grained clays and silts in floodplains to coarser sands and gravels in river channels. Mineralogically, the alluvial materials are rich in silica, with significant concentrations of alumina and iron oxides, indicative of the weathering of Highland Complex rocks. Clay-rich layers are dominated by aluminosilicate minerals, while sandier fractions are predominantly quartz. Trace elements such as chromium, nickel, and manganese suggest inputs from mafic and ultramafic lithologies.

The pH of these deposits typically ranges from 6 to 8. Organic matter content is generally low to moderate but can be elevated in waterlogged environments like lagoons and swamps, where reduced decomposition rates prevail. Along the proposed transmission line corridor, alluvial deposits are predominant between AP4 and AP16 (Figure 5.23).

**Charnokite Gneiss**

The distribution of charnockite formations is evident along the proposed transmission line at Tower points between AP16 to TT2 (Figure 5.23). These charnockites are closely tied to the tectonic evolution of Gondwana and offer significant insights into the processes of crustal formation and the thermal history of the region. In the Trincomalee area, these rocks are part of the Highland Complex, one of Sri Lanka's major Precambrian terrains, which is distinguished by granulite facies metamorphism. Charnockites here typically display interlocking crystals with granoblastic or gneissic textures. Their mineral composition includes orthopyroxene, quartz,

plagioclase feldspar, K-feldspar, garnet (occasionally), and biotite. Geochemically, these rocks are characterized by high silica content ($SiO_2$ ~55–75%), along with notable amounts of aluminum oxide ($Al_2O_3$) and iron oxide ($Fe_2O_3$).

Due to their strength and durability, charnockites are highly suitable for use as building materials and for decorative purposes. It is commonly used for heavy-duty construction, including bridges, towers, and high-load structures. Consequently, areas with charnockite genesis are ideal for the construction of Angle Towers along the transmission line.

**Undifferentiated Highland Series (Metasediments and Metaigneous Rocks)**

The Undifferentiated Highland Series in Trincomalee, forms part of the Highland Complex and comprises high-grade metamorphic rocks, including garnet-biotite gneisses, charnockites, and amphibolites. Along the proposed transmission line, particularly from TT1 to AP6, undifferentiated charnockites dominate the lithology. These rocks may lack clear differentiation due to limited surface outcrop exposure or pervasive weathering and alteration, making geological investigation challenging. In such cases, interpretation depends on observations from nearby basement formations and field evidence.

Undifferentiated charnockites typically appear as grey foliated gneisses containing feldspar, quartz, and biotite. Although exposed ridges of these rocks are generally resistant to erosion, their absence in other areas indicates extensive weathering of the basement rocks, resulting in a thick soil cover that conceals the underlying bedrock.

**Granitic Gneiss**

These rocks are dominant along the proposed transmission line between AP3 and AP4. Additionally, they occur in significant amounts in the Trincomalee area, where they were subjected to granulite facies metamorphism due to tectonic activity during the Precambrian era. The major mineral components of the granitic gneisses in this region include feldspar, quartz, and mafic minerals such as hornblende and biotite. The segregation of light-colored quartz and feldspar bands from darker mafic bands gives these rocks their distinctive foliated or banded texture.

The chemical composition of these rocks indicates a high silica content, ranging from approximately 60% to 75%, and they are rich in trace elements with specific isotopic characteristics. Due to their excellent strength and durability, granitic gneiss is widely used as a construction material. Its mechanical stability and resistance to weathering make it an ideal foundation material for infrastructure, including transmission line towers and other engineering structures.

**Quartz and Quartz Schist**

Quartzite commonly occurs along the proposed transmission line route, particularly between tower points 2/2 to AP3, AP15 to AP16, and 11/4 to AP12. In the Trincomalee region, quartz is frequently found as veins or deposits within metamorphic and igneous rocks. Quartz, composed of silicon dioxide ($SiO_2$), typically appears as transparent or white crystals but may also occur in

various colors due to the presence of impurities. Quartzite is a coarse-grained, unaltered, ridge-forming rock that contains less than 5% of minerals such as sillimanite, kaolinized feldspar, or biotite. Although geotechnically inferior to quartzo-feldspathic gneiss, quartzite is highly fractured and often serves as a valuable water-bearing formation. The presence of quartzite and quartz schist along the proposed transmission line generally suggests a stable geological foundation.

**Marble**

Marble is a metamorphic carbonate rock primarily composed of calcite. It is inherently prone to chemical weathering, particularly through the action of weak natural acids such as carbonic acid formed when rainwater interacts with atmospheric carbon dioxide. This reaction leads to the gradual dissolution of marble, resulting in the development of internal cavities and voids within the rock structure. One of the consequences of this process is land subsidence, which refers to the sinking of the ground surface due to the dissolution of underlying soluble rocks like marble. This can lead to structural instability and the formation of surface depressions, including sinkholes.

Within the proposed transmission line corridor, no direct field evidence of exposed marble formations has been observed. However, in areas dominated by alluvial deposits containing unconsolidated sediments, there remains the possibility of concealed marble or other soluble rocks below the surface.

**Economically important mineral deposits**

Economically important minerals are predominantly found around the proposed transmission line, particularly in the alluvial sands deposited by the country's largest river. These deposits are rich in heavy minerals such as limonite, garnet, ilmenite, sillimanite, and various gem minerals, which accumulate in the river's floodplains. However, no mineral sand mining activities are currently taking place in the vicinity of the proposed transmission line.

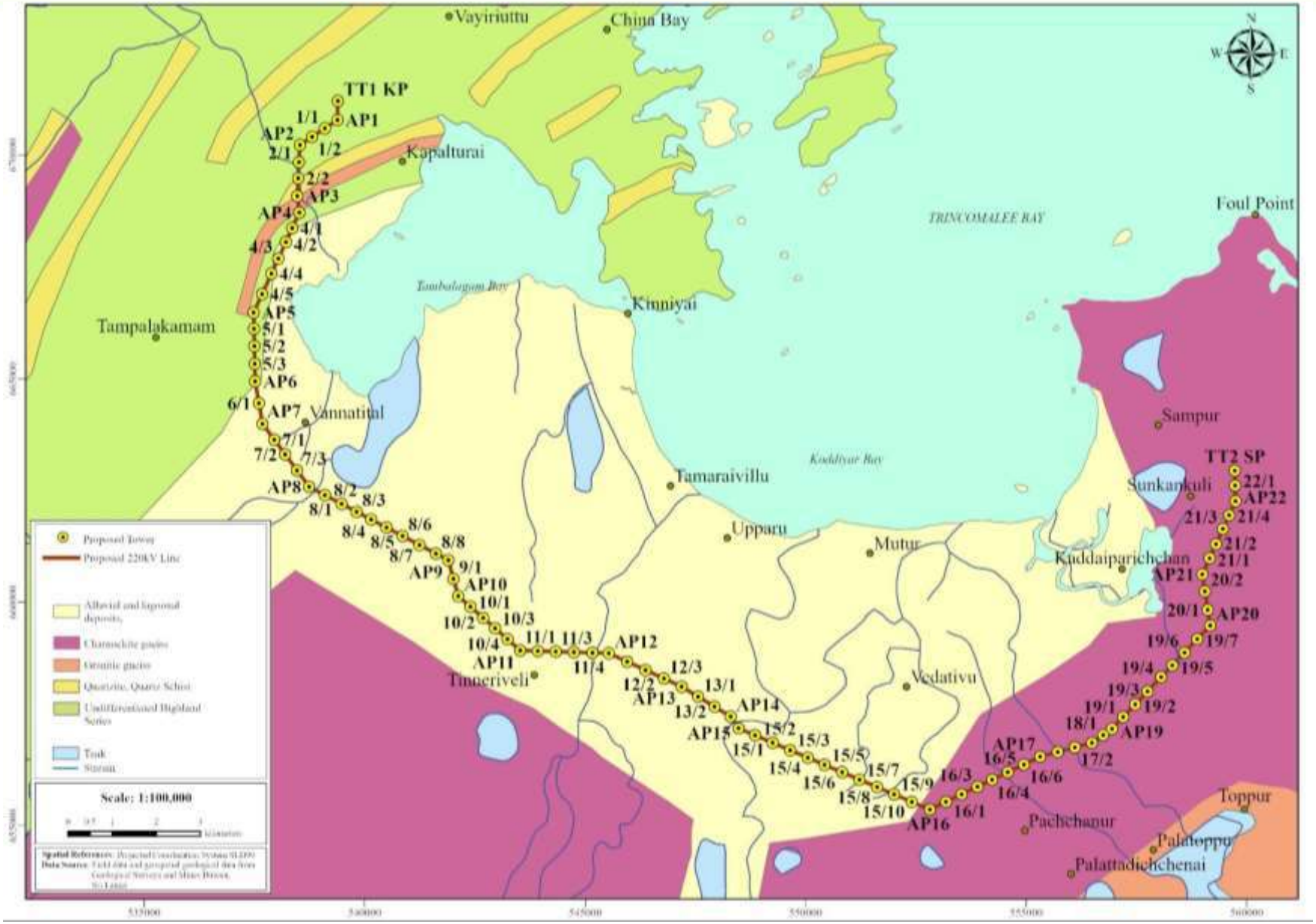


**Figure 5.23 - Geology along the transmission line corridor, Kappalthurai GS, Sampur CGS and associated solar park**
(Source: Prepared based on field data and geospatial geological data from Geological Surveys and Mines Bureau, Sri Lanka)

#### 5.2.5.2 Sampur CGS and associated solar park

The geological setting of the Sampur Grid Substation (GS) and the associated solar park consists of an upper layer of unconsolidated sands and coral deposits, underlain by Precambrian basement rocks of the Highland Series. These basement formations are predominantly composed of Charnockitic Gneiss, a high-grade metamorphic rock.

Exposures of hard rock outcrops are observed at several locations within the study area. The dominant structural orientation of the rock formations trends southwest to northeast with nearly vertical dips, consistent with the regional tectonic fabric. Although satellite imagery does not reveal prominent subsurface geo-structures such as joints or lineaments, the weathered and fractured zones within these hard rock formations are expected to serve as productive aquifers. These zones contribute to both shallow and deep groundwater storage, indicating moderate to high groundwater potential in the area.

### 5.2.6 Soil

#### 5.2.6.1 Transmission line corridor

The residual soils within the project-affected area are predominantly composed of reddish-brown earth and sandy regosols, which have developed through the weathering of meta-igneous and meta-sedimentary rocks. These soils are influenced by the tropical climate, geological history, and coastal morphology of the region. Within the proposed transmission line corridor, the soil profile differs from other parts of the country due to the dominance of alluvial deposits and relatively low levels of in-situ weathering.

The in-situ soils are primarily composed of montmorillonite-kaolinite clay minerals, exhibiting a Chemical Index of Alteration (CIA) below 60, indicative of moderate chemical weathering. These soils are typically immature, unconsolidated, and characterized by fine-grained sandy clay loams with low structural cohesion, particularly in non-agricultural areas. Due to the variability in parent materials and depositional processes, soil texture and composition vary along the corridor. The distribution of the soil type in the proposed transmission line area is given in Figure 5.24.

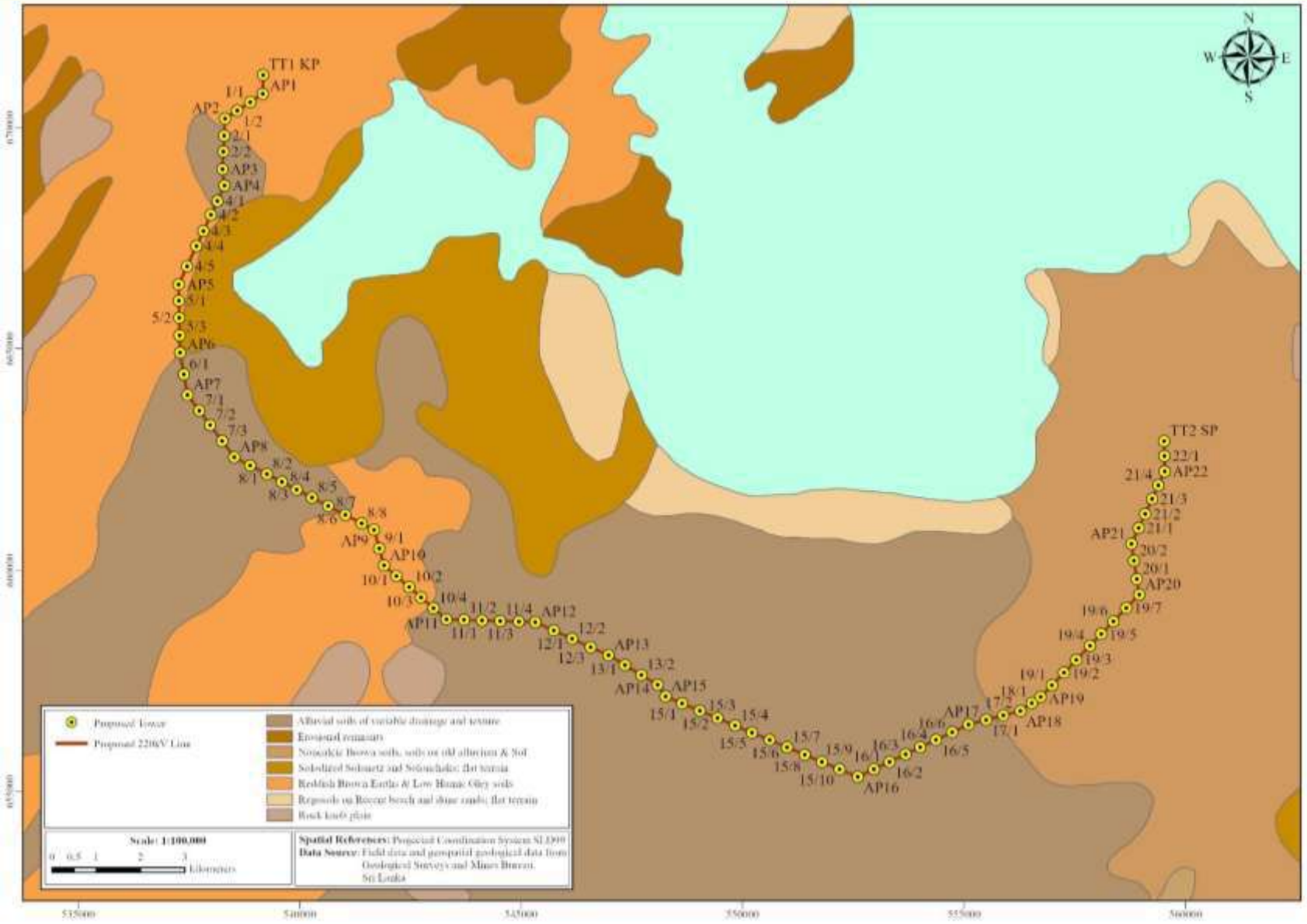


**Figure 5.24 - Distribution of soil along the transmission line corridor, Kappalthurai GS, Sampur CGS, and associated solar park**

(Source: Prepared based on field data and geospatial geological data from Geological Surveys and Mines Bureau, Sri Lanka)

**Alluvial soil of variable drainage and texture**

This is the predominant soil type along the proposed transmission line area (2/1 to 4/2, AP6 to 8/7, 10/4 to AP17), commonly found along riverbanks, floodplains, and coastal regions, covering approximately 21.2% of the region's soils. It forms through the deposition of sediments transported by rivers, streams, and coastal currents, settling on riverbeds and banks as water flow slows. These soils may contain heavy metals and exhibit varying mineral compositions depending on the geological characteristics of the area. The Mahaweli River plays a crucial role in transporting mineral-rich silt, sand, and clay from the highlands to low-lying areas, with monsoon rains intensifying this process through increased flow and erosion. Additionally, tidal movements in Trincomalee Bay further contribute to sediment accumulation, shaping the region's alluvial deposits.

The composition of alluvial soil typically includes a mix of sand, silt, and clay, with textures ranging from sandy loam to silty clay. It is rich in silica, quartz, and clay minerals, and contains essential nutrients such as potassium, phosphorus, nitrogen, lime, and magnesium—favorable for agriculture. High concentrations of iron and aluminum oxides are also present, along with trace levels of heavy metals introduced through riverine and oceanic transport. The soil's moderate organic matter content, particularly within the Mahaweli floodplains, contributes to its fertility, making it ideal for cultivating paddy, vegetables, fruits, and other crops.

In many locations, paleo-Mahaweli alluvial sands are also extracted for use in construction. Along the proposed transmission line, the alluvial soil is well-developed due to periodic flooding by the Mahaweli River. These deposits lie atop the underlying bedrock, with field observations indicating that soil layer thicknesses extend to several meters.

**Reddish Brown Earth and Low Humic Gley Soils**

Reddish-Brown Earth soils in the Trincomalee area exhibit distinct horizons formed through intense tropical weathering processes. The uppermost layer (O horizon) is composed of organic matter from decaying vegetation, which may degrade further under sunlight and burning, occasionally resulting in grey coloration. Beneath this, the A horizon typically consists of leached loamy or sandy loam topsoil, around 15 cm deep, still retaining essential nutrients such as phosphorus and potassium.

The subsoil or B horizon is marked by greater weathering and mineral leaching, with a characteristic red coloration due to iron oxides. Though less fertile than the topsoil, it is rich in aluminum and iron oxides and includes non-weathered quartz layers. Montmorillonite and kaolinite clays commonly occur due to feldspar weathering, often restricting root penetration. This horizon generally ranges from 60 cm to 90 cm. The C horizon below consists of weathered parent rock and varies in depth depending on local topography and drainage, but deep profiles are uncommon in the region.

Along the proposed transmission line, these soils are observed between TT1 to AP2 and from 8/7 to 10/4. Their stability for construction depends on moisture content and compaction. When dry, they harden and provide a firm foundation; however, in wet conditions, they become muddy and

lose load-bearing capacity. To ensure structural stability, appropriate soil compaction and drainage are essential. In high-moisture zones, reinforcement or stabilization may be necessary to prevent settling or foundation failure. Overall, Reddish-Brown Earth soils are suitable for most construction applications with proper management practices.

Low Humic Gley soils are found in floodplains, marshy areas, and zones with high water tables, particularly in poorly drained parts of Trincomalee. These soils have high organic matter content due to slow decomposition under saturated conditions and are typically grey or bluish due to iron reduction and gleying. They are clay-rich, with low permeability and poor drainage. While rich in nutrients and highly fertile for water-tolerant crops such as rice, they are generally unsuitable for construction due to low bearing capacity caused by persistent waterlogging. Engineering interventions, such as soil replacement or stabilization, may be required if construction is planned in such areas.

**Solodized solonetz**

Solodized Solonetz soils in the Trincomalee region form under conditions of salinity and alkalinity, typically in coastal or semi-arid areas where evaporation exceeds precipitation. This results in the accumulation of soluble salts in the soil. Salinity is further influenced by the proximity to the Mahaweli River and the coastal environment, especially in low-lying areas subject to tidal influence and sea spray. These soils are characterized by a highly alkaline, sodium-rich topsoil that often forms a hard, cemented layer (hardpan), impeding root penetration and water movement.

Solodized Solonetz soils are generally clayey in texture with high sodium content, which contributes to poor infiltration and drainage. The formation of a hardpan due to sodium salt accumulation significantly reduces the soil's structural stability and load-bearing capacity.

Along the proposed transmission line, this soil type is observed between 4/2 and AP6. Due to their high salinity, poor drainage, and structural limitations, Solodized Solonetz soils are unsuitable for infrastructure development without appropriate soil stabilization measures. These characteristics also make them less favorable for agriculture, as the hardpan layer restricts root growth and impedes water and nutrient uptake.

**Non-calcic brown soil**

Along the proposed transmission line corridor, non-calcic brown soil is dominant between AP17 and TT2. These soils typically exhibit a brown color due to the oxidation of iron minerals and generally form under climatic conditions characterized by distinct wet and dry seasons, with moderate rainfall and high temperatures. In drier regions, their color may range from grayish brown to dark brown. They are primarily derived from the weathering of parent materials such as basalt, gneiss, or granite, which are rich in iron and aluminum minerals. The long-term suitability of non-calcic brown soils in Trincomalee for construction activities depends on the implementation of appropriate engineering practices.

**Regosol on recent beach and dunes**

Regosols are immature soils lacking a well-developed structure and typically form in sandy and coastal areas. These soil types are observed at a distance from the proposed transmission line corridor. In the Trincomalee District, Regosols are commonly found on newly formed beaches and dunes, where they develop from loose sand accumulations. Regosols play a significant role in coastal stability, vegetation establishment, and land use planning.

#### 5.2.6.2 Sampur CGS and associated solar park

Based on field observation and available data Sampur CGS and associated solar park area dominated with non-calcic brown soil. The features of this soil type were described under 5.2.6.1.

#### 5.2.6.3 The Dynamic Cone Penetration Test (DCPT)

Dynamic Cone Penetration Test (DCPT) results were analyzed at key angle tower locations along the proposed transmission line corridor to assess subsurface soil conditions. The analysis indicates that areas exhibiting high blow counts correspond to dense soils with high bearing capacity, making them suitable for supporting transmission tower foundations. Conversely, zones with low blow counts are indicative of weak or loose soils with low bearing capacity, posing a risk of instability for tower construction. In such areas, appropriate ground improvement or soil stabilization measures must be implemented to ensure structural integrity and the long-term performance of the towers. Table 5.8 presents the correlation between DCPT blow counts, soil types, and their corresponding relative density and estimated bearing capacities. The detailed DCPT soil analysis reports for each angle tower location are included in Appendix 15.20.

**Table 5.8 - Soil DCPT Blow Count with Stability of Soil**

| DCPT Blow Count (per 300 mm) | Soil Description | Relative Density / Consistency | Estimated Allowable Bearing Capacity (kN/m²) |
|---|---|---|---|
| 0–3 | Very soft clay / Very loose sand | Very low | < 50 |
| 4–10 | Soft clay / Loose sand | Low | 50 – 75 |
| 11–20 | Medium clay / Medium-dense sand | Medium | 75 – 150 |
| 21–30 | Stiff clay / Dense sand | High | 150 – 250 |
| 31–40 | Very stiff clay / Very dense sand | Very High | 250 – 400 |
| >40 | Hard strata / Refusal | Extremely High | > 400 (site-specific analysis needed) |

### 5.2.7 Ambient Air Quality

The average ambient air quality in the Trincomalee District has, at times, exceeded safe levels, particularly with respect to $PM_{2.5}$ concentrations, as indicated by 2024 data from IQAir. Monthly averages ranged from 53.6 µg/m³ in February to 9.4 µg/m³ in October. In February, $PM_{2.5}$ concentrations exceeded the Sri Lankan 24-hour permissible limit of 50 µg/m³. Although local sources of air pollution in Trincomalee are minimal due to its rural and coastal characteristics, external factors such as transboundary air pollution from neighboring countries have contributed to elevated particulate matter levels, especially during the dry season. The average air quality data for 2024 is presented in Table 5.9.

No specific baseline air quality monitoring was conducted during the pre-construction phase of the proposed 220 kV transmission line project. Therefore, it is recommended to carry out air quality monitoring at selected tower locations. The proposed air quality monitoring locations are shown in Figure 8.5, 8.6, 8.7 and 8.8.

**Table 5.9 - Average air quality data for 2024**

| Month | Jan | Feb | March | April | May | June | July | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $PM_{2.5}$ concentration (µg/m³) | 35.2 | 53.6 | 41.9 | 17.5 | 12.7 | 13.7 | 10.3 | 10.6 | 12.8 | 9.4 | 16.8 | 39.8 |

(Source:iqair.com)

### 5.2.8 Noise Quality

According to the approved IEE report, baseline noise measurements were conducted at the proposed Sampur Solar Power Plant site. At this location, the nearest reported noise-sensitive receptors are Sivashakthi Vidyalaya and Santhosam Pre-School (located approximately 1.2 km from tower location 21/3). The recorded daytime noise levels ranged from 42 to 57 dB(A), primarily influenced by ambient sources such as birds, goats, and domestic activities. Nighttime noise levels ranged from 40 to 51 dB(A), mainly attributed to nocturnal insects. When compared with the maximum permissible noise levels for a low noise area (Pradeshiya Sabha area) as defined in the National Environmental (Noise Control) Regulations No. 1 of 1996, which specify 55 dB(A) for daytime (06:00 to 18:00) and 45 dB(A) for nighttime (18:00 to 06:00), a few measurements slightly exceeded the allowable limits, particularly during the late morning (for example, 10:00 to 11:00) and early night (for example, 18:00 to 19:00). Despite these minor exceedances, most values remained within the acceptable range. Currently, no on-site activities are contributing to noise emissions. The measured noise levels are presented in Table 5.10.

However, since the available measurements were collected from a location approximately 1.2 km away, it is recommended that noise monitoring be conducted at closer distances to the proposed transmission line to more accurately assess potential impacts on nearby receptors. The proposed noise quality monitoring locations are shown in Figure 8.5, 8.6, 8.7 and 8.8.
Several noise-sensitive receptors (NSRs) have been identified within 500 m of the transmission line corridor, including Seethanveli Garment Factory (309 m from tower 21/3), Peniel Prayer Church (265 m from AP 17), T/MU/Sacred Heart Vidyalayam - School (240 m from 16/5), Sacred

Heart Church - Irudayapuram (270 m from 16/4), Al-Madrasathul Noor Thakkiya – Mosque ( 357 m from 10/2), T/Kin/Al Ahla Vidyalayam - School (181 m from AP10), SMMSS Market (262 m from 9/1), Ayurveda Hospital, Soorangal (319 m from 8/7), RKM Saratha Vidyalayam - School (210 m from AP7).

**Table 5.10 - Baseline noise level at Sivashakthi Vidyalaya**

| Time Duration | Measured Residual Noise Level Leq (dB) | Background Noise Level L90 dB(A) | Contribution source |
|---|---|---|---|
| 05.00–06.00 | 43 | 41 | Birds, goats, domestic noise |
| 06.00–07.00 | 51 | 40 | |
| 07.00–08.00 | 52 | 42 | |
| 08.00–9.00 | 55 | 44 | |
| 09.00–10.00 | 51 | 45 | |
| 10.00–11.00 | 57 | 39 | |
| 11.00–12.00 | 48 | 48 | |
| 12.00–13.00 | 51 | 40 | |
| 13.00–14.00 | 51 | 39 | |
| 14.00–15.00 | 47 | 37 | |
| 15.00–16.00 | 42 | 37 | |
| 16.00–17.00 | 44 | 39 | |
| 17.00–18.00 | 55 | 41 | Insects noise |
| 18.00–19.00 | 51 | 38 | |
| 19.00–20.00 | 44 | 43 | |
| 20.00–21.00 | 44 | 43 | |
| 21.00–22.00 | 44 | 43 | |
| 22.00–23.00 | 42 | 40 | |
| 23.00–00.00 | 40 | 39 | |

### 5.2.9 Traffic Condition/ Density

The proposed transmission line corridor traverses predominantly rural and semi-rural areas of the Trincomalee District, where vehicular traffic is generally low. Most access roads along the alignment are local gravel or partially paved roads used primarily for agricultural, household, and light commercial transport. The major roads intersected by the proposed line include the Trincomalee–Batticaloa (A15) Road and the Tambalagamuwa–Kinniya (B541) Road. The A15 is intersected between tower locations 16/4 and 16/5 (Figure 5.1), while the B541 is intersected between 7/1 and 7/2 (Figure 5.2). Both roads experience moderate vehicular flow, typically consisting of light vehicles, motorcycles, three-wheelers, public transport, and goods carriers.

Additionally, the proposed alignment intersects the under-construction Trincomalee Outer Circular Road (Ring Road) at multiple points, including AP15–15/1, AP16–16/1, 16/5–16/6, and 8/3–8/4. Once completed, this road is expected to enhance intra-district connectivity and redirect traffic away from urban centers. The alignment also crosses the Mollipothana–Soorangai Road between 8/5 and 8/6. Other road crossings along the alignment include: 1/2–AP2, AP3–AP4, 6/1–AP7, 8/7–AP9, 11/1–11/2, 11/4–AP12, AP12–AP12/1, 15/7–15/8, 15/9–15/10, 16/1–16/2, 17/1–17/2, AP19–19/1, 19/3–19/4, 20/1–AP21, 21/3–21/4, and 22/1–TT2. Field reconnaissance

conducted along the transmission route confirmed the absence of any major traffic nodes or congestion-prone areas within the corridor.

## 5.3 Biological Environment

### 5.3.1 Existing Habitats and Flora and Fauna

#### 5.3.1.1 Existing Habitats

Biogeographically, the study area lies within the low country dry zone. Floristically, the study area is under the Dry and Arid Lowlands Floristic Zone and the Coastal and Marine Belt Floristic Zone. Tropical dry mixed evergreen forests, tropical thorn forests, Damana and Villu grasslands, flood-plain wetlands, and riverine and gallery forests are typical natural vegetation formations in the dry and arid lowlands floristic zone. Mangroves, salt marshes, seagrass and seaweed communities, dunes, and beach vegetation are typical natural vegetation formations in the coastal and marine belt floristic zone.

However, some of the above-listed typical natural vegetation formations, such as Damana and Villu grasslands, salt marshes, seagrass and seaweed communities, sand dunes, and beach vegetation, were not in the study area.

Tropical dry mixed evergreen forests, tropical thorn forests (scrublands), riverine and gallery forests, rivers, streams, floodplain wetlands, and mangroves are existing natural habitats in the study area.

Tropical dry mixed evergreen forests, tropical thorn forests, and riverine and gallery forests in the study area are highly disturbed due to human activities. For instance, dry mixed evergreen forests become thorn forests or scrublands due to disturbances, and riverine and gallery forests along the Mahaweli River are limited to a single three-layer due to disturbances.

Mangroves were observed in association with Thambalagamuwa Bay and Uppu Aru, and floodplain wetlands were observed behind the mangroves and beside the Mahaweli River. Human activities also impact the floodplain wetlands and mangroves in the area.

Agricultural lands (mainly paddy fields), home gardens, tanks, and canals are other existing habitats in the study area. Some of the observed existing habitats within the study area are presented in Plate 5.2.

| | |
|---|---|
| | |
| Tropical dry mixed evergreen forests (between AP1 and 1/2) | Tropical thorn forests (between AP20 and 20/1) |
| | |
| Mangroves (between 4/3 and 4/4) | Floodplain wetlands (between 4/3 and 4/4) |
| | |
| Tank (near AP2) | River (between AP3 and AP4) |
| | |
| Agricultural lands (paddy) and canals (between 21/2 and 21/3) | Home gardens (between 8/8 and AP9) |

**Plate 5.2 - Some Existing Habitats in the Study Area**

Sampling was conducted in the non-migratory (birds) and dry seasons. As sampling was conducted in the non-migratory (birds) season, only a few migratory bird species were observed (summer loiterers were observed). Many more migratory birds can be expected during the migratory season, as many favorable habitats exist (details are given in section 5.3.2). As sampling was conducted in the dry season, some few species of flora (seasonal herbaceous species) and fauna (land snails, amphibians, etc.) may have been missed. However, it did not affect the objectives of the assessment as the collected primary data, together with the available secondary data, were adequate to identify potential impacts and propose appropriate mitigation measures, as outlined in this ESIA.

#### 5.3.1.2 Observed Flora Species

A total number of 331 flora species, including eight (8) endemic species, 14 nationally threatened, and 19 nationally near threatened (NT) species, were observed during the field ecological study within the study area (Table 5.11). of the observed 14 nationally threatened species, one is nationally Critically Endangered Possibly Extinct [CR (PE)], six are nationally Endangered (EN), and seven (including two endemics) are nationally Vulnerable (VU) in terms of conservation status (National Red List 2020 of Sri Lanka).

**Table 5.11 - Summary of the Flora Species Observed During the Study**

| Type | Total Number | Endemic | Native | Exotic | Nationally Threatened and Near Threatened | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | CR (PE) | EN | VU | NT |
| Tree | 102 | 4 | 86 | 12 (Iv-1) | 0 | 2 | 3 (E-1) | 8 |
| Shrub | 37 | 2 | 31 | 4 (Iv-1) | 0 | 0 | 2 (E-1) | 2 |
| Herb | 132 | 0 | 101 | 31 (Iv-4) | 1 | 3 | 2 | 5 |
| Epiphyte | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Climbers or Creepers | 58 | 2 | 54 | 2 | 0 | 1 | 0 | 4 |
| **Total** | **331** | **8** | **274** | **49 (Iv-6)** | **1** | **6** | **7 (E-2)** | **19** |

**CR (PE)** – Critically Endangered Possibly Extinct, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **Iv** – Invasive Species, **E** – Number of Endemic Species

Of the observed eight (8) endemic flora species, two species, *Diospyros nummulariifolia*, and *Murraya glenieii*, are listed as nationally Vulnerable (VU) and found only in disturbed tropical dry mixed evergreen forests in the proposed transmission line route. *Diospyros nummulariifolia* is also listed as globally Endangered (EN) in terms of conservation status. All other observed endemic flora species are not nationally listed species, as they are common in dry zone habitats. However,

one species, *Glenniea unijuga* (Wal-mora / Kuma), is listed as globally Vulnerable (VU) in terms of conservation status and is also found in disturbed tropical dry mixed evergreen forests in the proposed transmission line route.

Of the observed other (non-endemic) flora species, one mangrove associate grass species, *Myriostachya wightiana*, found in the proposed transmission line route across the Oppu Aru is listed as Nationally Critically Endangered Possibly Extinct [CR(PE)] species (National Red List 2020 of Sri Lanka), as it was not collected/ observed from the country for more than 100 years. However, the author rediscovered it from the Valachchane estuary and Koddiar Bay in 2024/25. This location (Oppu Aru) is the third known location of this species in the country.

Of the observed other (non-endemic) flora species, six (6) flora species, *Salacia reticulata* (Kothala Himbutu), *Aponogeton natans* (Kekatiya / Koddi), *Pseudoconyza viscosa*, *Peplidium maritimum*, *Cynometra iripa* (Opulu / Attukaddupuli), *Xylocarpus granatum* (Mutti-kadol / Kandal anga), are nationally Endangered (EN) species, and five (5) flora species, *Erigeron sublyratus* (Nara-karamba), *Nymphaea nouchali* (Nil manel), *Coffea wightiana* (Kaddumallikai), *Chloroxylon swietenia* (Buruta / Muritai), *Diospyros ebenum* (Kaluwara / Karunkali) are nationally Vulnerable (VU) species. *Chloroxylon swietenia* (Buruta / Muritai) and *Diospyros ebenum* (Kaluwara / Karunkali) are also globally Vulnerable (VU) and Data Deficient (DD) species. In addition, 19 nationally Near Threatened (NT) flora species (all are non-endemic species) were also observed during the study.

One observed flora species in the mangroves associated with Thambalagamuwa Bay is somewhat similar to the nationally Critically Endangered (CR) mangrove species, *Ceriops decandra*. However, more details (fruits, etc.) are needed to establish the identity, and therefore, it is treated here only at the genus level (*Ceriops* sp.). *Ceriops decandra* is a restricted species to the mangroves of the eastern coast of the country, including Koddiyar Bay and Thambalagamuwa Bay.

The distribution of the observed endemic, nationally threatened, and Near Threatened (NT) flora species within the study area is summarized in Table 5.12. Some of the observed endemic, nationally threatened, and Near Threatened (NT) flora species are presented in Plate 5.3. The flora species observed in different habitats within the study area during the field ecological study are listed in Annex 15.4, along with the necessary information.

**ABBREVIATIONS**

**HA** – Habit, **T** – Tree, **S** – Shrub, **H** – Herbaceous, **C** – Climber or Creeper, **TS** – Taxonomic Status, **E** – Endemic Species, **N** – Native Species, **NCS** – National Conservation Status, **GCS** – Global Conservation Status, **CR (PE)** – Critically Endangered Possibly Extinct, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **DF** – Disturbed Dry Mixed Evergreen Forests, **SC** – Thorn Forests (Scrublands), **MG** – Mangroves, **WT** – Floodplain Wetlands, **RR** – Streams/Rivers and Associated Vegetation, **AG** – Agricultural lands, **HG** – Home Gardens, **CA** – Canals, **TA** – Tanks

**Table 5.12 - Distribution of the Observed Endemic, Nationally Threatened, and Near Threatened (NT) Flora Species Within the Study Area**

| Scientific Name | HA | TS | NCS | GCS | DF/SC | MG/WT | RR | AG/HG / CA/TA |
|---|---|---|---|---|---|---|---|---|
| *Murraya glenieii* | S | E | VU | | + | | | |

| Scientific Name | HA | TS | NCS | GCS | DF/SC | MG/WT | RR | AG/HG/CA/TA |
|---|---|---|---|---|---|---|---|---|
| *Diospyros nummulariifolia* | T | E | VU | EN | + | | | |
| *Jeffreycia zeylanica* | C | E | | | + | | + | |
| *Derris parviflora* | C | E | | | + | | + | |
| *Memecylon capitellatum* | S | E | | | + | | | |
| *Mallotus eriocarpus* | T | E | | | + | | | |
| *Glenniea unijuga* | T | E | | VU | + | | | |
| *Pityranthe verrucosa* | T | E | | | + | | + | |
| *Myriostachya wightiana* | H | N | CR(PE) | | | + | + | |
| *Salacia reticulata* | C | N | EN | | + | | | |
| *Aponogeton natans* | H | N | EN | | | | | + |
| *Pseudoconyza viscosa* | H | N | EN | | | + | | |
| *Peplidium maritimum* | H | N | EN | | | + | | |
| *Cynometra iripa* | T | N | EN | | | + | | |
| *Xylocarpus granatum* | T | N | EN | | | + | | |
| *Erigeron sublyratus* | H | N | VU | | | + | | |
| *Nymphaea nouchali* | H | N | VU | | | | | + |
| *Coffea wightiana* | S | N | VU | | + | | | |
| *Diospyros ebenum* | T | N | VU | DD | + | | | |
| *Chloroxylon swietenia* | T | N | VU | VU | + | | | + |
| *Calamus rotang* | C | N | NT | | | | | + |
| *Merremia emarginata* | C | N | NT | | | | | + |
| *Dioscorea oppositifolia* | C | N | NT | | + | | | |
| *Salacia chinensis* | C | N | NT | | + | | | + |
| *Dracaena zeylanica* | H | N | NT | | + | | | |
| *Hydrolea zeylanica* | H | N | NT | | | | | + |
| *Leonotis nepetifolia* | H | N | NT | | + | | | |
| *Paramollugo nudicaulis* | H | N | NT | | | | | + |
| *Ceratopteris thalictroides* | H | N | NT | | | + | | + |
| *Glycosmis angustifolia* | S | N | NT | | + | | | |
| *Scyphellandra virgata* | S | N | NT | | + | | | |
| *Avicennia officinalis* | T | N | NT | | | + | + | |
| *Lumnitzera racemosa* | T | N | NT | | | + | | |
| *Diospyros montana* | T | N | NT | | + | | | + |
| *Drypetes gardneri* | T | N | NT | | + | | | |
| *Alseodaphne semecarpifolia* | T | N | NT | | + | | | |
| *Ceriops tagal* | T | N | NT | | | + | | |
| *Manilkara hexandra* | T | N | NT | | + | | + | |
| *Vitex altissima* | T | N | NT | | + | | | |

| | |
|---|---|
| | |
| *Diospyros nummulariifolia* (endemic, nationally VU, globally EN) in disturbed forests (between AP1 and 1/2) | *Murraya glenieii* (endemic and nationally VU) in disturbed forests (between AP1 and 1/2) |
| | |
| *Salacia reticulata* (EN) in disturbed dry mixed evergreen forests (between AP1 and 1/2) | *Cynometra iripa* (EN) in Mangroves (between 4/3 and 4/4) |
| | |
| *Xylocarpus granatum* (EN) in Mangroves (between 4/3 and 4/4) | *Peplidium maritimum* (EN) in wetlands (between 4/3 and 4/4) |

| | |
|---|---|
| | |
| *Myriostachya wightiana* [CR(PE)] in Uppu Aru (between 11/4 and AP12) | |
| | |
| *Coffea wightiana (VU)* in thorn forests (scrublands) near 21/4) | *Scyphellandra virgata* (NT) in disturbed forests (between AP1 and 1/2) |
| | |
| *Ceratopteris thalictroides* (between AP3 and AP4) | |

**Plate 5.3 - Some Observed Endemic, Nationally Threatened, and Near Threatened Flora Species**

Except for a few trees [three nationally and globally vulnerable (VU) *Chloroxylon swietenia* (Buruta / Muritai) trees and one endemic tree, *Pityranthe verrucosa* (Dik wenna or Yakada Maram / Vid pani)], which are common in dry zone habitats, no ecologically important trees (Endemic or threatened) are among the identified trees for removal.

A few invasive alien flora species were also observed during the study. The distribution of the observed invasive alien flora species within the study area is listed in Table 5.13. Some observed nationally invasive flora species are included in Plate 5.4.

**ABBREVIATIONS**

**HA** – Habit, **T** – Tree, **S** – Shrub, **H** – Herbaceous, **DF** – Disturbed Dry Mixed Evergreen Forests, **SC** – Thorn Forests (Scrublands), **MG** – Mangroves, **WT** – Floodplain Wetlands, **RR** – Streams/Rivers and Associated Vegetation, **AG** – Agricultural lands, **HG** – Home Gardens, **CA** – Canals, **TA** – Tanks

**Table 5.13 - Distribution of Observed Nationally Invasive Alien Flora Species within the Study Area**

| Scientific Name | Sinhala Name | Tamil Name | HA | DF/SC | MG/WT | RR | AG/HG/CA/TA |
|---|---|---|---|---|---|---|---|
| *Salvinia molesta* | Salvinia | Salvinia | H | | + | | + |
| *Megathyrsus maximus (Panicum maximum)* | Rata Tana | - | H | | | + | + |
| *Eichhornia crassipes* | Japan Jabara | - | H | | + | + | + |
| *Typha angustifolia* | Hambu Pan | - | H | | + | + | + |
| *Lantana camara* | Gandapana | - | S | + | | + | + |
| *Leucaena leucocephala* | Ipil Ipil | Tagavai | T | | | + | |

*Eichhornia crassipes* and *Salvinia molesta* in the tank (between 10/2 and 10/3). *Aponogeton natans* (a nationally endangered species) is also there

*Typha angustifolia* in stream (*between AP 11 and 11/1*)

*Lantana camara* in disturbed forests (between AP1 and 1/2)

*Lantana camara* in thorn forests (scrublands) near 21/4

**Plate 5.4 - Some Observed Nationally Invasive Alien Flora Species within the Study Area**

Approximately 454 trees taller than 5 meters will need to be removed (Appendix 15.11). Most of the listed tree species were observed during the study. However, a few listed species were not observed [Black Siris (Albizia odoratissima), Charcoal Tree, royal poinciana/ flamboyant/ flame of the forest/ flame tree, Bata Damba/ Batapath Damba].

#### 5.3.1.3 Observed Fauna Species

A total number of 248 fauna species, including 18 endemic, 13 nationally threatened, and 12 nationally Near Threatened (NT) species, were observed during the field ecological study within the study area (Table 5.14).

**Table 5.14 - Summary of the Fauna Species Observed During the Study**

| Taxonomic Group | Total Number | Endemic | Native | Exotic / Feral | Nationally Threatened and Near Threatened | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | CR | EN | VU | NT |
| Birds | 116 | 7 | $99^{BrR}+9^{BrR\ \&\ M}+1^{M}$ | 0 | 0 | 1+1* | 2* | 6 |
| Butterflies | 55 | 1 | 54 | 0 | 0 | 0 | 1 | 2 |
| Dragonflies | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 1 |
| Mammals | 23 | 2 | 21 | 0 | 0 | 3 | 2 | 0 |
| Reptiles | 20 | 4 | 16 | 0 | 0 | 0 | 1 | 2 |
| Amphibians | 7 | 1 | 6 | 0 | 0 | 0 | 0 | 0 |
| Land Snails | 8 | 3 | 4 | 1 | 0 | 2 | 0 | 1 |
| **Total** | **248** | **18** | **230** | **1** | **0** | **7** | **6** | **12** |

**BrR** – Breeding Resident, **M** – Migratory, **CR** – Critically Endangered, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, * - Considered Only Breeding Resident Population of the Breeding Resident & Migratory Populations of these species during the 2021 national red list assessment

Of the observed bird species within the study area during the study, seven (7) species are endemics, 99 species are Breeding Residents, one species is migratory, and nine species are both Breeding Residents and migratory species.

Sri Lanka Swallow (*Cecropis hyperythra*), Sri Lanka Junglefowl (*Gallus lafayettii*), Sri Lanka Woodshrike (*Tephrodornis affinis*), Sri Lanka Browncapped Babbler (*Pellorneum fuscocapillus*), Sri Lanka Green-pigeon (*Treron pompadora*), Sri Lanka Barbet (*Psilopogon rubricapillus*), and Sri Lanka Shama (*Copsychus leggei*) are seven observed endemic bird species. None of the observed endemic bird species is listed as nationally or globally threatened or near-threatened species.

Of the observed bird species, two species, Streaked Weaver (*Ploceus manyar*) and Little Ringed Plover (*Charadrius dubius*), are nationally endangered (EN), and two species, Oriental Honey-buzzard (*Pernis ptilorhyncus*) and Little Tern (*Sternula albifrons*), are nationally Vulnerable (VU) in conservation status. Not all of these nationally threatened bird species are listed as globally threatened species. One observed nationally Near Threatened (NT) bird species, Grey-headed

Fish-eagle (*Haliaeetus ichthyaetus*), is also globally Near Threatened (NT) in conservation status. In addition, there are five nationally Near Threatened (NT) bird species and seven globally Near Threatened (NT) bird species also among the observed bird species during the study.

Only one pure migratory bird species, Whiskered Tern (*Chlidonias hybrida*), was observed during the study, as the survey was conducted during the non-migratory season. In addition, there are nine Breeding Residents and migratory bird species among the observed birds. The observed endemic, migratory, nationally or globally threatened, and Near Threatened bird species, as well as migratory birds with breeding resident populations, are listed in the table below (Table 5.15).

**ABBREVIATIONS**

**BrR** – Breeding Resident, **M** – Migratory, **END** – Endemic, **NCS** – National Conservation Status, **GCS** – Global Conservation Status, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **NE** – Not Evaluated

**Table 5.15 - The List of Observed Endemic, Migratory, Nationally or Globally Threatened and Near Threatened Bird Species, and Migratory Birds with Breeding Resident Populations**

| Scientific Name | Common Name | Status | NCS | GCS |
|---|---|---|---|---|
| *Ploceus manyar* | Streaked Weaver | BrR | EN | |
| *Haliaeetus ichthyaetus* | Grey-headed Fish-eagle | BrR | NT | NT |
| *Streptopelia decaocto* | Eurasian Collared-dove | BrR | NT | |
| *Euodice malabarica* | Indian Silverbil | BrR | NT | |
| *Lonchura malacca* | Tricoloured Munia | BrR | NT | |
| *Passer domesticus* | House Sparrow | BrR | NT | |
| *Artamus fuscus* | Ashy Woodswallow | BrR | NT | |
| *Anhinga melanogaster* | Oriental Darter | BrR | | NT |
| *Anthracoceros coronatus* | Malabar Pied Hornbill | BrR | | NT |
| *Esacus recurvirostris* | Great Thick-knee | BrR | | NT |
| *Ciconia episcopus* | Woolly-necked Stork | BrR | | NT |
| *Ducula aenea* | Green Imperial-pigeon | BrR | | NT |
| *Pelecanus philippensis* | Spot-billed Pelican | BrR | | NT |
| *Threskiornis melanocephalus* | Black-headed Ibis | BrR | | NT |
| *Chlidonias hybrida* | Whiskered Tern | M | NE | |
| *Charadrius dubius* | Little Ringed Plover | BrR & M | EN | |
| *Pernis ptilorhyncus* | Oriental Honey-buzzard | BrR & M | VU | |
| *Sternula albifrons* | Little Tern | BrR & M | VU | |
| *Bubulcus ibis* | Cattle Egret | BrR & M | | |
| *Ixobrychus flavicollis* | Black Bittern | BrR & M | | |
| *Dicrurus macrocercus* | Black Drongo | BrR & M | | |
| *Terpsiphone paradisi* | Asian Paradise- flycatcher | BrR & M | | |
| *Himantopus himantopus* | Black-winged Stilt | BrR & M | | |
| *Plegadis falcinellus* | Glossy Ibis | BrR & M | DD | |
| *Treron pompadora* | Sri Lanka Green- pigeon | END | | |
| *Cecropis hyperythra* | Sri Lanka Swallow | END | | |

| Scientific Name | Common Name | Status | NCS | GCS |
|---|---|---|---|---|
| *Psilopogon rubricapillus* | Sri Lanka Barbet | END | | |
| *Pellorneum fuscocapillus* | Sri Lanka Browncapped Babbler | END | | |
| *Gallus lafayettii* | Sri Lanka Junglefowl | END | | |
| *Tephrodornis affinis* | Sri Lanka Woodshrike | END | | |
| *Copsychus leggei* | Sri Lanka Shama | END | | |

The observed endemic, nationally or globally threatened, and Near Threatened fauna species, other than birds, are listed in the table below (Table 5.16).

**ABBREVIATIONS**

**END** – Endemic, IND – Native, **NCS** – National Conservation Status, **GCS** – Global Conservation Status, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened

**Table 5.16 - The List of Observed Endemic, Nationally or Globally Threatened, and Near Threatened Other Fauna Species**

| Scientific Name | Common Name | Status | NCS | GCS |
|---|---|---|---|---|
| **BUTTERFLIES** | | | | |
| *Appias galane* | Lesser albatross | END | | |
| *Papilio crino* | Banded peacock | IND | VU | |
| *Charaxes solon* | Black rajah | IND | NT | |
| *Tirumala septentrionis* | Dark blue tiger | IND | NT | |
| **DRAGONFLIES** | | | | |
| *Lathrecista asiatica* | Pruinosed Bloodtail | IND | NT | |
| **MAMMALS** | | | | |
| *Macaca sinica* | Sri Lanka toque monkey | END | | EN |
| *Moschiola meminna* | Sri Lanka mouse-deer | END | | |
| *Elephas maximus* | Elephant | IND | EN | EN |
| *Prionailurus rubiginosus* | Rusty-spotted cat | IND | EN | NT |
| *Prionailurus viverrinus* | Fishing cat | IND | EN | VU |
| *Lutra lutra* | Otter | IND | VU | NT |
| *Pipistrellus coromandra* | Indian pipistrel | IND | VU | |
| *Ratufa macroura* | Giant squirrel | IND | | NT |
| *Semnopithecus priam* | Grey langur | IND | | NT |
| **REPTILES** | | | | |
| *Sitana devakai* | Devaka's Fanthroat lizard | END | VU | VU |
| *Eutropis tammanna* | Tammanna skink | END | | |
| *Lissemys ceylonensis* | Flapshell turtle | END | | VU |
| *Naja polyocellata* | Sri Lanka Cobra | END | | |
| *Crocodylus palustris* | Mugger / Marsh Crocodile | IND | NT | VU |
| *Geochelone elegans* | Indian star tortoise | IND | NT | VU |
| *Python molurus* | Indian python | IND | | NT |
| *Varanus bengalensis* | Land monitor | IND | | NT |
| **AMPHIBIANS** | | | | |

| Scientific Name | Common Name | Status | NCS | GCS |
|---|---|---|---|---|
| *Uperodon rohani* | *White-bellied or Rohan's pugsnout frog* | END | | |
| **LAND SNAILS** | | | | |
| *Euplecta colletti* | | END | EN | |
| *Euplecta spp.* | | END | | |
| *Cyclophorus involvulus* | | IND | EN | |
| *Pterocyclus cumingi* | | IND | NT | |
| *Theobaldius spp.* | | END | | |

Some observed fauna species are included in Plate 5.5. The fauna species observed during the field study are listed in Annex 15.4-2, along with the necessary information.

*Euplecta colletti* - Endemic and EN

*Sitana devakai* – Endemic and VU

*Charaxes solon* (Black rajah) - NT

Glossy Ibis

*Hemidactylus leschenaultii*

*Crocodylus palustris* – Nationally NT, Globally VU

**Plate 5.5 - Some Observed Fauna Species within the Study Area**

(**EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened)

### 5.3.2 Migratory Birds and Other Migratory Fauna Species

Only one pure migratory bird species, Whiskered Tern (*Chlidonias hybrida*), was observed during the study, as the survey was conducted during the non-migratory season. In addition, nine Breeding Residents and migratory bird species were also observed during the study. The study area has numerous favorable habitats for migratory bird species. Therefore, more migratory bird species can be expected during the migratory season. The migratory bird species that were observed in the recent past in the area are listed in Table 5.17.

**ABBREVIATIONS**

**NCS** – National Conservation Status, **GCS** – Global Conservation Status, **CR** – Critically Endangered, **EN** – Endangered, **NT** – Near Threatened, **NE** – Not Evaluated, * - Considered Only Breeding Resident Population of the Breeding Resident & Migratory Populations of these species during the 2021 national red list assessment

**Table 5.17 - The List of Observed Migratory Bird Species in the Recent Past in the Area**

| Family | Scientific Name | Common Name | NCS | GCS |
|---|---|---|---|---|
| **Migratory Birds** | | | | |
| Accipitridae | *Circus aeruginosus* | Eurasian Marsh-Harrier | NE | |
| Acrocephalidae | *Acrocephalus dumetorum* | Blyth's Reed-warbler | NE | |
| Anatidae | *Anas acuta* | Northern Pintail | NE | |
| Anatidae | *Spatula querquedula* | Garganey | NE | |
| Charadriidae | *Charadrius atrifrons* | Tibetan Sandplover | NE | |
| Charadriidae | *Charadrius hiaticula* | Common Ringed Plover | NE | |
| Charadriidae | *Charadrius leschenaultii* | Greater Sand Plover | NE | |
| Charadriidae | *Pluvialis fulva* | Pacific Golden Plover | NE | |
| Charadriidae | *Pluvialis squatarola* | Grey Plover | NE | |
| Cuculidae | *Cacomantis passerinus* | Grey-bellied Cuckoo | NE | |
| Hirundinidae | *Hirundo rustica* | Barn Swallow | NE | |
| Laniidae | *Lanius cristatus* | Brown Shrike | NE | |
| Laridae | *Thalasseus bengalensis* | Lesser Crested Tern | NE | |
| Motacillidae | *Anthus richardi* | Richard's Pipit | NE | |
| Muscicapidae | *Muscicapa dauurica* | Asian Brown Flycatcher | NE | |
| Phylloscopidae | *Phylloscopus nitidus* | Green warbler | NE | |
| Pittidae | *Pitta brachyura* | Indian Pitta | NE | |
| Scolopacidae | *Actitis hypoleucos* | Common Sandpiper | NE | |
| Scolopacidae | *Arenaria interpres* | Ruddy Turnstone | NE | |
| Scolopacidae | *Calidris minuta* | Little Stint | NE | |
| Scolopacidae | *Gallinago stenura* | Pintail Snipe | NE | |
| Scolopacidae | *Limosa limosa* | Black-tailed Godwit | NE | NT |
| Scolopacidae | *Numenius arquata* | Eurasian Curlew | NE | NT |
| Scolopacidae | *Numenius phaeopus* | Whimbrel | NE | |
| Scolopacidae | *Tringa glareola* | Wood Sandpiper | NE | |

| Family | Scientific Name | Common Name | NCS | GCS |
|---|---|---|---|---|
| Scolopacidae | *Tringa nebularia* | Common Greenshank | NE | |
| Scolopacidae | *Tringa ochropus* | Green Sandpiper | NE | |
| Scolopacidae | *Tringa stagnatilis* | Marsh Sandpiper | NE | |
| Scolopacidae | *Tringa totanus* | Common Redshank | NE | |
| Scolopacidae | *Xenus cinereus* | Terek Sandpiper | NE | |
| Sturnidae | *Pastor roseus* | Rosy Starling | NE | |
| Sturnidae | *Sturnus pagodarum* | Brahminy Starling | NE | |
| **Breeding Resident and Migratory** | | | | |
| Laridae | *Gelochelidon nilotica* | Gull-billed Tern | CR* | |
| Laridae | *Hydroprogne caspia* | Caspian Tern | CR* | |
| Laridae | *Sterna hirundo* | Common Tern | CR* | |
| Laridae | *Thalasseus bergii* | Great Crested Tern | EN* | |
| Meropidae | *Merops philippinus* | Blue-tailed Bee-eater | CR* | |

In addition to migratory bird species, elephants roam the study area to obtain food and water.

## 5.4 Critical Habitat Assessment (CHA)

### 5.4.1 Screening of Primary Species Data Using IFC Criteria

Primary species data collected through field surveys in the project area by the author in June 2025 were screened using the criteria in the IFC's Guidance Note 6 (updated June 27, 2019) for critical habitat determination, and the obtained species supported the identification of critical habitats in the Area of Analysis.

All nationally or globally Critically Endangered Possibly Extinct [CR(PE)] and Endangered (EN) flora species, *Myriostachya wightiana*, *Salacia reticulata*, *Aponogeton natans*, *Pseudoconyza viscosa*, *Peplidium maritimum*, *Cynometra iripa*, *Xylocarpus granatum*, and *Diospyros nummulariifolia*, observed during the ecological assessment, can be considered to determine critical habitats according to criterion 1c (As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species). However, except for *Myriostachya wightiana*, the density or concentration of other species is very low in AOA. Therefore, none of the observed nationally Endangered (EN) flora species were selected to determine critical habitats under criterion 1c. Only *Myriostachya wightiana* can be chosen to determine critical habitats under criterion 1c.

Of the remaining seven endemic flora species (*Murraya glenieii*, *Jeffreycia zeylanica*, *Derris parviflora*, *Memecylon capitellatum*, *Mallotus eriocarpus*, *Glenniea unijuga*, *Pityranthe verrucosa*) and nationally or globally Vulnerable (VU) flora species (*Erigeron sublyratus*, *Nymphaea nouchali*, *Coffea wightiana*, *Diospyros ebenum*, *Chloroxylon swietenia*) observed during the ecological assessment, none can be selected to determine critical habitats under criteria 1b [Areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of

the IUCN Red List status to EN or CR and meet the thresholds in (a)] and criteria 2 (Endemic or Restricted Range Species) as these species do not meet the criteria's thresholds [1b and 2a (Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species)].

Accordingly, only one flora species, *Myriostachya wightiana* was chosen to determine critical habitats in the Area of Analysis from primary data.

**ABBREVIATIONS**

**E** – Endemic, **N** – Native, **NS** – National Conservation Status, **GS** – Global Conservation Status, **CR(PE)** – Critically Endangered Possibly Extinct, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient

**Table 5.18 - Screening of Primary Data (Flora) Using IFC Criteria**

| Scientific Name | Status | NS | GS | 1a | 1b | 1c | 2a |
|---|---|---|---|---|---|---|---|
| *Murraya glenieii* | E | VU | | | No | | No |
| *Diospyros nummulariifolia* | E | VU | EN | No | No | No | No |
| *Jeffreycia zeylanica* | E | | | | | | No |
| *Derris parviflora* | E | | | | | | No |
| *Memecylon capitellatum* | E | | | | | | No |
| *Mallotus eriocarpus* | E | | | | | | No |
| *Glenniea unijuga* | E | | VU | | No | | No |
| *Pityranthe verrucosa* | E | | | | | | No |
| *Myriostachya wightiana* | N | CR(PE) | | No | | Yes | |
| *Salacia reticulata* | N | EN | | No | | No | |
| *Aponogeton natans* | N | EN | | No | | No | |
| *Pseudoconyza viscosa* | N | EN | | No | | No | |
| *Peplidium maritimum* | N | EN | | No | | No | |
| *Cynometra iripa* | N | EN | | No | | No | |
| *Xylocarpus granatum* | N | EN | | No | | No | |
| *Erigeron sublyratus* | N | VU | | | No | | |
| *Nymphaea nouchali* | N | VU | | | No | | |
| *Coffea wightiana* | N | VU | | | No | | |
| *Diospyros ebenum* | N | VU | DD | | No | | |
| *Chloroxylon swietenia* | N | VU | VU | | No | | |

Similarly, one fauna species, *Elephas maximus* (Asian Elephant), was chosen to determine critical habitats in the Area of Analysis from primary data. The details of the fauna screening are given below.

**ABBREVIATIONS**

**BrR** – Breeding Resident, **M** – Migratory, **E** – Endemic, **N** – Native, **NS** – National Conservation Status, **GS** – Global Conservation Status, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **NE** – Not Evaluated

**Table 5.19 - Screening of Primary Data (Fauna) Using IFC Criteria**

| Scientific Name | Common Name | Status | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| **BIRDS** | | | | | | | | | | |
| *Ploceus manyar* | Streaked Weaver | BrR | EN | | No | | No | | | |
| *Charadrius dubius* | Little Ringed Plover | BrR & M | EN | | No | | No | | No | No |
| *Pernis ptilorhyncus* | Oriental Honey-buzzard | BrR & M | VU | | | No | | | No | No |
| *Sternula albifrons* | Little Tern | BrR & M | VU | | | No | | | No | No |
| *Bubulcus ibis* | Cattle Egret | BrR & M | | | | | | | No | No |
| *Ixobrychus flavicollis* | Black Bittern | BrR & M | | | | | | | No | No |
| *Dicrurus macrocercus* | Black Drongo | BrR & M | | | | | | | No | No |
| *Terpsiphone paradisi* | Asian Paradise-flycatcher | BrR & M | | | | | | | No | No |
| *Himantopus himantopus* | Black-winged Stilt | BrR & M | | | | | | | No | No |
| *Plegadis falcinellus* | Glossy Ibis | BrR & M | DD | | | | | | No | No |
| *Chlidonias hybrida* | Whiskered Tern | M | NE | | | | | | No | No |
| *Treron pompadora* | Sri Lanka Green- pigeon | E | | | | | | No | | |
| *Cecropis hyperythra* | Sri Lanka Swallow | E | | | | | | No | | |
| *Psilopogon rubricapillus* | Sri Lanka Barbet | E | | | | | | No | | |
| *Pellorneum fuscocapillus* | Sri Lanka Browncapped Babbler | E | | | | | | No | | |
| *Gallus lafayettii* | Sri Lanka Junglefowl | E | | | | | | No | | |
| *Tephrodornis affinis* | Sri Lanka Woodshrike | E | | | | | | No | | |
| *Copsychus leggei* | Sri Lanka Shama | E | | | | | | No | | |
| **BUTTERFLIES** | | | | | | | | | | |

| Scientific Name | Common Name | Status | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| *Appias galane* | Lesser albatross | E | | | | | | No | | |
| *Papilio crino* | Banded peacock | N | VU | | | No | | | | |
| **MAMMALS** | | | | | | | | | | |
| *Macaca sinica* | Sri Lanka toque monkey | E | | EN | No | | No | No | | |
| *Moschiola meminna* | Sri Lanka mouse-deer | E | | | | | | No | | |
| *Elephas maximus* | Elephant | N | EN | EN | No | | Yes | | | |
| *Prionailurus rubiginosus* | Rusty-spotted cat | N | EN | NT | No | | No | | | |
| *Prionailurus viverrinus* | Fishing cat | N | EN | VU | No | No | No | | | |
| *Lutra lutra* | Otter | N | VU | NT | | No | | | | |
| *Pipistrellus coromandra* | Indian pipistrel | N | VU | | | No | | | | |
| **REPTILES** | | | | | | | | | | |
| *Sitana devakai* | Devaka's Fanthroat lizard | E | VU | VU | | No | | No | | |
| *Eutropis tammanna* | Tammanna skink | E | | | | | | No | | |
| *Lissemys ceylonensis* | Flapshell turtle | E | | VU | | No | | No | | |
| *Naja polyocellata* | Sri Lanka Cobra | E | | | | | | No | | |
| *Crocodylus palustris* | Mugger / Marsh Crocodile | N | NT | VU | | No | | | | |
| *Geochelone elegans* | Indian star tortoise | N | NT | VU | | No | | | | |
| **AMPHIBIANS** | | | | | | | | | | |
| *Uperodon rohani* | Rohan's Pugsnout frog | E | | | | | | No | | |
| **LAND SNAILS** | | | | | | | | | | |
| *Euplecta colletti* | | E | EN | | No | | No | No | | |
| *Euplecta spp.* | | E | | | | | | No | | |
| *Cyclophorus involvulus* | | N | EN | | No | | No | | | |

| Scientific Name | Common Name | Status | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| *Theobaldius spp.* | | E | | | | | | No | | |

### 5.4.2 Screening of Secondary Species Data Using IFC Criteria

**IBAT Species Data**

Before screening secondary data generated through IBAT using criteria in the IFC's Guidance Note 6 (updated June 27, 2019) for critical habitat determination, it is necessary to verify the availability of those species in the Area of Analysis (AoA).

Sri Lanka is a small country, and habitat heterogeneity is one of the governing factors of its species richness. Both climatic and geographical factors influence habitat heterogeneity. Therefore, the existence and composition of species sometimes vary within a short distance.

IBAT data were generated within a 50 km radius of the project location, and therefore, species inhabiting other areas were also included in the list. These species may not be found in the area of analysis, so it is necessary to verify their presence. This verification was carried out using available literature and expert knowledge. Accordingly, the following species were verified as being present in the Area of Analysis (Table 5.20) and were screened using IFC criteria (Table 5.21). The details of the verification of IBAT-generated species data are included in Annex 15.4-3.

**ABBREVIATIONS**

**ST** – Status, **E** – Endemic, **N** – Native, **M** – Migratory, **NS** – National Conservation Status, **GS** – Global Conservation Status, **CR** – Critically Endangered, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **LC** – Least Concern, **NE** – Not Evaluated

**Table 5.20 - IBAT Generated Species that can be found in the Area of Analysis (AoA)**

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | Note |
|---|---|---|---|---|---|
| **ACTINOPTERYGII** | | | | | |
| *Mystus zeylanicus* | Sri Lanka Yellow Catfish | E | LC | LC | |
| *Oryzias carnaticus* | Spotted Ricefish | N | DD | LC | |
| *Oryzias dancena* | Indian Ricefish | N | DD | LC | |
| *Pseudosphromenus cupanus* | Spiketail Paradise Fish | N | LC | LC | |
| *Wallago attu* | | N | NT | VU | |
| **AVES** | | | | | |
| *Dinopium psarodes* | Lesser Sri Lanka Flameback | E | LC | LC | |

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | Note |
|---|---|---|---|---|---|
| *Calidris falcinellus* | Broad-billed Sandpiper | M | NE | VU | |
| *Calidris ferruginea* | Curlew Sandpiper | M | NE | VU | |
| *Pluvialis squatarola* | Grey Plover | M | NE | VU | |
| *Phaenicophaeus pyrrhocephalus* | Red-faced Malkoha | E | EN | VU | There are records in the dry zone (riverine in Wasgamuwa). |
| *Galloperdix bicalcarata* | Sri Lanka Spurfowl | E | VU | LC | There are records in the dry zone forests. |
| *Halcyon pileata* | Black-capped Kingflsher | M | NE | VU | |
| **MALACOSTRACA** | | | | | |
| *Macrobrachium rosenbergii* | Giant River Prawn | N | NE | LC | |
| *Macrobrachium rude* | | N | NE | LC | |
| *Macrobrachium scabriculum* | | N | NE | LC | |
| **MAMMALIA** | | | | | |
| *Elephas maximus* | Asian Elephant | N | EN | EN | Found during the field study |
| *Loris lydekkerianus / ssp. nordicus* | Grey Slender Loris / Northern Grey Slender Loris | N | NT | EN | |
| *Macaca sinica / ssp. sinica* | Toque Macaque / Dry Zone Toque Macaque | E | LC | EN | Found during the field study |
| *Manis crassicaudata* | Indian Pangolin | N | NT | EN | |
| *Semnopithecus vetulus / ssp. philbricki* | Purple-faced Langur / Northern Purple-faced Langur | E | EN | EN | |
| *Melursus ursinus* | Sloth Bear | N | EN | VU | |
| *Panthera pardus / ssp. kotiya* | Leopard / Sri Lankan Leopard | N | EN | VU | |
| *Prionailurus viverrinus* | Fishing Cat | N | EN | VU | Found during the field study |
| *Rusa* | Sambar | N | NT | VU | |

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | Note |
|---|---|---|---|---|---|
| *unicolor* | | | | | |
| *Semnopithecus priam / ssp. thersites* | Grey Langur / Sri Lankan Grey Langur | N | LC | VU | Found during the field study |
| **REPTILIA** | | | | | |
| *Indotyphlops lankaensis* | Sri Lanka Worm Snake | E | CR | CR | |
| *Indotyphlops malcolmi* | Malcolm's Worm Snake | E | DD | EN | |
| *Crocodylus palustris* | Mugger | N | NT | VU | Found during the field study |
| *Cylindrophis maculatus* | Ceylonese Cylinder Snake | E | NT | VU | |
| *Cyrtodactylus yakhuna* | Northern Sri Lanka Gecko | E | VU | VU | |
| *Dasia haliana* | Ceylonese Dasia | E | NT | VU | |
| *Geochelone elegans* | Indian Star Tortoise | N | NT | VU | Found during the field study |
| *Lissemys ceylonensis* | Sri Lankan Flapshell Turtle | E | LC | VU | Found during the field study |
| *Oligodon sublineatus* | | E | LC | VU | |
| *Rhinophis saffragamus* | Large Shieldtail Snake | E | EN | VU | |
| *Sitana devakai* | Devaka's Fan-throated Lizard | E | VU | VU | Found during the field study |

### 5.4.3 Other Secondary Species Data

The ecological study was conducted during the bird's non-migratory season. Therefore, data on Migratory or Congregatory bird species (required for IFC criterion 3) are insufficient. Hence, secondary data on Migratory or Congregatory bird species were gathered from previous studies conducted in the same area. These species data are included in Table 5.12 of section 5.3.1 and were screened using IFC criteria (Table 5.22).

Additionally, there are records of some restricted-range flora species, *Ceriops decandra* and *Sonneratia apetala,* in mangroves of the area. Both these species are nationally Critically Endangered (CR) according to the 2020 National Red List, and *Ceriops decandra* is a globally Near Threatened (NT) species. These species were also screened using IFC criteria (Table 5.22).

**ABBREVIATIONS**

**BrR** – Breeding Resident, **M** – Migratory, **E** – Endemic, **N** – Native, **NS** – National Conservation Status, **GS** – Global Conservation Status, **CR** – Critically Endangered, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **LC** – Least Concern, **NE** – Not Evaluated, * - Considered Only Breeding Resident Population of the Breeding Resident & Migratory Populations of these species during the 2021 national red list assessment

**Table 5.21 - Screening of Secondary Data (Fauna and Flora) Using IFC Criteria**

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fish** | | | | | | | | | | |
| *Mystus zeylanicus* | Sri Lanka Yellow Catfish | E | LC | LC | | | | No | | |
| *Wallago attu* | | N | NT | VU | | No | | | | |
| **Birds** | | | | | | | | | | |
| *Dinopium psarodes* | Sri Lanka Lesser Flameback | E | LC | LC | | | | No | | |
| *Calidris falcinellus* | Broad-billed Sandpiper | M | NE | VU | | No | | | No | No |
| *Calidris ferruginea* | Curlew Sandpiper | M | NE | VU | | No | | | No | No |
| *Pluvialis squatarola* | Grey Plover | M | NE | VU | | No | | | No | No |
| *Phaenicophaeus pyrrhocephalus* | Red-faced Malkoha | E | EN | VU | No | No | No | No | | |
| *Galloperdix bicalcarata* | Sri Lanka Spurfowl | E | VU | LC | | No | | No | | |
| *Halcyon pileata* | Black-capped Kingflsher | M | NE | VU | | No | | | No | No |
| **Mammals** | | | | | | | | | | |
| *Elephas maximus* | Asian Elephant | N | EN | EN | No | | Yes | | | |
| *Loris lydekkerianus / ssp. nordicus* | Grey Slender Loris / Northern Grey Slender Loris | N | NT | EN | No | | No | | | |
| *Macaca sinica / ssp. sinica* | Toque Macaque / Dry Zone Toque Macaque | E | LC | EN | No | | No | No | | |
| *Manis crassicaudata* | Indian Pangolin | N | NT | EN | No | | No | | | |
| *Semnopithecus vetulus / ssp. philbricki* | Purple-faced Langur / Northern | E | EN | EN | No | No | No | | | |

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| | Purple-faced Langur | | | | | | | | | |
| *Melursus ursinus* | Sloth Bear | N | EN | VU | No | No | No | | | |
| *Panthera pardus / ssp. kotiya* | Leopard / Sri Lankan Leopard | N | EN | VU | No | No | No | | | |
| *Prionailurus viverrinus* | Fishing Cat | N | EN | VU | No | No | No | | | |
| *Rusa unicolor* | Sambar | N | NT | VU | | No | | | | |
| *Semnopithecus priam / ssp. thersites* | Grey Langur / Sri Lankan Grey Langur | N | LC | VU | | No | | | | |
| **Reptiles** | | | | | | | | | | |
| *Indotyphlops lankaensis* | Sri Lanka Worm Snake | E | CR | CR | No | | Yes | No | | |
| *Indotyphlops malcolmi* | Malcolm's Worm Snake | E | DD | EN | No | | Yes | No | | |
| *Crocodylus palustris* | Mugger | N | NT | VU | | No | | | | |
| *Cylindrophis maculatus* | Ceylonese Cylinder Snake | E | NT | VU | | No | | No | | |
| *Cyrtodactylus yakhuna* | Northern Sri Lanka Gecko | E | VU | VU | | No | | No | | |
| *Dasia haliana* | Ceylonese Dasia | E | NT | VU | | No | | No | | |
| *Geochelone elegans* | Indian Star Tortoise | N | NT | VU | | No | | | | |
| *Lissemys ceylonensis* | Sri Lankan Flapshell Turtle | E | LC | VU | | No | | No | | |
| *Oligodon sublineatus* | | E | LC | VU | | No | | No | | |
| *Rhinophis saffragamus* | Large Shieldtail Snake | E | EN | VU | No | No | No | No | | |
| *Sitana devakai* | Devaka's Fan-throated Lizard | E | VU | VU | | No | | No | | |
| **Birds** | | | | | | | | | | |
| *Circus aeruginosus* | Eurasian Marsh-Harrier | M | NE | | | | | | No | No |
| *Acrocephalus dumetorum* | Blyth's Reed-warbler | M | NE | | | | | | No | No |

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| *Anas acuta* | Northern Pintail | M | NE | | | | | | No | No |
| *Spatula querquedula* | Garganey | M | NE | | | | | | No | No |
| *Charadrius atrifrons* | Tibetan Sandplover | M | NE | | | | | | No | No |
| *Charadrius hiaticula* | Common Ringed Plover | M | NE | | | | | | No | No |
| *Charadrius leschenaultii* | Greater Sand Plover | M | NE | | | | | | No | No |
| *Pluvialis fulva* | Pacific Golden Plover | M | NE | | | | | | No | No |
| *Pluvialis squatarola* | Grey Plover | M | NE | | | | | | No | No |
| *Cacomantis passerinus* | Grey-bellied Cuckoo | M | NE | | | | | | No | No |
| *Hirundo rustica* | Barn Swallow | M | NE | | | | | | No | No |
| *Lanius cristatus* | Brown Shrike | M | NE | | | | | | No | No |
| *Thalasseus bengalensis* | Lesser Crested Tern | M | NE | | | | | | No | No |
| *Anthus richardi* | Richard's Pipit | M | NE | | | | | | No | No |
| *Muscicapa dauurica* | Asian Brown Flycatcher | M | NE | | | | | | No | No |
| *Phylloscopus nitidus* | Green warbler | M | NE | | | | | | No | No |
| *Pitta brachyura* | Indian Pitta | M | NE | | | | | | No | No |
| *Actitis hypoleucos* | Common Sandpiper | M | NE | | | | | | No | No |
| *Arenaria interpres* | Ruddy Turnstone | M | NE | | | | | | No | No |
| *Calidris minuta* | Little Stint | M | NE | | | | | | No | No |
| *Gallinago stenura* | Pintail Snipe | M | NE | | | | | | No | No |
| *Limosa limosa* | Black-tailed Godwit | M | NE | | | | | | No | No |
| *Numenius arquata* | Eurasian Curlew | M | NE | | | | | | No | No |
| *Numenius* | Whimbrel | M | NE | | | | | | No | No |

| Taxonomic Group & Species Name | Common Name | ST | NS | GS | 1a | 1b | 1c | 2a | 3a | 3b |
|---|---|---|---|---|---|---|---|---|---|---|
| *phaeopus* | | | | | | | | | | |
| *Tringa glareola* | Wood Sandpiper | M | NE | | | | | | No | No |
| *Tringa nebularia* | Common Greenshank | M | NE | | | | | | No | No |
| *Tringa ochropus* | Green Sandpiper | M | NE | | | | | | No | No |
| *Tringa stagnatilis* | Marsh Sandpiper | M | NE | | | | | | No | No |
| *Tringa totanus* | Common Redshank | M | NE | | | | | | No | No |
| *Xenus cinereus* | Terek Sandpiper | M | NE | | | | | | No | No |
| *Pastor roseus* | Rosy Starling | M | NE | | | | | | No | No |
| *Sturnus pagodarum* | Brahminy Starling | M | NE | | | | | | No | No |
| *Gelochelidon nilotica* | Gull-billed Tern | BrR & M | CR* | | No | | No | | No | No |
| *Hydroprogne caspia* | Caspian Tern | BrR & M | CR* | | No | | No | | No | No |
| *Sterna hirundo* | Common Tern | BrR & M | CR* | | No | | No | | No | No |
| *Thalasseus bergii* | Great Crested Tern | BrR & M | EN* | | No | | No | | No | No |
| *Merops philippinus* | Blue-tailed Bee-eater | BrR & M | CR* | | No | | No | | No | No |
| **Flora** | | | | | | | | | | |
| *Ceriops decandra* | | N | CR | | No | | No | | | |
| *Sonneratia apetala* | | N | CR | | No | | No | | | |

Accordingly, three faunal species, *Elephas maximus* (Asian Elephant), *Indotyphlops lankaensis*, and *Indotyphlops malcolmi*, were selected from secondary data to identify critical habitats in the Area of Analysis.

Nationally Critically Endangered (CR) and restricted two mangrove flora species, *Ceriops decandra* and *Sonneratia apetala*, were not chosen as mangroves are not abundant in the AoA. Similarly, nationally Critically Endangered (CR) bird species, such as the Gull-billed Tern, Caspian Tern, Common Tern, and Blue-tailed Bee-eater, were not chosen. During the national red list assessment, only breeding resident populations were considered for those species, and no breeding grounds of these species were identified in AoA.

Altogether, one flora species, *Myriostachya wightiana*, and three fauna species, *Elephas maximus* (Asian Elephant), *Indotyphlops lankaensis*, and *Indotyphlops malcolmi*, were chosen from both primary and secondary data to determine critical habitats in the Area of Analysis.

*Myriostachya wightiana* was found within the RoW (mangroves of the Uppu aru). Elephants (*Elephas maximus*) were found in all natural and anthropogenic habitats along the line. *Indotyphlops lankaensis*, and *Indotyphlops malcolmi* are not found during the ecological survey, but from the IBAT report, and so far, are known from the areas above the Trincomalee Bay.

### 5.4.4 Critical Habitats in the Project Area

The selected Areas of Analysis (AoA) are categorized as Critical Habitats according to IFC's Critical Habitat criterion 1c ("As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species").
Neither selected area of analysis is categorized as a critical Habitat according to IFC's critical habitat criteria 1a, 1b, 2, and 3.
The selected Areas of Analysis are not assessed using IFC's Critical Habitat criteria 4 and 5 due to a lack of information.

## 5.5 Socioeconomic Conditions of the Project Influence Area

### 5.5.1 Project Location

The proposed project has three main components, namely the (i) construction of a 220 kV transmission line from the existing Kappalthurai grid substation (GS) to a new substation at Sampur at a total length of 37.6 Km (double circuit, Zebra conductor type); (ii) construction of the 1x 63 MVA, 220/132/33 kV Sampur CGS (to be operated at 132 kV initially); and (iii) augmentation of the capacities of the Kappalthurai GS to connect the transmission line from Sampur. Later, a Solar Park with a total capacity of 50 MW (in its initial phase, and to be expanded to 120 MW) will be constructed at Sampur, and the transmission line from Kappalthurai to Sampur will be connected to the proposed Solar Park to facilitate the transmission of power generated by the Solar Park. The Solar Park will constitute an Associated Facility under the present project. The Kappalthurai 220/132/33 kV Grid substation, currently operates at 132 kV level through a temporary arrangement from the existing Anuradhapura – Trincomalee 132 kV, Lynx, double circuit transmission line. Hence, connecting of 220 kV Sampur – Kappalthurai transmission line to Kappalthurai GS requires intermediate arrangements to connect at the 132 kV level matching the current operational level of Kappalthurai. Augmentation work of Kappalthurai GS involves the construction of 2 Nos. of 220 kV line bays, a retaining wall, earth filling works, structure foundations, steel erection works, installation works, and modification of protection panels and commissioning. Upon completion of the New Habarana – Kappalthurai 220 kV transmission line facility, necessary arrangements/modifications will be made to operate both Kappalthurai GS and Sampur CGS at 220 kV level. Kappalthurai.

The project including the proposed solar park is located in the Trincomalee district of the Eastern Province of Sri Lanka. The district with an estimated population of 442, 465 and a population

density of 180 per square kilometer (2024)[5] is administered by 11 divisional secretariat divisions (DSDs) and 230 Grama Niladhari divisions (GNDs).[6] This section presents the socio-demographic, economic, and cultural features of the sites selected for the construction of the 220 kV transmission line, Sampur CGS, Sampur Solar Park (Associated Facility), and the augmentation work of the Kappalthurai GS.

### 5.5.2 220 kV Transmission Line

**Demographic Characteristics**

The proposed 220 kV transmission line from Kappalthurai to Sampur CGS will traverse over some sections of 15 GNDs falling within 4 DSDs of the District. Therefore, for the social impact assessment of ESIA, these 15 GNDs were considered as the project's Area of Influence (AoI) of the transmission line. The GNDs include 1 in the DSD of Trincomalee Town and Gravets, 3 in the Thamabalagamuwa DSD, 4 in the Kinnya DSD, and 7 in the Muthur DSD. The total population in the 15 GNDs is estimated at 27,938 comprising 49.3% male and 50.7% female encompassing 8,227 households as shown in Table 5.22. The average household size is 3.4 persons.

**Table 5.22 - Estimated population in the project's area of influence**

| Divisional Secretariat Division | Grama Niladhari Division | Population | | No. Households |
|---|---|---|---|---|
| | | Male | Female | |
| Trincomalee Town and Gravets | Muththunagar (229F) | 261 | 272 | 182 |
| **Sub-Total** | | **261** | **272** | **182** |
| Thambalagamuwa | Palampatar (228) | 611 | 713 | 469 |
| | Kovilady (228K) | 203 | 217 | 164 |
| | Thambalagamuwa (228A) | 818 | 852 | 527 |
| **Sub-Total** | | **1,632** | **1,782** | **1,160** |
| Kinniya | Soorangal (226N) | 1,571 | 1,492 | 989 |
| | Naduoothu (226M) | 1,870 | 1,986 | 1,118 |
| | Majeed Nagar (226O) | 604 | 639 | 351 |
| | Upparu (225K) | 349 | 412 | 312 |
| **Sub-Total** | | **4,394** | **4,529** | **2,770** |
| Muthur | Iruthayapuram (218E) | 742 | 795 | 481 |
| | Shafi Nagar (224F) | 1,105 | 1,153 | 625 |
| | Pallikudiyeruppu (219) | 1,232 | 1,223 | 763 |
| | Kaddaiparrichan South (222) | 1,436 | 1,429 | 745 |
| | Chenaiyoor (222A) | 852 | 854 | 468 |
| | Kadatkaraichenai (222C) | 1,485 | 1,498 | 623 |
| | Sampur East (220) | 627 | 633 | 410 |
| **Sub-Total** | | **7,479** | **7,585** | **4,115** |
| **Total** | | **13,766** | **14,168** | **8,227** |

Source: Reports from respective Grama Niladharies, 2025

[5] Department of Census and Statistics (2024) Census of Population and Housing 2024 Enumeration Stage – Population of Sri Lanka by Districts

[6] A DSD is the third level of the administrative hierarchy in Sri Lanka following the provincial and district administration. A GND is the smallest and fourth-level administrative unit in Sri Lanka, and is a sub-unit of the DSD.

#### 5.5.2.1 Landownership and Land Use Patterns

The ownership rights to the land occupied by households in the project's AoI are diverse and complex. They include households that inherited land from their parents or ancestors, and are in possession of legal titles, households that purchased land from another party through legal transactions, and have transfer deeds, households that received land from the government under various land alienation programs, and holding state granted deeds, and households that occupy the land obtained through annual permits issued by the government through divisional secretaries. Yet, there are households who do not have any of the above but occupy the land which they had encroached illegally and request for regularization of their land holdings.

Meanwhile, the Hindu Kovil- Thambalagamuwa Adikonayagam Devasthanam in the Thambalagamuwa division holds around 850 acres/344 hectares of paddy and high lands which are jointly administered by the Department of Public Trustee and the Kovil management committee. Around 350 acres of paddy lands are auctioned twice a year, for the *maha* and *yala* seasons, and the farmers obtain those lands on a fee for cultivation. Similarly, the Buddhist temple of Kottiyarama temple in the Muthur division also holds around 300 acres/121 hectares of land which too are cultivated by tenant farmers.

The average extents of land owned by a majority of the households range between 2-5 acres (0.8-2.0 hectares) while a few households own more than 10 acres/4 hectares of land. For example, in the project affected GNDs of the Muthur division, 76.5% of the households owned less than 2 hectares of land, and another 20.5% held extents of land varying from 2-4 hectares. It is only the remaining 3% who owned more than 4 hectares of land. The per capita land use in this division is 0.3 hectares. The per capita land use in the divisions of Thambalagamuwa, Kinniya, and Town and Gravets is 0.7, 0.2, and 0.1 hectares respectively.

The land is primarily used for paddy cultivation which provides the main source of livelihood for the people. Paddy is cultivated in both *maha* (October-March in the following year) and *yala* (April-August) seasons with water from monsoon rains and the major and minor irrigation tanks. Home gardens and highlands are cultivated with a variety of seasonal crops such as ground nuts, cashew, mango, orange, lime, jackfruit, bananas, and papaya. The land is also used for livestock farming, and the animals are sent for grazing to open areas, abandoned lands, and state forest areas.

Settlements are generally confined to natural highlands but in the event of using the lowlands for house constructions such as paddy or marshlands, land fillings are carried out before constructions to avoid any inundations.

#### 5.5.2.2 Settlements

A few urban settlements are found in the DSDs of Town Gravets and Kinniya. The rest of the settlements are predominantly rural. The people (104 families) who returned to Muthunagar after their displacements in 2006 had been given 60 – 80 perches of land as their original settlements which were abandoned for a decade had been encircled by the Ports Authority. None of the resettled families own any paddy land but live on casual labor, and/or engage in livestock farming. A similar situation was observed in the DSD of Muthur where around 800 displaced families were resettled after the civil war.

The housing conditions in the DSDs vary from temporary makeshift dwellings of poor families to well-furnished permanent houses occupied by middle and upper-income families. For example, there are 1,231 permanent houses, 680 semi-permanent houses, and 502 temporary shelters in the GNDs of the Muthur DSD. Electricity and sanitary facilities are available for 1,681 and 1,730 housing units respectively. Shanty houses and wattle and daub houses account for 2.4% and 8% of the total housing stock respectively (Trincomalee District Statistical Handbook, 2023).

Altogether, there are 61,020 housing units in the four DSDs of which 80.3% are connected to the national grid for electricity. However, kerosene oil is also used in 37.1% of households. Pipe-borne water is available for 67% of the houses while 47.2% of the households have access to water from the protected wells. Water-sealed toilets are available for 90% of the housing units whereas non-water-sealed toilets are found in 5.4% of the houses. Toilet facilities are not available for 3.4% of households (Trincomalee District Statistical Handbook, 2023).

#### 5.5.2.3 Livelihoods

The main livelihood sources of the people in the 15 GNDs are paddy cultivation, vegetable and fruit cultivation, marine and freshwater fishing, and government sector jobs. The number of persons engaged in these livelihoods included 2,860 in paddy cultivation, 1,616 in vegetable and fruit cultivation, 1,332 in fishing, and 640 in government jobs, altogether with an active labor force of 6,448 as shown in Table 5.23. Paddy farmers comprised 44.4% of the labor force followed by 25.1% in vegetable cultivation, 20.7% in fishing, and the remaining 9.9% in government jobs. This labor force represented 23% of the total GND population.

Paddy is cultivated in both *maha* (September to March in the following year) and *yala* (May to end August) seasons with water provided by the major and minor irrigation systems and the seasonal rainwater of northeastern monsoon from December to February of the year. The average yield of paddy remains below the national rate of 4,531 kg. Per hectare. However, the crop yield of *Yala* (4,143 kg) exceeds the yield of 3,199 kg. Per hectare in the *maha* season. Highland crops cultivated include ground nuts, mango, orange, lime, jackfruit, banana, and papaya. Such crops are cultivated either in the home gardens or on encroached lands which are used for slash-and-burn agriculture (*chena* cultivation). Coconut is a major home garden crop. Additionally, livestock farming is a main source of livelihood for some households while it is a supplementary income for others. Farmers take their cattle, goats, and buffaloes to open spaces, forest areas, or flood plains including sites earmarked for transmission line, solar park, and the GS for grazing. Some livestock farmers own large herds of cattle, goats, and buffaloes varying from 50-100 animals. Agricultural farmers also engage in fishing during off-seasons to earn an additional income. People also extract fuel wood, bee honey, and medicinal herbs from the nearby forests or engage in poaching wild animals to sell and earn extra income.

**Table 5.23 - Main livelihoods of the people**

| Divisional Secretariat Division | Grama Niladhari Division | Livelihoods | | | |
|---|---|---|---|---|---|
| | | Paddy cultivation | Vegetable & fruit cultivation | Fishing | Government jobs |
| Trincomalee Town and Gravets | Muththunagar (229F) | 52 | 25 | 16 | 4 |
| **Sub-Total** | | **52** | **25** | **16** | **4** |
| Thambalagamuwa | Palampatar (228) | 41 | 54 | 8 | 47 |
| | Kovilady (228K) | 75 | 0 | 10 | 45 |
| | Thambalagamuwa (228A) | 502 | 0 | 3 | 34 |
| **Sub-Total** | | **618** | **54** | **21** | **126** |
| Kinniya | Soorangal (226N) | 117 | 321 | 63 | 29 |
| | Naduoothu (226M) | 216 | 172 | 64 | 23 |
| | Majeed Nagar (226O) | 83 | 68 | 170 | 7 |
| | Upparu (225K) | 62 | 74 | 195 | 6 |
| **Sub-Total** | | **478** | **635** | **492** | **65** |
| Muthur | Iruthayapuram (218E) | 235 | 28 | 12 | 24 |
| | Shafi Nagar (224F) | 385 | 117 | 70 | 26 |
| | Pallikudiyeruppu (219) | 354 | 105 | 3 | 106 |
| | Kaddaiparrichan South (222) | 252 | 180 | 145 | 86 |
| | Chenaiyoor (222A) | 316 | 76 | 158 | 33 |
| | Kadatkaraichenai (222C) | 52 | 353 | 376 | 103 |
| | Sampur East (220) | 118 | 43 | 39 | 67 |
| **Sub-Total** | | **1,712** | **902** | **803** | **445** |
| **Total** | | **2,860** | **1,616** | **1,332** | **640** |

Source: Reports from respective Grama Niladharies, 2025

### 5.5.2.4 Vulnerable Households and Persons

**Single-parent and women-headed households:** Of the 8,227 households in the AoI, 1,544 (18.8%) are enumerated as single-parent households. The women-headed households (WHH) accounted for 1,343 (87%) of the single-parent households, and 16.3% of the total number of households in the 15 GNDs as shown in Table 5.24. The highest number of WHHs are reported from the 7 GNDs in Muthur (799) followed by 4 GNDs in Kinniya (333), and 3 GNDs in Thamabalagamuwa (190). A higher proportion of WHHs are represented in the GNDs of Muthur and Thambalagamuwa DSDs with 19.4% and 16.4% respectively. Deaths of male members who had served the government's armed services or joined the rebellion groups during the civil war can be one of the reasons for the higher proportions of WHHs.

**Table 5.24 - Women Headed Households**

| Divisional Secretariat Division | Grama Niladhari Division | Total No. Households | No. Women-Headed Households | Percentage of Women-Headed Households |
|---|---|---|---|---|
| Trincomalee Town and Gravets | Muththunagar (229F) | 182 | 21 | 11.54 |

| | | | | |
|---|---|---|---|---|
| **Sub-Total** | | **182** | **21** | **11.54** |
| Thambalagamuwa | Palampatar (228) | 469 | 98 | 20.90 |
| | Kovilady (228K) | 164 | 28 | 17.07 |
| | Thambalagamuwa (228A) | 527 | 64 | 12.14 |
| **Sub-Total** | | **1,160** | **190** | **16.38** |
| Kinniya | Soorangal (226N) | 989 | 107 | 10.82 |
| | Naduoothu (226M) | 1,118 | 125 | 11.18 |
| | Majeed Nagar (226O) | 351 | 49 | 13.96 |
| | Upparu (225K) | 312 | 52 | 16.67 |
| **Sub-Total** | | **2,770** | **333** | **12.02** |
| Muthur | Iruthayapuram (218E) | 481 | 85 | 17.67 |
| | Shafi Nagar (224F) | 625 | 121 | 19.36 |
| | Pallikudiyeruppu (219) | 763 | 156 | 20.45 |
| | Kaddaiparrichan South (222) | 745 | 137 | 18.39 |
| | Chenaiyoor (222A) | 468 | 131 | 27.99 |
| | Kadatkaraichenai (222C) | 623 | 101 | 16.21 |
| | Sampur East (220) | 410 | 68 | 16.59 |
| **Sub-Total** | | **4,115** | **799** | **19.4** |
| **Total** | | **8,227** | **1,343** | **16.32** |

Source: Reports from respective Grama Niladharies, 2025

**Internally displaced and resettled households:** More than half of the households in the AoI had been displaced by the country's 30-year prolonged civil war and they had returned to their original homelands and resettled after the end of the civil war in 2009. The resettled households accounted for 4,551 which comprised 55.3% of the total 8,227 households in the 15 GNDs (Table 5.25). Of the total number of households, the 3 GNDs in Thambalagamuwa DSD and the 4 GNDs of Kinniya had a resettled population of 759 (65.4%) and 737 (26.6%) households respectively. The number of resettled households in the 7 GNDs of Muthur DSD was the highest with 3,055 and a share of 74.2% of its total number of households.

**Table 5.25 - Resettled households**

| Divisional Secretariat Division | Grama Niladhari Division | No. Resettled Households |
|---|---|---|
| Trincomalee Town and Gravets | Muththunagar (229F) | NA |
| **Sub-Total** | | **NA** |
| Thambalagamuwa | Palampatar (228) | 243 |
| | Kovilady (228K) | 49 |
| | Thambalagamuwa (228A) | 467 |
| **Sub-Total** | | **759** |
| Kinniya | Soorangal (226N) | 324 |
| | Naduoothu (226M) | 86 |
| | Majeed Nagar (226O) | 165 |
| | Upparu (225K) | 162 |
| **Sub-Total** | | **737** |
| Muthur | Iruthayapuram (218E) | 320 |
| | Shafi Nagar (224F) | 380 |
| | Pallikudiyeruppu (219) | 456 |

| Divisional Secretariat Division | Grama Niladhari Division | No. Resettled Households |
|---|---|---|
| | Kaddaiparrichan South (222) | 575 |
| | Chenaiyoor (222A) | 450 |
| | Kadatkaraichenai (222C) | 526 |
| | Sampur East (220) | 348 |
| **Sub-Total** | | **3,055** |
| **Total** | | **4,551** |

Source: Reports from respective Grama Niladharies, 2025

**Persons with disabilities:** The number of persons with various forms of disabilities accounted for 316 which was 1.1% of the total GND population.

**Dependents on Government subsidies and assistance:** The government cash subsidies given under Samurdhi and Aswesuma programs for households/persons living below the official poverty line (calculated based on the monthly per capita expenditure per person required to fulfill the basic needs) are received by 4,067 households/persons in the 15 GNDs.[7] This represents 49.4% of the total number of households in the 15 GNDs indicating that almost half of the GND population is poor. Additionally, another 1,984 persons receive various forms of other cash assistance given by the government such as public assistance given for poor elderly persons and for those suffering from chronic illnesses and disabilities (Table 5.26). In the DSDs of Town and Gravets, Thambalagamuwa, Kinniya, and Muthur, the proportion of the poor population is recorded as 3.9%, 6.8%, 13.5%, and 8% respectively (Trincomalee District Statistical Handbook, 2023). Multiple displacements during the civil war, inadequate resettlement support provided by the government, extensive dependence on seasonal agriculture, limited employment opportunities, chronic kidney diseases of the family members, and damages to cultivations by wild animals are attributed as the main underlying causes of poverty. The persons who were at the age of 60 years and above comprised 3,062 which is 11% of the GND total population.

**Table 5.26 - Beneficiaries of government subsidy and assistance programs**

| Divisional Secretariat Division | Grama Niladhari Division | No. Beneficiaries of the Samurdhi/Aswesuma subsidy program | No. Beneficiaries of other government assistance programs |
|---|---|---|---|
| Trincomalee Town and Gravets | Muththunagar (229F) | 89 | 89 |
| **Sub-Total** | | **89** | **89** |
| Thambalagamuwa | Palampatar (228) | 170 | 14 |
| | Kovilady (228K) | 41 | 56 |
| | Thambalagamuwa (228A) | 144 | 239 |
| **Sub-Total** | | **355** | **309** |
| Kinniya | Soorangal (226N) | 399 | 2 |
| | Naduoothu (226M) | 536 | 64 |
| | Majeed Nagar (226O) | 152 | 196 |
| | Upparu (225K) | 132 | 195 |
| **Sub-Total** | | **1,219** | **457** |
| Muthur | Iruthayapuram (218E) | 249 | 131 |

[7] The official poverty line (national) in March 2025 is SLRs 16,302 per person, and for the Trincomalee district, it is SLRs 16,014.

| Divisional Secretariat Division | Grama Niladhari Division | No. Beneficiaries of the Samurdhi/Aswesuma subsidy program | No. Beneficiaries of other government assistance programs |
|---|---|---|---|
| | Shafi Nagar (224F) | 376 | 92 |
| | Pallikudiyeruppu (219) | 436 | 28 |
| | Kaddaiparrichan South (222) | 321 | 252 |
| | Chenaiyoor (222A) | 362 | 382 |
| | Kadatkaraichenai (222C) | 423 | 124 |
| | Sampur East (220) | 237 | 120 |
| **Sub-Total** | | **2,404** | **1,129** |
| **Total** | | **4,067** | **1,984** |

Source: Reports from respective Grama Niladharies, 2025

#### 5.5.2.5 Access to Services

Communities have adequate access to medical and health services such as government hospitals, and health clinics, and the services are provided by public health inspectors, family health workers (midwives), and Ayurvedic physicians. There are 8 government hospitals, 27 public health inspectors, 84 midwives, and 23 Ayurvedic physicians operating within the 4 DSDs in the project AoI. Additionally, people also have access to private medical practitioners, dispensaries, and clinics (Trincomalee District Statistical Handbook, 2023).

Trincomalee is a multilingual society, school education is provided in three mediums Sinhalese, Tamil, and English. All children in the settlements of the project area have equal access to primary and secondary education which is provided free of charge. There are 190 public schools serving 63,511 students in the four DSDs. The teaching staff of all schools consists of 3,799 with an average ratio of 1:17 students. The schools can be reached within ½ to 1 km. (Trincomalee District Statistical Handbook, 2023).

Public transport is adequately available and covers the entire road network in the 4 DSDs. There are 13 main roads on which the buses operate and connect the settlements. Post-war reconstruction programs had significantly contributed to the improvement of the road network which was in dilapidated conditions. People also use their private vehicles for travel, and both men and women use push bicycles for their short-distance travel. Tractors and lorries are used for transporting their agricultural produce and firewood to the nearby markets.

For administrative services, people approach divisional secretariats, the district secretariat of Trincomalee, Kinniya Urban Council, the four Pradeshiya Sabhas, and other regional offices of different government departments. The DSDs of Town and Gravets, Thambalagamuwa, and Kinniya have 2 agrarian service centers each, while the Muthur DSD has 5 centers to serve the needs of farmer communities.

#### 5.5.2.6 Gender Issues and Gender Inequalities

Women in rural areas are largely confined to their domestic roles of collecting firewood, fetching water, cleaning and washing, cooking, carrying food to farms, and preparing children for schooling. They would also attend the parent-teacher meetings at schools, and accompany their

children to and from schools or pre-schools. However, the participation of women in Muslims families in public spheres compared to their counterpart Tamils is rather limited. Social and cultural beliefs and attitudes that prevail in the Muslim community restrict the mobility of women. Decision-making in such families is vested in males. However, these practices are changing significantly among the younger generations with their exposure to higher education, and media platforms. Also, with connectivity to electricity, women's burden of household chores has substantially reduced with better household lighting and the operation of electrical kitchen appliances. They also enjoy their leisure time watching the television.

**Gender-based Violence against Women and Children:** Though data is not available on the incidences of gender-based violence at the GND level, divisional-level police records reveal substantial numbers of crimes exercised against women and children. In 2024, the Kinniya police station had records of 8 cases of rape, 4 cases of incest, 4 cases of child abuse, and 312 cases of family disputes. The Sampur police station had registered 3 cases of statutory rape, 2 cases of child abuse, and 11 cases of assaulting the women. In the same year, Muthur police station reported 5 cases of statutory rapes and 267 cases of family disputes.

#### 5.5.2.7 Places of Archaeological and Cultural Significance

There are a number of important places in the Trincomalee district which are of archaeological, historical, and cultural significance. They include Thirukonsewaram temple or temple of the thousand pillars, Fort Frederick built by the Portuguese, Sri Badrakali Amman Hindu temple, dedicated to the goddess Kali Amman and built with classical *dravidian* architecture, Velgam vehera in Kannyiya with ancient *stupa*, built by King Devanampiyatissa in 307-267 BC, Gokanna temple, built by King Mahasen in the 3$^{rd}$ century, etc. However, none of these important places are located within the AoI of 15 GNDs. Therefore, the project does not envisage any adverse impacts on the archeological, historical, and cultural sites. In case of any chance finds of artifacts during the project's excavations, measures to be followed in protecting those archaeologically important artifacts are provided in the ESMP.

#### 5.5.2.8 Indigenous Peoples

'Veddhas/Vannilaeththo' constitutes the Indigenous Peoples in Sri Lanka whose territories are confined to remote villages in the Uva and the Eastern Provinces. The Eastern Province consists of three districts, namely Trincomalee (project implementation district), Batticaloa and Ampara. Though a few indigenous communities are present in the Batticaloa district, none of such communities are found in the Trincomalee or the Ampara districts. The project interventions are far away from the Veddha settlements. Therefore, the project does not envisage any impacts on the traditional homelands, culture, and livelihood activities of the Veddha communities. However, the indigenous communities will indirectly benefit from the project which endeavors to strengthen the country's power system and the reliability of its power supply.

### 5.5.3 Sampur Grid Substation

The substation will be constructed in the Sampur East GND of the Muthur DSD. The land earmarked for the construction of the Sampur CGS is 8.4 hectares (20.8 acres) in extent, and the government vested this land in CEB in July 2014 (see land transfer documents in Appendices 15.15). Even though the original land allocated for Sampur CGS is 8.4 hectares, less than 2 hectares of land will be utilized to construct the proposed GS and the rest will be reserved for its future expansions with proposed development projects in the area. This land consists mainly of scrubland and abandoned paddy lands. No residential structures are located within the boundaries of the GS site. Several minor tanks are located in the vicinity of the GS site, and the distance to these tanks is shown in Table 5.27.

**Table 5.27 - Minor tanks in the vicinity of the Sampur CGS site**

| Name of the Tank | Distance from the boundary of the GS site (meters) |
|---|---|
| Sambukkalai Kulam | 1,400 |
| Annakal Kulam | 582 |
| Sinna Nainda Kulam | 327 |
| Kulawan Kulam | 20 |
| Sambu Kulam | 957 |
| Semattan Kulam | 618 |
| Vempy Kulam | 502 |
| Vepan Kulam | 1,013 |
| Motiandi Kulam | 1,610 |
| Pokker Kulam | 1,690 |

Source: GIS and Satellite map data 2025)

### 5.5.4 Kappalthurai Grid Substation

The Kappalthurai GS, located at the northern end of the transmission line, and in the Muththunagar (229F) GND of Trincomalee Town and Gravets DSD was commissioned in 2022 and is in operation. The GS is located in a total land area of 16.8 acres/6.8 hectares. The GS and its land are owned and operated by CEB. The proposed augmentation work of the GS described earlier will be carried out within the existing premises of the GS, and therefore, it does not require any additional land acquisitions. The land allocated for the augmentation work is predominantly covered with scrub vegetation. Teak plantations and an industrial zone of the Board of Investment (BoI) are located adjacent to the Kappalthurai GS.

### 5.5.5 Proposed 50 MW Solar Park in Sampur

The proposed 50 MW Sampur solar park (to be expanded to 120 MW later) is located adjacent to the proposed Sampur CGS in the Muthur DSD. The total extent of the land allocated for the solar park is 204.3 hectares (504.8 acres) is vested in the Trincomalee Power Company Limited (TPCL), a company incorporated under Companies Act No. 07 of 2007, of which CEB owns 50% of the shares. The TPCL has taken over this land under a long-term lease agreement in September 2014. The TPCL has obtained the approvals and the necessary clearances for its phase I (50MW) including a conditional approval for the Initial Environmental Examination (IEE) report from the

Central Environmental Authority (CEA) in June 2023. The approval of the Cabinet of Ministers was also received in February 2025 for the establishment of Solar Power Plants at Sampur with 50 MW in Phase I followed by 70 MW in Phase II.

The site earmarked for the proposed 50 MW Solar Park primarily consists of sparse forest and scrubland. Apart from two minor tanks (Kulawan Kulam and Sambu Kulam) located within the boundary of the site; several other minor tanks are located in the surroundings of the solar park as shown in Table 5.28.

**Table 5.28 - Minor tanks in the vicinity of the Sampur Solar Park site**

| Name of the Tank | Distance from the boundary of the Solar Park site (meters) |
|---|---|
| Sambukkalai Kulam | Close to the boundary 10-30 |
| Annakal Kulam | 45-70 |
| Sinna Nainda Kulam | 344 |
| Kulawan Kulam | Inside |
| Sambu Kulam | Inside |
| Semattan Kulam | 760 |
| Vempy Kulam | 400 |
| Vepan Kulam | 802 |
| Motiandi Kulam | 492 |
| Pokker Kulam | 445 |

Source GIS and Satellite maps data 2025

## 5.6 Current and Proposed Development Activities in the Area

According to the information provided by the District Secretariat of Trincomalee, Divisional Secretariats of Town and Gravet, Thambalagamuwa, Kinniya, and Muthur, there are no ongoing development projects in the area of the proposed project, except for the Sampur Solar Park. There is an abandoned road project and Kappalthurai BOI zone is the only industrial zone in the project area which we have discussed under this.

### 5.6.1 Other Proposed Solar Projects

The Trincomalee area has been identified as a potential location for generating solar power. Currently the Sri Lanka Sustainable Energy Authority (SLSEA) has identified numerous Solar power projects located in the Trincomalee cluster. The total capacity of the proposed renewable energy projects is 767MW. The Proposed Sampur CGS will be required to absorb such capacity to the National Grid. The summary of the proposed projects is given in Appendices 15.14.

### 5.6.2 Outer Circle Road (currently abandoned)

The Sri Lanka Army constructed a ring road (outer circular road) in 2007, connecting Illakanthai to Thambalagamuwa via Patchcnnoor, Sunkankulam, and Surangal, as illustrated in the figure below. Currently, the road terminates at the Mullipotana - Surangal Road near the village of

Kalkuli. Plans are in place to extend this road further to Alles Garden, north of Trincomalee town, via Kanniya.

The proposed transmission line intersects this ring road at four different locations. Additionally, angle points 9 to 20 of the transmission line are situated on either side of the ring road.
Currently, the construction of the road is abandoned and most of the structures which were constructed were fully or partially damaged including the bridge constructed through the Mahaweli River. Currently, the reaming parts of the halfway completed road are used by heavy vehicles transporting construction materials which leads to further damage to the road.

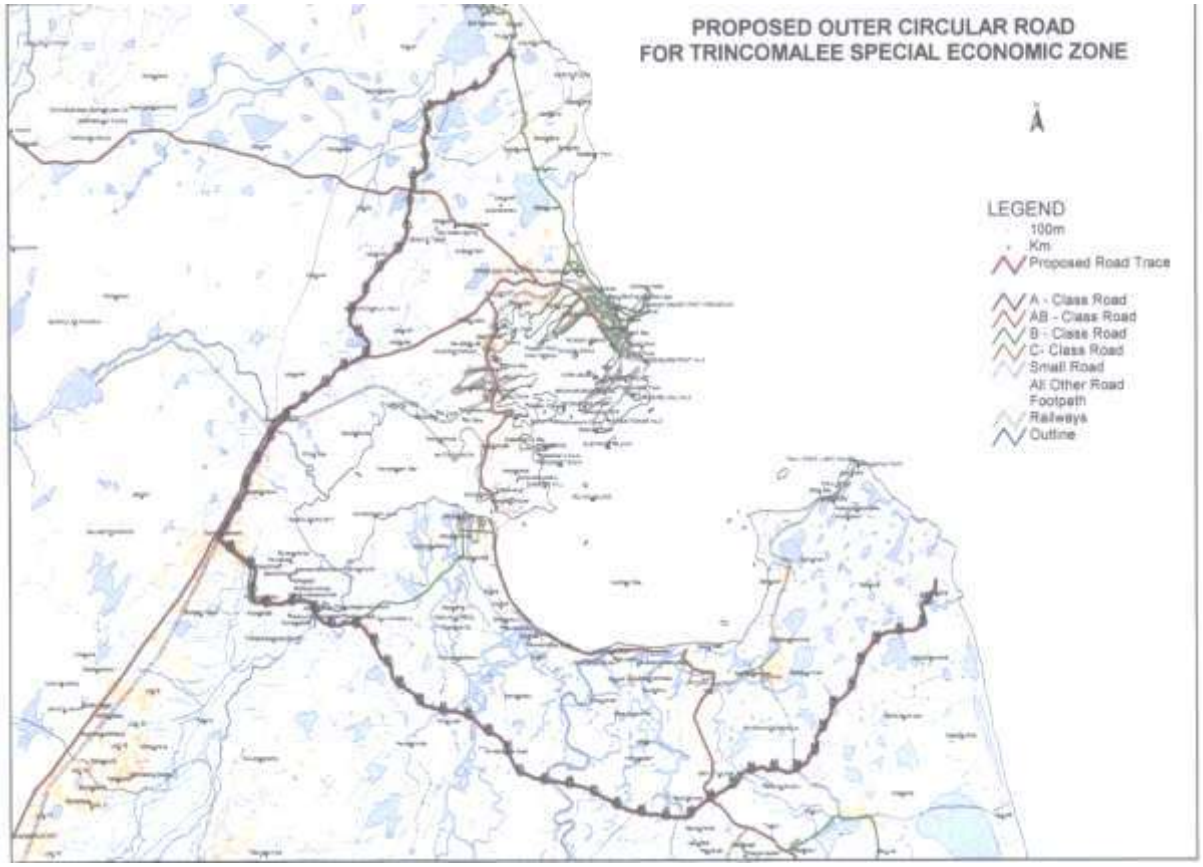


**Figure 5.25 - Ring road (outer circular road), a gravel road from Illakanthai to Mullipotana**

**Plate 5.6:** Surangal road (about 30 km), the rest of the outer circular road is not yet completed.

**Plate5.7:** Current status of the abandoned outer circular road project

**Plate5.8:** Current status of the bridge over Mahaweli River under the outer circular road

### 5.6.3 Industrial Zones

The Board of Investment (BOI) has a Zone in Kappalthurai which is next to the Kappalthurai GS land. Currently, the zone has no land for industrial expansion. BOI is currently in negotiation with the Sri Lanka Ports Authority (SLPA) to obtain land belonging to SLPA to expand its industrial zone.

# 6 Evaluation of Environmental and Social Risks and Impacts and Mitigation Measures

## 6.1 Environmental and Social Impacts

During the ESIA process, the following potential environmental and social issues have been identified during the planning, construction, and operational period. In the case of impacts, the extent of positive/negative impact cannot be predicted at the scoping stage, and further field studies are required, in order to determine the significance of the impact. The extent of these impacts will be clarified as the study progresses. The potential impacts of a project on the environment are presented in the Impact Matrix below;

**Table 6.1 - Impact Matrix**

| Category | No. | Environmental / Social Impact | Planning (P) | Construction (C) | Operation (O) |
|---|---|---|---|---|---|
| Physical Environment | 1 | Soil erosion | D | B– | D |
| | 2 | Soil pollution | D | B– | D |
| | 3 | Waste pollution | D | B– | C– |
| | 4 | Hydrological impacts | D | C– | B– |
| | 5 | Noise and vibration impacts | D | C– | D |
| Biological & Ecological Environment | 6 | Critical habitats | D | B– | D |
| | 7 | Flora | D | B– | D |
| | 8 | Fauna | D | B– | B– |
| Socio-Economic Environment | 9 | Land use restrictions | C– | B– | C– |
| | 10 | Disturbance of agricultural activities | D | C– | D |
| | 11 | Loss/reduction of income | D | B– | B– |
| | 12 | Public safety | D | B– | C– |
| | 13 | Land Acquisition | D | D | D |
| | 14 | Infrastructure development | D | C+ | B+ |
| | 15 | Skill and unskilled employment opportunities | D | B+ | C+ |

- Key to Symbols Used:

- P – Planning Stage
- C – Construction Stage
- O – Operation Stage
- A+/-: Significant positive/negative impact expected
- B+/-: Moderate positive/negative impact
- C+/-: Uncertain impact – needs further examination
- D: No impact expected

## 6.2 Physical Impacts

### 6.2.1 Impact on Land Use

#### 6.2.1.1 Construction Phase

During the construction phase, land use along the 35 m wide transmission line corridor will be altered due to excavation, vegetation clearance, access road development, and temporary construction facilities. A major proportion of the corridor—approximately 68.6% of active paddy fields and 2.84% (8.886 acres) of abandoned paddy fields, with 14 angle towers and 52 suspension towers sited directly within active or abandoned paddy fields. Earthworks and the movement of heavy machinery in these areas will compact the soil, reduce infiltration, and may limit future agricultural productivity.

In marshlands—especially around towers 4/3 to 4/5, near AP9, AP14, and between AP15 and 15/7—construction activities may disrupt natural hydrological functions and result in the loss of wetland vegetation. These marshlands, covering approximately 18 acres, provide critical ecosystem services such as biodiversity support, flood retention, and groundwater recharge. Their disturbance may reduce ecological integrity and increase local flood risks. Access road development through marshlands may also disrupt water flow and drainage patterns.

Home gardens, intersected at locations like tower 12/3, will lose valuable perennial crops (e.g., mango, papaya, teak). Scrublands, covering approximately 48.042 acres, serve as important transitional ecosystems that support chena cultivation, native biodiversity, and microclimatic balance. Construction in scrublands may disturb areas currently used for cultivation and contribute to temporary livelihood disruption and habitat loss. Vegetation removal in these areas may also affect climate regulation and soil stability.

In sparse forest areas, such as between TT1–AP2 and AP13–AP14, clearing of low-density tree cover and undergrowth for tower foundations may result in habitat fragmentation. These open forests, covering 14.298 acres, support shrubs, grasses, and small wildlife, and provide ecosystem services such as erosion control and carbon sequestration. Their removal may contribute to long-term degradation of forest structure and function.

The alignment intersects approximately 9.7 acres of streams, including significant watercourses such as Mahaweli Ganga, Uppu Aru, Valavachar Aru, and Kaddaiparichchan Aru. Although towers are not located directly within the streambeds, construction activities in adjacent areas—such as excavation, vehicle movement, and temporary crossings—may disturb riparian vegetation,

destabilize stream banks, and lead to increased sedimentation. These disturbances can degrade aquatic habitats, alter natural flow regimes, and compromise the physical and hydrological integrity of these freshwater systems. In all land types, site clearing and pit excavation may irreversibly change the soil structure and micro-drainage, particularly in low-lying or flood-prone zones near rivers like Mahaweli Ganga.

At the Kappalthurai GS, although land use impacts are minimal due to its existing operational status, TT1 construction may still involve limited clearing of sparse vegetation. The proposed Sampur CGS will be constructed on land currently classified as scrubland and abandoned paddy fields, altering low-intensity agricultural use. Additionally, access road improvements may change roadside land use dynamics and increase human disturbance. Within the associated 505-acre solar park, land clearance for panel installation will significantly affect existing scrub forests and seasonal tanks (including Sampukkulam, Pulavan Kulam, and Iluppankulam), especially in areas historically used for community water storage or seasonal cultivation. However, the overall impact on land use during the construction stage is envisaged to be low.

#### 6.2.1.2 Operational Phase

In the operational phase, permanent restrictions on land use will be enforced across the transmission corridor and substation zones. Under power line safety regulations, landowners will be unable to plant tall-growing trees or erect permanent structures within the right-of-way (tower heights: minimum 35 m). This restriction affects the long-term utility of lands under towers like 12/3 (home garden), AP22 (abandoned paddy), and 15/7 (marshland), where regrowth of economically or ecologically important vegetation is limited. These locations are mentioned as examples; however, such restrictions apply throughout the entire transmission line corridor. In paddy-dominated zones such as between AP20 and TT2, although some seasonal farming may continue, operational constraints and regular tower inspections may deter intensive cultivation. In marshlands and scrublands, continuous vegetation suppression and tower maintenance may result in biodiversity loss, disruption of wildlife corridors, and increased susceptibility to erosion. Moreover, natural regeneration in sparse forests near AP14 and 15/10 may be inhibited by routine clearing and human interference. The risk of direct disturbance to streams and riparian zones is significantly lower during the operational phase; however, potential impacts remain due to routine maintenance activities near water bodies. Additionally, the absence of permanent vegetation in maintenance corridors may lead to increased surface runoff during heavy rainfall, potentially causing localized sedimentation and affecting water quality in streams such as the Mahaweli Ganga, Uppu Aru, and their tributaries.

At Kappalthurai GS, operational impacts on land use are negligible due to its existing infrastructure and low surrounding land utilization. For the Sampur CGS and solar park, the conversion of scrublands and abandoned paddy to energy infrastructure results in a permanent transformation of land use. This affects the ecological function of adjacent tanks (e.g., Annaikal Kulam, Sambu Kulam), reduces open space for community use, and may restrict future agricultural or conservation-related land development. Overall, this impact during the operational stage is considered to be low.

### 6.2.2 Impact on Soil and Geology

#### 6.2.2.1 Construction Phase

During the construction of the 220 kV double circuit transmission line spanning 37.6 km with 95 towers (22 angle towers, 71 suspension towers, and 2 terminal towers), significant physical interventions are expected across varied geological and soil settings. The proposed tower locations fall across diverse geological formations such as charnockitic gneiss (AP16 to TT2), undifferentiated highland series (TT1 to AP6), granitic gneiss (AP3 to AP4), and quartzite and quartz schist (2/2 to AP3, 11/4 to AP12, AP15 to AP16), as well as various soil types including alluvial soils, reddish-brown earth, low humic gley soils, solodized solonetz, and non-calcic brown soils.

Based on DCPT results, variations in subsurface strength and bearing capacity were identified across several tower locations. Based on DCPT results, variations in subsurface strength and bearing capacity were identified across several tower locations, correlating closely with underlying soil types. Tower locations such as 4/2, AP6, 8/7, and 10/4, which are underlain by alluvial soils and low humic gley soils, exhibit low blow counts, indicating weak bearing capacity and a higher risk of differential settlement, subsidence, and foundation instability. These soil types are typically water-retentive and loosely packed, making them more susceptible to erosion, rutting, and waterlogging during construction. Conversely, towers located over non-calcic brown soils and hard rock formations like charnockitic and granitic gneiss, show high blow counts, reflecting stronger load-bearing capacity. However, excavation in these harder substrata may generate localized vibrations, microfracturing, and increased effort for foundation installation. These site-specific characteristics confirm that soil behavior across the alignment is heterogeneous, necessitating tailored foundation and construction practices to minimize long-term instability.

Initial site preparation activities, such as vegetation clearance, grading, and the development of temporary access roads, will disturb the natural soil cover and increase the risk of erosion. This is particularly critical in exposed slope areas along the Mahaweli Riverbanks and within soft alluvial zones located between 2/1 to 4/2, AP6 to 8/7, and 10/4 to AP17. These regions are vulnerable to sheet erosion and sediment transport, especially during the northeast monsoon. The removal of organic-rich topsoil also alters micro-drainage patterns, reduces moisture retention, and negatively impacts soil fertility.

Excavation for tower foundations, particularly within the alluvial deposits, can significantly disturb natural stratification and subsurface hydrology. These zones are especially prone to erosion and instability during cut-and-fill operations. Without adequate shoring and controlled dewatering, soil collapse, sediment runoff, and groundwater fluctuations may occur. However, dewatering activities in water-saturated zones, such as floodplains and low-lying sections near AP6 to 8/7 and 10/4 to AP17, may lead to temporary lowering of the water table and subsurface instability. In harder substrata like charnockitic gneiss (AP16 to TT2) and undifferentiated highland series (TT1 to AP6), controlled blasting or chiseling may be necessary, posing risks of micro-fracturing and disturbance to shallow aquifers. Foundation construction, including template alignment, stub setting, reinforcement, and concrete placement, poses contamination risks if cementitious materials are improperly handled. Alkaline leachates from such materials can alter soil pH and degrade structure.

Transporting materials and tower components to construction sites, especially in remote or waterlogged areas, can increase geological stress. While some towers are accessible via existing roads, others require manual handling or head-loading by workers. These repeated ground contacts, especially over sandy regosols or marshy low humic gley soils, result in surface rutting, excessive compaction, and destabilization. Heavy vehicle movement over poorly drained solodized solonetz soils (between 4/2 and AP6) can exacerbate these effects, causing further structural weakening. Stockpiling of excavated materials and equipment near wetlands, paddy fields, and riverbanks may result in sedimentation and edge erosion, especially during rainfall events.

Improper disposal of construction-related waste, such as packaging materials, excavated debris, and concrete residues, can physically disrupt soil structure and introduce potential contaminants. More critically, the use of heavy equipment introduces risks of fuel and lubricant leaks, especially in temporary camps and machinery storage zones. These hydrocarbons and heavy metals can degrade soil health, reduce microbial activity, and in extreme cases, contaminate shallow groundwater. Although galvanized high-tensile steel towers offer long-term corrosion resistance, improper disposal or damage during construction may still release metallic particles into the surrounding soil.

Although no undisturbed or sensitive geological formations are expected to be permanently affected, the cumulative and induced impacts of construction activities may lead to reduced land productivity and increased terrain instability in the absence of appropriate site management and mitigation measures. In terms of overall impact, it infers a low magnitude.

#### 6.2.2.2 Operational Phase

During the operational phase, physical interventions decrease, but residual and long-term soil and geological impacts remain relevant.

Periodic tower inspections, maintenance access, and vegetation management along the RoW may lead to repeated compaction in alluvial soil zones (2/1 to 4/2, AP6 to 8/7, and 10/4 to AP17) and non-calcic brown soils (AP17 to TT2). Without proper erosion control, exposed soil—especially in sandy and clayey regions—can deteriorate due to wind erosion during dry periods or heavy runoff during the northeast monsoon (December to February), when wind speeds increase and precipitation intensifies.

Drainage issues may persist in low-humic gley areas, causing waterlogging around tower bases if proper diversion structures are not maintained. In solonetz soils (4/2 to AP6), long-term saline accumulation can deteriorate foundation integrity, requiring occasional remediation.

Although regions with charnockite and granitic gneiss foundations (AP16 to TT2 and AP3 to AP4, respectively) are generally geotechnically sound, weathering or improper maintenance may lead to superficial erosion or vegetation encroachment, impacting structural stability. Quartzite belts (2/2 to AP3, 11/4 to AP12, AP15 to AP16) also require monitoring for potential propagation of surface fractures over time. However, the overall impact seems to be low.

### 6.2.3 Hydrological Impacts

#### 6.2.3.1 Impact on Surface Water

**Construction Phase**

As per Land Development Ordinance No.19 of 1935 and Land Regulations No 9912 of 15.10.1948, stream reservation widths must be maintained based on stream width: 20 m for streams <4.6 m, 40 m for 4.6–15.2 m, and 60 m for >15.2 m wide streams. The CEA, in consultation with the Agrarian Services Department, approved the Sampur project under specific conditions (letter dated 01/06/2023). A 40 m buffer must be maintained from the High Flood Line of Sampukulam Tank, and 20 m buffers from Pulawankulam and Illuppankulam Tanks.

During the construction phase, surface water systems may be directly impacted by tower foundation works such as pit excavation, grading, dewatering, and stockpiling of materials near watercourses. Several towers are sited within the required stream reservation zones, including AP3 (36 m from Palam Podda Aru), AP4 (53 m), 15/7 (45 m from Verical Aru), 8/1 (34 m from Par Aru), AP 11 (52 m from a tributary of Uppu Aru), and 16/3 (37 m from Valavachar Aru). The details of the stream reservations near the transmission line are presented in Table 6.2. These activities, when conducted in close proximity to riverbanks, may cause localized streambank destabilization, increased sediment runoff, and modification of natural overland drainage. If not adequately controlled, loose soils and construction debris may enter stream systems, particularly during rainfall events, leading to siltation, channel clogging, and disruption of aquatic habitats.

In addition, foundation construction in wet or marshy soils may require dewatering, potentially lowering local water tables and altering the baseflow of nearby streams. The use of heavy machinery, movement of construction vehicles, and cut-and-fill activities for access roads can further redirect surface runoff, block minor tributaries, or create artificial drainage paths, especially in flat alluvial areas where stream flow is slow and dispersed.

A specific concern relates to Mahaweli Ganga, where towers AP14 and AP15 are located within proximity to the riverbank. Although these towers are not placed within the active river channel, baseline flood modeling indicates that towers in this area may be inundated by 1 to 3 meters when river flooding coincides with sea level rise due to tides, storm surges, and wind setup. While this is a natural baseline hydrological phenomenon and not directly induced by project activities, it does raise concerns regarding the long-term resilience of tower infrastructure and access reliability during extreme weather events. Further, several towers, including 10/2 (118 m from Pattiyanoottru Kulam) and 21/2 (177 m from Mallumalai Kulam), are located in close proximity to irrigation tanks, which serve as critical water sources for agriculture and downstream users. Construction activities may disrupt natural drainage paths and affect tank recharge capacity. However, in terms of overall effect, the impact that causes on the surface water bodies seems to be low in magnitude.

**Table 6.2 - Status of Reservation of the TL near Major Streams**

| River | Stream width (m) | Tower No. | Shortest distance from the bank to the tower center (m) | Specified reservation (m) | Status |
|---|---|---|---|---|---|
| Palam Podda Aru | 25 | 2/2 | 91 | 60 | No reservation issue |
| | 25 | AP3 | 36 | | Need adjustments |
| | 20 | AP4 | 53 | | Need adjustments |
| Par Aru (Peru Aru) | 11 | AP8 | 333 | 40 | No reservation issue |
| | | 8/1 | 34 | | Need adjustments |
| Tributary of Par Aru | 11 | 8/5 | 43 | 40 | No reservation issue |
| | | 8/6 | 333 | | No reservation issue |
| Tributary of Uppu Aru | 60 | AP 11 | 52 | 60 | Need adjustments |
| | | 11/1 | 271 | | No reservation issue |
| Uppu Aru | 245 | 11/4 | 60 | 60 | No reservation issue |
| | | AP12 | 65 | | |
| Mahaweli | 164 | AP14 | 88 | 60 | No reservation issue |
| | | AP15 | 68 | | |
| Verical Aru | 25 | 15/7 | 45 | 60 | Need adjustments |
| | | 15/8 | 293 | | No reservation issue |
| Tributary of Valavachar Aru | 13 | 15/9 | 78 | 40 | No reservation issue |
| Tributary of Valavachar Aru | 13 | 15/10 | 230 | 40 | No reservation issue |
| Tributary of Valavachar Aru | 7 | AP16 | 186 | 40 | No reservation issue |
| Tributary of Valavachar Aru | 7 | 16/1 | 173 | 40 | No reservation issue |
| Tributary of Valavachar Aru | 12 | 16/2 | 145 | 40 | No reservation issue |
| Tributary of Valavachar Aru | 11 | 16/3 | 37 | 40 | Need adjustments |
| Kaddaiparichchan Aru | 21 | 17/1 | 106 | 60 | No reservation issue |
| | | 17/2 | 98 | | No reservation issue |

**Operational Phase**

During the operational phase, surface water bodies remain exposed to long-term, indirect impacts. Routine maintenance and inspection require periodic vehicular access to towers located within stream buffer zones. The continued use of unpaved access roads may cause soil compaction, surface runoff redirection, and sediment accumulation near streambanks. Over time, these alterations can change natural flow patterns, especially in meandering or braided channels, reducing their capacity for flood attenuation and ecological support. Furthermore, herbicide application for vegetation control may lead to chemical runoff into nearby streams during rainfall events, potentially affecting aquatic ecosystems and downstream irrigation uses. However, the overall impact on surface water bodies during the operational phase is envisaged to be low.

#### 6.2.3.2 Impact on Groundwater

**Construction Phase**

The project area traverses multiple shallow unconfined aquifers, particularly in alluvial zones adjacent to streams and rivers such as Mahaweli Ganga, Uppu Aru, and their tributaries. These aquifers are characterized by high infiltration rates, making them particularly vulnerable to surface contamination.

Several tower locations—such as AP15 near Mahaweli Ganga, 11/4 near Uppu Aru, AP11 near a tributary of Uppu Aru, and 15/7 near Verical Aru—are situated in close proximity to major surface water bodies. These areas are underlain by unconfined alluvial aquifers characterized by high permeability and shallow vadose zones, resulting in strong surface–groundwater interactions. Although groundwater extraction is not planned, mechanical disturbances during foundation excavation and soil compaction from heavy equipment may disrupt infiltration dynamics, reduce aquifer recharge, or cause localized depressions in the water table.

If dewatering, blasting, or subsurface formwork installation is not carefully managed, fine sediments, hydrocarbons, concrete slurry, and construction wastewater may infiltrate the subsurface, leading to potential aquifer contamination. Poorly compacted or unsealed foundation pits, especially near streambanks or flood-prone areas, may function as preferential flow pathways, allowing vertical migration of contaminants during rainfall events or high recharge periods. This is particularly concerning in wetland or marshy zones, where overbank streamflow during floods can transport suspended solids and surface pollutants that percolate into the aquifer system.

In wet soils, dewatering is often required, which can temporarily lower the groundwater table, particularly during the dry season. The use of rigid formers and concrete pouring may lead to subsurface sealing, further impeding infiltration. If concrete is improperly cured or if slurry leaks into the surrounding soil, it may elevate the alkalinity of percolating water, thereby affecting the geochemical balance of shallow aquifers.

Moreover, many rural communities in the project area depend on shallow open wells that directly tap into these aquifers. Without adequate controls, spillages or leachate from construction waste can seep into the groundwater, degrading its quality and posing risks to community health. Overall, this impact is found to be low in magnitude.

**Operational Phase**

Operational impacts on groundwater availability are indirect but persistent. Unpaved access routes—especially those not rehabilitated after construction—can significantly reduce infiltration over time due to soil sealing and hardpan formation. Additionally, long-term vegetation removal under towers alters evapotranspiration and soil porosity, further inhibiting recharge.

Stormwater drainage from tower bases, particularly if designed to discharge laterally rather than percolate, may result in runoff bypassing recharge zones altogether. This may not cause immediate groundwater depletion but can result in seasonal recharge deficits, affecting community wells and shallow aquifer-fed irrigation sources, which indicates a very low adverse impact.

#### 6.2.3.3 Impact on Surface Water and Groundwater Quality

**Construction Phase**

Water quality impacts during construction stem from multiple sources. These include soil erosion, accidental fuel and lubricant spills, improper storage of construction materials, and concrete waste discharge. Tower sites located near sensitive hydrological features—such as Valavachar Aru (16/3 – 37 m), Uppu Aru (11/4 – 60 m), and Mahaweli Ganga (AP15 – 68 m)—are particularly at risk. Sediments from excavation sites may be washed into adjacent streams during rainfall events, causing increased turbidity, reduced dissolved oxygen, and potential damage to aquatic organisms.

Concrete slurry or wastewater from equipment washing may contain alkaline substances and particulates, which, when discharged to the ground or into nearby water bodies, can cause pH elevation and chemical contamination. Such inputs can alter the natural buffering capacity of streams and introduce trace elements that accumulate over time.

The groundwater system, being shallow and unconfined, is equally vulnerable. Pollutants from surface activities can infiltrate the subsurface through cracks or porous soils, especially near tower bases, leading to localized contamination. Given that several groundwater samples already show high total alkalinity (up to 1050 mg/L in Mahaweli GW) and hardness, any additional load from anthropogenic sources could result in further degradation, rendering the water unsuitable for human consumption or irrigation without treatment.

Given these conditions, the current assessment provides a solid foundation; however, additional baseline sampling at sensitive locations is recommended, particularly for parameters such as pH, TDS, nitrates, coliform bacteria, hydrocarbons, salinity, and alkalinity.

The nearest potentially affected water bodies—such as Mahaweli Ganga, Uppu Aru, and Verical Aru—are hydrologically linked to the unconfined aquifer. As these surface waters or adjacent shallow wells can be used for drinking or irrigation purposes it is important to conduct groundwater quality sampling both before and during construction to ensure the protection of community resources. With a proper construction process in place, it is found that this impact is low in magnitude.

**Operational Phase**

Water quality risks during operation are associated with low-frequency but recurring exposures. The use of chemical herbicides for vegetation control under tower spans can result in runoff contamination, particularly during rainy seasons.

Continued maintenance activities, including lubrication of hardware and fuel storage for vehicles, present a chronic contamination risk. Leaks or spills though small can introduce PAHs (polycyclic aromatic hydrocarbons), metals, and organic contaminants into the environment. These pollutants may slowly degrade into both surface water and groundwater over time.

Moreover, corrosion of tower bases and grounding systems may release zinc or other metal ions, particularly in acidic or saline soil environments. These elements can leach into surrounding soils and water, altering trace element concentrations in the hydrological system.

As operational activities persist over the lifespan of the transmission line, the cumulative impact on water quality—especially in non-compliant or buffer-adjacent sites can become substantial, exacerbating local water stress, reducing aquatic habitat health, and requiring increased water treatment interventions for agricultural and domestic users. However, with proper maintenance efforts, this impact seems to be low in magnitude.
Hydrological Impacts

#### 6.2.3.4 Operational Stage

As the pylon foundations are very small in volume compared to the storage volume of the large flood plains, the pylon foundations will not create a significant storage change to cause any flood lift, hence no special mitigation measures other than checking the status of the pylon foundations to check if there are settlements and misalignment of towers.

#### 6.2.3.5 Hydrological Impacts on the GS During Construction and Operation

Since the GS station will not have a significant flood depth, and the ground level will be raised the GS will not be inundated.

Two irrigation canals run through the GS. The water flow under these canals to the downstream paddy areas cannot be disturbed by the GS construction. The following optional mitigation measures could be adopted to minimize the impact on these canals.

**Option 1:** Provide closed concrete two underground rectangular drains with manhole access and cover slabs and maintain these drains so that irrigation flow from the upstream tank which is outside the proposed GS could be kept intact. CEB could maintain these drains and if requested access to the officers of the Department of Agrarian Development (DAD), should be allowed for any inspection.

**Option 2:** Two diversion canals (Rectangular concrete canals) in the form of concrete channels with cover slabs and manhole provisions should be provided. Both canals should be out of the GS premises so that future maintenance by the DAD.

These two options are given in Figure 6.1. The most suitable option should be selected during the detailed design stage after the preparation of the conceptual drawings, canal size finalization, and discussing the matter with the DAD.

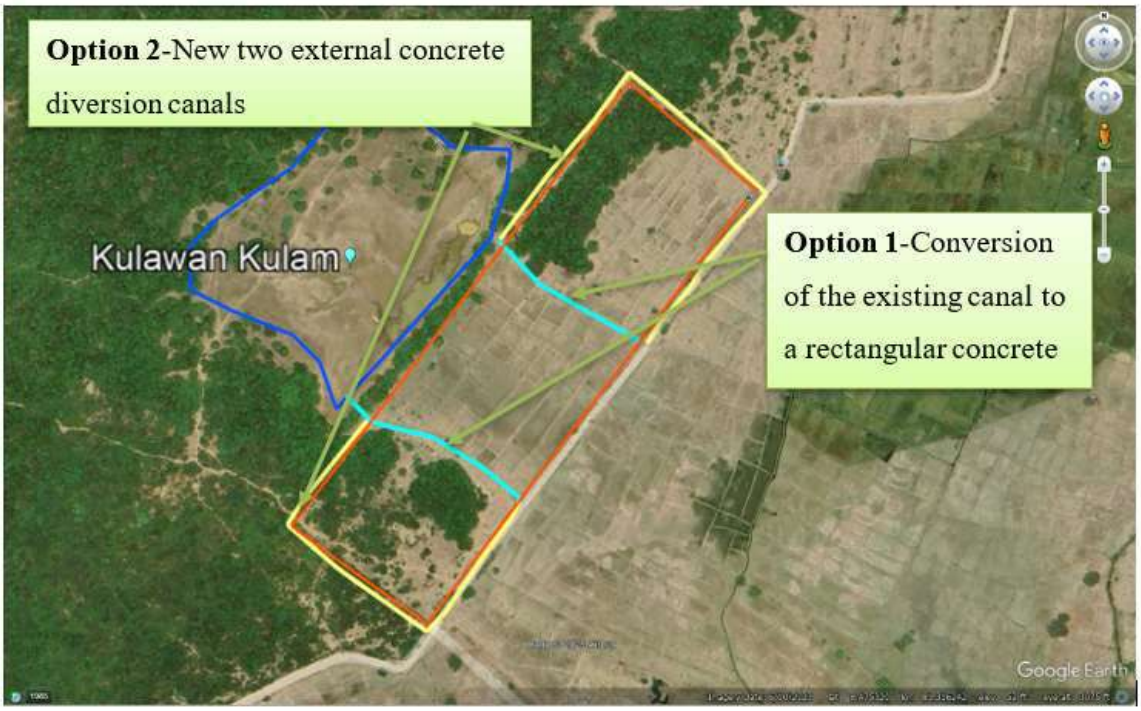


**Figure 6.1 - Optional Mitigation Measures for the Irrigation Canals through the GS**

### 6.2.3.6 Impacts on Streams

NOTE: This description is based on the letters issued for the HK line. This will be edited further after obtaining letters from the Irrigation Department and the Department of Agrarian Development. The reported directions from the ID and DAD are yet to be obtained.

**Stream Reservations**

Under the IEE study, which was previously concluded, the Irrigation Department has indicated stream reservation requirements, through its letter dated 01/06/2023. The reservation requirements are set out in Table 6.3.

**Table 6.3 - River Reservations Specified by the Irrigation Department**

| River/ Cannel | Reservation Limit (from the riverbank on either side) |
|---|---|
| Gal Oya, Aluth Oya, Minneriya - Kanthale Yoda Ela (MKYE) | 60m |
| Other Canals - 4.5m < Bedwidth < 15 m | 40m |
| Other Canals - Bedwidth > 15 m | 20m |

1. There is a discrepancy of reservation distance set out, for the category of “Other Canals”. Lower reservation values have been given for larger bed widths.

2. Reservations have only been made for canals. The meaning of canals here is not clear as there could be both natural streams and manmade irrigation canals.

Since the Irrigation Department has officially issued the guidelines for the reservations and there are discrepancies in the issued reservations, this matter will be officially discussed with the Irrigation Department and directions will be obtained.

The impact on the streams from the proposed transmission line was studied in terms of the required reservations specified by the Irrigation Department. Details are presented in Table 6.4.

**Table 6.4 - Status of Reservation of the TL near Major Streams**

| River | Approximate Width (m) | Towe No. | Approximate Distance from the Bank (m) to the Tower Center | Specified Reservation (m) | Status |
|---|---|---|---|---|---|
| Stream | 21 | 2/2 | 108 | 40 | No reservation issue |
| Stream | 28 | AP3 | 36 | 40 | Need adjustments |
| Stream | 20 | AP4 | 56 | 40 | No reservation issue |
| Upparu | 245 | 11/4 | 40 | 60 | Need adjustments |
| | | AP12 | 59 | 60 | |
| Mahaweli | 140 | AP14 | 102 | 60 | No reservation issue |
| | | AP15 | 75 | 60 | |

The locations given in the table above are illustrated in the Google satellite imagery below.

**Figure 6.2 - Uppu Aru Crossing**

**Figure 6.3 - Mahaweli River Crossing**

#### 6.2.3.7 Reservations for Minor Streams

Note: This description is based on the letter given to KH Line. This will be modified after CEB gets the letter from DAD.

Most of the minor streams and minor drainage canals are in the paddy areas, under the jurisdiction of the Department of Agrarian Development. As the Department of Agrarian Development has not imposed any reservation requirements no reservations will be made for the streams and irrigation canals within the paddy areas under the Department of Agrarian Development.

#### 6.2.3.8 Impact on Village Tanks

There are no village tanks directly affected by the transmission tower foundations except for Amman Kulum. In this case, the tower foundation of tower AP2 is about 40m away from the tank bund (Figure 6.4). In an unnamed village tank near tower AP9, the approximate distance is 30m to the upstream periphery of the tank's water surface (Figure 6.5). The other tanks are more than 40m away from the tower foundation center.

**Figure 6.4 - SK Line near Amman Kulum Tank**

In the first case (Amman Kulum), there will not be a considerable impact on the tank elements including its water surface, as the tower is downstream of the tank bund. In the latter case, the foundation excavations will cause siltation of the tank's water body during the rainy season.

To mitigate this impact, the foundation excavation should be carried out during dry season and the excavated material should be recompacted as backfilling. If excavation is during the wet season, suitable silt barriers such as sand-filled gunny bags should be used on the downstream side of the excavation to stop silt ingress in the nearby paddy areas or the tank.

**Figure 6.5 - SK Line near Unnamed Village Tank near Tower AP9**

The position of the transmission line and towers are given in Figure 6.6. Maps for individual tanks are given in Annex 15.7.

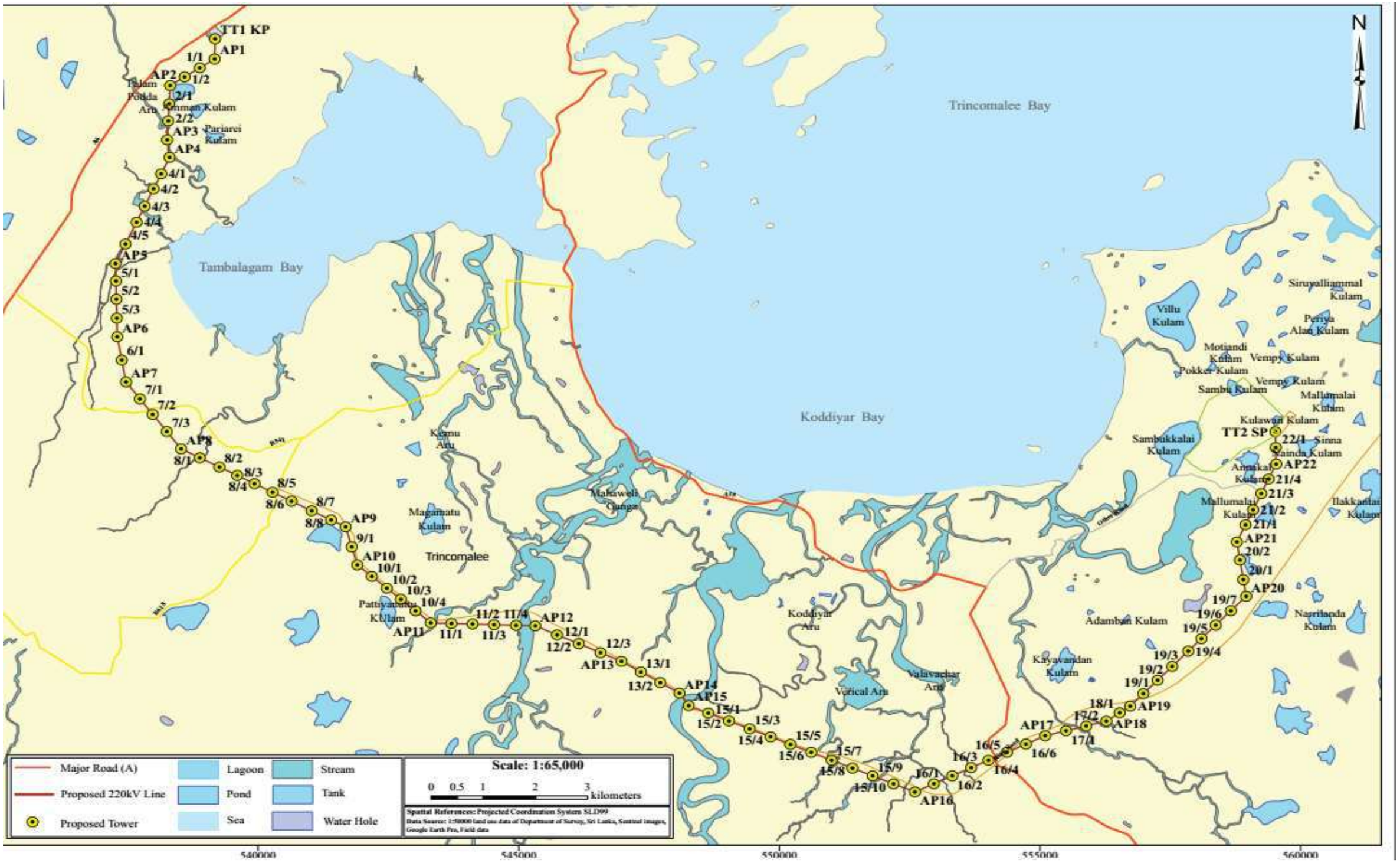


**Figure 6.6 - All Village Tanks and the Transmission Line**

### 6.2.4 Impact on Air Quality

#### 6.2.4.1 Construction Phase

Ambient air quality during project activities should comply with the National Environmental (Ambient Air Quality) Regulations stipulated in Gazette Extraordinary No. 1562/22 (dated 15th August 2008). According to these regulations, the 24-hour average maximum permissible limits are 100 µg/m³ for $PM_{10}$, 50 µg/m³ for $PM_{2.5}$, 80 µg/m³ for sulfur dioxide ($SO_2$), and 100 µg/m³ for nitrogen dioxide ($NO_2$).

Air quality during the construction phase is expected to be impacted by a range of project activities including land clearing, excavation for tower foundations, grading, material stockpiling, transport of construction materials, and operation of diesel-powered machinery. These activities will generate fugitive dust ($PM_{10}$ and $PM_{2.5}$) and gaseous emissions such as $NO_2$, $SO_2$, carbon monoxide (CO), and volatile organic compounds (VOCs). Dust emissions will be particularly elevated in dry weather conditions and open, unpaved areas, especially near access roads, temporary workspaces, and material storage yards. Operations like blasting or chiseling in rocky areas, and concrete mixing at tower sites, may cause localized but acute air quality deterioration, posing health risks to on-site workers and communities living near the construction corridor. The movement of heavy vehicles over unpaved roads will contribute to dust suspension and may affect nearby settlements, agricultural fields, and sensitive receptors, particularly in wind-exposed zones. However, a low adverse impact could be anticipated on ambient air quality.

#### 6.2.4.2 Operational Phase

In the operational phase, the transmission line is a passive infrastructure and does not emit pollutants during its normal functioning. However, periodic maintenance activities introduce minor air quality impacts, mainly through vehicular access, inspection team movement, and vegetation management. Maintenance vehicles traveling on unpaved or poorly maintained roads can raise road dust, particularly during dry seasons, which may contribute to localized ambient particulate levels.

Where mechanical vegetation clearance is used, there is additional dust generation from trampling, brush cutting, and root disturbance, especially beneath towers in open or deforested sections. If chemical herbicides are applied for vegetation control, the potential exists for odor emissions and volatile organic compound release, particularly in high-temperature conditions. While such emissions are low in magnitude, they may become repetitive and cumulative in areas close to settlements or where maintenance frequency is high.

In high-voltage transmission lines, localized corona discharges may occur under humid or rainy conditions. These discharges can generate trace amounts of ozone ($O_3$) and nitrogen oxides ($NO_x$); however, the levels are minimal and are not expected to significantly affect ambient air quality in the project area.

Although operational-phase impacts are generally minimal and non-continuous, poor management of these activities over time—especially if dust suppression or road maintenance measures are absent—may result in localized degradation of air quality along the corridor.

### 6.2.5 Noise and Vibration Impacts

#### 6.2.5.1 Construction Phase

The construction phase involves a wide range of activities that generate both airborne noise and ground vibrations, with the potential to affect nearby communities, sensitive receptors, and ecosystems. Key sources of noise include site clearance, vegetation removal, and grading activities using bulldozers and chainsaws. Foundation excavation—especially in rocky areas—may require chiseling or controlled blasting, both of which emit sharp noise peaks and induce localized ground vibrations. Concreting and curing operations using vibrators, as well as reinforcement and formwork, produce continuous mechanical noise that may last for extended periods. The movement of heavy machinery and transport vehicles along unpaved access roads contributes to persistent noise and vibration exposure.

During the construction stage, noise levels should comply with the maximum permissible noise levels of 75 dB(A) during the day and 50 dB(A) at night (National Environmental (Noise Control) Regulations No. 1 of 1996). Several noise-sensitive receptors (NSRs) have been identified within 200 meters of the transmission line corridor, including schools, religious places, hospitals, and residential areas (e.g., Kottiyarama Mula Maha Viharaya - Buddhist temple – 194 m from 16/6; RKM Saratha Vidyalayam – 210 m from AP4; Al Ahla Vidyalayam – 181 m from AP10). These receptors may experience temporary disturbance during the construction phase if activities are carried out without proper mitigation. Prolonged exposure to high noise levels may lead to adverse health effects on workers, including hearing fatigue, elevated stress, and reduced concentration, thereby increasing the risk of accidents. Additionally, wildlife in surrounding habitats may experience stress, altered movement patterns, or displacement due to noise and vibration, especially near forest patches, wetlands, or scrublands intersected by the transmission line corridor. Ground vibrations can affect soil-dwelling organisms, burrowing animals, and even microfaunal activity essential to soil health. Furthermore, repetitive ground shaking in areas with sandy or marshy soils may cause soil destabilization, increased erosion risk, and micro-cracks in surrounding built infrastructure. Overall, there could be sporadic events where this impact would be moderate in local environments, particularly affecting the mobility of fauna.

#### 6.2.5.2 Operational Phase

Noise and vibration impact during the operational phase are expected to be considerably lower than during construction but are not entirely negligible. During the operational stage, noise levels should comply with the maximum permissible noise levels applicable to areas under Pradeshiya Sabhas, where ambient noise is typically low, 55 dB(A) during the day and 45 dB(A) at night (National Environmental (Noise Control) Regulations No. 1 of 1996).

A key source of operational noise is corona discharge, which may occur around high-voltage conductors during wet, foggy, or humid weather. This phenomenon produces a low-intensity

hissing, crackling, or buzzing noise, known as corona noise, typically measured between 35–50 dB(A) directly beneath the conductors during rainy conditions. In quiet rural zones or during the night, this may be perceptible and potentially cause nuisance near habitations or schools located close to the transmission line corridor.

Routine maintenance activities, including vegetation management (e.g., brush cutting or mechanical weed removal), tower inspections, or repairs may temporarily increase local noise levels, especially if power tools or motorized equipment are used. The regular use of unpaved access roads for maintenance vehicles can result in repetitive low-frequency vibration and localized noise pollution. Over time, these activities may lead to minor, cumulative changes in ambient acoustic conditions and soil compaction patterns. In dry periods, road traffic may also increase secondary noise from vehicle engines and tire friction. Additionally, in saline or coastal areas, weathering and corrosion of tower structures may produce intermittent mechanical sounds or vibration during high winds or rainfall, potentially introducing low-level but persistent ambient noise. However, this impact is reckoned to be very low during the operation phase.

### 6.2.6 Traffic Impacts

#### 6.2.6.1 Construction Phase

During the construction phase, temporary and localized increases in traffic volume are anticipated due to the movement of construction materials, tower components, and personnel. The transmission line corridor primarily traverses rural and semi-rural areas of the Trincomalee District, where baseline traffic volumes are generally low. However, the proposed alignment intersects several key roads, including the Trincomalee–Batticaloa (A15) Road, the Thambalagamuwa–Kinniya (B541) Road, and the under-construction Trincomalee Outer Circular Road (Ring Road) at multiple locations.

The movement of heavy vehicles and construction equipment may temporarily disrupt traffic flow, particularly at crossings along the A15 and B541 during peak daytime hours. Additionally, minor congestion may occur on narrow gravel roads used as access routes near locations such as AP6 to AP8 and AP14 to TT1, where agricultural and household traffic also operates. While no major congestion points were observed during field reconnaissance, traffic-related impacts are classified as low, given the rural setting and limited construction footprint. These impacts are expected to be manageable through proper scheduling of deliveries, use of existing alternate routes, and coordination with local authorities for traffic control measures, including signage and flagging at critical junctions.

#### 6.2.6.2 Operational Phase

During the operational phase, traffic impacts are expected to be negligible. Routine maintenance of towers and transmission lines will require only occasional vehicle access, primarily using existing roads and dedicated service paths. Minimal traffic is anticipated to the Sampur CGS and the Kappalthurai GS, both of which are accessible by existing roads. Maintenance activities will be scheduled during off-peak hours, and no long-term or regular disruption to public or commercial traffic is expected during this phase.

### 6.2.7 Other Impacts

#### 6.2.7.1 Visual and Landscape Impact

The construction and operation of the proposed 132 kV transmission line and associated substations will introduce new vertical and linear infrastructure elements into predominantly rural, agricultural, and scrubland landscapes. Transmission towers—rising to heights of approximately 35 m—will create visual discontinuities, especially where they traverse open paddy fields, marshes, or home gardens with minimal vertical features. Areas such as the paddy fields between tower locations 10/3–10/4 and the marshlands between AP14 and 15/7 are particularly sensitive due to their wide-open vistas and ecological character. The repetitive, industrial design of towers and conductors may be visually intrusive, particularly when viewed from nearby roads, settlements, or water bodies such as Pulavan Kulam and Iluppankulam. The visual impact will be further accentuated during the construction phase due to vegetation clearance, excavation, and the presence of machinery. Although the visual change is less significant in scrubland or forested zones, edge effects and skyline alterations remain. While these changes are not expected to obstruct key vistas or heritage sites, they do contribute to a cumulative landscape transformation in a traditionally low-rise, agrarian setting. However, having artificial structures may bring in visual impact since there is no possibility of camouflaging efforts.

#### 6.2.7.2 Impacts on Local Topography and Micro-Landform Features

The construction of the proposed transmission line and associated facilities will cause localized alterations to topography, primarily due to tower foundation excavation, substation grading, and access road development. While much of the project area features flat to gently undulating terrain, specific segments—such as AP14 to 15/7 and AP11 to 11/4—intersect marshlands and low-relief floodplains, making them susceptible to minor landform modifications.

Excavation for towers and substations (e.g., TT1 at Kappalthurai and TT2 at Sampur) involves the removal and backfilling of surface materials, which may flatten micro-topographic features or introduce artificial slopes. Temporary construction platforms and spoil heaps may also cause short-term elevation changes that disrupt local drainage.

However, these alterations are confined to small, isolated areas at tower and substation sites and do not require large-scale terrain reshaping. Given the overall flatness of the landscape and the absence of steep gradients, the topographic impact is expected to be minimal and localized.

#### 6.2.7.3 Accumulation of Waste / Disposal of Debris

During the construction phase, significant volumes of waste are expected from activities such as vegetation clearance, foundation excavation, concreting, tower erection, and stringing. These waste streams include excavated soil, construction debris (e.g., metal rods, wood scraps, insulation materials), plastic packaging, concrete residues, and formwork discards. If these materials are not properly collected and disposed of, they can accumulate at tower bases, substations, or along access routes, leading to localized soil degradation, drainage obstruction, and visual intrusion. In sensitive areas such as marshlands (e.g., AP14–15/7) and floodplains (e.g., AP11–11/4),

unregulated waste piles may impede runoff, increase sediment loads in streams, and promote waterlogging.

Although the operational phase typically generates limited waste, maintenance activities—such as insulator replacement, tower painting, or cable tensioning—may produce small quantities of solid waste requiring controlled disposal; hence, the impact is minute.

### 6.2.8 Geohazard Assessment

The transmission line corridor, along with the Sampur CGS, associated solar park, and Kappalthurai GS, is situated in the Trincomalee District in the eastern part of Sri Lanka, which is generally considered a low to moderate geohazard risk zone. According to the IEE findings, the region lies within a seismically stable zone with negligible earthquake risk, and its flat terrain minimizes the potential for landslides compared to the central highlands. However, localized flooding may occur in low-lying sections of the corridor, particularly during the northeast monsoon season (December to February), necessitating adequate drainage planning. During this period, winds are generally stronger and moisture-laden, increasing the risk of mechanical strain or structural impacts on transmission towers and solar panels. While large-scale erosion is not prominent, minor soil erosion may occur in sloped or coastal areas—especially where vegetation is cleared. Saltwater intrusion, exacerbated by sea level rise, is another potential concern near coastal installations. The area also has a low but notable risk of tsunami impact, as evidenced by the 2004 Indian Ocean tsunami, warranting basic precautionary measures for infrastructure near the coastline. Generally, although this area is not highly vulnerable to geohazards, careful mitigation measures and planning considerations are recommended for further development.

### 6.2.9 Operational Health and Safety

Health and safety risks relating to power transmission designs were assessed for various stages of the project life cycle (i.e. manufacture, assembly, commissioning, operation and maintenance, and decommissioning). As health and safety covered many diverse risks, it was recommended that health and safety and environment were split into two separate categories with dedicated techniques for each used.

Unskilled labor will be sourced from seasonal workers in local communities, but skilled labor is expected to be externally recruited, creating risks related to labor influx. There are also risks relating to occupational health and safety (OHS), GBV, SEA and SH as well as working conditions such as working at height, live power lines, and lightning strike risks, hence workers are required with adequate PPE with H&S training and should be provided with compensation and reasonable living conditions.

In the absence of dedicated protective measure standards for transmission lines, the governing health and safety standard applicable to the design of transmission lines, including their structures, was the Factory Ordinance and the World Bank Group Environmental, Health, and Safety Guidelines. The Factory Ordinance standards applied only to the health and safety of personnel. Additionally, only commissioning, operations, and maintenance of transmission lines were

covered. For information on manufacture, assembly, commissioning, operation and maintenance, and decommissioning, and environment, alternative sources of information were required.

There are many different categories of risk relating to health and safety for transmission lines. These include, but are not limited to, handling of Long/heavy Objects, Wild Animals, working at Height, Excavation, Vehicles & machinery, access and egress, fire, noise, geological, hazards related to waste disposal and vegetation clearing, and should be used as guidance in HAZID (to help identify health and safety hazards). Hazardous identification related to occupations, and the public was done based on the proposed project activities, and a Hazardous Identification and Risk Assessment (HIRA) was prepared. HIRA presented potential hazards along with preventive and corrective measures (Section 6.5). The contractor shall develop a comprehensive OHS plan outlining the procedures, responsibilities, risk mitigatory measures, emergency response protocols, and safety training programs to be implemented throughout the construction phase. This plan must be submitted to the CEB for review and approval well in advance of initiating any construction activities. The approved OHS plan will serve as a key instrument to ensure the health, safety, and well-being of all workers, subcontractors, and site personnel, and must be aligned with national regulations and international best practices.

#### 6.2.9.1 Risk assessment and management

The activities of all types of organizations were exposed to potential hazards due to both external influences and the nature of their operations. This exposure, coupled with the potential consequences of the hazards, created risk. This risk was assessed via a series of activities designed to identify, analyze, and evaluate the potential risks. Risks were managed by identifying actions to be taken to mitigate or treat the source or the consequence and were accepted when the risk was as Low as Reasonably Practicable (ALARP). Risks were also considered acceptable if they were seen as an inherent or necessary part of the technology development process. Key to the management process was an understanding of the risks associated with the system in question.

#### 6.2.9.2 Risk identification

Sources of risk or hazards were elements that, alone or in combination, had the intrinsic potential to give rise to risk. A systematic approach was necessary to identify these and ensure that all relevant sources of risk and hazards were recognized. One such approach was Hazard Identification (HAZID).

### 6.2.10 Mitigations for Physical Impacts

#### 6.2.10.1 Mitigation Measures for Land Use Impacts

**Construction Phase**

In active and abandoned paddy fields (e.g., towers 4/2, 6/4, 10/3, 14/1, and 17/3), schedule construction after harvesting seasons and ensure topsoil is carefully removed, stored, and reapplied after tower erection to preserve soil fertility and support future cultivation.

For marshland zones near towers 4/3 to 4/5, AP9, AP14, and between AP15 and 15/7, use low-impact access techniques such as temporary matting or geotextile-supported tracks to minimize soil rutting and protect wetland hydrology. Avoid excavation during peak monsoon periods.

In home gardens intersected at tower 12/3, restrict machinery movement to designated paths to minimize crop damage. Provide compensation for lost perennial trees like mango and teak, and offer replanting support post-construction.

In sparse forest areas (e.g., TT1 to AP2 and AP13 to AP14), vegetation clearance should be confined to the 35 m RoW and the designated access paths. Retain edge vegetation as habitat buffers and avoid disturbing regeneration patches during material transport.

For chena cultivation zones near AP11 and AP16, coordinate with local farmers to identify current usage and avoid disruption during active cultivation periods. Support temporary relocation or provide short-term livelihood alternatives.

In low-lying areas close to Mahaweli Ganga, ensure drainage channels are maintained during excavation, and restore micro-drainage after construction. Implement erosion control measures such as silt fences and berms near watercourses.

Within the Sampur GSS and solar park zone, maintain a 40 m buffer from the High Flood Line of Sampukulam Tank and 20 m buffers from Pulavan Kulam and Iluppankulam, as per CEA guidelines. These zones must remain undisturbed, with stormwater swales installed to control runoff and reduce sedimentation.

**Operational Phase**

Enforce RoW vegetation control beneath towers in home garden areas like 12/3, using manual clearing methods without herbicides to prevent long-term soil degradation and allow low-lying crops.

In marshland and forest zones (e.g., AP14, 15/7, 15/10), avoid frequent clearing that inhibits ecological regeneration; instead, apply a targeted maintenance regime allowing controlled regrowth of compatible native species.

For paddy-dominant zones between AP20 and TT2, establish communication with landowners to coordinate tower inspections outside active planting/harvesting times and minimize disruption to seasonal farming.

Around solar park boundaries, establish native vegetative buffers to reduce edge impacts on adjacent seasonal cultivation areas and minimize visual and land-use conflicts with community-used tanks like Annaikal Kulam and Sambu Kulam.

#### 6.2.10.2 Mitigation Measures for Soil and Geology Impacts

**Construction Phase**

In erosion-prone alluvial soil zones (e.g., 2/1 to 4/2, AP6 to 8/7, and 10/4 to AP17), install temporary erosion control measures such as silt fences, coir logs, and contour bunds following the CEA's ESC (Erosion and Sediment Control) guidelines, especially during the northeast monsoon. Measures should be site-specific, with priority given to flood-prone low-lying areas.

For tower foundation excavation in soft or water-saturated soils, particularly near Mahaweli River floodplains, adopt controlled dewatering techniques and trench shoring to prevent collapse and erosion. Ensure dewatering discharges are filtered before release to adjacent land or drainage channels to comply with CEA water discharge guidelines.

In rocky substrata like charnockitic gneiss (AP16–TT2) and undifferentiated highland series (TT1–AP6), conduct pre-construction geo-technical assessments and apply controlled blasting protocols only where necessary, minimizing vibration and subsurface fracturing. Techniques should follow NBRO recommendations for safe rock excavation in sensitive zones.

Restrict construction access and heavy machinery movement in solodized solonetz soils (4/2–AP6) and low humic gley soils to designated haul paths using low ground pressure equipment or geo-fabric mats, reducing soil compaction and structural weakening.

Stockpile excavated soil and material at least 50 m away from tanks, streams, or marshes, ensuring temporary bunds are installed to prevent edge erosion and sedimentation, in line with CEA's buffer requirements.

Implement separate topsoil stripping, storage, and reuse in productive areas such as paddy fields and reddish-brown earth zones to preserve fertility for post-construction rehabilitation.

Construct concrete mixing and refueling areas on impermeable surfaces with secondary containment to prevent alkaline runoff, hydrocarbon spills, and heavy metal contamination, in accordance with Sri Lanka's National Environmental (Protection & Quality) Regulations, 2008.

Prohibit dumping of construction waste, excavated debris, or packaging material in wetlands, paddy fields, or forest edges. Ensure disposal is carried out at CEA-licensed facilities, following Schedule Waste Management Guidelines.

**Operational Phase**

Limit maintenance vehicle access in alluvial and non-calcic brown soil areas (e.g., AP17 to TT2) to dry-season inspections using existing stabilized tracks. Avoid repeated access during the monsoon to reduce rutting and erosion.

Construct and maintain drainage diversion structures (e.g., side drains, culverts) around towers in low humic gley soils to avoid chronic waterlogging. Measures should conform to CEA guidelines for infrastructure in flood-prone areas.

In solonetz soils (4/2–AP6), regularly monitor for surface salinization and apply remedial measures (e.g., soil amendment with gypsum or organic matter) where foundation integrity may be affected by long-term salt accumulation.

In rocky terrains such as quartzite and gneiss belts (AP3 to AP4, AP15 to AP16, AP16 to TT2), inspect tower foundations periodically for surface cracking or erosion. Apply local stabilization methods such as mortar patching, sealing, or surface vegetation to maintain structural integrity.

Avoid unnecessary clearing of vegetation within the RoW during maintenance; retain low-growing ground cover to stabilize soil and comply with ESS1 objectives on natural resource conservation.

#### 6.2.10.3 Mitigation Measures for Hydrological Impacts

**Construction Phase**

For towers within or near stream reservations (e.g., AP3, AP4, 15/7, 8/1, AP11, 16/3), reevaluate tower siting to ensure compliance with State Land Ordinance No. 9912 and Central Environmental Authority (CEA) buffer zone regulations: 60 m for streams >15.2 m, 40 m for streams between 4.6–15.2 m, and 20 m for streams <4.6 m in width. Where realignment is not feasible, apply strict erosion control, sediment barriers, and temporary bunds.

At towers close to irrigation tanks and sensitive aquatic ecosystems (e.g., 10/2, 21/2, AP15), install silt fences, sediment traps, and check dams to prevent runoff carrying sediment or contaminants into surface water bodies.

Prohibit storage of fuels, lubricants, or construction chemicals within 100 m of any watercourse or tank; designate bunded zones for such activities.

Use controlled dewatering and install sedimentation basins at marshy tower sites (e.g., AP14, AP15, AP11) to avoid turbidity spikes and lower the risk of altering groundwater recharge dynamics.

Conduct concrete curing and equipment washing at designated containment zones away from water bodies to prevent alkaline runoff.

Employ low-impact access techniques (e.g., geotextile tracks) near floodplains and saturated soils to minimize compaction and hydrological disruption, especially near Mahaweli Ganga and alluvial stretches.

**Operational Phase**

Schedule maintenance access to stream-adjacent towers during dry periods and reinforce streamside access roads (e.g., AP3, AP11, AP15) with permeable materials to maintain overland flow.

Implement vegetative buffer zones and riparian replanting (with native grass or shrub species) along degraded streambanks to stabilize soils and maintain ecosystem function.

Strictly prohibit herbicide use in RoW segments that lie within 100 m of streams, tanks, or wetlands; adopt manual or mechanical vegetation control instead.

Periodically inspect tower bases (especially AP15, 11/4, and 16/3) for corrosion and leachate formation; replace compromised components using low-toxicity alternatives.

Install oil interceptors or absorbent mats under parked maintenance vehicles during servicing near water-sensitive locations.

Restore micro-drainage features disturbed during construction using natural contouring and vegetated swales to promote groundwater recharge.

Educate local O&M teams on water-sensitive maintenance protocols and assign accountability for buffer zone compliance during routine checks.

#### 6.2.10.4 Mitigation Measures for Air Quality Impacts

**Construction Phase**

Ensure compliance with Sri Lankan ambient air quality standards as per Gazette Extraordinary No. 1562/22. Conduct baseline and periodic monitoring of $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_2$, and CO at locations near identified sensitive receptors such as schools, religious places, and settlements.

Implement dust suppression measures by spraying water on unpaved access roads, tower construction areas, and material stockpiles at least twice daily, especially during dry weather and high-wind periods.

Control vehicle speeds to under 30 km/h on unpaved roads, following best-practice measures adopted in AIIB-financed projects to reduce fugitive dust.

Cover all material transport vehicles to prevent dust dispersion. Avoid overloading and ensure material loads (e.g., soil, sand) are moistened before transport.

Use low-emission, well-maintained diesel-powered equipment, and avoid unnecessary idling. Regularly inspect machinery for compliance with national emission limits.

Restrict on-site concrete mixing and mechanical excavation near settlements, using enclosures or barriers when possible to reduce particulate emissions.

Avoid blasting during peak wind hours and dry months (June to September) unless justified by geotechnical requirements. Use dust barriers and pre-blasting water application for rocky formations like charnockitic gneiss areas (AP16 to TT2).

Establish buffer zones of at least 50 m from residential and agricultural zones when operating high-dust-generating equipment.

Maintain a grievance redress mechanism, as required by AIIB ESF, to record and respond to any complaints related to air quality during construction.

**Operational Phase**

Restrict maintenance vehicle speeds to 30 km/h on unpaved routes, particularly near settlements and agricultural fields, to minimize dust resuspension.

Schedule maintenance and vegetation clearance during early morning or late afternoon hours, especially during the dry season, to reduce dust impacts.

Use manual or low-dust vegetation clearance in RoW areas close to settlements or cultivations, e.g., towers 11/3 and 12/3. Avoid the use of herbicides; if necessary, select environmentally safe products approved by the Registrar of Pesticides in Sri Lanka and apply only under calm weather conditions.

Inspect and maintain access roads regularly to prevent rutting and surface deterioration, which can exacerbate dust generation.

Educate maintenance staff on dust control and air quality compliance responsibilities under the AIIB ESF and national environmental standards.

#### 6.2.10.5 Mitigation Measures for Noise and Vibration Impacts

**Construction Phase**

All high-noise activities such as rock blasting, chiseling, and heavy excavation must be restricted to 6:00 AM – 6:00 PM, as per the maximum permissible daytime noise level of 75 dB(A) under Gazette Extraordinary No. 924/12 of 1996. Night-time activities (6:00 PM – 6:00 AM) must be minimized and kept under 50 dB(A).

In areas requiring controlled blasting (e.g., AP3–AP4 tower sections over granitic gneiss), residents, Grama Niladari and Pradeshiya Sabha officers must be notified at least 24 hours in advance in accordance with AIIB ESF.

Use controlled blasting techniques (e.g., pre-splitting) to reduce air overpressure and ground vibration.

All construction machinery must be certified to meet National Machinery Noise Standards and be equipped with functional mufflers and silencers to reduce source-level noise emissions.

Install acoustic barriers or noise baffles near sensitive receptors (e.g., T/Kin/Al Ahla Vidyalayam – School, RKM Saratha Vidyalayam - School) if construction activities fall within a 500 m radius.

Limit construction and delivery vehicle speeds to under 30 km/h on all unpaved roads within 500 m of settlements and ecological zones.

Provide PPE such as industrial-grade earplugs or earmuffs to workers exposed to noise levels exceeding 85 dB(A) for more than 8 hours, based on Factories (Registration of Factories and Approval of Factory-Building) Regulations No. 1 of 2019.

In sandy regosol and low humic gley zones (e.g., 4/2 to AP6), employ anti-vibration pads or dampening mats beneath vibratory equipment and monitor ground vibration using portable seismographs to avoid structural cracking and ecological damage.

Avoid use of high-noise machinery within 50 m of wetlands, tanks (e.g., Iluppankulam), or forest patches (e.g., Muthur Government Forests).

Conduct monthly noise monitoring at receptor locations using calibrated sound level meters, and maintain records for audit compliance per CEA noise measurement protocol (2000) and AIIB's monitoring and evaluation requirements under ESS 1.

Establish and publicize a project-level GRM with logbooks at local GND offices to address community complaints related to noise or vibration, as mandated by AIIB ESF.

**Operational Phase**

Minimize corona noise (typically 35–50 dB(A) in wet weather) by using corona rings and ACSR conductors with appropriate surface treatment. Regular inspection should be carried out in compliance with CEA guidance on operational phase noise limits.

Ensure that routine operational activities adhere to 55 dB(A) during the day and 45 dB(A) at night in Pradeshiya Sabha-administered low-noise areas, as per Gazette Extraordinary No. 924/12 of 1996.

Restrict maintenance traffic along unpaved access roads during night-time hours. When necessary, schedule such activities during the day, with speed limits below 30 km/h to minimize secondary noise and vibrations.

Inspect tower structures in coastal and saline-prone areas for corrosion-related mechanical sounds (e.g., creaking during wind). Apply anti-corrosive coatings and structural tightening to reduce incidental noise.

Use manual or battery-powered tools for vegetation clearance near sensitive areas. Mechanical brush cutters should be used only during daytime hours, in line with the National Noise Control Regulations.

Conduct annual feedback sessions with local residents and GND officers to document any emerging noise or vibration issues and adapt the Environmental Management Plan (EMP) accordingly.

#### 6.2.10.6 Traffic Impact Mitigation Measures

**Construction Phase**

Coordinate with local authorities (RDA, Police, Pradeshiya Sabha) prior to construction to obtain necessary permits for transport of oversized or heavy loads.

Schedule transportation of materials and tower components outside peak hours (e.g., 7:00–9:00 AM and 4:00–6:00 PM), especially at crossings along the A15 and B541 roads, to reduce traffic disruption.

Install temporary warning signs, reflectors, and flagmen at all key road crossings (especially on A15, B541, and Ring Road intersections) to manage traffic safely and in line with RDA's Traffic Control Manual.

Use escorted convoys or pilot vehicles when transporting oversized equipment through narrow gravel roads near sensitive locations (e.g., AP6–AP8 and AP14–TT1).

Maintain clear sight distances at all access points by cutting vegetation and removing obstructions to ensure visibility for both construction and public vehicles.

Prepare and implement a Traffic Management Plan (TMP) specific to tower delivery schedules and access routes, addressing haul route safety and load-bearing capacity, especially for rural roads.

Limit use of community roads and ensure heavy trucks avoid local school hours to protect vulnerable road users such as students and farmers.

Provide local residents with advance notice of major deliveries, especially in areas where agricultural or domestic vehicle use is high.

Ensure construction vehicles are clearly marked, well-maintained, and equipped with functioning horns, lights, and brakes, as per Sri Lanka's Motor Traffic Act.

Establish a grievance redress system at GND level to allow community members to report unsafe or inconvenient traffic incidents.

**Operational Phase**

Schedule routine maintenance of towers and lines during off-peak traffic hours, using pre-identified access paths and minimizing road use in residential/agricultural areas.

Use light-duty vehicles for maintenance tasks to avoid disruption on narrow rural roads.

Ensure advance communication with local authorities for any non-routine access needs (e.g., emergency repair) that may affect road use.

#### 6.2.10.7 Mitigation Measures for Other Impacts

**Visual and Landscape Impact**

Retain natural vegetation buffers along the RoW in visually sensitive zones (e.g., near Pulavan Kulam and Iluppankulam), as permitted by safety clearances.

Use dull or non-reflective coatings on tower structures to reduce glare and visual contrast with the surrounding environment.

Limit the height of spoil heaps and stockpiles during construction to avoid further landscape disruption and ensure timely removal.

Implement progressive vegetation restoration (using native species) after construction in open areas such as paddy fields between 10/3–10/4.

Avoid unnecessary widening of the RoW in agricultural and scenic areas; follow minimum required clearance standards only.

**Local Topography and Micro-Landform Features**

Minimize excavation depth and area during tower foundation works, especially in flood-prone lowlands (e.g., AP14–15/7 and AP11–11/4).

Avoid stockpiling excavated materials on natural drainage paths or depressions to prevent waterlogging.

Grade temporary access roads and construction platforms to follow the natural contours of the land as much as feasible.

Apply compaction and stabilization techniques during backfilling to prevent subsidence and altered runoff patterns.

Restore altered micro-topography by recontouring disturbed areas post-construction to match pre-existing drainage lines.

Install surface drainage channels or temporary culverts where construction intersects low-lying or marshy terrain.

**Accumulation of Waste / Disposal of Debris**

Develop and implement a Construction Waste Management Plan (CWMP) in accordance with CEA Solid Waste Guidelines (2005).

Segregate construction waste into reusable (e.g., steel), recyclable (e.g., plastic, wood), and non-recyclable categories at source.

Remove and dispose of construction debris and excavated material at approved disposal sites identified in consultation with the Local Authority or Pradeshiya Sabha.

Refrain from locating labour camps close to waterways; proper sanitation facilities should be provided at locations away from water bodies.

Prohibit discharge of cement, cement mix, fuel oil, waste lubricants, or polythene into water bodies. Prohibit open dumping of waste in marshlands and floodplains (e.g., AP14–15/7), and erect signs to enforce this prohibition at sensitive zones.

Establish an on-site facility for hazardous/electronic waste management; do not store such waste in open areas or dispose outside.

Ensure that a Scheduled Waste Licence from the CEA is obtained one month prior to project operation, in accordance with Gazette Extra Ordinary Notification No. 1534/18 dated 01.02.2008, amended by Gazette No. 2264/17 dated 27.01.2022.

Prevent disposal of plant debris/unusable material into or near water bodies; use a designated disposal site located away from such areas.

Reuse spoil material (soil and rock) for site levelling, back-filling, or other construction-related activities wherever possible.

Use geo-membranes or tarpaulin covers to store excavated spoil temporarily, preventing erosion and sediment wash-off.

Ensure all non-biodegradable waste such as plastic packaging, insulation material, and used cables are collected and sent to licensed recycling or disposal facilities.

During operation, collect solid waste from maintenance activities and dispose through authorized third-party waste handlers.

Maintain waste handling logs and include them in environmental monitoring reports submitted to AIIB and local authorities.

Train contractors and workers on proper waste handling and spill prevention, particularly in ecologically sensitive zones.

**Mitigation Measures (Geohazards)**

**Construction Phase**

Wind Hazards: Construction activities around exposed areas and along the coastal segments of the solar park should be scheduled outside the peak monsoon months (December–February). Temporary scaffolding and storage yards in these areas should be wind-rated and securely anchored to withstand gusts typical during this season in the Trincomalee District.

Soil Erosion: In sloped construction areas where vegetation is cleared, temporary erosion control measures such as sediment barriers, mulching, and slope stabilization using coir mats or geo-textiles should be applied to prevent surface runoff and soil loss. Excavated material stockpiles must be covered and placed away from runoff paths to reduce sediment transport.

Saltwater Intrusion Risks: At Sampur CGS and southern edges of the solar park, subsoil is likely to exhibit salinity due to marine influence. Use of sulfate-resistant cement and anti-corrosion coated reinforcement bars is essential for tower and substation foundations. Storage of cement and metallic materials must be on elevated, sealed platforms to prevent salt exposure.

Tsunami Contingency (Low-Risk but Precautionary): A basic tsunami evacuation plan should be communicated to construction workers. Machinery storage and fuel depots should be sited at least 1 km inland or on elevated ground above historical inundation levels (~5–6 m based on 2004 Indian Ocean tsunami impacts).

**Operational Phase**

Wind Loading: Transmission towers and solar panel mounting systems should be designed for the maximum expected wind speeds in the region, incorporating sufficient structural reinforcement and bracing to avoid damage from sustained or gusty winds.

Soil Erosion (Post-Construction): Permanent stabilization of disturbed areas through turfing or native vegetation replanting is essential to maintain soil integrity in erosion-prone locations.

Saltwater Intrusion: In coastal zones, routine inspections of metal components for corrosion should be conducted, and protective coatings should be reapplied as needed. Sensitive equipment in substations should be housed in sealed enclosures with anti-corrosion protection.

Tsunami Risk: Critical infrastructure components should remain elevated and secured, and operational protocols must include coordination with national disaster management systems for early tsunami warnings and rapid shutdown procedures if required.

## 6.3 Biological Impacts

### 6.3.1 Constructional Impacts

#### 6.3.1.1 Impacts Due to Vegetation Clearance and Removal of Trees

Vegetation cover at tower locations and other sites (grid sub-station sites, access roads, etc.) will need to be cleared for construction purposes. To achieve ground clearance, selective felling of trees or clearing of vegetation needs to be done along the transmission line route (RoW). Both these activities (vegetation clearance and tree removal) will have several impacts on ecological resources. Loss of habitat, habitat fragmentation, edge effects, loss of species, hindrance to animals' activities (including movements), and the spread of invasive species are ecological impacts associated with vegetation clearance and the removal of trees.

Even though the proposed transmission line will predominantly pass through modified habitats, some sections will traverse ecologically sensitive areas, including disturbed forests, scrublands, mangroves, rivers, and other wetlands. In such cases, impacts due to vegetation clearance and tree removal cannot be considered low or negligible. As there are some ecologically important flora and fauna species (rare endemics, restricted-range species, keystone species, critically endangered or endangered species, habitat-specific species, etc.) inhabiting these habitats, vegetation clearance and tree removal will be detrimental to such species.

With respect to flora, there are nationally Critically Endangered Possibly Extinct [CR(PE)] mangrove associate flora species, *Myriostachya wightiana*, and nationally Endangered (EN) mangrove flora species, *Cynometra iripa* (Opulu / Attukaddupuli), *Xylocarpus granatum* (Mutti-kadol / Kandal anga), in mangroves along the route. Additionally, there are possibilities of finding some nationally Critically Endangered (CR) mangrove flora species, including *Ceriops decandra* and *Sonneratia apetala*, in these mangrove areas. Furthermore, there are a few nationally endangered (EN) flora species, including *Peplidium maritimum* and *Pseudoconyza viscosa*, in wetlands and scrublands. With respect to fauna, a few nationally endangered (EN) less mobile fauna species, *Euplecta colletti*, *Cyclophorus involvulus*, are found in disturbed forests along the route. Furthermore, the nesting habitats of the nationally endangered (EN) birds, the Streaked Weaver (Ploceus manyar) and the Little Ringed Plover (Charadrius dubius), are found in wetlands along the route. Vegetation clearance and tree removal will significantly impact these species unless mitigation measures are implemented.

Soil erosion and siltation, as well as noise, vibration, and dust, will destabilize the surrounding ecology. Noise, vibration, and dust issues typically end soon after the activity. However, soil erosion and siltation issues can persist, altering the affected habitats, and sometimes this is detrimental to the inhabiting species, leading to water pollution in aquatic habitats as well as eutrophication of stagnant water bodies. Therefore, mitigation measures will need to be adopted to prevent soil erosion and siltation, as well as control noise, vibration, and dust within acceptable levels.

Improper management (improper disposal and burning) of debris can destroy existing habitats, fauna, and flora at disposal/ burning sites, block waterways and drainages, and facilitate the spread of invasive species. If debris is disposed of in ecologically sensitive areas (streams, rivers, wetlands, etc.), the impact will be high. Several invasive flora species were identified along the

route during the ecological study. Spreading of these species, as well as some other invasive species, can occur due to improper debris disposal.

Additionally, the state timber corporation will conduct the removal of trees on state lands, but they are not responsible for debris disposal. Therefore, the practice is spreading debris all over the area, including ecologically sensitive areas (streams, rivers, wetlands, etc.).

As this is a linear structure, debris resulting from vegetation clearance and tree removal cannot be disposed of centrally at the demarcated site. Therefore, the impacts will spread to the larger areas along the route.

#### 6.3.1.2 Impacts due to the Construction Works

As there will be no in-site vegetation during construction works, no in-site ecological impacts are anticipated (In-site ecological impacts are anticipated only during the vegetation clearance stage as discussed above). All ecological impacts are anticipated on the surrounding ecological setup due to in-site construction works.

Soil erosion and siltation resulting from cutting, digging, and filling works, as well as noise, vibration, and dust generated by all other construction activities, will destabilize the surrounding ecology as discussed above. Therefore, mitigation measures will need to be adopted to prevent soil erosion and siltation, as well as control noise, vibration, and dust within acceptable levels.

#### 6.3.1.3 Other Ecological Impacts

If nighttime work is carried out, the light effect will also destabilize the surrounding ecology. It will be worse if high-power lights or lights without shade are used. Additionally, the impact of noise and vibration on fauna species is typically worse at night than during the day.

There are elephant movements in some areas of the route, specifically in the Sampur CGS area. Fencing around the Sampur CGS will hinder the free movement of elephants and, ultimately, exacerbate existing human-elephant conflicts in the area.

Accelerated illegal extraction of timber and firewood, as well as poaching, are other anticipated ecological issues resulting from the influx of workers and improved accessibility. All forests in the area have become disturbed or sparse due to illegal extraction of timber and firewood, and this can be exacerbated by enhanced accessibility. The project cannot mitigate this unless it helps to strengthen law enforcement. Poaching can be exacerbated by the high demand among workers for the meat of wild animals and the poaching of animals for their meat by workers.

Improper management (improper disposal and burning) of debris resulting from activities other than vegetation clearance and tree removal can also (as discussed) destroy existing habitats, fauna, and flora at disposal or burning sites, as well as block waterways and drainages. Additionally, facilitates the spread of invasive species through the disposal of soil and the use of infested (by seeds or propagules) burrow materials from outside.

### 6.3.2 Operational Impacts

#### 6.3.2.1 Avifaunal Collision

Avifauna collisions with transmission lines are among the most common impacts associated with the development of transmission lines. Avifauna diversity and density in the area, as well as the vulnerability of individual avifaunal species to collisions, are the two primary factors that contribute to avifaunal collisions with transmission lines. Avifaunal movement patterns, or the way avifaunal species use the area's airspace (flight height and direction), and flight behaviors, including flight speeds, are some fundamental factors that determine vulnerability. Body dimensions also play a crucial role in avifaunal collisions with transmission lines. The factors that cause avifaunal collisions with transmission lines are summarized below.

**Factors That Cause Avifaunal Collisions**

- Avifauna diversity and density
- Vulnerability of individual avifaunal species
    - Movement patterns (the way species use the airspace)
        - Flight height and direction
    - Flight behaviors
        - Flight speeds, etc.
    - Body dimensions

The proposed transmission line area has a variety of avifaunal habitats that harbor rich avifaunal diversity and density, including migratory bird species. Therefore, avifaunal collisions can typically occur due to proposed development, especially in areas close to waterbodies (such as tanks, lagoons, bays, marshlands, etc.).

#### 6.3.2.2 Other Ecological Impacts

The night light at Sampur CGS will destabilize the surrounding ecology. It will be worse if high-power lights or lights without shade are used. There are elephant movements in the Sampur CGS area, and this night light can affect elephant movements in the area.

Additionally, the Sampur CGS will hinder the free movement of elephants, ultimately exacerbating existing human-elephant conflicts in the area.

Accelerated illegal extraction of timber and firewood, as well as poaching, are other anticipated ecological issues resulting from improved accessibility. All forests in the area have become disturbed or sparse due to illegal extraction of timber and firewood, and this can be exacerbated by enhanced accessibility. The project cannot mitigate this unless it helps to strengthen law enforcement.

### 6.3.3 Special Mitigation Measures for Ecological Impacts

#### 6.3.3.1 Prevention of Clearance of Mangroves

Mangroves between Tower 4/3 and Tower 4/4, and Uppu Aru (between Tower 11/4 and Tower AP12) should not be cleared or disturbed by any mean. If the ground clearance is insufficient, the tower height should be adjusted accordingly to achieve sufficient ground clearance.

As per the current project plan, no mangrove clearing is anticipated, and the transmission line alignment has been designed to avoid any direct impact on mangrove habitats.

#### 6.3.3.2 Protection of Ecologically Important Species

Habitats and species of ecologically important mangrove flora species, such as *Myriostachya wightiana*, *Cynometra iripa* (Opulu/Attukaddupuli), and *Xylocarpus granatum* (Mutti-kadol/Kandal), which are found in the area during the ecological study, as well as potentially occurring flora species, *Ceriops decandra* and *Sonneratia apetala*, should be protected from disturbance due to project activities, such as vehicular movement, material storage, accidental waste dumping, vegetation clearing, or changes in hydrological flow near their habitats.

Additional studies targeting these species will be necessary, and their locations should be mapped for future monitoring.

#### 6.3.3.3 Translocation of Ecologically Important Species

The following observed and potential fauna and flora species from forests and scrublands need to be translocated before tree removal and vegetation clearance into pre-selected, suitably protected habitats in the surrounding areas. The translocation shall be carried out under the recommendation and guidance of DWLC and FD.

**Table 6.5 - potential fauna and flora species need to be translocated**

| Scientific Name | Common Name | Status | National Red List Status |
|---|---|---|---|
| **Land Snails** | | | |
| *Euplecta colletti* | | Endemic | Endangered (EN) |
| *Euplecta spp.* | | Endemic | |
| *Cyclophorus involvulus* | | Native | Endangered (EN) |
| *Pterocyclus cumingi* | | Native | Near Threatened (NT) |
| *Theobaldius spp.* | | Endemic | |
| *Beddomea tifasciatus**** | | Endemic | Vulnerable (VU) |
| **Reptiles** | | | |
| *Sitana devakai* | Devaka's Fanthroat lizard | Endemic | Vulnerable (VU) |
| *Eutropis tammanna* | Tammanna skink | Endemic | |
| *Geochelone elegans* | Indian star tortoise | Native | Near Threatened (NT) |
| **Amphibians** | | | |
| *Uperodon rohani* | *White-bellied or Rohan's pugsnout frog* | Endemic | |
| *Poecilotheria spp.**** | Tarantula Spider | Endemic | Endangered (EN) |

| Scientific Name | Common Name | Status | National Red List Status |
|---|---|---|---|
| **Flora** | | | |
| *Murraya glenieii* | | Endemic | Vulnerable (VU) |
| *Diospyros nummulariifolia* | | Endemic | Vulnerable (VU) |

***** - Not observed during the study, but can be found.

However, if some other ecologically important flora or fauna species are found during translocation, they should also be translocated.

After the translocation, monitoring (survival) and maintenance (watering (if flora), shading (if needed), protection, invasive management, fire management, etc.) of translocated species and areas should be carried out for a few years until they become self-sustaining.

#### 6.3.3.4 Strengthening the Conservation

As a compensatory action, strengthening the conservation of existing natural habitats in the surrounding area and enriching habitats in selected natural areas (mangroves, forests, scrublands) in the surrounding area needs to be carried out. Monitoring (survival) and maintenance (watering, shading (if required), protection, invasive management, fire management, etc.) of enriched areas should be carried out for a few years until the area becomes sustainable.

Tree planting, mangrow restoration and varioes conservation methods can be adopted to compansate the disturbance to the habitats due to this project, and those should be under the guidance of the DFO Trincomalee. The Department of Forest Conservation recommended a mangrove restoration program to compensate for the loss of habitats and trees resulting from the project. The DFO office of Trincomalee has already selected an area for Mangrove restoration at Pathinipura in line with their proposed restoration plans in the Trincomalee region. The figure below shows the Proposed Mangrove Restoration Area at Pathinipura.

**Figure 6.7 - Proposed Mangrove Restoration Area at Pathinipura**

(Source: DFO Office Trincomalee)

However, before implementing mangrove restoration in the selected area, it is recommended that the suitability of the area and its potential impact on the existing vegetation be evaluated. As a few nationally endangered (EN) flora species have been observed on the mudflats in the area, any disturbance to the existing natural habitats will be detrimental to these species. Not only flora species but also a few nationally endangered (EN) bird species were observed in that area.

#### 6.3.3.5 Implement Dedicated Passages or Corridors for Safe Animal Movement

The proposed transmission line does not prevent elephants or other animals from moving, as there is enough space between the towers. However, together with associate facilities (Sampur Solar Park), it will affect animal movement. Therefore, need to implement dedicated passages or corridors specifically designed for the safe movement of animals during construction and operation.

The IEE for the Sampur Solar Park has recommended establishing a wildlife corridor to facilitate the movement of elephants and other wildlife when the solar park is operating at its full capacity (120 MW). The proposed wildlife corridor for the Sampur Solar Park is given below. However, it needs to be further developed by adding a tank and associated forests in the southeast corner of the map (red circle) to the proposed corridor for meaningful impact mitigation, as elephants are frequently moving between this area and the proposed Sampur Solar Park area.

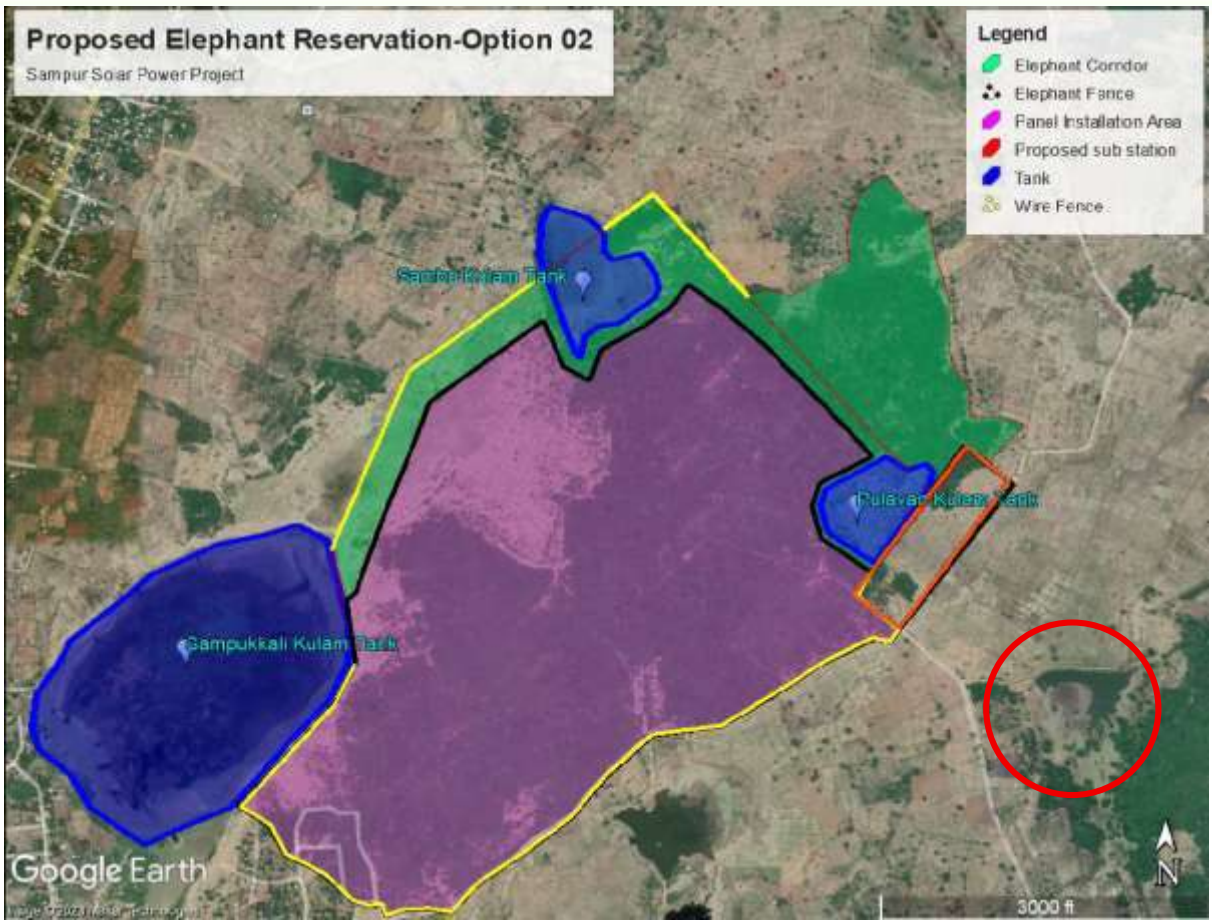


**Figure 6.8 - Proposed wildlife corridor for the Sampur Solar Park**

(Source: IEE for 50MW Sampur Solar Park)

#### 6.3.3.6 Evaluation of Avifauna Collision Risk

Information on avifaunal movement patterns, or the way avifaunal species use the area's airspace, is needed to evaluate the avifaunal collision risk. However, that information was not collected during the ecological surveys, as the survey was conducted over a limited period of time and during the non-migratory season of birds. Also, no reliable secondary information is available. Therefore, the avifaunal collision risk cannot be evaluated.

The route is finalized, and conditional approval was granted from the approving agency (Central Environmental Authority) for it. One condition is the installation of diverters as mitigation measures for avifaunal collisions. Therefore, finding the most suitable diverters (i.e., auditory, acoustic, or visual) and the most appropriate places to install diverters is necessary.

Hence, Information on avifaunal movement patterns, or the way avifaunal species use the area's airspace, needs to be collected during the construction phase (together with the construction) to evaluate avifaunal collision risk and to find most suitable diverters (i.e., auditory, acoustic, or visual) and the most appropriate places.

This approach allows real-time observations of species flight paths in response to construction activity, which may influence bird behavior and airspace use. It also ensures the alignment of mitigation efforts with actual bird movement during the most relevant seasons.

It is recommended that Vantage Point (VP) Surveys and Point Count Surveys be conducted during the bird migratory season (October to March), together with construction in locations with nearby water bodies along the transmission line.

At least two VP surveys, with a minimum duration of 36 hours for each VP survey, need to be conducted (one at AP 5, covering the area between tower 4/2 and tower 6/1, and another at tower 21/1, covering the area between Sampur CGS and tower 19/7). Additionally, Point Count surveys need to be conducted in all water bodies within a 500-meter zone of the right-of-way (RoW) of the transmission line.

Accordingly, the most suitable diverters (i.e., auditory, acoustic, or visual) and the most appropriate places to install diverters can be found, and installation can be done along with the construction.

#### 6.3.3.7 Management of Invasive Species and Noxious Weeds

To prevent the spread of invasive species and noxious weeds, the following actions need to be implemented.

- Propagules of invasive species and noxious weeds should be managed separately during tree removal and vegetation clearance [should not be disposed of as other debris, need special disposal methods (control burning, bury, etc.)].
- Vehicles should be covered during the transportation of cleared vegetation from the construction site.
- Borrow material should be brought from properly identified borrow pits. The sites should be inspected to ensure that no invasive species and noxious weeds are being carried with the burrow material.
- Close monitoring of transportation and storage of borrowed material for the spread of any invasive species and noxious weeds.
- Plant selection for landscaping should be done with the proper guidance of a plant biologist/ ecologist, not to introduce exotic species with potential invasive abilities.
- Site restoration and erosion protection-related work should always use native and locally abundant species under the guidance of a subject specialist.
- All precautionary measures should be adopted to avoid the spreading of invasive species and noxious weeds during construction work, and the site should be inspected periodically to ensure that no invasive species and noxious weeds are establishing themselves at the site.
- Washing the vehicles should be conducted periodically to prevent carrying propagules of any invasive species and noxious weeds.

#### 6.3.3.8 General Mitigation Measures for Ecological Impacts

- To avoid unnecessary land encroachment, land clearing, tree removal, and disturbances to surrounding habitats and species.
    - Identify and demarcate the project footprint, including the RoW of road, construction areas, disposal areas, material-obtaining areas, stockpiling areas, office areas, worker camps, and other facilities.

- Arrange a detailed "tree enumeration" based on the demarcated project footprint. Once the "tree enumeration" is completed, the tree list should be submitted to the relevant approving agency (i.e., FD) to obtain written approval for tree removal.
  Note: Tree enumeration includes marking each tree (usually over 30cm DBH) using a number and preparing a detailed tree list that includes specific information about each tree [Scientific name, common name, conservation status (referring to GoSL National Red List 2020 or any updated version available at the time), and DBH in cm]. State Timber Cooperation (STC) will remove trees in state lands. This number is needed to arrange STC's estimates and logistics, to count the number of trees that need to be removed, and to determine the actual number of trees that were removed.
- Tree removal and vegetation clearance should be carried out carefully, without disturbing the surrounding vegetation and habitats, under close supervision.

- To avoid unnecessary pressures on flora and fauna species (including endemic, restricted range, nationally or globally threatened species) and their habitats due to project activities.
  - Disposal areas, material-obtaining areas, stockpiling areas, office areas, worker camps, and other temporary facilities should not be located within natural habitats (should be located outside of natural habitats).
  - Erect and maintain signboards to inform workers and ensure they are aware not to go beyond the demarcated area.
  - Minimize lighting/illumination at night.
  - Prevent or minimize nighttime work.
  - Noise and vibration levels should be controlled in accordance with the relevant standards.
  - Apply appropriate measures to minimize dust generation (watering, water sprinklers, dust barriers, etc.).
  - Emissions from all machinery and vehicles should be controlled according to the standards (no bad smoke).
  - Prevent the burning of plastics, other materials, or debris.
  - Prevent illegal activities (poaching, fire, mining, timber or firewood extraction, encroachment, etc.) due to the increase in community movements to the area and direct and indirect project-related causes (i.e., employment, resource/material supply, etc.).

- To prevent possible disturbances and pollution of the surrounding surface water bodies.
  - Prevent the discharge or disposal of solid waste or wastewater into surrounding water bodies or habitats, and waste management should be carried out in accordance with the standards.
  - Erosion and siltation prevention structures should be established as necessary.

- To prevent hindrance to animal movement and prevent or minimize Human-Elephant Conflict (HEC),
  - Implement dedicated passages or corridors designed for safe animal movement during construction.
  - Apply appropriate measures to prevent/ minimize road accidents (Road Killings) of animals (speed limits, signboards, awareness, etc.).
  - Fish migratory paths should not be blocked along irrigation and streams.

Awareness of the villagers and the contractor's team on preventing human-wildlife conflicts.

## 6.4 Evaluation of Social Risks and Impacts of the Project

### 6.4.1 Risks and Impacts of the 220 kV Transmission Line

The total length of the 220 kV transmission line from Kappalthurai GS to Sampur CGS is 37.6 Km. The standard width of the right-of-way (RoW) of the transmission line is 35 meters i.e. 17.5 m to either side from the center of the transmission conductor. The total land area under the RoW will be 325.2 acres (131.6 hectares). CEB will not acquire this land for the RoW but will allow the landowners to use the land for the same purpose for which they have been using the land after the completion of the civil works, however subject to certain conditions. For example, planting trees that grow over 5 m in height will not be allowed, and the construction of any structures within the RoW requires prior approval from CEB. Standing trees are to be removed to clear the RoW for the installation of transmission towers and conductors, and the land area required for the installation of transmission towers will be compensated by CEB to their respective owners. Damages to any crops during the construction work of the project will also be compensated by CEB to their respective farmers.

#### 6.4.1.1 Landscape of the RoW

The RoW of the transmission line consists of diverse landscapes. They include paddy lands, scrublands, home gardens, abandoned paddy lands, sparse forests, marsh areas, access roads, and streams. The sparse forests are characterized by low tree density, widely spaced trees, and open canopies. The open canopies allow sunlight to reach the ground, promoting the growth of shrubs, grasses, and small plants. Scrublands consist of bushes and small trees, with some areas used for *chena* cultivation**.** If those sparse forests are vested in the Forest Department, the project should ensure obtaining its prior approval for the installation of transmission lines and towers inside those forest areas.

As shown in Table 6.6, around 68.6% of the total length of the transmission line will traverse paddy lands followed by another 28.3% over scrub lands, marsh areas, sparse forests, abandoned paddy lands, and home gardens. The rest 3% of the line will traverse streams and access roads. (Appendices 15.10.6 illustrates the landscape of the RoW).

**Table 6.6 - Landscape of the RoW**

| Landscape | Area (Acres) | Percentage of the total land area (%) | Length of the transmission line (km) |
|---|---|---|---|
| Paddy lands | 220.8 | 70.6 | 25.7 |
| Scrubs lands | 48.0 | 14.9 | 3.5 |
| Marsh areas | 18.0 | 5.6 | 4.1 |
| Sparse forests | 14.3 | 4.4 | 1.7 |
| Streams | 9.7 | 3.1 | 1.1 |
| Paddy (Abandoned) | 8.9 | 2.8 | 1.0 |

| Landscape | Area (Acres) | Percentage of the total land area (%) | Length of the transmission line (km) |
|---|---|---|---|
| Home gardens | 2.1 | 0.6 | 0.2 |
| Major access roads | 0.1 | 0.01 | 0.2 |
| Total | **321.9** | - | **37.6** |

Source: Calculations derived from geospatial digital data of prepared 1:50,000 Land use maps based on field observation, Satellite imagery, and data from Survey Department, Sri Lanka)

#### 6.4.1.2 River and Stream Crossings and Impacts

The transmission line will cross over the Mahaweli River, 7 streams, and 1 canal as shown in Table 6.7. However, no transmission towers will be installed in the middle of the river or the streams. For example, the two transmission towers (AP14 and AP15) connecting the transmission line section over the Mahaweli River from one side to the other will be installed 96 m and 82 m away from the river banks respectively. Similarly, the transmission towers (11/4 and AP12) connecting the transmission line section over the Uppu Aru stream from one side to the other will be installed 68.5 m and 61.4 m away from the banks of this stream respectively. Therefore, the construction of the transmission line over the river and the streams will not impact the river/stream-based activities of the people such as bathing, washing, or sand mining. However, sand mining activities across the Mahaweli River at this particular location (within a radius of 100 m) are required to be temporarily suspended during the construction period of the transmission line due to safety requirements. Additionally, the project should consult the Irrigation Department and any other relevant authorities before the commencement of the project's construction work to ensure that the project complies with the conditions stipulated by such authorities and does not disrupt the water flows of the river and the streams and their respective buffer zones.

**Table 6.7 - Transmission line intersecting the rivers and streams**

| River and streams | No. Crossings |
|---|---|
| Mahaweli Ganga | Crossing |
| Uppu Aru | Crossing |
| Kaddaiparichchan Aru | Crossing twice |
| Valavachar Aru | Crossing 4 times |
| Verical Aru | Crossing |
| Stream 2 | Crossing |
| Canal 1 | Crossing 3 times |
| Stream 1 | Crossing |
| Palam Podda Aru | Crossing |

Source: GIS and Satellite maps data 2025

#### 6.4.1.3 Impacts on Minor Tanks

Despite the presence of several minor tanks in the surroundings of the RoW of the transmission line, there will be no adverse impacts on those tanks as they are located at a reasonable distance from the RoW as shown in Table 6.8. The transmission line will traverse adjacent to one tank but its functions will not be affected. Therefore, irrigation and other socioeconomic activities associated with the tanks will remain undisturbed by the transmission line project. However, the

project should consult the Irrigation Department and the Department of Agrarian Services Development before the commencement of civil works to ensure that the project complies with the conditions stipulated by such authorities and it does not disrupt the irrigation services of the tanks and the livelihoods of the people.

**Table 6.8 - Distance to minor tanks from the RoW**

| Minor Tanks | Distance from the RoW (m) |
|---|---|
| Sinna Nainda Kulam | 359 |
| Annakal Kulam | 158 |
| Mallumalai Kulam | 159 |
| Tank 4 | 15 |
| Tank 3 | 330 |
| Pattiyanuttu Kulam | 121 |
| Tank 2 | 25 |
| Tank 1 | Crossing at edge of the Tank |

Source: GIS and Satellite maps data 2025

#### 6.4.1.4 Road Crossings and Impacts

The transmission line will cross over one A Grade national highway (A15 –Trincomalee-Batticaloa road), two B Grade roads (B541 – Tambalgamuwa-Kinniya Road and B618 – Mullipothana –Soorangal road), and 24 other minor roads, and the Trincomalee railway line as shown in Table 6.9). The construction of the transmission line and the towers may cause temporary disturbances such as traffic congestion, dust, and noise emissions at these road crossings. Moreover, construction work may also cause safety risks to road commuters and the labor teams of the construction contractors. Therefore, the project should consult the Road Development Authority (RDA), Provincial Road Development Authority (PRDA), Local Authorities, and the Sri Lanka Railways (SLRs) on the safety measures to be followed during construction work, and ensure that the contractors strictly comply with those safety requirements. Additionally, the project shall require devising a traffic management plan in consultation with the traffic police in the area, especially for locations where the transmission line traverses the A and B Grade roads, and the railway line.

**Table 6.9 - Road crossings of the transmission line**

| Location | Road Crossing | A Grade Roads | B Grade Roads | Other Roads | Railroad |
|---|---|---|---|---|---|
| AP1 to AP2 | Railway line | | | 1 | 1 |
| | Other Road | | | | |
| AP6 to AP7 | Other Road | | | 1 | |
| AP7 to AP8 | B541 Tampalakamam-Kinniya Road | | 1 | | |
| AP8 to AP9 | Other Road | | 1 | 3 | |
| | Other Road | | | | |
| | B618 – Mullipothana -Soorangal | | | | |
| | Outer Circular Road[8] | | | | |

[8] The Sri Lanka Army constructed a ring road (outer circular road) in 2007, connecting Illakanthai to Thambalagamuwa via Patchcnnoor, Sunkankulam, and Surangal. Currently, the road terminates at the Mullipotana - Surangal Road near the village of Kalkuli. Plans are in place to extend this road further to Alles Garden, north of Trincomalee town, via Kanniya. Currently the

| Location | Road Crossing | A Grade Roads | B Grade Roads | Other Roads | Railroad |
|---|---|---|---|---|---|
| AP9 to AP10 | Other Road | | | 1 | |
| AP10 to AP11 | Pattiyanuitu Kulam Road | | | 2 | |
| | Other Road | | | | |
| AP11 to AP12 | Vanniyamadu-Kurunchakerny Road | | | 1 | |
| AP12 to AP13 | Periyakinniya Road | | | 1 | |
| AP15 to AP16 | Outer Circular Road twice | | | 3 | |
| | Other Road | | | | |
| | Other Road | | | | |
| AP16 to AP17 | Outer Circular Road twice | 1 | | 3 | |
| | Other Road | | | | |
| | Other Road | | | | |
| | A15 –Trincomalee- Batticaloa Road | | | | |
| AP17 to AP18 | Other Road | | | 1 | |
| AP19 to AP20 | Outer Circular Road | | | 2 | |
| | Kaddaiparichan-Toppur Road | | | | |
| AP20 to AP21 | Other Road | | | 2 | |
| | Other Road | | | | |
| AP21 to AP22 | Other Road | | | 2 | |
| | Illankanthei Road | | | | |
| AP22 to TT2 | Other Road | | | 1 | |
| **Total** | | **1** | **2** | **24** | **1** |

Source: GIS and Satellite maps data 2025

### 6.4.1.5 Impact on Land

The construction of the transmission line at a length of 37.6 km requires the installation of 95 transmission towers comprising 71 suspension towers, 22 angle towers, and 2 terminal towers. The average land space required for a single-angle tower base is approximately 225 square meters (15x15 m) but can be slightly smaller for suspension towers. Assuming that each tower requires a land area of 225 square meters, the total land area required for the installation of 95 towers will be 5.2 acres/2.1 hectares. As per the preliminary design of the project, towers will be installed within the different landscapes of the RoW as shown in Table 6.10.

**Table 6.10 - Transmission tower installations**

| Landscape of the RoW | Tower Installations | | |
|---|---|---|---|
| | No. Suspension Towers | No. Angle Towers | No. Terminal Towers |
| Paddy lands | 52 | 14 | - |
| Scrubs lands | 09 | 04 | 01 |
| Marsh areas | 06 | 01 | - |
| Sparse forests | 02 | 02 | 01 |
| Streams | - | - | - |
| Paddy (Abandoned) | 0 1 | 0 1 | - |

construction of the road is abandoned and most of the structures which were constructed were fully or partially damaged including the bridge constructed through the Mahaweli River. The reaming parts of the halfway completed road are used by heavy vehicles which are transporting construction materials which lead to further damage to the road.

| Landscape of the RoW | Tower Installations | | |
|---|---|---|---|
| | No. Suspension Towers | No. Angle Towers | No. Terminal Towers |
| Home gardens | 01 (Edge of the Home Garden) | - | - |
| Major access roads | | | |
| **Total** | **71** | **22** | **02** |

Source: GIS and Satellite maps data 2025

Altogether, there will be 66 towers installed on private lands (301 land lots) as shown in Table 6.11. The installation of these 66 towers which requires a total land area of 3.7 acres/1.5 hectares of private land is a permanent loss of land to their respective landowners despite the cultivation of paddy and seasonal crops allowed under the towers. Therefore, cash compensation will be provided by CEB for the permanent loss of land for the tower bases irrespective of the type of land. The market value of an acre of paddy land is substantially high and reported to be around SLRs 3,500,000. Therefore, the farmers are extremely concerned over the loss of at least a small portion of their land for transmission towers because it can adversely affect their livelihoods.

**Table 6.11 - Installation of transmission towers on private land**

| Divisional Secretariat Division | Grama Niladhari Division | No. Affected Land Lots | No. Towers | Tower Nos. |
|---|---|---|---|---|
| Trincomalee Town and Gravets | Muththunagar (229F) | 14 | 2 | AP 2/1 , AP 2/2 |
| **Sub-Total** | | **14** | **2** | |
| Thambalagamuwa | Palampatar (228) | 26 | 7 | AP 3 , AP 4 , AP 4/1 , AP 4/2 , AP 4/3 , AP4/5 , AP 5 |
| | Kovilady (228K) | 24 | 3 | AP5/1 , AP 5/2 , AP 5/3 |
| | Thambalagamuwa (228A) | 14 | 3 | AP 7/2 , AP7/3 , AP 8 , |
| **Sub-Total** | | **64** | **13** | |
| Kinniya | Soorangal (226N) | 9 | 3 | AP 8/1 , AP 8/3 , AP 8/5 |
| | Naduoothu (226M) | 28 | 6 | AP 8/6 , AP 8/7 , AP 8/8 , AP 9 , AP 9/1 , AP 10 |
| | Majeed Nagar (226O) | 27 | 9 | AP 10/1 , AP 10/3 , AP 10/4 , AP 11 , AP 11/1 , AP 11/2 , AP 11/3 , AP 11/3 , AP 11/4 |
| | Upparu (225K) | 12 | 3 | AP 12 , AP 12/1 , AP 12/2 |
| **Sub-Total** | | **76** | **21** | |
| Muthur | Iruthayapuram (218E) | 17 | 4 | AP 16/5 , AP 16/6 , AP 7 , AP 17/1 |
| | Shafi Nagar (224F) | 38 | 9 | AP 15/8 , AP 15/8 , AP 15/9 , AP 15/10 , AP 16 , AP 16/1 , AP 16/2 , AP 16/3 , AP 16/4 |
| | Pallikudiyeruppu (219) | 19 | 4 | AP 18/1 , AP 19 , AP 19/1 , AP 19/2 |
| | Kaddaiparrichan South (222) | 15 | 3 | AP 19/3 , AP 19/4 , AP 19/5 |
| | Chenaiyoor (222A) | 43 | 8 | AP 19/6 , AP 19/6 , AP 19/7 , AP 20 , AP 20/2 , AP 21/1 , AP 21/2 , AP 21/3 |
| | Kadatkaraichenai (222C) | 15 | 2 | AP 19/3 , AP 19/4 , AP 19/5 |
| | Sampur East (220) | | | |
| **Sub-Total** | | **147** | **30** | |

| | | | | |
|---|---|---|---|---|
| **Total** | | **301** | **66** | |

Source: W Notice list for Sampur Kappalthurai project

#### 6.4.1.6 Impact on Structures

Except for two residential structures of which one is a makeshift house abandoned by its occupiers, and the second, a semi-permanent dwelling, there are no other residential, commercial, or community structures and properties, or places of religious, cultural, and archaeological significance located within the RoW. The semi-permanent dwelling is located between planned suspension towers 10/1 and 10/2 to be installed, and one of those towers will be located in front of this residential dwelling. CEB has agreed to change the tower locations to move the tower away from this residential dwelling, and if required to arrange temporary relocation of the occupants of this dwelling during the construction work. The project will be responsible for meeting all relocation costs including the costs of transitional housing. Moreover, CEB will also compensate any damages to this residential dwelling at replacement cost.

#### 6.4.1.7 Impact on Auxiliary Structures

There are around 10 agro-wells, 2 cattle sheds, and 2 poultry pens located within the RoW, but none of them will be affected by the construction work of the transmission line. However, due to safety reasons, it may be required to temporarily prevent the owners of these auxiliary structures from accessing these agro-wells, cattle sheds and poultry pens during the construction work. The project can negotiate with the cattle shed and poultry pen owners to temporarily relocate their cattle sheds and poultry pens for which the project should pay the shifting and fixing costs of these structures to their respective owners. Moreover, safe access to the Agro-wells should be provided by the contractor as these agro-wells are essentially used by the farmers to irrigate their cultivation fields during the dry periods. Any damages to these agro-wells should be restored by the contractor at his own cost.

#### 6.4.1.8 Impact on Crops

The construction of the transmission line and its towers will cause temporary crop damage during the installation of towers, stringing conductors, line maintenance work, and movement of vehicles and machinery. Paddy cultivated in an area of approximately 220 acres/89 hectares, and other crops grown on 2 acres/0.8 hectares of home gardens can be either partially or fully affected. However, CEB will endeavor to minimize such crop damages by avoiding peak cultivation seasons or scheduling the construction work during off-seasons. If unavoidable, CEB will provide cash compensation to the affected farmers for their crop losses.

#### 6.4.1.9 Impact on Trees

The 220 kV transmission line component of the project requires the removal of several standing trees to clear the RoW of the transmission line. CEB has enumerated and prepared a list of 454 trees that require to be removed which is included in Appendices 15.11. Of the 454 trees, 155 are

grown in the forest areas and another 219 in the non-forest areas. The remaining 80 trees are located on land belonging to the Sri Lanka Ports Authority (SLPA). The 454 trees comprise 366 timber trees and 88 fruit-bearing trees. Moreover, 89 of the 454 trees are large trees with a girth of more than 5 ft. while the majority 345 are medium-sized trees whose girth varies from 1-5 ft. The remaining 20 trees are small trees with a girth of fewer than 1 ft. (Table 6.12). Except for a few trees [three nationally and globally vulnerable (VU) *Chloroxylon swietenia* (Buruta / Muritai) trees and one endemic tree, *Pityranthe verrucosa* (Dik wenna or Yakada Maram / Vid pani)], which are common in dry zone habitats no ecologically important trees (Endemic or threatened) are among the identified trees.

**Table 6.12 - Details of the tree species to be removed for the RoW**

| Location of the Trees | Timber Trees | | | Fruit-bearing Trees | | |
|---|---|---|---|---|---|---|
| | Large (>5ft in girth) | Medium (1-5ft in girth) | Small (<1ft in girth) | Large (>5ft in girth) | Medium (1-5ft in girth) | Small (<1ft in girth) |
| **Forest areas** | 18 | 126 | 1 | 1 | 9 | 0 |
| **Non-forest areas** | 43 | 92 | 6 | 24 | 41 | 13 |
| **SLPA land** | 3 | 77 | 0 | 0 | 0 | 0 |
| **Total** | **64** | **295** | **7** | **25** | **50** | **13** |

Source: Ceylon Electricity Board, 2024

The total value of the trees to be removed is estimated at SLRs 4,911,480 as per the applicable compensation rates determined by CEB for tree species of different sizes. CEB-determined compensation rates are shown in Appendices 15.13. The total value of the timber trees and the fruit-bearing trees are SLRs 3,104,480.00 and SLRs1, 807,000.00 respectively as shown in Table 6.13.

**Table 6.13 - Estimated values of the trees to be removed**

| Tree size | Timber Trees | | Fruit-Bearing Trees | |
|---|---|---|---|---|
| | No. Trees | Total Value (LKR) | No. Trees | Total Value (LKR) |
| **Forest Areas** | | | | |
| **Large** | 18 | 394,600.00 | 1 | 15,200.00 |
| **Medium** | 126 | 699,000.00 | 9 | 114,400.00 |
| **Small** | 1 | 1,200.00 | 0 | 0.00 |
| **Sub-Total** | **145** | **1,094,800.00** | **10** | **129,600.00** |
| **Non-Forest Areas** | | | | |
| **Large** | 43 | 908,800.00 | 24 | 580,600.00 |
| **Medium** | 92 | 582,530.00 | 41 | 1,030,500.00 |
| **Small** | 6 | 7,100.00 | 13 | 66,300.00 |
| **Sub-Total** | **141** | **1,498,430.00** | **78** | **1,677,400.00** |
| **Sri Lanka Ports Authority Land** | | | | |
| **Large** | 3 | 64,000.00 | 0 | 0.00 |
| **Medium** | 77 | 447,250.00 | 0 | 0.00 |
| **Small** | 0 | 0.00 | 0 | 0.00 |

| | | | | |
|---|---|---|---|---|
| **Sub-Total** | **80** | **511,250.00** | **0** | **0.00** |
| **Total** | **366** | **3,104,480.00** | **88** | **1,807,000.00** |

Source: Ceylon Electricity Board, 2024

#### 6.4.1.10 Impact of Labor Influx

As per the estimates of CEB, construction of the 220 kV transmission line requires a total workforce of 210, comprising 120 workers for constructing the tower foundations at 10 workers for a single foundation, 60 workers for tower erection at 20 workers for a single tower erection, and 30 workers for stringing the conductors at 15 workers assigned for 1 km length. The estimated workforce requirement for the completion of the work of the transmission line is 20,900 man-days.

Meanwhile, the construction of the Sampur CGS will require an estimated workforce of 82 for land development, foundation and cable trench construction, construction of the control building, steel erection works, installation works, and testing and commissioning. The estimated workforce requirement for the completion of the work of the GS is 8,500 man-days.

The estimated workforce required for the augmentation work of the Kappalthurai GS is 31 to carry out the work similar to the work of the Sampur CGS. The estimated workforce requirement for the completion of the work of augmentation work of the GS is 1,050 man-days.

The workforce requirements for the above three components of the project can bring economic benefits to the local communities such as job opportunities for men and women in labor work, and opportunities to provide meals and accommodation for labor teams coming from outside. However, the extent to which the women from Muslim and Tamil communities would grab these economic opportunities needs to be assessed given their relatively rigid social structures, and the religious and cultural norms and beliefs that restrict the mobility of women. On the negative side, the risks of GBV, SEA, and SH as well as the abuse of alcohol and drugs, and the spread of communicable diseases may increase with the migration of labor teams in significant numbers for construction work. Awareness programs for both workers and members of the nearby communities, especially targeting women and children, strict code of conduct issued to workers, and seeking the assistance of law enforcement agencies can help prevent and control such negative impacts. Additional mitigation measures are included in the ESMP.

#### 6.4.1.11 Project Affected Land and Persons

The transmission line component of the project will altogether affect 301 land lots located within its RoW which are owned by 284 persons as shown in Table 6.14. These affected persons were identified through a list prepared by CEB who had been issued a W-Notice notifying the wayleave clearance requirements over their properties. The affected persons comprise 14 land lots belonging to 13 persons in the Muhunagar GND of the Trincomalee Town and Gravets DSD; 64 land lots belonging to 54 persons in the 3 GNDs of Thambalagamuwa DSD; 76 land lots of 70 persons in the 4 GNDs of Kinniya DSD; and 147 land lots owned by 147 persons in 6 of the 7 GNDs of Muthur DSD. The affected population consists of 68.3% males and 31.7% of females. The ethnicity of the affected persons includes 184 Tamils (64.8%), 93 Muslims (32.7%) and 7 Sinhalese (2.5%).

**Table 6.14 - Affected private land and landowners**

| Divisional Secretariat Division | Grama Niladhari Division | Affected No. Land Lots | Affected Persons | | |
|---|---|---|---|---|---|
| | | | Male | Female | Total |
| Trincomalee Town and Gravets | Muththunagar (229F) | 14 | 7 | 6 | 13 |
| **Sub-Total** | | **14** | **7** | **6** | **13** |
| Thambalagamuwa | Palampatar (228) | 26 | 16 | 9 | 25 |
| | Kovilady (228K) | 24 | 11 | 4 | 15 |
| | Thambalagamuwa (228A) | 14 | 10 | 4 | 14 |
| **Sub-Total** | | **64** | **37** | **17** | **54** |
| Kinniya | Soorangal (226N) | 9 | 7 | 2 | 9 |
| | Naduoothu (226M) | 28 | 20 | 4 | 24 |
| | Majeed Nagar (226O) | 27 | 21 | 6 | 27 |
| | Upparu (225K) | 12 | 8 | 2 | 10 |
| **Sub-Total** | | **76** | **56** | **14** | **70** |
| Muthur | Iruthayapuram (218E) | 17 | 10 | 7 | 17 |
| | Shafi Nagar (224F) | 38 | 27 | 11 | 38 |
| | Pallikudiyeruppu (219) | 19 | 14 | 5 | 19 |
| | Kaddaiparrichan South (222) | 15 | 9 | 6 | 15 |
| | Chenaiyoor (222A) | 43 | 25 | 18 | 43 |
| | Kadatkaraichenai (222C) | 15 | 9 | 6 | 15 |
| | Sampur East (220) | - | - | - | - |
| **Sub-Total** | | **147** | **94** | **53** | **147** |
| **Total** | | **301** | **194** | **90** | **284** |

Source: Based on the W-Notice issued by CEB notifying wayleave clearance (2022-23)

Of the affected land lots, 93.4% comprised paddy lands, and the highest have been in the 6 GNDs of Muthur DSD with a share of 46% of the affected paddy lands. Only a single-home garden lot will be affected. Additionally, 19 lots of other land (cultivated or uncultivated highlands) will also be affected.

**Table 6.15 - Type of Affected Land**

| Divisional Secretariat Division | Grama Niladhari Division | Type of Affected Land (No. Lots) | | |
|---|---|---|---|---|
| | | Paddy land | Home gardens | Other land |
| Trincomalee Town and Gravets | Muththunagar (229F) | 14 | - | - |
| **Sub-Total** | | **14** | **-** | **-** |
| Thambalagamuwa | Palampatar (228) | 24 | 1 | 1 |
| | Kovilady (228K) | 24 | - | - |
| | Thambalagamuwa (228A) | 14 | - | - |
| **Sub-Total** | | **62** | **1** | **1** |
| Kinniya | Soorangal (226N) | 9 | - | - |
| | Naduoothu (226M) | 28 | - | - |
| | Majeed Nagar (226O) | 27 | - | - |
| | Upparu (225K) | 12 | | |
| **Sub-Total** | | **76** | **-** | **-** |
| Muthur | Iruthayapuram (218E) | 17 | - | - |

| Divisional Secretariat Division | Grama Niladhari Division | Type of Affected Land (No. Lots) | | |
|---|---|---|---|---|
| | | Paddy land | Home gardens | Other land |
| | Shafi Nagar (224F) | 38 | - | - |
| | Pallikudiyeruppu (219) | 13 | - | 6 |
| | Kaddaiparrichan South (222) | 15 | - | - |
| | Chenaiyoor (222A) | 43 | - | - |
| | Kadatkaraichenai (222C) | 3 | - | 12 |
| | Sampur East (220) | | | |
| **Sub-Total** | | **129** | | **18** |
| **Total** | | **281** | **1** | **19** |

Source: Based on the W-Notice issued by CEB notifying wayleave clearance (2022-23)

Apart from the affected private land, 2 Kovils, 3 Mosques, and 2 Schools also claimed having their land within the RoW of the transmission line but the exact number of land lots belonging to these public institutions and falling within the RoW is not known. One of the Kovils (Adikonayagam Devasthanam) claimed owning around 850 acres of paddy and highlands of which 350 acres of paddy land are auctioned in both *maha* and *Yala* seasons. The lands obtained through the auctions are cultivated by these tenant farmers. The property of the Kovil land is vested in the Department of Public Trustee, and the Public Trustee is responsible for managing all assets of the Kovil. Details of the affected private landowners and the public institutions are included in Appendices 15.5.

#### 6.4.1.12 Profile of the Affected Persons

The social assessment for the ESIA included a survey of a sample of 64 persons randomly selected from among the above-mentioned 284 project-affected persons. The sample comprised 23% of the total affected population. Among the respondents were 46 men and 18 women. The 64 persons included 4 from the Muthunagar GND of the Town and Gravets DSD, 12 from the 3 GNDs of Thambalagamuwa, 18 from the 4 GNDs of Kinniya, and 30 from the 7 GNDs of Muthur DSD. In terms of their ethnic composition, 41 (64%) were Tamil, 19 (29.7%), were Muslim, and 4 (6.3%) were Sinhalese. The total household population was 242 comprising 119 males (49.2%) and 123 females (50.8%). The educational achievements of the household population included 31% who had reached G.C.E. A/L; 28% with G.C.E. O/L, 13% up to grade 5; 11% with a diploma or higher professional/technical certificate; 9% graduates; and another 8% comprising children who were below the age of 5 years. The employed population comprised 88 persons in agriculture, 6 in government jobs, 16 in private sector jobs, and 7 in businesses. The unemployed population accounted for 35 persons. Of the 64 persons, 59 (92.2%) had been displaced during the civil war and had returned to their original villages.

The average monthly income of the households in the 15 GNDs of the 4 DSDs was SLRs. 76,696; the highest had been in Trincomalee Town and Gravets with SLRs. 91,400. The average monthly incomes for the rest of the 3 DSDs included SLRs. 77,500 for Thambalagamuwa, SLRs. 72,860 for Kinniya, and SLRs. 65,025 for Muthur. The average monthly expenditure of a household on food was SLRs. 45,965 followed by SLRs. 8,726 on children's education, SLRs. 7,723 on medicine, SLRs. 3,244 on electricity, and SLRs. 9,734 on other household needs bringing the total monthly expenditure to SLRs. 75,392.

All 64 households were connected to grid electricity, and electricity had been used mainly for household lighting and operating electrical appliances. The electrical appliances used in the households included televisions (79.7%), radios (87.5%), fans (70.3%), irons (62.5%), refrigerators (54.7%), and water motors (39.1%). Electricity had been used for cooking purposes only by 7 (10.9%) of the households. Energy-saving bulbs had been used in 87.5% of the households. Almost all the households felt that the current electricity charges were comparatively high, and wanted to reduce their electricity consumption.

The project will affect the paddy lands belonging to 59 (92.2%) households. A home garden of one household (1.6%) will be affected. The project will also impact the other lands owned by the rest of the 4 households (6.3%).

### 6.4.2 Risks and Impacts of the Sampur Grid Substation

The land required for the construction of the GS in Sampur is government land vested in CEB, and free of encumbrances. Therefore, the acquisition of private land for the GS is not required. As this land consists mainly of scrubland and abandoned paddy lands, no adverse social or involuntary resettlement impacts are anticipated.

### 6.4.3 Risks and Impacts of Kappalthurai Grid Substation

The augmentation work of the Kappalthurai GS will be carried out within the existing premises of the substation and therefore, the work will not cause any adverse social or involuntary resettlement impacts.

### 6.4.4 Risks and Impacts of Sampur Solar Park

The site earmarked for the proposed 50 MW Solar Park primarily consists of sparse forest and scrubland. There are no residential, commercial, or community structures and properties within the boundaries of this land. Therefore, no adverse social or involuntary resettlement impacts are anticipated. However, there is one primary school (Tri/MU/ Kirawathkuli Sivashakthi Vidyalayam) and a pre-school (at Samthosapuram) located 100 m away from the solar park boundary. The school has a student population of 93 comprising 39 girls and 54 boys, and a teaching staff of 7. The preschool accommodates 33 students and 2 teachers. Additionally, the school's playground is situated at the edge of the park boundary. Though adverse impacts on these public institutions and properties are not envisaged, it is recommended that the ESIA be conducted for the solar park to further examine for any potential risks and impacts of the project on these nearby sensitive receptors. It is also recommended that permanent barricades be erected around the solar park to prevent any accidental risks to the children and the general public.

## 6.5 Hazard Identification and Risk Assessment (HIRA)

### 6.5.1 HIRA Introduction

The process of Hazard Identification and Risk Assessment is intended to establish a standard procedure for determining Occupational Health and Safety Risks and their overall significance relating to organizational activities. Risks arise from the interaction between people, equipment, materials, and the work environment. This Procedure is primarily concerned with personal injury and ill health risks and does not address damage to plants and equipment, except when such damage may injure people. The task of risk assessment should involve both identification of the hazards and undertaking an evaluation of the impacts of the risks Involved.

To ensure that there is a formal process for hazard identification, risk assessment, and control to effectively manage workplace and safety hazards at the construction sites of the Sampur - Kappalthurai Transmission Line Project of CEB. A Hazard Identification and Risk Assessment (HIRA) document has been prepared that evaluates the risk associated with a specific hazard and is defined by probability and frequency of occurrence, magnitude, severity, exposure, and consequences.

This manual provides in-depth knowledge of the hazards and vulnerabilities that affect construction sites. This document uses an all-hazards approach when evaluating the hazards that affect the construction process, and the associated risks and impacts each hazard presents. This HIRA provides the basic information necessary to develop effective hazard mitigation/prevention strategies. Moreover, this document provides the foundation for ensuring safe construction practices by providing prior knowledge to the construction engineers, workers, and contractors and enlists the preventive actions and precautions that should be taken to prevent their occurrence.

### 6.5.2 HIRA Procedure

CEB shall constitute a core group for conducting Hazard Identification and Risk Assessment of all project activities before the activities are performed at the site. The process of Risk Assessment is based on the steps described here.

1. Identification of hazards associated with a task or activity, considering the following:
    - Look at all aspects of the work.
    - Include non-routine activities such as maintenance, repair, or cleaning.
    - Look at incident / near-miss records.
    - Include people who work "off-site" either at home, on other job sites, as drivers, teleworkers, with clients, etc.
    - Look at the way the work is organized or "done" (include experience and age of people doing the work, systems being used, etc.).
    - Look at foreseeable unusual conditions (for example: possible impact on hazard control procedures that may be unavailable in an emergency, power outage, etc.).
    - Examine risks to visitors or the public.
    - Include an assessment of groups that may have a different level of risks such as young

or inexperienced workers, persons with disabilities, or new or expectant mothers.

2. Assessment of Risk

The following steps are used to identify, assess, and control the identified hazards at the workplace:

- Collect information about existing hazards and potential hazards for all the project activities.
- Assess the risk
- Set priorities
- Communicate information about the hazards and risks
- Develop, select, and implement controls and monitor their effectiveness.
- Maintain Records.

The detailed HIRA is available in the Appendices 15.9. Summary of identified H&S Risks are categorized into 8 main hazardous as below:

**Table 6.16 - Summary of Primary Hazards and Associated Risks during Transmission Line Construction**

| Hazard Category | Description |
|---|---|
| Electrical Hazards | Risk of electric shock or arc flash during tower erection and conductor stringing. |
| Working at Heights | Fall risk during tower and transmission line construction activities. |
| Vehicular Accidents | Potential accidents involving construction vehicles along access roads. |
| Manual Handling Injuries | Injuries from lifting, carrying, or handling construction materials. |
| Slips, Trips, and Falls | Risks are especially prevalent during excavation or under wet and uneven conditions. |
| Heat Stress and Dehydration | Health risks due to prolonged exposure to high temperatures in the project area. |
| Environmental Hazards | Disturbance to sensitive ecosystems like marshlands and home gardens during construction. |
| Community Safety Risks | Increased risk to residents, especially near schools and residential areas during construction. |

HIRA identified risks, associated legal requirements, severity & probability, and measures accordingly. The measures considered according to the below sequence given in the matrix:

**Table 6.17 - Summary of Risk Assessment and Control Measures Matrix**

| Sl. No | Hierarchy of Control | Description |
|---|---|---|
| **1.** | **Elimination** | Redesign the job or substitute a substance so that the hazard is removed or eliminated. For example, duty holders must avoid working at height where they can. |
| **2.** | **Substitution** | Replace the material or process with a less hazardous one. For example, use a small MEWP to access work at height instead of step ladders. Care should be taken to ensure the alternative is safer than the original. |

| Sl. No | Hierarchy of Control | Description |
|---|---|---|
| 3. | **Engineering Controls** | Use work equipment or other measures to prevent falls where you cannot avoid working at height. Install or use additional machinery such as local exhaust ventilation to control risks from dust or fume. Separate the hazard from operators by methods such as enclosing or guarding dangerous items of machinery/equipment. Give priority to measures which protect collectively over individual measures. |
| 4. | **Administrative Controls** | These are all about identifying and implementing the procedures you need to work safely. For example: reducing the time workers are exposed to hazards (E.g., by job rotation); prohibiting use of mobile phones in hazardous areas; increasing safety signage and performing risk assessments. |
| 5. | **Personal Protective Equipment** | Only after all the previous measures have been tried and found ineffective in controlling risks to a reasonably practicable level, must personal protective equipment (PPE) be used. For example, where you cannot eliminate the risk of a fall, use work equipment or other measures to minimize the distance and consequences of a fall (should one occur). If chosen, PPE should be selected and fitted by the person who uses it. Workers must be trained in the function and limitation of each item of PPE. |

HIRA is a live document and shall be reviewed when:

1. There is a significant change in work processes that could affect the Environment**,** **Occupational Health & Safety**. For example, the introduction of new machinery or a change in work procedures.
2. After an **incident** as a result of exposure to a hazard.
3. HIRA shall be revised when there is a change in Legal requirements.
4. There is a change in Project Scope.
5. Based on Incident Potential Rate & Project Risk Index
6. Data analytics on observations and near miss cases
7. Prevailing EHS Culture at Project site.

# 7 Climate Risk and Adaptation Assessment.

## 7.1 Introduction

### 7.1.1 General

The Climate Risk and Adaptation Assessment has been prepared in detail. A summary of the report is provided below; the detailed report is given in Appendix 15.8. This section deals with the climate risk and adaptation measures required

### 7.1.2 Study Methodology

This chapter describes the legal and regulatory framework, which includes the AIIB ESF standards for climate adaptation under ESS 1 to ensure that the candidate project is resilient to climate risk. It describes the relevance of local instruments such as Sri Lanka has several guidelines for climate risk adaptation, including the (a) National Climate Change Adaptation Strategy (NCCAS), (b) the National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP), and (c) the country's NDC.

The Climate Change impact on (a) extreme rainfall and flooding, (b) rising temperature, (c) sea level rise, (d) strong winds and cyclones (e) lightning strikes, and (d) flood level rise were tested under this study. The impact on these climate parameters was tested under the IPCC Climate Change Scenarios, RCP 4.5 (Moderate emissions) and, RCP 8.5 (High emissions.

Flood lift under the scenarios mentioned above was assessed by factorizing the 25-year return period rainfall (hyetograph) using the pre-evaluated factors given in the CRIP Report [Ref 7 - Annex 15.8], for the 25 Year Rain. Using the prorated hyetograph, the HEC RAS 2D flood model was run, and the flood depth raster was obtained. By deducting the flood depth raster for the climate change scenario (RCP 8.5) from the baseline scenario the flood the 2D flood lift raster was obtained to visualize the climate change-induced flood impact (i.e. the flood lift).

## 7.2 The Importance of Assessment

### 7.2.1 General

Climate change is causing more extreme weather events, including heavy rains, strong winds, rising temperatures, and sea-level rise. These changes can affect infrastructure, including power transmission lines. This assessment focuses on the planned transmission line in Trincomalee, identifying potential climate risks and solutions to make it more resilient.

### 7.2.2 Legal and Regulatory Framework

**The following will be the key preponderant factors.**

- AIIB ESF standards for climate adaptation under the ESS 1 and the Environmental and Social Exclusion List, to ensure that the proposed sub-projects are resilient to climate risks.
- The ESF requires projects to integrate climate resilience into the design.

**Understanding the local regulations and guidelines on Climate Risk Adaptation**

Sri Lanka has several guidelines for climate risk adaptation, including the (a) National Climate Change Adaptation Strategy (NCCAS), (b) the National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP), and (c) the country's NDC:

**(a) National Climate Change Adaptation Strategy (NCCAS)**

The NCCAS focuses on adaptation and disaster risk management. It identifies five strategic thrusts,

- Mainstream Climate Change Adaptation into National Planning and Development
- Enable Climate Resilient and Healthy Human Settlements
- Minimize Climate Change Impacts on Food Security
- Improve Climate Resilience of Key Economic Drivers
- Safeguard Natural Resources and Biodiversity from Climate Change Impacts.

**(b) National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP)**

The NAP was developed in line with guidelines from the UNFCCC. It covers adaptation needs for vulnerable sectors and cross-cutting national needs. Some of the actions in the NAP include improving the efficiency of transmission and distribution systems and promoting climate-proof infrastructure and building design practices.

**(c) Nationally Determined Contribution (NDC)**

Sri Lanka's NDC outlines the country's commitment to addressing its vulnerability to climate change. It includes a commitment to reducing greenhouse gas emissions by 14.5% by 2030 and increasing the contribution of renewable energy to 70% by 2030.

**(d) Other considerations**

Beyond the above instruments, AIIB assessments require an evidence-based, and project-specific approach. This includes integrating recent climate risk data from the **Sri Lanka Climate Change Risk Profile (World Bank, 2020);** however, the World Bank climate data portal provides results outputs for the quarters of the year. Since this assessment needs beyond these data for the specific use of climate change scaled rainfall to the flood models, long-term daily rainfall and temperature data were used for predictions.

AIIB expects climate risk assessments to demonstrate how adaptation is integrated into the project lifecycle, from design to monitoring, supported by both local data and international best practices.

**(e) International Instruments**

The following international instruments apply to this CRI

- **Paris Agreement (2015) – UNFCCC**

Sri Lanka is a signatory and has submitted its Nationally Determined Contributions (NDCs), which include adaptation goals. AIIB expects projects to be Paris-aligned, meaning they must consider climate resilience and contribute to national adaptation goals.

- **United Nations Sustainable Development Goals (SDGs)**

Particularly SDG 13 (Climate Action), SDG 9 (Infrastructure), and SDG 6 (Water), are relevant as AIIB aligns with the SDGs; projects should demonstrate how they support sustainable and climate-resilient development.

- **IPCC Reports (e.g., AR6, 2021–2022)**

This report provides the scientific basis for understanding climate trends, risks, and regional vulnerabilities. Risk assessments have referred to the IPCC scenarios and projections.

These instruments collectively capsule the expectations for climate risk assessments by AIIB.

## 7.3 Major Climate Risks Identified

1. **Extreme Rainfall and Flooding**
    a. Increased rainfall can lead to flooding, which may weaken the foundations of power towers and disrupt electricity supply. The rainfall increase in many stations has been predicted under the Climate Risk and Adaptation Assessment (Annex 15.8). Statistically significant rainfall-increasing trends have been identified for the rain station Trincomalee for RCP 8.5 which is the BIU Scenario. which has an influence on the candidate powerline.
    **Assigned Risk Scale: High**

2. **Rising Temperatures**
    a. Higher temperatures can cause power lines to sag, increase energy loss, and the risk of system failures. In the Climate Risk and Adaptation Assessment (CRAA), On a broader scale, the average temperature in Sri Lanka has increased by approximately 0.1°C to 0.3°C over the past several decades. Some other temperature-related parameters have shown a statistically significant trend.
    **Assigned Risk Scale: Medium**

3. **Sea-Level Rise and Coastal Erosion**
    a. Coastal areas are vulnerable to rising sea levels, which can lead to flooding and corrosion of infrastructure. Around 3.4mm/year of sea level rise has been reported for Sri Lanka.
    **Assigned Risk Scale: Medium**

4. **Strong Winds and Cyclones**
    a. Sri Lanka experiences cyclones and strong winds, which can damage transmission lines and pylons. As shown in the CRAA, the proposed transmission line is located in the high-risk cyclone zone.
    **Assigned Risk Scale: High**

5. **Lightning Strikes**
    a. Frequent lightning strikes can cause power outages and damage infrastructure. Even though the transmission line is not in a low-lightening risk area, according to the CRAA, there is a reported tendency to increase the number of lightning strikes in the future. Rising global temperatures due to climate change result in warmer air, which can hold approximately 7% more moisture per 1°C of warming. This increase in moisture enhances the likelihood of thunderstorms,
    Even though the project area is in a low lightning strike zone, the CRA has predicted an increasing number of lightning strikes in the future. Irrespective of the location CEB provides lightning protectors to these highly sensitive, publicly important systems leading to more violent storms and frequent lightning strikes.
    **Assigned Risk Scale: Medium**

**Note: The scaling is subjective, and the scaling was biased towards, the worst side intentionally to arrive at conservative adaptation measures**.

6. **Flood Level Rise**

This is tied to the increase in rainfall and the increase in sea level downstream. Specific spatial flood levels due to climate change have been obtained through the flood studies under CRAA

**Assigned Risk Scale: High**

## 7.4 Key Adaptation Measures

**Transmission Line Resilience and Protection Measures for Climate Change Impacts**

**1. Introduction**

The Sampur - Kappalthurai 220kV Transmission Line is a critical component of Sri Lanka's power infrastructure. Given the impacts of climate change, it is essential to ensure the resilience of the transmission infrastructure to temperature variations, flooding, sea-level rise, and increased lightning activity. This report outlines the technical considerations, resilience measures, and protective mechanisms incorporated in the project to mitigate these environmental challenges.

**2. Resilience of Transmission Infrastructure to Temperature Increase**

**2.1 Pylon Material – Steel Towers**

- The transmission towers are constructed using galvanized high-tensile steel, ensuring superior resistance to corrosion and mechanical stress.
- Galvanization Process: Hot-dip galvanization provides a protective coating, reducing oxidation and degradation due to heat.
- Thermal Expansion: The high-tensile steel conforms to IEC 60826 (Design Criteria of Overhead Transmission Lines) and BS EN 1993-3-1 (Structural Design of Steel Towers) to prevent excessive expansion-related stresses.

**2.2 Foundation Concrete**

- The concrete used in tower foundations is designed for high thermal resistance, preventing cracking due to temperature fluctuations.
- Sulfate-resistant cement is used in areas with saline exposure to mitigate degradation risks.
- Proper curing techniques are followed to enhance structural longevity.

**2.3 Grid Substation Equipment (GS Elements)**

- Transformers, circuit breakers, and insulators adhere to IEC 60076 (Power Transformers Standard) and IEC 62271 (High-voltage Switchgear and Control gear) for extreme temperature operation.
- Cooling Mechanisms: Oil-filled and air-cooled radiators enhance thermal performance, preventing overheating.

**3. Resilience to Flooding and Sea Level Rise**

**3.1 Pylon Foundation Design for Flood-Prone Areas**

- Geotechnical assessments determine foundation depth, ensuring pylon stability in flood-prone areas.
- Reinforced pile foundations are used where soil conditions are vulnerable to saturation.
- Drainage systems are integrated at the base of transmission towers to prevent water stagnation.

**3.2 Substation Resilience to Flooding and Local Drainage**

- Elevated Platforms: Critical substation equipment is placed on elevated platforms to reduce exposure to floodwater.
- Waterproof Enclosures: Transformers and switchgear are enclosed in waterproof housing to prevent damage.
- Drainage Networks: Flood barriers (for lower return periods such as 2 years)
- Improved surface drainage systems divert excess water away from substations, to control local drainage issues.

**4. Increased Lightning Strikes and Protection Measures**

**4.1 Lightning Protection for Transmission Towers**

- Optical Ground Wire (OPGW) is integrated to protect conductors from direct lightning strikes.
- The earthing system at each pylon is designed to maintain resistance below 10 ohms, ensuring effective dissipation of lightning energy.
- Where necessary, a counterpoise earthing system will be installed to achieve the required resistance.

**4.2 Insulation and Surge Arresters**

- Polymeric composite insulators and silicone rubber insulators reduce flashovers from lightning surges.
- Surge arresters at substations protect transformers and switchgear from transient overvoltage.

**4.3 Grid Substation Protection**

- Gas-insulated switchgear (GIS) provides superior protection against lightning-induced surges.
- Shielding devices and earthing grids ensure the safe discharge of lightning energy.
- At grid substations, the ground resistance is maintained below 1 ohm by installing a copper mesh grounding system.

**5. Compliance with International Standards**

The following standards will be complied with.

- IEC 62305 (Lightning Protection Standards) ensures comprehensive lightning safety.
- IEEE 998 (Guide for Direct Lightning Stroke Shielding of Substations) governs effective shielding measures.
- IEC 60076 and IEC 62271 ensure grid components operate safely under various environmental conditions.

Note: These adaptation measures look somewhat generic. More specific adaptation measures should be built into the engineering design at the detailed design stage of the transmission line,

using these somewhat generic guidelines. Specific parameters such as rainfall increase, temperature increase, and sea level rise have been provided in the CRA. Such a detailed study must be built into the construction contract, as such a detailed study will take time and is not within the scope of this study.

## 7.5 Benefits to Local Communities

### 7.5.1 Benefits to Local Communities

The following benefits to the local communities will take effect after the climate change adaptation measures are built into the design.

1. **Safer Infrastructure:** Stronger structures will lower the risk of accidents and damage.
2. **Environmental Protection:** Sustainable designs minimize long-term environmental impact.
3. **Community Involvement:** Local feedback will be considered in the project planning.

The project aims to build a power transmission line that is not only strong and reliable but also proof of future climate change. Public feedback and cooperation will play a vital role in ensuring its success.

### 7.5.2 National Benefits

The following national benefits will be there after building the Climate Change Adaptation measures to the design.

1. **Reliable Power Supply:** Reducing power outages caused by extreme weather events. Reduces the risk of outages due to extreme weather (e.g., floods, storms, heat waves), which are increasingly frequent in Sri Lanka.
2. **Avoidance of system breakdowns leading to total island-wide or provincial-wide power outages:** There are past experiences, where the failure of a transmission line has caused provincial power outages.
3. **Minimizes economic losses and service disruptions**, especially to critical facilities (e.g., hospitals, water supply, communication).

## 7.6 Climate Change impacts

Sri Lanka, particularly Trincomalee, is highly vulnerable to climate change impacts, including **sea-level rise, extreme rainfall, temperature fluctuations, tropical cyclones, and lightning strikes**. These risks pose threats to infrastructure, especially power transmission lines, causing potential failures, damage, and electricity supply interruptions. The detailed climate risk assessment report along the transmission line is included in Appendices 15.8.

### 7.6.1 Business-As-Usual (BAU) Scenario

- **Rainfall Extremes & Changes**: Trincomalee's rainfall station data reveals increasing trends in **heavy rainfall events, consecutive wet/dry days, and extreme precipitation indices**. Although trends are mostly statistically insignificant, future projections under

**RCP 4.5 and RCP 8.5** (BAU Scenario) scenarios indicate a significant increase in heavy rainfall events. The RCP 8.5 Scenario was considered as the BIU Scenario.

- **Temperature Rise**: Increasing temperatures may cause power line sagging, structural stress, and higher energy demand. Analysis of temperature indices shows a significant reduction in **cold nights (TN10P)** and an increase in **hot nights (TN90P)**, highlighting warming trends.
- **Sea-Level Rise**: Coastal transmission lines are vulnerable to **flooding, erosion, and saltwater intrusion**, increasing corrosion risks. Projections estimate a **rise of up to 0.84 meters by 2100** under high-emission scenarios, with Trincomalee experiencing expanded inundation areas.
- **Extreme Winds & Cyclones**: Sri Lanka is prone to tropical cyclones, with strong winds causing damage to **transmission towers and power lines**. Historical data shows most cyclones occur in **November-December**, with storm surges and flooding exacerbating risks.
- **Lightning Strikes**: Lightning density is expected to rise with climate change. While data is limited, existing vulnerability assessments highlight increased lightning activity during the **Inter-Monsoon seasons**, particularly affecting rural areas.

#### 7.6.1.1 Future Climate Scenarios & Risk Assessment

The study uses climate models (RCP 4.5, RCP 6.0, RCP 8.5) to assess future climate risks. GIS mapping and flood modeling (HEC RAS, HEC HMS) predict spatial impacts. Findings suggest worsening extreme weather events, require urgent adaptation measures.

**Impact of the Rainfall and Sea Level Rise on Flood Levels**

From the analysis of the rainfall, it is seen that there is an increasing tendency for rainfall. The CRIP Report says that the 25 Year rainfall for a six-day design rain is increased by a factor of 8.1 that leads to an increase in flood levels. Increased flood level is also connected to the sea level rise as the increased downstream sea level with retard the flood recession. This will cause temporary inundation of the foundations and the steel elements of the pylons for a longer time.

**Increase in Temperature**

Studies show an increase in temperature in the Project Area. Such an increase in temperature will cause thermal expansion and buckling of steel elements etc.

**Impacts of cyclones**

**General**

Severe loss or damage due to tropical cyclones could arise from wind, rain, and associated floods, coastal erosion, and storm surges. Falling trees and flying objects due to strong winds may cause serious loss of life and damage to property. Rain and floods cause loss of agricultural products and damage to public works, highways, and property.

During the passage of a cyclone, low-lying coastal areas may get further affected due to storm surge, a large mass of water, that rises above the normal level of the sea, due to low air pressure within the cyclone and the pilling up of water due to strong winds.

**Wind Damage**

**Destruction of Infrastructure**: Cyclones produce extremely strong winds (often exceeding 200 km/h or 124 mph), which can cause widespread damage to buildings, roads, bridges, power lines, and communication networks. The force of the wind can tear roofs off buildings, uproot trees, and cause power outages.

**Flooding**

**Heavy Rainfall**: Cyclones are often accompanied by torrential rainfall that can lead to widespread flooding.

**Storm Surge**

A storm surge is an abnormal rise in sea level caused by the strong winds and low pressure associated with cyclones. It can result in coastal flooding, inundating low-lying areas and causing significant damage to infrastructure, homes, and agricultural land.

**Infrastructure and Reconstruction Challenges**

**Damage to Infrastructure**: Infrastructure such as electricity pylons, and grid stations could get damaged. The restoration of essential services can take time.

**Impacts on Climate and Future Risk**

**Cyclones and Climate Change**: Climate change is projected to increase the intensity of cyclones due to rising sea surface temperatures and changes in atmospheric patterns. Warmer oceans provide more energy for cyclones, which can lead to stronger storms, larger storm surges, and more intense rainfall.

**Increasing Frequency and Severity**: In some regions, the frequency and severity of cyclones are expected to increase because of climate change, further heightening the risks to vulnerable coastal and low-lying areas.

Low-pressure systems typically begin to develop in the northern Bay of Bengal, below the 10°N latitude, during late April or early May. According to historical cyclonic events, these systems can intensify into cyclones as they move northward into the Bay of Bengal above the 10°N latitude.

Later, after November, low-pressure areas again begin to develop in the northern Bay of Bengal, below the 10°N latitude. These cyclonic storms can potentially cross the eastern coast of Sri Lanka.

**Impact on Lightening**

According to research, it is seen that the number of lightning streaks increased due to Climate Change, although there are no projected data for Sri Lanka.

A detailed Climate Risk Study is given in Annex 15.8.

## 7.7 Transmission Line Resilience and Protection Measures for Climate Change Impacts

### 7.7.1 Introduction

The Sampur - Kappalthurai 220kV Transmission Line is a critical component of Sri Lanka's power infrastructure. Given the impacts of climate change, it is essential to ensure the resilience of the

transmission infrastructure to temperature variations, flooding, sea-level rise, and increased lightning activity. This report outlines the technical considerations, resilience measures, and protective mechanisms incorporated in the project to mitigate these environmental challenges.

### 7.7.2 Resilience of Transmission Infrastructure to Temperature Increase

**Pylon Material – Steel Towers**

- The transmission towers are constructed using galvanized high-tensile steel, ensuring superior resistance to corrosion and mechanical stress.
- Galvanization Process: Hot-dip galvanization provides a protective coating, reducing oxidation and degradation due to heat.
- Thermal Expansion: The high-tensile steel conforms to IEC 60826 (Design Criteria of Overhead Transmission Lines) and BS EN 1993-3-1 (Structural Design of Steel Towers) to prevent excessive expansion-related stresses.

**Foundation Concrete**

- The concrete used in tower foundations is designed for high thermal resistance, preventing cracking due to temperature fluctuations.
- Sulfate-resistant cement is used in areas with saline exposure to mitigate degradation risks.
- Proper curing techniques are followed to enhance structural longevity.

**Grid Substation Equipment (GS Elements)**

- Transformers, circuit breakers, and insulators adhere to IEC 60076 (Power Transformers Standard) and IEC 62271 (High-voltage Switchgear and Control gear) for extreme temperature operation.
- Cooling Mechanisms: Oil-filled and air-cooled radiators enhance thermal performance, preventing overheating.

### 7.7.3 Resilience to Flooding and Sea Level Rise

**Pylon Foundation Design for Flood-Prone Areas**

- Geotechnical assessments determine foundation depth, ensuring pylon stability in flood-prone areas.
- Reinforced pile foundations are used where soil conditions are vulnerable to saturation.
- Drainage systems are integrated at the base of transmission towers to prevent water stagnation.

**Substation Resilience to Flooding**

- Elevated Platforms: Critical substation equipment is placed on elevated platforms to reduce exposure to floodwater.
- Waterproof Enclosures: Transformers and switchgear are enclosed in waterproof housing to prevent damage.
- Drainage Networks: Flood barriers and improved surface drainage systems divert excess water away from substations.

### 7.7.4 Increased Lightning Strikes and Protection Measures

**Lightning Protection for Transmission Towers**

- Optical Ground Wire (OPGW) is integrated to protect conductors from direct lightning strikes.
- The earthing system at each pylon is designed to maintain resistance below 10 ohms, ensuring effective dissipation of lightning energy.
- Where necessary, a counterpoise earthing system will be installed to achieve the required resistance.

**Insulation and Surge Arresters**

- Polymeric composite insulators and silicone rubber insulators reduce flashovers from lightning surges.
- Surge arresters at substations protect transformers and switchgear from transient overvoltage.

**Grid Substation Protection**

- Gas-insulated switchgear (GIS) provides superior protection against lightning-induced surges.
- Shielding devices and earthing grids ensure the safe discharge of lightning energy.
- At grid substations, the ground resistance is maintained below 1 ohm by installing a copper mesh grounding system.

## 7.8 Compliance with International Standards

The following standards will be complied with.

- IEC 62305 (Lightning Protection Standards) ensures comprehensive lightning safety.
- IEEE 998 (Guide for Direct Lightning Stroke Shielding of Substations) governs effective shielding measures.
- IEC 60076 and IEC 62271 ensure grid components operate safely under various environmental conditions.

# 8 Environmental and Social Management Plan (ESMP) and Environmental and Social Monitoring Plan (ESMoP)

## 8.1 The Environmental and Social Management Plan (ESMP)

This Environmental and Social Management Plan (ESMP) provides a set of mitigation measures to avoid or minimize the potential environmental and social risks and impacts identified during ESIA which are likely to occur during project design and planning, construction and operational stages. The ESMP forms part of the Contract, the provisions of which are detailed in the ESMP and are mandatory in nature and also contractually binding. The ESMP will also equally applicable to sub – contractors including nominated sub – contractors if any.

**Non-Compliance with ESMP**

As mentioned, ESMP present good practices to be implemented to ensure that any adverse environmental and social impacts and risks are avoided, minimized or mitigated.

The Contractor is advised to carefully consider the relevant requirements of the ESMP stated under different project phases prior to preparing his site-specific detailed ESMP (C-ESMP). In case the Contractor fails to comply with the requirements of the ESMP, after informing in writing, the Project Engineer/PMU shall take whatever actions it is deemed necessary to ensure that the ESMP is properly implemented. If the Contractor still fails to comply with the particular requirements, the Engineer shall impose a penalty and take actions to arrange appropriate remedial measures to rectify the impact.

The E&S officers of the PMU shall be responsible for conducting compliance monitoring of the ESMP implementation during the project period and conducting site visits and liaising with the Contractor to ensure compliance on site. If the contractor fails to comply with the requirements after giving a reasonable time to attend/rectify the non-compliances, the Engineer shall recommend the PMU to suspend the whole or any part of the particular construction activity until proper mitigation measures are taken to a level acceptable to the Engineer. If the contractor continues to fail to take satisfactory action within a period of 14 days from the date of suspension, the Engineer shall immediately take action to get the service completed through a third party and the entire cost incurred shall be recovered from any amount payable to the Contractor.

**Monitoring and Reporting Requirements**

The Contractor is required to recruit an Environmental and Social Safeguards Officer (ESSO) who acts as the representative of the Contractor for environmental and social safeguards. ESSO shall maintain a report of ESMP compliance via photo documentation of implementation, issues and impacts identified during construction and report on how the Contractor has achieved implementation of E&S management as per this document. A written report to the Engineer shall be submitted monthly via the use of photographs and written documentation as part of project progress reports on a monthly basis or as agreed with the Engineer.

## 8.2 Environmental and Social Monitoring Plan (ESMoP)

CEB will have the overall responsibility for monitoring the ESMP implementation. The Environmental and Social Safeguards Officer/s of the PMU will be responsible for the implementation of the monitoring plan presented below. The safeguards officer/s together with the site engineers will undertake monthly field visits to project sites and meet with the affected persons, and the contractor and his staff, and will also review the E&S monitoring reports prepared by the contractors' E&S officers. The E&S officer/s will also focus on engaging the relevant stakeholders in the monitoring processes and adopt participatory processes. The safeguards officer/s will prepare corrective action plans to address any non-compliance. The safeguards officer/s will also maintain a database of all the relevant information related to monitoring results including the follow-up action taken.

The safeguards officer/s will systematically document the monitoring results, and quarterly reports will be produced during ESMP implementation. Semiannual monitoring reports will be submitted to AIIB together with the corrective actions adopted to address compliance issues.

The Detailed Environmental and Social Management Plan (ESMP) is presented in Table 8.1 and the Detailed Environmental and Social Monitoring Plan (ESMoP) is in Table 8.2.

**Table 8.1 – Detailed Environmental and Social Management Plan (ESMP)**

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| **Design and planning stage** | | | | | | |
| Construction of transmission line foundations across areas with unconsolidated alluvial deposits | Poor soil compaction, high erodibility, moisture variations, foundation instability | Conduct comprehensive geotechnical assessments along the route | CEB PMU | Design and Environmental Division of CEB / CEB PMU | Engineering Cost | Design and Pre-construction phase |
| Construction of towers in mining areas | Subsidence, foundation instability | Avoid zones with active/historical mining; where unavoidable, design enhanced foundations | CEB PMU | Design and Environmental Division of CEB / CEB PMU | Engineering Cost | Design and pre-construction phase |
| Wayleave clearance | Removal of trees in forest lands | Tree enumeration is already completed based on the recommendations of IEER and Environmental Clearance from CEA. Final tree list to be removed has already been submitted to Timber Corporation through the Forest Department. Same list given in Appendix 15.11 and approvals of the same included in Appendix 15.14 | CEB PMU | CEB PMU | Compensation | Design and pre-construction phase |
| Wayleave clearance | Removal of trees in Private lands | Trees identified for removal on private lands for transmission line construction are marked during the wayleave survey. Compensation shall be paid to the landowners based on the approved rates, as recommended by the Divisional Secretary (DS). | CEB PMU | CEB PMU/ DS | Compensation | Design and pre-construction phase |
| | Social impacts | | | | | |
| | Lack of project related awareness among stakeholders including project affected persons leading to objections raised against project implementation | · Identify the key stakeholders of the project including project affected persons. | PMU's E&S officers | Design and Environmental Division of CEB / CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | ● Prepare a Stakeholder Consultation and Information Disclosure Plan on and ensure its implementation during project designed planning stage as well as during project implementation stage. | | | | Pre-construction phase / Construction phase |
| | | · Conduct awareness raising and information sharing programs via workshops, meetings, focus groups, social media, and distribution of printed material. | | Design and Environmental Division of CEB/ CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | · Provide information on the scope of the project, potential risks and impacts, project's implementation procedures, and timelines. | | Design and Environmental Division of CEB/ CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | · Establish feedback mechanisms for stakeholders to communicate their issues and concerns, suggestions and requests for additional information. | | Design and Environmental Division of | ESMP Budget | Pre-construction phase / |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | | | CEB/ CEB PMU | | Construction phase |
| | | · Respond to the communications from the stakeholders. | | Design and Environmental Division of CEB/ CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | Grievances and complaints from project affected persons and other stakeholders | · Establish a project based grievance redress mechanism (GRM). | PMU's E&S officers | CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | · Provide wider publicity to the GRM on the scope of the GRM and its operational procedures, locations etc. through display of posters, banners, and social media. | | CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | · Set up complaint boxes and grievance logs at strategic locations and provide contact details and phone numbers of focal points for reporting grievances. | | CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | · Ensure timely and efficient resolution of grievances. | | CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | | Monitor the performance of the GRM at regular intervals. | | CEB PMU | ESMP Budget | Pre-construction phase / Construction phase |
| | Loss of land and trees | Identify the land area required for the installation of tower foundations, and the trees to be removed, and their respective landowners. | PMU & DS | CEB PMU | Compensation | Pre-construction phase |
| | | Determine the compensation enlistments for affected persons at replacement value. | | CEB PMU | Compensation | Pre-construction phase |
| \ | | Complete compensation payments for affected land and trees prior to the commencement of civil works. | | CEB PMU | Compensation | Pre-construction phase |
| | | Provide additional assistance to vulnerable persons/households. | | CEB PMU | Compensation | Pre-construction phase |
| | | Provide seedlings of short-term high yielding varieties of fruit-bearing species to affected persons/households for planting in their home gardens. | | CEB PMU | Compensation | Pre-construction phase |
| | Impacts on primary and/or auxiliary structures | Identify and assess the impacts on primary and/or auxiliary structures. | PMU & DS | Design and Environmental Division of CEB/ CEB PMU | Compensation | Pre-construction phase / construction phase |
| | | Arrange for temporary relocation of the affected households and auxiliary structures (e.g. cattle sheds, poultry pens etc.) during the construction period if required for safety reasons. | | CEB PMU | Compensation | Pre-construction phase / construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | Provide compensation at replacement value for any damages caused to the structures enabling their full restoration. | | CEB PMU | Compensation | Pre-construction phase / construction phase |
| | | Provide additional assistance to vulnerable persons/households. | | CEB PMU | Compensation | Pre-construction phase / construction phase |
| | Non-compliance with regulatory E&S requirements | Review all regulatory environmental and social requirements stipulated by project approving agencies such as CEA, RDA, SLRs, ID, FD, DWLC, LAs etc. | PMU & Contractor | CEB PMU | ESMP Budget | |
| | | Consult the relevant authorities and establish regular communications with those agencies. | | CEB PMU | ESMP Budget | |
| | | Prepare the implementation procedures required to comply with those E&S related regulatory requirements. | | CEB PMU | ESMP Budget | |
| | Labor influx | Establish a Workers' Grievance Redress Mechanism for reporting the grievances of the workers. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| Baseline Establishment | | Establishment of Water Quality and Noise Baseline data required for future monitoring activities. | PMU & Contractor | CEB PMU | ESMP Budget | Pre-construction phase |
| | | Conducting VP Surveys to identify the type of Bird Diverters and locations to be installed based on the recommendations given in the ESIA. | PMU & Contractor | CEB PMU | ESMP Budget | Pre-construction phase / construction phase |
| **Construction Stage** | | | | | | |
| | Impacts on land use | Tree removal and vegetation clearance should be carried out carefully, without disturbing the surrounding vegetation and habitats, under close supervision. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | In active and abandoned paddy fields (e.g., towers 4/2, 6/4, 10/3, 14/1, and 17/3), schedule construction after harvesting seasons and ensure topsoil is carefully removed, stored, and reapplied after tower erection to preserve soil fertility and support future cultivation. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | For marshland zones near towers 4/3 to 4/5, AP9, AP14, and between AP15 and 15/7, use low-impact access techniques such as temporary matting or geotextile-supported tracks to minimize soil rutting and protect wetland hydrology. Avoid excavation during peak monsoon periods. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | In home gardens intersected at tower 12/3, restrict machinery movement to designated paths to minimize crop damage. Provide compensation for lost perennial trees like mango and teak, and offer replanting support post-construction. | CEB PMU/ Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | In sparse forest areas (e.g., TT1 to AP2 and AP13 to AP14), vegetation clearance should be confined to the 35 m RoW and the designated access paths. Retain edge vegetation as habitat buffers and avoid disturbing regeneration patches during material transport. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | For chena cultivation zones near AP11 and AP16, coordinate with local farmers to identify current usage and avoid disruption during active cultivation periods. Support temporary relocation or provide short-term livelihood alternatives. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | In low-lying areas close to Mahaweli Ganga, ensure drainage channels are maintained during excavation, and restore micro-drainage after construction. Implement erosion control measures such as silt fences and berms near watercourses. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Within the Sampur GSS and solar park zone, maintain a 40 m buffer from the High Flood Line of Sampukulam Tank and 20 m buffers from Pulavan Kulam and Iluppankulam, as per CEA guidelines. These zones must remain undisturbed, with stormwater swales installed to control runoff and reduce sedimentation. | Contractor/ TPCL | Design and Environmental Division of CEB/ CEB PMU/ TPCL | Contractor's Budget / TCPL Budget | Construction phase |
| | Soil and geology impacts | In erosion-prone alluvial soil zones (e.g., 2/1 to 4/2, AP6 to 8/7, and 10/4 to AP17), install temporary erosion control measures such as silt fences, coir logs, and contour bunds following the CEA's ESC (Erosion and Sediment Control) guidelines, especially during the northeast monsoon. Measures should be site-specific, with priority given to flood-prone low-lying areas. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | For tower foundation excavation in soft or water-saturated soils, particularly near Mahaweli River floodplains, adopt controlled dewatering techniques and trench shoring to prevent collapse and erosion. Ensure dewatering discharges are filtered before release to adjacent land or drainage channels to comply with CEA water discharge guidelines. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | In rocky substrata like charnockitic gneiss (AP16–TT2) and undifferentiated highland series (TT1–AP6), conduct pre-construction geo-technical assessments and apply controlled blasting protocols only where necessary, minimizing vibration and subsurface fracturing. Techniques should follow NBRO recommendations for safe rock excavation in sensitive zones. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Restrict construction access and heavy machinery movement in solodized solonetz soils (4/2–AP6) and low humic gley soils to designated haul paths using low ground pressure equipment or geo-fabric mats, reducing soil compaction and structural weakening. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Stockpile excavated soil and material at least 50 m away from tanks, streams, or marshes, ensuring temporary bunds are installed to prevent edge erosion and sedimentation, in line with CEA's buffer requirements. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Implement separate topsoil stripping, storage, and reuse in productive areas such as paddy fields and reddish-brown earth zones to preserve fertility for post-construction rehabilitation. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | Construct concrete mixing and refueling areas on impermeable surfaces with secondary containment to prevent alkaline runoff, hydrocarbon spills, and heavy metal contamination, in accordance with Sri Lanka's National Environmental (Protection & Quality) Regulations, 2008. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prohibit dumping of construction waste, excavated debris, or packaging material in wetlands, paddy fields, or forest edges. Ensure disposal is carried out at CEA-licensed facilities, following Schedule Waste Management Guidelines. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Approval from GSMB and CEA should be obtained prior to conduct rock blasting (controlled) during excavation | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Hydrological impacts | For towers within or near stream reservations (e.g., AP3, AP4, 15/7, 8/1, AP11, 16/3), reevaluate tower siting to ensure compliance with State Land Ordinance No. 9912 and Central Environmental Authority (CEA) buffer zone regulations: 60 m for streams >15.2 m, 40 m for streams between 4.6–15.2 m, and 20 m for streams <4.6 m in width. Where realignment is not feasible, apply strict erosion control, sediment barriers, and temporary bunds. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | At towers close to irrigation tanks and sensitive aquatic ecosystems (e.g., 10/2, 21/2, AP15), install silt fences, sediment traps, and check dams to prevent runoff carrying sediment or contaminants into surface water bodies. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prohibit storage of fuels, lubricants, or construction chemicals within 100 m of any watercourse or tank; designate bunded zones for such activities. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Use controlled dewatering and install sedimentation basins at marshy tower sites (e.g., AP14, AP15, AP11) to avoid turbidity spikes and lower the risk of altering groundwater recharge dynamics. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Conduct concrete curing and equipment washing at designated containment zones away from water bodies to prevent alkaline runoff. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Employ low-impact access techniques (e.g., geotextile tracks) near floodplains and saturated soils to minimize compaction and hydrological disruption, especially near Mahaweli Ganga and alluvial stretches. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Hydrological Impacts on the Sampur CGS disturb water flow of two irrigation canals that run through the Sampur CGS. | Option 1: Provide closed concrete two underground rectangular drains with manhole access and cover slabs and maintain these drains so that irrigation flow from the upstream tank which is outside the proposed GSS could be kept intact. CEB could maintain these drains and if request access to the officers of the Department of Agrarian Development (DAD), should be allowed for any inspection. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Reservation for minor streams | Reservations will be made for the streams and irrigation canals within the paddy areas under the Department of Agrarian Development | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | Foundation excavations will cause siltation of the tank's waterbody during the rainy season. | Foundation excavation should be carried out during dry season and the excavated material should be recompacted as backfilling. If excavation is during the wet season, suitable silt barriers such as sand filled gunny bags should be used on the downstream side of the excavation to stop silt ingress into the nearby paddy areas or the tank. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Water Quality | Ensure compliance with Sri Lankan water quality standards. conduct baseline and periodic monitoring of parameters given at table 8.4 (water quality parameters) at locations proposed for water quality monitoring (table 8.3). | Contractor/ CEB | CEB PMU | Contractor's Budget / ESMP Budget | Pre-construction phase / construction phase |
| | Air quality impacts | Ensure compliance with Sri Lankan ambient air quality standards as per Gazette Extraordinary No. 1562/22. Conduct baseline and periodic monitoring of $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_2$, and CO at locations near identified sensitive receptors such as schools, religious places, and settlements as given in Table 8.5. | Contractor/ CEB | CEB PMU | Contractor's Budget / ESMP Budget | Pre-construction phase / construction phase |
| | | Implement dust suppression measures by spraying water on unpaved access roads, tower construction areas, and material stockpiles at least twice daily, especially during dry weather and high-wind periods. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Control vehicle speeds to under 30 km/h on unpaved roads, following best-practice measures adopted in AIIB-financed projects to reduce fugitive dust. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Cover all material transport vehicles to prevent dust dispersion. Avoid overloading and ensure material loads (e.g., soil, sand) are moistened before transport. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Use low-emission, well-maintained diesel-powered equipment, and avoid unnecessary idling. Regularly inspect machinery for compliance with national emission limits. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Restrict on-site concrete mixing and mechanical excavation near settlements, using enclosures or barriers when possible to reduce particulate emissions. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Avoid blasting during peak wind hours and dry months (June to September) unless justified by geotechnical requirements. Use dust barriers and pre-blasting water application for rocky formations like charnockitic gneiss areas (AP16 to TT2). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Noise and vibration impacts | All high-noise activities such as rock blasting, chiseling, and heavy excavation must be restricted to 6:00 AM – 6:00 PM, as per the maximum permissible daytime noise level of 70 dB(A) under Gazette Extraordinary No. 924/12 of 1996. Night-time activities (6:00 PM – 6:00 AM) must be minimized and kept under 60 dB(A). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | In areas requiring controlled blasting (e.g., AP3–AP4 tower sections over granitic gneiss), residents, Grama Niladhari and Pradeshiya Sabha officers must be notified at least 24 hours in advance in accordance with AIIB ESF. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Use controlled blasting techniques (e.g., pre-splitting) to reduce air overpressure and ground vibration. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | All construction machinery must be certified to meet National Machinery Noise Standards and be equipped with functional mufflers and silencers to reduce source-level noise emissions. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Install acoustic barriers or noise baffles near sensitive receptors (e.g., T/Kin/Al Ahla Vidyalayam – School, RKM Saratha Vidyalayam - School) if construction activities fall within a 500 m radius. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Limit construction and delivery vehicle speeds to under 30 km/h on all unpaved roads within 500 m of settlements and ecological zones. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Provide PPE such as industrial-grade earplugs or earmuffs to workers exposed to noise levels exceeding 85 dB(A) for more than 8 hours, based on Factories (Registration of Factories and Approval of Factory-Building) Regulations No. 1 of 2019. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | In sandy regosol and low humic gley zones (e.g., 4/2 to AP6), employ anti-vibration pads or dampening mats beneath vibratory equipment and monitor ground vibration using portable seismographs to avoid structural cracking and ecological damage. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Avoid use of high-noise machinery within 50 m of wetlands, tanks (e.g., Iluppankulam), or forest patches (e.g., Muthur Government Forests). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Conduct monthly noise monitoring at receptor locations using calibrated sound level meters, and maintain records for audit compliance per CEA noise measurement protocol (2000) and AIIB's monitoring and evaluation requirements under ESS 1. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Establish and publicize a project-level GRM with logbooks at local GND offices to address community complaints related to noise or vibration, as mandated by AIIB ESF. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Traffic impact | Coordinate with local authorities (RDA, Police, Pradeshiya Sabha) prior to construction to obtain necessary permits for transport of oversized or heavy loads. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Schedule transportation of materials and tower components outside peak hours (e.g., 7:00–9:00 AM and 4:00–6:00 PM), especially at crossings along the A15 and B541 roads, to reduce traffic disruption. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Install temporary warning signs, reflectors, and flagmen at all key road crossings (especially on A15, B541, and Ring Road intersections) to manage traffic safely and in line with RDA's Traffic Control Manual. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Use escorted convoys or pilot vehicles when transporting oversized equipment through narrow gravel roads near sensitive locations (e.g., AP6–AP8 and AP14–TT1). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Maintain clear sight distances at all access points by cutting vegetation and removing obstructions to ensure visibility for both construction and public vehicles. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | Prepare and implement a Traffic Management Plan (TMP) specific to tower delivery schedules and access routes, addressing haul route safety and load-bearing capacity, especially for rural roads. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Limit use of community roads and ensure heavy trucks avoid local school hours to protect vulnerable road users such as students and farmers. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Provide local residents with advance notice of major deliveries, especially in areas where agricultural or domestic vehicle use is high. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure construction vehicles are clearly marked, well-maintained, and equipped with functioning horns, lights, and brakes, as per Sri Lanka's Motor Traffic Act. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Establish a grievance redress system at GND level to allow community members to report unsafe or inconvenient traffic incidents. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Visual and landscape impact | Retain natural vegetation buffers along the RoW in visually sensitive zones (e.g., near Pulavan Kulam and Iluppankulam), as permitted by safety clearances. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Use dull or non-reflective coatings on tower structures to reduce glare and visual contrast with the surrounding environment. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Limit the height of spoil heaps and stockpiles during construction to avoid further landscape disruption and ensure timely removal. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Implement progressive vegetation restoration (using native species) after construction in open areas such as paddy fields between 10/3–10/4. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Avoid unnecessary widening of the RoW in agricultural and scenic areas; follow minimum required clearance standards only. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Local topography and micro-landform features | Minimize excavation depth and area during tower foundation works, especially in flood-prone lowlands (e.g., AP14–15/7 and AP11–11/4). | Contractor | Design and Environmental Division of CEB/CEB PMU | Contractor's Budget | Construction phase |
| | | Avoid stockpiling excavated materials on natural drainage paths or depressions to prevent waterlogging. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Grade temporary access roads and construction platforms to follow the natural contours of the land as much as feasible. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Apply compaction and stabilization techniques during backfilling to prevent subsidence and altered runoff patterns. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Restore altered micro-topography by recontouring disturbed areas post-construction to match pre-existing drainage lines. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Install surface drainage channels or temporary culverts where construction intersects low-lying or marshy terrain. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Accumulation of waste / disposal of debris | Develop and implement a Construction Waste Management Plan (CWMP) in accordance with CEA Solid Waste Guidelines (2005). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Segregate construction waste into reusable (e.g., steel), recyclable (e.g., plastic, wood), and non-recyclable categories at source. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | Remove and dispose of construction debris and excavated material at approved disposal sites identified in consultation with the Local Authority or Pradeshiya Sabha. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prohibit open dumping of waste in marshlands and floodplains (e.g., AP14–15/7), and erect signs to enforce this prohibition at sensitive zones. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Use geo-membranes or tarpaulin covers to store excavated spoil temporarily, preventing erosion and sediment wash-off. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure all non-biodegradable waste such as plastic packaging, insulation material, and used cables are collected and sent to licensed recycling or disposal facilities. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | During operation, collect solid waste from maintenance activities and dispose through authorized third-party waste handlers. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Maintain waste handling logs and include them in environmental monitoring reports submitted to AIIB and local authorities. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Train contractors and workers on proper waste handling and spill prevention, particularly in ecologically sensitive zones. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Construction work during the flood time | As the entire transmission line is on a flood plain, it is better to avoid construction during this time to steer clear of floods. If there are any sort of ground activities during the impending flood time the following precautionary measures should be taken. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | CEB and the Contractor should follow the flood warnings given on mass media and even social media about ensuing floods and high rainfall. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | If there are any equipment or material which could be vulnerable to flooding such material and equipment should be taken away to safer places. Workers too should be taken away to safer places. The guidance of the DMC could be followed during such instances. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Impact from cyclones | CEB and the Contractor should follow the cyclone warnings given on mass media and even social media about ensuing cyclones and high rainfall. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | If there are any equipment or material which could be vulnerable to cyclones such material and equipment should be taken away to safer places. Workers too should be taken away to safer places. The guidance of the DMC could be followed during such instances. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Work at heights including wire stringing should be avoided. The use of drones for such work is anyway the best. However, even the use of drones during cyclone /high wind times is not advisable. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| Foundation installation on unstable weathered sediments | Structural instability, increased maintenance needs, potential collapse | Anchor foundations into competent bedrock wherever feasible | Contractor | Design and Environmental Division of CEB/CEB PMU | Construction phase | Contractor's Budget |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| Soil preparation and foundation works | Soil instability and reduced load-bearing capacity | Apply proper soil compaction techniques during foundation construction | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| General construction over Regosols soil areas and non-calcic brown soils | Foundation failure, operational risks | Implement soil conditioning and foundation strengthening strategies | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| Tower site development and drainage installation | Erosion, waterlogging around tower bases | Design and install efficient drainage systems to control moisture | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| Tower foundation construction | Land subsidence during construction and operation | Monitor subsidence signs and apply corrective actions as needed | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Impacts Due to Vegetation Clearance and Removal of Trees | Mangroves between tower 4/3 and tower 4/4, and Uppu Aru (between tower 11/4 and tower AP12) should not be cleared or disturbed under any means. If the ground clearance is insufficient, the tower height should be adjusted accordingly to achieve sufficient ground clearance. | Contractor/ CEB PMU | Design and Environmental Division of CEB/ CEB PMU | Engineering Cost | Preconstruction phase |
| | | Protection of Ecologically Important Species Habitats and species of ecologically important mangrove flora species, such as *Myriostachya wightiana*, *Cynometra iripa* (Opulu/Attukaddupuli), and *Xylocarpus granatum* (Mutti-kadol/Kandal), which are found in the area during the ecological study, as well as potentially occurring flora species, Ceriops decandra and Sonneratia apetala, should be protected from disturbance due to project activities. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Conduct additional studies targeting ecologically important species such as *Myriostachya wightiana*, *Cynometra iripa* (Opulu/Attukaddupuli), and *Xylocarpus granatum* (Mutti-kadol/Kandal), which are found in the area during the ecological study, as well as potentially occurring flora species, *Ceriops decandra* and *Sonneratia apetala*, and map their locations for future monitoring. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | Translocation of Ecologically Important Species | The ecologically important potential and observed species from forests and scrublands need to be translocated immediately before tree removal and vegetation clearance into pre-selected, suitable protected habitats in the surrounding areas.<br>(Refer Table 6.5 in section 6.3.3.3 of the ESIA for details) | Contractor | Design and Environmental Division of CEB/ CEB PMU | ESMP Budget | Construction phase |
| | Avifauna Collision Risk | Conduct a minimum of two VP surveys (one at AP 5, covering the area between tower 4/2 and tower 6/1, and another at tower 21/1, covering the area between Sampur CGS and tower 19/7) during the bird migratory season, with a minimum duration of 36 hours for each VP survey. Additionally, Point Count surveys need to be conducted in all water bodies within a 500-meter zone of the right-of-way (RoW) of the transmission line. | Contractor | Design and Environmental Division of CEB/ CEB PMU | ESMP Budget | Construction phase |
| | Spreading of invasive species | Propagules of invasive species and noxious weeds should be managed separately during tree removal and vegetation clearance [should not be disposed of as other debris, need special disposal methods (control burning, bury, etc.)]. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | Vehicles should be covered during the transportation of cleared vegetation from the construction site. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Borrow material should be brought from properly identified borrow pits. The sites should be inspected to ensure that no invasive species and noxious weeds are being carried with the burrow material. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Close monitoring of transportation and storage of borrowed material for the spread of any invasive species and noxious weeds. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Inspect the site periodically to ensure that no invasive species and noxious weeds are establishing themselves at the site. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Washing the vehicles should be conducted periodically to prevent carrying propagules of any invasive species and noxious weeds. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Pressures on flora and fauna species (including endemic, restricted range, nationally or globally threatened species) and their habitats due to project activities. | Disposal areas, material-obtaining areas, stockpiling areas, office areas, worker camps, and other temporary facilities should not be located within natural habitats (should be located outside of natural habitats). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Erect and maintain signboards to inform workers and ensure they are aware not to go beyond the demarcated area. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Minimize lighting/illumination at night. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prevent or minimize nighttime work. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Noise and vibration levels should be controlled in accordance with the relevant standards. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Apply appropriate measures to minimize dust generation (watering, water sprinklers, dust barriers, etc.). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Emissions from all machinery and vehicles should be controlled according to the standards (no bad smoke). | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prevent the burning of plastics, other materials, or debris. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prevent illegal activities (poaching, fire, mining, timber or firewood extraction, encroachment, etc.) due to the increase in community movements to the area and direct and indirect project-related causes (i.e., employment, resource/material supply, etc.). | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | Possible disturbances and pollution of the surrounding surface water bodies. | Prevent the discharge or disposal of solid waste or wastewater into surrounding water bodies or habitats, and waste management should be carried out in accordance with the standards. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Erosion and siltation prevention structures should be established as necessary. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | To prevent hindrance to animal movement and prevent or minimize Human-Elephant Conflict (HEC), | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Implement dedicated passages or corridors designed for safe animal movement during construction. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Apply appropriate measures to prevent/ minimize road accidents (Road Killings) of animals (speed limits, signboards, awareness, etc.). | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Fish migratory paths should not be blocked. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | Hindrance to animal movement and prevent or minimize Human-Elephant Conflict (HEC), | Implement dedicated passages or corridors designed for safe animal movement during construction. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Apply appropriate measures to prevent/ minimize road accidents (Road Killings) of animals (speed limits, signboards, awareness, etc.). | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Fish migratory paths should not be blocked. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Awareness of the villagers and the contractor's team on preventing human-wildlife conflicts. | Contractor | Design and Environmental Division of | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | | | CEB/ CEB PMU | | |
| | Social impacts | | | | | |
| | Loss of crops and cultivations | Conduct an assessment of the potential damages to crops and cultivations due construction work. | DS, CEB & Contractor | CEB PMU & DS | Compensation | Construction phase |
| | | Consult the farmers/landowners to identify strategies to avoid/minimize the impacts on cultivations. | DS, CEB & Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | | If unavoidable, assess the compensation entitlements for farmers/landowners. | DS, CEB & Contractor | CEB PMU & DS | Compensation | Construction phase |
| | | Provide compensation to the affected persons prior to the commencement of civil works. | DS, CEB & Contractor | CEB PMU & DS | Compensation | Construction phase |
| | | Offer employment opportunities for the affected persons in the construction work. | DS, CEB & Contractor | CEB PMU & DS | Contractor's Cost | Construction phase |
| | | Provide additional assistance to vulnerable persons/households. | DS, CEB & Contractor | CEB PMU & DS | Compensation | Construction phase |
| | Labor influx & GBV, SEA & SH | Zero tolerate the incidences of gender-based violence, sexual exploitation and abuse and sexual harassment. | Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | | Conduct awareness raising programs for the labor teams as well as members of nearby communities on the prevention of GBV, SEA & SH. | Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | | Establish a special grievance reporting mechanism with trained officers to report and receive cases of GBV, SEA and SH. | Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | | Identify service providers for referrals of the victims of GBV. | Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | | Issue a Code of Conduct for each and every employee in their local languages and monitor their compliance. | Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | | Monitor the behaviors of the labor teams for any abuse of alcohol and drugs in the work places, and take corrective action. | Contractor | CEB PMU & DS | ESMP Budget | Construction phase |
| | Child labor and forced labor | Ensure that contractors or their subcontractors do not employ children under the age of16 years. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Devise a method to verify the age of the job applicants prior to their recruitment and maintain those records for inspection by the project officers. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure that children under 16 are not engaged in hazardous work or night time work even if they are recruited under special circumstances. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure that contractors or their sub-contractors do not engage forced/ bonded labor. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Access restrictions | Provide alternate access to households, commercial centers and public places if access to those places is temporarily restricted due to construction work. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Restore the permanent access immediately after the completion of the construction work. | Contractor | CEB PMU | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | Community health and safety risks | Prepare and implement a community health and safety management plan. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Adopt appropriate site-specific measures to ensure the safety of community members who would access their agro-wells, poultry pens, and cattle sheds located within the RoW, and prevent any risks of accidents. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Barricade the construction sites, and deploy security personnel to avoid any outside parties entering the sites without permission. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Establish labor camps far away from the settlements, and public places such as schools, religious institutions, medical and health centers, and service delivery institutions. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure that sanitary facilities, drainage systems, and waste disposal in the labor camps are properly maintained to prevent pollution of air, ground and surface water, and mosquito breeding. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Occupational health and safety risks to the workers | Comply with the requirements for safety of the workers as per the ILO Convention No. 62 and Safety & Health Regulations of the Factory Ordinance of Sri Lanka. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Establish all necessary safety measures at site. | CEB PMU/ Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure that high quality Personal Protective Equipment (PPE) in sufficient quantities is provided to all workers in adequate quantities. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Prepare a safety inspection checklist and monitor and record the compliances on a monthly basis. | CEB PMU/ Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Ensure the safety of workers while working closer to elephant roaming areas and along the railway line. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Conduct toolbox training meetings on daily basis. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Inspect the conditions of the vehicles, machinery, and equipment used for construction work at regular intervals and maintain the records. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Raise workers' awareness on the Workers' GRM and facilitate them to approach the project based GRM if necessary. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | Chance finds of physical and cultural resources and archaeological property | Inform the project engineer immediately if any objects of archaeological or historical significance are discovered during excavations. | Contractor | Design and Environmental Division of CEB/ CEB PMU | Contractor's Budget | Construction phase |
| | | Prevent the workers or any other persons from removing and damaging any such artifacts. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Stop the work in that location and barricade the area. | Contractor | CEB PMU | Contractor's Budget | Construction phase |
| | | Inform the Archaeological Department and the PMU to follow the established chance find procedures (Engineer). | Contractor | Design and Environmental Division of | Contractor's Budget | Construction phase |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | | | CEB/ CEB PMU | | |
| **Operation and Maintenance** | | | | | | |
| | Land use impacts | Enforce RoW vegetation control beneath towers in home garden areas like 12/3, using manual clearing methods without herbicides to prevent long-term soil degradation and allow low-lying crops. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | In marshland and forest zones (e.g., AP14, 15/7, 15/10), avoid frequent clearing that inhibits ecological regeneration; instead, apply a targeted maintenance regime allowing controlled regrowth of compatible native species. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | For paddy-dominant zones between AP20 and TT2, establish communication with landowners to coordinate tower inspections outside active planting/harvesting times and minimize disruption to seasonal farming. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Around solar park boundaries, establish native vegetative buffers to reduce edge impacts on adjacent seasonal cultivation areas and minimize visual and land-use conflicts with community-used tanks like Annaikal Kulam and Sambu Kulam. | TPCL | Design and Environmental Division of CEB/ TPCL | TPCL Cost | throughout operations |
| | Geology and soil impacts | Limit maintenance vehicle access in alluvial and non-calcic brown soil areas (e.g., AP17 to TT2) to dry-season inspections using existing stabilized tracks. Avoid repeated access during the monsoon to reduce rutting and erosion. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Construct and maintain drainage diversion structures (e.g., side drains, culverts) around towers in low humic gley soils to avoid chronic waterlogging. Measures should conform to CEA guidelines for infrastructure in flood-prone areas. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | In solonetz soils (4/2–AP6), regularly monitor for surface salinization and apply remedial measures (e.g., soil amendment with gypsum or organic matter) where foundation integrity may be affected by long-term salt accumulation. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | In rocky terrains such as quartzite and gneiss belts (AP3 to AP4, AP15 to AP16, AP16 to TT2), inspect tower foundations periodically for surface cracking or erosion. Apply local stabilization methods such as mortar patching, sealing, or surface vegetation to maintain structural integrity. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Avoid unnecessary clearing of vegetation within the RoW during maintenance; retain low-growing ground cover to stabilize soil and comply with ESS1 objectives on natural resource conservation. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Schedule maintenance access to stream-adjacent towers during dry periods and reinforce streamside access roads (e.g., AP3, AP11, AP15) with permeable materials to maintain overland flow. | Operation & Maintenance Division of | Operation & Maintenance Division of | Operational Cost | throughout operations |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | | Transmission Branch | Transmission Branch | | |
| | | Implement vegetative buffer zones and riparian replanting (with native grass or shrub species) along degraded streambanks to stabilize soils and maintain ecosystem function. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Strictly prohibit herbicide use in RoW segments that lie within 100 m of streams, tanks, or wetlands; adopt manual or mechanical vegetation control instead | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Periodically inspect tower bases (especially AP15, 11/4, and 16/3) for corrosion and leachate formation; replace compromised components using low-toxicity alternatives. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Install oil interceptors or absorbent mats under parked maintenance vehicles during servicing near water-sensitive locations. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Restore micro-drainage features disturbed during construction using natural contouring and vegetated swales to promote groundwater recharge. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Educate local O&M teams on water-sensitive maintenance protocols and assign accountability for buffer zone compliance during routine checks. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | Impacts on air quality | Restrict maintenance vehicle speeds to 30 km/h on unpaved routes, particularly near settlements and agricultural fields, to minimize dust resuspension. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Schedule maintenance and vegetation clearance during early morning or late afternoon hours, especially during the dry season, to reduce dust impacts. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Use manual or low-dust vegetation clearance in RoW areas close to settlements or cultivations, e.g., towers 11/3 and 12/3. Avoid the use of herbicides; if necessary, select environmentally safe products approved by the Registrar of Pesticides in Sri Lanka and apply only under calm weather conditions. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Inspect and maintain access roads regularly to prevent rutting and surface deterioration, which can exacerbate dust generation. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | Noise and vibration impacts | Minimize corona noise (typically 35–50 dB(A) in wet weather) by using corona rings and ACSR conductors with surface treatment. Regular inspection should be carried out in compliance with CEA guidance on operational phase noise limits. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Ensure that routine operational activities adhere to 55 dB(A) during the day and 45 dB(A) at night in Pradeshiya Sabha-administered low-noise areas, as per Gazette Extraordinary No. 924/12 of 1996. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Restrict maintenance traffic along unpaved access roads during night-time hours. When necessary, schedule such activities during the day, with speed limits below 30 km/h to minimize secondary noise and vibrations. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Inspect tower structures in coastal and saline-prone areas for corrosion-related mechanical sounds (e.g., creaking during wind). Apply anti-corrosive coatings and structural tightening to reduce incidental noise. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Use manual or battery-powered tools for vegetation clearance near sensitive areas. Mechanical brush cutters should be used only during daytime hours, in line with the National Noise Control Regulations. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Conduct annual feedback sessions with local residents and GND officers to document any emerging noise or vibration issues and adapt the Environmental Management Plan (EMP) accordingly. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | Traffic impacts | Schedule routine maintenance of towers and lines during off-peak traffic hours, using pre-identified access paths and minimizing road use in residential/agricultural areas. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Use light-duty vehicles for maintenance tasks to avoid disruption on narrow rural roads. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | | Ensure advance communication with local authorities for any non-routine access needs (e.g., emergency repair) that may affect road use. | Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |
| | Translocation of Ecologically Important Species | After the translocation, monitoring (survival) and maintenance (watering (if flora), shading (if needed), protection, invasive management, fire management, etc.) of translocated species and areas should be carried out for a few years until they become self-sustaining. | CEB PMU and Operation & Maintenance Division of Transmission Branch | Operation & Maintenance Division of Transmission Branch | Operational Cost | throughout operations |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | Compensation program for disturbance to natural habitats | strengthening the conservation of existing natural habitats in the surrounding area and enriching habitats in selected natural areas (mangroves, forests, scrublands) in the surrounding area need to be carried out. Monitoring (survival) and maintenance (watering, shading (if required), protection, invasive management, fire management, etc.) of enriched areas should be carried out for a few years until the area becomes sustainable. | CEB PMU and Operation & Maintenance Division of Transmission Branch | CEB PMU & Operation & Maintenance Division of Transmission Branch | Operational Cost/ ESMP Budget | throughout operations |
| | | Initiate a mangrove restoration program in Proposed Mangrove Restoration Area at Pathinipura after evaluating suitability of the area and its potential impact on the existing vegetation and fauna. | CEB PMU and Transmission Branch | Design and Environmental Division of CEB | Operational Cost | throughout operations |
| | Implement Dedicated Passages or Corridors for Safe Animal Movement | Implement dedicated passages or corridors specifically designed for the safe movement of animals during construction and operation. | CEB PMU and Contractor | Design and Environmental Division of CEB/ CEB PMU | Operational Cost | throughout operations |
| | | Develop Proposed wildlife corridor for the Sampur Solar Park | TPCL | Design and Environmental Division of CEB/ TPCL | TPCL Cost | throughout operations |
| | | Plant selection for landscaping should be done with the proper guidance of a plant biologist/ ecologist, not to introduce exotic species with potential invasive abilities. | CEB PMU and Transmission Branch | Design and Environmental Division of CEB | Operational Cost | throughout operations |
| | | Site restoration and erosion protection-related work should always use native and locally abundant species under the guidance of a subject specialist. | CEB PMU and Transmission Branch | Design and Environmental Division of CEB | Operational Cost | throughout operations |
| | Unresolved legacy issues | Review and evaluate the status of the following aspects prior to the closure of the project and commencing the operations.<br>a) Payments of all compensation are fully completed.<br>b) All grievances reported are satisfactorily resolved.<br>c) Permanent accesses are restored.<br>d) Temporarily relocated households and auxiliary structures are moved to places of their origin or to better locations.<br>e) Land temporarily used for construction purposes are restored to their original conditions and returned to their owners with full settlement of due payments.<br>f) Labor camps are demolished and cleared.<br>g) All excavations are back-filled.<br>h) Tree replanting program has been successfully implemented.<br>i) GSS and Solar Park sites are properly fenced off with adequate security personnel deployed. | CEB PMU / Contractor /TCPL | Design and Environmental Division of CEB/ CEB PMU / TCPL | Contractors Cost, ESMP Budget / TCPL funds | project closure |
| | Flood and cyclones | checking the status of the pylon foundations to check if there are settlements and misalignment of towers. | CEB PMU and Transmission Branch | Design and Environmental Division of CEB | Operational Cost | throughout operations |
| | All Hazardous identified in the HIRA in Health and Safety (Occupational and Public) | Each and every measures given in detailed HIRA | Contractor | CEB PMU and Transmission Branch | Contractors Cost | throughout operations |

| Project Activity | Potential Risks and Impacts | Proposed Mitigation Measures | Institutional Responsibility for Implementation | Institutional Responsibility for Supervision | Budget for Implementation | Implementation Schedule |
|---|---|---|---|---|---|---|
| | | | | Environmental Division of CEB | | |

**Table 8.2 - Detailed Environmental and Social Monitoring Plan (ESMoP)**

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| Site clearing | Avoid damage to designated wildlife and ecological sites and protected species | Designated wildlife and ecological sites are excluded from project's technical designs | Design review | Detail designs, technical specification | Once | CEB PMU and Design and Environmental Division of CEB | Before line route is finalized |
| Site clearing | Minimize damage to existing home gardens, and tree cover and limit the construction to selected tower locations and waylee of transmission line | checking whether the safety measures are in practice and safety equipment are available and in use at the time of work. Checking the standard of the safety equipment and security guarantee of them. Loss of trees and herbal cover at tower location. Cleanliness and reparation of damaged places and properties. Replantation of saplings, proper maintenance, watering frequency, replantation of dead plants within a period of two years. | Site inspections, review of records of removed trees, records of accidents replantation. | Records of compensation payments, Records of removal of trees and disposal, Records of replantation of home garden crops, Records of proper maintenance of them. | Regular monitoring at work sites during the construction. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| | | Estimates of the lost income due to the removal of home garden crops. The amount of compensation approved for payment. The method of assessment of compensation for the lost income. Receivers of compensation. | Inspection and document review | Documents pertaining to the estimation of income lose, assessment of compensation and payment of compensation. Consultation with affected people. | Prior to commencement of removal of home garden trees. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| Clearing of corridor, tower foundations, access routes, etc. | Impacts on critical floral species recorded within the project influence zone | Impacts on critical flora species such as *Myriostachya wightiana*, *Cynometra iripa* (Opulu/Attukaddupuli), *Xylocarpus granatum* (Mutti-kadol/Kandal), *Ceriops decandra* and *Sonneratia apetala* and their habitats (mangroves) | Ecological Assessment | Additional ecological assessment reports | Destruction of critical floral species and habitats during construction at every six months | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| | Additional studies targeting the critical species *Indotyphlops lankaensis* and *Indotyphlops malcolmi* are | *Indotyphlops lankaensis* and *Indotyphlops malcolmi* | Ecological Assessment | Additional ecological assessment reports | Destruction of critical faunal species during construction at every six months | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| | needed to determine their availability in the project area, as these species are listed in the IBAT reports. | | | | | | |
| Translocation of Ecologically Important Species | All nationally threatened and near-threatened less mobile fauna species and seedlings or saplings of nationally threatened and near-threatened flora species need to be translocated. Some were given in the table under "**Translocation of Ecologically Important Species"** | Number of species translocated<br>Survival rates of species translocated | Assessment of Translocated Species | Nationally threatened and Near-threatened species recorded and translocated | Monthly for six months from the translation | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| | "Implement Dedicated Passages or Corridors for Safe Animal Movement" to reduce HEC | Implementation progress | Field inspections and consultation | Field inspections and consultation | During construction at every six months. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction and Operation Period |
| | To ensure seasonal cultivation of paddy land according to the time schedules of cultivation with zero impact or minimum impact. To decide on the most appropriate time periods for the constructions on paddy lands avoiding the Maha and Yala Seasons. | Paddy cultivations as scheduled for the respective seasons of Maha or Yala. Free continuation of paddy land use without fear of being affected by any project activity in paddy lands. An agreement of using non-cultivation months for project activities in paddy lands with respective farmers and their organizations. | Field inspections and consultation with farmers and their organization, and regional agricultural offices. | Reports of seasonal cultivation of paddy lands, Decisions of farmers' organizations, and decisions of relevant agricultural and irrigation authorities for the supply of water and commencement of cultivation. | Prior to commencement of works in paddy lands and regularly in the period of construction to enable the release of paddy lands for cultivation in the coming season without any delay. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| | To ensure safety of people working and using agricultural equipment's under the power line. To identify any modification required depending on the landscape of the specific location and recommend effective mitigations measures, | Level of public awareness on the use and restrictions on the use of harvesting and other agricultural machineries under the power line and tower locations. | Consultation with the real land users of the affected paddy lands and farmers' organization of the respective area. | Records of public consultations with farmers and land users. Information documents distributed among farmers. | Prior to commencement of construction and after the construction of towers and transmission line | CEB PMU and Design and Environmental Division of CEB | Before line route is finalized |
| | Avoid inconveniences to households causing from dust emissions and noise | Noise levels (dB (A)) and Vibration Levels against baseline | 1. Noise levels were monitored during daytime (6 a.m. – 6 p.m.) and night-time (6 p.m. – 6 a.m.) at the boundary of the site (British Standard BS-4142, 1997)<br>2. Continuous vibration | Primary and Secondary | Baseline prior to start construction and During construction at every six months | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| | | | levels were recorded at selected locations in accordance with the methods laid down in International Organization for Standardization (ISO – 4966: 1990E, as stipulated in the interim vibration standards stipulated by the Central Environmental Authority of Sri Lanka) | | | | |
| | Composition of ambient air /noise level | Testing of Air Quality through PM10, 2.5, $CO_3$, $SO_2$, $No_x$ | 1. Model E 8500 portable industrial integrated emission system combustion gas analyzer. Electrochemical method was adopted for flue gas sampling and analysis. 2. High Volume Sampler with size selective sample inlet. Sartorius analytical balance. ASTM D 4096 – 82, 2017 High-Volume Sampling and Gravimetric Analysis | Primary and Secondary | Baseline prior to start construction and During construction at every six months | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| Anticipated impacts on human lives as explained by villagers | To ensure all the people affected by the project are aware of the project, project benefits and negative impacts, payment of compensation, replacement of home garden crops, and the GRM and GRC of the project. | Type of information shared with people, Number of Stakeholder consultations conducted, types of feedback received from stakeholders. And Project response to those feedback | Review of reports on stakeholder consultations | Report of stakeholder engagements | Prior to commencement of project activities and in the course of constructions on a monthly basis | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| | | Free use of paths, fences, structures and access roads leading to paddy lands, cultivations and settlements. Existing physical condition of the. Public complaints of damage or disturbance | Site inspections, review of records of public complaints and records of maintenance. | Records of public complaints, Records of maintenance of paths, fences and structures by the project, public consultations. | Regularly in the construction period. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| Creation of access roads and construction may create damage to fences, paths to paddy fields and any other structures belonging to farmers | To ensure the free public use of existing access roads, paths, fences, structure by protecting and maintaining and maintaining them. To prevent any direct or indirect harm on people stemming from the use | Free use of paths, fences, structures and access roads leading to paddy lands, cultivations and settlements. Existing physical condition of the. Public complaints of damage or disturbance | Site inspections, review of records public complaints and records of maintenance. | Records of public complaints, Records of maintenance of paths, fences and structures by the project, public consultations. | Regularly in the construction period. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| | or blockage of those facilities by project activities. | | | | | | |
| Construction works and nuisance to residents | To ensure preservation of public health and the suppression of nuisance to residents in the project area. | Filthy state of project sites, Offensive foul and drains, receptacles, ruinous buildings, waste and stagnant water in sites, disposal of waste into water bodies in the project area | Site inspections, review of record of disposals, public complaints, | Public complaints on nuisance, work site information, reports of PHI s. | Regularly in the period of construction | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| Construction work and disturbance to people and their activities | To ensure disturbance free social environment for the people living in the project vicinity and access roads. To leave no room for public protest against the project in response to adverse disturbances to smooth functioning of community institutions including sleep in the night, education of children, businesses. | Abiding by the work norms, rules and regulations of work, night work, labour mismanagement, supervision of work, public awareness of type of work to be carried out in the vicinity, human movements in the forest areas. | Fixed work norms, supervision of work, confinement to day time work and avoidance of night work, training for the use of vehicles and machineries to use them with less disturbance to people, Discipline of the work force and location of work camps in distance to settlements. | Work site reports, types of work including the use of explosives, public complaints and consultation with residents, | Regularly in the construction period. | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| Mechanized construction | Construction equipment status, hours of operation, maintenance | Noise levels (dB (A)) and Vibration Levels against baseline | Noise and Vibration Levels can be tested and periodical review of machinery performances | Primary records including periodical review reports | Observations during site visits, as frequently as required | CEB PMU and Design and Environmental Division of CEB | Throughout the Construction Period |
| | | | | | Periodical Noise and Vibration testing as proposed above | | |
| Temporary blockage, loss of service of utilities | Disruption of Utility services | Total hours of power shutdown | Number of complaints by the users | Complaint records | Monitored regularly during the period of stringing the conductors. | CEB PMU and Design and Environmental Division of CEB | Throughout the construction period |
| Access to and site clearance at tower footings | Hindrance to regular social activities, use of rights of way, hindrance to waterways | Number of Complaints, Occurrence of localized flooding | Based on complaints and number of occurrence and severity of such | Complaint records | Complaint basis | CEB PMU and Design and Environmental Division of CEB | Throughout the construction period |
| | Extent of land cleared | Acreage of lands cleared | Acreage of cleared | Primary records of land clearing | Area of land cleared in Acreage | | |
| | Biodiversity of the area | Number of Species recorded, Richness, Abundance | Fauna and Flora Survey | Fauna and Flora Studies | Baseline and Impact Assessment after Clearing of lands | | |
| | Loss of aesthetic value of Project Area | Complaints of about Visual pollution | Number of Complaints | Complaint records | Complaint basis | | |
| Provision of facilities for construction workers | Amenities for Workforce facilities | Facilities provided based regulations | EPL for Dormitories and Offices and Observations frequently preferably monthly | Observation records, complaint Records, EPL | Monthly Inspection by the CEB and Bi-annual inspection by Regulatory bodies | CEB PMU and Design and Environmental Division of CEB | Throughout the construction period |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| | Water quality | Drinking water quality | Drinking water quality testing methods stipulated in the regulations | Water quality testing reports | Quarterly | | |
| | Health conditions of workers | Medical check-up, Health Records | Periodic Health check-ups, medical check-up at the recruitment | Medical reports, Records of health issues | Monthly | | |
| Encroachment into farmland | Land area of active agriculture lost at each tower footings and along the transmission corridor | Number of Complaints, Compensation amounts | Based on the complaints | Complaint records | Based on the records | CEB PMU and Design and Environmental Division of CEB | Throughout the construction period |
| | | | Number of Aps and Sum of Compensation | DSs compensation records | | | |
| Excavation for construction of transmission line towers, roads and infrastructures | Monitor stability of soil along the transmission line route, especially in areas with river beds and alluvial deposits | -Surface Water Flow Rates<br>- Soil Stability and Land Movement<br>- Flood levels | Analyze using detail geotechnical data and hydrological data | Available Standard guidelines for geotechnical and hydrological assessments | Periodically up to completion of project and during constructions | CEB PMU and Design and Environmental Division of CEB | Pre-construction, construction phases and post construction phases |
| Removal of vegetation cover for tower foundations, infrastructures and access roads | Monitor soil erosion along the transmission line route | Soil erosion rate | Monitor the effectiveness of erosion control measures such as vegetation or silt fences. | Soil erosion monitoring protocols and environmental guidelines | Periodically up to completion project and during constructions | CEB PMU and Design and Environmental Division of CEB | Pre-construction, construction phases and post construction phases |
| Movement of heavy machinery and construction vehicles and Temporary storage of materials or equipment exerts pressure on the soil | Assess the level of soil compaction, particularly in areas disturbed by construction activities (e.g., access roads, tower foundations). | Bulk Density, Soil Permeability and Porosity, Water Infiltration Rate, Soil Penetration Resistance, Moisture Content | Conduct soil compaction tests at regular intervals to determine any adverse effects on soil health and permeability | Soil compaction and geotechnical standards | Periodically up to completion project and during constructions | CEB PMU and Design and Environmental Division of CEB | Pre-construction, construction phases and post construction phases |
| Leaks from fuel, lubricants, and chemicals used in machine and improper disposal of construction waste and hazardous material | Monitor for contamination of soil due to the release of hazardous substances (e.g., oil, fuel, lubricants, chemicals) from construction activities, maintenance of transmission lines, or malfunctioning equipment. | Physical and chemical soil quality parameters | Regular soil testing for heavy metals, hydrocarbons, or other contaminants around construction sites, substations, or areas with equipment storage. | Soil contamination standards, WHO soil contamination guidelines, Heavy metal testing guidelines | Periodically up to completion project and during constructions | CEB PMU and Design and Environmental Division of CEB | Pre-construction, construction phases and post construction phases |
| Removal of vegetation cover for construction activities | Investigate how soil disturbances, including changes in permeability or erosion, might affect the local hydrology and water quality in the area | Water flow rates, Soil moisture content | Regular monitoring of soil moisture content and water flow rates using sensors and other suitable equipment | Standards for soil moisture content | Periodically up to completion project and during constructions | CEB PMU and Design and Environmental Division of CEB | Pre-construction, construction phases and post construction phases |
| Vegetation removal and disturbance of topsoil during construction of towers, roads and infrastructures | Assess how the transmission line construction and operation impact the soil's ability to support healthy vegetation | Vegetation cover before, during, and after construction, evaluating changes in biodiversity and soil fertility. | Analysis of soil nutrient parameters | Soil fertility guidelines, soil nutrients test methods | Periodically up to completion project and during constructions | CEB PMU and Design and Environmental Division of CEB | Pre-construction, construction phases and post construction phases |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| Transformer Oil spillage | Transformer oil sump checked through physical measurement of volume and visual inspection | Ambient water quality testing of water sources selected including Oil and Grease | As per the standards given by the Regulations | Primary and Secondary records | Oil sump volume and permeability, once after completion | CEB PMU and Design and Environmental Division of CEB | During Operations |
| | Water contamination | | | | Water quality of nearby water bodies | | |
| | Implementation of HIRA | PPE Compliance<br>Accidents and Incidents<br>Safety trainings<br>Mock-drills<br>Health check-up<br>Community complaints | % of workers using required PPE<br>Number and severity of incidents<br>Number of sessions held; attendance rate<br>Drill completion and response time<br>% of workers receiving medical exams<br>Complaints logged and resolved | Records based monitoring | Daily<br>Monthly<br><br>Monthly<br>Quarterly<br><br>Bi-Annual<br>Monthly | Contractor<br><br><br>CEB PMU<br><br><br>Design and Environmental Division of CEB | During construction |
| Electric Shock Hazards | Usage of appropriate technologies (number of injury incidents, lost workdays) | Number of cases records of electric shocks | Based records | Records based monitoring | Preparedness level for using these technologies in crisis – once a month | CEB PMU and Design and Environmental Division of CEB | During Operations |
| | Maintenance of fences | Number of Isolated sites and Number of not susceptible | | | Report on maintenance – every 2 weeks | | |
| | Maintenance of warning signs | Use of warning signs | | | | | |
| . | Training/awareness programs and mock drills for all relevant staff | Number of training and awareness conducted | Training records | Records based monitoring | once a year | CEB PMU and Design and Environmental Division of CEB | During Operations |
| | Stakeholder awareness programs conducted. | ● No. programs conducted<br>● No. participants by gender and type<br>● Type of information shared and means of communication | Review of the records of the meetings, lists of participants and photographs<br><br>Review of the printed material disseminated. | | Monthly | E&S officer/s of PMU | |
| | Project based grievance redress mechanism established. | ● No. grievances received and resolved | Review of grievance registry | | Monthly | E&S officer/s of PMU | |
| | Payment of compensation to affected persons completed. | ● Compensation for affected land used for tower foundations<br>● Compensation for affected trees | Review of compensation payment registries | | Bi-weekly | E&S officer/s of PMU | |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| | | • Compensation for affected crops and cultivations<br>• Compensation for damaged structures<br>• Transitional allowances paid for temporary relocation of affected households and auxiliary structures<br>• Compensation for affected livelihoods | | | | | |
| | Vulnerable persons and households are provided with special assistance. | • Special assistance paid to vulnerable persons and households<br>• Rehabilitation and restoration assistance provided for vulnerable persons and households | Review of compensation payment registries | | Bi-weekly | E&S officer/s of PMU | |
| | GBV, SEA and SH are prevented. | • No. GBV, SEA and SH cases reported<br>• Preventive measures taken to restrain GBV, SEA and SH | Review of the grievance registries of GRM and the Workers' GRM | | Monthly | E&S officer/s of PMU | |
| | Community health and safety is ensured. | • Community health and safety management plan | Site visits, interviews with relevant officers | | Monthly | E&S officer/s of PMU and site engineers | |
| | Local community members including vulnerable persons are employed in construction work. | • No. persons employed by gender and work position | Review of contractors' employee records | | Quarterly | E&S officer/s of PMU | |
| | Occupational health and safety measures have been established. | • Provision of PPEs for workers<br>• Type of arrangements in place to deal with emergency situations<br>• No. and type of accidents reported<br>• No. toolbox training meetings conducted | Review of safety checklists of the contractor, records of toolbox meetings and inspection records of vehicles, machinery and equipment, site visits and interviews with relevant officers | | Monthly | E&S officer/s of PMU, site engineers and site managers | |
| | Assess avifauna collision risk and collision | Avifauna collision risk | Vantage Point (VP) Surveys and Point Count Surveys. | Surveys findings | Once in Construction phase | CEB PMU and Design and Environmental Division of CEB | Construction phase |
| | Assess avifauna collision risk and collision | collision | Carcass Survey | Carcass survey findings | Monthly during operation period up to 3 years | CEB PMU and Design and Environmental Division of CEB | During Operations |

| Project Activity | Monitoring Objective/Area | Parameters to be Monitored | Method of Monitoring | Sources of Information for Monitoring | Measurement and Frequency | Institutional Responsibility Monitoring and Reporting | Implementation Schedule |
|---|---|---|---|---|---|---|---|
| Transmission line construction over unconsolidated alluvial deposits | Assess soil compaction and foundation stability | Soil density, moisture content, compaction levels | Field tests (e.g., Standard DCPT Test, Field Density Test) | Geotechnical survey reports, field test results | Before, during, and after compaction works | CEB PMU and Design and Environmental Division of CEB | Pre-construction and Construction phase |
| Excavation and tower foundation works | Ensure anchoring into competent bedrock | Depth to competent bedrock, rock quality | Borehole drilling logs, geophysical surveys | Geotechnical investigation reports, drilling records | Once per tower location prior to construction | CEB PMU and Design and Environmental Division of CEB | Pre-construction phase |
| Construction activities in areas with unstable soil (e.g., non-calcic brown soils) | Verify soil conditioning and strengthening measures | Soil treatment application, reinforcement techniques used | Site inspections, material quality testing, DCPT test | Construction logs, material test results | Continuous during foundation preparation | CEB PMU and Design and Environmental Division of CEB | Construction phase |
| Drainage installation around tower sites | Control moisture content and prevent erosion | Drainage system integrity, site drainage efficiency | Visual inspections, hydraulic function testing | As-built drainage system drawings, inspection reports | Monthly inspections and after heavy rains | CEB PMU and Design and Environmental Division of CEB | Construction and early Operation phase |
| Foundation construction in mining-affected areas | Prevent failure due to land subsidence and weak soils | Foundation design adaptations, ground movement | Review of foundation designs; use of inclinometers, settlement plates | Engineering design reports, instrument monitoring data | Design review once; Subsidence monitoring quarterly | CEB PMU and Design and Environmental Division of CEB | Pre-construction (design stage) and Construction/Operation (monitoring) phase |
| General construction over Regosols soil areas | Avoid construction on weak soil where possible | Location relative to mapped Regosols | Mapping verification, site inspection | Soil surveys, construction site reports | Once per site during planning stage | CEB PMU and Design and Environmental Division of CEB | Pre-construction phase |
| Land subsidence monitoring during operation | Detect early signs of subsidence that may affect structures | Ground level changes, tilt of structures | Ground survey (e.g., leveling surveys, satellite InSAR monitoring) | Monitoring reports, satellite data | Biannually during operation | CEB PMU and Design and Environmental Division of CEB | Operation phase |
| | Incidents and Accidents recorded | Number of cases reported as electrocution and electric shock<br>Elephant collision on transmission towers and grid stations | Number of Incidents | Incident Reports | Monthly | CEB PMU and Design and Environmental Division of CEB | Operation phase |

**Table 8.3 - Water quality monitoring locations (Sampur to Kappalthurai)**

| Sampling Location | Coordinates | | Reason for Selection |
|---|---|---|---|
| | Latitude (N) | Longitude (E) | |
| WQ1 | 8°31'45.95" | 81° 7'17.75" | Located on Palam Podda Aru stream, selected due to potential construction impact, as Tower AP3 is located approximately 36 m from Palam Podda Aru, within the stream reservation zone. |
| WQ2 | 8°31'35.13" | 81° 7'19.44" | Located on Palam Podda Aru stream and selected due to potential construction impact, as Tower AP4 is located approximately 53 m from Palam Podda Aru, within the stream reservation zone. |
| WQ3 | 8°28'8.91" | 81° 7'35.76" | Located on Par Aru (Peru Aru) stream and selected due to potential construction impact, as Tower 8/1 is located approximately 34 m from Par Aru (Peru Aru), within the stream reservation zone. |
| WQ4 | 8°27'24.38" | 81° 8'59.16" | Selected to monitor possible tank-related impacts, as Tower 8/8 is located 29 m from the tank boundary, within a sensitive aquatic buffer area. |
| WQ5 | 8°26'13.68" | 81°10'2.76" | Located on a tributary of Uppu Aru and selected due to potential construction impact, as Tower AP11 is located approximately 52 m from the stream, within the stream reservation zone. |
| WQ6 | 8°26'13.23" | 81°10'57.13" | Located on Uppu Aru and selected due to potential construction impact, as Tower 11/4 is located approximately 36 m from Uppu Aru. |
| WQ7 | 8°25'20.15" | 81°12'41.94" | Located on Mahaweli Ganga and selected due to potential construction impact, as Tower AP14 is located approximately 68 m from the Mahaweli Ganga. |
| WQ8 | 8°24'39.90" | 81°14'14.26" | Located on Verical Aru stream and selected due to potential construction impact, as Tower 15/7 is located approximately 45 m from Verical Aru, within the stream reservation zone. |
| WQ9 | 8°27'29.03" | 81°18'42.65" | Selected to monitor possible tank-related impacts, as Tower 21/2 is located 118 m from the Tank boundary. |
| WQ10 | 8°28'34.21" | 81°19'1.98" | Selected to monitor possible tank-related impacts, as Tower TT2 is located 117 m from the Tank boundary. |

**Note:**

These sampling points were strategically selected near water bodies situated within or adjacent to the stream reservation zones along the transmission line route. Given the proximity of construction activities such as excavation and machinery movement, there is potential for temporary degradation of surface water quality due to increased sediment load, accidental spills, or runoff. Monitoring these points will help assess the extent of such impacts and ensure compliance with environmental safeguards.

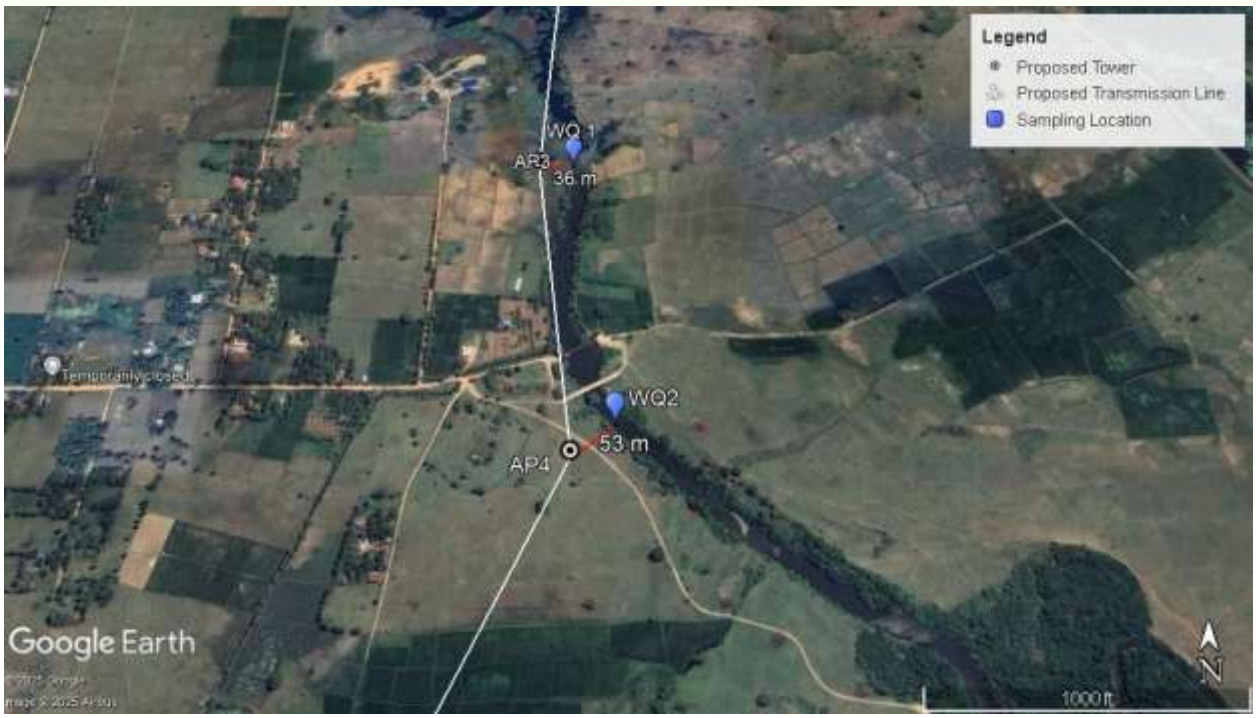


**Figure 8.1. Water quality testing locations (WQ1 and WQ2)**

**Figure 8.2. Water quality testing locations (WQ3, WQ4, WQ5 and WQ6)**

**Figure 8.3. Water Quality Testing Locations (WQ7 and WQ8)**

**Figure 8.4. Water quality testing locations (WQ9 and WQ10)**

**Table 8.4 - Water Quality Parameters (Sampur to Kappalthurai)**

| Item No. | Parameter |
|---|---|
| 1 | pH and Temperature (°C) |
| 2 | Electrical Conductivity (EC) (µS/cm) |
| 3 | Total Hardness (as $CaCO_{3)}$ (mg/L) |
| 4 | Total Alkalinity (as $CaCO_3$) (mg/L) |
| 5 | Total Suspended Solids (TSS) (mg/L) |
| 6 | Total Dissolved Solids (TDS) (mg/L) |
| 7 | Salinity (ppt) |
| 8 | Turbidity (NTU) |
| 9 | Oil & Grease (mg/L) |
| 10 | Dissolved Oxygen (DO) (mg/L) |
| 11 | Biochemical Oxygen Demand (BOD) (mg/L) |
| 12 | Chemical Oxygen Demand (COD) (mg/L) |
| 13 | Phosphate ($PO_4^{3-}$) (mg/L) |
| 14 | Nitrate ($NO_3^-$) (mg/L) |
| 15 | Fluoride ($F^-$) (mg/L) |
| 16 | Chloride ($Cl^-$) (mg/L) |
| 17 | Sulfate ($SO_4^{2-}$) (mg/L) |

**Table 8.5 - Noise / Air Quality monitoring locations**

| Sampling Location | Coordinates | | Reason for Selection |
|---|---|---|---|
| | Latitude (N) | Longitude (E) | |
| N1 | 8°32'54.18" | 81° 7'44.22" | Selected due to potential construction impact, as Tower TT1 is located approximately 156 m from BOI area. |
| N2 | 8°29'6.74" | 81° 6'48.52" | Selected due to potential construction impact, as Tower AP4 is located approximately 210 m from RKM Saratha Vidyalayam - School. |
| N3 | 8°26'49.72" | 81° 9'13.71" | Selected due to potential construction impact, as Tower AP10 is located approximately 181 m from T/Kin/Al Ahla Vidyalayam – School. |
| N4 | 8°24'55.00" | 81°16'9.58" | Selected due to potential construction impact, as Tower 16/6 is located approximately 194 m from Kottiyarama Mula Maha Viharaya - Buddhist temple |

**Note**: Noise levels will be measured in terms of LAeq'T (means the equivalent continuous, A- weighted sound pressure determined over a time interval T). Measurements will be expressed in decibels A-weighted [dB(A)]. Measurements will be carried out during both daytime (06:00–18:00) and nighttime (18:00–06:00) in accordance with the National Environmental (Noise Control) Regulations No. 1 of 1996.

**Figure 8.5. Noise quality monitoring locations (N1)**

**Figure 8.6. Noise quality monitoring locations (N2)**

**Figure 8.7. Noise quality monitoring locations (N3)**

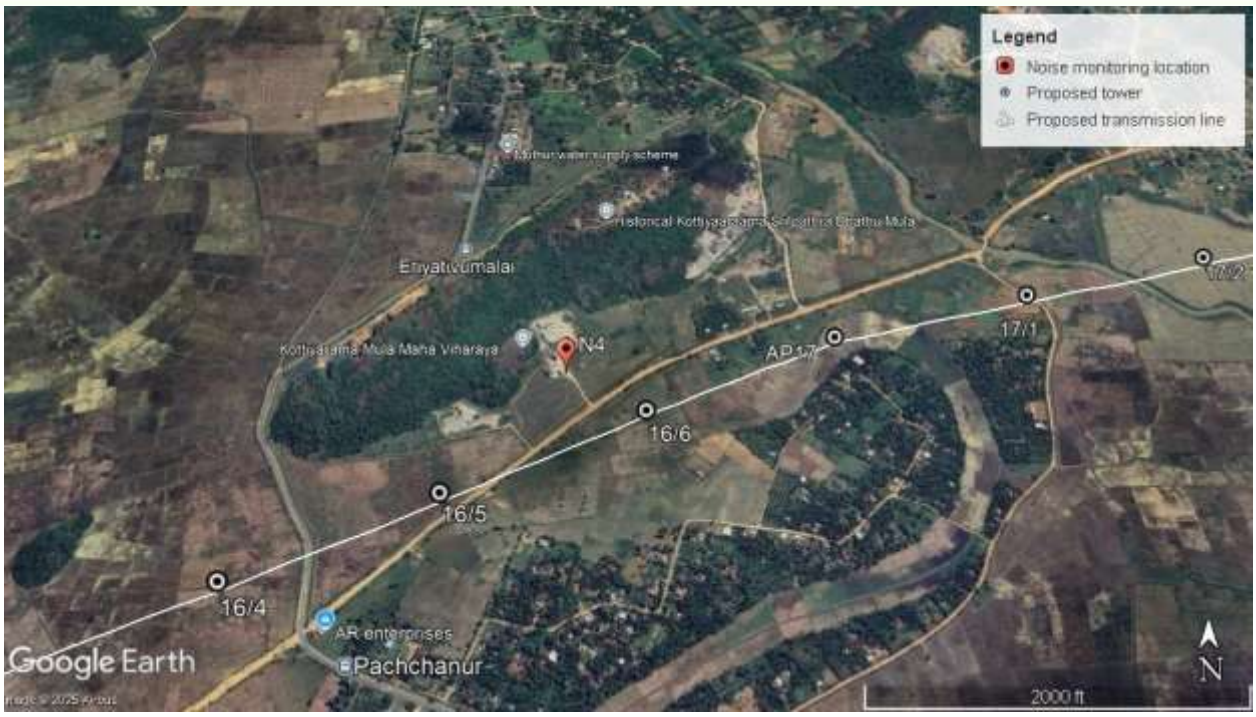


**Figure 8.8. Noise quality monitoring locations (N4)**

**Note:** Same locations proposed for Noise Quality Monitoring can be used for the Air Quality monitoring (if required).

# 9 Analysis of Alternatives

## 9.1 No Action Alternative

The Sri Lanka Sustainable Energy Authority has identified the Sampur and Trincomalee region as a strategic location for renewable energy development, with the potential to generate up to 767MW through various energy projects. As part of this initiative, Trincomalee Power Company Limited (TPCL) has already secured the necessary approvals to commence construction of Phase I of their solar power project, which will contribute 50MW to the energy grid.

However, the successful integration of these renewable energy projects into the National Grid is heavily dependent on the completion of the proposed transmission line connecting Sampur and Kappalthurai. Without this crucial infrastructure, there would be no viable means of transmitting the generated electricity to the wider grid, thereby limiting the effectiveness and feasibility of these large-scale energy investments. Ensuring the timely development of this transmission line is therefore essential for maximizing the region's renewable energy potential and supporting Sri Lanka's broader energy sustainability goals.

## 9.2 Alternative Project Sites and Routes

The proposed Sampur CGS site was originally identified for the Trincomalee Coal Power Project, which was planned by the CEB but later abandoned. However, the land parcel (Lot 1388) was officially handed over to the CEB by the Divisional Secretary of Muthur on July 9, 2014, and has remained under CEB's ownership ever since. Given its existing status and strategic location, the same land has been selected for the Sampur CGS as part of the new project.

This decision was made after careful evaluation, considering factors such as land acquisition feasibility, minimization of social issues, and environmental impact. The site was deemed suitable due to its minimal vegetation cover, reducing ecological disruption, and its proximity to the proposed Sampur Solar Project. By utilizing this land, the project aims to streamline development while ensuring sustainable and responsible land use.

Meanwhile, the Kappalthurai GS is an operational grid substation with adequate space available for further expansion within its designated land area. Currently, the Kappalthurai GS is integrated into the National Grid via a 132 kV transmission line linking Anuradhapura. This line was originally designed to connect Anuradhapura GS with Trincomalee GS, facilitating power distribution across the region.

As part of the ongoing transmission infrastructure development, the Kappalthurai GS will also be linked to the newly planned Habarana GS through a proposed 220 kV transmission line. This upgraded connection will enhance the stability and capacity of the power network, ensuring efficient energy distribution and supporting future renewable energy projects in the region.

There were three selections for connecting to the National Grid Kappalthurai GS, New Habarana GS, and Trincomalee GS. The Trincomalee area is a highly urbanized area and connecting the Sampur CGS will have more social issues including resettlements. There is a proposed project connecting New Habarana GS with Kappalthurai GS with a 220 kV Transmission line and the

construction of another transmission line in the same corridor will double the social and environmental issues as well as reduce the total length of the proposed transmission line.

### 9.2.1 Route Selection and Environmental Considerations

The Ceylon Electricity Board (CEB) undertook a comprehensive evaluation of multiple route options for the Sampur–Kappalthurai 220 kV transmission line, with a primary focus on environmental sustainability, land use compatibility, and social impact mitigation. The selection process aimed to avoid sensitive ecological zones such as wetlands, mangroves, residential areas, and agricultural lands, while also seeking the shortest feasible path for the transmission line.

Three alternative routes were analyzed in terms of their overall length and environmental impact:

Option 1 (Selected Route): 37.6 km
Option 2: 35.8 km (Shortest Route)
Option 3: 35.9 km

Despite Option 2 being the shortest, CEB chose Option 1, the longest of the three, due to its lower impact on human settlements and ecologically sensitive areas. The selected route minimizes the number of houses and properties falling within the Right of Way (RoW) and avoids key environmentally sensitive regions, including the Mahaweli River, Uppu Aru, and Koddiyar Bay's wetland habitats.

### 9.2.2 Comparison of Land Use Across Route Options

A critical factor in the route selection process was the evaluation of land use patterns and ecological footprint across the three alternatives. The following Table provides a comparative breakdown of how different land use types are affected under each option:

**Table 9.1 - Land use of the options considered**

| | Option 1 | Option 2 | Option 3 | Implication |
|---|---|---|---|---|
| Paddy Fields | 68.6% | 44.5% | 46.2% | Option 1 passes through more paddy fields, but these areas can be restored post-construction, making this impact manageable. |
| Forest Areas | 4.44% | 8.4% | 8.04% | Option 1 minimizes forest clearance, reducing biodiversity loss and deforestation concerns. |
| Marshlands and Streams | 5.59% marshland, 3.02% stream | 3.15% marshland, 3.95% stream | 8.30% marshland, 5.17% stream | Options 1 compared to Option 2 traverse more wetland habitats, but has several comparative advantages in respect of other indicators. |
| Scrubland | 14.93% | 26.50% | 17.83% | Option 1 affects a fewer scrubland compared to Options 2 and 3 |

| | Option 1 | Option 2 | Option 3 | Implication |
|---|---|---|---|---|
| Home Gardens and Residential Areas | 0.64% | 4.68% | 9.15% | Option 1 maintains a balance between avoiding homes and minimizing displacement, while Option 3 affects most residential areas. |
| Other Land Types (Tanks, Streams, Chena, Teak, and Sand) | 3.1% | 8.82% | 5.31% | Option 1 exhibits moderate land use across tanks (2.81%), chena (0.53%), and teak plantations (0.45%), making it less intrusive on unique land resources than the other alternatives. |

***Environmental and Social Benefits of Option 1***

The decision to select Option 1 was driven by multiple environmental and social considerations:

**1. Avoidance of Sensitive Ecological Zones**

- Minimizes encroachment on forests and protected areas (7.92 km affected vs. higher impacts in other routes).
- Limits disturbance to wetland ecosystems near Koddiyar Bay.
- Ensures minimal impact on major water crossings, reducing soil erosion and habitat destruction.

**2. Reduction of Social Disruptions**

- Fewer home gardens and residential areas are affected compared to Option 3.
- Avoids large-scale displacement of people and minimizes land acquisition disputes.
- Protects agricultural livelihoods, ensuring paddy field restoration at post-construction.

**3. Engineering and Cost Efficiency**

- Optimal balance between distance and impact, ensuring minimal re-routing.
- Better accessibility for construction via existing roads.
- Reduced infrastructure conflicts (fewer power lines, telephone, and major road crossings).

The selection of Option 1 for the Sampur - Kappalthurai 220 kV transmission line was based on a holistic evaluation of environmental, social, and engineering factors. While it is the longest of the three alternatives (37.6 km), it presents the lowest impact on ecologically sensitive areas, residential properties, and water bodies.

By prioritizing sustainability and minimizing displacement, Option 1 aligns with best practices in infrastructure planning, ensuring a feasible, socially responsible, and environmentally sound solution for the region’s energy needs.

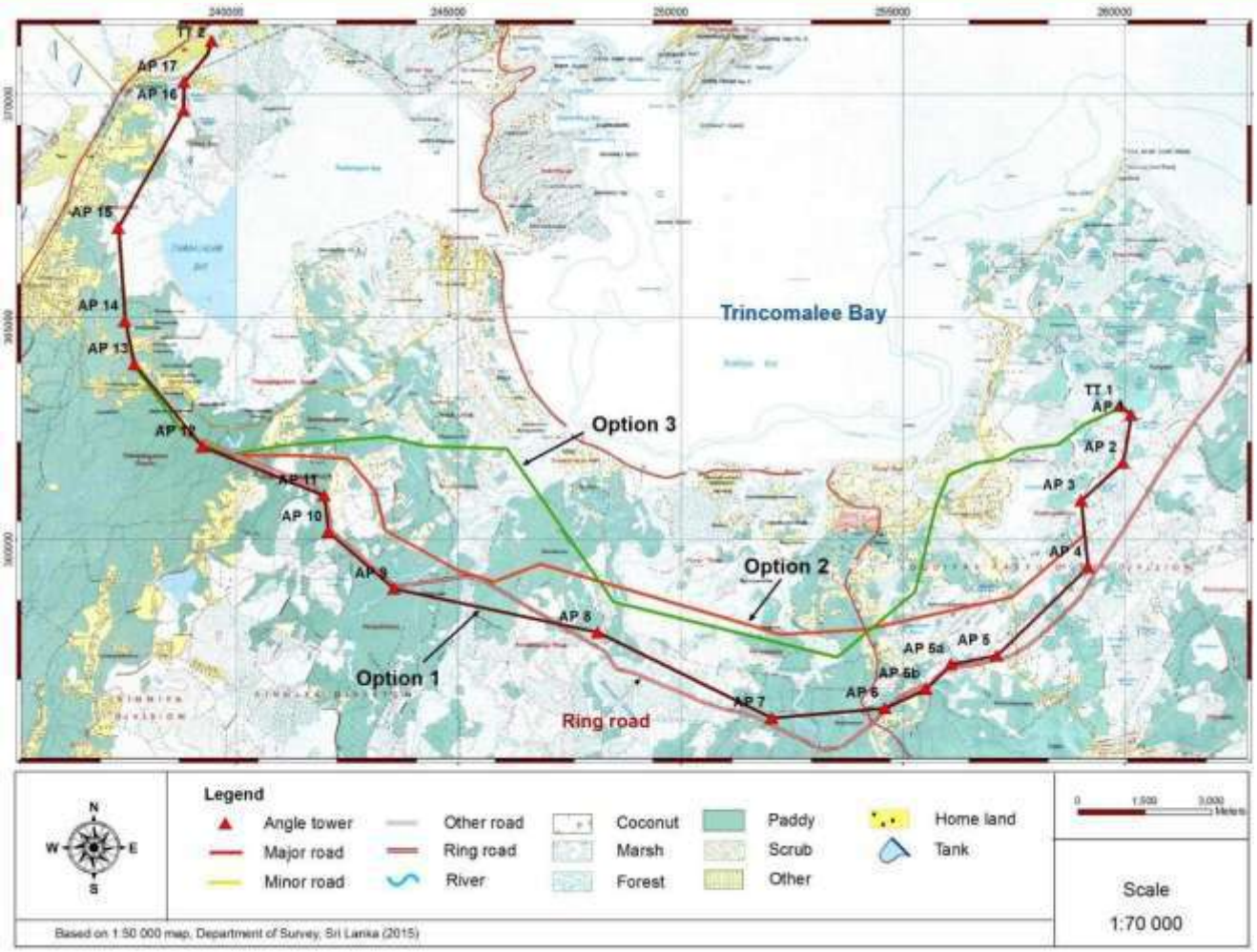


**Figure 9.1 - Alternative routes for the proposed Sampur- Kappalthurai 220 kV transmission line**

**4. Minimization of the Impacts on Streams and Village Tanks and Streams**

Minimization of the impact on village tanks. As there are many village tanks in the route the presence and proximity of the village tanks to the tower foundations were considered among other factors. Thus, the line route has been finalized in such a way only one tank's waterbody may get a marginal impact (i.e. siltation during the rainy season) during foundation excavations. This impact could be well mitigated. Refer to Section 6.2.2.6 for further details.

The tower foundations will not disturb major medium or minor streams as such foundations have been set sufficiently away from the streams adhering to the river/stream reservations by the Irrigation Department. Refer to Section 6.2.2.4 for further details.

# 10 Stakeholder Consultation and Information Disclosure

## 10.1 Consultations

The consultations served the purpose of disclosing information about the proposed project and its components as well as its potential impacts on affected persons and communities and eliciting their views and concerns. These consultations included communities including vulnerable households that would be directly affected by the use of their private land for the construction of transmission line corridors. In addition to community-level consultations, interviews were also conducted with several other stakeholders who have a stake in the project either as project-approving agencies or partners in project implementation. They included the village level Grama Niladharies[9], Divisional Secretaries, divisional level Planning Officers, members of Local Authorities (Pradeshiya Sabhas), officers of the Forest Department, Department of Wildlife Conservation, Department of Public Trustee, Road Development Authority, Department of Archaeology, Agrarian Development Officers, Railway Department, State Timber Corporation, and Urban Development Authority.

The feedback received from consultations will be used by CEB to carry out necessary revisions to the technical designs in order to minimize the resettlement impacts. Furthermore, consultation outcomes were also helpful in identifying the key issues and concerns of the local communities regarding the potential impacts of the project on their safety, economic and social assets, especially on land and livelihoods, assessing the level of compensation anticipated by the affected persons, and establishing appropriate safeguards measures such as grievance redress and monitoring procedures and the preparation of the entitlement matrix. Consultations with women also led to identifying the special safeguard measures that need to be adopted to ensure the protection of women and girls from threats that could be exerted on them by outside construction and operation labor teams.

Consultations included focus group discussions and individual interviews. Altogether, 48 community members comprising 38 men and 10 women were consulted. Additionally, 51 government officers were interviewed. A summary of participants at consultations is presented in Table 10.1 while the attendance lists and photographs of consultations are in Appendices 15.3.

**Table 10.1 - Locations and the number of participants in consultations**

| Date | Venue | Type of Participants | No. Participants | | |
|---|---|---|---|---|---|
| | | | Male | Female | Total |
| 22.12.2024 | Muthur East | Members of the Muthur Farmer Organization | 6 | - | 6 |
| 22.12.2024 | Pudukudiiruppu, Thambalagama | Community members | 9 | 4 | 13 |
| 22.12.2024 | Kunnayakam Road, Muthur | Community members | 7 | 3 | 10 |
| 06.12.2024 | Individual households | Members of individual households | 11 | 2 | 13 |
| 23.12.2024 | Divisional Secretariat, Town & Gravets | Divisional Secretary, Deputy Director (Planning), Administrative Officer & Administrative Officer of the Grama Niladharies | 3 | 1 | 4 |

[9] Grama Niladharies are the village level administrators of the government.

| Date | Venue | Type of Participants | No. Participants | | |
|---|---|---|---|---|---|
| | | | Male | Female | Total |
| 23.12.2024 | Divisional Secretariat, Kinniya | Divisional Secretary | 1 | - | 1 |
| 23.12.2024 | Divisional Secretariat, Muthur | Divisional Secretary, Deputy Director (Planning), Administrative Officer & Chief Clerk | 3 | 1 | 4 |
| 23.12.2024 | Divisional Secretariat, Thambalagamuwa | Divisional Secretary | - | 1 | 1 |
| 7.1.2025 | Divisional Secretariat, Muthur (second consultation with 3 AIIB representatives) | Divisional Secretary | 1 | - | 1 |
| 7.1.2025 | Divisional Secretariat, Thambalagamuwa (second consultation with 3 AIIB representatives) | Divisional Secretary | - | 1 | 1 |
| 10.2.2025 | Divisional Secretariat, Muthur (third consultation) | Chief Management Service Officer, Admin. Officer of GNs, Grama Niladhari of Iruthayapuram | 3 | - | 3 |
| 10.2.2025 | Divisional Secretariat, Town & Gravets (second consultation) | Deputy Director (Planning) | 1 | - | 1 |
| 10.2.2025 | Divisional Secretariat, Thambalagamuwa (third consultation) | Chief Management Asst. - Planning | 1 | - | 1 |
| 9.4.2025 | Pradeshiya Sabha, Town and Gravets | Secretary, Pradeshiya Sabha | 1 | - | 1 |
| 9.4.2025 | Pradeshiya Sabha, Muthur | Secretary, Pradeshiya Sabha | 1 | - | 1 |
| 9.4.2025 | Pradeshiya Sabha – Kinnaya | Secretary, Pradeshiya Sabha | 1 | - | 1 |
| 9.4.2025 | Pradeshiya Sabha, Thambalagamuwa | Secretary, Pradeshiya Sabha | 1 | - | 1 |
| 16.12.2025 | PMU | Project Manager and ES Officers of PMU | 6 | 1 | 7 |
| 11.02.2025 | PMU, TPCL | Project Manager, TPCL | 1 | - | 1 |
| 9.2.2025 | District Forest Office | District Forest Officer, Trincomalee | 1 | - | 1 |
| 9.2.2025 | Board of Investment Office | Deputy Director, BOI, Trincomalee | 1 | - | 1 |
| 20.02.2025 | Department of Wildlife Conservation | Director, DWLC | 1 | - | 1 |
| 25.4.2025 | Department of Public Trustee | Deputy Public Trustee, Legal Officer, Officer-in-charge of Legal Division & Assistant | 3 | 2 | 5 |
| 10.2.2025 | Kiravathkuli Siva Shakthi Vidyalayam. Santhosapuram, Muthur | Principal | 1 | - | 1 |
| 10.2.2025 | Pre-school- at the Kiravathkuli Siva Shakthi Vidyalayam. Santhosapuram Muthur. | Head of the pre-school | - | 1 | 1 |
| 9.2.2025 | Kottiarama Temple Muthur | Chief incumbent priest of the temple | 1 | - | 1 |
| 9.2.2025 | Thampalagamam Adikonayagam Devasthana, Thambalagamuw | Manager of the Kovil | 1 | - | 1 |
| 3.6.2025 | Department of Archaeology, Trincomalee | Assistant Director and Research Officer | 2 | - | 2 |

| Date | Venue | Type of Participants | No. Participants | | |
|---|---|---|---|---|---|
| | | | Male | Female | Total |
| 3.6.2025 | Road Development Authority, Trincomalee | Chief Engineer | 1 | - | 1 |
| 3.6.2025 | Urban Development Authority, Trincomalee | Director/Eastern Province | 1 | - | 1 |
| 3.6.2025 | Divisional Irrigation Engineer's Office, Trincomalee | Divisional Irrigation Engineer | 1 | - | 1 |
| 3.6.2025 | State Timber Corporation, Regional Office, Trincomalee | Assistant Regional Manager | 1 | - | 1 |
| 3.6.2025 | Agrarian Service Centers, Uppuveli, Muthur, Sampur, Thambalagamuwa and Kinniya | Agrarian Development Officers | 3 | 1 | 4 |
| 4.6.2025 | Thambalagamuwa GND | Community members – (Caretakers of livestock and a fisherman) | 3 | - | 3 |
| 4.6.2025 | Sampur area | Community members – (A fisherman, a farmer & a housewife) | 2 | 1 | 3 |
| **Total** | | | 80 | 19 | 99 |

Source: Consultations conducted for the ESIA, December 2024 – June 2025

Overall, the stakeholders held a positive perception of the project in view of its national importance to strengthen the country's power system and improve the reliability of its power supply, and the country's development in general. They recognized the national importance of developing the electricity sector to meet the escalating demand for electricity, for the development of the industrial and commercial sectors of the country, and the generation of employment. The consultations revealed that both community members and other stakeholders were aware of the project because of the preparatory work of the project carried out by CEB such as demarcating the project boundaries and marking the wayleaves. Participants at consultations appreciated the consultative process as it helped them acquire further knowledge of the proposed project and its operational procedures. The ESIA consultants also shared a printed leaflet in local languages which summarized the scope of the project and its implementation procedures. A copy of the leaflet is in Appendices 15.19.

Communities however did express concerns over the potential loss of their land, trees, and crops and the adverse consequences that such losses can have on their livelihoods and incomes. They emphasized that the project follows adequate measures to avoid/minimize any adverse impacts on their private properties, livelihoods, environment, and personal health and safety.

Meanwhile, several people expressed fears and concerns over the risks to their safety owing to the construction of the transmission line over their paddy fields which can also trigger the risks of lightning. Felling of trees particularly the fruit-bearing trees such as coconut and mango trees for clearing the transmission line corridor was another serious concern of the people as it would deprive them of their incomes and food security.

If the project caused any adverse impacts on individual properties, valuable tree species, and cultivations, people requested that such losses irrespective of whether they are permanent or temporary should be compensated adequately and timely. Consultations also highlighted that compensation for any of their losses should be paid over at a higher rate, irrespective of the title that they would hold to their properties, and before the commencement of construction work.

Given the above, CEB will continue the consultations with affected parties to share additional information about the project and to address any of their issues and concerns.

The outcomes of consultations are summarized in Table 10.2 while the detailed discussions are in Appendices 15.3.

**Table 10.2 - Key Issues raised and discussed at consultations**

| Key Issues and concerns raised by participants | Response from the project |
|---|---|
| **IMPACTS ON LAND** | |
| Installation of the towers and transmission line will affect our paddy fields, valuable properties, and settlements. Therefore, CEB should plan to find a less harmful line route. | The proposed line route was chosen after careful consideration of several factors. This line route has minimal impacts. However, CEB will take all possible measures to minimize adverse impacts on human settlements. The height of the transmission line can be increased so that people can construct structures and continuously engage in cultivation under the transmission line. |
| The project should avoid/minimize adverse impacts on cultivable land as it is the primary means of people's livelihoods and agricultural production in the region. | There is no land acquisition. Farmers will be allowed to continue their cultivations under the transmission towers and lines provided they do not plant trees over and above the height of 5m within the RoW. |
| Maximum efforts should be made to avoid the use of private properties to reduce adverse impacts on people's livelihoods including cultivation. | It is not possible to completely avoid the use of private land. The land earmarked for the construction of the Sampur CGS and the Solar Park is state land. Also, some sections of the transmission line will traverse state and forest land. The project will not acquire the private land for the RoW of the transmission line. CEB will compensate the private landowners for the land used for the installation of the transmission towers. |
| The project should endeavor to use state land or forest lands as much as possible so that the use of private land can be avoided or minimized. | |
| **IMPACTS ON LIVELIHOODS AND INCOMES** | |
| The project will restrict access to grazing land for cows and goats. Only a very few dedicated grazing grounds are available in the area. | Access to the sites earmarked for Sampur CGS and Solar Park will be restricted. Grazing animals along the transmission line corridor area will not have any restrictions. |
| Construction of the GS and the Solar Park will deprive the farmers of access to those lands for grazing their animals and collecting firewood. | |
| Would the project cause disruptions to irrigation systems, cultivation calendars, and harvesting seasons? | The project will take all possible measures to avoid or minimize adverse impacts on people's livelihoods and incomes. The project will not cause any disruptions to irrigation systems. Any crop losses due to construction work will be compensated by CEB at market value. Compensation will also be paid for any trees to be removed, and CEB will extend its support and assistance to families to replant the trees. |
| Would the project cause a loss of seasonal incomes to farmers who are predominantly dependent on agriculture? | |
| Any disruptions to agricultural activities may deprive the farmer of income to repay their outstanding bank and other loans. | |
| We have planted coconut, mango, and other fruit trees in our home gardens with much difficulty especially protecting them from wild animals and elephants. The project should protect such crops and trees. Otherwise, we will lose our income. | |

| Key Issues and concerns raised by participants | Response from the project |
|---|---|
| Construction work should be scheduled for off-seasons to avoid disturbances to local rice production. | Wherever possible, the project will avoid peak cultivation seasons for construction work. If unavoidable, compensation will be paid for the loss of cultivation and agricultural yields. |
| Farmers should be consulted to reach an agreement on how to avoid adverse impacts on their cultivations. | The project will continue to engage the farmers in consultations to plan the construction schedule and minimize adverse impacts on their livelihoods. |
| **SAFETY ISSUES AND CONCERNS** | |
| We fear to engage in paddy cultivation and use agricultural machinery and equipment under the high-tension lines and near the towers. They can be entangled with lines and towers causing accidents. | CEB will ensure to provide a protective environment for the farmers while installing towers and lines and farmers can engage in cultivations without fear. |
| The project should adopt safety measures to protect the labor teams from the threats of wild elephants, especially when working in forest adjacent areas. Elephants are frequently roaming in such areas. | CEB will introduce a set of safety measures to the contractors and their labor teams. |
| We are concerned about the possible lightning strikes and threats to our lives and properties due to transmission towers and conductors. | It is unlikely. CEB adopts proper methods such as lightning arrestors to control lightning impacts from towers and lines. |
| Would the high-tension lines cause cancer disease in people? | There is no scientific evidence to substantiate that transmission lines cause cancer in people. Also, there had been no such complaints registered with CEB by people living closer to transmission lines. |
| The roaming of wild elephants may increase due to the clearing of vegetation. There are no elephant fences erected in the area. | |
| The safety of the children using the school playground which is adjacent to the proposed solar park should be ensured. | Solar Park area will be fenced-off and outsiders will not be allowed to enter the site. |
| **COMPENSATION FOR LOSSES** | |
| People should be paid proper compensation for the loss of their trees and crop damages, and assist in restoring their lost incomes. | CEB assures compensation for the loss of trees and any crop damages to affected parties. Compensation will be paid as determined by the Divisional Secretary of the respective area. |
| People affected by the project should be paid fair compensation for the loss of/damages to their assets and cultivation. | |
| Compensations for all damages and losses caused by the project should be acceptable to the affected families and individuals to avoid public unrest on project impacts. | CEB will consult the affected persons on their compensation entitlements, and any grievances will be addressed. |
| We have no objection to this project which is of national importance. The project should however avoid/minimize adverse impacts on communities. People's grievances should be resolved timely and acceptable manner. | The project will establish a grievance redress mechanism to take immediate action to address the grievances. Additionally, affected persons can report their grievances to the divisional secretary. |
| **ENVIRONMENT PROTECTION** | |
| During the construction period, the project must ensure the protection of wildlife and forest resources, and prevent any unauthorized individuals from engaging in harmful activities, such as animal poaching, under the guise of project-related work. | CEB will provide clear instructions to the construction contractors to take preventive measures to protect the forests and wildlife, and will regularly monitor their compliance. |
| **PROJECT BENEFITS** | |

| Key Issues and concerns raised by participants | Response from the project |
|---|---|
| The project should offer labor work for local people during project construction. | CEB will request the contractors to place priority on recruiting people from the local communities for construction work. |
| Projects of national importance should not jeopardize the well-being of the local communities through the adverse impacts of the project. | |
| Can the CEB provide electricity connections to households without electricity? | The project will bring this issue to the notice of CEB authorities. |
| The proposed project will be important for both existing industries and future developments of the BOI zones to have a reliable power source. | |
| **LABOR INFLUX** | |
| School drop-out rate and absenteeism particularly among boys is comparatively high in this area, and there is a risk of contractors deploying child labor for construction work. | Employment of child labor or forced labor is strictly prohibited under this project. Contractors will be strictly instructed to avoid employing child labor. A Code of Conduct will also be issued to the contractor staff. |
| **LAND ISSUES** | |
| A letter was received from a few people claiming ownership of some lands in the area earmarked for Sampur Solar Park (divisional secretary) | The project will initiate additional environmental and social assessments for the solar park before its implementation. Such assessments will investigate any legacy issues related to the land allocated for the solar park. |
| There is no private ownership of the land earmarked for the Sampur Solar Park. The land was under the Forest Department until 2014. During that time, some farmers illegally entered the land and commenced cultivation. | |
| We are not aware of any people claiming rights to the land earmarked for Sampur Solar Park. Threats from wildlife will be reduced with the clearance of forests adjacent to school playgrounds and paddy fields. | |
| **WOMEN'S ISSUES** | |
| Early marriages, domestic violence, harassment, discrimination, second marriages, negligence of childcare, out-migration for foreign employment, and extra-marital affairs of parents are the issues of women in these villages. | The project will ensure the safety of both women and children that they are protected from undue interferences from construction workers, and that their routine work is conducted without any interruptions. A Code of Conduct will be issued to each employee prohibiting them to engage in any form of unacceptable behaviors. |
| **REGULATORY REQUIREMENTS** | |
| Pradeshiya Sabhas should be consulted for any project activity affecting local roads and other common properties controlled and maintained by the Pradeshiya Sabhas, before the commencement of the construction work. | The project will comply with this requirement, and work closely with the Local Authorities. |
| Any damage to the local roads due to project activities such as transporting heavy machinery and goods should be restored by the project itself as the Pradeshiya Sabhas lack funds. If any project activity is likely to affect the local road conditions, Pradeshiya Sabha should be consulted. | |
| The Forest Department has planned to restore the mangrove ecosystem to compensate the trees and other environmental resources to be removed for the transmission line project. | The project will consult the Forest Department to explore the possibilities of supporting this initiative. |
| DWLC is in the process of reviewing the options recommended in the IEE report to establish an alternate | The project will follow up on this with the DWLC. |

| Key Issues and concerns raised by participants | Response from the project |
|---|---|
| corridor for elephant movements and will grant its approval to the most appropriate option together with its recommendations for the protection of wild animals. | |
| A part of the affected land belongs to the Konanayagam Temple which is now vested in the Department of Public Trustee and is managed by a Trust Board of 7 members elected by the worshippers of the Temple. All incomes received from the annual auctioning of the land for cultivation are deposited with the Public Trustee and are disbursed to the temple to meet its expenses. Therefore, CEB should work with the Public Trustee Department, and the Trust Board of the temple in using the temple land for the project and for making compensation. | The project will comply with this requirement. |
| RDA has issued guidelines to CEB on the requirements related to the height of the transmission line in places where it intersects the public roads and to avoid any adverse impacts on transport services, road facilities, and commuters. | The project will comply with the RDA guidelines. |
| The proposed project falls within the Eco-Tourism, Agriculture, and Industrial Zone of the UDA demarcated area. UDA has issued guidelines to CEB on land use requirements. | The project will comply with the UDA guidelines. |
| The Irrigation Department has no objections to the project. The project should ensure that access paths to irrigation tanks are not disrupted by project activities. | The project will comply with the requirements. |
| At the request of CEB, State Timber Corporation has agreed to undertake the removal of trees on the RoW and prepared a list of trees to be removed. | |
| Agrarian Services Centers have informed the Farmer Organizations about the proposed project at the request of CEB, and farmers were made aware of the project. | |
| **CHANCE FINDS** | |
| Artifacts of archaeological significance may be found during excavations and precautions must be taken to protect them. | The project will establish the required procedures to be followed in such chance finds to protect those objects of archaeological and historical significance, and will inform the Archaeology Department. |
| Department of Archaeology had given its clearance to the project with conditions. If the project comes across any chance findings, the Department should be informed. | |

## 10.2 Information Disclosure

During the ESIA conducted for the project, information related to tentative directions of the transmission line route of the project, sites earmarked for the GS and the solar park, land requirements, potential impacts of the project, both positive and negative, and direct and indirect, entitlement policies and frameworks for compensation for the affected parties and grievance redress procedures were shared with affected persons during consultations. The PMU of CEB will continue their communications with the affected persons and other stakeholders and disclose information such as the valuation procedures, project-related impacts, specific entitlements of the affected persons, compensation procedures, grievance redress procedures, and dates of the commencement of civil works. Moreover, the ESIA report should be disclosed on the official website of the CEB with translations into Sinhala and Tamil languages.

## 10.3 Continued Consultation and Information Disclosure Plan

The PMU of CEB will direct their safeguards officers, project managers, and engineers to engage in continuous consultations with the affected persons to minimize/avoid adverse impacts of the project emanating from final engineering designs. For continued consultations, the following steps are envisaged from the PMU:

(i) Organize and conduct periodic meetings with affected persons and other stakeholders to inform them of the status of final engineering designs, the project's impacts and entitlements, and payment of compensation to affected persons.
(ii) In coordination with engineers engage the relevant stakeholders to review the final engineering designs, and suggest any modifications to the project designs (if any) including environmental and social safeguards measures to be implemented. The Forest Department, Department of Wildlife Conservation, Road Development Authority, Provincial Road Development Authority, Sri Lanka Railways, Irrigation Department, Department of Agrarian Services Development, Central Environmental Authority, Divisional Secretaries, and Local Authorities should be essentially engaged in this consultative process.
(iii) Conduct awareness programs for affected persons and other stakeholders on the availability of grievance redress mechanisms and review their performance and outcomes.
(iv) In consultation with the Divisional Secretaries, organize and facilitate meetings between the Divisional Secretaries and the affected persons to determine entitlements and compensation for the affected land, cultivations, trees, and any other assets.
(v) Conduct awareness meetings and disseminate printed leaflets to inform the affected persons of the procedures, dates, times, and venues for disbursement of compensation.
(vi) Hold periodic meetings with the affected persons and other stakeholders to review any unanticipated or indirect consequences of the project implementation.
(vii) Organize public meetings and appraise the communities about the progress of project implementation and the implementation of environmental and social safeguards such as payment of compensation and other assistance to be provided.
(viii) Conduct information dissemination sessions at major locations and solicit the help of the local community leaders to encourage the participation of the affected persons in consultations.
(ix) Place special attention to assist the vulnerable groups to understand the process and to help them in getting the compensation and other assistance.
(x) Establish a feedback mechanism for community members, affected persons, and other stakeholders to raise and report their issues related to the project implementation, and to submit their requests and suggestions.

According to Section 64 of the ESF, AIIB requires environmental and social information disclosed by the client. The PMU will ensure that copies of the ESIA conducted for this project as well as the ESMP are made accessible to any stakeholders either in the form of hard copies or electronically. The referenced documents will be posted on CEB's website https://www.ceb.lk and AIIB's https://www.aiib.org/en/projects/details/2025/proposed/sri-lanka-sampur-kappalthurai-transmission-infrastructure-development-project.html. Table 10.3 shows the Consultation and

Information Disclosure Plan - which shows the stakeholders to be consulted, stakeholders with whom the information should be shared, type of information to be shared, methods of consultations and information sharing, type of information to be shared, location, timeline and responsible person/agency.

**Table 10.3 - Consultation and Information Disclosure Plan**

| Stakeholder Group | Information to be Shared | Method of Consultation & Information Sharing | Location | Timeline | Responsible Person/Agency |
|---|---|---|---|---|---|
| Project Affected Persons (PAPs) | Final design, entitlement matrix, compensation procedures, GRM, implementation, traffic management plans, community health & safety measures, crop loss minimization strategies | Public/community meetings, printed leaflets, door-to-door visits, mobile phone communication, help desks | Affected villages, GN divisions, Divisional Secretariat offices | Quarterly and as needed | CEB PMU Safeguards Officers; Divisional Secretariats |
| Vulnerable Groups (Elderly, Women-headed Households, Low-income Households, Differently-abled) | Same as PAPs, plus additional support services and grievance redress procedures | Targeted meetings, simplified brochures, home visits, NGO/CSO support sessions | Residences of vulnerable persons, GN divisions | Every six month or as needed | CEB Social Safeguards Officers, Local CSOs, Divisional Secretariats |
| Divisional Secretaries and Local Authorities | Land acquisition, compensation plans, crop loss reduction measures, labor influx monitoring, GRM updates | Coordination meetings, official correspondence, review workshops | Divisional Secretariat offices | Monthly or as needed | CEB Project Managers and Engineers |
| Line Agencies (Forest Dept., DWLC, RDA, PRDA, Irrigation Dept., SL Railways, Agrarian Services Dept., CEA) | Final engineering designs, ESMP, traffic and environmental mitigation measures, compensatory tree planting, construction safety | Technical meetings, design review workshops, correspondence, joint site visits | Relevant agency offices, project sites | As required during design finalization and project implementation stage | CEB Engineers, Environmental & Social Consultants |

| Stakeholder Group | Information to be Shared | Method of Consultation & Information Sharing | Location | Timeline | Responsible Person/Agency |
|---|---|---|---|---|---|
| Community Leaders and Religious Leaders | Project updates, safeguards measures including health & safety, compensation and resettlement process, tree planting programs | Group meetings, printed materials, awareness sessions | Religious/civic centers, community halls | Every 2–3 months | CEB PMU Communication Officer |
| Wider Community (non-directly affected households) | General project overview, progress updates, grievance mechanisms, community health & safety plans, issues related to labor influx, community satisfaction on project implementation | Public awareness campaigns, local media, CEB website | Public places (schools, community centers), online | Quarterly | CEB PMU & Communication Team |
| Project Workers (Contractor and Subcontractor Staff) | Occupational Health and Safety Plan, labor management and code of conduct, GRM for workers, labor influx risks, community interaction | Toolbox talks, induction trainings, briefings, posters in worker camps and worksites | Construction sites, worker camps | Ongoing during construction | Contractor HS Officer; CEB Safeguards Officers |

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# 11 Resettlement Policy Framework (RPF)

The project does not require any involuntary land acquisitions. As per the practice of CEB, no land will be acquired for the RoW of the 220 kV transmission line from Kappalthurai GS to Sampur CGS. CEB will obtain the voluntary consent of the landowners for wayleave clearances. However, CEB will provide cash compensation for the land area used for the construction of transmission tower foundations as determined by the divisional secretary of the respective regions, in this case, the divisional secretaries of Trincomalee Town and Gravets, Thambalagamuwa, Kinniya, and Muthur. The ownership of such land will remain with the respective landowners and they will be allowed to continue their cultivations under the towers. The standing trees, especially those located right under the transmission conductors, and trees that are over and above 5 m in height will be removed, and cash compensation will be paid to the tree owners irrespective of their ownership titles at current market rates determined by CEB and as shown in Appendices 15.13. CEB as part of its corporate social responsibility (CSR) will also support a replanting program as part of restoration and rehabilitation assistance and will provide seedlings of short-duration and high-yielding varieties of coconut and fruit species free of charge and other technical guidance to the affected persons to compensate for their loss of trees and incomes.

Moreover, any damages caused to the structures and crops located within the RoW during the construction of the transmission line will also be compensated as determined by the respective divisional secretaries. Compensation for any damaged structures will be paid at replacement cost enabling the structure owners to restore such structures to a state better or equal to the pre-project situation. Crop losses will be compensated based on the calculation of the market value of the crop yields, number of seasons lost, and the income losses of the affected persons. Since there are no land acquisitions for transmission lines, people can still retain their ownership of the land, and use it for construction and cultivation purposes provided the vertical/horizontal clearance requirement of 5.0 m and 6.5 m respectively from any buildings and structures is maintained. As such, planting of trees above m in height will not be allowed, and any construction of structures will require prior approval from CEB.

The land earmarked for the construction of the Sampur CGS and the Solar Park in Sampur is state land already vested in CEB and the Trincomalee Power Company Limited (TPCL) respectively and is free from any encumbrances. No additional land acquisitions are required for both projects. The augmentation work of the Kappalthurai GS will be carried out within the existing premises of the GS which is owned by CEB.

The project will not cause any physical displacements or involuntary resettlements. However, except for the permanent loss of land for tower bases and the standing trees over and above 5 m in height, impacts will be largely temporary economic displacements. Therefore, this project does not require a Resettlement Policy Framework or a Resettlement Plan. However, an Entitlement Matrix is provided below to guide the CEB in the process of providing compensation to the affected persons for their loss of land and trees, and damages caused to any structures, crops, and cultivations.

Compensation and/or rehabilitation and restoration assistance will be provided to all persons affected by the project irrespective of their title to offset such losses. They include (i) persons

with formal legal rights to land; (ii) persons who have no formal legal rights to such land, but who have claims to such lands that are recognized or recognizable under national laws; and (iii) persons who have neither formal legal rights nor recognized or recognizable claims to such land.

**Table 11.1 - Eligibility and Entitlement Matrix**

| No. | Type of Loss | Affected Persons/ Institutions | Entitlement | Details | Responsibility |
|---|---|---|---|---|---|
| | | | **LAND** | | |
| 1. | Land acquired for tower base areas at the ground level of the transmission towers | Legal titleholders, government permit holders, non-titleholders with legitimate/legalizable rights to land, and custodians of the temples/Kovils | Cash compensation at replacement cost | ● Cash compensation at the replacement value of the land as determined by the Divisional Secretary.<br>● 60 days of advance notice to the affected persons to remove standing trees and harvest the seasonal crops.<br>● Permission for landowners to cultivate the land underneath the tower base area after construction work is completed. | ● DS<br>● CEB |
| | | | **STANDING TREES** | | |
| 2. | Standing trees within the RoW of the transmission lines | Legal titleholders, permit holders, non-titleholders, sharecroppers, and tenants | Cash compensation at replacement cost and rehabilitation and restoration assistance | ● Cash compensation is determined by the Divisional Secretary based on the type, age, productivity, and lost income during the life cycle of the trees.<br>● If there are sharecroppers and/or tenants, DS will divide the compensation proportionately between the landowner and the sharecropper/tenant after considering the nature of the agreement reached between the two parties.<br>● The labor cost of removing the trees.<br>● 60 days of advance notice to the affected persons to cut down standing trees and the right to possess the timber and any other produce. | ● DS<br>● CEB |

| | | | | | |
|---|---|---|---|---|---|
| | | | | ● Provision of seedlings of short-duration and high-yielding varieties of coconut and fruit species free of charge to affected households. | |
| **STANDING CROPS** | | | | | |
| 3. | Standing crops within the RoW of the transmission lines | Legal titleholders, permit holders, non-titleholders, sharecroppers and tenants | Cash compensation at replacement cost and rehabilitation and restoration assistance | ● Compensation is determined by the Divisional Secretary taking into account the market value of a given variety of crops, average seasonal production of the cultivated land, and the number of seasons lost to the farmer.<br>● 60 days of advance notice to the affected persons to harvest standing seasonal crops. | ● DS<br>● CEB<br>● Contractors |
| **PRIMARY STRUCTURES** | | | | | |
| 4. | Partially affected primary residential and commercial structures and common property resources within the clearing with RoW. | Legal titleholders, permit holders, non-titleholders, and custodians of common property resources | Cash compensation at replacement cost | ● Cash compensation as determined by the Divisional Secretary to reconstruct and restore the partially affected structures in the same location or the remaining portion of the land to a state better or equal to the pre-project situation. | ● DS<br>● CEB<br>● Contractors |
| **AUXILIARY STRUCTURES** | | | | | |
| 5. | Partially/fully affected auxiliary structures | Legal titleholders, permit holders, non-titleholders, and custodians of common property resources | Cash compensation at replacement cost | ● Cash compensation as determined by the Divisional Secretary to reconstruct/replace the affected structures in the remaining portion of the land. | ● DS<br>● CEB<br>● Contractors |
| **TEMPORARY RELOCATION** | | | | | |
| 6. | Temporary relocation of affected households and auxiliary structures | Legal titleholders, permit holders, non-titleholders, and custodians of common property resources | Transitional allowances | ● Transitional housing allowance to affected households as determined by the Divisional Secretary to find alternate accommodation for the duration of the construction work in the specific locations.<br>● Cost of shifting and fixing the auxiliary structures until the construction work is | ● DS<br>● CEB<br>● Contractors |

| | | | | | |
|---|---|---|---|---|---|
| | | | | completed in the specific locations. | |
| **LOSS OF LIVELIHOODS** | | | | | |
| 6. | Temporary disruptions to livelihoods businesses and incomes | Households/persons losing livelihoods due to construction work | Rehabilitation and restoration assistance | ● Cash compensation as determined by the Divisional Secretary based on the calculation of lost income and workdays<br>● Priority is given, where feasible, for the employment of vulnerable affected persons and their family members in construction work | ● DS<br>● CEB<br>● Contractors |
| **SPECIAL ASSISTANCE TO VULNERABLE HOUSEHOLDS** | | | | | |
| 7. | Vulnerable allowances | Affected vulnerable Households (poor women-headed households, households living below the poverty line, elderly persons, and persons with disabilities who have no other support) | Rehabilitation and restoration assistance | ● A one-time grant of SLRs 50,000 per vulnerable household Priority given, where feasible, for employment of vulnerable affected persons and their family members in construction work. | ● CEB<br>● Contractors |
| **RESTORATION OF UTILITY SERVICES** | | | | | |
| 8. | Disruptions to utility services (electricity, water, telecommunication, etc.) | Affected households and/or facilities regardless of legal title | Rehabilitation and restoration assistance | ● Contractors to restore the service facilities in collaboration with service providers.<br>● Compensation for costs incurred due to disruption of services as determined by Divisional Secretary | ● DS<br>● CEB<br>● Contractors |
| **UNFORESEEN IMPACTS** | | | | | |
| 9. | Unforeseen adverse impacts on properties and livelihoods during project construction | Affected persons and/or facilities regardless of legal title | Cash compensation at replacement cost | ● The contractor will be responsible for rehabilitating and restoring used[10] or damaged properties to the same or better level and CEB will ensure to get the same done on time.<br>● Other unforeseen impacts are to be assessed and determined based on safeguards principles and | ● Contractors<br>● DS<br>● CEB |

[10] In case of temporary use, a written agreement shall be made between the landowner and the contractor for construction related activities

| | | | | | |
|---|---|---|---|---|---|
| | | | | incorporated into the entitlement matrix | |

# 12 Institutional Mechanism

## 12.1 Implementation and Monitoring Arrangements

The Institutional Structure and Responsibility for Environmental Management Plan will be at CEB.

As a requirement according to the National Environmental Act (NEA), a mandatory environmental clearance from the Central Environmental Authority or a Project Approving Agency (PAA) has already been obtained by the PP, and the PP (CEB) is obliged to adhere to all measures stipulated under the environmental clearances and which may require to renew in three years.

CEB has set up a Transmission Design & Environment Branch (TDE) for dealing with environmental issues at the corporate level to monitor and implement environmental good practices. This is headed by a Deputy General Manager who is qualified and also well aware of the project activities and their impacts on the environment. A Senior Engineer has been deputed as the Head of the Environment Unit to give guidance to the project staff and contractors to adopt good environmental practices while implementing the project.

## 12.2 The duties of the Environment Unit at the corporate level

- Monitoring and implementation of mitigation measures during the construction and operation phases of the project.
- Coordinate the preparation of suitable environmental management reports at various project sites.
- Advising and coordinating field environmental management cells' activity towards effective environment management.
- Liaise with the Ministry of Power and Energy and CEA, and relevant state agencies and seek their help to solve the environment-related issues of the project implementation.
- Advise project management units on environmental and social issues to avoid negative environmental impacts.
- Provide training and awareness on environmental and social issues related to power transmission projects to the project staff.

## 12.3 The duties of the Environment Division at the Field level

- Implement the environmental policy guidelines and environmental good practices at the sites.
- Advising and coordinating the field office activity towards effective environment management.
- Liaise with the Forest Department, Department of Wildlife Conservation and seek help from officers in resolving environment monitoring-related issues.

- Carry out environmental and social surveys in conjunction with project implementation units to avoid negative environmental impact.
- Make the contractor's staff aware of environmental and social issues related to power transmission projects so that ESMP can be managed effectively.

It is the practice of CEB through its Projects Division to establish a Project Management Unit (PMU) to oversee the implementation of the project while its construction phase is ongoing. One of the key responsibilities of the PMU will be to ensure that the ESMP is implemented, and the monitoring is done regularly as per the Monitoring Plan.

The project will require liaising with institutions including the Divisional Secretaries of the respective areas along which the Transmission line traverses. During the Planning Stage, the Grama Niladhari together with the DSD will play a major role especially when compensation is to be paid to the project-affected parties. A Grievance Management System should be established at the DS level, enabling any affected party /person to make a complaint. There should be an ongoing mechanism to resolve such complaints.

Community awareness will be important during the project implementation and thereafter. PMU can play a key role in raising awareness among the people about the safety factors of the Transmission Line.

## 12.4 Implementing the Environmental and Social Monitoring Plan

During the planning, construction, and operation phase of this project, the monitoring of the environmental and social aspects shall be done at the transmission line by (i) Environmental Officer (ii) Social officer of the Project Management Unit. During the operational phase, all monitoring activities should be undertaken by the relevant responsible officer of the Environmental Unit of the CEB.

Parameters to be monitored include payment of compensation (as per the relevant circulars) noise abatement, maintaining hygienic conditions, maintenance of fire and safety equipment, etc. The monitoring activities of the project include site supervision, verification of permits, and monitoring of water quality, soil, noise, and air. Monitoring the quality of water, soil, air, and noise during the construction stage is the responsibility of the PMU.

Monitoring reports should be prepared once in six months with the corrective action plan for the problem areas. Overall, environmental good practices should be followed as per environmental policy guidelines the environmental monitoring report will be submitted by the PMU to the CEB which will include the result of environmental monitoring in its environmental report.

## 12.5 Capacity Building Training Plan

This section outlines a Capacity Building Training Plan for effective implementation of the Environmental and Social Management Plan (ESMP). The training plan has been developed based on the capacity assessment of local institutions, project staff, and stakeholders. The plan below

summarizes the areas identified for capacity building, target groups, resource persons, training schedule, venues, and indicative budgets.

**Table 12.1 - Capacity Building Training Plan**

| Area for Capacity Building | Target Group | Resource Persons | Timeline and Duration | Training Venue | Training Budget (LKR) |
|---|---|---|---|---|---|
| Environmental and Social Safeguards requirements | CEB PMU staff, contractors, Divisional Secretariat officials | Environmental/Social Consultants of PMU, CEA Representatives | Month 1 Pre-construction phase (One day Training) | Central location at Trincomalee District | 400,000 |
| Implementation of Grievance Redress Mechanism (GRM) including issues related to GBV, SEA and SH | Grievance Redress Committee members, Local Government staff (representative) | Social Specialist of PMU | Month 2 (½ a day training) | Divisional Secretariat Office | 250,000 |
| Occupational Health and Safety (OHS), | Contractors, field engineers, site workers | Certified Safety Trainers, OHS Consultants | Monthly (during construction period) (½ a day training) | Construction sites / Contractor training facilities | 600,000 |
| Labor management procedures | PMU staff, contractors, primary suppliers, sub-contractors etc. | PMU | Prior to the construction (½ a day training) | Construction sites / Contractor training facilities or central location | 200,000 |
| Community Engagement and Stakeholder Communication | PMU staff at field level and the contractor's senior staff like managers & engineers, DS Office representatives | PMU/CEB's Env. Division | Quarterly (½ a day training) | Community centers near project site | 300,000 |
| Monitoring and Reporting of ESMP Implementation | CEB Monitoring Unit, Environment and Social Officers of the | Environmental/Social Consultants of PMU, | Bi-annually (One day training) | CEB PMU Office | 400,000 |

| | | | | | |
|---|---|---|---|---|---|
| | PMU, and the contractor/s | | | | |
| Biodiversity and Habitat Protection Measures | Project engineers, contractor staff, Forest Dept., DWLC staff | Ecologists, Wildlife Conservation Experts | Month 3 (One day Training) | Trincomalee | 350,000 |
| **Total** | | | | | **2,500,000** |

## 12.6 Project Operation Plan and Budget Details

The CEB's financial commitment concerning the avoidance and the mitigation of environmental and social impacts induced by the project is to incorporate into the overall project budget all costs for resettlement, compensation of losses, mitigation measures, and monitoring activities. The mitigation measures and the monitoring will guarantee the protection of flora and fauna and proper resettlement and compensation as recommended in the relevant chapters of this report. The exact costs of these measures could be defined only during the construction stage. However, various mitigation measures recommended are already an integral part of the project design and consequently of the total budget. Furthermore, a number of provisions that will be taken to minimize environmental impacts do not necessarily induce costs and can even be profitable for the project. However, the CEB has already allocated for Transmission Line from Sampur to Kappalthurai GS of Rs. 200Mn for ESMP related activities to be implemented under the project.

The project operation plans and the budget details are shown in Table 12.2 given below. The overall responsibility for the implementation of the mitigation and monitoring plan will be entrusted to the CEB. It will function as a self-monitoring agency. It will instruct the contractor(s) so that they will follow the stipulated mitigation plan. An Environmental Manager will be appointed who will be responsible for all the monitoring activities. The CEB will be staffed with specialists to cover all important fields such as ecology and socioeconomics.

**Table 12.2 - Estimated budget for ESMP-related activities to be implemented by PMU and Contractor**

| No | Activity | Details | Estimated Cost (LKR) in Million | Estimated Cost (USD) | Responsible Party |
|---|---|---|---|---|---|
| 1 | Wayleave Clearance & Crop Compensation | Compensation for removal of vegetation and crop losses due to transmission line Right of Way clearance. | 20 | 66667.00 | CEB/PMU |
| 2 | Compensation for lands in tower locations | Compensation for private lands due to construction of transmission line tower foundations. | 10 | 33333.00 | CEB/PMU |

| No | Activity | Details | Estimated Cost (LKR) in Million | Estimated Cost (USD) | Responsible Party |
|---|---|---|---|---|---|
| 3 | Farming Land Restoration after Tower Works | Restoring agricultural land impacted by construction activities at tower locations. | 10 | 33333.00 | CEB/PMU |
| 4 | Compensatory Tree Planting & Biodiversity Offsets | Tree planting and habitat restoration to offset ecological impacts from project activities. | 10 | 33333.00 | CEB/PMU |
| 5 | Grievance Redress Mechanism Implementation | Operationalizing and maintaining GRM including training, awareness and documentation. | 2 | 6667.00 | CEB/PMU |
| 6 | Public Consultation & Information Disclosure | Engaging stakeholders and disclosing relevant ESMP and project information periodically. | 3 | 10000.00 | CEB/PMU |
| 7 | Community Awareness Programs | Workshops for nearby residents on safety, project impacts, and contact points. | 2.5 | 8333.00 | CEB/PMU |
| 8 | Environmental & Social Monitoring (Water, Air, Noise) | Routine monitoring of key environmental parameters will be conducted to ensure compliance with applicable standards. Pre-construction baseline data will be incorporated into the Supplementary Report. | 5 | 16667.00 | Contractor |
| 9 | Avifaunal Survey & Supplementary Report | Seasonal avifaunal study and reporting to update ESIA based on migratory bird activity. | 2 | 6667.00 | Contractor |
| 10 | Deployment of Environmental & Social Officers (CEB-side) | Placement of E&S specialists under contractors' responsibility to monitor for CEB. | 15 | 50000.00 | Contractor |
| 11 | Capacity Building & Training (Safeguards, OHS, Biodiversity) | Workshops for staff and stakeholders to strengthen ESMP knowledge and execution. | 5 | 16667.00 | Contractor |
| 12 | Deployment of E&S Officers | Posting dedicated Environment and Social Officers at site. | 8 | 26667.00 | Contractor |
| 13 | Deployment of Health & Safety Officers | Appointment of site-level safety engineers and supervisors. | 8 | 26667.00 | Contractor |
| 14 | Crack Surveys | Structural assessment of nearby assets before and after construction. | 1 | 3333.00 | Contractor |
| 15 | Restoration of Utility Services | Reconnection of water lines, electricity, telecom, and other public services. | 1 | 3333.00 | Contractor |
| 16 | Implementation of Health and Safety Plan | Cost for PPE, signage, temporary access roads and safety precautions. | 7 | 23333.00 | Contractor |

| No | Activity | Details | Estimated Cost (LKR) in Million | Estimated Cost (USD) | Responsible Party |
|---|---|---|---|---|---|
| 17 | Implementation of Waste Management Plan | Waste segregation, disposal and contractors' environmental hygiene responsibility. | 6 | 20000.00 | Contractor |
| 18 | Implementation of Traffic Management Plan | Costs for police coordination, signage and local road usage during work. | 1 | 3333.00 | Contractor |
| 19 | Compensation for Construction Related Damages | Payment to affected parties for direct physical or economic damage. | 12 | 40000.00 | Contractor |
| 20 | Capacity Development Trainings | Contractor-led continuous learning for laborers and subcontractors. | 2.5 | 8333.00 | Contractor |
| 21 | Human-Elephant Conflict Management | Fencing and monitoring to reduce wildlife conflict near sensitive zones. | 3 | 10000.00 | Contractor |
| 22 | Restoration of Drinking Water and Minor Irrigation | Repair of small-scale water schemes impacted by civil works. | 3 | 10000.00 | Contractor |
| 23 | Social Development Programs | Community benefit programs such as skill training and infrastructure aid. | 3 | 10000.00 | Contractor |
| 24 | Tree Planting Programs | Green cover enhancement in affected sites through small-scale planting. | 5 | 16667.00 | Contractor |
| 25 | Contingency & Unforeseen Measures | Budget provision for any unplanned ESMP-related actions required during implementation. | 5 | 16667.00 | Contractor |
| **Total** | | | **150** | **500000.00** | |

# 13 Grievance Redress Mechanism

The impacts of the project may raise grievances and complaints on the part of affected persons. The clearance of standing trees and way-leaves within the ROW of the transmission line can adversely affect the livelihoods and incomes of households; civil construction works can destroy stand crops; stringing of transmission conductors over private properties can lead to property devaluation and raise people's concerns over their safety; and construction work of the project can also result in various inconveniences to the general public such as access difficulties, restrictions to public places, damages to privately owned built structures and common property resources, disturbances causing from noise and dust, and issues related to labor influx etc.

The project will establish a project-based grievance redress mechanism (GRM) that is easily accessible to the aggrieved parties, transparent, and accountable in grievance handling and responding while winning the confidence of the complainants. A well-established and well-functioning GRM would be able to resolve the grievances locally and avoid lengthy court procedures and delays in project implementation. It will adopt a transparent and time-bound procedure in the grievance resolution process.

The project Management Unit (PMU) of CEB will establish a clear set of procedures with specific time frames for grievance resolution at each level which will include procedures for receiving and recording grievances, screening and referrals, assessment of grievances, grievance resolution, reporting and monitoring. Further, PMU with the guidance of environmental and social safeguards officers assigned to the project will conduct awareness-raising programs to inform the affected persons and the general public on the role and functions of the GRM, grievance reporting procedures, time frames for grievance resolution at each level, the operational locations of the GRM and the details of contact persons, addresses and telephone numbers at each level of the GRM. Brochures and leaflets printed in Sinhala and Tamil languages covering the above information will also be distributed.

The GRM will function throughout the life cycle of the project implementation, and CEB will ensure its accessibility to affected parties, and transparency and efficiency in grievance resolution. The project will also provide orientation and training to the members of the GRM on effective grievance-handling procedures.

The GRM will consist of two tiers. The first tier will be at the project's site level while the second tier will be at the PMU-level.

## 13.1 Site-level GRM

The lowest level of the GRM will be the construction site of the transmission line or the substation. The project will assign a site engineer to each such site/subproject. The persons affected by a subproject can report their grievances and complaints to the offices of the CEB's site engineers. Contact phone numbers, emails, and names of the site engineers will be posted at all construction sites at visible locations. The grievances and complaints can be reported either verbally or in

writing. At the site engineers' offices, an electrical/civil superintendent will record the grievances in the grievance logbook including the contact details of the complainant, the submission date of the complaint, and the nature of the grievance/complaint. Any affected person who cannot access the site engineer's office due to any access difficulties can forward his/her complaint via the *Grama Niladharies* of their respective villages. Complaints from female affected persons will be attended to by a female superintendent/female officer of the site engineer's office.

The site engineers of CEB will resolve the minor grievances as much as possible and forward the rest grievances/complaints to their respective project managers of the PMU. The project managers in consultation with their site engineers, electrical and civil superintendents, and the site engineers/managers of the construction contractor will hold an inquiry into the complaints/grievances and address the issues within a period not exceeding two weeks. If necessary, site inspection visits will be undertaken by the project managers together with their staff. The site engineers will keep the complainants informed of the progress made with respect to their grievances/complaints and the outcome of the grievance resolution. Grievance redress outcomes including actions agreed and implemented will also be recorded at the project managers' office.

## 13.2 PMU-level GRM

If the project site engineers and their respective managers are unable to resolve the grievance/complaint or else if the affected person is dissatisfied with the site-level resolution, the grievance/complaint can be referred to the Project Director (PD) of the PMU. The Additional General Manager (Projects) of CEB will appoint a committee that will be responsible for grievance resolution. The committee will be chaired by the PD and its membership includes the divisional secretary and *the Grama Niladhari* of the area from where the grievance/complaint originated; a representative from the Transmission Design and Environmental Unit of CEB; and the environmental and social safeguards officers of the project.

The PMU-level grievance committee can convene the affected person/s to explain his/her grievance at its meetings. The complainant can also send his/her nominee to the committee if he/she is unable to physically participate in the meeting. During the committee deliberations, the project director and the committee will clarify the issues involved and will try to settle acceptable to both the affected person and the project within three weeks. If an agreement or resolution is reached, the key points of the agreement/resolution will be summarized, documented, and signed by both the affected person and the members of the committee. One of the safeguards officers of the PMU will assist in the documentation and record keeping, summaries of which will also be reported to AIIB through monitoring reports.

## 13.3 Grievance Redress through Divisional Secretaries

In parallel to the project-based GRM established by CEB, aggrieved parties can also submit their grievances to the Divisional Secretary of the respective subproject area. The divisional secretary is delegated with the powers of the PUCSL and empowered to address the complaints and grievances

of the affected persons and the utility companies.[11] Grievances and complaints particularly with regard to issues of severances and disturbances to private properties caused by electricity projects and compensation for lost/affected assets can be brought to the notice of the divisional secretary. If any aggrieved parties have access difficulties to the divisional secretary, they can yet forward their complaints via the *Grama Niladharies* of their respective villages. The divisional secretary will hold an inquiry into the complaints/grievances reported to him with the participation of the relevant project managers the site engineers of the subproject and the project engineers of the contractors to find an amicable settlement to the issue. If required, the divisional secretary will also consult the project director. This process will be completed within a period not exceeding two weeks from the submission of the complaint/grievance by the affected persons.

The project-based grievance redress mechanism, however, will not impede the opportunities that affected persons have to resort to the country's legal system at any stage of the process. The affected persons have the right to refer their grievances to appropriate courts of law at any time. They can also submit their grievances to AIIB's Project-affected People's Mechanism if dissatisfied with the action or decisions of the project GRM and management, which has both a problem-solving function to respond to concerns of project-affected people and a compliance review function where there is a discrepancy with the implementation of AIIB's operational policies.

Apart from the above-described three levels of GRM, contractors will also establish a GRM at the site level (Workers' GRM) which will exclusively address the issues and grievances of the labor teams. However, whenever necessary, the aggrieved laborers also have the choice of approaching the project-based GRM.

The PMU has the overall responsibility to monitor the performance of the GRM, maintain a database of all grievances received and resolved, and submit quarterly reports to the CEB and the AIIB.

[11] Sri Lanka Electricity (Amendment) Act, No.31 of 2013.

# 14 Conclusions and Recommendations

## 14.1. Conclusions

The Environmental and Social Impact Assessment (ESIA) for the proposed 220 kV transmission line project has comprehensively evaluated the potential environmental, ecological, and social impacts associated with the project. The findings indicate that while certain impacts on flora, fauna, and local communities are inevitable, they are largely manageable through proper mitigation measures.

The project will contribute significantly to Sri Lanka's renewable energy development by facilitating the evacuation of power from the Sampur Solar Park to the national grid. This aligns with the country's long-term energy strategy, ensuring a stable and reliable power supply while reducing dependence on fossil fuels.

Environmental assessments confirm that the majority of species affected are common to the dry zone and adaptable to habitat changes. No critical habitats or major migratory pathways will be significantly impacted. Social assessments indicate that the project will have minimal displacement effects, with appropriate compensation mechanisms in place for affected landowners.

The project design includes strategic site selection to minimize environmental damage, and sustainable construction practices will be implemented to reduce ecological disturbance. Proper environmental monitoring and adherence to best practices in project execution will further ensure minimal long-term negative impacts.

## 14.2. Recommendations

To ensure that the project proceeds in an environmentally and socially responsible manner, the following recommendations are proposed:

**1. Biodiversity and Habitat Conservation**

- Avoid/minimize clearing trees/ vegetation in sensitive areas, particularly riverine forests and mangroves [Prevention of Clearance of Mangroves: Mangroves between tower 4/3 and tower 4/4, and Uppu Aru (between tower 11/4 and tower AP12) should not be cleared or disturbed (section 6.3.3.1 for details)].

- Protection of Ecologically Important Species: Habitats and species of ecologically important mangrove flora species, such as *Myriostachya wightiana*, *Cynometra iripa* (Opulu/Attukaddupuli), and *Xylocarpus granatum* (Mutti-kadol/Kandal), which are found in the area during the ecological study, as well as potentially occurring flora species, *Ceriops decandra*, *Sonneratia apetala*, *Indotyphlops lankaensis* and *Indotyphlops malcolmi* should be protected from disturbance due to project activities (section 6.3.3.2 for details).

- Translocation of Ecologically Important Species: Translocation of endemic, threatened and near threatened fauna and flora species from forests and scrublands based on the recommendation and guidance of DWLC & FD before tree removal and vegetation clearance into pre-selected, suitable protected habitats in the surrounding areas (section 6.3.3.3 for details).

- Implement a habitat enrichment (including mangroves) program in coordination with FD to compensate for vegetation loss along the transmission line corridor (section 6.3.3.4 for details).
- Maintain a buffer zone near wetlands and waterways to protect aquatic ecosystems.

**2. Mitigation of Wildlife Impacts**

- Implement Dedicated Passages or Corridors for Safe Animal Movement: Implement dedicated passages or corridors specifically designed for the safe movement of animals during construction and operation (section 6.3.3.5 for details).

- Evaluation of Avifauna Collision Risk (section 6.3.3.6 for details).

- Management of Invasive Species and Noxious Weeds (section 6.3.3.7 for details).

- Work with local wildlife authorities to address any unforeseen human-elephant conflict incidents.
- Construction should be completed within a shorter duration and limited to daytime in forest areas to minimize human-elephant conflicts
- proper fencing should be used to secure excavated foundation areas during construction period and the Sampur CGS and Sampur Solar Park during the construction and operational period.

**3. Soil, Water, and Pollution Control**

- Implement erosion control measures, particularly in areas with steep slopes or near water bodies.
- Prohibit construction waste disposal in natural water bodies and establish proper waste management systems.
- Ensure controlled material transportation to prevent accidental spills and environmental contamination.

**4. Social and Livelihood Considerations**

- Provide compensation at replacement cost and alternative livelihood support to affected landowners.
- Engage in continuous community consultation to address grievances effectively through the Grievance Redress Mechanism (GRM).
- Ensure employment opportunities for local communities where possible.

**5. Health and Safety Measures**

- Enforce strict occupational health and safety protocols for workers.

- Provide training on safety measures, including handling hazardous materials and electrical hazards.
- Establish emergency response plans in case of accidents or environmental incidents.

**6. Long-Term Monitoring and Compliance**

- Conduct periodic environmental and social audits to assess project compliance with mitigation measures.
- Establish an independent monitoring body to oversee the project's environmental and social commitments.
- Maintain transparent reporting on project impacts and mitigation efforts to stakeholders and regulatory agencies.

**In Addition to the above implementation of ESMP and ESMoP as well as following and adhering to the conditions laid by the different agencies as per the Appendices 15.14 shall be strictly followed.**

By implementing these recommendations, the project can proceed with minimized environmental and social risks while maximizing its contributions to Sri Lanka's energy security and sustainability goals.

# 15 Appendices

## List of Appendices

**15.1** : List of Contributors to the ESIA Study

**15.2** : References

**15.3** : Stakeholder Consultation Records (Meeting Minutes, Attendance Lists, Photographs)

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**15.19** : Public Information Leaflet used during the public consultation

**15.20** : DCPT Reports

**15.21** : GPS coordinates of Tower locations

**15.22** : Survey form used to collect household data

## 15.1 - List of Contributors to the ESIA Study

| Name | Designation | Work Allocation |
|---|---|---|
| **Prof. Mahesh Jayaweera** | *Team Leader & Environment Expert* | Ensure compliance with environmental regulations and standards.<br>Inputs and Improvements for the physical Aspects of the report<br>Finalizing and editing the final report |
| **Mr. Trishan Perera** | *Deputy Team Leader* | Assist the Team in project management and coordination.<br>Support stakeholder engagement and consultation processes.<br>Ensure timely completion of deliverables.<br>Review reports and provide quality assurance.<br>Act as the primary liaison between the team and project stakeholders. |
| **Mr. Tilak Nalinda Peries** | *Ecological Expert* | Conducting ecological surveys and biodiversity assessments.<br>Oversee the preparation of the Critical Habitat Assessment (CHA).<br>Provide technical input on ecological mitigation measures |
| **Prof. W.M. Dhanapala** | *Sociological Expert* | Conduct social impact assessments (SIA).<br>Organize and facilitate Focused Group Discussions (FGDs) and key informant interviews.<br>Identify potential socio-economic impacts on local communities. |
| **Mr. Anura Ranwala** | *Hydrological Expert* | Conduct hydrological assessments, including water flow analysis and flood risk evaluation.<br>Assess potential impacts of the project on local water bodies and drainage systems.<br>Support in the development of mitigation strategies for water-related risks.<br>Contribute to the Climate Risk and Adaptation Assessment. |
| **Mr. Bhanuka Gunathilake** | *Geology and GIS Expert* | Conduct geological and soil assessments of the project area.<br>Develop GIS-based maps for transmission line corridors and key environmental features.<br>Analyze land use patterns and topographical data. |
| **Mr. Prasad Jayaweera** | *Environment, Health and Safety Expert* | Identify occupational health and safety risks during construction and operation.<br>Develop an Environmental and Social Management Plan (ESMP).<br>Ensure compliance with national and international EHS standards.<br>Provide recommendations for worker and community safety measures. |

| | | |
|---|---|---|
| **Ms. Pavithra Perera** | *Program Associate* | Preparation of required lists for the report<br>Assist in data analysis to Deputy Team leader.<br>Supporting consultants in the report preparation and finalization of the report. |
| **Ms. Kanapathipillai Keerthana** | *Project Intern* | Translations of project questioners and documents.<br>Preparation of required lists for the report.<br>Supporting filed works.<br>Supporting consultants in the report preparation and finalization of the report. |

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**Appendices 15.2.a: Literature Used for Identification, Nomenclature, Red List Status, and Invasive Status of Species during Ecological Study.**

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|---|---|
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# 15.3. Stakeholder Consultation Records (Meeting Minutes, Attendance Lists, Photographs)

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### 15.3.1. - Focus Group Discussions

**Type and method of consultation:** Focus Group Discussion

**Date of consultation;** 22.12.2024

**Location of consultation:** MOH Lane, Muthur East, Muthur. Muthur Farmers' Organization

| | **Issues and contents discussed** | **Participants' responses, views and perception** | **Observations remarks** |
|---|---|---|---|
| 1 | Welcome and introduction to the FGD meeting. | 1.All participants volunteered to take part in the discussion and contributed freely. The introduction convinced them of the significance of this meeting with them for responsible disclosure of information on the proposed project and listening to community members including people to be affected by the project.<br><br>2. All participants were Muslim in Ethnicity and male in gender.<br><br>3. The discussion was conducted in both Tamil and Sinhalese languages without any communication gap.<br><br>4. The participants were happy to have the meeting with them by the consultants and officers of the CEB, who were readily available for clarifying technical matters of the project. | 1.The meeting was very friendly and enthusiastic for the participants.<br>2. Mr.K.M.A. Rahuman (70) , President of the Farmers' Organization took the leadership for organizing the FGD. |
| 2 | General awareness of the project | 1.The participants had been aware of the proposed power project as a result of some initial activities carried out by the CEB officers in the Muthur and Kinniya areas. The CEB officers have met them for the official requirements of marking the tower locations, transmission line route and obtaining peoples consent and responses in official forms.<br><br>2. Some participants had heard about the project without much knowledge of project activities. They were sufficiently informed at the beginning of the discussion.<br><br>3.Awareness of the project was further developed by distributing a detailed Leaflet exclusively prepared for that purpose.<br><br>4. The leaflet is a good source of correct and easy to understand source of reliable information for those who were not present in the community discussion. The community | 1.The leaflet remains a reliable source of project information for the participants in their vernacular; Tamil and sharing of it prevents spread of baseless rumors regarding the project. |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | members were given leaflets to be distributed to required community members. | |
| 3 | Interest in learning more details on the project | 1.The discussion provided the community members with an opportunity to elicit more information on the project. The leading participants asked number of questions on the details of the project and construction activities of towers. And also the way they might affect their lands, properties and cultivations.<br>2.They were satisfied with the detailed account of the project activities. | |
| 4 | Selection of project sites; Tower locations, route of the transmission line and grids | 1. The participants were deeply concerned about the selection of tower locations on their paddy fields and the transmission line route over them.<br>2. They accepted the technical importance of selecting the transmission line route through paddy fields but emphasized the need to avoid their valuable properties in the initial stage of the project planning.<br>3. They requested CEB to consider the adverse impacts on cultivations and settlements and find less harmful line route. | 1. Having listened to the people, the CEB officers clarified the policy of minimum impact on human settlements and the possibility of adjustments increasing the height of the transmission line so that people can use their lands for prescribed constructions and cultivations. |
| 5 | Critical issues and concerns about the project sites and proposed activities | 1. Selection of tower locations in their paddy fields and the traversing of the transmission line through the open paddy fields were the two issues they raised as critical.<br>2.Those issues are so perceived because of the fear of working and using agricultural machines, instruments, tractors, Land Master and harvesting equipment in the open paddy fields under the tower locations and the high-tension power lines. | 1.Protective use of the lands under the power line and suspension towers was clarified by the CEB officers. |
| 6 | Issues of cutting and removal of home garden crops | 1. Expect proper compensation and income restoration. | |
| 7 | Land ownership, land use and issues | 1.The participants claimed the ownership of their residential and agricultural lands by means of Personal Title Deeds, Land deeds granted by the Government, Permits issued by the Divisional Secretariat and encroachment, | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | occupation and cultivation for a considerable period.<br><br>2. They also shared the perception of land as the most valuable asset as the primary means of agricultural production in the area.<br><br>3. Their land use falls into the categories of residential, rain-fed paddy cultivation, Irrigated paddy cultivation, home gardens and cultivation of vegetables and grains and grazing of cows and goats.<br><br>4. Lack of permanent lands for grazing cows and goats was also raised in the discussion as an issue they struggle with. | |
| 8 | Use of private lands -Paddy, residential, home garden and other cultivations for the project | 1.The farmers expressed their views on the project impacts referring to the ground markings in their cultivations and paddy fields for the identification of Tower locations and route (35m in width) of the transmission line.<br><br>2. The participants have been informed of the particular use of the private lands for the relevant project activity by the CEB in formal and official manner following relevant regulations.<br><br>3. They have recognized the national importance of the proposed power project and expressed no objection to the project.<br><br>4.The farmers were aware of the construction of the towers on their land without land acquisition.<br><br>5. The farmers made a strong request to address their grievances duly in an acceptable manner and in time. | |
| 9 | Use of state lands, cultivations and public properties for the projects | 1.They also support the maximum use of state land for all purposes of the project so that the project has minimal impact on private lands and properties.<br><br>2.However, some participants expressed their concern on ensuring the protection of wildlife and forest resources in the period of constructions in the state lands coming under | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | different departments and authorities referring to organized crimes committed under the pretext of construction needs by certain perpetrators.<br><br>3. The possibility of ensuring safety of work force employed in the forest areas by expelling wild elephants was also raised by some of the participants. Consequently, elephants roaming in the settlements might increase.<br><br>4. Exploitation of forest resources and hunting wild animals by external people in the period of construction was another anticipated issue raised by them. | |
| 10 | Lands of religious temples | | |
| 11 | Livelihoods, sources of income and patterns of cultivation and harvesting | 1 Cultivation of paddy, vegetables, grains, home garden crops are carried out by almost all participants as their major means of sustenance.<br><br>2.A few families keep cows, buffaloes and goats as a source of income from milk and dairy products.<br><br>3. Paddy is cultivated for two seasons; Maha and Yala. Maha season is from October to March next year.<br><br>4. Almost all rain-fed and irrigation-based paddy fields are cultivated in the Maha Season as the region gets the North-Eastern monsoon rains in this period of the year.<br><br>5. Paddy yields harvest in March and thereafter the fields left for grazing.<br><br>6. Due to the scarcity of rain and water only a portion of irrigated lands are cultivated with paddy and other types of crops in the Yala season in the year from April to August.<br><br>7. Collection of firewood from forest areas and selling them is also a means of living for some families in the area. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 8. Casual labor in farms and construction sited provides livelihood for some poor families.<br><br>8. State and private sector employees are also available in the area. | |
| 12 | Employment opportunities | 1.Employment opportunities are predominantly confined to the agricultural activities, casual labor, construction and business.<br>2. Expressed their interest in finding suitable employment in the proposed project. | |
| 13 | Health and safety concerns | 1.The participants expressed their deep concern on the perceived fear of lightning impacts caused by transmission line and suspension towers and questioned about it in the meeting.<br><br>2.According to their belief and perception the suspension towers attract lightning strikes and consequently people and their properties in the adjacent area are lethally affected.<br><br>3. The magnitude of the proposed project itself fuels this lethal fear among participants to be closely exposed to the Tower locations and the transmission line traversing over paddy fields and residential facilities.<br><br>4. The danger of causing cancer as a result of being exposed to high tension power lines was also questioned in the meeting by some participants. | |
| 14 | Socio-economic status | 1. Socio-economic status as perceived by the participants remains at a satisfactory level of economic capacity sufficient for meeting basic needs and fulfilling other needs of day-to-day life depending on the seasonal income of agricultural products for most of the village residents.<br>3. There are rich farmers who possess and cultivate more than ten Acres of paddy fields. They have other businesses too. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 2. Housing is available for all, but the quality remains at different levels from small houses to well-constructed modern houses.<br><br>3.Those employed in state sector institutions, businesses and abroad have constructed big and beautiful houses furnished with modern domestic durables. | |
| 15 | Sources of energy and use of electricity | 1 Firewood collected from own lands, bush forest areas and lands of others, remains the main source of energy for cooking.<br>2. Some families use LP gas as source of energy for cooking.<br>3.Electricity is available for most households and predominantly used for the purpose of illuminating the house.<br>4. TV sets, radios, Music instruments, water motors, electronic kitchenware, refrigerators, mobile phones, computers are available accounting for a considerable consumption of electricity as mentioned by the participants.<br><br>5.Kerosine oil is used for illumination of houses without electricity in the area.<br><br>6. For vehicles, agricultural equipment, tractors, machines and motors they use petrol and diesel as required. | |
| 16 | Status of women and gender equality | 1.Gender relations still remains as structured in the traditional Muslim culture and society.<br><br>2.Accordingly male dominance is prevalent with a subordinate role of females in decision making.<br>3. Male participation in the FGD was also and evidence of the gendered relations. | |
| 17 | Education and child protection | 1. Schools are functioning well in the area, but the absenteeism of students is high according to the community members.<br><br>2. School dropout rate increases after G.C.E. Ordinary Level Examination in Grade 11.<br><br>3 Employment of school dropouts and prevalence of child labor in the area were also revealed by participants. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| 18 | Critical issues affecting people and their economy and social life | 1.Inceasing cost of agricultural productions and the unreasonable lower prices of Paddy was cited as a serious issue. | |
| 19 | Infrastructure facilities | 1.Access roads to settlements and public services and facilities are available for the community.<br>2.Hyginic water supply for drinking purposes' is available. | |
| 20 | Access to social welfare, justice and benefits of development | 1.Some participants receive monthly "Elders' grant, Aswesuma grant, Farmers. Pension pay at different rates as revealed by them.<br><br>2.Some claimed that they deserve social welfare grants, but the local authorities have deprived them of such financial grants.<br><br>3. The participants emphasized the adverse impacts of the proposed project and<br>Due recognition of their demands in return as the national development proceeds at a particular cost to affected families. | |

FGD Location: Muthur 22.12.2024

| | பெயர் / பெயர் | விலாசம் / முகவரி | தொலைபேசி எண் / தொலைபேசி எண் | கையொப்பம் / கையொப்பம் |
|---|---|---|---|---|
| | K.M.A Raheem | MOH Lane Muthur-01 | 0763764916 | |
| | H.Zamhareer | MOH Lane Muthur-01 | 0772110453 | |
| | A. Azeek | Palanagar Muthur 0-2 | 0754790044 | |
| | R. Rafee | Palanagar Muthur-2 | 0752981196 | |
| | R.M. Haizam | Akkarachenai Muthur-01 | 0775384966 | |
| | R.Rabsan | Jabal Nahar Muthur-2 | 0778164614 | |
| | | | | |
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| | | | | |

**Type and method of consultation:** Focus Group Discussion

**Date of consultation;** 22.12.2024

**Location of consultation**. Pokkani 450, Pudukudiiruppu, Thambalagama.

| | **Issues and contents discussed** | **Participants' responses, views and perception** | **Observations remarks** |
|---|---|---|---|
| 1 | Welcome and introduction to the FGD meeting. | 1.People of the village participated in the meeting voluntarily and freely.<br><br>2.All the participants were Tamil in ethnicity representing males and females of the community.<br><br>3. Discussion was conducted in Tamil language with Tamila and Sinhalese interpretations as required.<br><br>4.The participants were fully educated on the purpose of meeting with them, and they were happy about the clarification of objectives of it, provision of an opportunity to have a face-to-face contact with consultants and supportive staff members. | 1.The meeting was very friendly and enthusiastic for the participants.<br>2. The leadership of organizing it was taken by Mr. Rathnasabapathi, a community member residing in the same village. |
| 2 | General awareness of the project | 1.Almost all of the participants had been aware of the proposed power project as a result of some initial activities carried out by the CEB officers in the Thambalagamam area and meeting them for the official requirements of marking the tower locations, transmission line route and obtaining peoples consent and responses in official forms.<br><br>2. Some participants had heard about the project without much knowledge. They were well informed at the outset of the meeting.<br>3.Having sufficient awareness of the project was facilitated by distributing a detailed Leaflet exclusively prepared for the purpose of enhancing public awareness of the project.<br>4. The leaflet is a good source of correct and easy to understand source of information for those who were not present in the community discussion. The community members willingly took it home. | 1.The leaflet remains a reliable source of project information for the participants in their vernacular; Tamil and sharing of it prevents spread of baseless rumors regarding the project. |
| 3 | Interest in learning more | The meeting provided the community members with an opportunity to learn more information on the project. The leading | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | details on the project | participants asked number of questions on the details of the project and construction activities and as to how they might affect their lands, properties and cultivations. They were satisfied with the detailed account of the project activities. | |
| 4 | Selection of project sites; Tower locations, route of the transmission line and grids | 1. The participants were deeply concerned about the selection of tower locations in their lands and the transmission line route over them.<br>2. They emphasized the need to avoid their valuable properties in the initial stage of the project planning for the transmission line suggesting the use of forest lands.<br>3. They urged the relevant officers of the CEB to consider the adverse impacts on cultivations and settlements and find an alternative route. | 1. Having listened to the people, the CEB officers clarified the policy of minimum impact on human settlements and the possibility of adjustments increasing the height of the transmission line so that people can use their lands for prescribed constructions and cultivations. |
| 5 | Critical issues and concerns about the project sites and proposed activities | 1. Selection of tower locations in their paddy fields and the traversing of the transmission line through the open paddy fields were the two issues of which they were deeply concerned.<br>2.The two issues are much more critical for them due to their perceived fear of working and using agricultural machines, instruments, tractors, Land Master and harvesting equipment in the open paddy fields under the towers and the high-tension power lines.<br><br>. | 1.Protective use of the lands under the power line and suspension towers was clarified by the CEB officers. |
| 6 | Issues of cutting and removal of home garden crops | 1. Expect proper compensation and income restoration. | |
| 7 | Land ownership, land use and issues | 1.The participants claimed the ownership of their residential and agricultural lands by means of Personal Title Deeds, Land deeds granted by the Government, Permits issued by the Divisional Secretariat and encroachment, occupation and cultivation for a considerable period as was mentioned. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 2. According to their general perception land remains the most valuable asset as the primary means of agricultural production in the area.<br>3. Land use falls into the categories of residential, rain-fed paddy cultivation, Irrigated paddy cultivation, home gardens and cultivation of vegetables and grains.<br><br>4. The issue of lacking permanent lands for grazing of cows and goats was also raised in the discussion. | |
| 8 | Use of private lands -Paddy, residential, home garden and other cultivations for the project | 1.Participants revealed the project impacts referring to the ground markings in their private lands of home gardens, cultivations and paddy fields for identification of Tower locations and route (35m in width) of the transmission line.<br>2. They have been informed of the particular use of the private lands for the relevant project activity by the CEB in formal and official manner following relevant regulations.<br>3. They seemed to have recognized the national importance of the proposed power project and expressed no objection to the project.<br>4. They had shared the fact that the project does not acquire private land for it.<br>5. They expect and request to address their grievances duly in an acceptable manner and time. | |
| 9 | Use of state lands, cultivations and public properties for the projects | 1.They also support the maximum use of state land for all purposes of the project so that the project has minimal impact on private lands and properties.<br><br>2.However, some participants expressed their concern on ensuring the protection of wildlife and forest resources in the period of constructions in the state lands coming under different departments and authorities referring to organized crimes committed under the pretext of construction needs by certain perpetrators.<br>3. The possibility of ensuring safety of work force employed in the forest areas by expelling wild elephants was also raised by some of the participants. Consequently, elephants roaming in the settlements might increase. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 4. Exploitation of forest resources and hunting of wild animals by external people in the period of construction was another anticipated issue raised by them. | |
| 10 | Lands of religious temples | 1.The availability of paddy lands owned by the Hindu Kovil in the affected area was also revealed by participants.<br>2. Those lands are cultivated by people in the area whom the Kovils have given them on agreements for seasonal cultivation. | |
| 11 | Livelihoods, sources of income and patterns of cultivation and harvesting | 1 Cultivation of paddy, vegetables, grains, home garden crops are carried out by almost all participants as their major means of sustenance.<br>2.A few families keep cows, buffaloes and goats as a source of income from milk and dairy products.<br>3. Paddy is cultivated for two seasons; Maha and Yala. Maha season is from October to March next year.<br>4. Almost all rain-fed and irrigation-based paddy fields are cultivated in the Maha Season as the region gets the North-Eastern monsoon rains in this period of the year.<br>5. Paddy yields harvest in March and thereafter the fields left for grazing.<br>6. Due to the scarcity of rain and water only a portion of irrigated lands are cultivated with paddy and other types of crops in the Yala season in the year from April to August.<br>7. Collection of firewood from forest areas and selling them is also a means of living for some families in the area.<br>8. Casual labor in farms and construction sited provides livelihood for some poor families.<br>8. State and private sector employees are also available in the area. | |
| 12 | Employment opportunities | 1.Employment opportunities are predominantly confined to the agricultural activities, casual labor and construction.<br>2. Expressed their interest in finding suitable employment in the proposed project. | |
| 13 | Health and safety concerns | 1.The participants expressed their fear of lightning impacts caused by transmission line and suspension towers, and questioned about it in the meeting. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 2.According to their belief and perception the suspension towers attract lightning strikes and consequently people and their properties in the adjacent area are lethally affected.<br>3. The magnitude of the proposed project itself fuels this lethal fear among participants to be closely exposed to the Tower locations and the transmission line traversing over paddy fields and residential facilities.<br>4. The danger of causing cancer as a result of being exposed to high tension power lines was also questioned in the meeting by some participants. | |
| 14 | Socio-economic status | 1.Socio-economic status as perceived by the participants remains at a satisfactory level of economic capacity sufficient for meeting basic needs and fulfilling other needs of day-to-day life depending on seasonal income of agricultural products for most of the village residents.<br><br>2. Housing is available for all but the quality remains at different levels from small houses to well-constructed modern houses.<br><br>3.Those employed in state sector institutions, businesses and abroad have constructed big and beautiful houses furnished with modern domestic durables. | |
| 15 | Sources of energy and use of electricity | 1 Firewood collected from own lands, bush forest areas and lands of others, remains the main source of energy for cooking.<br>2.Electricity is available for most households and predominantly used for the purpose of illuminating the house.<br>3. TV sets, radios, Music instruments, water motors, electronic kitchenware, refrigerators, mobile phones, computers are available accounting for a considerable consumption of electricity as mentioned by the participants.<br><br>4.Kerosine oil is used for illumination of houses without electricity in the area.<br><br>5. For vehicles, agricultural equipment, tractors, machines and motors they use petrol and diesel as required. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| 16 | Status of women and gender equality | 1.Gender relations still remains as structured in the traditional culture and society with some changes resulting from higher education of female and their employment.<br>2.Accordingly male dominance is still prevalent with a subordinate role of females in decision making. | |
| 17 | Education and child protection | 1. Schools are functioning well in the area, but the absenteeism of students is high according to the community members.<br>2. School dropout rate increases after G.C.E. Ordinary Level Examination in Grade 11.<br><br>3 Employment of school dropouts and prevalence of child labor in the area were also revealed by participants. | |
| 18 | Critical issues affecting people and their economy and social life | 1 | |
| 19 | Infrastructure facilities | 1.Access roads to settlements and public services and facilities are available for the community.<br>2.Hyginic water supply for drinking purposes' is available. | |
| 20 | Access to social welfare, justice and benefits of development | 1.Some participants receive monthly "Elders' grant, Aswesuma grant, Farmers. Pension pay at different rates as revealed by them.<br>2.Some claimed that they deserve social welfare grants, but the local authorities have deprived them of such financial grants.<br>3 The participants emphasized the adverse impacts of the proposed project and<br>Due recognition of their demands in return as the national development proceeds at a particular cost to affected families. | |

| FGD Location: Thambiluvil | | | 22.12.2024 |
|---|---|---|---|
| | பெயர் / பெயர் | இடம் / முகவரி | தொலைபேசி எண் / தொலைபேசி எண் | கையொப்பம் / கையொப்பம் |
| | K. Thushani | Kattimodai, Thampalakamam | 075 - 5677134 | K |
| | T. Thavanayakam | | 076 - 4375214 | T |
| | R. PriyatharShan | Puthukudiyiruppu Thampalakamam | 0782632069 | R. Priyan |
| | R. முன்பாண்டி | பெரும்பள்ளி தம்பலகாமம் | - | R. முன்பாண்டி |
| | S. கிரிசிகன் | கன்னிமேடு, தம்பலகாமம் | 0711192147 | S. Kirshikan |
| | வ. பிரதீப் | பொதுகாணி, தம்பலகாமம் | - | வ. பிரதீப் |
| | J. Kavishayan | Pothukerny Thampalakamam | 0719114361 | J. |
| | J. பிரதீபன் | Pothukerny, thampalakamam | - | J. பிரதீபன் |
| | J. Akilan | Pothukerny, Thampalakamam | 076 4781893 | J. |
| | B. நிர்மலராஜ் | பொதுகாணி, தம்பலகாமம் | 0774707036 | B. |
| | [illegible] | [illegible] | [illegible] | [illegible] |
| | [illegible] | [illegible] | 0766279177 | [illegible] |

| FGD Location: Thambalagamuwa | | | 22.12.2024 | |
|---|---|---|---|---|
| | பெயர் | முகவரி | தொலைபேசி எண் | கையொப்பம் |
| | [illegible] | [illegible] | 0773385778 | [illegible] |
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**Type and method of consultation**: Focus Group Discussion

**Date of consultation;** 22.12.2024

**Location of consultation.** Kattaparichchan, Pattiadikuda, Muthur. Kunnayakam road.

| | **Issues and contents discussed** | **Participants' responses, views and perception** | **Observations remarks** |
|---|---|---|---|
| 1 | Welcome and introduction to the FGD meeting. | 1. The FGD was organized and conducted with the voluntary and free participation of community members from the Kattaparichchan area which is under the impacts of the project.<br>2. The discussion was started with an introduction to the proposed project and main objectives of meeting project affected and other concerned parties as public consultation for the proper planning and implementation of the project.<br><br>3.The introduction convinced them of the significance of this meeting with them for responsible disclosure of information on the proposed project and listening to community members and collecting important information regarding community and their responses.<br><br>2. All male and female participants were Tamil in Ethnicity.<br><br>3. The discussion was conducted in both Tamil and Sinhalese languages without any communication gap.<br><br>4. The community members enthusiastically participated in the discussion and were very happy with the opportunity given for a live meeting with consultants. They expressed their gratitude for recognizing them as important stakeholders of the project.<br><br>5. They expressed their confidence in considering their views by the relevant authorities of the project. | 1.The meeting was conducted in a friendly manner. |
| 2 | General awareness of the project | 1.The participants clearly mentioned that they were aware of the proposed power project because of some initial activities carried out by the CEB officers in the communities in Muthur area. The CEB officers have met them for the official requirements of marking the tower | 1.The leaflet remains a reliable source of project information for the participants in their vernacular; Tamil and sharing of it |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | locations, transmission line route and obtaining peoples consent and responses in official forms.<br><br>2. Some participants had heard about the project without much knowledge of project activities. They were sufficiently informed at the beginning of the discussion.<br><br>3.Awareness of the project was further developed by distributing a detailed Leaflet exclusively prepared for that purpose.<br><br>4. The leaflet, printed in Tamil and Sinhalese languages, is a good source of correct and easy to understand source of reliable information for those who were not present in the community discussion. The community members were given leaflets to be distributed to required community members. | prevents spread of baseless rumors regarding the project. |
| 3 | Interest in learning more details on the project | 1.The participants showed a special interest in learning more about the project. The discussion provided the community members with an opportunity to elicit more information on the project. The leading participants asked number of questions on the details of the project and construction activities of towers. And, the way they might affect their lands, properties and cultivations.<br><br>2.They seemed satisfied with the detailed account of the project activities. | |
| 4 | Selection of project sites; Tower locations, route of the transmission line and grids | 1. The participants to be affected by the project were deeply concerned about the selection of tower locations on their paddy fields and the transmission line route over them.<br><br>2. They also accepted the technical importance of selecting the transmission line route through paddy fields but emphasized the need to avoid their valuable properties in the initial stage of the project planning. | 1. Having listened to the people, the CEB officers clarified the policy of minimum impact on human settlements and the possibility of adjustments increasing the height of the transmission line so that people can use their lands for prescribed |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 3. They requested CEB to consider the adverse impacts on cultivation and settlements and find less harmful line route. | constructions and cultivations. |
| 5 | Critical issues and concerns about the project sites and proposed activities | 1. The two issues raised as critical are the selection of tower locations in their paddy fields and the selection of the transmission line through the open paddy fields.<br><br>2.Those two issues are perceived because of the fear of working and using agricultural machines, instruments, tractors, Land Master and harvesting equipment in the open paddy fields under the tower locations and the high-tension power lines.<br><br>3. These two activities related possible impacts on cultivation of paddy according to the annual cultivation calendar, construction related disturbances on work, proper irrigation and protection of harvest were the other matters raised.<br><br>4. The emphasized the adverse impacts of losing seasonal income of their cultivations, cost of investments in cultivation of paddy, on their survival as they predominantly depend on the agricultural products.<br><br>5. Dependence on personal and bank loans for the cultivation of paddy lands makes it makes it compulsory to ensure yielding the anticipated quantity of harvest to settle the loans and sustain the cultivation.<br>. | 1.Protective use of the lands under the power line and suspension towers was clarified by the CEB officers. |
| 6 | Issues of cutting and removal of home garden crops | 1. Some participants raised the question of protecting their home garden crops; coconut, mango and fruits.<br><br>2. They stressed the difficulty of growing and protecting them by facing various challenges including the elephant attacks and other wildlife.<br>3. Accordingly, they proposed to avoid cultivation from the project. | 1. |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| 7 | Land ownership, land use and issues | 1.The participants claimed the ownership of their residential and agricultural lands by means of Personal Title Deeds, Land deeds granted by the Government, Permits issued by the Divisional Secretariat and encroachment, occupation and cultivation for a considerable period.<br><br>2. They also shared the perception of land as the most valuable asset as the primary means of agricultural production in the area for them.<br><br>3. Their land use falls into the categories of residential, rain-fed paddy cultivation, Irrigated paddy cultivation, home gardens and cultivation of vegetables and grains and grazing of cows and goats.<br><br>4. Lack of permanent lands for grazing cows and goats was also raised in the discussion as an issue they struggle with. | |
| 8 | Use of private lands -Paddy, residential, home garden and other cultivations for the project | 1.The farmers expressed their views on the project impacts referring to the ground markings in their cultivations and paddy fields for the identification of Tower locations and route (35m in width) of the transmission line.<br><br>2. The participants have been informed of the particular use of the private lands for the relevant project activity by the CEB in a formal and official manner following relevant regulations.<br><br>3. They have recognized the national importance of the proposed power project and expressed no objection to the project.<br><br>4.The farmers were aware of the construction of the towers on their land without land acquisition.<br><br>5. The farmers made a strong request to address their grievances duly in an acceptable manner and on time. | |
| 9 | Use of state lands, | 1.They also support the maximum use of state land for all purposes of the project so that the | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | cultivations and public properties for the projects | project has minimal impact on private lands and properties.<br><br>2.However, some participants expressed their concern on ensuring the protection of wildlife and forest resources in the period of constructions in the state lands coming under different departments and authorities referring to organized crimes committed under the pretext of construction needs by certain perpetrators.<br><br>3. The possibility of ensuring safety of work force employed in the forest areas by expelling wild elephants was also raised by some of the participants. Consequently, elephants roaming in the settlements might increase.<br><br>4. Exploitation of forest resources and hunting wild animals by external people in the period of construction was another anticipated issue raised by them. | |
| 10 | Lands of religious temples | 1.The availability of lands including paddy fields owned by the Hindu Kovills in the area was mentioned by the participants.<br><br>2. Those paddy fields are cultivated by farmers whom the Kovils have assigned them on agreements. | |
| 11 | Livelihoods, sources of income and patterns of cultivation and harvesting | 1 Cultivation of paddy, vegetables, grains, home garden crops are carried out by almost all participants as their major means of sustenance.<br><br>2.A few families keep cows, buffaloes and goats as a source of income from milk and dairy products.<br>3. Fishing is also practiced as means of living by some families. They practice it in the lagoons in the area.<br><br>4. Paddy is cultivated for two seasons; Maha and Yala. Maha season is from October to March next year. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 5. Almost all rain-fed and irrigation-based paddy fields are cultivated in the Maha Season as the region gets the North-Eastern monsoon rains in this period of the year.<br><br>6. Paddy yields harvest in March and thereafter the fields left for grazing.<br><br>7. Due to the scarcity of rain and water only a portion of irrigated lands are cultivated with paddy and other types of crops in the Yala season in the year from April to August.<br><br>8. Collection of firewood from forest areas and selling them is also a means of living for some families in the area.<br><br>9. Casual labor in farms and construction sited provides livelihood for some poor families.<br><br>10. State and private sector employees are also available in the area. | |
| 12 | Employment opportunities | 1.Employment opportunities are predominantly confined to the agricultural activities, casual labor, construction and business.<br>2. Expressed their interest in finding suitable employment in the proposed project. | |
| 13 | Health and safety concerns | 1.The participants expressed their deep concern on the perceived fear of lightning impacts caused by transmission line and suspension towers and questioned about it in the meeting.<br><br>2.According to their belief and perception the suspension towers attract lightning strikes and consequently people and their properties in the adjacent area are lethally affected.<br><br>3. The magnitude of the proposed project itself fuels this lethal fear among participants to be closely exposed to the Tower locations and the transmission line traversing over paddy fields and residential facilities. | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | 4. The danger of causing cancer as a result of being exposed to high tension power lines was also questioned in the meeting by some participants.<br><br>5. Wild elephants roaming in settlements have become a serious problem of safety and protection of home gardens and crops including paddy. There is no Elephant -fence in the area.<br>6.Revealed that there are patients suffering from kidney disease and taking treatment. | |
| 14 | Socio-economic status | 1. Socio-economic status as perceived by the participants remains at a satisfactory level of economic capacity sufficient for meeting basic needs and fulfilling other needs of day-to-day life depending on the seasonal income of agricultural products for most of the village residents.<br><br>2. Housing is available for all, but the quality remains at different levels from small houses to well-constructed modern houses.<br><br>3.Those employed in state sector institutions, businesses and abroad have constructed big and beautiful houses furnished with modern domestic durables. | |
| 15 | Sources of energy and use of electricity | 1 Firewood collected from own lands, bush forest areas and lands of others, remains the main source of energy for cooking.<br>2. Some families use LP gas as source of energy for cooking.<br>3.Electricity is available for most households and predominantly used for the purpose of illuminating the house.<br>4. TV sets, radios, Music instruments, water motors, electronic kitchenware, refrigerators, mobile phones, computers are available accounting for a considerable consumption of electricity as mentioned by the participants.<br><br>5.Kerosine oil is used for illumination of houses without electricity in the area.<br>6. There are families without access to electricity even though transmission lines run | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
|---|---|---|---|
| | | over the area. Due to issues of land ownership those families remain without electricity.<br><br>6. For vehicles, agricultural equipment, tractors, machines and motors they use petrol and diesel as required. | |
| 16 | Status of women and gender equality | 1.Gender relations still remains as structured in the traditional Tamil culture and society.<br><br>2.Accordingly male dominance is prevalent with a subordinate role of females in decision making. However, higher education and employment of women have empowered women to reduce gender inequality to some extent. | |
| 17 | Education and child protection | 1. Schools are functioning well in the area, but the absenteeism of students is high according to the community members.<br><br>2. School dropout rate increases after G.C.E. Ordinary Level Examination in Grade 11.<br><br>3 Employment of school dropouts and prevalence of child labor in the area were also revealed by participants. | |
| 18 | Critical issues affecting people and their economy and social life | 1.Inceasing cost of agricultural productions and the unreasonable lower prices of Paddy was cited as a serious issue. | |
| 19 | Infrastructure facilities | 1.Access roads to settlements and public services and facilities are available for the community.<br>2.Hyginic water supply for drinking purposes' is available. | |
| 20 | Access to social welfare, justice and benefits of development | 1.Some participants receive monthly "Elders' grant, Aswesuma grant, Farmers. Pension pay at different rates as revealed by them.<br><br>2.Some claimed that they deserve social welfare grants, but the local authorities have deprived them of such financial grants.<br><br>3. The participants emphasized the adverse impacts of the proposed project and | |

| | Issues and contents discussed | Participants' responses, views and perception | Observations remarks |
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| | | Due recognition of their demands in return as the national development proceeds at a particular cost to affected families.<br><br>4. families without access to electricity have requested a power connection from the CEB but still the problem remains unsolved as the issue remains beyond its control and requires approval of higher authority. | |

| FGD Location: | Kaddaparichchan | | 22.12.2024 | |
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| | பெயர் / பெயர் | இடம் / முகவரி | முன்னாள் எண் / தொலைபேசி எண் | கையொப்பம் / கையொப்பம் |
| 01 | க. பழனிவேல் | கடைப்பிரிச்சான்-07 | 0771274963 | |
| 02 | இ. இந்திரஜித் | கடைப்பிரிச்சான்-7 | 0771791 | |
| 03 | K. திருமகள் | கடைப்பிரிச்சான்-07 | 0757001594 | |
| 04 | A. Sumathy | Kaddaiparichchan-7 | 0752146441 | |
| 05 | M. ANOTAN | Kaddaiparichchan-7 | 0770563618 | |
| 06 | தி. [illegible] | கடைப்பிரிச்சான்-07 | 0753188905 | |
| 07 | [illegible] | கடைப்பிரிச்சான் 07 | 0776472609 | |
| 08 | இ. [illegible] | கடைப்பிரிச்சான் -07 | 0778049849 | |
| 09 | [illegible] | கடைப்பிரிச்சான் -07 | 0774331495 | |
| 10 | [illegible] | கடைப்பிரிச்சான்-07 | 0756456751 | |
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**Type and method of consultation.** Focus Group Discussion

**Date of consultation;** 07.01.2025

**Location of consultation.** Muthur. Kunnayakam road.

| | **Issues and contents discussed** | **Participants' responses, views and perception** | **Observations remarks** |
|---|---|---|---|
| 1 | Welcome and introduction to the FGD meeting. | 1 This is the second focused group discussion held with the farmers and residents in Muthur. It was organized with the support of Mr. K.M.A. Rahuman, President of farmers' Organization in Muthur.<br>2. This second FG had a wider participation of paddy land owners affected by the proposed power project as well as some other famers who were interested in the project activities in their area.<br>3. The discussion was started with a detailed introduction to the proposed project activities in the paddy fields and main objectives of meeting project affected and other concerned parties as public consultation for the proper planning and implementation of the project.<br><br>3.The introduction provided in Tamil language convinced them of the significance of this meeting with them for responsible disclosure of information on the proposed project and listening to community members and collecting important information regarding community and their responses.<br>4. The three representatives of the AIIB who were in field visit also observed the FG with the officers and engineers of the CEB.<br><br>5. All male participants were Muslim in Ethnicity and were very enthusiastic in leaning about the project impacts.<br><br>3. The discussion was conducted in both Tamil and Sinhalese languages without any communication gap.<br><br>4. The community members voluntarily participated in the discussion and were very happy with the opportunity given for a live meeting with consultants. They expressed their gratitude for recognizing them as important stakeholders of the project. | 1.The meeting was conducted in a friendly manner. |

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| | | 5. They also expressed their confidence in considering their views by the relevant authorities of the project. | |
| 2 | General awareness of the project | 1.The participants affected by the project clearly mentioned that they were aware of the proposed power project because of some initial activities carried out by the CEB officers in the communities in Muthur area. The CEB officers have met them for the official requirements of marking the tower locations, transmission line route and obtaining peoples consent and responses in official forms.<br><br>2. Some participants had little understanding of the project and started arguing on the importance of being made fully aware of the project activities by the relevant authorities including the GN and DS in the Muthur. Later it was clear that those members remained out side the project impacted areas and as a result they had not been consulted for the initial activities of marking of tower locations and submission of notices of formal activities by the CEB and the DS. However the DS office had educated all the GNs working in those areas to make the farmers and residents aware of the proposed project.<br><br>3.Awareness of the project was further developed by distributing a detailed Leaflet exclusively prepared for that purpose.<br><br>4. The leaflet, printed in Tamil and Sinhalese languages, is a good source of correct and easy to understand source of reliable information for those who were not present in the community discussion. The community members were given leaflets to be distributed to required community members. | 1.The leaflet remains a reliable source of project information for the participants in their vernacular; Tamil and sharing of it prevents spread of baseless rumors regarding the project. |
| 3 | Interest in learning more details on the project | 1.The participants showed a special interest in learning more about the project. The discussion provided the community members with an opportunity to elicit more information on the project. The leading participants asked number of questions on the details of the project and construction activities of towers. And, the way they might affect their lands, properties and cultivations. Detailed account | |

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| | | on project activities was provided by the CEB officers working on the project.<br><br>2.They seemed satisfied with the information of the project activities. | |
| 4 | Selection of project sites; Tower locations, route of the transmission line and grids | 1. The participants to be affected by the project expressed their deep concern about the selection of tower locations on their paddy fields and the transmission line route over them.<br><br>2. With responsible clarifications they also recognized the technical importance of selecting the transmission line route through paddy fields. | 1. Having listened to the people, the CEB officers clarified the policy of minimum impact on human settlements and the possibility of adjustments increasing the height of the transmission line so that people can use their lands for prescribed constructions and cultivations. |
| 5 | Critical issues and concerns about the project sites and proposed activities | 1. The two main issues raised as critical are the selection of tower locations in their paddy fields and the selection of the transmission line through the open paddy fields.<br><br>2.Those two issues seemed to have been perceived because of the fear of working and using agricultural machines, instruments, tractors, Land Master and harvesting equipment in the open paddy fields under the tower locations and the high-tension power lines.<br><br>3. These two activities related possible impacts on cultivation of paddy according to the annual cultivation calendar, construction related disturbances on work, proper irrigation and protection of harvest were the other matters raised.<br><br>4. They also stressed the adverse impacts of losing seasonal income of their cultivations, cost of investments in cultivation of paddy, on their survival as they predominantly depend on the paddy production.<br><br>5. Dependance on personal and bank loans for the cultivation of paddy lands makes it compulsory to yield the anticipated quantity of | 1.Protective use of the lands under the power line and suspension towers was clarified by the CEB officers. |

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| | | harvest to settle the loans and sustain the cultivation. | |
| 6 | Issues of cutting and removal of home garden crops | They did not refer to such a requirement in their paddy lands. | 1. |
| 7 | Land ownership, land use and issues | 1.The participants claimed the ownership of their paddy lands by means of Personal Title Deeds, Land deeds granted by the Government and documents of lease and tenancy.<br><br>2. They also shared the perception of land as the most valuable asset as the primary means of agricultural production in the area for them.<br><br>3. Their land use falls into the categories of rain-fed paddy cultivation, Irrigated paddy cultivation, cultivation of vegetables, grains and grazing of cows and goats.<br><br>4. Lack of permanent lands for grazing cows and goats was also raised in the discussion as an issue they struggle with. | |
| 8 | Use of private lands -Paddy, residential, home garden and other cultivations for the project | 1.The farmers expressed their views on the project impacts referring to the ground markings in their paddy fields for the identification of Tower locations and route (35m in width) of the transmission line.<br><br>2. The participants have been informed of the particular use of the private lands for the relevant project activity by the CEB in a formal and official manner following relevant regulations.<br><br>3. They understand the national importance of the proposed power project and expressed no objection to the project.<br><br>4.The farmers were aware of the construction of the towers on their land without land acquisition except the plot of tower footing.<br><br>5. The farmers made a strong request to address their grievances duly in an acceptable manner and on time. | |

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| 09 | Livelihoods, sources of income and patterns of cultivation and harvesting | 1 Cultivation of paddy, vegetables, grains, home garden crops are carried out by almost all participants as their major means of sustenance.<br><br>2.A few families keep cows, buffaloes and goats as a source of income from milk and dairy products.<br><br>3. Paddy is cultivated for two seasons; Maha and Yala. Maha season is from October to March next year.<br><br>4. Almost all rain-fed and irrigation-based paddy fields are cultivated in the Maha Season as the region gets the North-Eastern monsoon rains in this period of the year.<br><br>5. Paddy yields harvest in March and thereafter the fields left for grazing. | |
| 10 | Employment opportunities | 1.Employment opportunities are predominantly confined to the agricultural activities, casual labor, construction and business.<br>2. Expressed their interest in finding suitable employment in the proposed project. | |
| 11 | Health and safety concerns | 1.The participants expressed their deep concern on the perceived fear of lightning impacts caused by transmission line and suspension towers and questioned about it in the meeting.<br><br>2.According to their belief and perception the suspension towers attract lightning strikes and consequently people and their properties in the adjacent area are lethally affected.<br><br>3. The magnitude of the proposed project itself fuels this lethal fear among participants to be closely exposed to the Tower locations and the transmission line traversing over paddy fields.<br><br>4.Revealed that there are patients suffering from kidney disease and taking treatment. | |

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| 12 | Socio-economic status | 1. Socio-economic status as perceived by the participants remains at a satisfactory level of economic capacity sufficient for meeting basic needs and fulfilling other needs of day-to-day life depending on the seasonal income of agricultural products for most of the families of participants.<br><br>2. Housing is available for all, but the quality remains at different levels from small houses to well-constructed modern houses. | |

### 15.3.2 - Stakeholder consultations - Divisional Secretariats in the project affected area.

| | Date and place | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| 1 | 23.12.2024. Divisional Secretariat-Town and Gravets. | 1.Mr. N. Madiwannan-DS.<br>2.Mrs. Derik-Administrative Officer<br>3.Mr. A.S.M. Riyath-DD Planning.<br>4.Mr. Jayakanthan-AOGN | Key officials including Mr. N. Madiwannan (Divisional Secretary), Mrs. Derik (Administrative Officer), Mr. A.S.M. Riyath (Deputy Director Planning), and Mr. Jayakanthan (AOGN) are aware of the proposed project and its activities within the Kappalthurai GN Division. They have received all necessary information available at the DS office concerning both the Divisional Secretariat division and Kappalthurai GN division. There are no issues regarding the grid location at Kappalthurai, as the land is owned by the Ceylon Electricity Board (CEB). The Divisional Secretariat has committed to communicating all project-related information to the Grama Niladhari (GN) officers during their weekly meetings at the DS office. To date, no complaints have been reported from residents of the Kappalthurai area. There are no planned development activities in the project area, although other solar power projects are slated for implementation elsewhere. After reviewing the project details, the officials expressed their consent to the project design. |
| 2 | 23.12.2024. Divisional Secretariat-Kinniya. | 1.Mr. M.H. Mohamed-DS | Mr. M.H. Mohamed, the Divisional Secretary, is aware of the proposed project. He has no major concerns regarding the power transmission line passing through his division, noting that it has minimal impact on local settlements. He provided additional information regarding tower constructions and the routing of power lines over paddy lands. He emphasized the importance of paying compensation for any damages caused by the project. Mr. Mohamed understands his role in damage assessment and the Grievance Redress Mechanism (GRM). He has committed to supporting the project through his office staff and facilitating communication with Grama Niladhari officers. He raised no objections to the project. To minimize disruption to local rice production, he recommended that construction activities take place during non-cultivation periods. There are no other |

| | Date and place | Participants in the meeting | Key points and issues discussed |
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| | | | development projects planned within the project area under his jurisdiction. |
| 3 | 23.12.2024. Divisional Secretariat-Muthur. | 1.Mr. M.B.M. Mubarak-DS<br>2.Mrs.Silmiya-AO.<br>3.Mr. Prabath-DDP.<br>4. Mr. Nifas-CC of the DS office | Key officials including Mr. M.B.M. Mubarak (Divisional Secretary), Mrs. Silmiya (Administrative Officer), Mr. Prabath (Deputy Director Planning), and Mr. Nifas (CC of the DS office) are well aware of the project and have received additional information to share with Grama Niladhari officers across the division. Mr. Mubarak emphasized the importance of providing compensation at the highest rate to satisfy affected landowners. He expressed readiness to support the project by providing all necessary assistance through his staff. The project team is urged to maximize avoidance of impacts on private properties to minimize adverse effects on people's livelihoods, including cultivation. He welcomed the fact that the project will not cause resettlement of families or institutions and reported no complaints from communities within the affected GN divisions. Mr. Mubarak pledged to inform all Grama Niladharis about the project at the upcoming Monday meeting. He also highlighted the importance of consulting with farmers to address cultivation-related issues arising from project activities, aiming to reach agreements that prevent disruptions to timely and proper use of paddy lands. Overall, he expressed a positive outlook on the project's contribution to national development and is prepared to assist with damage estimations and compensation payments as required by the Ceylon Electricity Board (CEB). |
| 4 | 23.12.2024. Divisional Secretariat-Thambalagamuwa | 1.Mrs. J. Shripathi-DS | Mrs. J. Shripathi, the Divisional Secretary, expressed her awareness and support for the project. She has assisted the Ceylon Electricity Board (CEB) offices in carrying out the initial project activities and ensured that all Grama Niladharis (GNs) are informed about the tower construction and transmission line works in the area. She reported receiving no public complaints related to the project. Mrs. Shripathi emphasized that compensation for any damages and losses caused by the project should be fair and acceptable to affected families and individuals to prevent public unrest. She maintains a positive outlook on the |

| | Date and place | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| | | | project and is ready to provide support as needed at both the office and GN levels. Additionally, she has provided relevant information and granted permission to contact any officer for further details about the GN divisions and local communities. |
| 5 | 07.01.2025. Second round consultation. With **the Three AIIB Representatives** Divisional Secretariat-Muthur | 1.Mr. M.B.M. Mubarak-DS.<br><br>2. Three AIIB Representatives. | Mr. M.B.M. Mubarak, Divisional Secretary, along with three AIIB representatives, discussed concerns raised by a few individuals claiming ownership of certain lands within the area designated for the Associated Facility of the Sampur project. The consultants requested further details to facilitate due diligence on these claims. Mr. Mubarak stated that currently, there is no documented evidence of private land ownership in the area, and he has communicated this information to the Grama Niladharis. He clarified that prior to 2014, the Sampur land was under the Forest Department's jurisdiction, during which time some farmers cultivated the land without official permission. Additionally, the discussion highlighted the need to increase awareness of the Divisional Secretary's role in the Grievance Redress Mechanism (GRM) and Grievance Redress Committee (GRC). |
| 6 | 07.01.2025. Second round consultation. With **the Three AIIB Representatives** Divisional Secretariat-Thambalagamuwa | 1.Mrs. J. Shripathi-DS | Mrs. J. Shripathi, Divisional Secretary, expressed her awareness of the project and her readiness to provide assistance as needed. She noted that most farmers in the area own between 2 to 3 acres of land. Mrs. Shripathi emphasized the importance of paying fair compensation for any losses caused by the project to affected parties. |
| 7 | 10.02.2025. Third round consultation. Divisional Secretariat-Muthur | 1.S.I. Nifas- Chief Management Service Officer.<br>2. K.M.M. Jaroom-Admin. GN.<br>3. G. Subathirai-GN-Iruthayapuram. | S.I. Nifas (Chief Management Service Officer), K.M.M. Jaroom (Administrative GN), and G. Subathirai (GN – Iruthayapuram) confirmed that all Grama Niladharis (GNs) have been informed about the project by the Divisional Secretariat officers. Information leaflets have been distributed to the GNs to help them provide clear explanations about the project to interested parties, including affected individuals. No claims of land ownership related to the Associated Facility or proposed Grid site at Sampur have been reported, though they committed to further inquiries in consultation with relevant GNs. Additionally, |

| | Date and place | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| | | | they gathered information on gender-related issues and services offered by the Women's Affairs Section, which include job training, micro-credit, economic development, self-employment support, tailoring, and home gardening. Social challenges reported within the division include early marriages, domestic violence, second marriages, neglect of childcare, migration for foreign employment, and extramarital affairs. Each GN division has an active Women's Society addressing these concerns. |
| 8 | 10.2.2025. Second round consultation- Divisional Secretariat - Town and Gravets. | 1 A.S. Riyath- DD. planning. | During the second-round consultation at the Divisional Secretariat – Town and Gravets, A.S. Riyath (Deputy Director of Planning) confirmed that the Divisional Secretary had distributed project information and leaflets to all Grama Niladhari (GN) divisions, ensuring comprehensive awareness of the project activities. These matters were discussed in detail at a GN meeting held at the DS office. To date, no issues or complaints have been raised by the GNs or families. Additional information was gathered from the Section of Women's Affairs, highlighting ongoing social concerns such as family disputes, domestic violence, harassment, and discrimination. Each GN division maintains an active Women's Society, and job training as well as self-employment programs are provided to support community development. |
| 9 | 10.2.2025. Third round consultation- Divisional Secretariat- Thambalagamuwa | 1.J. Nihath. -PCC. | During the third-round consultation at the Divisional Secretariat – Thambalagamuwa, J. Nihath (PCC) confirmed that project information and leaflets had been distributed to all Grama Niladhari (GN) divisions, enabling them to effectively explain the project to community members and address any potential misunderstandings. These discussions took place during GN meetings, and no issues or complaints regarding the project have been reported by the community so far. The Section of Women's Affairs at the DS office actively provides services aimed at women's development, including self-employment training and home gardening programs. However, issues such as gender discrimination and violence against women |

| | Date and place | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| | | | and children have been observed within the area. |

### 15.3.3. - Stakeholder consultations – Secretaries of Pradeshiya Sabha in the project affected area.

| | Date | Officers consulted | Key points of discussion |
|---|---|---|---|
| 1 | 9.4.2025 | Randika Desapriya- Secretary, Pradeshiya Sabha- Town and Gravets | 1. He is aware of the proposed project<br>2. More details on the project activities in the Kappalthurai area in the Muththu Nagar were provided.<br>3. The Pradeshiya Sabha has no objection to the project.<br>4. He is concerned with the construction and maintenance of local roads, cemeteries, marketplaces, libraries and some of the playgrounds.<br>5. He emphasized the need to consult him with reference to any project activity affecting local roads and other common places controlled and maintained by the Pradeshiya Sabha, before construction commenced.<br>6. Any damage to the local roads due to project activities should be repaired by the project itself as the PA lacks funds.<br>7. Need to keep the PS informed of the project activities in settlements as new members are to be elected in May 2025 and the PS become active again with reference to issues of people and development activities in the areas of local governance. |
| 2 | 9.4.2025 | M.I.M. Jamsith- Secretary, Pradeshiya Sabha- Muthur. | 1. The secretary is well aware of the proposed power project.<br>2. A detailed account of the proposed project activities at Sampur GSS, Kappalthurai GSS and the transmission line and suspension tower construction was provided.<br>3. As the new members of the PA are to be elected in May 2025 he expressed his ideas as the secretary.<br>4. There is no objection to the proposed project activities in the area under the PS governance.<br>5. Local roads around 1000 km. cemeteries, local marketplaces, some playgrounds and libraries are maintained by the PS. |

| | Date | Officers consulted | Key points of discussion |
|---|---|---|---|
| | | | 6. The secretary is concerned with the protection of local roads used for the transportation of project materials and requests careful use of them.<br>7. Asked to ensure the existing quality of local roads affected by the Project by regular maintenance and repairs at the cost of the Project.<br>8. Any project activity affecting public roads and other public places needs to be commenced after consulting the secretary of the PS. |
| 3 | 9.4.2025 | M. Aswath-Secretary, Pradeshiya Sabha- Kinniya | 1. The secretary has a good understanding of the proposed power project.<br>2. He had a special interest in learning more details about the project activities in area under the governance of the Kinniya PS.<br>3. Full account of the whole project and its impacts was provided.<br>4. He is willing to support the Project in his capacity as the secretary of the Kinniya PS.<br>5. The PS election is to be conducted in May 2025 and PS members will be elected accordingly.<br>6. The PS maintains local roads, cemeteries, marketplaces, libraries, and some playgrounds.<br>7. He requested to use those common roads and other facilities with due care and protection of them.<br>8. As the PS lacks funds, the project should repair damage caused to local roads and other public properties.<br>9. CEB should consult him regarding any activity affecting the local roads and other places in the area and the public use of them in the time of project construction. |
| 4 | 9.4.2025 | B.U.A.S. Udagedara-Secretary, Pradeshiya Sabha- Thambalagamuwa. | 1.The secretary is aware of the proposed project and has expressed his interest in learning more details of the project activities to be carried out in the Thambalagamuwa PS area.<br>2. Project information was provided.<br>3. He expressed his support in carrying out the project activities in the area under the Thambalagamuwa PS.<br>4. The PS members are to be elected in the election in May 2025.<br>5. Local roads, cemeteries, marketplaces, libraries and certain playgrounds in the |

| | Date | Officers consulted | Key points of discussion |
|---|---|---|---|
| | | | Thambalagamuwa area are maintained and controlled by the PS office.<br>6. The CEB needs to keep the secretary informed of project activities affecting or disturbing the public use of local roads and other public places maintained by the PS.<br>7.Damage to PS controlled properties should be repaired by the Project at its cost as the PS is hardly find funds for such requirements. |

## 15.3.4. - Stakeholder consultations – GN consultation Report of Affected GN Divisions

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| 1 | **Town and Gravets - DS** | | | The Grama Niladhari of the Muththunagar has an important role to be played as the official representative of the DS in making decisions on impacts of project activities, assessment of damage and payment of compensation and dissemination of reliable information at the grass root level.<br><br>Discussions with the GN of the Muththunagar were conducted at the DS office on 23.12.2024, and 10.2.2025 and he was contacted 3 times to collect GN level information required for the project.<br>The administrative GN at the DS office, Mr. K.M.M. Jaroom facilitated the meeting of GNs in the DS Division. |
| | Muththunagar-GN | 229F | R.Janapriyan | The GN did not refer to any land issue caused by the proposed project.<br><br>The GN asked for more information on the project activities in his division and all available information was provided.<br>Copies of a leaflet specially prepared for increasing public awareness of the Proposed GSS at Kappalthurai and Sampur and the transmission line between them were handed over to be distributed among community members.<br>As revealed, people are highly concerned with possible lightning impacts of Transmission lines and Towers. Clarifications were provided according to the explanations of the CEB.<br>Next question of peoples' concern referred to getting proper compensation for project caused damage and losses.<br>People expect compensation for land used for the project and damage at the maximum market rates. |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | The GN was concerned with the project imposed restrictions on the future use of lands for construction of housing facilities. |
| 2 | Thambalagamuwa-DS | | | The three GN Officers play an important role as the official representative of the DS in making decisions on impacts of project activities, assessing damage and payment of compensation and dissemination of reliable information at the grass root level.<br>They were interviewed at the DS Office on 23.12.2024, and 10.2.2025 and contacted 3-5 times to collect GN level information required for the project. |
| | Kovil Kudiyiruppu-GN | 228K | M.M.Mohammed Nisaam | The DS had made the GN aware of the proposed project by the CEB at a meeting in the office.<br>More information was provided in response to use of lands for the construction of Towers and traversing of the TL over paddy fields and other areas.<br>The first question referred to any land acquisition for the project which may cause serious issues for people. The CEB requirement of land for the Tower footings and payment of compensation for the entire land area covered by the suspension tower were clarified to share with community members.<br>Compensation at market price for all damages and losses were emphasized at the meeting.<br>Information on compensation and the replacement policy of the project was also communicated.<br>The GN questioned about the project imposed restrictions on the future use of lands for construction of housing facilities<br>Lightning impacts of the TL and Towers were also raised referring to community attitudes of such dangers. |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | The CEB clarification on this issue was also communicated. |
| | Thambalagamuwa-GN | 228A | V. Sudarshani | The GN had learned about the proposed project and the activities to be carried out by the DS Office, at the GNs meeting held by the DS Mrs. J. Sripathy.<br>Additional information was provided with the Leaflet specially prepared to develop community awareness of the proposed project.<br>According to the GN, landowners are worried about in case of land acquisition for the construction of Suspension towers. In response, the real requirement of lands only for the tower footing was explained and the policy of making compensation for the whole land area covered by the Towers without acquiring lands was also clarified so that the GN could communicate it to the affected landowners.<br>Landowners concern regarding the compensations for losses and damages was also raised stressing the need of making them at the highest market price. The policy of compensation plus replacement of loss and damages was also explained at the meeting.<br>The GN asked about the project imposed restrictions on the future use of lands for construction of housing facilities. |
| | Palampeddaru-GN | 228 | | The DS Mrs. J. Sripathy had made the GN aware of the proposed project and relevant activities.<br>According to the GN, landowners are worried about in case of land acquisition for the construction of Suspension towers. In response, the real requirement of lands only for the tower footing was explained and the policy of making compensation for the |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | whole land area covered by the Towers without acquiring lands was also clarified so that the GN could communicate it to the affected landowners.<br>The GN was concerned with the project-imposed restrictions on the future use of lands for construction of housing facilities.<br>Landowners' concern regarding the compensations for losses and damages was also raised stressing the need of making them at the highest market price. The policy of compensation plus replacement of loss and damages was also explained at the meeting. |
| 3 | Kinniya-DS | | | The four GN Officers play an important role as the official representative of the DS in making decisions on impacts of project activities, assessing damage and payment of compensation and dissemination of reliable information at the grass root level.<br>They were interviewed at the DS Office on 23.12.2024, and 10.2.2025 and contacted 3-5 times to collect GN level information required for the project |
| | Upparu-GN | 225K | S M Imthiyas (Acting) | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br><br>According to the GN, landowners are worried about in case of land acquisition for the construction of Suspension towers. In response, the real requirement of lands only for the tower footing was explained and the policy of making compensation for the whole land area covered by the Towers without acquiring lands was also clarified so that the GN could communicate it to the affected landowners.<br>Landowners' concern regarding the compensations for losses and damages |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | was also raised stressing the need of making them at the highest market price.<br>The policy of compensation plus replacement of loss and damages was also explained at the meeting.<br>The GN expressed his concern on the project -imposed restrictions over the future use of lands for construction of housing facilities. |
| | Nadoottu-GN | 226M | S.Riyas | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>According to the GN, landowners are worried about in case of land acquisition for the construction of Suspension towers.<br>In response, the real requirement of lands only for the tower footing was explained and the policy of making compensation for the whole land area covered by the Towers without acquiring lands was also clarified so that the GN could communicate it to the affected landowners.<br>The GN was concerned with the project-imposed restrictions on the future use of lands for construction of housing facilities.<br>Landowners' concern regarding the compensations for losses and damages was also raised emphasizing the need of making them at the highest market price.<br>The policy of compensation plus replacement of loss and damages was also explained at the meeting.<br>Also raised the question of safety of people under the TL and in the vicinity of Towers. People have shared an attitude of increasing lightning impacts of TL and Towers. The issue was clarified according to the CEB explanation |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | Soorangal-GN | 226N | M.N.Sabrath | The DS had made the GN aware of the proposed project by the CEB at a meeting in the office.<br>More information was provided in response to use of lands for the construction of Towers and traversing of the TL over paddy fields and other areas.<br>The first question referred to any land acquisition for the project which may cause serious issues for people.<br>The CEB requirement of land for the Tower footings and payment of compensation for the entire land area covered by the suspension tower were clarified to share with community members.<br>Compensation at market price for all damages and losses were emphasized at the meeting.<br>Information on compensation and the replacement policy of the project was also communicated.<br>The GN questioned about the project-imposed restrictions on the future use of lands for construction of housing facilities<br>Lightning impacts of the TL and Towers were also raised referring to community attitudes of such dangers. The CEB clarification on this issue was also communicated. |
| | Majeed Nagar-GN | 226O | S M Imthiyas | The DS had made the GN aware of the proposed project and the role of the DS.<br>The information has shred at a GN meeting at the DS office.<br>More information was provided with the Leaflet containing all the basic details of the project. More copies were given for distribution among community members.<br>Four questions were raised in the meeting regarding land acquisition, restriction overland use, safety of |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | people under the TL and Tower locations, and due compensation for losses and damages.<br>The project policy on dealing with these issues was clarified with the information provided by the CEB.<br>With reference to safety, the possible lightning impact of new TL and Towers on people was emphasized.<br>The real need of land for the tower footings and the availability of the land area covered by the Tower for paddy cultivation was also clarified. Further the compensation for the entire land covered by the tower without acquisition was also clarified. |
| 4 | Muthur-DS | | | The GN Officers in this DS Division play an important role as the official representative of the DS in making decisions on impacts of project activities, assessing damage and payment of compensation and dissemination of reliable information at the grass root level.<br>They were interviewed at the DS Office on 23.12.2024, and 10.2.2025 and contacted 3-5 times to collect GN level information required for the project.<br><br>Almost all the GNs of the Division asked about the same questions and accordingly they have been reported in the same format. |
| | Sampur East | 220 | V. Renuka | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br><br>Five questions on (1)the land use for the project, (2) restrictions on the future use of lands for construction of buildings, (3) safety of farmers and residents under powerline and in the area of Towers, (4) due compensation for damages and losses and (5) the |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | restriction on the cultivation of land under TL, were raised in the discussion. These questions were the issues of communities under the influence of the proposed project as mentioned by the GN.<br>All the questions were addressed in terms of the project policies and the clarifications of the CEB.<br>The GN had not received any claim for land ownership in the project site allocated for the GSS at the Sampur. |
| | Kadarkaraichenai-GN | 222C | N.M. Jesmin | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses and safety measures was provided in terms of the CEB clarifications.<br>The GN did not mention any issue of land ownership in the project area |
| | Chenaiyoor-GN | 222A | V. Abivarna | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses and safety measures was provided in terms of the CEB clarifications. |
| | Pallikkudiyiruppu-GN | 219 | S. Janakan | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses and safety measures was provided in terms of the CEB clarifications. |
| | Kaddaiparichchan South-GN | 222 | N.B.Nowfal | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | and safety measures was provided in terms of the CEB clarifications. |
| | Shaffi Nagar-GN | 224F | A.W.M. Jalees | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses and safety measures was provided in terms of the CEB clarifications. |
| | Jinna Nagar-GN | 224E | M. Shifas | The GN is aware of the proposed project and project activities in GN division.<br>More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses and safety measures was provided in terms of the CEB clarifications. |
| | Iruthayapuram-GN | 218E | Subathirai Gunaratnam | The GN is aware of the proposed project and project activities in GN division. |

| | DS and GN Division | Division Number | Name of the GN | Consultation information |
|---|---|---|---|---|
| | | | | More information was provided with the Leaflet prepared for enhancing public awareness of the project.<br>The GN raised four important questions as to whether the project causes land acquisition, compensation is paid at a satisfactory rate for the affected land owners, restrict the future use of land for construction purposes and safety of farmers and community member working and living in the vicinity of the TL and suspension towers.<br>A sufficient account of project information and policies of compensation, replacement of losses and safety measures was provided in terms of the CEB clarifications. |

### 15.3.5. - Stakeholder consultations – other Organizations

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| 1 | CEB PMU | Mr. Chameera Rajapaksha<br>ES offices of PMU<br>ESIA TEAM | A coordination meeting was held with Mr. Chameera Rajapaksha, representing the Environmental and Social (ES) unit of the Project Management Unit (PMU) of the Ceylon Electricity Board (CEB), along with other PMU Environmental and Social officers and the Environmental and Social Impact Assessment (ESIA) Team. The purpose of the meeting was to facilitate effective collaboration between the ESIA consultants and the implementing agency, ensuring that all necessary environmental and social considerations are fully integrated into the planning and execution of the 220 kV Sampur–Kappalthurai Transmission Line Project.<br><br>The discussion began with a detailed presentation of the project scope, objectives, and geographical coverage, including the key components such as the transmission line, grid substations, and associated facilities like the solar park. Mr. Rajapaksha provided insights into the current status of the project, highlighting milestones already achieved and upcoming stages requiring environmental and social due diligence.<br><br>A significant portion of the meeting focused on the design and preparation of the project information leaflet, intended for distribution to local communities, stakeholders, and institutions during field visits. This leaflet would serve as a tool to convey essential project information in a simplified and accessible format, helping to foster transparency and informed public participation.<br><br>The availability of relevant technical data was also addressed. The PMU officers and ESIA team reviewed the datasets already collected—such as route alignment maps, tower locations, land ownership details, and preliminary environmental observations—and discussed the additional data required to complete a robust assessment. The need for timely data sharing between CEB departments and the ESIA team was emphasized to avoid delays in the assessment process.<br><br>Finally, the meeting concluded with a focused discussion on the planning and way forward for the ESIA process. This included the proposed timeline for remaining field surveys, stakeholder consultations, documentation of environmental and social baseline conditions, risk assessments, and finalization of the Environmental and Social Management Plan (ESMP). Roles and responsibilities were clearly outlined, |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| | | | and agreement was reached on a coordination mechanism to facilitate ongoing communication between the ESIA consultants and the PMU. The collaborative approach reaffirmed CEB's commitment to adhering to both national environmental regulations and the safeguard requirements of the Asian Infrastructure Investment Bank (AIIB). |
| 4 | Sampur Solar Power Project (TPCL) | Mr Navodana Project Manager | A discussion was held with Mr. Navodana, the Project Manager of the Sampur Solar Power Project, implemented by Trincomalee Power Company Ltd. (TPCL). He confirmed that the project has received all necessary approvals to proceed with the first phase of development, involving 50 MW of solar capacity. The second phase, which will add an additional 70 MW, is planned to commence once environmental clearance and other required approvals are obtained from the relevant regulatory agencies. Mr. Navodana explained that the land currently designated for the solar project was previously allocated for the Sampur Coal Power Plant, which was later abandoned. When the land was officially handed over to TPCL, it had already been completely cleared, with no remaining forest cover. In terms of biodiversity, he noted that no leopards have been observed in the area over the past ten years, based on routine observations by TPCL staff working at the site. |
| 5 | DFO Office Trincomalee | DFO Trincomalee | A meeting was held with the Divisional Forest Officer (DFO) of Trincomalee, during which it was confirmed that the Forest Department is well aware of the Sampur–Kappalthurai 220 kV Transmission Line Project. The DFO emphasized the department's proactive approach in addressing the environmental implications of the project. In line with this, the Forest Department has formulated a plan to restore affected ecosystems as a form of ecological compensation for the impacts resulting from project activities, particularly vegetation clearance and habitat disturbance. As part of these restoration efforts, the department has already identified specific areas for the rehabilitation of mangrove ecosystems within the project's influence zone. These restoration activities will be carried out in collaboration with project stakeholders and in accordance with national conservation guidelines. |
| 6 | Board of Investments | Mr. S Sathkunalinkam Deputy Director, Trincomalee Zone, BOI | 1. The Kappalturai BOI Zone is fully occupied with industries at the moment<br>2. The BOI is looking for lands for expansion of the Kappalturai BOI Zone and discussions are ongoing with the Sri Lanka Ports Authority<br>3. The proposed transmission lines will be important for both existing industries and Future developments of the BOI zones to have a reliable power sources. |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| 7 | Department of Wildlife Conservation | Mr. Manjula Amararathna, Director, Department of Wildlife Conservation | Mr. Manjula Amararathna, Director of the Department of Wildlife Conservation (DWLC), confirmed that the DWLC has received the letter sent by TPCL regarding the Solar Park Initial Environmental Examination (IEE). The Department is currently considering providing their consent to one of the options proposed in the IEE report concerning the elephant (wildlife) corridor. They have indicated a preference for the option that does not divide the solar park, as this would help avoid additional operational challenges when managing both phases of the project. The DWLC will formally convey their consent to the Ceylon Electricity Board (CEB) in writing in due course. Additionally, they plan to propose further actions to address potential impacts on other animal species in the area. |
| 8 | Department of Public trustee | 1.K.G. Maheesha Awanthi-Legal Officer<br>2.R.A. W.U.k. Ranasinghe-In Charge-Legal Division<br>3. M. Indrajith. | A discussion was held with representatives of the Department of Public Trustee, including Ms. K.G. Maheesha Awanthi (Legal Officer), Mr. R.A. W.U.K. Ranasinghe (In Charge – Legal Division), and Mr. M. Indrajith. During the meeting, they were made aware of the proposed power project and were briefed on the planned project activities taking place on land belonging to the Thampalakamam Konayagam Devasthanam. It was noted that the Department of Public Trustee, established under the Public Trustee Ordinance No. 1 of 1922, serves as the custodian trustee of properties belonging to the said Devasthanam. |
| 8 | Department of Public trustee | 1. Mrs. G.B. Karavita-Deputy Public Trustee.<br><br>2.R.A. W. U. k. Ranasinghe-In Charge-Legal Division | A meeting was held with Mrs. G.B. Karavita (Deputy Public Trustee) and Mr. R.A. W.U.K. Ranasinghe (In Charge – Legal Division) of the Department of Public Trustee. They were informed about the proposed project and the importance of the Department's cooperation, given its legal stake in lands belonging to the Konanayagam Devasthanam in Thampalagama. As explained by the Deputy Public Trustee, the District Court of Trincomalee issued a Court Order (No. Trust 10) on 12.07.1976, authorizing the Department to act as the legal Custodian Trustee of the Konanayagam Devasthanam. Under this order, a seven-member Trust Board elected by the temple's worshippers manages the temple properties under the supervision of the Public Trustee Department. All income earned through seasonal auctions of temple lands for paddy cultivation is legally required to be deposited into the Department's bank accounts. The temple must request funds by submitting a budget for religious, administrative, and managerial expenses to the Department. Regarding the proposed project, it was emphasized that the Ceylon Electricity Board (CEB) must engage with the Public Trustee Department, the |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
|---|---|---|---|
| | | | Trust Board, and the temple management on matters related to land use, compensation, and any other project-related issues. All financial transactions are to be channeled through the Public Trustee Department. As the legal Custodian Trustee, the Department expressed no objection to the proposed project, acknowledging that the affected lands belong to the Konanayagam Temple. |
| 9 | Department of archaeology – Trincomalee District Office. **3.06.2025** | 1. Anushan Munasinghe Assistant Director<br>2. Suranga Perrera- archaeological research officer, | The Department of Archaeology holds a significant stake in the proposed project, as the Trincomalee District contains numerous historically important areas and archaeological sites. The Department is responsible for ensuring that no artifacts or heritage sites are adversely affected by project activities. Officers of the Department have been made aware of the proposed Solar Power Project at Sampur, the Grid Substations (GSS) at Sampur and Kappalthurai, and the associated transmission line connecting the two locations. The Ceylon Electricity Board (CEB) has formally notified the Department, following which field inspections were conducted by the Department's officers. A letter of consent was issued on 20.11.2023, outlining specific instructions and conditions to be followed. To date, no specific archaeological sites have been identified within the areas allocated for the associated facility, the two GSS sites, or the transmission line corridor. However, in the event that any artifacts or archaeologically significant sites are discovered during excavation or construction at these locations, the CEB is required to immediately notify the Department of Archaeology and follow its guidance for further action.<br> |
| 10 | Road Development Authority- Trincomalee Office. | 1. Mr. K. Santheepan- Chief Engineer. | The Road Development Authority (RDA) in the Trincomalee District has a vested interest in the proposed power project to ensure that road sections falling within the project's influence are not adversely affected. RDA officers have been informed of the project by the Ceylon Electricity Board (CEB) and are fully aware of its scope. In response, the RDA has issued specific guidelines and conditions to be followed by the CEB during both the construction and maintenance phases of the project. The Chief Engineer particularly |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
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| | | | emphasized the importance of maintaining the prescribed height of the transmission line at all public road crossings. The CEB must ensure that contractors and work crews strictly adhere to RDA's guidelines to avoid any negative impacts on transportation infrastructure, public facilities, or road users. The RDA has expressed its willingness to cooperate with the CEB throughout the construction period. Apart from the public roads within the project area, no other RDA sites or depots are expected to be impacted by the proposed development.<br><br> |
| 11 | Urban Developmen t Authority. Trincomalee. | Mr. L.M. Samanatha Kumara- Director- Eastern Province, Urban development authority. | The Urban Development Authority (UDA) has a stake in the proposed project to ensure that all activities within its jurisdiction comply with established land use policies and development guidelines. The Director of the Eastern Province UDA has been informed of the project by the Ceylon Electricity Board (CEB), along with all relevant details. In response, the UDA has issued a formal consent letter, outlining the guidelines and conditions to be followed by the CEB during project implementation. The UDA has developed a Master Plan for the development of the Trincomalee District, identifying specific Development Zones for various purposes. The proposed power project falls within areas designated for Eco-tourism, Agriculture, and the Industrial Zone in Kappalthurai. The UDA has raised no objections regarding the selected sites for the associated facilities of the Solar Power Plant, the Grid Substations (GSS) at Sampur and Kappalthurai, or the transmission line corridor connecting them. Furthermore, the UDA expressed its full cooperation for the successful implementation of the project, recognizing its strategic importance in strengthening the power supply required for future development initiatives in both the Trincomalee District and the broader national context. |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
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| | | | |
| 12 | Divisional Irrigation Engineer's Office- Provincial. Trincomalee District. | 1.Mr. M. Hariprashanth- Divisional Irrigation Engineer. | The Divisional Irrigation Engineer was consulted regarding the proposed project due to his responsibility for the protection of medium-scale irrigation tanks exceeding 200 acres in the district. In the Sampur area, only the Ilakkandai Tank falls under his jurisdiction. He has been informed about the project and did not raise any objections to its construction. However, he emphasized the importance of ensuring uninterrupted access to the Ilakkandai Tank, requesting that project activities do not obstruct or disturb existing access roads. He also noted that smaller tanks, those under 200 acres in size, fall under the purview of the respective Agrarian Development Service Centers. |
| 13 | State Timber Corporation, Regional Office. | Mr. I.P.G.N. Karunathilaka. Assistant Regional Manager | The Regional Office of the State Timber Corporation has a key role in ensuring that any tree removal required for the proposed project is carried out in compliance with relevant legal provisions. The officers at the regional office have been officially informed by the Ceylon Electricity Board (CEB) regarding the project's tree removal requirements. In response, the office has processed the request, issued a formal consent letter, and provided a list of trees approved for removal. No concerns or objections were raised by the officers regarding the execution of this task. |
| 14 | Agrarian service Centre. Uppuveli, | Mr. T.Tharshanathai. Agrarian Development Officer. | The Agrarian Development Officer (ADO) is responsible for the management of small tanks under 200 acres in size, as well as the overall agricultural development within the division. In the project area, three tanks—Taharwettuwan, Ammankulam, and Sinna Ammankulam—fall under the |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
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| | Agrarian Development Office. | | jurisdiction of the ADO. The Agrarian Development Centre provides various services, including the distribution of agricultural seeds, fertilizers, and pesticides, facilitation of agricultural bank loans and insurance, and the provision of technical guidance and information to farmers. The ADO is well informed about the proposed project, having received all relevant details from the Ceylon Electricity Board (CEB) officers. He has played a key role in disseminating project information to local villagers, farmers, and their organizations. The ADO expressed confidence that the farming community would be supportive of the project, provided that fair compensation is offered for any damages or losses incurred.<br> |
| 15 | Agrarian Development Office. Muthur. | 1.S.I. Faris- Agrarian Development Officer.<br>2.Ilhillam-Agriculrural research assistant | The Agrarian Development Officer (ADO) is responsible for managing small tanks less than 200 acres in size and overseeing agricultural development within the respective division. The Agrarian Development Centre provides a range of services to farmers, including the distribution of agricultural seeds, fertilizers, and pesticides, as well as facilitating agricultural bank loans, insurance, and providing technical guidance and information. The ADO is aware of the proposed project and has supported the Ceylon Electricity Board (CEB) by helping to inform farmers about the planned project activities in the paddy fields. |
| 16 | Agrarian Development Office. Sampur. | R. Rathnesh- Agrarian Development Officer. | The Agrarian Development Officer (ADO) is responsible for small tanks under 200 acres and agricultural development within the respective division. The Centre offers services such as supplying agricultural seeds, fertilizers, and pesticides, as well as facilitating agricultural bank loans, insurance, and providing information and guidance to farmers. The ADO is aware of the proposed project and has assisted the Ceylon Electricity Board (CEB) in informing farmers about the project activities affecting the paddy fields. |

| | Stakeholder | Participants in the meeting | Key points and issues discussed |
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| | | | |
| 17 | Agrarian Development Office Kinniya. | A.K. Ajithkhan- Agrarian Development Officer. | The Agrarian Development Officer (ADO) is responsible for small tanks less than 200 acres in size and agricultural development within the respective division. There are five small tanks under his jurisdiction: Kulangupanjana, Mahamar, Pattiyanupoor, Sungamkuli, and Wellankuli. The Agrarian Development Centre provides a range of services including the supply of agricultural seeds, fertilizers, and pesticides, as well as facilitation of agricultural bank loans, insurance, and the provision of information and guidance to farmers. The ADO is aware of the proposed project and has assisted the Ceylon Electricity Board (CEB) in communicating the project activities to farmers in the paddy fields. |
| 18 | Agrarian Development Office Thambalagamuwa. | J. Shubhashini- Agrarian Development Officer. | The Agrarian Development Officer (ADO) is responsible for small tanks less than 200 acres in size and agricultural development within the respective division. There are two small tanks under her control: Puliuthuwewa and Ulpathwewa. The larger Galmatiyawewa tank, which spreads over 200 acres, falls under the jurisdiction of the Divisional Irrigation Engineer, who was consulted and reported under Section 4 of this table. The Agrarian Development Centre provides services including the provision of agricultural seeds, fertilizers, pesticides, agricultural bank loans, insurance, and guidance. The ADO is aware of the proposed power project activities within her service area and has cooperated with the Ceylon Electricity Board (CEB) in communicating project information to the local farmers. |

## 15.3.6. - Individual and household interviews and discussions.

**Sampur and Kappalthurai project area.**

Date. 10.Feb.2025.

| | **Family members**<br>**h-Husband**<br>**w-Wife**<br>**s-Son**<br>**d-Daughter,**<br>**Ann Address** | **Gender and Age** | **Information, matters raised, responses, views, and observations** |
|---|---|---|---|
| 1 | 1.S. Dewendra.(h)<br>No.6. Senavur<br>Samour-GN<br>2.K. Gayathri (w)<br>d-2<br>s-1 | M-45<br><br><br>F-47<br>F-18<br>F-14<br>M-6 | 1.They had been in Kalladi in Batticaloa District in the war time and have come to the Senavur after 3 years of the end of the war in May 2009. Now they have fully resettled in the original lands and continue social life and economic activities as normal residents. It has taken several years to consolidate in a war affected area. With the state support as well as NGOs of the time they have resumed economic, residential and community and cultural activities.<br>2. According to him the transmission line has no serious impact on them even though it traverses over the paddy fields.<br>3. He was made fully aware of the Line, Tower construction and possible impacts on farmers and other residents in the project area.<br>4. He mentioned that his community is well aware of the Project owing to CEB initial activities and public consultations so far conducted. |
| 2 | 1.K. Sundaram<br>Senavur.<br>2.K. Chandra (w) | M-55<br><br>F-45 | 1.He is aware of the Project. Further information was provided with the Leaflet.<br>2. His family also share the same history of impacts of war on their community, displacement and resettlement after 3 years of the end of war in 2009.<br>3. TL traverses over his paddy field being the second parcel of land from the Grid location.<br>4. The field is cultivated by his son- 2 Acres of paddy field with Deed of clear and legal ownership.<br>5. He has a herd of cows consisting of over 60.<br>6. Gets milk from over 30 cows and sell to the local collecting center.<br>7. Finding grazing lands for cows is a serious problem for them. The cows are taken to the open areas in the communities, roads and bush forest areas including the proposed project site.<br>8. Asked about adverse impacts of the Grid and the TL as they spend most of the in cultivations, referring to lighting impacts of the new project.<br>9. Paddy fields are used for grazing in the 2 months of off season of paddy cultivations. April and September. |

| | **Family members**<br>**h-Husband**<br>**w-Wife**<br>**s-Son**<br>**d-Daughter,**<br>**Ann Address** | **Gender and Age** | **Information, matters raised, responses, views, and observations** |
|---|---|---|---|
| | | | 10. He grazes cows taking them into the grid site of the project and the associated facility for the solar power plant without permission from the relevant authorities.<br><br>11. He is concerned with losing the grazing grounds in the grid site and the associated facility areas due to land clearance for the projects. |
| 3 | 1.S. Siddhalechchami (w)<br>Senavur.<br>2.K. Anandan (h)<br>s-2 | F-52<br><br><br><br>M-52 | 1. She is the owner of the 1acre paddy field inherited from her late father S. Kandasami.<br>2.Intervieved at the paddy land with well ripped paddy to be harvested within a few days.<br>3.Has the same experience of the war and its impacs, and displacement, resettlement with state and Ngo support after the end of war in 2009.<br>4.Main means of living is the paddy cultivation in Maha season of the year.<br>5.Housing facility was constructed by the State and it has 3 rooms with living and dining halls,<br>6. Earns living by collecting fuel wood for the forest areas and selling them at Rs. 40-50 per bundle of nearly 10 pieces.<br>7.Also, the husband works as a casual laborer and earns Rs.2000 per a day.<br>8.No source of drinking water and water is weekly supplied by the Regional Council of the area free of charge.<br>9.She does not work as a laborer for earnings.<br>10. Her husband makes major decisions in the family and she usually agrees with him.<br>11. Electricity is available.<br>12. Anakkamkulam tank supplies water for agricultural and domestic use.<br>13. she has no opposition to the project but asked about any harm from the TL over her land.<br>14. She wanted to carry out project activities without causing any damage on the surface of Paddy lands. |
| 4 | S. Vignaswaram (h)<br>V. Nagaloroni (w)<br>Santhosapuram. | M-28<br>F-23 | 1. They have been married for 8 years.<br>2. Earn living by cutting and selling fire woods collected from the forest areas of the region.<br>3. The firewood collected from the forests are carried by bicycle to residential location and make small bundles for selling at Rs. 40 to 50 per one |

| | **Family members**<br>**h-Husband**<br>**w-Wife**<br>**s-Son**<br>**d-Daughter,**<br>**Ann Address** | **Gender and Age** | **Information, matters raised, responses, views, and observations** |
|---|---|---|---|
| | | | 4. Both husband and wife go to the forest in the morning around 8.00 and return home after noon.<br>5. Live a very poor life as mentioned.<br>6. Involved in paid casual labor works in the area.<br>7. Earns Rs.2000 per day.<br>8. They are not affected by the Project<br>9. They have no idea of any bad impact of the project<br>10. They were made aware of the project.<br>11. They were highly concerned with land clearance for the construction of the proposed grid station and the associated facility for the solar power plant and plates, they used to collect firewood from those lands too. |
| 5 | 1.S. Nirojan (h).<br>2. Wasana-(w)<br>s-1<br>D-1<br><br>Parents' family<br>1.T. Sivanesathurei (h)<br>Senavur,<br>2.m Mallika (w)<br>s-2<br>Daughter's Family<br>d-1. 2 | M-28<br>F-25<br><br><br><br>M-65<br><br><br>F-58 | 1. Said that they were aware of the new project<br>2. Community members have no objection to it, and they need only good compensation for land use.<br>3. The means of living is providing transportation by a three wheel for hire.<br>4. Earns nearly Rs. 1500 per day.<br>5. Married with a Sinhalese female and has2 year old son and a 4-month-old Daughter.<br>6. Family members cultivate paddy lands over which the transmission line passes.<br>7. Most people are poor and live on limited paddy harvest and home garden crops.<br>8. People go to the forest to collect bee honey, firewood, and hunt animals. |
| 6 | 1.Harsadewa Sahayapuram, Muthur. SL Army at Kottiarama Temple. | M-34 | 1. Provides security for the Buddhist temple on the mountain of Kottiarama, Sahayapuram.<br>2. The temple has a good relationship with people.<br>3. He has learned about the proposed project from the people in the area. |
| 8 | 1.K. Konanayagam (h)<br>Warnamettu Road, Thampalagamuwa.<br>2.K. Krishnadevi (w)<br>s- K. Niroshan | M-67<br><br><br>F-63<br>M-37 | 1. Active member of the Thampalagamam South Farmers' Organization.<br>2. Already aware of the project and the tower location in the paddy field.<br>3. Got information on the project from the officers of the CEB<br>4. Farmers have no objection to the transmission line as it is a national project. |

| | **Family members**<br>**h-Husband**<br>**w-Wife**<br>**s-Son**<br>**d-Daughter,**<br>**Ann Address** | **Gender and Age** | **Information, matters raised, responses, views, and observations** |
|---|---|---|---|
| | | | 5. But they expect maximum compensation for the land taken for the tower bases in their limited paddy field.<br>6. Cultivate 7 acres of paddy land. The small Kovil in the village has 5 Acres of paddy land cultivated by farmers who get them by highest bid at the auction by the Kovil. Around Rs 25000 per Acres per one season is the highest bid price.<br>7. Construction activities should avoid the two seasons of cultivation- Maha from mid-October to March of the following year, and Yala from mid-April to August.<br>8. Irrigated by the Kanthale Tank<br>9. Rain-fed paddy cultivations are found in the area.<br>10. One son stays with parents being disabled by and accident in 2009. Find it difficult to walk and use a wheelchair. Parents look after him.<br>11. Have permanent ownership for land by Deeds. |
| 9 | 1.S. Ganesham.(h)<br>Seedanawala,<br>Senavur, Muthur.<br>2.K. Mangala (w)<br>s-2<br>d-2 All married<br>Elderly-Selvathurai Kannan | M-62<br><br>F-50<br><br><br>F-80 | 1. Two families are living in two small wattle and daub houses.<br>2. They were aware of the transmission line project and got the information from the farmers in the village.<br>3. The transmission line traverses over the paddy field near the boundary of their land of one Acre.<br>4. Cultivate maize and vegetables in the high land.<br>5. Living is very difficult as there is no permanent work in the area. |
| 10 | 1.Nanda Kumar.(h)<br>Senavur.<br>s-1<br>d-1 | M-44 | 1. Farmer by occupation and cultivate 3 Acres of paddy lands.<br>2. Irrigated by a small tank in the area.<br>3. The transmission line runs over his paddy field.<br>4. Asked about effects of having a high-tension line over his land.<br>5. Provided the information leaflet and explained all matters<br>6. As there is no impact on continuing paddy cultivation in the land, he expressed that he has no objection to the project.<br>7. The children are schooling yet, in grade 2 and 6 at the Senavur school.<br>8. Alcohol remains a serious problem in the area. |

| | **Family members**<br>**h-Husband**<br>**w-Wife**<br>**s-Son**<br>**d-Daughter,**<br>**Ann Address** | **Gender and Age** | **Information, matters raised, responses, views, and observations** |
|---|---|---|---|
| 11 | 1.S. Sivapalan Kattaparichchan. (h)<br>2.M. Gnaneshwari (w)<br>3.S.Johendra (s) | M-59<br><br><br>F-53<br>M-36 | 1. Farmer and cultivate 4 Acres of paddy land irrigated by water of small tank in the area and rain fed cultivation of paddy.<br>2. Lands located in Seedanawali.<br>3. He has a house with three rooms with a cement floor.<br>4. He has no objection to the proposed project.<br>5. Paddy cultivation is difficult due to increasing cost of labore, fertilizers, pesticides and equipments.<br>6. The wild elephant threat is always there.<br>7. Lands are protected by personal elephant-fences in the area. |
| 12 | 1.P. Manikkarasa(h) No.47 Naduppirappavtad. Kinniya road. Thambalagamuwa DS.<br>2.M. Selvarathna (w | M-68<br><br><br><br><br>64 | 1. Farmer and cultivate 3 ¾ Acres of paddy lands.<br>2. Now the sons cultivate some of them.<br>3. He is aware of the proposed project.<br>4. He has no objection to the project even though the transmission line passes over their paddy lands.<br>5. The villages are living on the paddy harvest and home garden crops such as coconuts, mangos, vegetables.<br>6. Problem is the lower rate of buying paddy existing in the area.<br>7. Women also work in the fields.<br>8. Male makes decisions on important matters,<br>9. In some families' family problems are affecting the children and women |
| 13 | 9.12.2024<br>1.Sures Kumar, Paththinipuram.<br>1. Ajantha, | M-32<br>F-27 | 1. Ap 48 tower falls in the paddy land next to his residential land and expressed his concern on it.<br>2. The family is aware of the project activity in the land.<br>3. Asked about any harmful effects of the proposed power line.<br>4. More information provided with the leaflet of project information.<br>5. They were not objecting to the project but wanted to ensure their protection<br>6. Wife is expecting the first baby.<br>7. The house has been constructed but not yet completed, Cement block is used for walls and asbestos forth roof.<br>8. Live on cultivation of paddy and casual labor. |

## 15.3.7 - Community consultation in relation to the Associated facility (Proposed Solar Park)

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| Date | 4.06.2025 |
| Name of the Participant | Muruga Chandrakanthan |
| Age | 45 Years |
| Gender | Male |
| Ethnicity | Tamil |
| Address | Santhosapuram, Sampur |
| Number of Family members | 5- Husband, wife-47 Year, 2 sons 21 years and 19 Years. Daughter 13 year |
| Employment | Fishing in the sea |
| Consultation location | He was interviewed at his own house. |
| Consultation report | He lives with his family in the Santhosapuram and volunteered to be interviewed regarding the proposed power project and the associated facility.<br><br>He is aware of the proposed Solar power project at the Sampur and according to him almost all community members are aware of it. A detailed account of the proposed project was provided to him and the family.<br>He is not aware of any person who claims landownership for any plot of land allocated for the project.<br>According to him, people from different village areas used to encroach state lands for seasonal cultivation of paddy in those lands before the eruption of war in the 1990s. But after the end of war in 2009 he had not seen such cultivations in the area allocated for the project.<br>People from different areas still come to these state lands for grazing cows, buffaloes and goats, and also for collecting firewood for domestic use and business as revealed by him.<br>He and his family do not see any issues in the selection of the project site for solar power plant and related project activities.<br>Development of those lands adjacent to his community is useful for all as the growth of a forest in close proximity to the school playground, the village and the paddy field boundaries may attract more wildlife and cause many issues for people and cultivations.<br>He was very positive in attitudes towards the project. |

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| Date | 4.06.2025 |
| Name of the Participant | Kandasami Ramesh |
| Age | 41 Years |
| Gender | Male |
| Ethnicity | Tamil |
| Address | Santhosapuram, sampur. |
| Number of Family members | 5- Husband, wife-41 Year, and 2 daughters-in 12,07, and son 15 Years. |
| Employment | Paddy and vegetable farmer |
| Consultation location | He was interviewed at his vegetable cultivation located on the other side of the road running along the boundary of the proposed Associated facility of solar power plant and the proposed GSS at Sampur. |
| Consultation report | He is a farmer cultivating his own paddy and high lands located on the opposite side of the road running along the boundary of the proposed project area.<br>This time he had cultivated nearly 1 Acre of vegetable.<br>He is aware of the proposed solar power plant project and the GSS at the Sampur site.<br>He also mentioned that some people had cultivated paddy in some lands belonging to the state in the project site before the eruption of the war in those areas.<br>He did not mention any person who claims landownership on the project site.<br>After the end of the war in 2009 the whole area of lands remains without cultivation by any villager. It is well protected by the permanent fence constructed by the government.<br>He also revealed that people from various areas come to this project site for collecting forest resources such as firewood, plants for herbal medicine, bee honey and hunting wild animals.<br>He questioned about any adverse impact on his livelihood of agriculture.<br>Details on the proposed projects in the area were provided to increase his awareness.<br>His two daughters go to the Kiravatkuli Sivasakthi Vidyalayam located in a land adjacent to the boundary of the proposed solar power project site. The playground of this primary school remains |

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| | exposed to the project site. After listening to the project details, he asked about any adverse impact of the solar power plant on the school children playing on the playground.<br>He requested to ensure their children's safety by suitable permanent measures.<br><br> |

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| Date | 4.06.2025 |
| Name of the Participant | P. Neththi |
| Age | 28Years |
| Gender | Female |
| Ethnicity | Tamil |
| Address | Santhosapuram, Sampur. |
| Number of Family members | 5- Ancle- 55 year, Husband-28, wife-28 Year, and 2 sons 8 and 2 Years. |
| Employment | Housewife, Husband is a coconut harvester |
| Consultation location | She was interviewed at her father-in-law's house where she and her family reside. |
| Consultation report | She came to reside in the Santhosapuram nearly 10 years ago after getting married to her husband, T. Paththipan, who is a resident of the Santhosapuram. Her hometown is Hatten.<br>As the father-in-law and her husband were not available for the whole day, she volunteered to respond to our interview.<br>Their residential place is located on the opposite side of the road running along the boundary of the proposed solar power plant site.<br>She and her family members were aware of the proposed project in front of their residential area. But she had no idea of the nature of a solar power plant as she had not seen such a project.<br>Information was provided so that she can understand the nature of the project to be constructed in the adjacent project site.<br>She asked about any adverse influence on their family and children playing in the courtyard. |

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## 15.3.8 - Community consultation report -Sampur-Kappalthurai

1. Mr. K.D. Juhan- Consultation on **animal feeding on lands of the project area**

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| Date | 4.06.2025 |
| Name of the Participant | K.D. Juhan |
| Age | 33 Years |
| Gender | Male |
| Ethnicity | Tamil |
| Address | Potkerny, Thambalagamuwa. |
| Number of Family members | 4- Husband, wife, son-3 Year and daughter-6 Year |
| Employment | Casual labor, look after 30 buffaloes belonging to a resident in the village. Grazing them and milking are carried out daily. Income around Rs. 60000 per month |
| Consultation location | He was interviewed in the paddy lands over which the proposed Transmission Line travers in the Thambalagamuwa GN division. |
| Consultation report | During field observations in the project area, a local buffalo herder was interviewed while grazing a herd of approximately 30 buffaloes. He mentioned that he was aware of the proposed power project, having received information from paddy landowners in the vicinity. After the purpose of the engagement was explained to him in Tamil, he willingly participated in the interview. He explained that he uses the paddy lands for grazing only during the off-season of cultivation, particularly when fields remain uncultivated during the Yala season. For the rest of the year, he typically moves his herd to grazing lands in Morawewa and Kinniya, where open pasture is available.<br><br>The respondent earns his living through buffalo herding and occasional casual labor in the local area. His elder daughter is currently attending school, and his wife is not employed. He also stated that he does not receive any government welfare assistance, including Aswesuma, and does not own or lease any paddy land in the area. Importantly, he expressed no objection to the proposed project, noting that he can adjust his grazing routes during the construction period and avoid the transmission corridor, thereby ensuring that the project will not adversely affect his livelihood.<br><br> |

2. Mr. R.A, Jagan - Consultation on animal feeding on lands of the project area

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|---|---|
| Date | 4.06.2025 |
| Name of the Participant | R.A, Jagan |
| Age | 45 Years |
| Gender | Male |
| Ethnicity | Tamil |
| Address | Potkerny, Thambalagamuwa. |
| Number of Family members | 4- Husband, wife-40 Year, son-12 Year and daughter-20 Year |
| Employment | He looks after 100 goats belonging to a resident in the village. Grazing them is carried out daily. He is paid Rs.1100 per day. |
| Consultation location | He was interviewed in the paddy lands over which the proposed Transmission Line travers in the Thambalagamuwa GN division. |
| Consultation report | During field observations near the transmission line corridor, a local resident was interviewed while grazing a herd of approximately 100 goats in the surrounding area. He stated that he had first learned about the proposed project through information shared by neighbors, and was subsequently provided with more detailed explanations regarding the project activities, particularly those involving the use of paddy fields. The individual voluntarily agreed to participate in the interview after understanding its purpose. He is a disabled person, having sustained a serious injury to his right leg as a result of an explosive attack during the war in the Vanni district. Following the end of the conflict, he relocated and settled in the current area, where he now resides with his family.<br><br>His household livelihood depends primarily on goat herding, which provides the main source of income. He receives a monthly social welfare payment of Rs. 10,000 under the Aswesuma program, and his wife is not employed. Goat grazing is typically conducted during the off-season of paddy cultivation, and in some cases, he also uses uncultivated paddy lands during the Yala season. During other periods, he shifts the herd to adjacent forested areas for feeding.<br><br>He did not express any concerns about the impact of the proposed transmission project on his livelihood, as the use of paddy fields for grazing is minimal and seasonal, and he has access to extensive alternative grazing lands. His feedback suggests that the project will not interfere with his regular animal husbandry activities.<br><br> |

3. J. Kandan - Consultation on the **place of Hindu religious worship** in the project area of Thambalagamuwa

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|---|---|
| Date | 4.06.2025 |
| Name of the Participant | J. Kandan |
| Age | 43 Years |
| Gender | Male |
| Ethnicity | Tamil |
| Address | Parathpuram, Thambalagamuwa. |
| Number of Family members | 5- Husband, wife-36 Year, and 3 daughters-in 12,14, 18 Years. |
| Employment | Business, Fishing. |
| Consultation location | He was interviewed at the Hindu religious place of worship known as Umarikattu Pullayar, found in adjacent to the paddy lands over which the proposed Transmission Line travers in the Thambalagamuwa GN division. The purpose was to get information on this religious place. He volunteered to be interviewed on his way back after fishing in a waterbody in the area. |
| Consultation report | Adjacent to Tower 4/5, just outside the transmission line corridor, there is a scrubland area known as Umarikattu, located near the paddy fields of the Thambalagamuwa Grama Niladhari Division. Within this area lies a small place of Hindu worship, locally referred to as Umarikattu Pullayar, as depicted in the accompanying photograph. The site consists of two modest religious structures and a small hut with an asbestos roof.<br><br>According to Mr. Kandan, the area has traditionally been maintained as part of the surrounding forest. As part of local custom, the land is intentionally left uncleared as a form of ritual observance. The site is not used for large religious gatherings or permanent temple structures; rather, it serves a functional spiritual purpose tied specifically to agricultural practices. Periodic rituals are conducted here to invoke blessings for successful paddy cultivation and the protection of farmers.<br><br>The land in question is state-owned, and no private claims or encroachments were identified. Mr. Kandan confirmed that he is aware of the proposed transmission project and that none of his land or structures are impacted. He also stated that he has no objection to the implementation of the project. |

| | | |
|---|---|---|
| | <br> | |

## 15.3.9 - Consultation with schools and religious institutions

**Date. 09.Feb.2025.**

| | Institution | Name | Details of the discussion |
|---|---|---|---|
| 1 | School- Kiravathkuli Siva shakthi Vidyalayam. Santhosapuram Muthur. | A.Rathiseelan Principal, (48) | Kiravathkuli Siva Shakthi Vidyalayam, located in Santhosapuram, Muthur, is a primary school offering education from Grades 1 to 5. The school has a total of 93 pupils, comprising 39 girls and 53 boys, and is staffed by seven teachers including the principal. During a stakeholder consultation, the principal confirmed his awareness of the proposed project in Sampur but expressed interest in learning more about it. In response, detailed information was provided, and a project information leaflet was handed over for reference. It was noted that the school's playground is situated very close to the boundary of the associated facility of the Sampur Solar Power Park. The principal expressed his support for the project, acknowledging its national importance in contributing to Sri Lanka's energy development. He also mentioned that children regularly use the playground even on weekends for training and sports activities, highlighting the importance of considering potential impacts on nearby educational and recreational spaces during project implementation.<br> <br> |

| | Institution | Name | Details of the discussion |
|---|---|---|---|
| 2 | Pre-school- at the Kiravathkuli Siva shakthi Vidyalayam. Santhosapuram Muthur. | Mrs. P. Navajothi, Head | A pre-school also operates within the premises of Kiravathkuli Siva Shakthi Vidyalayam in Santhosapuram, Muthur, under the leadership of Mrs. P. Navajothi. During the stakeholder engagement, she initially stated that she was unaware of the proposed project. In response, detailed information was provided and a project leaflet was handed over for her reference. She inquired specifically about potential impacts on the children attending the pre-school. It was clarified that the proposed transmission line would not affect the school premises or its playground. Upon receiving this assurance, Mrs. Navajothi expressed no objection to the project. She also shared her interest in seeing the nearby shrubland areas—adjacent to the school—being developed in a manner that benefits the local community. |
| 3 | Kottiarama Temple Muthur. | Rev. Balalle Rathanasara Incumbent monk | Kottiarama Temple, located in Muthur and led by Rev. Balalle Rathanasara, was included in the stakeholder consultations for the proposed project. The incumbent monk stated that he was already aware of the project and had no objections to its implementation. However, he raised concerns regarding the potential impact on archaeologically significant sites in the Sampur area. He specifically mentioned locations such as Nalikapavwa, Elakanda, and Kayawandanam Male, which are believed to hold historical and cultural value. He also noted that his temple itself contains an ancient stone inscription written in old Brahmi script, and that a Stupa currently under construction is clearly visible from the main road and surrounding hillside. The temple claims ownership of approximately 300 acres of land, including 110 acres of paddy fields, which are cultivated by local villagers. Additionally, parts of the rocky, mountainous land have been leased out for stone quarry operations. Rev. Rathanasara also highlighted broader social concerns in the community, such as the persistence of a traditional caste system, discrimination against lower caste groups, |

| | Institution | Name | Details of the discussion |
|---|---|---|---|
| | | | and widespread poverty. He further reported incidents of human-elephant conflict affecting nearby settlements, emphasizing the need for sensitivity to both cultural heritage and community challenges during the project's planning and implementation stages.<br><br> <br><br> |

| | Institution | Name | Details of the discussion |
|---|---|---|---|
| 4 | Thampalagamam Adikonayagam Devasthana. Thambalagamuwa , | B. Prabhakara Manager (40) | The Adikonayagam Devasthana in Thampalagamam, managed by Mr. B. Prabhakara, is recognized as the main and largest Hindu temple in the area. Mr. Prabhakara, aged 40, oversees the administrative responsibilities of the temple and confirmed his awareness of the proposed transmission line project. The temple owns approximately 850 acres of land, a significant portion of which consists of paddy fields currently cultivated by 84 local farmers. These lands are managed under a seasonal auction system, where each acre is leased to the highest bidder, with base bids starting at Rs. 17,000 per acre. In some seasons, successful bids have exceeded Rs. 100,000 per acre, reflecting the high agricultural value of the land. All temple lands are under the control of the Department of Public Trustee, which governs their use and leasing arrangements. As the proposed transmission line will traverse parts of these temple-owned paddy fields, coordination will be required with both the temple management and the Department of Public Trustee for access and tower construction. Despite these administrative considerations, the manager expressed no objection to the project or to the use of temple lands for its implementation.<br> |

**View of the Outer circular road from Kottiarama Temple, Muthur. (The Proposed Transmission line will be constructed in parallel to the Outer Circular Road in this area)**

# Annex 15.4: Tables of Envirimental Baseline Data

## Annex 15.4-1: Flora Species Observed During the Field Ecological Study

**ABBREVIATIONS**

**HA** – Habit, **T** – Tree, **S** – Shrub, **H** – Herbaceous, **C** – Climber or Creeper, **TS** – Taxonomic Status, **E** – Endemic Species, **N** – Native Species, **I** – Exotic Species, **NS** – National Conservation Status, **GS** – Global Conservation Status, **CR (PE)** – Critically Endangered Possibly Extinct, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **DF** – Disturbed Dry Mixed Evergreen Forests, **SC** – Thorn Forests (Scrublands), **MG** – Mangroves, **WT** – Floodplain Wetlands, **RR** – Streams/Rivers and Associated Vegetation, **AG** – Agricultural lands, **HG** – Home Gardens, **CA** – Canals, **TA** – Tanks

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acanthaceae | *Acanthus ilicifolius* | Katu-ikili | - | H | N | | | | + | + | |
| Acanthaceae | *Avicennia marina* | Kanna | Kannamaram | T | N | | | | + | | |
| Acanthaceae | *Avicennia officinalis* | Kanna | Kannamaram | T | N | NT | | | + | + | |
| Acanthaceae | *Blepharis maderaspatensis* | - | - | H | N | | | + | | | |
| Acanthaceae | *Dyschoriste nagchana* | - | Paduvan | H | N | | | + | | | |
| Acanthaceae | *Elytraria acaulis* | - | - | H | N | | | + | | | |
| Acanthaceae | *Hygrophila auriculata* | Katu-ikiriya | Nirmulli | H | N | | | | + | + | + |
| Acanthaceae | *Rostellularia procumbens* | Mayani | - | H | N | | | + | | | + |
| Acanthaceae | *Ruellia prostrata* | Nil-puruk | - | H | N | | | + | | + | + |
| Alismataceae | *Limnophyton obtusifolium* | - | - | H | N | | | | | | + |
| Amaranthaceae | *Achyranthes aspera* | Gas-karal-heba | Nayururi | H | N | | | + | | + | + |
| Amaranthaceae | *Alternanthera pungens* | - | - | H | I | | | | | | + |
| Amaranthaceae | *Alternanthera sessilis* | Mukunu-wenna | Ponankani | H | N | | | | | + | + |
| Amaranthaceae | *Gomphrena celosioides* | - | - | H | I | | | | | | + |
| Amaranthaceae | *Ouret lanata* | Pol-pala | - | H | N | | | + | | + | + |
| Amaryllidaceae | *Crinum viviparum* | Heen-tolabo | - | H | N | | | | | + | |
| Anacardiaceae | *Lannea coromandelica* | Hik | Odi | T | N | | | + | | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Anacardiaceae | *Mangifera indica* | Amba | Ma, Manga | T | I | | | | | | + |
| Annonaceae | *Huberantha korinti* | Ul-kenda | Uluvintai | T | N | | | + | | | |
| Annonaceae | *Miliusa indica* | Kekili-messa | - | T | N | | | + | | | |
| Annonaceae | *Monoon longifolium* | O-wila | Mara-iluppai | T | N | | | + | | + | |
| Apocynaceae | *Aganosma cymosa* | Muwa-kiri-wel | - | C | N | | | + | | | |
| Apocynaceae | *Calotropis gigantea* | Wara | Errukalai | S | N | | | + | | + | + |
| Apocynaceae | *Carissa spinarum* | Heen-karamba | Chirukila | C | N | | | + | | + | + |
| Apocynaceae | *Hemidesmus indicus* | Heen-iramusu | Nannari | C | N | | | + | | + | + |
| Apocynaceae | *Ichnocarpus frutescens* | Gerandi-dul | - | C | N | | | + | | + | + |
| Apocynaceae | *Leptadenia reticulata* | - | Palai | C | N | | | + | | | |
| Apocynaceae | *Pentatropis capensis* | - | - | C | N | | | + | + | + | + |
| Apocynaceae | *Pergularia daemia* | Meda-hangu | Uttamakam | C | N | | | + | | | |
| Apocynaceae | *Secamone emetica* | Mudu-kiriya | - | C | N | | | + | | | |
| Apocynaceae | *Wattakaka volubilis* | Anguna | Kodi-Palai | C | N | | | + | | + | + |
| Aponogetonaceae | *Aponogeton natans* | Kekatiya | Koddi | H | N | EN | | | | | + |
| Araceae | *Pistia stratiotes* | Diya-paradel | - | H | N | | | | | | + |
| Arecaceae | *Borassus flabellifer* | Tal | Panai | T | I | | | | | + | + |
| Arecaceae | *Calamus rotang* | Heen-wewel | Pirambu | C | N | NT | | | | | + |
| Arecaceae | *Cocos nucifera* | Pol | Thengai | T | N | | | | | | + |
| Arecaceae | *Phoenix pusilla* | Indi | Inchu | T | N | | | + | | | |
| Aristolochiaceae | *Aristolochia indica* | Sapsanda | Adagam | C | N | | | + | | | |
| Asparagaceae | *Asparagus racemosus* | Hathawariya | Chattavari | C | N | | | + | | + | |
| Asparagaceae | *Dracaena zeylanica* | Niyanda | Maral | H | N | NT | | + | | | |
| Asteraceae | *Ageratum conyzoides* | Hulan Tala | Pumpillu | H | I | | | | | | + |
| Asteraceae | *Blumea obliqua* | Muda-mahana | Nara-karamba | H | N | | | + | + | | + |
| Asteraceae | *Chromolaena odorata* | Podisinnamaran | - | S | I | | | + | | + | + |
| Asteraceae | *Cyanthillium cinereum* | Monarakudumbiya | Chitiviyarchenkalainir | H | N | | | + | | + | + |
| Asteraceae | *Eclipta prostrata* | Kikirindi | Kaikechi | H | I | | | | | + | + |
| Asteraceae | *Epaltes divaricata* | Heen-mudu-mahana | - | H | N | | | | + | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Asteraceae | *Erigeron sublyratus* | - | Nara-karamba | H | N | VU | | | + | | |
| Asteraceae | *Jeffreycia zeylanica* | Pupula | Kappilay | C | E | | | + | | + | |
| Asteraceae | *Mikania cordata* | Wathu Palu | Tuni-kodi | C | I | | | | | + | + |
| Asteraceae | *Pseudoconyza viscosa* | - | - | H | N | EN | | | + | | |
| Asteraceae | *Sphaeranthus africanus* | Vel-mudda | - | H | N | | | | + | + | + |
| Asteraceae | *Sphaeranthus indicus* | Mudu mahana | - | H | N | | | | + | + | + |
| Asteraceae | *Tridax procumbens* | - | - | H | I | | | + | | | + |
| Asteraceae | *Vicoa indica* | Ran-hiriya | - | H | N | | | + | | | |
| Asteraceae | *Xanthium indicum* | Agada | - | H | N | | | | + | + | + |
| Bignoniaceae | *Stereospermum tetragonum* | Dunu-madala | Padri | T | N | | | + | | | |
| Boraginaceae | *Coldenia procumbens* | - | - | H | N | | | | | | + |
| Boraginaceae | *Cordia curassavica* | - | - | S | I | | | + | | | |
| Boraginaceae | *Cordia dichotoma* | Lolu | Naruvilli | T | N | | | + | | + | |
| Boraginaceae | *Ehretia aspera* | - | Addula | T | N | | | + | | + | |
| Boraginaceae | *Ehretia microphylla* | Heen-thambala | Pakkuvetti | S | N | | | + | | | |
| Boraginaceae | *Heliotropium indicum* | Et Honda | Tedkodukku | H | I | | | | | + | + |
| Burseraceae | *Commiphora sp.* | - | - | S | N | | | | | | + |
| Capparaceae | *Capparis sepiaria* | Rila-katu | Karunchurai | S | N | | | + | | + | |
| Capparaceae | *Capparis spp.* | - | - | S | N | | | + | | | |
| Capparaceae | *Crateva adansonii* | Lunu-warana | Navilankai | T | N | | | + | | | + |
| Caricaceae | *Carica papaya* | Gas Labu | Pappali | T | I | | | | | | + |
| Celastraceae | *Gymnosporia emarginata* | - | - | S | N | | | + | | + | |
| Celastraceae | *Reissantia indica* | - | - | C | N | | | + | | | |
| Celastraceae | *Salacia chinensis* | Heen-himbutu- wel | - | C | N | NT | | + | | | + |
| Celastraceae | *Salacia reticulata* | Kothala Himbutu | - | C | N | EN | | + | | | |
| Cleomaceae | *Cleome viscosa* | Wal-aba | - | H | N | | | | | | + |
| Cleomaceae | *Cleome rutidosperma* | - | - | H | I | | | | | | + |
| Combretaceae | *Combretum spp.* | - | - | C | N | | | | | + | + |
| Combretaceae | *Lumnitzera racemosa* | Beriya | Tipparuthin | T | N | NT | | | + | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Combretaceae | *Terminalia arjuna* | Kumbuk | Marutu | T | N | | | + | | + | |
| Commelinaceae | *Commelina spp.* | - | - | H | N | | | | | + | + |
| Commelinaceae | *Cyanotis spp.* | - | - | H | N | | | | | + | + |
| Commelinaceae | *Murdannia spirata* | - | - | H | N | | | | | + | + |
| Convolvulaceae | *Argyreia osyrensis* | Dumbada | - | C | N | | | + | | | |
| Convolvulaceae | *Camonea pilosa* | Mahamadu | - | C | N | | | | | | + |
| Convolvulaceae | *Evolvulus nummularius* | - | - | H | I | | | | | | + |
| Convolvulaceae | *Hewittia malabarica* | Wal-trasta-walu | - | C | N | | | | | + | + |
| Convolvulaceae | *Ipomoea aquatica* | Kan-kun | - | C | N | | | | + | + | + |
| Convolvulaceae | *Ipomoea obscura* | Tel-kola | - | C | N | | | | | | + |
| Convolvulaceae | *Ipomoea pes-tigridis* | Divi-adiya | - | C | N | | | + | | | + |
| Convolvulaceae | *Ipomoea sagittifolia* | Rasa-tel-kola | Tali | C | N | | | + | | + | + |
| Convolvulaceae | *Merremia emarginata* | - | - | C | N | NT | | | | | + |
| Cucurbitaceae | *Coccinia grandis* | Kowakka | Kovvai | C | N | | | + | | | + |
| Cucurbitaceae | *Cucumis maderaspatanus* | Gon-kekiri | Mochumochukkai | C | N | | | | | | + |
| Cucurbitaceae | *Diplocyclos palmatus* | Pasengilla | - | C | N | | | + | | | |
| Cucurbitaceae | *Momordica charantia* | Batu-karavila | Pakal | C | N | | | + | | | |
| Cucurbitaceae | *Trichosanthes cucumerina* | Dum-mella | Pudal | C | N | | | + | | + | |
| Cyperaceae | *Actinoscirpus grossus* | - | - | H | N | | | | | + | + |
| Cyperaceae | *Bulbostylis spp.* | - | - | H | N | | | | | | + |
| Cyperaceae | *Cyperus aromaticus* | - | - | H | I | | | | | + | + |
| Cyperaceae | *Cyperus spp.* | - | - | H | N | | | | + | + | + |
| Cyperaceae | *Cyperus stolonifer* | - | - | H | N | | | | + | | + |
| Cyperaceae | *Eleocharis geniculata* | - | - | H | N | | | | + | | + |
| Cyperaceae | *Eleocharis spp.* | - | - | H | N | | | | + | + | + |
| Cyperaceae | *Fimbristylis spp.* | - | - | H | N | | | | + | + | + |
| Cyperaceae | *Schoenoplectiella articulata* | - | - | H | N | | | | | | + |
| Cyperaceae | *Scleria lithosperma* | - | - | H | N | | | + | | | |
| Dioscoreaceae | *Dioscorea oppositifolia* | Gonala | - | C | N | NT | | + | | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ebenaceae | *Diospyros ebenum* | Kaluwara | Karunkali | T | N | VU | DD | + | | | |
| Ebenaceae | *Diospyros ferrea* | Kalu-habaraliya | - | T | N | | | + | | | |
| Ebenaceae | *Diospyros malabarica* | Timbiri | Timbiri | T | N | | | + | | | |
| Ebenaceae | *Diospyros montana* | - | Katukanni | T | N | NT | | + | | | + |
| Ebenaceae | *Diospyros nummulariifolia* | - | - | T | E | VU | EN | + | | | |
| Ebenaceae | *Diospyros ovalifolia* | Kunumella | Vedukkanari | T | N | | | + | | | |
| Euphorbiaceae | *Croton bonplandianus* | - | - | H | I | | | | | + | + |
| Euphorbiaceae | *Croton hirtus* | Val Tippili | - | H | I | | | | | + | + |
| Euphorbiaceae | *Croton sp.* | Vel-keppetiya | - | S | N | | | + | | | |
| Euphorbiaceae | *Dimorphocalyx glabellus* | Weli-wenna | Tentukki | T | N | | | + | | | |
| Euphorbiaceae | *Euphorbia antiquorum* | Daluk | Chatura kalli | T | N | | | + | | | |
| Euphorbiaceae | *Euphorbia hirta* | Bu Dada Kiriya | - | H | I | | | | | | + |
| Euphorbiaceae | *Excoecaria agallocha* | Tela kiriya | Tilai | T | N | | | | + | + | |
| Euphorbiaceae | *Mallotus eriocarpus* | Vel-keppetiya | Maratini | T | E | | | + | | | |
| Euphorbiaceae | *Mallotus rhamnifolius* | Molabe | Marai-tinni | T | N | | | + | | | |
| Euphorbiaceae | *Ricinus communis* | Beheth Endaru | Chittamanakku | S | I | | | | | + | + |
| Euphorbiaceae | *Tragia involucrata* | Wel-kahabiliya | - | C | N | | | + | | | + |
| Fabaceae | *Abrus precatorius* | Olinda | Kundu-mani | C | N | | | + | | | + |
| Fabaceae | *Aeschynomene indica* | Diya-siyambala | - | H | N | | | | | | + |
| Fabaceae | *Alysicarpus vaginalis* | Aswenna | - | H | N | | | + | | | + |
| Fabaceae | *Bauhinia tomentosa* | Kaha-petan | Tiruvathi | T | N | | | + | | | + |
| Fabaceae | *Cassia fistula* | Ehela | Kavani | T | N | | | + | | + | + |
| Fabaceae | *Cassia roxburghii* | Ratu-wa | Vakai | T | N | | | + | | + | + |
| Fabaceae | *Clitoria ternatea* | Nil-katarolu | Karuttappu | C | N | DD | | | | | + |
| Fabaceae | *Crotalaria spp.* | - | - | H | N | | | + | | + | + |
| Fabaceae | *Crotalaria verrucosa* | Nil-andana-hiriya | Kilukiluppai | H | N | | | | | | + |
| Fabaceae | *Cynometra iripa* | Opulu | Attukaddupuli | T | N | EN | | | + | | |
| Fabaceae | *Derris parviflora* | Kala-wel | - | C | E | | | + | | + | |
| Fabaceae | *Derris scandens* | Bo-kala-wel | Kalungu kodi | C | N | | | + | | + | + |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fabaceae | *Derris trifoliata* | Kala-wel | Uppu thailan-kodi | C | N | | | | + | + | |
| Fabaceae | *Dichrostachys cinerea* | Andara | Vindattai | T | N | | | + | | + | + |
| Fabaceae | *Gliricidia sepium* | Weta Mara | Kona | T | I | | | | | + | + |
| Fabaceae | *Grona triflora* | Heen-undupiyali | - | H | N | | | + | | | + |
| Fabaceae | *Indigofera linnaei* | Bin-avari | Cheppunerenchi | H | N | | | + | | | + |
| Fabaceae | *Indigofera spp.* | - | - | H | N | | | + | | + | |
| Fabaceae | *Leucaena leucocephala* | Ipil Ipil | Tagavai | T | Iv | | | | | + | |
| Fabaceae | *Macroptilium lathyroides* | - | - | H | I | | | | | | + |
| Fabaceae | *Mimosa pudica* | Nidikumba | Tottal-vadi | H | I | | | + | | + | + |
| Fabaceae | *Neptunia prostrata* | Diya-nidikumba | - | H | N | | | | | | + |
| Fabaceae | *Piliostigma racemosum* | Maila | Atti | T | N | | | + | | + | + |
| Fabaceae | *Pongamia pinnata* | Magul-karanda | Poona | T | N | | | | | + | + |
| Fabaceae | *Pseudarthria viscida* | Gas gonika | - | C | N | | | + | | | |
| Fabaceae | *Samanea saman* | Para Mara | - | T | I | | | | | | + |
| Fabaceae | *Senegalia caesia* | Hinguru-vel | - | C | N | | | | | + | + |
| Fabaceae | *Senna auriculata* | Ranawara | Avarai | T | N | | | + | | | |
| Fabaceae | *Senna occidentalis* | Peni Tora | Ponnantakarai | H | I | | | + | | + | + |
| Fabaceae | *Senna tora* | Peti Tora | - | H | I | | | + | | + | + |
| Fabaceae | *Sesbania grandiflora* | Katuru Murunga | Akatti | T | I | | | | | | + |
| Fabaceae | *Tamarindus indica* | Siyabala | Puli | T | I | | | + | | | + |
| Fabaceae | *Tephrosia purpurea* | Gam-pila | Kavilai | H | N | | | + | | + | + |
| Fabaceae | *Tephrosia villosa* | Bu-pila | - | H | N | | | | | | + |
| Fabaceae | *Vachellia leucophloea* | Maha andara | Velvalayam | T | N | | | + | | | |
| Fabaceae | *Peltophorum pterocarpum* | Haha Maara | Iya-vakai | T | I | | | + | | + | + |
| Gentianaceae | *Enicostema axillare* | - | Vellakuru | H | N | | | | + | | |
| Hydrocharitaceae | *Ottelia alismoides* | - | - | H | N | | | | | | + |
| Hydroleaceae | *Hydrolea spinosa* | - | - | H | I | | | | | | + |
| Hydroleaceae | *Hydrolea zeylanica* | Diya-kirilla | - | H | N | NT | | | | | + |
| Hypoxidaceae | *Curculigo orchioides* | Heen-bin-tal | Wolappanai | H | N | | | + | | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lamiaceae | *Gmelina asiatica* | Demata | Gumadi | S | N | | | + | | + | |
| Lamiaceae | *Leonotis nepetifolia* | Maha-yak-wanassa | Kasitumpai | H | N | NT | | + | | | |
| Lamiaceae | *Leucas zeylanica* | Geta tumba | Mudi tumpai | H | N | | | + | | | + |
| Lamiaceae | *Mesosphaerum suaveolens* | Madurutala | - | H | I | | | | | | + |
| Lamiaceae | *Ocimum americanum* | Suwandu tala | Kanchankorai | H | N | | | + | | + | + |
| Lamiaceae | *Ocimum gratissimum* | Gas-tala | - | H | N | | | + | | + | + |
| Lamiaceae | *Premna tomentosa* | Boo-seru | Koluk- kutti | T | N | | | + | | | |
| Lamiaceae | *Tectona grandis* | Thekka | - | T | I | | | + | | | + |
| Lamiaceae | *Vitex altissima* | Millla | Kaaddmanakku | T | N | NT | | + | | | |
| Lamiaceae | *Vitex leucoxylon* | Nebedda | Kaddu nochchi | T | N | | | + | | + | |
| Lamiaceae | *Volkameria inermis* | Wal gurenda | Dangamkuppi | S | N | | | | + | + | + |
| Lauraceae | *Alseodaphne semecarpifolia* | Wewarana | Yavaranai | T | N | NT | | + | | | |
| Lecythidaceae | *Barringtonia acutangula* | Ela midella | Adampu | T | N | | | + | | + | |
| Lentibulariaceae | *Utricularia aurea* | Diya pasi | - | H | N | | | | | | + |
| Linaceae | *Hugonia mystax* | Bu-getiya | Motirakanni | C | N | | | + | | | |
| Lindernaceae | *Torenia crustacea* | - | - | H | N | | | | + | | |
| Loganiaceae | *Strychnos minor* | Kaduru Ketiya wel | Kachchalkodi | C | N | | | + | | | |
| Loganiaceae | *Strychnos nux-vomica* | Godakaduru | Kanchurai | T | N | | | + | | | |
| Loranthaceae | *Dendrophthoe falcata* | - | - | EP | N | | | + | | | + |
| Loranthaceae | *Taxillus cuneatus* | - | - | EP | N | | | + | | | |
| Lythraceae | *Sonneratia caseolaris* | Kirala | - | T | N | | | | + | | |
| Malpighiaceae | *Hiptage benghalensis* | Puwak-gediya-wel | - | C | N | | | | | + | + |
| Malvaceae | *Abutilon indicum* | Wal anoda | Peruntulli | S | N | | | + | | + | + |
| Malvaceae | *Berrya cordifolia* | Hal-milla | Chavandalai | T | N | | | + | | + | + |
| Malvaceae | *Grewia carpinifolia* | - | - | S | N | | | + | | | |
| Malvaceae | *Grewia helicterifolia* | Bora daminiya | Taviddai | T | N | | | + | | | |
| Malvaceae | *Grewia orientalis* | Wel keliya | Kodi | S | N | | | + | | + | + |
| Malvaceae | *Grewia tiliifolia* | Daminiya | Chadachchi | T | N | | | + | | | |
| Malvaceae | *Helicteres isora* | Lihiniya | Vallampanai | T | N | | | + | | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Malvaceae | *Hibiscus micranthus* | Bebila | Perumaddi | H | N | | | + | | + | + |
| Malvaceae | *Hibiscus tiliaceus* | Beli-patta | Nir-paratthi | T | N | | | + | | + | |
| Malvaceae | *Melochia corchorifolia* | Gal kura | - | H | N | | | | | + | + |
| Malvaceae | *Pavonia zeylanica* | - | - | S | N | | | + | | | + |
| Malvaceae | *Pityranthe verrucosa* | Dik wenna | Vid pani | T | E | | | + | | + | |
| Malvaceae | *Pterospermum suberifolium* | Welan | Taddaemarum | T | N | | | + | | + | |
| Malvaceae | *Sida acuta* | Gas-bebila | - | H | N | | | + | | + | + |
| Malvaceae | *Sida cordata* | Wel-bevila | Palampadu | H | N | | | + | | + | + |
| Malvaceae | *Sida cordifolia* | Bevila | Cheevakanpudu | H | N | | | + | | + | + |
| Malvaceae | *Sida mysorensis* | Giriwadi-bevila | - | H | N | | | | | | + |
| Malvaceae | *Triumfetta spp.* | - | - | H | N | | | | | + | + |
| Malvaceae | *Urena lobata* | Patta-epala | - | H | N | | | | | + | + |
| Malvaceae | *Urena sinuata* | Heen-epala | - | H | N | | | + | | + | + |
| Malvaceae | *Waltheria indica* | - | - | H | I | | | | | | + |
| Marsileaceae | *Marsilea minuta* | Hathara-pethiya | - | H | N | | | | + | + | + |
| Melastomataceae | *Memecylon capitellatum* | Weli-kaha | Katti-kaya | S | E | | | + | | | |
| Melastomataceae | *Memecylon umbellatum* | Kora-kaha | Kurre-kaya | S | N | | | + | | | |
| Meliaceae | *Aglaia elaeagnoidea* | - | Kannakampu | T | N | | | + | | | |
| Meliaceae | *Azadirachta indica* | Kohomba | Vembu | T | I | | | + | | + | + |
| Meliaceae | *Walsura trifoliolata* | Kirikon | Chadavakku | T | N | | | + | | | |
| Meliaceae | *Xylocarpus granatum* | Mutti-kadol | Kandal anga | T | N | EN | | | + | | |
| Menispermaceae | *Cissampelos pareira* | Diya-mitta | Appatta | C | N | | | + | | + | |
| Menispermaceae | *Tinospora cordifolia* | Rasakinda | Chintil | C | N | | | + | | + | + |
| Menyanthaceae | *Nymphoides hydrophylla* | Heen-ambala | - | H | N | | | | | | + |
| Molluginaceae | *Glinus lotoides* | - | - | H | N | | | | | | + |
| Molluginaceae | *Glinus oppositifolius* | Heen-ala | - | H | N | | | | | | + |
| Molluginaceae | *Paramollugo nudicaulis* | - | - | H | N | NT | | | | | + |
| Molluginaceae | *Trigastrotheca pentaphylla* | - | - | H | N | | | | | | + |
| Moraceae | *Ficus benghalensis* | Maha-nuga | Arla | T | N | | | + | | | + |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Moraceae | *Ficus hispida* | Kota-dimbula | - | T | N | | | | | | + |
| Moraceae | *Ficus racemosa* | Attikka | Atti | T | N | | | | | + | |
| Moraceae | *Ficus sp.* | Nuga | - | T | N | | | + | | | + |
| Moraceae | *Streblus asper* | Geta-netul | Papirai | T | N | | | + | | + | + |
| Moringaceae | *Moringa oleifer* | Murunga | Murungamaram | T | I | | | | | + | + |
| Musaceae | *Musa x paradisiaca* | Kesel | Valaipalam | H | I | | | | | + | + |
| Myrtaceae | *Eugenia roxburghii* | - | - | T | N | | | + | | | |
| Myrtaceae | *Syzygium cumini* | Madan | Perunaval | T | N | | | + | | + | + |
| Nyctaginaceae | *Boerhavia diffusa* | Pita-sudu-pala | Karichcharanai | H | N | | | | | | + |
| Nymphaeaceae | *Nymphaea nouchali* | Nil manel | - | H | N | VU | | | | | + |
| Nymphaeaceae | *Nymphaea pubescens* | Olu | - | H | N | | | | + | | + |
| Ochnaceae | *Ochna lanceolata* | Bo-kera | Katharai | T | N | | | + | | | |
| Olacaceae | *Olax scandens* | - | Kadalranchi | C | N | | | + | | | |
| Oleaceae | *Jasminum angustifolium* | Wal-pichcha | - | C | N | | | + | | + | + |
| Onagraceae | *Ludwigia adscendens* | Beru-diyanilla | - | H | N | | | | | | + |
| Onagraceae | *Ludwigia perennis* | Piduruwella | - | H | N | | | | | | + |
| Onagraceae | *Ludwigia spp.* | - | - | H | N | | | | | | + |
| Passifloraceae | *Passiflora foetida* | - | - | C | I | | | | | | + |
| Phrymaceae | *Peplidium maritimum* | - | - | H | N | EN | | | + | | |
| Phyllanthaceae | *Bridelia retusa* | Ketakala | Mul-venkai | T | N | | | + | | | |
| Phyllanthaceae | *Flueggea leucopyrus* | Heen-katu-pila | Mudpulanthi | S | N | | | + | | + | + |
| Phyllanthaceae | *Margaritaria indica* | Karawu | - | T | N | | | + | | + | |
| Phyllanthaceae | *Phyllanthus racemosus* | Kuratiya | - | S | N | | | + | | + | |
| Phyllanthaceae | *Phyllanthus reticulatus* | Wel-kayila | Mipullanti | S | N | | | + | | + | + |
| Phyllanthaceae | *Phyllanthus simplex* | - | - | H | N | | | + | | | + |
| Phyllanthaceae | *Synostemon bacciformis* | Et pitawakka | - | H | N | | | | + | | + |
| Plantaginaceae | *Bacopa monnieri* | Lunu-wila | - | H | N | | | | + | | + |
| Plantaginaceae | *Scoparia dulcis* | - | - | H | I | | | | | | + |
| Poaceae | *Chloris barbata* | Mayuru Tana | Kondai-pul | H | I | | | | | | + |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Poaceae | *Chrysopogon aciculatus* | Tuttiri | Ottu-pul | H | N | | | | | | + |
| Poaceae | *Cynodon dactylon* | Ruha | Arugam-pillu | H | N | | | + | + | + | + |
| Poaceae | *Dactyloctenium aegyptium* | Putu-tana | - | H | N | | | | | | + |
| Poaceae | *Heteropogon contortus* | I-tana | - | H | N | | | | | | + |
| Poaceae | *Imperata cylindrica* | Illuk | - | H | N | DD | | | | | + |
| Poaceae | *Megathyrsus maximus* | Rata Tana | - | H | Iv | | | | | + | + |
| Poaceae | *Myriostachya wightiana* | - | - | H | N | CR(PE) | | | + | + | |
| Poaceae | *Oplismenus compositus* | - | - | H | N | | | + | | | |
| Poaceae | *Panicum repens* | Etora | Injii-pul | H | N | | | | + | + | + |
| Poaceae | *Pharagmites karka* | Nala-gas | - | S | N | | | | | | + |
| Poaceae | *Saccharum officinarum* | Uk | Karumbu | H | I | | | | | | + |
| Poaceae | *Zea mays* | Bada Iringu | Makka-cholam | H | I | | | | | | + |
| Poaceae | *Oryza sativa* | Wi | - | H | N | | | | | | + |
| Polygonaceae | *Persicaria pulchra* | Sudu-kimbul-wenna | - | H | N | | | | | + | + |
| Pontederiaceae | *Eichhornia crassipes* | Japan Jabara | - | H | Iv | | | | + | + | + |
| Pontederiaceae | *Pontederia vaginalis* | Diya habarala | - | H | N | | | | + | | + |
| Portulacaceae | *Portulaca quadrifida* | Heen-genda-kola | - | H | N | | | | + | | |
| Primulaceae | *Aegiceras corniculatum* | Heen kadol | Vitlikanna | T | N | | | | + | | |
| Pteridaceae | *Acrostichum aureum* | Keran Koku | - | H | N | | | | + | | |
| Pteridaceae | *Ceratopteris thalictroides* | - | - | H | N | NT | | | + | | + |
| Putranjivaceae | *Drypetes gardneri* | Gal-wira | - | T | N | NT | | + | | | |
| Putranjivaceae | *Drypetes sepiaria* | Wira | Wirai | T | N | | | + | | | |
| Rhamnaceae | *Scutia myrtina* | - | Tudari | C | N | | | + | | + | |
| Rhamnaceae | *Ventilago madraspatana* | Yakada-wel | Vempadam | C | N | | | + | | | |
| Rhamnaceae | *Ziziphus mauritiana* | Dabara | Illantai | T | N | | | + | | + | + |
| Rhamnaceae | *Ziziphus oenopolia* | Heen eraminiya | Churai | C | N | | | + | | + | + |
| Rhizophoraceae | *Cassipourea ceylanica* | Pana | Kannu | S | N | | | + | | | |
| Rhizophoraceae | *Ceriops sp.* | - | - | T | N | | | | + | | |
| Rhizophoraceae | *Ceriops tagal* | - | Chiru-Kandal | T | N | NT | | | + | | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rhizophoraceae | *Rhizophora mucronata* | Ela kadol | Kandal | T | N | | | | + | | |
| Rubiaceae | *Adina cordifolia* | Kolon | Manchal kadampa | T | N | | | + | | + | + |
| Rubiaceae | *Benkara malabarica* | Pudan | - | S | N | | | + | | + | |
| Rubiaceae | *Canthium coromandelicum* | Kara | Karai | T | N | | | + | | + | |
| Rubiaceae | *Catunaregam spinosa* | Kukuruman | Karai | S | N | | | + | | | |
| Rubiaceae | *Coffea wightiana* | - | Kaddumallikai | S | N | VU | | + | | | |
| Rubiaceae | *Discospermum sphaerocarpum* | Gal Seru | Vella | T | N | | | + | | | |
| Rubiaceae | *Ixora coccinea* | Ratambala | Vedchi | S | N | | | + | | | |
| Rubiaceae | *Ixora pavetta* | Maha-ratambala | Kanmuttankirai | T | N | | | + | | | |
| Rubiaceae | *Mitracarpus hirtus* | - | - | H | I | | | | | | + |
| Rubiaceae | *Mitragyna parvifolia* | Helamba | Nir-kadampa | T | N | | | + | | | |
| Rubiaceae | *Morinda coreia* | Ahu | Manchavanna | T | N | | | + | | | |
| Rubiaceae | *Oldenlandia spp.* | - | - | H | N | | | | | | + |
| Rubiaceae | *Psydrax dicoccos* | Gal-karanda | Vatchikuran | T | N | | | + | | | |
| Rubiaceae | *Richardia brasiliensis* | - | - | H | I | | | | | | + |
| Rubiaceae | *Spermacoce articularis* | - | - | H | N | | | | | | + |
| Rubiaceae | *Tarenna asiatica* | Tarana | Karanai | S | N | | | + | | | |
| Rutaceae | *Atalantia sp.* | Yakinaran | Pey kuruntu | S | N | | | + | | | |
| Rutaceae | *Chloroxylon swietenia* | Buruta | Muritai | T | N | VU | VU | + | | | + |
| Rutaceae | *Clausena indica* | Migon karapincha | Pannai | S | N | | | + | | | |
| Rutaceae | *Glycosmis angustifolia* | Bol-pana | - | S | N | NT | | + | | | |
| Rutaceae | *Glycosmis mauritiana* | - | - | S | N | | | + | | | |
| Rutaceae | *Glycosmis pentaphylla* | Dodan-pana | Kulapannai | S | N | | | + | | | |
| Rutaceae | *Limonia acidissima* | Divul | Mayaladikkuruntu | T | N | | | + | | | |
| Rutaceae | *Murraya glenieii* | - | - | S | E | VU | | + | | | |
| Rutaceae | *Murraya koenigii* | Karapincha | Karivempu | T | N | | | + | | | |
| Rutaceae | *Paramignya monophylla* | Wellangiriya | - | C | N | | | | | + | |
| Rutaceae | *Pleiospermium alatum* | Tumpat kurundu | - | T | N | | | + | | | |
| Rutaceae | *Toddalia asiatica* | Kudu miris | Kandai | C | N | | | + | | + | |

| Family | Scientific Name | Sinhala Names | Tamil Names | HA | TS | NS | GS | DF/ SC | MG/ WT | RR | AG/HG/ CA/TA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Salicaceae | *Casearia zeylanica* | Wal-waraka | Kakapalai | T | N | | | + | | + | |
| Salvadoraceae | *Azima tetracantha* | Katuniyanda | Ichanku | S | N | | | + | | + | + |
| Salvadoraceae | *Salvadora persica* | Maliththan | Uvay | T | N | | | + | | | |
| Salviniaceae | *Salvinia molesta* | Salvinia | Salvinia | H | Iv | | | | + | | + |
| Sapindaceae | *Allophylus cobbe* | Wal-kobbe | - | T | N | | | + | | + | |
| Sapindaceae | *Cardiospermum halicacabum* | Penela-wel | - | C | N | | | | | + | + |
| Sapindaceae | *Dimocarpus longan* | Mora | Nurai | T | N | | | + | | | |
| Sapindaceae | *Glenniea unijuga* | Wal-mora | Kuma | T | E | | VU | + | | | |
| Sapindaceae | *Lepisanthes senegalensis* | Gal-kuma | Kal-kuma | T | N | | | + | | | |
| Sapindaceae | *Lepisanthes tetraphylla* | Dambu | - | T | N | | | + | | + | |
| Sapindaceae | *Sapindus emarginatus* | Kaha-penela | - | T | N | | | + | | | |
| Sapindaceae | *Schleichera oleosa* | Koon | Kula | T | N | | | + | | + | + |
| Sapotaceae | *Madhuca longifolia* | Gam Mi | Illupai | T | N | | | | | + | |
| Sapotaceae | *Manilkara hexandra* | Palu | Palai | T | N | NT | | + | | + | |
| Solanaceae | *Solanum melongena* | Ela Batu | Kattiri-kai, Vaddu | H | I | | | + | | | + |
| Sphenocleaceae | *Sphenoclea zeylanica* | - | - | H | N | | | | | | + |
| Typhaceae | *Typha angustifolia* | Hambu Pan | - | H | Iv | | | | + | + | + |
| Verbenaceae | *Lantana camara* | Gandapana | - | S | Iv | | | + | | + | + |
| Verbenaceae | *Phyla nodiflora* | Hiramana-datta | Podutalai | H | N | | | | | | + |
| Violaceae | *Scyphellandra virgata* | - | - | S | N | NT | | + | | | |
| Vitaceae | *Causonis trifolia* | Wal-rat-diya-labu | - | C | N | | | | + | | |
| Vitaceae | *Cissus latifolia* | Wal-diya-labu | - | C | N | | | + | | | |
| Vitaceae | *Cissus quadrangularis* | Hirassa | Arugni | C | N | | | + | | + | |
| Vitaceae | *Cissus vitiginea* | Wal-nivithi | Kaddumuntiri | C | N | | | + | | + | |

**Annex 15.4-2:** Fauna Species Observed During the Field Ecological Study

**ABBREVIATIONS**

**BrR or B** – Breeding Resident, **M** – Migratory, **E** – Endemic, **N** – Native Species**, I** – Exotic Species, **NS** – National Conservation Status, **GS** – Global Conservation Status, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **NE** – Not Evaluated

| Family | Scientific Name | Common Name | Sinhala Name | Tamil Name | ST | NS | GS |
|---|---|---|---|---|---|---|---|
| | | **BIRDS** | | | | | |
| Accipitridae | *Accipiter badius* | Shikra | Kurulugoya | Valooru | BrR | | |
| Accipitridae | *Haliaeetus ichthyaetus* | Grey-headed Fish-eagle | Aluhis masukussa | Siriya sambalthalai meen kaluhu | BrR | NT | NT |
| Accipitridae | *Haliaeetus leucogaster* | White-bellied Sea-eagle | Kusa alli muhudukussa | Ven vayitru kadat kaluhu | BrR | | |
| Accipitridae | *Haliastur indus* | Brahminy Kite | Bamunu piyakussa | Sem parunthu | BrR | | |
| Accipitridae | *Nisaetus cirrhatus* | Crested Hawk-eagle | Perali kondakussa | Niram marum kaluhu | BrR | | |
| Accipitridae | *Pernis ptilorhyncus* | Oriental Honey-buzzard | Silu bambarakussa | Then parunthu | B & M | VU | |
| Accipitridae | *Spilornis cheela* | Crested Serpent-eagle | Silu sarapakussa | Kondai paambu kaluhu | BrR | | |
| Aegithinidae | *Aegithina tiphia* | Common Iora | Podu iorava | Manjal chittu | BrR | | |
| Alaudidae | *Alauda gulgula* | Oriental Skylark | Peradigu ahsritta | Vaanam paadi | BrR | | |
| Alaudidae | *Eremopterix griseus* | Ashy-crowned Sparrow-lark | Kirulalu Bimritta | Sambal thalai vaanam paadi | BrR | | |
| Alaudidae | *Mirafra affinis* | Rufous-winged Bushlark | Panduru gomaritta | Jerdan puthar vaanam paadi | BrR | | |
| Alcedinidae | *Alcedo atthis* | Common Kingfisher | Mal Pilihuduwa | Siriya neela meen kothi | BrR | | |
| Alcedinidae | *Ceryle rudis* | Pied Kingfisher | Gomara pilihuduwa | Siriya karuppu vellai meen kothi | BrR | | |
| Alcedinidae | *Halcyon smyrnensis* | White-throated Kingfisher | Gelasudu medi- pilihuduwa | Ven marabu meen kothi | BrR | | |
| Alcedinidae | *Pelargopsis capensis* | Stork-billed Kingfisher | Manathudu maha pilihuduwa | Parutha alahu meen kothi. | BrR | | |
| Anatidae | *Dendrocygna javanica* | Lesser Whistling-duck | Heen thamba seruwa | Siriya seelkani siravi | BrR | | |

| Family | Scientific Name | Common Name | Sinhala Name | Tamil Name | ST | NS | GS |
|---|---|---|---|---|---|---|---|
| Anhingidae | *Anhinga melanogaster* | Oriental Darter | Ahikava | Paambu thara | BrR | | NT |
| Apodidae | *Apus affinis* | Little Swift / House Swift | Punchi thurithaya | Naadu ulavaaran | BrR | | |
| Apodidae | *Cypsiurus balasiensis* | Asian Palm-swift | Asia thal-thurithaya | Panai ulavaaran | BrR | | |
| Ardeidae | *Ardea alba* | Great Egret | Sudu- maha kokka | Periya kokku | BrR | | |
| Ardeidae | *Ardea cinerea* | Grey Heron | Alu kokka | Sambal kokku | BrR | | |
| Ardeidae | *Ardea intermedia* | Intermediate Egret | Sudu medi-kokka | Naduthara kokku | BrR | | |
| Ardeidae | *Ardea purpurea* | Purple Heron | Karaval kokka | Senneela kokku | BrR | | |
| Ardeidae | *Ardeola grayii* | Indian Pond-heron | Kana kokka | Mudaiyan | BrR | | |
| Ardeidae | *Bubulcus ibis* | Cattle Egret | Gerikokka | Unnik kokku | B & M | | |
| Ardeidae | *Butorides striata* | Striated Heron | Palakokka | Siriya pachchai kokku | BrR | | |
| Ardeidae | *Egretta garzetta* | Little Egret | Punchi anu-koka | Sinna kokku | BrR | | |
| Ardeidae | *Ixobrychus flavicollis* | Black Bittern | Kalu meti-kokka | Karung kuruhu | B & M | | |
| Ardeidae | *Nycticorax nycticorax* | Black-crowned Night-heron | Rekana- kokka | Irak kokku | BrR | | |
| Artamidae | *Artamus fuscus* | Ashy Woodswallow | Alu vanalihiniya | Sambal kaatu thakai vilaan | BrR | NT | |
| Bucerotidae | *Anthracoceros coronatus* | Malabar Pied Hornbill | Poru Kandetta | Malabar karuppuvellai iruvaayan | BrR | | NT |
| Burhinidae | *Burhinus indicus* | Indian Thick-knee | Golu-kirala | Perungkanni | BrR | | |
| Burhinidae | *Esacus recurvirostris* | Great Thick-knee | Gal kirala | Valaimukku perungkanni | BrR | | NT |
| Campephagidae | *Coracina melanoptera* | Black-headed Cuckooshrike | Kaluhis kovulsaratiththa | Karunthalai kuyil keechaan | BrR | | |
| Caprimulgidae | *Caprimulgus asiaticus* | Common / Indian Nightjar | Indu Bimbassa | Siru pakki | BrR | | |
| Caprimulgidae | *Caprimulgus atripennis* | Jerdon's Nightjar | Digupenda bimbassa | Jerdon pakki | BrR | | |
| Charadriidae | *Charadrius dubius* | Little Ringed Plover | Punchi mala oleviya | Sinna pattani uppuk kothi | B & M | EN | |
| Charadriidae | *Vanellus indicus* | Red-wattled Lapwing | Rath yatimal kirala | Sihappu mooku aart kaati | BrR | | |

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|---|---|---|---|---|---|---|---|
| Charadriidae | *Vanellus malabaricus* | Yellow-wattled Lapwing | Kaha yatimal kirala | Manjal mooku aart kaati | BrR | | |
| Chloropseidae | *Chloropsis jerdoni* | Blue- winged Leafbird | Jerdon kolarisiya | Jerdon pachaichittu | BrR | | |
| Ciconiidae | *Anastomus oscitans* | Asian Openbill | Vivarathuduwa | Naththai-kuththi-narai | BrR | | |
| Ciconiidae | *Ciconia episcopus* | Woolly-necked Stork | Padili manava | Venkaluthu naarai | BrR | | NT |
| Ciconiidae | *Mycteria leucocephala* | Painted Stork | Lathuvakiya | Manjalmooku naarai | BrR | | |
| Cisticolidae | *Cisticola juncidis* | Zitting Cisticola | Iri Pavansariya | Naatu visirivaal kathir kuruvi | BrR | | |
| Cisticolidae | *Orthotomus sutorius* | Common Tailorbird | Battichcha | Thaiyat kaara kathir kuruvi | BrR | | |
| Cisticolidae | *Prinia inornata* | Plain Prinia | Sarala prinia | Kathir kuruvi | BrR | | |
| Cisticolidae | *Prinia socialis* | Ashy Prinia | Alu prinia | Sambal kathir kuruvi | BrR | | |
| Cisticolidae | *Prinia sylvatica* | Jungle Prinia | Vana prinia, Hambu kurulla | Kaatu kathir kuruvi | BrR | | |
| Columbidae | *Columba livia* | Common Pigeon | Pareviya | Maada Puraa | BrR | | |
| Columbidae | *Ducula aenea* | Green Imperial-pigeon | Nil Mahagoya | Pachai arasa Puraa | BrR | | NT |
| Columbidae | *Spilopelia suratensis* | Spotted Dove | Alu-kobeiya | Pulli Puraa | BrR | | |
| Columbidae | *Streptopelia decaocto* | Eurasian Collared-dove | Mala kobeiya | Panjavaran Puraa | BrR | NT | |
| Columbidae | *Treron bicinctus* | Orange-breasted Green-pigeon | Layaran batagoya | Orange maarbu Pachai Puraa pigeon | BrR | | |
| Columbidae | *Treron pompadora* | Sri Lanka Green-pigeon | Sri Lanka Pitadam Batagoya | Sambal nettri Pachai Puraa | E | | |
| Coraciidae | *Coracias benghalensis* | Indian Roller | Dumbonna | Panan-kadai, Kottai-kili | BrR | | |
| Corvidae | *Corvus macrorhynchos* | Indian Jungle Crow | Kalu kaputa | Andang kaakai | BrR | | |
| Corvidae | *Corvus splendens* | House Crow | Colomba kaputa | Kaakai | BrR | | |
| Cuculidae | *Centropus sinensis* | Greater Coucal | Atikukula | Periya sembaham | BrR | | |
| Cuculidae | *Clamator jacobinus* | Pied Cuckoo | Gomara kondakoha | Kadalai kuyil | BrR | | |
| Cuculidae | *Eudynamys scolopaceus* | Asian Koel | Kovula | Asia Kuyil | BrR | | |
| Cuculidae | *Phaenicophaeus viridirostris* | Blue-faced Malkoha | Wathanil malkoha | Neela muha malkoha | BrR | | |

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|---|---|---|---|---|---|---|---|
| Dicaeidae | *Dicaeum erythrorhynchos* | Pale-billed Flowerpecker | Lathudu Pililichcha | Dickel malar kothi | BrR | | |
| Dicruridae | *Dicrurus macrocercus* | Black Drongo | Kalu kavuda | Karung karichaan | B & M | | |
| Estrildidae | *Euodice malabarica* | Indian Silverbil | Sarala Weekurulla | Ven thondai sillai | BrR | NT | |
| Estrildidae | *Lonchura malacca* | Tricoloured Munia | Thepaha Weekurulla | Karunthalai sillai | BrR | NT | |
| Estrildidae | *Lonchura punctulata* | Scaly-breasted Munia | Laya kayuru Weekurulla | Pulli sillai | BrR | | |
| Estrildidae | *Lonchura striata* | White-rumped Munia | Nithamba sudu Weekurulla | Ven muthuhu sillai | BrR | | |
| Hemiprocnidae | *Hemiprocne coronata* | Crested Treeswift | Silu ruk-thurithaya | Kondai ulavaaran | BrR | | |
| Hirundinidae | *Cecropis hyperythra* | Sri Lanka Swallow | Sri Lanka Lak Lihiniya | | E | | |
| Jacanidae | *Hydrophasianus chirurgus* | Pheasant-tailed Jacana | Savul-diyasana | Neela vaal illaik koli | BrR | | |
| Laridae | *Chlidonias hybrida* | Whiskered Tern | Alupiya Kangul-lihiniya | | M | NE | |
| Laridae | *Sternula albifrons* | Little Tern | Punchi muhudulihiniya | | B & M | VU | |
| Leiotrichidae | *Argya affinis* | Yellow-billed Babbler | Demalichcha | Manjal alahu silamban | BrR | | |
| Megalaimidae | *Psilopogon haemacephalus* | Coppersmith Barbet | Rathlaya Kottoruwa | Senmaarbu Kukkuruvan | BrR | | |
| Megalaimidae | *Psilopogon rubricapillus* | Sri Lanka Barbet | Mal Kottoruwa, Rathmunath Kottoruwa | Sennettri kukkuravan | E | | |
| Megalaimidae | *Psilopogon zeylanicus* | Brown-headed Barbet | Polos Kottoruwa | Paluppu thalai kukkuruvan | BrR | | |
| Meropidae | *Merops orientalis* | Little Green Beeeater | Punchi binguharaya | Siriya pachai panchuruttaan. | BrR | | |
| Monarchidae | *Terpsiphone paradisi* | Asian Paradise- flycatcher | Asia rahanmara | Arasavaal eepidipaan | B & M | | |
| Motacillidae | *Anthus rufulus* | Paddyfield Pipit | Keth waratichcha | Vayal nettaikkaadi | BrR | | |
| Muscicapidae | *Copsychus leggei* | Sri Lanka Shama | SL Vana Polkichcha | Ilankai Solanippaadi | E | | |
| Muscicapidae | *Copsychus saularis* | Oriental Magpie-robin | Polkichcha | Karuppu vellai solaippadi | BrR | | |
| Muscicapidae | *Saxicoloides fulicatus* | Indian Robin | Kalukichcha | Karunj chittu | BrR | | |
| Nectariniidae | *Cinnyris asiatica* | Purple Sunbird | Dam sutikka | Ootha thenchittu | BrR | | |
| Nectariniidae | *Cinnyris lotenius* | Long-billed Sunbird | Dikthudu Sutikka | Loten thenchittu | BrR | | |

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|---|---|---|---|---|---|---|---|
| Nectariniidae | *Leptocoma zeylonica* | Purple-rumped Sunbird | Nithamba dam sutikka | Oothapitta thenchittu | BrR | | |
| Oriolidae | *Oriolus xanthornus* | Black-hooded Oriole | Kahakurulla | Karunthalai maangkuyil | BrR | | |
| Passeridae | *Passer domesticus* | House Sparrow | Gekurulla | Chittukkuruvi | BrR | NT | |
| Pelecanidae | *Pelecanus philippensis* | Spot-billed Pelican | Thithhota pasthuduwa | Pullialahu koolikkada | BrR | | NT |
| Pellorneidae | *Pellorneum fuscocapillus* | SL Browncapped Babbler | SL Boraga piridemalichcha | Ilankai kabilakulla velaikkara kuruvi | E | | |
| Phalacrocoracidae | *Microcarbo niger* | Little Cormorant | Punchi diyakava | Siriya neerkaham | BrR | | |
| Phalacrocoracidae | *Phalacrocorax fuscicollis* | Indian Cormorant | Indu diyakava | Naduthoura neerkaaham | BrR | | |
| Phasianidae | *Gallus lafayettii* | Sri Lanka Junglefowl | Sri Lanka Wali kukula | Kattu-koli | E | | |
| Phasianidae | *Pavo cristatus* | Indian Peafowl | Monara | Neela mayil | BrR | | |
| Picidae | *Dinopium benghalense* | Lesser Goldenback | Pita- rang Kerela | Siriya pon muthuhu marang kothi | BrR | | |
| Ploceidae | *Ploceus manyar* | Streaked Weaver | Pan Wadukurulla | Karung keetru thookanaang kuruvi | BrR | EN | |
| Ploceidae | *Ploceus philippinus* | Baya Weaver | Ruk Wadukurulla | Thookkanaang kuruvi | BrR | | |
| Podicipedidae | *Tachybaptus ruficollis* | Little Grebe | Punchi gembithuruva | Sinna mookulippan | BrR | | |
| Psittacidae | *Psittacula krameri* | Rose-ringed Parakeet | Rena girawa | Pachai Kili | BrR | | |
| Pycnonotidae | *Pycnonotus cafer* | Red-vented Bulbul | Kondaya | Sinnaan | BrR | | |
| Pycnonotidae | *Pycnonotus luteolus* | White-browed Bulbul | Bamasudu Kondaya | Ven puruva sinnaan | BrR | | |
| Rallidae | *Amaurornis phoenicurus* | White-breasted Waterhen | Layasudu korawakka | Ven maarbu kaanaang koli | BrR | | |
| Rallidae | *Gallinula chloropus* | Common Moorhen | Podu galinuwa, Wil kukkula | Thaalai koli | BrR | | |
| Rallidae | *Porphyrio poliocephalus* | Purple Swamphen | Dam madi-kithala | Neela thodai koli | BrR | | |
| Recurvirostridae | *Himantopus himantopus* | Black-winged Stilt | Kalupiya ipalpava | Nedungkaal ullaan | B & M | | |
| Strigidae | *Ketupa zeylonensis* | Brown Fish-owl | Bora kevulbakamuna | Meen pidi aanthai | BrR | | |
| Strigidae | *Otus bakkamoena* | Indian Scops Owl | Karapati Kanbassa | Pattaikaluthu sevi aanthai | BrR | | |
| Sturnidae | *Acridotheres tristis* | Common Myna | Myna | Naakanavai | BrR | | |

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|---|---|---|---|---|---|---|---|
| Sylviidae | *Chrysomma sinense* | Yellow-eyed Babbler | Nethkaha thanademalichcha | Manjal kan silamban | BrR | | |
| Threskiornithidae | *Platalea leucorodia* | Eurasian Spoonbill | Hendialava | Karandi vaayan | BrR | | |
| Threskiornithidae | *Plegadis falcinellus* | Glossy Ibis | Silutu Dathuduwa | | B & M | DD | |
| Threskiornithidae | *Threskiornis melanocephalus* | Black-headed Ibis | Hisakalu dekettha | Vellai arivaal mookan | BrR | | NT |
| Timaliidae | *Dumetia hyperythra* | Tawny-bellied Babbler | Kusakaha landudemalichcha | Karunj chirappu vayittru silamban | BrR | | |
| Timaliidae | *Rhopocichla atriceps* | Dark-fronted Babbler | Vathaduru pandurudemalichcha | Karunthalai chilamban | BrR | | |
| Turnicidae | *Turnix suscitator* | Barred Buttonquail | Punchi bola watuyuruwa | Kadai | BrR | | |
| Upupidae | *Upupa epops* | Eurasian Hoopoe | Poroluwa | Kondalthi | BrR | | |
| Vangidae | *Tephrodornis affinis* | Sri Lanka Woodshrike | SL Podu vanasaratiththa | Kaatu keechaan | E | | |
| | | | | | | | |
| | | **BUTTERFLIES** | | | | | |
| Hesperiidae | *Iambrix salsala* | Chestnut Bob | Guru talagobaya | | N | | |
| Hesperiidae | *Suastus gremius* | Indian Palm Bob | Indu talagobaya | | N | | |
| Hesperiidae | *Taractrocera maevius* | Common Grass Dart | Tanasara | | N | | |
| Lycaenidae | *Arhopala amantes* | Large oakblue | Maha gas-nilaya | | N | | |
| Lycaenidae | *Azanus jesous* | African Babul Blue | Apricanu neelaya | | N | | |
| Lycaenidae | *Castalius rosimon* | Common Pierrot | Podu Mal-nilaya | | N | | |
| Lycaenidae | *Catochrysops strabo* | Forger-me-not | Kela Mal-nilaya | | N | | |
| Lycaenidae | *Chilades lajus* | Lime Blue | Podu Panu-nilaya | | N | | |
| Lycaenidae | *Chilades putli* | Grass Jewel | Ran Thruna-nilaya | | N | | |
| Lycaenidae | *Curetis thetis* | Indian sunbeam | Maha hiru-nilaya | | N | | |
| Lycaenidae | *Leptotes plinius* | Zebra Blue | Raja Iri-Neelaya | | N | | |
| Lycaenidae | *Megisba malaya* | Malayan | Podu Dumburu-nilaya | | N | | |
| Lycaenidae | *Rathinda amor* | Monkey-puzzle | Visituru vanduru nilaya | | N | | |
| Lycaenidae | *Spindasis vulcanus* | Common Silverline | Podu Ridee-nilaya | | N | | |

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|---|---|---|---|---|---|---|---|
| Lycaenidae | *Tajuria cippus* | Peacock Royal | Monara Raja-nilaya | | N | | |
| Lycaenidae | *Zizina otis* | Lesser Grass Blue | Podu Thruna-nilaya | | N | | |
| Lycaenidae | *Zizula hylax* | Tiny Grass Blue | Punchi Thruna-nilaya | | N | | |
| Nymphalidae | *Acraea violae* | Tawny costor | Thambily panduru-boraluwa | | N | | |
| Nymphalidae | *Ariadne ariadne* | Angled castor | Ruthu pathan-sariya | | N | | |
| Nymphalidae | *Charaxes solon* | Black rajah | Kalu raja-kumaraya | | N | NT | |
| Nymphalidae | *Danaus chrysippus* | Plain tiger | Podu koti-thambiliya | | N | | |
| Nymphalidae | *Danaus genutia* | Common tiger | Iri Koti-thambiliya | | N | | |
| Nymphalidae | *Euploea core* | Common crow | Podu kaka-kotithiyaya | | N | | |
| Nymphalidae | *Hypolimnas bolina* | Great eggfly | Maha alankarikya | | N | | |
| Nymphalidae | *Hypolimnas misippus* | Danaid Eggfly | Kela Alankarikya | | N | | |
| Nymphalidae | *Junonia almana* | Peacock pansy | Monera alankarikya | | N | | |
| Nymphalidae | *Junonia atlites* | Grey pansy | Aluwan alankarikya | | N | | |
| Nymphalidae | *Junonia iphita* | Chocolate soldier | Podu alankarikya | | N | | |
| Nymphalidae | *Junonia lemonias* | Lemon pansy | Dumburuwan alankarikya | | N | | |
| Nymphalidae | *Melanitis leda* | Common evening brown | Podu dumburuwa | | N | | |
| Nymphalidae | *Neptis hylas* | Common sailor | Gomara selaruwa | | N | | |
| Nymphalidae | *Neptis jumbah* | Chestnut-streaked sailor | Thambala-iri selaruwa | | N | | |
| Nymphalidae | *Parantica aglea* | Glassy tiger | Suduwan nil-kotithiya | | N | | |
| Nymphalidae | *Phalantha phantha* | Leopard | Podu thith-thambiliya | | N | | |
| Nymphalidae | *Tirumala limniace* | Blue tiger | Podu nil-kotithiya | | N | | |
| Nymphalidae | *Tirumala septentrionis* | Dark blue tiger | Anduruwan nil-kotithiya | | N | NT | |
| Nymphalidae | *Ypthima ceylonica* | White four-ring | Podu heen-dumburuwa | | N | | |
| Papilionidae | *Graphium agamemnon* | Green jay / Tailed jay | Kola papilia | | N | | |
| Papilionidae | *Pachliopta aristolochiae* | Common rose | Podu rosa papilia | | N | | |
| Papilionidae | *Pachliopta hector* | Crimson rose | Maha rosa papilia | | N | | |
| Papilionidae | *Papilio crino* | Banded peacock | Monara papilia | | N | VU | |

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|---|---|---|---|---|---|---|---|
| Papilionidae | *Papilio demoleus* | Lime butterfly | Kaha papilia | | N | | |
| Papilionidae | *Papilio polymnestor* | Blue mormon | Maha nilaya | | N | | |
| Papilionidae | *Papilio polytes* | Common mormon | Kalu papilia | | N | | |
| Pieridae | *Appias galane* | Lesser albatross | Kuda sudana | | E | | |
| Pieridae | *Catopsilia pomona* | Lemon emigrant | Kaha piyasariya | | N | | |
| Pieridae | *Catopsilia pyranthe* | Mottled emigrant | Thith-piya piyasariya | | N | | |
| Pieridae | *Cepora nerissa* | Common gull | Podu Punduru-sudana | | N | | |
| Pieridae | *Colotis amata* | Small salmon arab | Punchi rosa sudana | | N | | |
| Pieridae | *Delias eucharis* | Jezebel | Podu Maha-sudda | | N | | |
| Pieridae | *Eurema hecabe* | Common grass yellow | Maha kahakolaya | | N | | |
| Pieridae | *Ixias marianne* | White orange tip | Sudu maha sudana | | N | | |
| Pieridae | *Ixias pyrene* | Yellow orange tip | Kaha maha sudana | | N | | |
| Pieridae | *Leptosia nina* | Psyche | Kalu-thith sudda | | N | | |
| Pieridae | *Pareronia ceylanica* | Dark wanderer | Anduru nil piyasariya | | N | | |
| | | | | | | | |
| | | **DRAGONFLIES** | | | | | |
| Coenagrionidae | *Agriocnemis pygmaea* | Wandering Wisp | | | N | | |
| Coenagrionidae | *Ceriagrion coromandelianum* | Yellow Waxtail | | | N | | |
| Coenagrionidae | *Ischnura senegalensis* | Common Bluetail | | | N | | |
| Coenagrionidae | *Pseudagrion microcephalum* | Blue Sprite | | | N | | |
| Gomphidae | *Ictinogomphus rapax* | Rapacious Flangetail | | | N | | |
| Lestidae | *Lestes elatus* | White-tipped Spreadwing | | | N | | |
| Libellulidae | *Brachythemis contaminata* | Asian Groundling | | | N | | |
| Libellulidae | *Crocothemis servilia* | Oriental Scarlet | | | N | | |
| Libellulidae | *Diplacodes trivialis* | Blue Percher | | | N | | |
| Libellulidae | *Lathrecista asiatica* | Pruinosed Bloodtail | | | N | NT | |
| Libellulidae | *Neurothemis tullia* | Pied Parasol | | | N | | |

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|---|---|---|---|---|---|---|---|
| Libellulidae | *Orthetrum sabina* | Green Skimmer | | | N | | |
| Libellulidae | *Pantala flavescens* | Wandering Glider | | | N | | |
| Libellulidae | *Potamarcha congener* | Blue Pursuer | | | N | | |
| Libellulidae | *Rhyothemis variegata* | Varigated Flutter | | | N | | |
| Libellulidae | *Tramea limbata* | Sociable Glider | | | N | | |
| Libellulidae | *Trithemis aurora* | Crimson Dropwing | | | N | | |
| Libellulidae | *Urothemis signata* | Scarlet Basker | | | N | | |
| Platycnemididae | *Copera marginipes* | Yellow Featherleg | | | N | | |
| | | | | | | | |
| | | **MAMMALS** | | | | | |
| Canidae | *Canis aureus* | Jackal | Nariya / Hiwala | | N | | |
| Cercopithecidae | *Macaca sinica* | Sri Lanka toque monkey | Sri Lanka Rilawa | | E | | EN |
| Cercopithecidae | *Semnopithecus priam* | Grey langur | Eli-wdura | | N | | NT |
| Cervidae | *Axis axis* | Spotted deer | Tith Muwa | | N | | |
| Elephantidae | *Elephas maximus* | Elephant | Etha / Aliya | | N | EN | EN |
| Felidae | *Prionailurus rubiginosus* | Rusty-spotted cat | Kola Diviya / Balal Diviya | | N | EN | NT |
| Felidae | *Prionailurus viverrinus* | Fishing cat | Handun Diviya | | N | EN | VU |
| Herpestidae | *Herpestes edwardsii* | Grey mongoose | Alu Mugatiya | | N | | |
| Herpestidae | *Herpestes smithii* | Ruddy mongoose | Rath Mugatiya | | N | | |
| Hipposideridae | *Hipposideros speoris* | Schneider's leaf-nosed bat | Kesketi Pathnehe-vavula | | N | | |
| Hystricidae | *Hystrix indica* | Porcupine | Ittewa | | N | | |
| Leporidae | *Lepus nigricollis* | Black-naped hare | Wal Hawa | | N | | |
| Muridae | *Rattus rattus* | Common rat | Podu Ge Miya | | N | | |
| Muridae | *Tatera indica* | Antelope rat | Weli-miya | | N | | |
| Mustelidae | *Lutra lutra* | Otter | Diya-balla | | N | VU | NT |
| Pteropodidae | *Cynopterus sphinx* | Short-nosed fruit bat | Thala-vavula | | N | | |
| Pteropodidae | *Pteropus giganteus* | Flying fox | Ma-vavula | | N | | |

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|---|---|---|---|---|---|---|---|
| Sciuridae | *Funambulus palmarum* | Palm squirrel | Leena | | N | | |
| Sciuridae | *Ratufa macroura* | Giant squirrel | Dandu-leena | | N | | NT |
| Suidae | *Sus scrofa* | Wild boar | Wal Ura | | N | | |
| Tragulidae | *Moschiola meminna* | Sri Lanka mouse-deer | Sri Lanka Meminna | | E | | |
| Vespertillionidae | *Pipistrellus coromandra* | Indian pipistrel | Indu Koseta-vavula | | N | VU | |
| Viverridae | *Viverricula indica* | Ring-tailed civet | Urulewa | | N | | |
| | | | | | | | |
| | | **REPTILES** | | | | | |
| Agamidae | *Calotes calotes* | Green garden lizard | Pala katussa | | N | | |
| Agamidae | *Calotes versicolor* | Common garden lizard | Gara katussa | | N | | |
| Agamidae | *Sitana devakai* | Devaka's Fanthroat lizard | Devakage talikatussa | | E | VU | VU |
| Bataguridae | *Melanochelys trijuga* | Parker's black turtle | Parkerge gal ibba | | N | | |
| Colubridae | *Ahaetulla nasuta* | Green vine snake | Ahaetulla | | N | | |
| Colubridae | *Dendrelaphis tristis* | front Spot bronze back | Handa haldanda | | N | | |
| Colubridae | *Ptyas mucosa* | Rat snake | Gerandiya. | | N | | |
| Crocodylidae | *Crocodylus palustris* | Mugger / Marsh Crocodile | Hala kimbula | | N | NT | VU |
| Elapidae | *Naja polyocellata* | Sri Lanka Cobra | Naya | | E | | |
| Gekkonidae | *Hemidactylus frenatus* | Common house-gecko | Sulaba gehuna | | N | | |
| Gekkonidae | *Hemidactylus leschenaultii* | Bark gecko | Kimbul huna | | N | | |
| Gekkonidae | *Hemidactylus parvimaculatus* | Spotted housegecko | Pulli gehuna | | N | | |
| Pythonidae | *Python molurus* | Indian python | Pimbura | | N | | NT |
| Scincidae | *Eutropis carinata* | Common skink | Sulaba hikanala | | N | | |
| Scincidae | *Eutropis tammanna* | Tammanna skink | Tammanna hikanala | | E | | |
| Testudinidae | *Geochelone elegans* | Indian star tortoise | Mevara ibba/ Taraka ibba | | N | NT | VU |
| Trionychidae | *Lissemys ceylonensis* | Flapshell turtle | Kiri ibba | | E | | VU |
| Varanidae | *Varanus bengalensis* | Land monitor | Talagoya | | N | | NT |
| Viperidae | *Daboia russelii* | Russell’s viper | Tith polonga. | | N | | |

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| Viperidae | *Hypnale hypnale* | Merrem's hump nose viper | Polon thelissa | | N | | |
| | | | | | | | |
| | | **AMPHIBIANS** | | | | | |
| Bufonidae | *Duttaphrynus melanostictus* | Common house toad | Sulaba geai gemba | | N | | |
| Dicroglossidae | *Euphlyctis cyanophlyctis* | Skipper frog | Utpatana madiya | | N | | |
| Dicroglossidae | *Euphlyctis hexadactylus* | Sixtoe green frog | SaEangili pala madiya | | N | | |
| Dicroglossidae | *Minervarya agricola* | Common paddy field frog | Sulaba vel madiya | | N | | |
| Microhylidae | *Uperodon rohani* | White-bellied *or Rohan's* pugsnout frog | Bada-sudu or Rohange motahombu madiyas | | E | | |
| Microhylidae | *Uperodon taprobanicus* | Common bull frog | Visituru ratu madiya | | N | | |
| Rhacophoridae | *Polypedates maculatus* | Spotted tree frog | Pulli gas madiya | | N | | |
| | | | | | | | |
| | | **LAND SNAILS** | | | | | |
| Achatinidae | *Lissachatina fulica* | Giant African Snail | | | I | | |
| Ariophantidae | *Cryptozona bistrialis* | | | | N | | |
| Ariophantidae | *Euplecta colletti* | | | | E | EN | |
| Ariophantidae | *Euplecta spp.* | | | | E | | |
| Ariophantidae | *Macrachlamy vilipensa* | | | | N | DD | |
| Cyclophoridae | *Cyclophorus involvulus* | | | | N | EN | |
| Cyclophoridae | *Pterocyclus cumingi* | | | | N | NT | |
| Cyclophoridae | *Theobaldius spp.* | | | | E | | |

## Annex 15.4-3: Details of Verification of IBAT-Generated Species Data

**ABBREVIATIONS**

**ST** – Status, **E** – Endemic, **N** – Native, **M** – Migratory, **NS** – National Conservation Status, **GS** – Global Conservation Status, **CR** – Critically Endangered, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near Threatened, **DD** – Data Deficient, **LC** – Least Concern, **NE** – Not Evaluated, **AoA** – Availability in the Area of Analysis

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| ACTINOPTERYGII | *Mystus zeylanicus* | Sri Lanka Yellow Catfish | E | LC | LC | Yes | |
| ACTINOPTERYGII | *Oryzias carnaticus* | Spotted Ricefish | N | DD | LC | Yes | |
| ACTINOPTERYGII | *Oryzias dancena* | Indian Ricefish | N | DD | LC | Yes | |
| ACTINOPTERYGII | *Pseudosphromenus cupanus* | Spiketail Paradise Fish | N | LC | LC | Yes | |
| ACTINOPTERYGII | *Wallago attu* | | N | NT | VU | Yes | |
| AVES | *Dinopium psarodes* | Sri Lanka Lesser Flameback | E | LC | LC | Yes | |
| AVES | *Calidris falcinellus* | Broad-billed Sandpiper | M | NE | VU | Yes | |
| AVES | *Calidris ferruginea* | Curlew Sandpiper | M | NE | VU | Yes | |
| AVES | *Pluvialis squatarola* | Grey Plover | M | NE | VU | Yes | |
| AVES | *Phaenicophaeus pyrrhocephalus* | Red-faced Malkoha | E | EN | VU | Can | Wet zone species. There are records in the dry zone (riverine in Wasgamuwa). |
| AVES | *Galloperdix bicalcarata* | Sri Lanka Spurfowl | E | VU | LC | Can | Wet zone species. There are records in the dry zone forests. |
| AVES | *Halcyon pileata* | Black-capped Kingflsher | M | NE | VU | Can | Rare Migratory bird |
| MALACOSTRACA | *Macrobrachium rosenbergii* | Giant River Prawn | N | NE | LC | Yes | |
| MALACOSTRACA | *Macrobrachium rude* | | N | NE | LC | Yes | |
| MALACOSTRACA | *Macrobrachium scabriculum* | | N | NE | LC | Yes | |
| MAMMALIA | *Elephas maximus* | Asian Elephant | N | EN | EN | Yes | Found during the field study |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| MAMMALIA | *Loris lydekkerianus / ssp. nordicus* | Grey Slender Loris / Northern Grey Slender Loris | N | NT | EN | Yes | |
| MAMMALIA | *Macaca sinica / ssp. sinica* | Toque Macaque / Dry Zone Toque Macaque | E | LC | EN | Yes | Found during the field study |
| MAMMALIA | *Manis crassicaudata* | Indian Pangolin | N | NT | EN | Yes | |
| MAMMALIA | *Semnopithecus vetulus / ssp. philbricki* | Purple-faced Langur / Northern Purple-faced Langur | E | EN | EN | Yes | |
| MAMMALIA | *Melursus ursinus* | Sloth Bear | N | EN | VU | Yes | |
| MAMMALIA | *Panthera pardus / ssp. kotiya* | Leopard / Sri Lankan Leopard | N | EN | VU | Yes | |
| MAMMALIA | *Prionailurus viverrinus* | Fishing Cat | N | EN | VU | Yes | Found during the field study |
| MAMMALIA | *Rusa unicolor* | Sambar | N | NT | VU | Yes | |
| MAMMALIA | *Semnopithecus priam / ssp. thersites* | Grey Langur / Sri Lankan Grey Langur | N | LC | VU | Yes | Found during the field study |
| REPTILIA | *Indotyphlops lankaensis* | Sri Lanka Worm Snake | E | CR | CR | Yes | There are records in the Trincomalee area. As *Typhlops lankaensis* in the 2012 National Red List. |
| REPTILIA | *Indotyphlops malcolmi* | Malcolm's Worm Snake | E | DD | EN | Yes | There are records in the Trincomalee area. As *Typhlops malcolmi* in the 2012 National Red List. |
| REPTILIA | *Crocodylus palustris* | Mugger | N | NT | VU | Yes | Found during the field study |
| REPTILIA | *Cylindrophis maculatus* | Ceylonese Cylinder Snake | E | NT | VU | Yes | |
| REPTILIA | *Cyrtodactylus yakhuna* | Northern Sri Lanka Gecko | E | VU | VU | Yes | As *Geckoella yakhuna* in the 2012 National Red List. |
| REPTILIA | *Dasia haliana* | Ceylonese Dasia | E | NT | VU | Yes | |
| REPTILIA | *Geochelone elegans* | Indian Star Tortoise | N | NT | VU | Yes | Found during the field study |
| REPTILIA | *Lissemys ceylonensis* | Sri Lankan Flapshell Turtle | E | LC | VU | Yes | Found during the field study |
| REPTILIA | *Oligodon sublineatus* | | E | LC | VU | Yes | |
| REPTILIA | *Rhinophis saffragamus* | Large Shieldtail Snake | E | EN | VU | Yes | As *Pseudotyphlops philippinus* in the 2012 National Red List |
| REPTILIA | *Sitana devakai* | Devaka's Fan- throated Lizard | E | VU | VU | Yes | |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| ACTINOPTERYGII | *Dawkinsia srilankensis* | Blotched Filamented Barb | E | EN | EN | No | Not found in the lower Mahaweli basin |
| ACTINOPTERYGII | *Labeo lankae* | Redfln Labeo | E | EN | EN | No | Not found in the lower Mahaweli basin |
| ACTINOPTERYGII | *Systomus martenstyni* | Martenstyni's Barb | E | EN | EN | No | Not found in the lower Mahaweli basin |
| ACTINOPTERYGII | *Horadandia atukorali* | Horadandia | E | VU | VU | No | Not found in the Mahaweli basin |
| ACTINOPTERYGII | *Ophisternon bengalense* | Bengal Mud Eel | N | EN | LC | No | Not found in the Mahaweli basin |
| ACTINOPTERYGII | *Argyrosomus japonicus* | Dusky Meagre | | NE | EN | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Lethrinus mahsena* | Sky Emperor | | NE | EN | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Albula glossodonta* | Shortjaw Boneflsh | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Bolbometopon muricatum* | Green Humphead Parrotflsh | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Epinephelus fuscoguttatus* | Brown- marbled Grouper | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Epinephelus polyphekadion* | Camouflage Grouper | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Istiophorus platypterus* | Sailflsh | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Mola mola* | Ocean Sunflsh | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Omobranchus hikkaduwensis* | Kikkadu Blenny | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Oxymonacanthus longirostris* | Harlequin Fileflsh | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Hippocampus histrix* | Thorny Seahorse | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Hippocampus kelloggi* | Great Seahorse | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Hippocampus spinosissimus* | Hedgehog Seahorse | | NE | VU | No | No marine habitats in the AoA |
| ACTINOPTERYGII | *Hippocampus trimaculatus* | Three-spot Seahorse | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora abrotanoides* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora aculeus* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora acuminata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora anthocercis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora aspera* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora austera* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora cerealis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora clathrata* | | | NE | EN | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| ANTHOZOA | *Acropora dendrum* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora digitifera* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora divaricata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora donei* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora echinata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora florida* | Branch Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora gemmifera* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora glauca* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora grandis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora hemprichii* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora horrida* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora humilis* | Finger Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora hyacinthus* | Brush Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora intermedia* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora latistella* | Staghorn Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora listeri* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora longicyathus* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora loripes* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora lovelli* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora lutkeni* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora microphthalma* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora millepora* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora monticulosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora multiacuta* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora muricata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora nasuta* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora palmerae* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora pharaonis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora pulchra* | | | NE | EN | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| ANTHOZOA | *Acropora robusta* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora rudis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora samoensis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora secale* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora selago* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora solitaryensis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora stoddarti* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora subglabra* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora subulata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora sukarnoi* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora tenuis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora valenciennesi* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora valida* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora vaughani* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora verweyi* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora yongei* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Alveopora allingi* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Alveopora catalai* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Alveopora fenestrata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Astreopora listeri* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Astreopora macrostoma* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Dipsastraea laxa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Dipsastraea lizardensis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Favites valenciennesii* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Isopora crateriformis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Isopora palifera* | Catch Bowl Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Lithophyllon concinna* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Lithophyllon repanda* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Lobophyllia hemprichii* | Largebrain Root Coral | | NE | EN | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| ANTHOZOA | *Merulina scabricula* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora aequituberculata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora angulata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora crassituberculata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora danae* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora digitata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora efflorescens* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora effusa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora foliosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora foveolata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora friabilis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora hispida* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora informis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora mollis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora peltiformis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora spongodes* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora spumosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora stilosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora tuberculosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora turgescens* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora undata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora venosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Oulophyllia crispa* | Intermediate Valley Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pavona duerdeni* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pectinia alcicornis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pectinia lactuca* | Lettuce Coral | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pocillopora acuta* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pocillopora ankeli* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pocillopora damicornis* | Cauliflower Coral | | NE | EN | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| ANTHOZOA | *Pocillopora meandrina* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pocillopora verrucosa* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Pocillopora woodjonesi* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Porites evermanni* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Porites mannarensis* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Porites stephensoni* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Seriatopora stellata* | | | NE | EN | No | No marine habitats in the AoA |
| ANTHOZOA | *Acropora granulosa* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Alveopora spongiosa* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Astreopora expansa* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Dipsastraea favus* | Head Coral | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Echinopora lamellosa* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Lobophyllia corymbosa* | Brain Root Coral | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora millepora* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora monasteriata* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Montipora verrucosa* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Pavona cactus* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Pavona minuta* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Porites desilveri* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Porites lichen* | | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Seriatopora caliendrum* | Birdsnest Coral | | NE | VU | No | No marine habitats in the AoA |
| ANTHOZOA | *Seriatopora hystrix* | Thin Birdsnest Coral | | NE | VU | No | No marine habitats in the AoA |
| ARACHNIDA | *Brignolia trichinalis* | | N | DD | VU | No | Only one collection in Kandy |
| AVES | *Fregetta tropica* | Black-bellied Storm-petrel | Va | NE | LC | No | Oceanic/ off-coast species. Occasionally driven ashore in bad weather. |
| AVES | *Glaucidium castanotum* | Chestnut- backed Owlet | E | EN | NT | No | Wet zone species. |
| AVES | *Oceanites oceanicus* | Wilson's Storm-petrel | M | NE | LC | No | Oceanic/ off-coast species. Occasionally driven ashore in bad weather. |

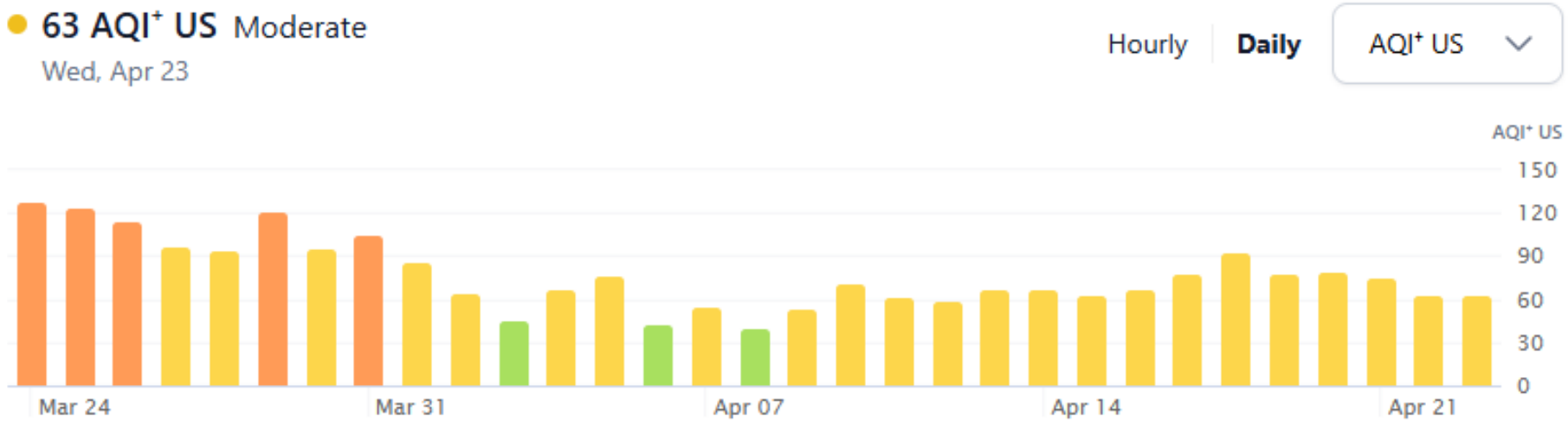
| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| AVES | *Pterodroma arminjoniana* | Trindade Petrel | | NE | VU | No | Not recorded in Sri Lanka |
| CHONDRICHTHYES | *Acroteriobatus variegatus* | Stripenose Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Glaucostegus granulatus* | Sharpnose Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Glaucostegus thouin* | Clubnose Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Glaucostegus typus* | Giant Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhina ancylostomus* | Bowmouth Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhinobatos annandalei* | Bengal Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhynchobatus australiae* | Bottlenose Wedgeflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhynchobatus laevis* | Smoothnose Wedgeflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhinobatos lionotus* | Smoothback Guitarflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Aetobatus flagellum* | Longhead Eagle Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Aetobatus ocellatus* | Spotted Eagle Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Aetomylaeus maculatus* | Mottled Eagle Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Gymnura zonura* | Zonetail Butterfly Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Himantura leoparda* | Leopard Whipray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Himantura uarnak* | Coach Whipray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Himantura undulata* | Honeycomb Whipray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Maculabatis gerrardi* | Whitespotted Whipray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Mobula birostris* | Oceanic Manta Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Mobula kuhlii* | Shorthorned Pygmy Devil Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Mobula mobular* | Spinetail Devil Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Mobula tarapacana* | Sicklefln Devil Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Mobula thurstoni* | Bentfln Devil Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Narcine prodorsalis* | Tonkin Numbflsh | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Pateobatis bleekeri* | Bleeker's Whipray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Pateobatis jenkinsii* | Jenkins' Whipray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhinoptera javanica* | Javanese Cownose Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhinoptera jayakari* | Oman Cownose Ray | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Urogymnus asperrimus* | Porcupine Ray | | NE | EN | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| CHONDRICHTHYES | *Narcine atzi* | Oman Numbflsh | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Aetomylaeus nichofli* | Banded Eagle Ray | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Gymnura poecilura* | Longtail Butterfly Ray | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Mobula alfredi* | Reef Manta Ray | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Narcine maculata* | Smallspot Numbflsh | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Narcine timlei* | Brown Numbflsh | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Pastinachus ater* | Broad Cowtail Ray | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Pateobatis fai* | Pink Whipray | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Taeniurops meyeni* | Blotched Fantail Ray | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Anoxypristis cuspidata* | Narrow Sawflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Pristis pristis* | Largetooth Sawflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Pristis zijsron* | Green Sawflsh | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Alopias pelagicus* | Pelagic Thresher | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus longimanus* | Oceanic Whitetip Shark | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus plumbeus* | Sandbar Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Centrophorus atromarginatus* | Dwarf Gulper Shark | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Centrophorus granulosus* | Gulper Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Centrophorus uyato* | Little Gulper Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Echinorhinus brucus* | Bramble Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Eusphyra blochii* | Winghead Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Hemipristis elongata* | Snaggletooth Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Isurus oxyrinchus* | Shortfln Mako | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Isurus paucus* | Longfln Mako | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Negaprion acutidens* | Sharptooth Lemon Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhincodon typus* | Whale Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Sphyrna lewini* | Scalloped Hammerhead | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Sphyrna mokarran* | Great Hammerhead | | NE | CR | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Stegostoma tigrinum* | Indo-Paciflc Leopard Shark | | NE | EN | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Cephaloscyllium silasi* | Indian Swellshark | | NE | CR | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| CHONDRICHTHYES | *Planonasus indicus* | Eastern Dwarf False Catshark | | NE | DD | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Alopias superciliosus* | Bigeye Thresher | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus albimarginatus* | Silvertip Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus amblyrhynchoides* | Graceful Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus amboinensis* | Pigeye Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus brevipinna* | Spinner Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus falciformis* | Silky Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus leucas* | Bull Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus limbatus* | Blacktip Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharhinus melanopterus* | Blacktip Reef Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Carcharodon carcharias* | White Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Chaenogaleus macrostoma* | Hooktooth Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Chiloscyllium griseum* | Grey Bamboo Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Chiloscyllium indicum* | Slender Bambooshark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Hemigaleus microstoma* | Sickelfln Weasel Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Nebrius ferrugineus* | Tawny Nurse Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Rhizoprionodon acutus* | Milk Shark | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Sphyrna zygaena* | Smooth Hammerhead | | NE | VU | No | No marine habitats in the AoA |
| CHONDRICHTHYES | *Triaenodon obesus* | Whitetip Reef Shark | | NE | VU | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Holothuria lessoni* | | | NE | EN | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Holothuria nobilis* | Black Teatflsh | | NE | EN | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Holothuria scabra* | | | NE | EN | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Thelenota ananas* | Pineapple Sea Cucumber | | NE | EN | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Actinopyga mauritiana* | | | NE | VU | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Actinopyga miliaris* | | | NE | VU | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Holothuria fuscogilva* | | | NE | VU | No | No marine habitats in the AoA |
| HOLOTHUROIDEA | *Stichopus herrmanni* | | | NE | VU | No | No marine habitats in the AoA |
| HYDROZOA | *Millepora platyphylla* | | | NE | EN | No | No marine habitats in the AoA |
| HYDROZOA | *Millepora tenera* | | | NE | EN | No | No marine habitats in the AoA |

| Taxonomic Group | Species Name | Common Name | ST | NS | GS | AoA | Note |
|---|---|---|---|---|---|---|---|
| INSECTA | *Microgomphus wijaya* | Wijaya's Scissortail | E | EN | VU | No | Wet zone species |
| MAGNOLIOPSIDA | *Shorea hulanidda* | Hulan-idda | E | EN | EN | No | Wet zone species |
| MALACOSTRACA | *Ceylonthelphusa cavatrix* | | E | CR | EN | No | Wet zone species |
| MALACOSTRACA | *Ceylonthelphusa alpina* | | E | CR | EN | No | Wet zone species |
| MALACOSTRACA | *Ceylonthelphusa armata* | | E | CR | EN | No | Wet zone species |
| MALACOSTRACA | *Ceylonthelphusa diva* | | E | CR | EN | No | Wet zone species |
| MALACOSTRACA | *Ceylonthelphusa durrelli* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Ceylonthelphusa kotagama* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Mahatha iora* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Mahatha regina* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Perbrinckia glabra* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Perbrinckia punctata* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Perbrinckia scitula* | | E | CR | CR | No | Wet zone species |
| MALACOSTRACA | *Oziothelphusa ritigala* | | E | EN | VU | No | Wet zone species |
| MALACOSTRACA | *Perbrinckia integra* | | E | EN | VU | No | Wet zone species |
| MAMMALIA | *Balaenoptera musculus* | Blue Whale | N | EN | EN | No | No marine habitats in the AoA |
| MAMMALIA | *Dugong dugon* | Dugong | N | VU | VU | No | No marine habitats in the AoA |
| MAMMALIA | *Physeter macrocephalus* | Sperm Whale | N | VU | VU | No | No marine habitats in the AoA |
| POLYPODIOPSIDA | *Salvinia natans* | Floating Fern | | | LC | No | Not found in Sri Lanka |
| REPTILIA | *Chelonia mydas* | Green Turtle | N | EN | EN | No | No habitats in the AoA |
| REPTILIA | *Eretmochelys imbricata* | Hawksbill Turtle | N | EN | CR | No | No habitats in the AoA |
| REPTILIA | *Caretta caretta* | Loggerhead Turtle | N | EN | VU | No | No habitats in the AoA |
| REPTILIA | *Dermochelys coriacea* | Leatherback Turtle | N | CR | VU | No | No habitats in the AoA |
| REPTILIA | *Lepidochelys olivacea* | Olive Ridley Turtle | N | EN | VU | No | No habitats in the AoA |

**Historic air quality graph for Trincomalee**




**Source:** https://www.iqair.com/sri-lanka/eastern-province/trincomalee/drivegreen-trincomalee

**Appendices 15.4.4 - Five Criteria in the IFC's Guidance Note 6 (updated June 27, 2019) for Critical Habitats Determination**

**0BCriterion 1: Critically Endangered (CR) and/or Endangered (EN) Species**

- Species threatened with global extinction and listed as CR and EN on the IUCN Red List of Threatened Species shall be considered as part of Criterion 1. Critically Endangered species face an extremely high risk of extinction in the wild. Endangered species face a very high risk of extinction in the wild.
- As described in footnote 11 of Performance Standard 6, the inclusion in Criterion 1 of species that are listed nationally/regionally as CR or EN in countries that adhere to IUCN guidance shall be determined on a project-by-project basis in consultation with competent professionals.
- Thresholds for Criterion 1 are the following:
  - (a) Areas that support globally important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species).
  - (b) Areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds in (a).
  - (c) As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.
- Special consideration should be given to great apes (gorillas, orangutans, chimpanzees and bonobos) due to their anthropological significance. Any area where there are great apes is likely to be treated as critical habitat.

**1BCriterion 2: Endemic or Restricted Range Species**

- The term endemic is defined as a restricted range. Restricted range refers to a limited extent of occurrence (EOO).
  - ✓ For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an EOO of less than 50,000 square kilometers ($km^2$).
  - ✓ For marine systems, restricted-range species are provisionally considered those with an EOO of less than 100,000 $km^2$.
  - ✓ For coastal, riverine, and other aquatic species in habitats that do not exceed 200 km width at any point (for example, rivers), the restricted range is defined as having a global range of less than or equal to 500 km linear geographic span (i.e., the distance between occupied locations furthest apart).
- The threshold for Criterion 2 is the following:
  - (a) Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.

**2BCriterion 3: Migratory or Congregatory Species**

- Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem).
- Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis. Examples include the following:
  - ✓ Species that form colonies.
  - ✓ Species that form colonies for breeding purposes and/or where large numbers of individuals of a species gather at the same time for non-breeding purposes (for example, foraging and roosting).
  - ✓ Species that utilize a bottleneck site where significant numbers of individuals of a species occur in a concentrated period of time (for example, for migration).
  - ✓ Species with large but clumped distributions where a large number of individuals may be concentrated in a single or a few sites while the rest of the species is largely dispersed (for example, wildebeest distributions).
  - ✓ Source populations where certain sites hold populations of species that make an inordinate contribution to recruitment of the species elsewhere (especially important for marine species).
- Thresholds for Criterion 3 are the following:
  - ➢ (a) Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.
  - ➢ (b) Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress.

**3BCriterion 4: Highly Threatened and/or Unique Ecosystems**

- The IUCN is developing a Red List of Ecosystems, following an approach similar to the Red List for Threatened Species. The client should use the Red List of Ecosystems where formal IUCN assessments have been performed. Where formal IUCN assessments have not been performed, the client may use assessments using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally recognized NGOs).
- The thresholds for Criterion 4 are the following:
  - ➢ (a) Areas representing ≥5% of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN.
  - ➢ (b) Other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning.

**4BCriterion 5: Key Evolutionary Processes**

- The structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation, and combinations of these variables, can influence the evolutionary processes that give rise to regional configurations of species and ecological properties. In some cases, spatial features that are unique or idiosyncratic of the landscape have been associated with genetically unique populations or subpopulations of plant and animal species. Physical or spatial features have been described as surrogates or spatial catalysts for evolutionary and ecological processes, and such features are often associated with species diversification. Maintaining these key evolutionary processes inherent in a landscape as well as the resulting species (or subpopulations of species) has become a major focus of biodiversity conservation in recent decades, particularly the conservation of genetic diversity. By conserving species diversity within a landscape, the processes that drive speciation, as well as the genetic diversity within species, ensures the evolutionary flexibility in a system, which is especially important in a rapidly changing climate.
- For illustrative purposes, some potential examples of spatial features associated with evolutionary processes are as follows:
  - ✓ Landscapes with high spatial heterogeneity are a driving force in speciation, as species are naturally selected based on their ability to adapt and diversify.
  - ✓ Environmental gradients, also known as ecotones, produce transitional habitat, which has been associated with the process of speciation and high species and genetic diversity.
  - ✓ Edaphic interfaces are specific juxtapositions of soil types (for example, serpentine outcrops, limestone, and gypsum deposits), which have led to the formation of unique plant communities characterized by both rarity and endemism.
  - ✓ Connectivity between habitats (for example, biological corridors) ensures species migration and gene flow, which is especially important in fragmented habitats and for the conservation of metapopulations. This also includes biological corridors across altitudinal and climatic gradients and from “crest to coast.”
  - ✓ Sites of demonstrated importance to climate change adaptation for either species or ecosystems are also included within this criterion.

## 15.4: Tables of Social Baseline Data

### 15.4.a List of Affected Lands and their ownership (Private Lands)

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H.Vijayaparathi | School road, Selvanayagapuram, Trincomalee | | W-168 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 48 | Tamil |
| 2 | K.Hariyenthiran | School road, Selvanayagapuram, Trincomalee | | W-169 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 51 | Tamil |
| 3 | H.Theajashon | School road, Selvanayagapuram, Trincomalee | | W-170 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 20 | Tamil |
| 4 | H.Shastihan | School road, Selvanayagapuram, Trincomalee | | W-171 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 22 | Tamil |
| 5 | K. Tharmalingam | 6m Vaddaram, Sambal theevu, Trincomalee | | W-166 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 86 | Tamil |
| 6 | N. Sameswary | 6m Vaddaram, Sambal theevu, Trincomalee | | W-167 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 58 | Tamil |
| 7 | V.Sasikala | Orr's hiil, Trincomalee | | W-159 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 62 | Tamil |
| 8 | Thalaiyasingam Puvanenthiran | Kaskisan road, Trincomalee | AP 2/1 | W-217 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 53 | Tamil |
| 9 | Kanesapillai Kunanayagi | Orr's hiil, Trincomalee | | W-158 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 72 | Tamil |
| 10 | Sivasuntharam Rajinikanth | Paddimedu, Thambalakamam | | W-163 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 51 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | S.Thangeswary | No.76, School road, Trincomalee | | W-160 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 63 | Tamil |
| 12 | S.Thangeswary | No.76, School road, Trincomalee | | W-161 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 63 | Tamil |
| 13 | Velayutham Suntharalingam | Paddimedu, Thambalakamam | | W-162 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Male | 62 | Tamil |
| 14 | Magadevan Kaalipillai | Kuttampuli, Thampalakamam | AP 2/2 | W-164 | Trincomalee Town and Gravets DSD | Uppuveli ASC | Muthunagar (229F) | Paddy | Female | 62 | Tamil |
| 15 | M.Vimalenthiran | Snake lane, Trincomalee | AP 3 | W-194 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 53 | Tamil |
| 16 | M.Vimalenthiran | Snake lane, Trincomalee | | W-195 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Other | Male | 53 | Tamil |
| 17 | M.Tiruvasakam | Paththinipuram, Tampalakamam | | W-298 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Homega rden | Male | 69 | Tamil |
| 18 | J.Vithursika | Palampaddaru, Thampalakamam | AP 4 | W-165 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 29 | Tamil |
| 19 | P.Konesh | Palaiyoottu, Trincomalee | | W-187 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 53 | Tamil |
| 20 | S.Krishnakumari | Puthukudiyiruppu, Thampalakamam | | W-174 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 51 | Tamil |
| 21 | Y.Kajenthiran | Puthukudiyiruppu, Thampalakamam | | W-173 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 37 | Tamil |
| 22 | S.Sathurmukam | Munnampodiveddai, Thoppur | | W-268 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 69 | Tamil |
| 23 | T.Puvaneswaran | Paththinipuram, Palampaddaru, Thampalakamam | | W-2 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 56 | Tamil |
| 24 | S.Thajitharan | Paththinipuram, Palampaddaru, Thampalakamam | | W-1 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 38 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | N.Saroyathevi | Munnampodiveddai, Thoppur | | W-269 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 59 | Tamil |
| 26 | T.Vijayaparathi | Paththinipuram, Palampaddaru, Thampalakamam | | W-3 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 51 | Tamil |
| 27 | K.Kanesalingham | Paththinipuram, Palampaddaru, Thampalakamam | | W-6 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 78 | Tamil |
| 28 | K.Pathmini | 256/23A, Innerhabour road, Trincomalee | AP 4/1 | W-7 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 64 | Tamil |
| 29 | T.Vijayalaksmi | Potkeni, Thampalakamam | | W-8 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 62 | Tamil |
| 30 | T.Surenthakumar | Paththinipuram, Palampaddaru, Thampalakamam | | W-220 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 32 | Tamil |
| 31 | S.Kabilraj | Puthukudiyiruppu, Thampalakamam | | W-37 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 35 | Tamil |
| 32 | N.Malikadevi | Paththinipuram, Palampaddaru, Thampalakamam | | W-38 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 78 | Tamil |
| 33 | K.Thayalini | Samathu lane, Trincomalee | | W-188 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 51 | Tamil |
| 34 | J.Parameshwary | Puthukudiyiruppu, Thampalakamam | AP 4/2 | W-219 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Female | 54 | Tamil |
| 35 | K.Jeyachandran/ Mukunthan | Puthukudiyiruppu, Thampalakamam | | W-172 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 70 | Tamil |
| 36 | V.Nathan | Potkeni, Thampalakamam | AP 4/3 | W-176 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 58 | Tamil |
| 37 | S.Dilakshikan | puthukudiyiruppu, thampalakamam | AP4/5 | W-177 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 21 | Tamil |
| 38 | K.Mahenthirarasa | Puthukudiyiruppu, Thampalakamam | | W-175 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 75 | Tamil |
| 39 | N.Kunasekaram | Potkerni, Thampalagramam | AP 5 | W-27 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 66 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | K.sinnarasa | Puthukudiyiruppu, Thampalakamam | | W-28 | Tampalakam am DSD | Tampalaka mam ASC | Palampadda ru (228) | Paddy | Male | 62 | Tamil |
| 41 | P.Arudselvi | Puthukudiyiruppu, Thampalakamam (now Colombo-06) | AP5/1 | W-278 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | 48 | Tamil |
| 42 | P.Anparasi | Puthukudiyiruppu, Thampalakamam | | W-19 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | 55 | Tamil |
| 43 | S.Poopalasingam | Kannnamedu, Thampalakamam | | W-16 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 63 | Tamil |
| 44 | S.Anparasi | Puthukudiyiruppu, Thampalakamam | | W-18 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | 55 | Tamil |
| 45 | K.Kajanthan | Puthukudiyiruppu, Thampalakamam | | W-20 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 33 | Tamil |
| 46 | S.Sooriyakala | Puthukudiyiruppu, Thampalakamam | | W-14 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | 56 | Tamil |
| 47 | S.Poopalasingam | Kannnamedu, Thampalakamam | | W-17 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 63 | Tamil |
| 48 | S.Nadesalingam | Puthukudiyiruppu, Thampalakamam | AP 5/2 | W-13 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 69 | Tamil |
| 49 | K.Kajanthan | Puthukudiyiruppu, Thampalakamam | | W-15 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 33 | Tamil |
| 50 | K.Uthatarajah (V.Arumugasamy) | | | 270 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | | Tamil |
| 51 | K.VIJAIYALEDSUM Y (Pitpakuthi) | Kannnamedu, Thampalakamam | | W-10 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | | Tamil |
| 52 | (K.Pratheepan) K.Kunarathnam | 740 Potkeni, Thampalakamam | AP 5/3 | W-11 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 79 | Tamil |
| 53 | (P.Kanthaiyaa) K.Kunaratnam | 740 Potkeni, Thampalakamam | | W-12 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 79 | Tamil |
| 54 | R.Ganaselvam (Ulthanda Vayal) (Gnanachelvam) | Kurukkal Puram, NC Road, Trincomalee | | W-256 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 62 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | (N.Devika PANDARI KEERU-UK) T,Navamani | Kannnamedu, Thampalakamam | | W-21 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | | Tamil |
| 56 | (K.SUBRAMANIYAM ) K.Sivasubramaniyam | 255 Main Street, Trincomalee | | W-24 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 92 | Tamil |
| 57 | R.RAVISANKAR | 54/10 Seaview Road, Trincomalee | | W-22 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 58 | Tamil |
| 58 | R.RAVISANKAR | 54/10 Seaview Road, Trincomalee | | W-23 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 58 | Tamil |
| 59 | (K.Subramaniyam) K.Sivasubramaniyam | 255 Main Street, Trincomalee | | W-25 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 92 | Tamil |
| 60 | (S.Ravitharan) S.RAVISANKAR | 54/10 Seaview Road, Trincomalee | | W-23 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 58 | Tamil |
| 61 | (S.Ravitharan) S.RAVISANKAR | 54/10 Seaview Road, Trincomalee | | | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 58 | Tamil |
| 62 | S.Ravitharan-ARASADI VILAKKUMAARU KEERU | 54/10 Seaview Road, Trincomalee | | | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 58 | Tamil |
| 63 | Mr.Selvadevi Selvarajah(S.selvathy Sinna kannam Vayal) | Main Street, Trincomalee | | W-282 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Female | 60 | Tamil |
| 64 | S.Vinothini (Sinna kannam Vayal) (G.Rajinthan) | Nayanmar thidal, Thampalakamam | | W-26 | Tampalakam am DSD | Tampalaka mam ASC | kovilady (228K) | Paddy | Male | 34 | Tamil |
| 65 | (S.Gowrydevi) K.Sundaralingam | Puthukudijiruppu Thampalakamam | | W-236 | Tampalakam am DSD | Tampalaka mam ASC | Thambalaga muwa (228A) | Paddy | Male | 77 | Tamil |
| 66 | T.Vijayanathan(P.Sitht hiravel)-SAMMANTHA PERUMAL KEERU | 140/54 Seaview Road, Trincomalee | | W-257 | Tampalakam am DSD | Tampalaka mam ASC | Thambalaga muwa (228A) | Paddy | Male | 64 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67 | K.Kumaravadivel-SUVANTHIYAL VARAVA | | | W-255 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | | Tamil |
| 68 | V.Lingeswaran(L.Sasidevi)-SUVANTHIYAL VARAVA | 140/155 Seaview Road, Trincomalee | AP 7/2 | W-258 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 64 | Tamil |
| 69 | S.Kirubakaran(A.Vijithamalar) | Orr's Hill, Trincomalee | | W-279 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 48 | Tamil |
| 70 | R.Santhini-MUHAMAATHU SULTHAN KAADU | | | W-292 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Female | | Tamil |
| 71 | R.VINOTHINI-MUHAMAATHU SULTHAN KAADU | | AP7/3 | W-293 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Female | | Tamil |
| 72 | K.SITHTHIRAKANTHAN-RAMALINKAM KAADU | Puthukudijiruppu, Mullaitheevu | | W-286 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 54 | Tamil |
| 73 | J.Sulaxana | Varnamedu, Thampalakamam | | W-35 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Female | 41 | Tamil |
| 74 | (P.Pathmathy) N.Pathmanathan | Varnamedu, Thampalakamam | | W-36 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 71 | Tamil |
| 75 | K.Suntharalingam | Puthukudijiruppu Thampalakamam | | W-237 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 77 | Tamil |
| 76 | K.Konanayakam | | AP 8 | W-245 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 64 | Tamil |
| 77 | (E.Vijaiyasri) T.Eswaranathan | Kallimedu Thampalakamam | | W-29 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Male | 64 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78 | S.Koneshwary | Kallimedu Thampalakamam | | W-34 | Tampalakamam DSD | Tampalakamam ASC | Thambalagamuwa (228A) | Paddy | Female | 71 | Tamil |
| 79 | (A.H.KALEELUL RAHMAN) Kaleelul Rahman M.C.M | Kutty Karach, Kinniya - 04 | AP 8/1 | W-232 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 62 | Muslim |
| 80 | M.H.M. Sathath | Java Road, Kinniya | | W-284 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Female | 60 | Muslim |
| 81 | M.C.M.NAWAS | Kinniya-06 | | W-283 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 64 | Muslim |
| 82 | (M.A.M.JOUFAR) Mohamad Jahufar .M.A | UC Road, Kinniya | | W-234 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 64 | Muslim |
| 83 | M K Mahrifa | Alin Road, Maancholai, Kinniya | AP 8/3 | W-271 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Female | 53 | Muslim |
| 84 | M.M.H.M. Hanifa | 117,Higra Road, Kinniya-03 | | W-251 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 66 | Muslim |
| 85 | M.A.Roufeek | Main Street, Kinniya | | W-233 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 60 | Muslim |
| 86 | A R M. Ziyath | Munaichenai, Kinniya - 04 | | W-231 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 56 | Muslim |
| 87 | M.A.M.Uwais | 198 Mancholai, Kinniya | AP 8/5 | W-33 | Kinniya DSD | Kurichchankeni ASC | Soorangal (226N) | Paddy | Male | 66 | Muslim |
| 88 | SIRAJ ALI NAJAMA | Annal Nagar, Kinniya - 03 | | W-227 | Kinniya DSD | Kurichchankeni ASC | Nadoothuthu (226M) | Paddy | Female | 50 | Muslim |
| 89 | A.R.M.IKRAM | Annal Nagar, Kinniya - 03 | | W-225 | Kinniya DSD | Kurichchankeni ASC | Nadoothuthu (226M) | Paddy | Male | 48 | Muslim |
| 90 | (U.UMMU KALEELA) K.A.Rauff | Annal Nagar, Kinniya - 03 | AP 8/6 | W-226 | Kinniya DSD | Kurichchankeni ASC | Nadoothuthu (226M) | Paddy | Male | 72 | Muslim |
| 91 | S.FURKHAN | Kachchaika, Koditheevu, Kinniya | | W-39 | Kinniya DSD | Kurichchankeni ASC | Nadoothuthu (226M) | Paddy | Male | 45 | Muslim |
| 92 | M.S.SULAIMAN-53 | Kachchaika, Koditheevu, Kinniya | | W-40 | Kinniya DSD | Kurichchankeni ASC | Nadoothuthu (226M) | Paddy | Male | 72 | Muslim |
| 93 | M.INAS MOHAMED | Kakkamunai, Kinniya - 07 | | W-221 | Kinniya DSD | Kurichchankeni ASC | Nadoothuthu (226M) | Paddy | Male | 24 | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 94 | M.F.RIHANA | Kakkamunai, Kinniya - 07 | | W-222 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Female | 44 | Muslim |
| 95 | I.M.A Sumeev(M.S.LAFIR) | Idiman - 4 Kinniya | | W-51 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 35 | Muslim |
| 96 | S.SAINULABDEEN | Vilveli - 5 Kinniya | | W-50 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 70 | Muslim |
| 97 | M.M Jafur(S.M.RAZIK) | Mahamam 5 , Kinniya | | W-52 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 41 | Muslim |
| 98 | M.I. Abdhul Hameeth (R.M.ISMAYIL) | Idiman Puthunagar, Kinniya | AP 8/7 | W-228 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 68 | Muslim |
| 99 | (A.G.NALEEMA UMMA) M.M.Jawfar | Maahamara , Kinniya - 05 | | W-229 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 41 | Muslim |
| 100 | (A.M.M.ASREEN) A.R.Abdul majeed | Kakkamunai, Kinniya - 06 | | W-224 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 60 | Muslim |
| 101 | A.M.NASEERA | Adappanar Vayal,Kinniya - 05 | | W-30 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Female | 39 | Muslim |
| 102 | A.M.JARSATH | Rahumaniyar Road, Kinniya - 01 | AP 8/8 | W-31 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 37 | Muslim |
| 103 | Mohamad Kareem Samsuna | Nadooothhu, Kinniya | | W-299 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Female | 52 | Muslim |
| 104 | A.M.JARSATH | Rahumaniyar Road, Kinniya - 01 | | W-82 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 37 | Muslim |
| 105 | (M.FH.ABDUL MAJEETH) A.M.Moujooth | Kakkamunai, 07 Kinniya | | W-223 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 55 | Muslim |
| 106 | (A.M.NIJAM)A.M.Jarsath | Rahumaniyar Road, Kinniya - 01 | | W-32 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 37 | Muslim |
| 107 | Mohamad Kareem Samsuna | Nadooththu, Kinniya | | W-299 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Female | 52 | Muslim |
| 108 | (A.Anifu) Anifu A.M.A | Nadooththu, Kinniya | AP 9 | W-218 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 70 | Muslim |
| 109 | M.M.RISWAN | Java Road, Kinniya | | W-215 | Kinniya DSD | Kurichchanken i ASC | Nadooththu (226M) | Paddy | Male | 34 | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 110 | (M.A.JAPAR) A.J.M.Nafas | Maancholai,Kinniya - 03 | AP 9/1 | W-54 | Kinniya DSD | Kurichchan keni ASC | Nadooththu (226M) | Paddy | Male | 37 | Muslim |
| 111 | ABDUL WAHAF | | | W- | Kinniya DSD | Kurichchan keni ASC | Nadooththu (226M) | Paddy | Male | 77 | Muslim |
| 112 | J.M.RAMEES | | | W- | Kinniya DSD | Kurichchan keni ASC | Nadooththu (226M) | Paddy | Male | 48 | Muslim |
| 113 | (UMMU HANIYUMMA) A.J.M.Siyami | Java Road, Kinniya 07 | | W-216 | Kinniya DSD | Kurichchan keni ASC | Nadooththu (226M) | Paddy | Male | 39 | Muslim |
| 114 | (A.J.M.SIYAM) M.I.Abdul Jabbar | Java Road, Kinniya 07 | | W-41 | Kinniya DSD | Kurichchan keni ASC | Nadooththu (226M) | Paddy | Male | 79 | Muslim |
| 115 | A.M.A.KALEEM | Maththiya Palli Veethy, Kinniya-02 | AP 10 | W-214 | Kinniya DSD | Kurichchan keni ASC | Nadooththu (226M) | Paddy | Male | 73 | Muslim |
| 116 | A.R.M.LABBAI | Nadooththu, Kinniya | AP 10/1 | W-249 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 74 | Muslim |
| 117 | [S.M.A.RAHEEM (M.NAWSIR )] M.L.M.NAWSIR | Puvarasamtheevu, Kinniya | | W-248 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 37 | Muslim |
| 118 | SITHI NAJIMA ABDUL RAHIM | Puvarasamtheevu, Kinniya | | W-247 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Female | 53 | Muslim |
| 119 | A.H.UMMUKULTHUOOM | Nodooththu, Kinniya | | W-253 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Female | 66 | Muslim |
| 120 | MS.SAMSUNISHA | Sinnampillaichenai, Vellaimanal, Kinniya | | W-241 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Female | 35 | Muslim |
| 121 | A.M.Fasri | Malinthurai, Kinniya-04 | | W-275 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 51 | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 122 | M.S.UBAITHULLAH | Sinnampillaichenai, Vellaimanal, Kinniya | AP 10/3 | W-240 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 41 | Muslim |
| 123 | S.M.NASEER (S.M.NALEEM) | Puvarasamtheevu, kinniya | | W-267 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 50 | Muslim |
| 124 | (A.MISKEEN) A.M.THAMAM | Sammavaichatheevu, Kinniya - 06 | | W-243 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 34 | Muslim |
| 125 | (M.I.A.WAHITHU) A.W.M.Mukeeth | Kurichankeni-01, Kinniya | | W-281 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 37 | Muslim |
| 126 | (A.MISKEEN) M.M.ALIYAR | 7m Vaddaram, No. 50, Kinniya | AP 10/4 | W-244 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Female | 67 | Muslim |
| 127 | (V.L.ABDUL FAREED) M.S.JAMALDEEN | Hijara Road, Kinniya-02 | | W-242 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 72 | Muslim |
| 128 | S.M.NASAR | Kurichankeni-02, Kinniya | | W-246 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 63 | Muslim |
| 129 | (I.PANNEER SELVAM)A.C.M.Mubarak | School Road, Kurichankeni-02, kinniya | AP 11 | W-280 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 39 | Muslim |
| 130 | A.W.M.Hanifa | Sukusir Street, Kinniya - 06 | | W-55 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 84 | Muslim |
| 131 | A.M.Nowfeel | Rox Lane, Java Road, Kinniya - 06 | | W-53 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 49 | Muslim |
| 132 | S.A.Azees | No. 70A Peranthoru Kinniya - 05 | AP 11/1 | W-79 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 54 | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 133 | (A.M.Munees ) A.M.Rinoos | Adappanar Vayal,Kinniya - 05 | | W-276 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 43 | Muslim |
| 134 | K.M.Mahroof{fizal} | | | W-294 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 76 | Muslim |
| 135 | M.M.Riswana | 07 Jawa Street,Kinniya - 07 | AP 11/2 | W-42 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Female | 50 | Muslim |
| 136 | S.Sarsath | Sammavaichatheevu, Kinniya - 06 | | W-47 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 30 | Muslim |
| 137 | (S.I.Abubakkar ) A.SAFARULLA | Sammavaichatheevu, Kinniya - 06 | | W-46 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 50 | Muslim |
| 138 | A.Umar Jawfar | Neduntheevu, Kinniya - 06 | | W-265 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 59 | Muslim |
| 139 | M.B.Sukri | Kakkamunai, Kinniya - 07 | AP 11/3 | W-264 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 57 | Muslim |
| 140 | S.M.Uwais (U.J. Fareena) | Neduntheevu, Kinniya - 06 | AP 11/3 | W-266 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Female | 42 | Muslim |
| 141 | K.M.M.Ibrahim | Mancholai Chenai, Kinniya - 03 | | W-252 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 70 | Muslim |
| 142 | (K.M.Mohammathali) M.MUSRI | Java Road, Kinniya-07 | AP 11/4 | W-250 | Kinniya DSD | Kinniya ASC | Majeeth Nagar (226O) | Paddy | Male | 65 | Muslim |
| 143 | (KUSAIMA) A.S.Sithti kusaima | Abdhulgafoor Road, No 22 Kinniya - 01 | AP 12 | W-45 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Female | 57 | Muslim |
| 144 | (ANWAR) S.M.Anwar | Maharoof Nagar, Kinniya - 03 | | W-59 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 47 | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 145 | (Mohammed marsook M.S) S.M.Anwar | Maharoof Nagar, Kinniya - 03 | | W-273 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 47 | Muslim |
| 146 | (M.A. FIRASKHAN) V.Pirasathkhan | Kutty Karach,Kinniya - 05 | | W-48 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 45 | Muslim |
| 147 | (A.K.A. NATHEER ) Abdul kareem nadeer | 81/60 Marble Beach Road, Vellaimanal, Chinabay | AP 12/1 | W-49 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 59 | Muslim |
| 148 | U. ABDUL RASAK | Main Street, Kinniya - 03 | | W-43 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 77 | Muslim |
| 149 | (M.S.A. MJEED) S.Faheer | | | W-58 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 26 | Muslim |
| 150 | HISMATHUMMA | | | W-56 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Female | 53 | Muslim |
| 151 | S.FAHEER | | AP 12/2 | W-57 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 26 | Muslim |
| 152 | (A.A. FASMEER) Mohomad fasmeer A.H | Maancholai,Kinniya - 03 | | W-44 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 33 | Muslim |
| 153 | (M. RISAN) N.L.Maharoof | Maharoof Nagar, Kinniya - 03 | | W-60 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | | Muslim |
| 154 | (IMTHIYAS M.E.M)M.A.Masaheer | Hanifa Road, Kinniya-03 | | W-277 | Kinniya DSD | Kinniya ASC | Upparu (225K) | Paddy | Male | 46 | Muslim |
| 155 | A.N.JARIYA | Alimnagar, Muthur | | W-260 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 49 | Muslim |
| 156 | A.G.ANOOJA | Nadutheevu, Muthur | AP 15/8 | W-189 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 36 | Muslim |
| 157 | A.L.SAFEERA | Vellai Manal, Kinniya | AP 15/8 | W-193 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 40 | Muslim |
| 158 | M.L.SAHEETH | Vellai Manal, Kinniya | | W-191 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 57 | Muslim |
| 159 | A.L.RASEETHA | Vellai Manal, Kinniya | | W-192 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 75 | Muslim |
| 160 | R.JUNOOT | Cort Road, Trincomalee | | W-259 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 68 | Muslim |
| 161 | ABDUL SALAM | Periyapalam, Muthur | | W-200 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 67 | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 162 | I.FOWSIYA UMMA | Palanagar, Muthur-02 | | W-199 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 75 | Muslim |
| 163 | M.M.AIYOOB | Palanagar, Muthur-02 | AP 15/9 | W-198 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 76 | Muslim |
| 164 | I.JALEEL | Batticalo Road, Jinnanagar, Muthur | | W-190 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 42 | Muslim |
| 165 | UL.DAOOD | Periyapaalam, Muthur | | W-62 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 52 | Muslim |
| 166 | M.S.Raseek | Periyapaalam, Muthur | | W-61 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 70 | Muslim |
| 167 | A.S.ASmy | Bassar Palli Road, Muthur-04 | | W-64 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 48 | Muslim |
| 168 | J.D.H.Priyanga | Periyapaalam, Muthur | AP 15/10 | W-63 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 54 | Sinhala |
| 169 | K.A. Sudeera | No.600/1 LB 06 Dehiwatta | | W-01 | Muthur DSD | Serunuwara ASC | Shafi Nagar (224F) | Paddy | Male | 38 | Sinhala |
| 170 | M.A.Mawlis | No.51, Mandalapura, Dehiwatta | | W-02 | Muthur DSD | Serunuwara ASC | Shafi Nagar (224F) | Paddy | Male | 75 | Sinhala |
| 171 | K.P. Palitha kumara | No.133, Mandalapura, Dehiwatta | | W-03 | Muthur DSD | Serunuwara ASC | Shafi Nagar (224F) | Paddy | Male | 58 | Sinhala |
| 172 | K.P. Rohana kumara | 151/B Neelapola Road, Dehiwatta | AP 16 | W-04 | Muthur DSD | Serunuwara ASC | Shafi Nagar (224F) | Paddy | Male | 54 | Sinhala |
| 173 | W.A.Wasantha kumara | No.27 LB 07 Dehiwatta | | W-05 | Muthur DSD | Serunuwara ASC | Shafi Nagar (224F) | Paddy | Male | 45 | Sinhala |
| 174 | W.A.Saman kumara | No.38 LB 07 Dehiwatta | | W-06 | Muthur DSD | Serunuwara ASC | Shafi Nagar (224F) | Paddy | Male | 37 | Sinhala |
| 175 | (S.Sithy sareeha) S.THAHEER | Palanagar, Muthur | | W-151 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 60 | Muslim |
| 176 | A.M.M.Farhan | Araba Nagar, Muthur-02 | AP 16/1 | W-238 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 34 | Muslim |
| 177 | N.M.SARIF | Palanagar, Muthur | | W-239 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 71 | Muslim |
| 178 | (M.Y.ANIFA UMMA) M.RISHAN | | | W-157 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | | Muslim |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 179 | RAJ KAFOOR | Jinnanagar, Muthur | | W-140 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 61 | Muslim |
| 180 | Y.JAYASIMAN | Iruthayapuram, Muthur | | W-139 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 48 | Muslim |
| 181 | A.S.RASOOL | Neithalnagar, Muthur | AP 16/2 | W-153 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 61 | Muslim |
| 182 | A.W.RAFI | Jayanagar, Muthur | | W-141 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 32 | Muslim |
| 183 | (M.I.MAHROOF) Mahroof Mohamad Siron | Central Road, Palanagar, Muthur | | W-142 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 35 | Muslim |
| 184 | A.S.RIFAYA(M.N.RIFAYA) | Konx Road, Muthur | | W-295 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 56 | Muslim |
| 185 | N.SUJANA | Palanagar, Muthur | | W-146 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 37 | Tamil |
| 186 | R.SIRISKANTHARASA | Iralkuli, Muthur | | W-152 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 62 | Tamil |
| 187 | S.SASIKARAN | Manalchenai, Mallikaitheevu | AP 16/3 | W-131 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 45 | Tamil |
| 188 | P.KOMALADEVI | Alimnagar, Muthur | | W-65 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 61 | Tamil |
| 189 | N.NAJA | Markas Road, Periyapaalam, Muthur-05 | | W-145 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 43 | Tamil |
| 190 | A.W.M.JAWATH SITHARA | A.C.Road, Muthur | AP 16/4 | W-196 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Male | 57 | Tamil |
| 191 | A.G.NOORJAHAN | Neithalnagar, Muthur-01 | | W-75 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 71 | Tamil |
| 192 | K.PUSPALEELA | Thulaveddai Lane, 1st Milepost, No. 15/24 Point Pedro, Jaffna | | W-291 | Muthur DSD | Muthur ASC | Shafi Nagar (224F) | Paddy | Female | 48 | Tamil |
| 193 | (B.PUNITHARASA) B.ATPUTHARASA | Thakanagar, Muthur | | W-155 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 52 | Tamil |
| 194 | K.M.A.RAHUMAN | M.O.H Road, Muthur | AP 16/5 | W-80 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 71 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 195 | A.R.RUSAIKA | M.O.H Road, Muthur | | W-81 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 60 | Tamil |
| 196 | M.ILMUNISHA | Periyapaalam, Muthur-05 | | W-143 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 41 | Tamil |
| 197 | (HALIMA UMMAHA) K.M.Asath | Periyapaalam, Muthur-05 | AP 16/6 | W-144 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 50 | Tamil |
| 198 | K.TAYAWATHI | Iruthayapuram, Muthur | | W-136 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 40 | Tamil |
| 199 | Y.NISANTHINI | Iruthayapuram, Muthur | | W-135 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 45 | Tamil |
| 200 | Y.YOHANATHAN | Iruthayapuram, Muthur | | W-134 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 84 | Tamil |
| 201 | (AATHAVAN FO) Y.SANTHAKUMARI | Iruthayapuram, Muthur | | W-154 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 49 | Tamil |
| 202 | G.JAYA | Iruthayapuram, Muthur | | W-76 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 53 | Tamil |
| 203 | V.VANITHA | Iruthayapuram, Muthur | | W-77 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Female | 56 | Tamil |
| 204 | P.YOHARETNAM | Iruthayapuram, Muthur | AP 7 | W-150 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 43 | Tamil |
| 205 | S.THEVATAS | Iruthayapuram, Muthur | | W-149 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 84 | Tamil |
| 206 | P.K.M.FAISATH | Arabic Collage Road, Muthur-05 | AP 17/1 | W-156 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 42 | Tamil |
| 207 | K.KIRUSNATHASAN | Iruthayapuram, Muthur | | W-138 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 69 | Tamil |
| 208 | R.AJANTHAN | Kattaiparichan, Muthur | | W-147 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 31 | Tamil |
| 209 | R.ATHURSAN | Kanesapuram, Kattaiparichan, Muthur | | W-148 | Muthur DSD | Muthur ASC | Iruthayapuram (218E) | Paddy | Male | 29 | Tamil |
| 210 | K.JEYABAL | Kattaiparichan, Muthur | | W-87 | Muthur DSD | Sampoor ASC | Pallikudyjiruppu (219) | Paddy | Male | 69 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 211 | N.Sumathy | Thirukonamalai | AP 17/2 | W-86 | Muthur DSD | Sampoor ASC | Pallikudyjir uppu (219) | Paddy | Female | 50 | Tamil |
| 212 | K.Tharsanan | Thirukonamalai | | W-85 | Muthur DSD | Sampoor ASC | Pallikudyjir uppu (219) | Paddy | Male | 29 | Tamil |
| 213 | (K.Irasathurai) T.Kunarasa | Kattaiparichan | | W-84 | Muthur DSD | Sampoor ASC | Pallikudyjir uppu (219) | Paddy | Male | 54 | Tamil |
| 214 | (S. THANKAMMA) S.Sivanantham | Kattaiparichan | | W-83 | Muthur DSD | Sampoor ASC | Pallikudyjir uppu (219) | Paddy | Male | 74 | Tamil |
| 215 | S.SASITHARAN | Kattaiparichan-7, Muthur | | W-123 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Male | 72 | Tamil |
| 216 | (S.SELVAMALAR)S. BRINTHAPAN | Pallikudiyiruppu, Thoppur | | W-290 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Male | 42 | Tamil |
| 217 | (KALAIVANY FO) Nagarasa Rathikanthan | Pallikudiyiruppu, Thoppur | | W-297 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Male | 45 | Tamil |
| 218 | T.SIVAKARAN | Thankapuram, Pallikudiyiruppu, Thoppur | | W-130 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Male | 54 | Tamil |
| 219 | T.Sarweswaran | Kattaioarichchan, Muthur | AP 18/1 | W-274 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Other | Male | 48 | Tamil |
| 220 | K.KAMALINI | Thankapuram, Thoppur | | W-66 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Female | 40 | Tamil |
| 221 | K.DILAANI | Thankapuram, Thoppur | AP 19 | W-67 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Female | 34 | Tamil |
| 222 | v.sachchthanantham | Manarchenai, Mallikaitheevu | | W-272 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Other | Male | 70 | Tamil |
| 223 | Sabaradnam Yogarasa | | AP 19/1 | W-230 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Other | Male | 36 | Tamil |
| 224 | A.SAROOJA | Thankapuram, Pallikudiyiruppu, Thoppur | | W-119 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Other | Female | 61 | Tamil |
| 225 | A.NANTHINI | Thankapuram, Pallikudiyiruppu, Thoppur | | W-125 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Other | Female | 38 | Tamil |
| 226 | V.THIRUMAGAN | Thankapuram, Pallikudiyiruppu, Thoppur | | W-126 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Other | Male | 42 | Tamil |
| 227 | T.SASIKUMAR | Thankapuram, Thoppur | AP 19/2 | W-120 | Muthur DSD | Thoppur ASC | Pallikudyjir uppu (219) | Paddy | Male | 41 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 228 | M.NAWARATNARASA | Thankapuram, Thoppur | | W-121 | Muthur DSD | Thoppur ASC | Pallikudyjiruppu (219) | Paddy | Male | 52 | Tamil |
| 229 | R.Kirusanthini(contact: selvarathnam) | Kattaiparichan | | W-78 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Female | 39 | Tamil |
| 230 | K.NANTHADEVI | Kadakkaraichenai | | W-70 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Female | 55 | Tamil |
| 231 | S.NANTHAN | Thangapuram | | W-69 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Male | 50 | Tamil |
| 232 | R.JEYACHCHANTHIRAN | Kattaiparichan | | W-89 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Male | 41 | Tamil |
| 233 | N.KANGESWARY | Kattaiparichan | AP 19/3 | W-88 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Male | 37 | Tamil |
| 234 | S.SELVARETHTHINAM | Kattaiparichan | | W-91 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Male | 68 | Tamil |
| 235 | S.SARATHADEVI | Kattaiparichan | | W-186 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Female | 71 | Tamil |
| 236 | M.SUNTHARARASA | Uvarmalai | AP 19/4 | W-185 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Male | 79 | Tamil |
| 237 | (S.MATHAVARASA) Anojan | Kattaiparichan | | W-112 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Male | 39 | Tamil |
| 238 | (S.MATHAVARASA) A.Sumathy | Kattaiparichan | | W-97 | Muthur DSD | Sampoor ASC | Kaddaipariachchan South (222) | Paddy | Female | 39 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 239 | (J.Thulankumani) J.Rajeepan | Kattaiparichan | | W-95 | Muthur DSD | Sampoor ASC | Kaddaiparichchan South (222) | Paddy | Male | 35 | Tamil |
| 240 | K.NISANTHINI | Kattaiparichan | | W-98 | Muthur DSD | Sampoor ASC | Kaddaiparichchan South (222) | Paddy | Female | 42 | Tamil |
| 241 | K.PALANIVEL | Kattaiparichan | AP 19/5 | W-90 | Muthur DSD | Sampoor ASC | Kaddaiparichchan South (222) | Paddy | Male | 69 | Tamil |
| 242 | A. Sumathy | Kattaiparichan | | W-96 | Muthur DSD | Sampoor ASC | Kaddaiparichchan South (222) | Paddy | Male | 39 | Tamil |
| 243 | N.Kanesamma | Kattaiparichan | | W-68 | Muthur DSD | Sampoor ASC | Kaddaiparichchan South (222) | Paddy | Female | 75 | Tamil |
| 244 | S.SUNTHRAMOORTHI | Kattaiparichan | | W-262 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 84 | Tamil |
| 245 | J.KIRUFANANTHI | Chenaiyur | | W-73 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 44 | Tamil |
| 246 | T.Kuharaj | Kattaiparichan | | W-74 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 41 | Tamil |
| 247 | J.KIRUFANANTHI | Kattaiparichan | AP 19/6 | W-72 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 44 | Tamil |
| 248 | K.PARAMASIVAN | Pallikudiyruppu | AP 19/6 | W-71 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 54 | Tamil |
| 249 | M.MOHANASUNTHARAM | Kattaiparichan | | W-94 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 63 | Tamil |
| 250 | MOHANA SUNTHARAM MAHADEVI | Kattaiparichan | | W-93 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 53 | Tamil |
| 251 | SANTHIRALINGAM KEERTHIKA | Kattaiparichan | | W-92 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 32 | Tamil |
| 252 | (JANESWARI) N.Gnaneswary | Kattaiparichan | | W-137 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 69 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 253 | M.SUHUNA | Kattaiparichan | | W-99 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 37 | Tamil |
| 254 | S.SUHANTHI | Kattaiparichan | | W-128 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 54 | Tamil |
| 255 | S.RASIHARAN | Kanesapuram | AP 19/7 | W-129 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 41 | Tamil |
| 256 | (RETHUNA VADIVEL)M.Rathinavadivel | Kanesapuram | | W-133 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 59 | Tamil |
| 257 | S.THILAHARANI | Chenaiyur | | W-127 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 51 | Tamil |
| 258 | P.ILAINGESWARAN | Pallikkudiyiruppu | | W-208 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 41 | Tamil |
| 259 | K.ARULSELVAM | Kattaiparichan | AP 20 | W-132 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 46 | Tamil |
| 260 | S.RAVEENTHIRAN | Chenaiyur | | W-105 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 58 | Tamil |
| 261 | J.VASANTHATHEVI | Chenaiyur | | W-104 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 56 | Tamil |
| 262 | T.PUSHPALATHA | Chenaiyur | | W-103 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 37 | Tamil |
| 263 | (T.SITHTHIRAVEL) S.Ravindran | Chenaiyur | | W-102 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 58 | Tamil |
| 264 | A.MEENALOIJINI | Chenaiyur | | W-107 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 53 | Tamil |
| 265 | P.PUSHPARANI | Chenaiyur | | W- | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 66 | Tamil |
| 266 | (P.MARIMUTHTHU) K.PAKKIYATHURAI | Kattaiparichan-7, Muthur | AP 20/2 | W-101 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 80 | Tamil |
| 267 | K.PAKKIYATHURAI | Chenaiyur | | W-100 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 80 | Tamil |
| 268 | (S.KANAPATHIPILLAI) K.Suthakaran | Kadakkaraichenai | | W-184 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 57 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 269 | SRI MURALITHARN NAGALATCHUM | Chenaiyur | | W-254 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 62 | Tamil |
| 270 | U.YOHESWARI | Kattaiparichan | | W-108 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 54 | Tamil |
| 271 | K.SELVARANI | Kattaiparichan | | W-110 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 65 | Tamil |
| 272 | S.RAHUNATHAN | Kattaiparichan | | W-124 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 54 | Tamil |
| 273 | S.NANTHAKUMAR | Chenaiyur | AP 21/1 | W-201 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 44 | Tamil |
| 274 | (I.SANTHAMALAR) P.Ilankumaran | Chenaiyur | | W-109 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 56 | Tamil |
| 275 | S.UTHAYAKUMAR | Chenaiyur | | W-263 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 52 | Tamil |
| 276 | N.KANNADHASAN | Chenaiyur | | W-261 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 51 | Tamil |
| 277 | A.KANPATHIPILLAI (Kanapathippillai Suthakaran) | Kadakkaraichenai | | W-183 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 57 | Tamil |
| 278 | K.THANAPALASINGAM | Chenaiyur | | W-114 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 54 | Tamil |
| 279 | R.RATNASINGAM | Chenaiyur | | W-115 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 69 | Tamil |
| 280 | K.THANABALASINGAM | Chenaiyur | | W-113 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 54 | Tamil |
| 281 | [(P.NAGESWARI)-sold] N.navaradnarasa | Kattaiparichan | AP 21/2 | W-111 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 62 | Tamil |
| 282 | S.DEVIKKA RANI | Kattaiparichan | | W-106 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 60 | Tamil |
| 283 | S.LIPAYINI | Kattaiparichan | | W-118 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Female | 32 | Tamil |
| 284 | M.UTHAYARAJ | Trinco | | W-235 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 52 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 285 | A.MOHANDAS | Chenaiyur | | W-116 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 36 | Tamil |
| 286 | P.ARIYADURAI | Chenaiyur | AP 21/3 | W-117 | Muthur DSD | Sampoor ASC | Chenaiyoor (222A) | Paddy | Male | 69 | Tamil |
| 287 | S.Kalirasa | Santhosapuram, Muthur | | W-203 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 58 | Tamil |
| 288 | Nakalingam Inthiran | Salayur, Muthur | | W-210 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 36 | Tamil |
| 289 | S.Patheeswara raja | Salaiyur-07, Kattaiparichan, Muthur | | W-207 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 27 | Tamil |
| 290 | S.Kamaleswara raja | Salaiyur-07, Kattaiparichan, Muthur | AP 21/4 | W-206 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 34 | Tamil |
| 291 | (Pandiyan) T.Sasikaran | Santhosapuram, Kadarkaraichenai | | W-202 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 31 | Tamil |
| 292 | M.Meeharan | Santhosapuram, Kadarkaraichenai | | W-209 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 31 | Tamil |
| 293 | K.Sanmugarasa | Seethana Veli, Muthur | | W-211 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Female | 54 | Tamil |
| 294 | N.Selvarathnam | Santhosapuram, Muthur | | W-204 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 52 | Tamil |
| 295 | K.Maarimuththu | Santhosapuram, Muthur | | W-205 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | | Tamil |
| 296 | Veerakkuddy Pulenthiran | Santhosapuram | | W-182 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 41 | Tamil |

| SN | Owners Name | Address | Tower No. | W notice No | DSD | Agrarian division | GN division | Type of Land | Gender | Age (as at 31st May 2025) | Ethnicity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 297 | Varnakulasinkam Jeyakumar | Chenaiyoor 6 | | W-181 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 44 | Tamil |
| 298 | T.Thankarajan | Salaiyur | | W-180 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Other | Male | 45 | Tamil |
| 299 | j.selvarani | Seethana Veli | AP 22/1 | W-178 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Paddy | Female | 40 | Tamil |
| 300 | (yokamma) T.Jekatheeswary | Santhosapuram | | W-179 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Paddy | Female | 37 | Tamil |
| 301 | Sannmukanathan Sriranjini | Santhosapuram | | W-197 | Muthur DSD | Sampoor ASC | Kadatkaraichenai (222C) | Paddy | Female | 41 | Tamil |

**15.4.b List of Affected Lands and their ownership (KOVIL, MOSQUE, SCHOOL LANDS )**

| No | Owners Name | W notice No | Tower Number (if any) |
|---|---|---|---|
| 1 | ATHI KONESWARAM KOVIL -THAMPALAKAMAM | W-285 | AP6, AP6/1 , AP7 |
| 2 | AL IHAZAAN JUMMA MOSQUE-KINNIYA | W-287 | |
| 3 | JAWA JUMMA MOSQUE-KINNIYA | W-288 | AP8/2 |
| 4 | BUHARI MOSQUE-KINNIYA | W-289 | |
| 5 | SAHTHIYA ARABIC COLLEGE | W-212 | |
| 6 | SAHTHIYA ARABIC COLLEGE | W-213 | |
| 7 | SAMIYAMMAL KOVIT-THAMPALAKAMAM | W-296 | |

# 15.6 List of Relevant Associated Reports and Plans

## REPORTS

- IEE REPORT FOR INITIAL ENVIRONMENT EXAMINATION(IEE) FOR THE PROPOSED 50MW SOLAR POWER PROJECT AT SAMPOOR, TRINCOMALEE - MAY 2023
- INITIAL ENVIRONMENTAL EXAMINATION REPORT FOR PROPOSED 220 KV TRANSMISSION LINE PROJECT FROM NEW HABARANA SS TO KAPPALTHURAI GS – JANUARY 2024
- LONG TERM GENERATION EXPANSION PLAN 2023-2042, CEYLON ELECTRICITY BOARD
- UPDATED INITIAL ENVIRONMENTAL EXAMINATION FOR PROPOSED 220KV TRANSMISSION LINE FROM SAMPUR GRID SUBSTATION TO KAPPALTHURAI GRID SUBSTATION – OCTOBER 2023

## PLANS

- Construction of Sampur Solar Park Phase I – 50MW (Construction to be began soon)
- Construction of Sampur Solar Park Phase II – 70MW (Detailed studies to be began soon)
- Expansion of Kappalturai BOI Zone
- Proposed Renewable Energy Projects in Trincomalee Cluster under approval process at SLSEA

**Renewable Enegry projects located in Trincomolee cluster under approval process of SLSEA**

| SEA Ref.No. | Company Name | Type | Capacity (MW) | Location | |
|---|---|---|---|---|---|
| | | | | Latitude | Longitude |
| 40580 | Windforce PLC | Solar | 60.00 | 8.561136 | 81.177787 |
| 41110 | Sky Solar Solutions (Pvt) Ltd | Solar | 50.00 | 8.407575 | 81.372738 |
| 41270 | Blue Sun Technology (Pvt) Ltd | Solar | 137.00 | 8.555319 | 81.151524 |
| 41340 | 3W Power Management Ltd | Solar | 100.00 | 8.747021 | 81.132267 |
| 41360 | Orbital Energy Pte Ltd | Solar | 100.00 | 8.475754 | 81.340208 |
| 41920 | Arinma Holding (Pvt) Ltd | Solar | 100.00 | 8.42102 | 81.234718 |
| 43960 | Arinma power Tricomolee (Pvt) Ltd | Solar | 100.00 | 8.434951 | 81.238825 |
| | Sampoor Solar Project | Solar | 120.00 | | |
| **Total** | | | **767.00** | | |

**"Note: Apart from the above large projects, there are a considerable number of projects below 10 MW under the Feed-in Tariff scheme located in the Trincomalee cluster."**

## 15.7 – Hydrological Study Report

### A-Methodology Hydrological Impact assessment for the Transmission Line

A two dimensional flood model was formulated to identify the flood impact of the proposed transmission line. The model scematisation is given in Figure H8 The model downstream boundary was used as sea where a constant water level of 1.2m was assuimed that represent the maximum water level for non clyclonic conditions with wind wave setup, which is a more common extreme scenario that matches the design 25 year return period which could be equel to the project life duration. The model upstream boundary is the Manampitiya Bridge where measured discharge measurements by the Irrigation Department are available to calculate the discharge for 25 Year return period.  Input

The details of the computation of the design hydrograph that was used as an upstream input to the model using the information given in the CRIP Report ( Ref: Consultancy Services for Development of Basin Investment Plans (DBIP) for Selected Basins, Volume 6: Computational Framework Specific to Mahaweli Ganga Basin, 2018 September, Atkins)  is given in Annex H1

The 2D model schematization for the flood study is given in Figure H0.

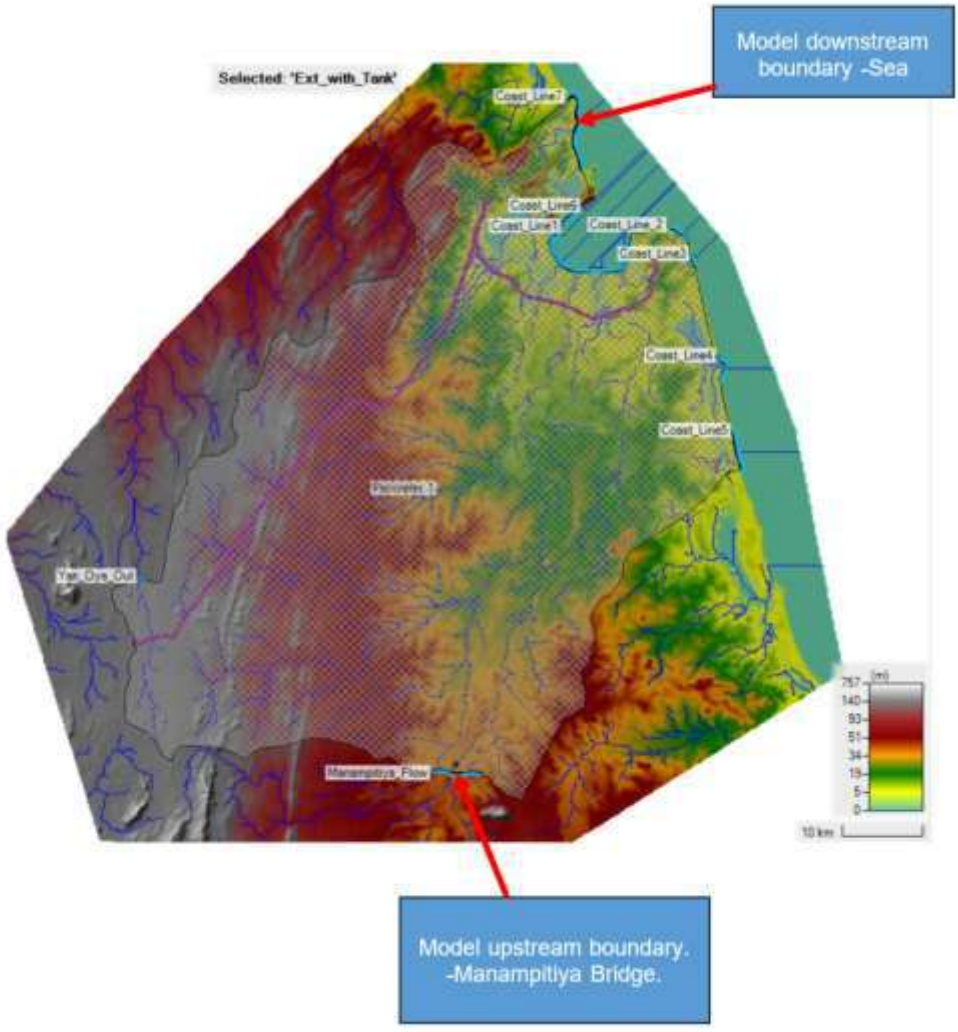



**Figure H0- 2D Flood Model Scematisation for the Transmission Line**

**B- Results for the Flood Study of the Transmission Line**

The 25 Year flood maps obtained from the model for the transmission line is given from Figure H2 to Figure H7.

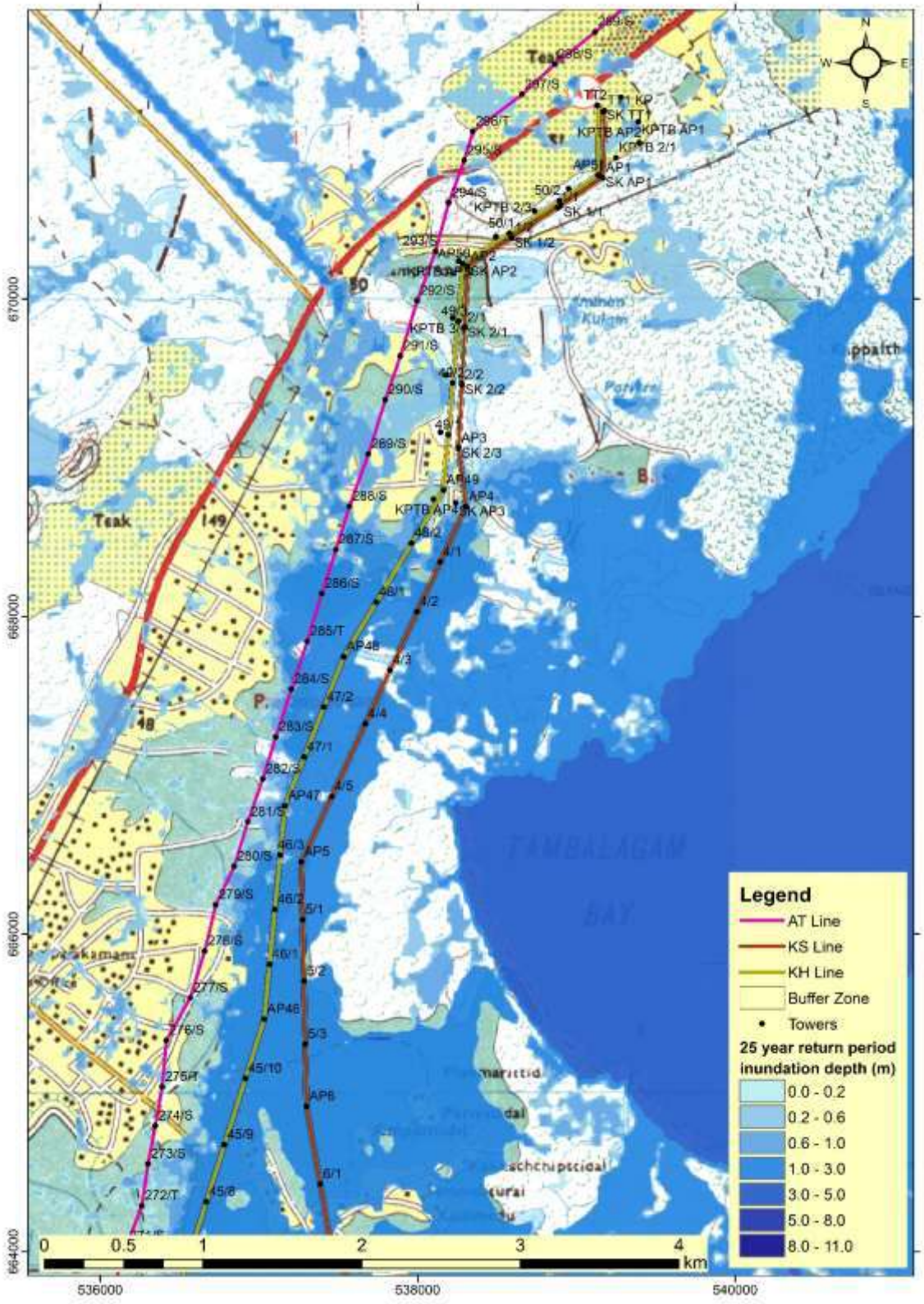



**Figure H2- Flood Depth Map 25 Year Return Period – AP1 to 6/1**

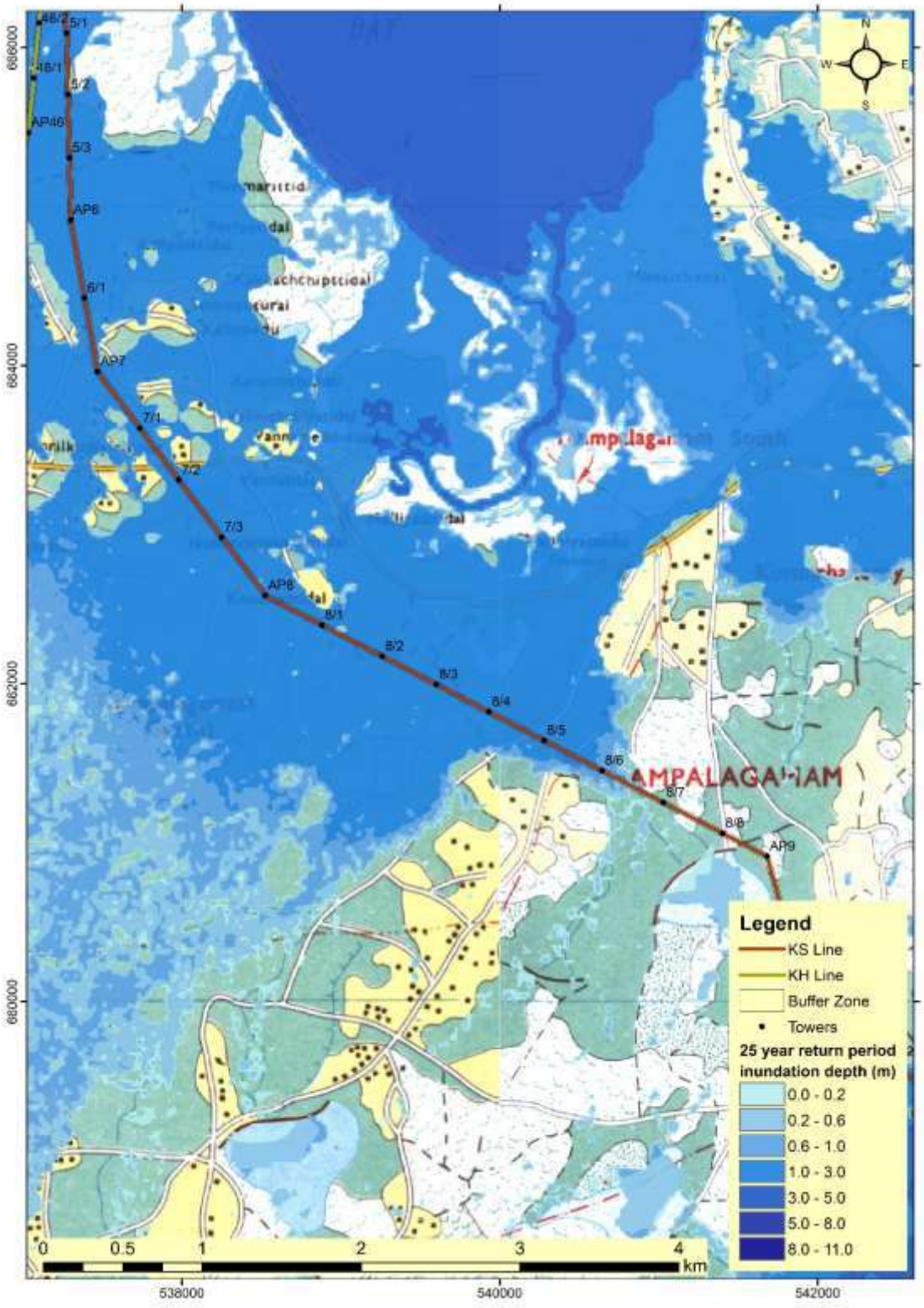



**Figure H3- Flood Depth Map 25 Year Return Period – 6/1 to AP9**

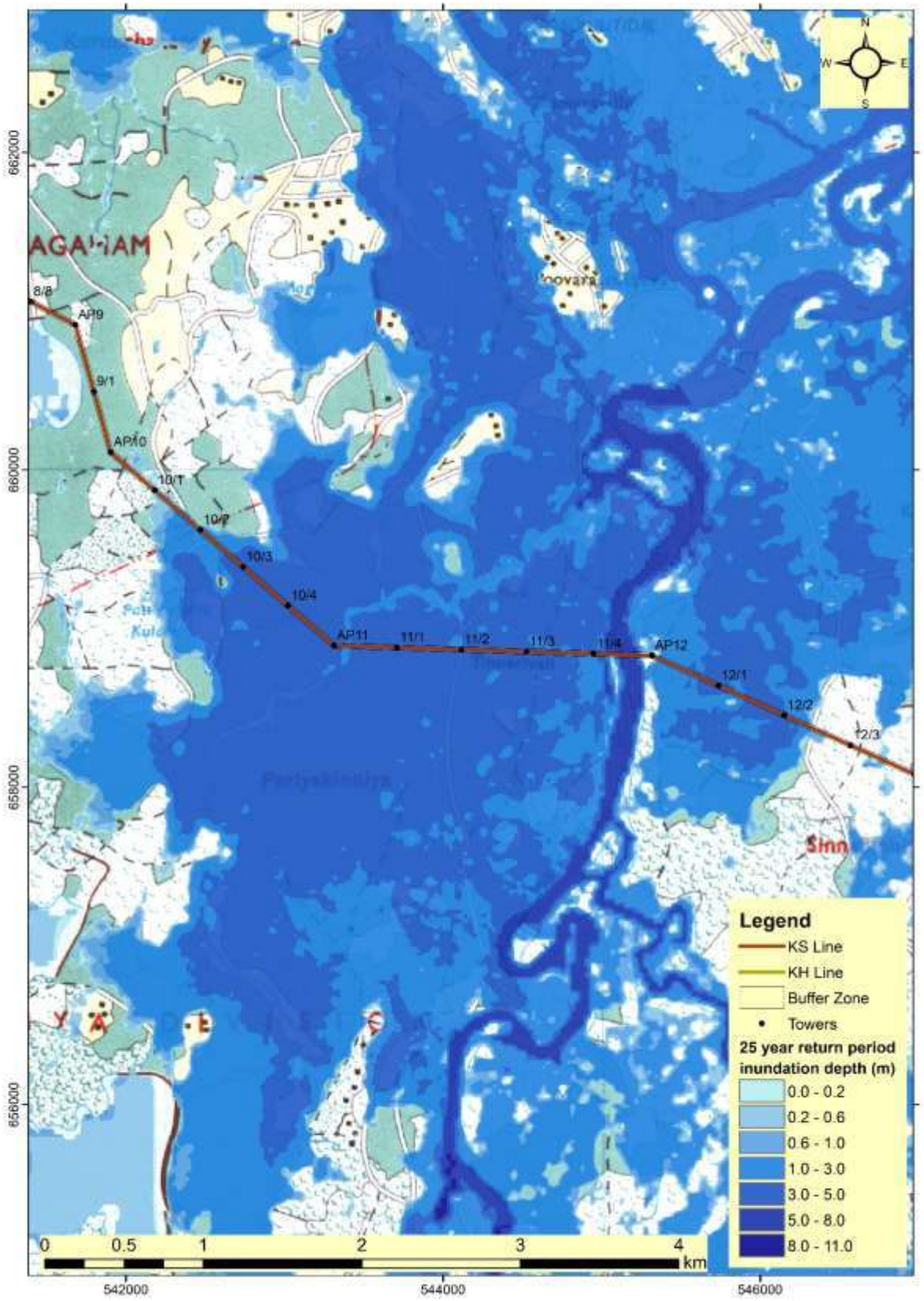



**Figure H4- Flood Depth Map 25 Year Return Period – AP9 to 12/3**

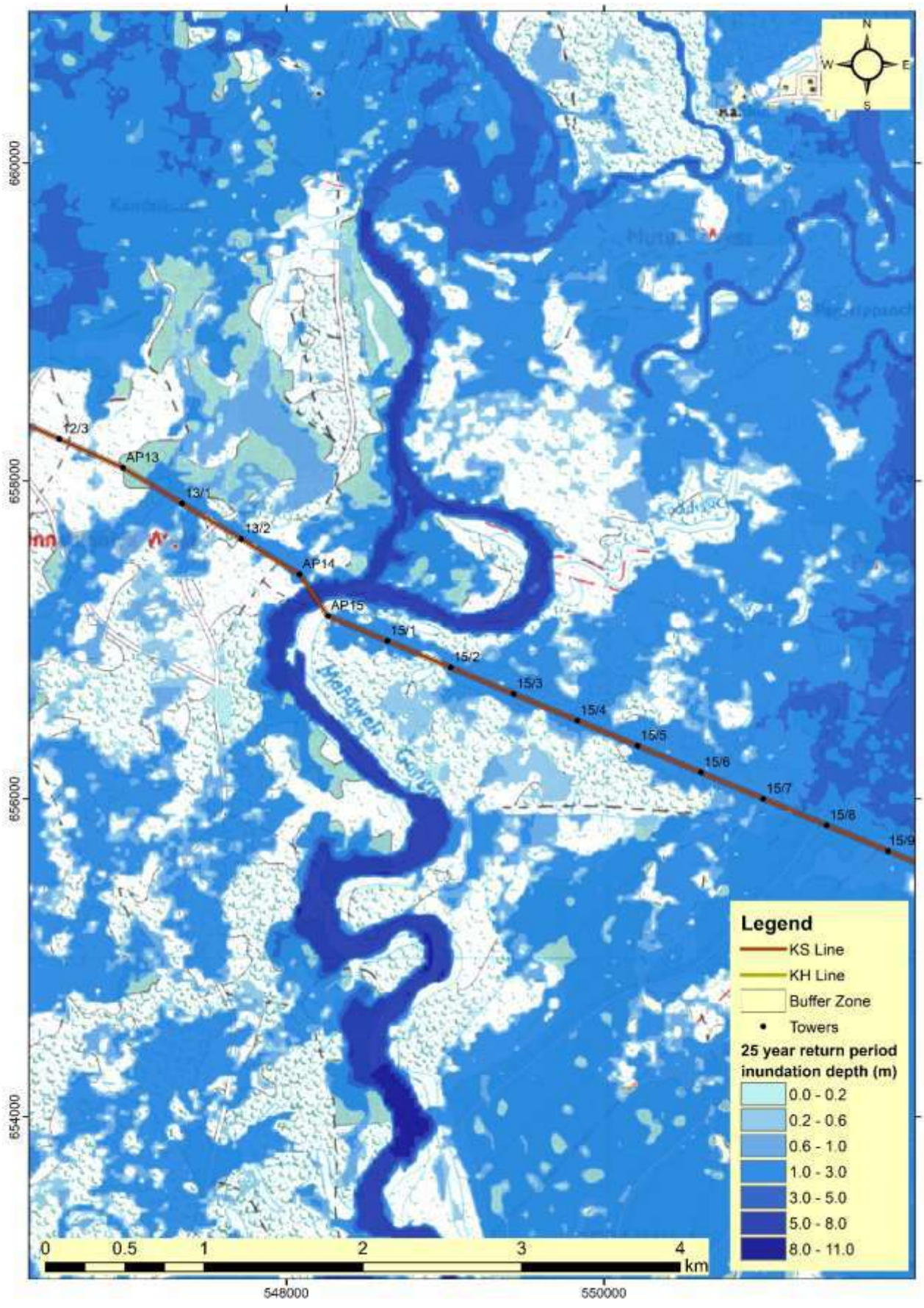



**Figure H5- Flood Depth Map 25 Year Return Period – 12/3 to 15/9**

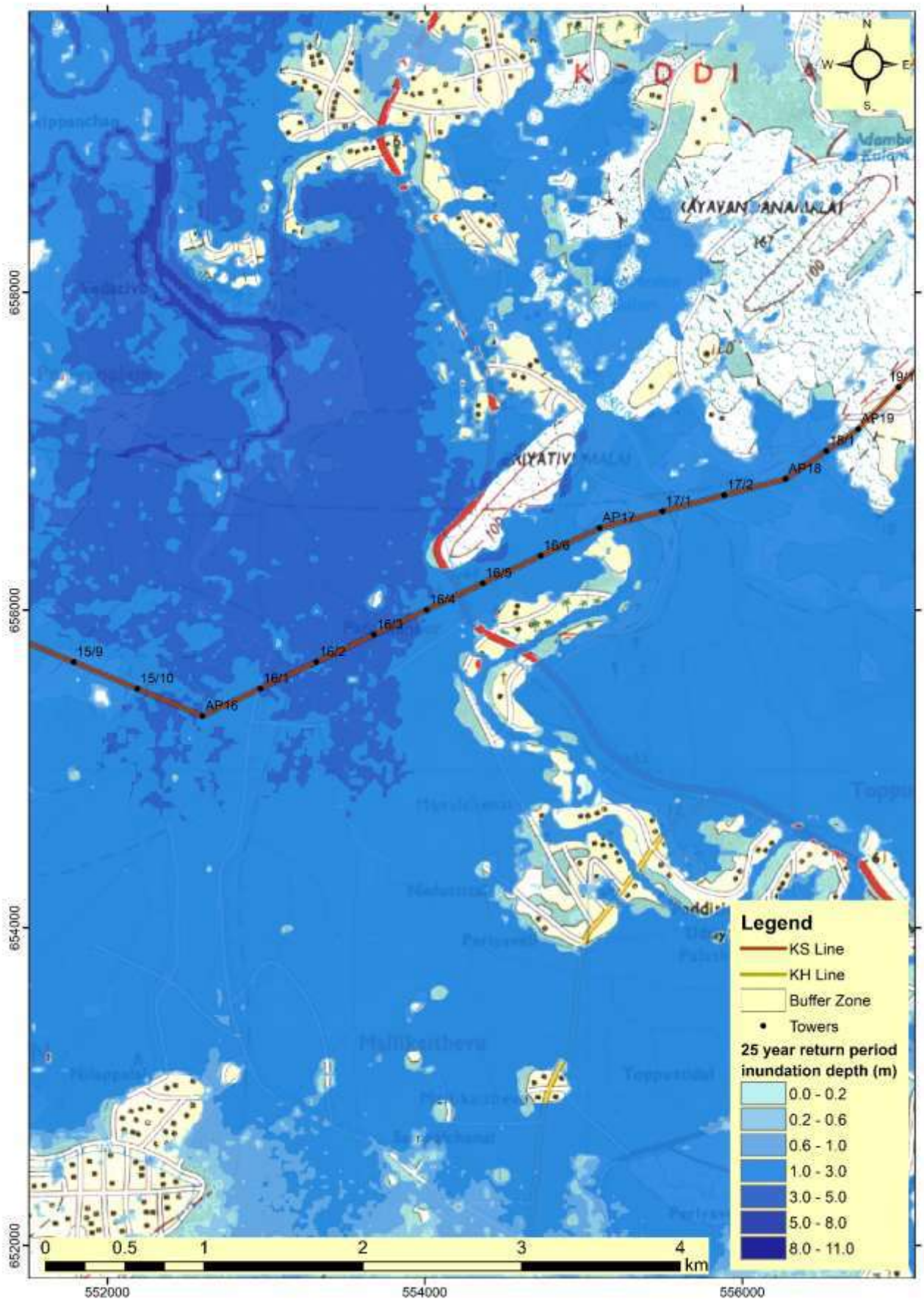



**Figure H6- Flood Depth Map 25 Year Return Period – 15/9 to 19/1**

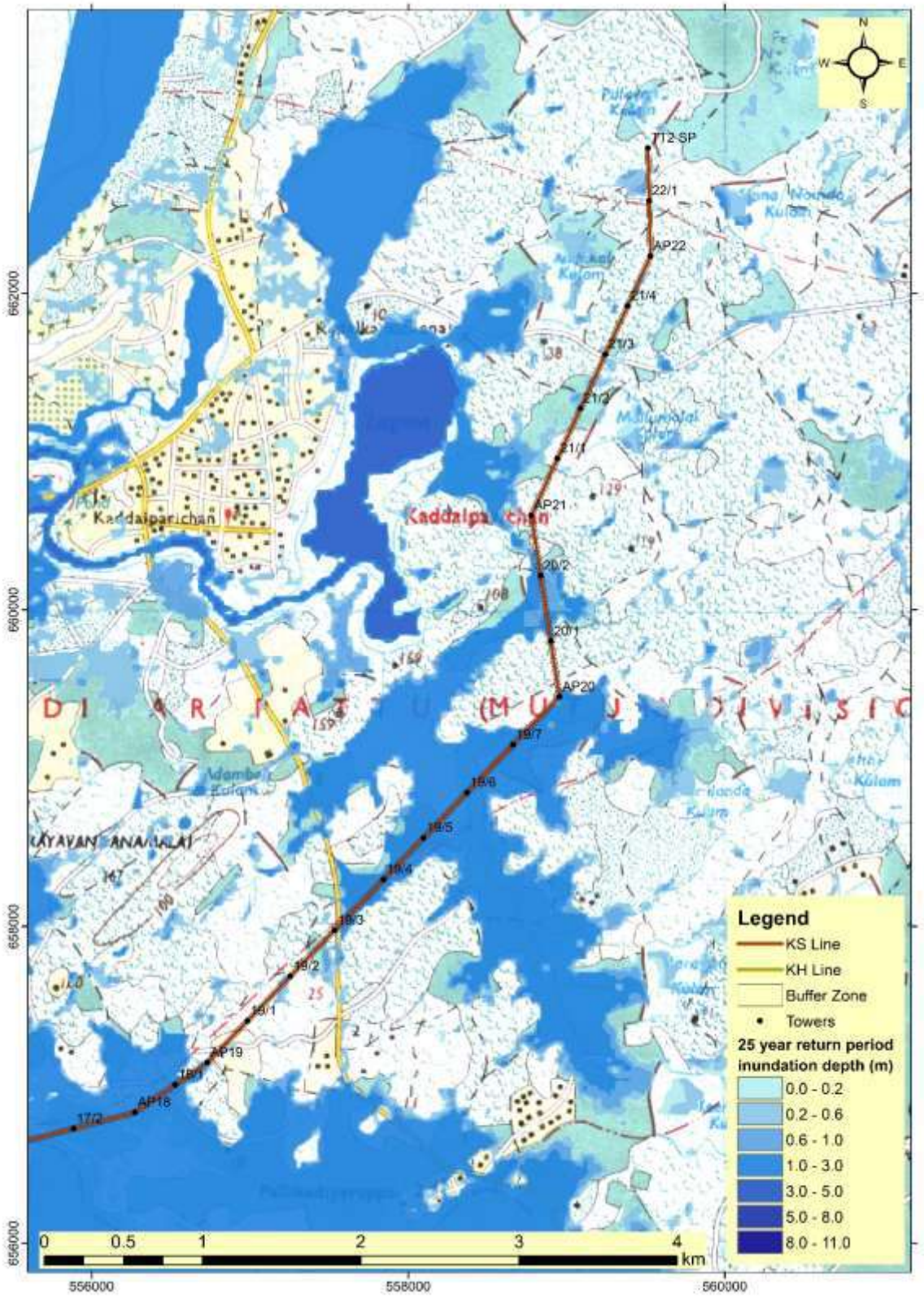



**Figure H7- Flood Depth Map 25 Year Return Period – 19/1 to T12 SP**

**C-Flood Study for the Sampur Grid Station**

HEC RAS 2D model (an open-source software of the US Corps of Engineers) was deployed for the study. One-day rain event for 100-Year return periods were considered for the study and the hyetographs were formulated. In addition to the normal design return period, which is 25 years for the transmission line, a 100 Year return period was considered for the GSS as the critical elements of the GSS cannot be allowed to be inundated. Several water-stagnated locations can be identified around the proposed grid station site. To get more accurate inundation behaviour and flood levels, a local rainfall runoff and inundation model needs to be developed by considering the local drainage conditions, such as the cascade reservoir system and its canal network.

**Figure H0 - 2D Model Schematization for the GSS**

One day rain event for 25 and 100 Year return periods were considered for the study and the hyetographs use are given below. In addition to the nomal design return period that was used for the line 100 Year retun period was also considered for the GSS as the critical elements of the GSS cannot allowed to be inundated.

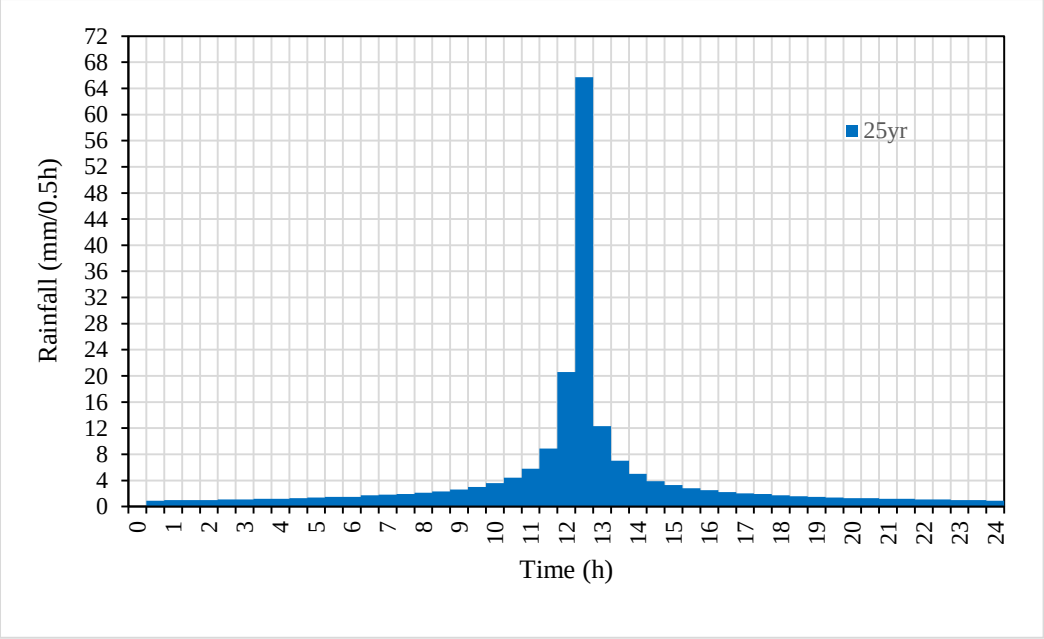



**Figure H9- Hyetograph for 25 Year Return Period**

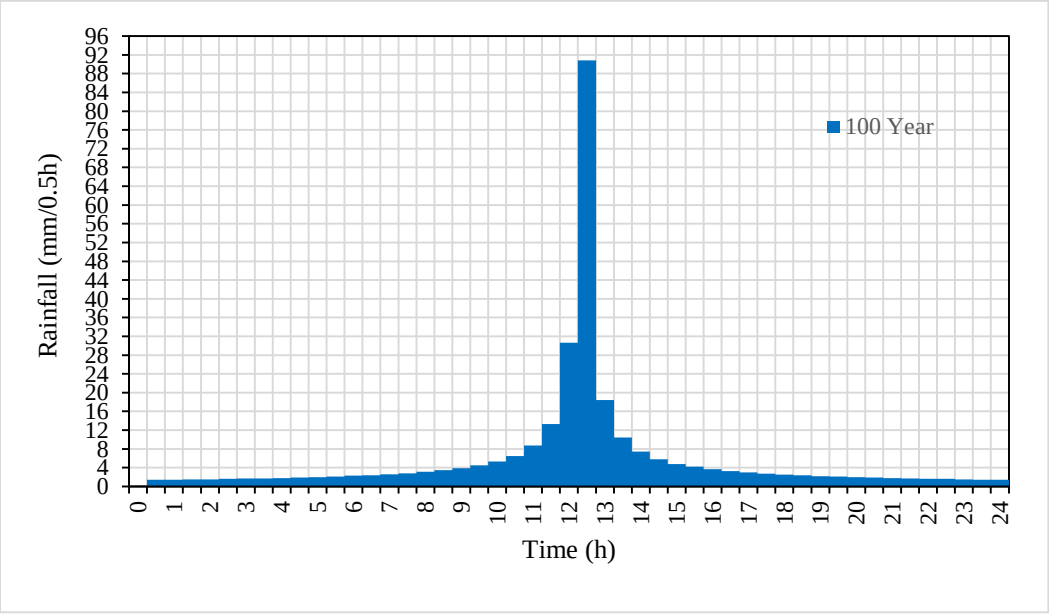



**Figure H10- Hyetograph for 100 Year Return Period**

Several water-stagnated locations can be identified around the proposed grid station site. To get more accurate inundation behaviour and flood levels, a local rainfall runoff and inundation model needs to be developed by considering the local drainage conditions, such as the cascade reservoir system and its canal network. For the local model, the extent covered by the sub-catchments 1, 2, as shown in Figure H10, were used. The model schematization is given in Figure H11.

**Figure H11 Sub-catchments for a localized model for KS grid station**

**Figure H12-2D Model Scematisation for the GSS**

As given in the figure ( 2D model scematization) , above a discharge boundary from upper catchment was used as the upstream boundary and a “Normal Depth Boundary “ was used at the downstream.

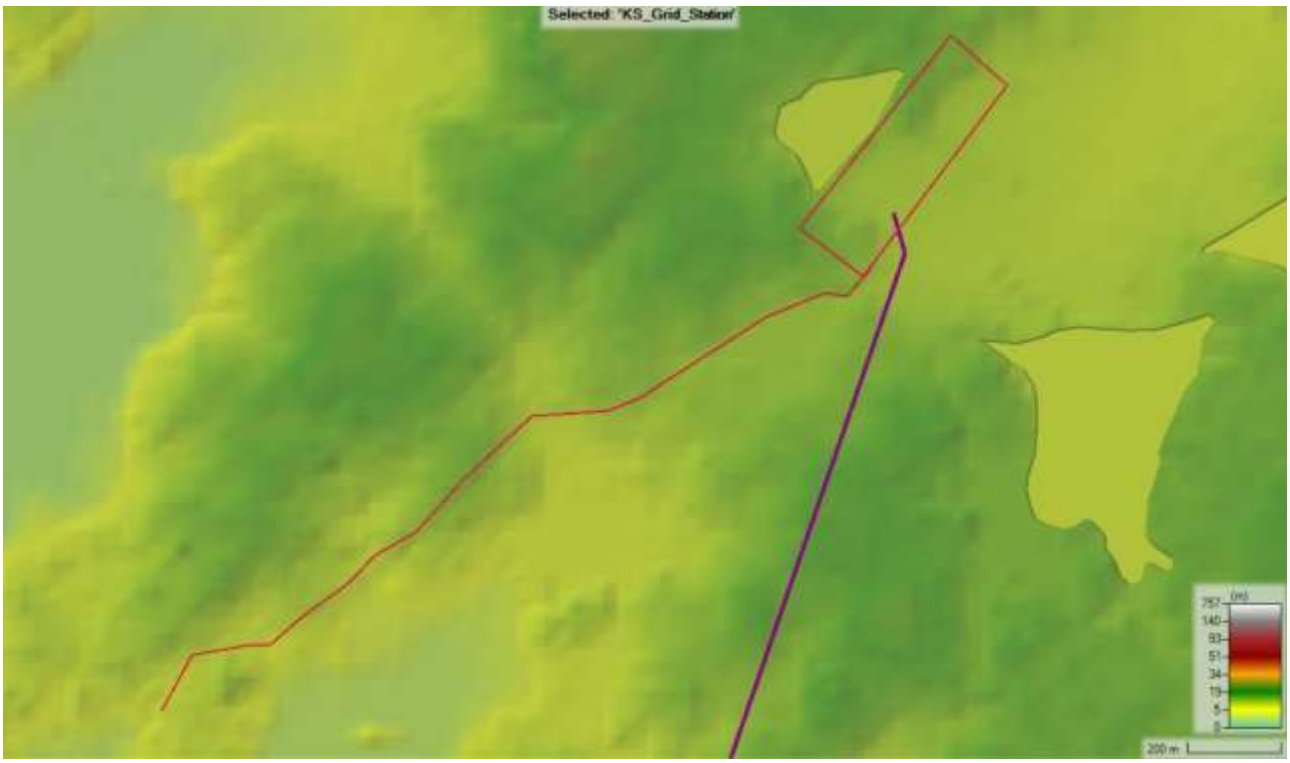



**Figure H13- Terran for the Sampur GSS**

Figure H14 shows the village tanks located near the proposed site for the grid station. Representation of these reservoirs will be imperative in the local model to get reliable model outputs. Hence following details want to be obtained.

- Reservoir connection canal system and its geometry
- Reservoir capacity, bund and spill details
- Local drainage network around the area (canal, drains, anicuts, culverts, bridges and etc.)

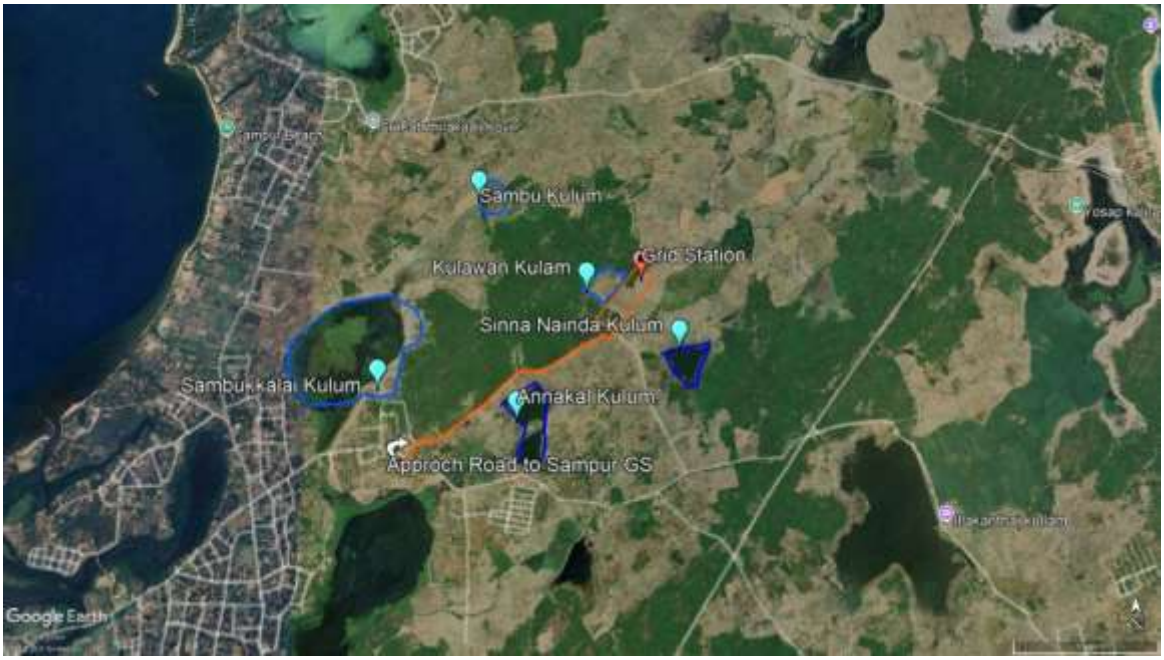



**Figure H14- Village tanks around the proposed grid station site**

**D- Results of the Flood Study -Sampur GSS Station**

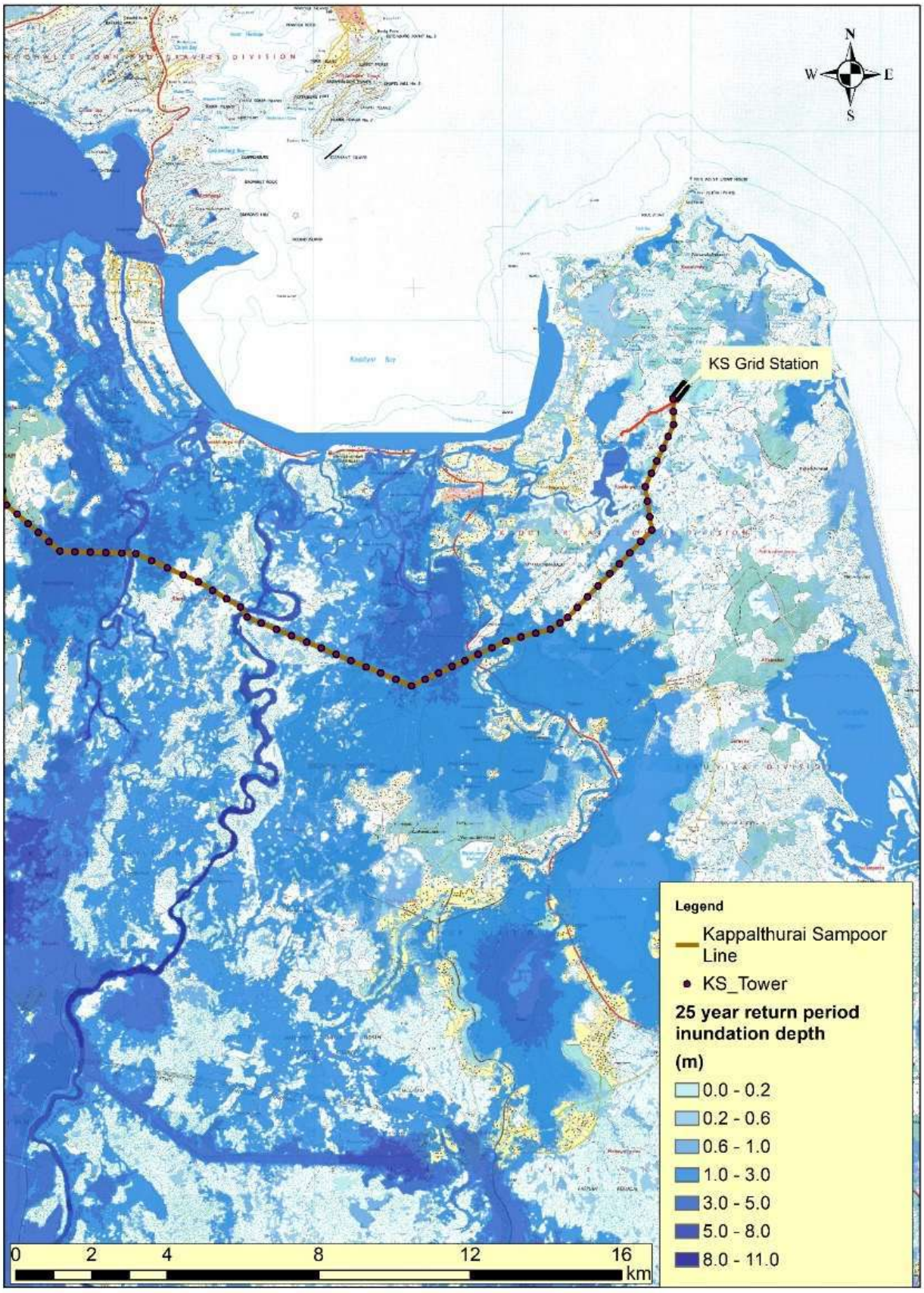



**Figure H15-** Inundation extent and depth variation for 25-year return period 6day design storm event.

The inundation map shows that the KS grid station site is located beyond the Mahaweli Ganga main floodplain. The figure below shows the inundation around the grid station site.

**Figure H16- Inundation extent and depth variation for 25-year return period around the grid station site**

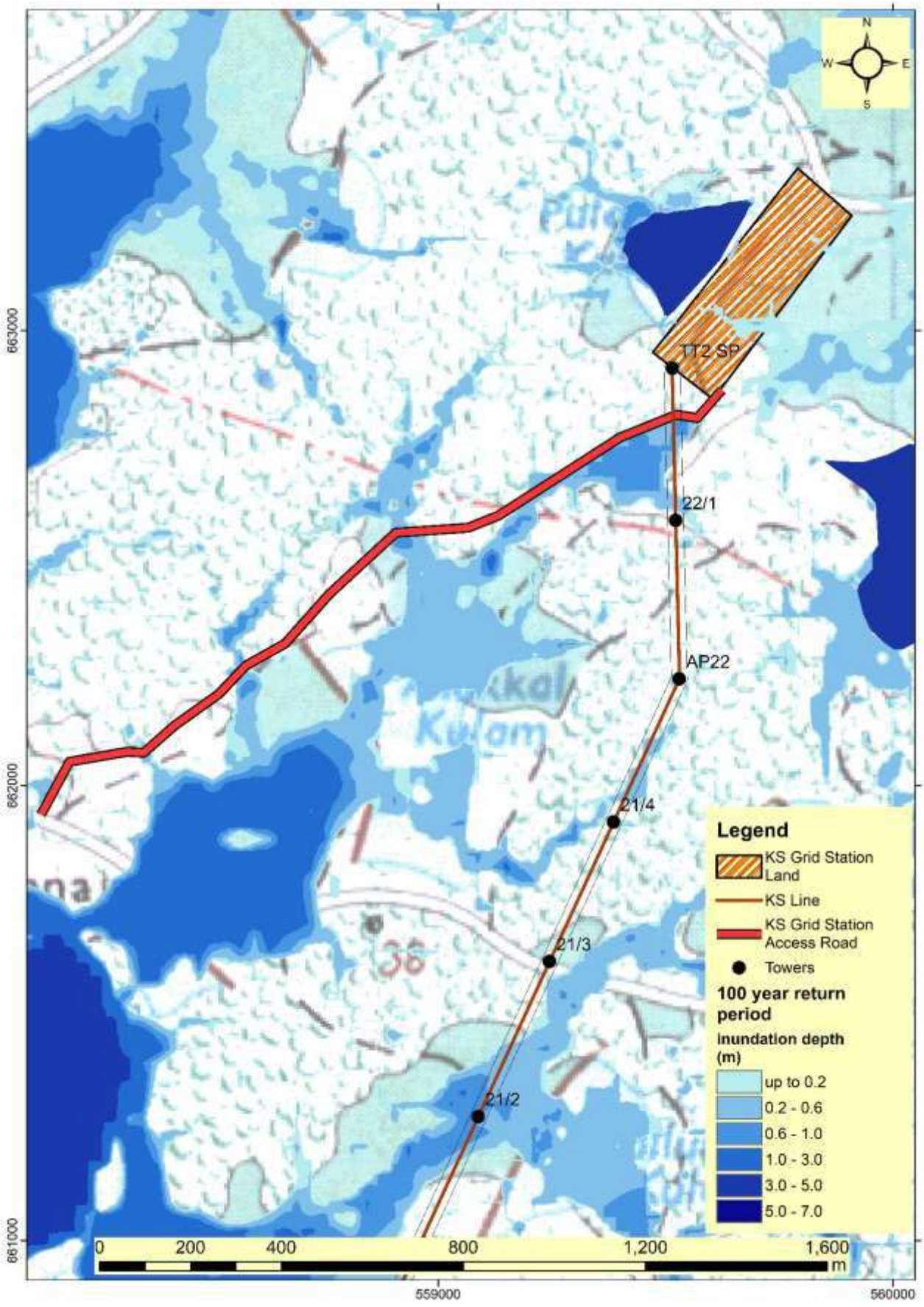



**Figure H17- Inundation extent and depth variation for 100-year return period around the grid station site**

## Annex H1- Hydrological Computations used to derive the 25 Year Inflow Hydrograph Manampitiya for the flood study of the Kappalthurai Sampur Line.

**FLOOD FREQUENCY ANALYSIS-MANAMPITIYA**

| Water Year | Observed Maximum recorded water level (m) | Gauge Zero | Water Level in MSL | Discharge from ID ratings (cms) |
|---|---|---|---|---|
| 1985/1986 | 5.39 | 31.5 | 36.89 | 1596.86 |
| 1986/1987 | 4.4 | 31.5 | 35.9 | 938.48 |
| 1987/1988 | 3.33 | 31.5 | 34.83 | 422.9 |
| 1988/1989 | 4.53 | 31.5 | 36.03 | 1014.99 |
| 1989/1990 | 5.58 | 31.5 | 37.08 | 1743.13 |
| 1990/1991 | 5.28 | 31.5 | 36.78 | 1515.09 |
| 1991/1992 | 5.41 | 32.23 | 37.64 | 1615 |
| 1992/1993 | 5.86 | 32.23 | 38.09 | 1970.41 |
| 1993/1994 | 4.57 | 32.23 | 36.8 | 1039.14 |
| 1994/1995 | 5.37 | 32.23 | 37.6 | 1581.82 |
| 1995/1996 | 3.44 | 32.23 | 35.67 | 466.51 |
| 1996/1997 | 3.02 | 32.23 | 35.25 | 311.57 |
| 1997/1998 | 4.14 | 32.23 | 36.37 | 794.47 |
| 1998/1999 | 3.75 | 32.23 | 35.98 | 1351.09 |
| 1999/2000 | 2.86 | 32.23 | 35.09 | 805.12 |
| 2000/2001 | 3.92 | 32.23 | 36.15 | 1471.4 |
| 2001/2002 | 2.67 | 32.23 | 34.9 | 706.81 |
| 2002/2003 | 3.81 | 32.23 | 36.04 | 1392.97 |
| 2003/2004 | 2.56 | 32.23 | 34.79 | 652.83 |
| 2004/2005 | 4.06 | 32.23 | 36.29 | 1574.33 |
| 2005/2006 | 3.98 | 32.23 | 36.21 | 1515.09 |
| 2006/2007 | 3.97 | 32.23 | 36.2 | 1507.76 |
| 2007/2008 | 3.87 | 32.23 | 36.1 | 1435.48 |
| 2008/2009 | 1.9 | 32.23 | 34.13 | 474.5 |
| 2009/2010 | 2.84 | 32.23 | 35.07 | 949.44 |
| 2010/2011 | 4.22 | 32.23 | 36.45 | 1936.95 |
| 2011/2012 | 3.21 | 32.23 | 35.44 | |
| 2012/2013 | 4.77 | 32.23 | 37 | |
| 2013/2014 | 3.27 | 32.23 | 35.5 | |
| 2014/2015 | 5.08 | 32.23 | 37.31 | |
| 2015/2016 | 3.65 | 32.23 | 35.88 | |

| Observed Maximum recorded water level (m) | Discharge from CRIP Rating (cms) | |
|---|---|---|
| 5.86 | 10712.06926 | 10712.1 |
| 5.58 | 8610.467116 | 8610.5 |
| 5.41 | 7417.857293 | 7417.9 |
| 5.39 | 7281.84242 | 7281.8 |
| 5.37 | 7146.7468 | 7146.7 |
| 5.28 | 6550.319795 | 6550.3 |
| 5.08 | 5294.238878 | 5294.2 |
| 4.77 | 3626.481676 | 3626.5 |
| 4.57 | 2863.789059 | 2863.8 |
| 4.53 | 2728.816669 | 2728.8 |
| 4.4 | 2427.617121 | 2427.6 |
| 4.22 | 2189.580955 | 2189.6 |
| 4.14 | 2088.925987 | 2088.9 |
| 4.06 | 1991.367445 | 1991.4 |
| 3.98 | 1896.858696 | 1896.9 |
| 3.97 | 1885.257216 | 1885.3 |
| 3.92 | 1827.950478 | 1828 |
| 3.87 | 1775.295252 | 1775.3 |
| 3.81 | 1728.341747 | 1728.3 |
| 3.75 | 1682.012344 | 1682 |
| 3.65 | 1606.183948 | 1606.2 |
| 3.44 | 1452.591493 | 1452.6 |
| 3.33 | 1375.193472 | 1375.2 |
| 3.27 | 1333.862136 | 1333.9 |
| 3.21 | 1293.156248 | 1293.2 |
| 3.02 | 1168.382343 | 1168.4 |
| 2.86 | 1068.179339 | 1068.2 |
| 2.84 | 1055.967198 | 1056 |
| 2.67 | 954.9759716 | 955 |
| 2.56 | 892.3114256 | 892.3 |
| 1.9 | 560.6633275 | 560.7 |

**Discharge comparison at Manampitiya gauging station**

| Return Period (yr) | Fitted to EVI Gumbel distribution data of Water Year 1985/1986 to 2015/2016 | | | Discharge from HYDROLOGY STUDY FOR A11 ROAD FROM GALLELLA TO MANAMPITIYA by SLLDC (cms) | Peak discharge of design hydrograph used for CRIP flood model (cms) |
|---|---|---|---|---|---|
| | Flood Level (mMSL) | Discharge from CRIP rating curve (cms) | Discharge from ID past rating curves (cms) | | |
| 10 | 37.41 | 6531.5 | 1869.2 | 5900 | 2300 |
| 25 | 38.14 | 8505.6 | 2257.5 | 8150 | 2800 |
| 50 | 38.69 | 9970.1 | 2545.5 | 10000 | 3400 |
| 100 | 39.23 | 11423.7 | 2831.5 | 12000 | 3733 |

A resultant modelled four-segment logarithmic rating, consistent with the spot flow measurement record, has been developed (see Figure A.2-29) and is given as follows:

- $Q = 91.07352\ (H + 0.6)^{1.88344}$ 0 m < H < 3.88 m
- $Q = 19.39539\ (H + 0.8)^{2.92541}$ 3.88 m < H < 4.46 m
- $Q = 0.05539\ (H + 0.8)^{4.45736}$ 4.46 m < H < 4.85 m
- $Q = 3189.85493\ (H - 3.7)^{1.57300}$ 4.85 m < H < 7.3 m

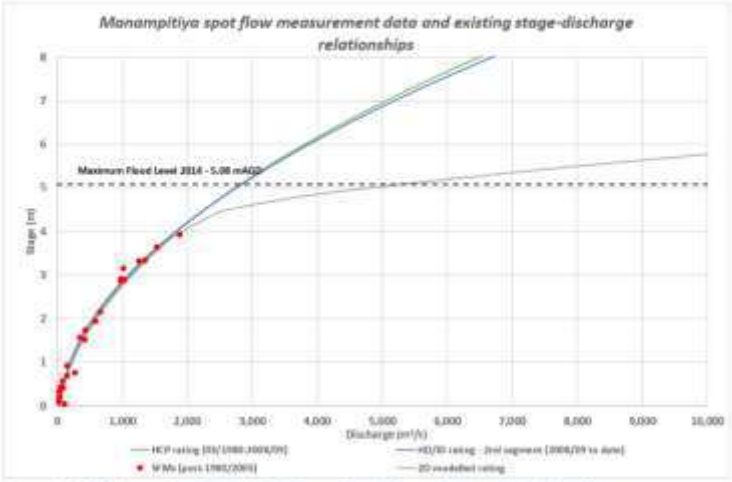



Figure A.2-29 Manampitiya Rating Model Logarithmic Stage-Discharge Relationship

Figure 4-8 shows the design flood hydrographs for the examined return period events at Manampitiya based on the selected design rainfall package, along with the peak flow recorded for the 2014 flood event.

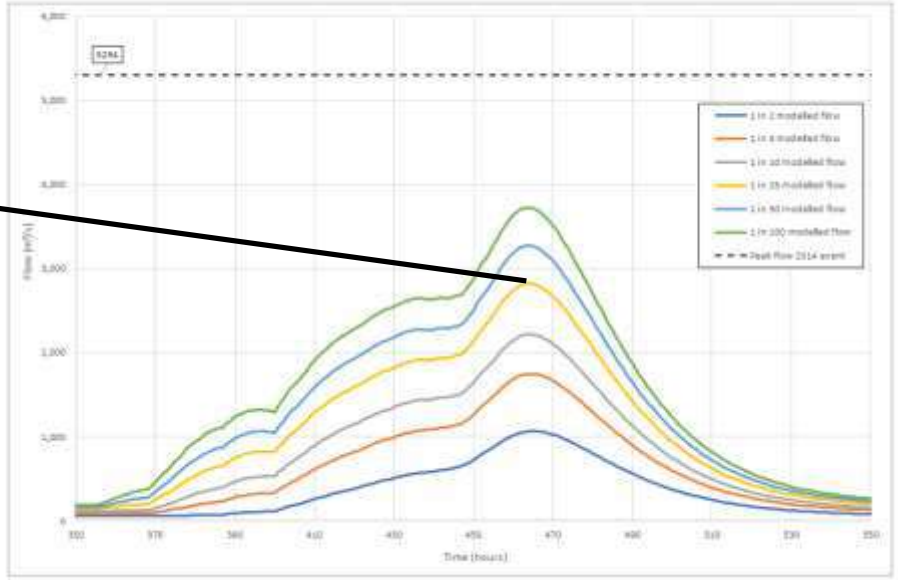
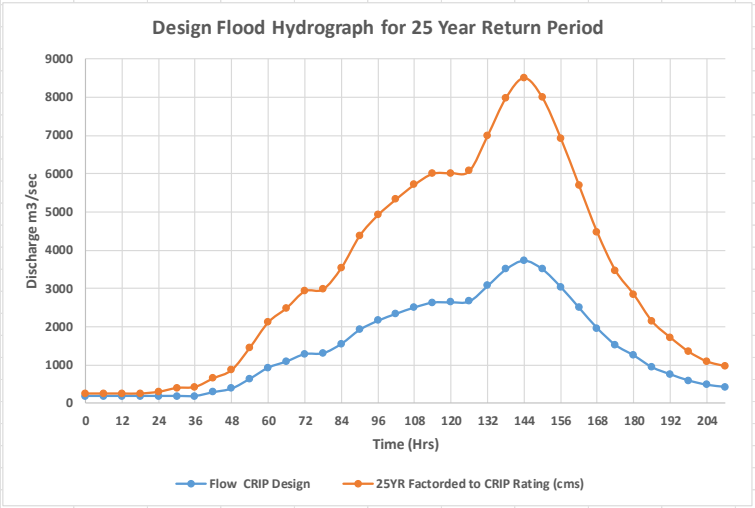


Figure 4-8 Design hydrographs for the selected rainfall package

| Time (h) | Flow CRIP Design | 25YR Factorded to CRIP Rating (cms) |
|---|---|---|
| 0 | 188 | 255.0 |
| 6 | 188 | 255.0 |
| 12 | 188 | 255.0 |
| 18 | 188 | 255.0 |
| 24 | 188 | 300.0 |
| 30 | 188 | 400.0 |
| 36 | 188 | 428.4 |
| 42 | 287 | 654.0 |
| 48 | 382 | 870.4 |
| 54 | 640 | 1458.3 |
| 60 | 929 | 2116.8 |
| 66 | 1092 | 2488.2 |
| 72 | 1285 | 2928.0 |
| 78 | 1307 | 2978.1 |
| 84 | 1554 | 3540.9 |
| 90 | 1921 | 4377.2 |
| 96 | 2159 | 4919.5 |
| 102 | 2342 | 5336.5 |
| 108 | 2508 | 5714.7 |
| 114 | 2634 | 6001.8 |
| 120 | 2641 | 6017.8 |
| 126 | 2665 | 6072.5 |
| 132 | 3071 | 6997.6 |
| 138 | 3504 | 7984.2 |
| 144 | 3733 | 8506.0 |
| 150 | 3506 | 7988.8 |
| 156 | 3042 | 6931.5 |
| 162 | 2500 | 5696.5 |
| 168 | 1960 | 4466.0 |
| 174 | 1520 | 3463.5 |
| 180 | 1247 | 2841.4 |
| 186 | 939 | 2139.6 |
| 192 | 754 | 1718.1 |
| 198 | 592 | 1348.9 |
| 204 | 480 | 1093.7 |
| 210 | 425 | 968.4 |

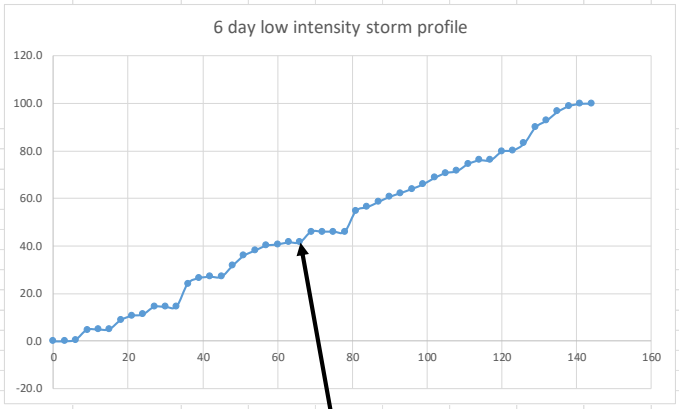


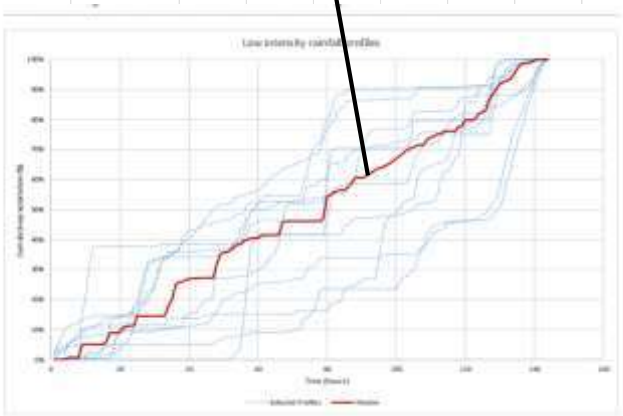

| | |
|---|---|
| Max-CRIP Design | 3733 |
| 25 year max from CRIP rating | 8506 |
| **Factor** | **2.279** |
| Base Flow | 255.18 |

**STORM PROFILE FOR 25 Year RETURN PERIOD**

| Time (h) | Cumulative % | Gauge Station | 459 | | Climate projection (F-8.1% CRIP Pre-feasibility study pessimistic factor | Rounded off factor |
|---|---|---|---|---|---|---|
| | | Cumulative RF (mm) | Rainfall (mm) Current | | | |
| 0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0.7 | 3.005991 | 3.005991 | 3 | 3.249476271 | 3.2 |
| 9 | 4.8 | 22.107735 | 19.101744 | 19.1 | 20.64898526 | 20.6 |
| 12 | 5.0 | 22.809546 | 0.701811 | 0.7 | 0.758657691 | 0.8 |
| 15 | 5.1 | 23.191434 | 0.381888 | 0.4 | 0.412820928 | 0.4 |
| 18 | 8.9 | 40.651794 | 17.46036 | 17.5 | 18.87464916 | 18.9 |
| 21 | 10.7 | 49.237848 | 8.586054 | 8.6 | 9.281524374 | 9.3 |
| 24 | 11.3 | 51.809625 | 2.571777 | 2.6 | 2.780090937 | 2.8 |
| 27 | 14.5 | 66.555 | 14.745375 | 14.7 | 15.93975038 | 15.9 |
| 30 | 14.5 | 66.555 | 0 | 0 | 0 | 0 |
| 33 | 14.6 | 67.184289 | 0.629289 | 0.6 | 0.680261409 | 0.7 |
| 36 | 24.3 | 111.345597 | 44.161308 | 44.2 | 47.73837395 | 47.7 |
| 39 | 26.6 | 122.116032 | 10.770435 | 10.8 | 11.64284024 | 11.6 |
| 42 | 27.2 | 124.6644 | 2.548368 | 2.5 | 2.754785808 | 2.8 |
| 45 | 27.2 | 124.6644 | 0 | 0 | 0 | 0 |
| 48 | 31.8 | 146.027637 | 21.363237 | 21.4 | 23.0936592 | 23.1 |
| 51 | 36.0 | 165.201444 | 19.173807 | 19.2 | 20.72688537 | 20.7 |
| 54 | 38.2 | 175.436226 | 10.234782 | 10.2 | 11.06379934 | 11.1 |
| 57 | 40.3 | 184.774581 | 9.338355 | 9.3 | 10.09476176 | 10.1 |
| 60 | 40.8 | 187.201773 | 2.427192 | 2.4 | 2.623794552 | 2.6 |
| 63 | 41.6 | 191.143665 | 3.941892 | 3.9 | 4.261185252 | 4.3 |
| 66 | 41.7 | 191.322675 | 0.17901 | 0.2 | 0.19350981 | 0.2 |
| 69 | 46.2 | 211.9662 | 20.643525 | 20.6 | 22.31565053 | 22.3 |
| 72 | 46.2 | 211.9662 | 0 | 0 | 0 | 0 |
| 75 | 46.2 | 211.9662 | 0 | 0 | 0 | 0 |
| 78 | 46.2 | 211.9662 | 0 | 0 | 0 | 0 |
| 81 | 54.9 | 252.076833 | 40.110633 | 40.1 | 43.35959427 | 43.4 |
| 84 | 56.4 | 259.074288 | 6.997455 | 7 | 7.564248855 | 7.6 |
| 87 | 58.7 | 269.253531 | 10.179243 | 10.2 | 11.00376168 | 11 |
| 90 | 60.8 | 279.235404 | 9.981873 | 10 | 10.79040471 | 10.8 |
| 93 | 62.4 | 286.564257 | 7.328853 | 7.3 | 7.922490093 | 7.9 |
| 96 | 64.2 | 294.650919 | 8.086662 | 8.1 | 8.741681622 | 8.7 |
| 99 | 66.1 | 303.453621 | 8.802702 | 8.8 | 9.515720862 | 9.5 |
| 102 | 68.8 | 315.758952 | 12.305331 | 12.3 | 13.30206281 | 13.3 |
| 105 | 70.9 | 325.210221 | 9.451269 | 9.5 | 10.21682179 | 10.2 |
| 108 | 71.6 | 328.868451 | 3.65823 | 3.7 | 3.95454663 | 4 |
| 111 | 74.7 | 342.703629 | 13.835178 | 13.8 | 14.95582742 | 15 |
| 114 | 76.2 | 349.787376 | 7.083747 | 7.1 | 7.657530507 | 7.7 |
| 117 | 76.2 | 349.877799 | 0.090423 | 0.1 | 0.097747263 | 0.1 |
| 120 | 79.8 | 366.500484 | 16.622685 | 16.6 | 17.96912248 | 18 |
| 123 | 80.4 | 369.093834 | 2.59335 | 2.6 | 2.80341135 | 2.8 |
| 126 | 83.3 | 382.287789 | 13.193955 | 13.2 | 14.26266536 | 14.3 |
| 129 | 90.1 | 413.532837 | 31.245048 | 31.2 | 33.77589689 | 33.8 |
| 132 | 93.0 | 426.665286 | 13.132449 | 13.1 | 14.19617737 | 14.2 |
| 135 | 96.7 | 443.692809 | 17.027523 | 17 | 18.40675236 | 18.4 |
| 138 | 99.0 | 454.575699 | 10.88289 | 10.9 | 11.76440409 | 11.8 |
| 141 | 100.0 | 459 | 4.424301 | 4.4 | 4.782669381 | 4.8 |
| 144 | 100.0 | 459 | 0 | 0 | 0 | 0 |
| | | | 459 | 458.9 | 496.179 | 496.4 |

| Station | 6 Day Rain (mm) |
|---|---|
| | |
| Polonnoruwa Agri | 459 |
| Hingurakgoda Agri | 487 |
| Allai Tank | 500 |
| Trincomale | 442 |



# Annex 15.8 - Climate Risk and Adaptation Assessment:

**Detailed Methodology:**

**The key requirements of the ToR are as follows:**

1. Carry out a detailed climate risk and adaptation assessment (CRA) of the main climate and geophysical hazards of relevant components of the proposed project.
2. Recommend adaptation measures in project design to manage these risks, with cost estimates.
3. Develop a non-technical summary of the CRA report, which may be used to communicate findings with project-affected and public stakeholders.

**Proposed Methodology**

**1. Understanding AIIB's Environmental and Social Framework (ESF). The following will be the key preponderant factors.**

- AIIB's Environmental and Social Framework (ESF) standards for climate adaptation under the Environmental and Social Standard (ESS 1) and the Environmental and Social Exclusion List, to ensure that the proposed sub projects are resilient to climate risks.
- The ESF requires projects to integrate climate resilience into the design.

**2. Understanding the local regulations and guidelines on Climate Risk Adaptation**

Sri Lanka has several guidelines for climate risk adaptation, including the (a) National Climate Change Adaptation Strategy (NCCAS), (b) the National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP), and (c) the country's Nationally Determined Contribution (NDC):

**(a) National Climate Change Adaptation Strategy NCCAS**

The NCCAS focuses on adaptation and disaster risk management. It identifies five strategic thrusts,

1. Mainstream Climate Change Adaptation into National Planning and Development
2. Enable Climate Resilient and Healthy Human Settlements
3. Minimize Climate Change Impacts on Food Security
4. Improve Climate Resilience of Key Economic Drivers
5. Safeguard Natural Resources and Biodiversity from Climate Change Impacts.

**(b) National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP)**

The NAP was developed in line with guidelines from the UNFCCC. It covers adaptation needs for vulnerable sectors and cross-cutting national needs. Some of the actions in the NAP include improving the efficiency of transmission and distribution systems and promoting climate-proof infrastructure and building design practices.

**(c) Nationally Determined Contribution NDC**

Sri Lanka's NDC outlines the country's commitment to addressing its vulnerability to climate change. It includes a commitment to reducing greenhouse gas emissions by 14.5% by 2030 and increasing the contribution of renewable energy to 70% by 2030.

**3. Initial Climate Risk Screening- Business as Usual [BAU] Scenario**

**A- Hazard Identification**

Hazard Identification determines which climate events (e.g., sea-level rise, extreme rainfall, temperature increases) pose risks to the transmission line, especially since power lines are

sensitive to extreme weather events. A preliminary screening of the project's location to identify major climate hazards will be conducted. The key parameters will be

- ✓ Rainfall
- ✓ Wind induced cyclones
- ✓ Extreme heat related to temperature increase
- ✓ Lightening
- ✓ Flood depth and spread area for different return periods,

**A-Rainfall, Cyclones and Extreme heat related to temperature increase**

Rainfall, cyclones and temperature risks were assessed using past data, preferably the. Standard analysis using data from the relevant met stations in the project area or using international data sets. The parametric trends for the selected period will be identified using accepted statistical techniques.

**B-Flood Depth and Spread Area -Flood Modelling**

A 2D modelling approach using HEC RAS and HEC HMS flood models of the US Corps of Engineers will be used to assess the spatial impact of floods. This modelling is only preliminary modelling to identify flood risks. SRTM DEM will be used to model the terrain.

Estimation of backwater due to the pylon foundations and temporary access roads required for construction will be done by representing the said elements on the flood plain and run the model as a future scenario for 5-year return period for the temporary access roads as those will be temporary and for 100-year return period for the pylon foundations as it will be permanent. These scenarios belong to the future scenario without reflecting the climate change effects.

Future scenarios due to climate change will be obtained by running the model using an upward proration factorized rain. The proration factor were obtained from the projected flood hydrograph that will reflect the climate change impacts for the worst-case scenario CRP 8.5.

**C- Lightening Risk**

Lightening risks has been identified in the paper titled **Community Base Vulnerability Mapping for Lightning Strikes in Sri Lanka -K.H.M.S. Premalal et. al**. using Hazard and Vulnerability indices calculated according to the weighting factors found using the regression equations for the number of lightning days, poverty index and the population density. Number of lightning days and population densities were considered to identify the hazard area, and the indices were calculated using the weighting factors mentioned under the equation 2 and the results were normalized according to the UNDP, 2002 definition. Lightening risk maps have been produced for Sri Lanka.

**3.Detailed Climate Risk Assessment- Future Scenario**

Available global climate models will be used to provide baseline insights into the local climate vulnerabilities. The most frequently used appropriate models will be used. The Representative Concentration Pathways (RCP), basically RCP4.5, RCO6.0 and RCP8.5 will be used to reflect worst case scenarios for each phenomenon.

Potential risks will be quantified by modeling extreme events and evaluating historical data on climate trends. Use GIS mapping for spatial analysis of hazard exposure along the transmission route.

**4. Vulnerability Assessment:**
Based on the results of the risk assessment, how exposed and sensitive the infrastructure and surrounding environment are to climate hazards will be assessed. This includes examining the resilience of structures, access roads, pylons, and substations against potential climate-induced impacts.

**(a) Adaptive Capacity and Resilience Measures**

- AIIB stresses the need for adaptation solutions that can enhance resilience. For transmission lines, this might involve strengthening poles, elevating structures in flood-prone areas, or selecting corrosion-resistant materials.
- Identify and cost-effectively evaluate various adaptation options (e.g., rerouting away from high-risk areas, implementing disaster-resistant design).
- Document these adaptations, justifying their necessity based on risk levels determined through climate models and risk scenarios.

**(b) Integration with Environmental and Social Impact Assessment (ESIA)**

- AIIB requires that climate adaptation efforts be consistent with environmental and social mitigation measures. Ensure that the ESIA includes:
    - Climate risk impacts biodiversity.
    - Community impacts, especially if there are risks like increased flooding or drought due to climate-driven changes in the region.
- Incorporate stakeholder feedback, especially from communities or regions near the transmission line route that may be impacted by climate-related risks.

**(c) Monitoring and Evaluation Framework**

- AIIB requires a robust monitoring framework to track climate risks and the effectiveness of adaptation measures over time. Implement a system to:
    - Monitor climate data specific to the area.
    - Regularly inspect and maintain infrastructure based on AIIB's recommended inspection intervals.
- Include an adaptive management plan to make real-time adjustments based on observed climate impacts.

**(d) Alignment with AIIB's Reporting Requirements**

- AIIB mandates regular progress reports that address adaptation performance, climate resilience of the project, and ongoing risk assessments. Be prepared to report on:
    - Climate adaptation measures implemented.
    - Any changes in risk profile or new adaptation strategies applied.
    - Results from stakeholder engagement processes and how these inform ongoing adaptation actions.

**(e) Documentation and Approval**

- Document all findings, methods, and recommendations in a CRA report, ensuring it aligns with AIIB's guidelines. The report should highlight:
    - Risk scenarios.
    - Detailed adaptation strategies.
    - A summary of climate risk modeling methodologies.

- Submit this to AIIB as part of the project's environmental and social documentation, meeting all specified deadlines for approval.

This structured approach will ensure your CRA is compatible with AIIB's emphasis on building climate-resilient infrastructure and meeting environmental and social standards effectively.

**Climate Risk Assessment**

**Project Location Overview:** The project encompasses only Trincomalee s in Sri Lanka: (Figure C1 ). Trincomalee is facing unique climate-related challenges that can affect various infrastructures. The analysis for this project focuses on assessing the risks posed by changes in key climate variables: rainfall, temperature, sea-level rise, strong winds, and lightning strikes as these factors directly impact the resilience and reliability for infrastructure in the region.

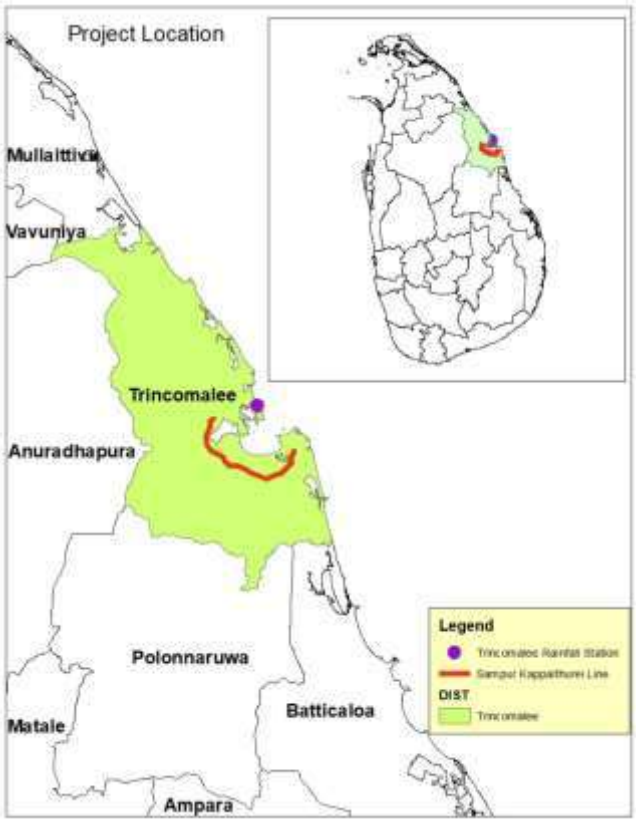



**Figure C1- Project Location**

**Climate Risks Overview**

Sri Lanka is increasingly vulnerable to climate change impacts due to its geographic location in the Indian Ocean. As a result, climate-related hazards, such as sea-level rise, extreme rainfall, and temperature fluctuations, pose significant risks to the country's infrastructure, especially its power transmission lines. These hazards can lead to system failures, damage to physical infrastructure, and interruptions in electricity supply. Identifying these risks is essential for effective adaptation and mitigation planning.

Trincomalee, situated on Sri Lanka's northeastern coast, faces a combination of coastal and inland climate challenges. Its proximity to the sea makes it particularly vulnerable to the effects of sea-level rise, rising temperature extreme rainfall, strong winds, and lightning strikes.

A. **Rainfall Extremes and Changes in Rainfall Patterns:** Trincomalee is susceptible to the adverse effects of extreme rainfall, with the potential for flash floods and localized flooding. These conditions can weaken tower foundations and bring down power lines. Shifts in the timing, frequency, and intensity of rainfall can lead to both flooding and droughts, with impacts on the structural integrity of transmission lines.

B. **Rising Temperatures:** Increased temperatures can cause power lines to sag, leading to potential system failures or increased energy consumption.

C. **Sea-Level Rise:** Coastal areas of Trincomalee are at high risk from sea-level rise, which could lead to flooding of coastal infrastructure, including transmission lines and substations. Saltwater intrusion into the soil can also damage electrical components and worsen corrosion issues. Coastal flooding and saltwater corrosion threaten the durability of infrastructure along the coastline, particularly transmission towers and substations.

D. **Extreme Rainfall and Flooding –** Extreme rainfall directly leads to extreme flooding and by analyzing extreme rainfall extreme flooding behaviour of the encompassed catchments of the transmission line could be obtained.

E. **Tropical Cyclones and Strong Winds:** Being in the path of tropical cyclones, Trincomalee faces risks from extreme winds. These winds can cause significant damage to transmission towers, particularly those near the coastline. Additionally, storm surges and flooding during cyclonic events can further disrupt power supply lines. High winds, particularly during monsoon seasons or cyclonic activity, pose a risk to the physical infrastructure of transmission lines and towers.

F. **Lightening effects:** For the transmission lines it is important to find the impact of lightening streak increase in future. However, no concrete research data are available for Sri Lankan conditions and only qualitative conclusions are available.

**Business As Usual Scenario (BAU)**

**A: Rainfall Extremes and Changes in Rainfall Patterns**

**Data station**

Trincomalee rainfall station was used as the station for the study as consistent rainfall is available for this station. This station is representative of the entire KS line.

**Extreme Climate Indices**

Rather than focusing solely on average rainfall trends, the analysis of extreme climate indices (such as the frequency of heavy rainfall events, One Day heavy rainfall etc.) can offer deeper insight into the potential risks and vulnerabilities associated with climate change. These extreme indices are important for identifying climate-related hazards that could pose threats to human livelihoods, ecosystems, and infrastructure in the region. Monitoring these extreme events and incorporating them into climate adaptation planning is essential for mitigating potential climate risks. Following extreme indices were identified from Trincomalee .

**Rainfall related extreme indices**

1. Consecutive Dry Days (CDD)
2. Consecutive Wet Days (CWD)
3. Annual count of days when Rainfall >=10 mm (R10mm)

4. Annual count of days when Rainfall >=20 mm (R10mm)
5. Maximum 1-day rainfall (RX1Day)
6. Maximum 3-day rainfall (RX3Day)
7. Maximum 5-day rainfall (RX5Day)
8. Annual Total Precipitation (PTOT)

**Rainfall Indices**

Rather than focusing solely on average rainfall trends, the analysis of extreme climate indices (such as the frequency of heavy rainfall events, One Day heavy rainfall etc.) can offer deeper insight into the potential risks and vulnerabilities associated with climate change. These extreme indices are important for identifying climate-related hazards that could pose threats to human livelihoods, ecosystems, and infrastructure in the region. Monitoring these extreme events and incorporating them into climate adaptation planning is essential for mitigating potential climate risks. Following extreme indices were identified from the selected rainfall station of the Trincomalee.

**1. Consecutive Dry Days**

Analysis is presented in Table C1

**Table C1- Consecutive Dry Days**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = 0.065x + 46.426 | 0.0061 | 0.571 |

**Note: Explanation on the Statistical Parameters**

- The trend equation shows the negative / positive trend by its (slope=0.065 for the above case). Minus value shows a decreasing trend and positive value shows an increasing trend.
- $R^2$ is the root mean square value.
- P value is the probability value is **a number describing the likelihood of obtaining the observed data** under the null hypothesis of a statistical test. A p-value of less than 0.05 is typically considered to be statistically significant.
- The trend equation is obtained by plotting the No of Consecutive Dry Days (CDD) versus the Year

Sample graph is shown below in Figure C2

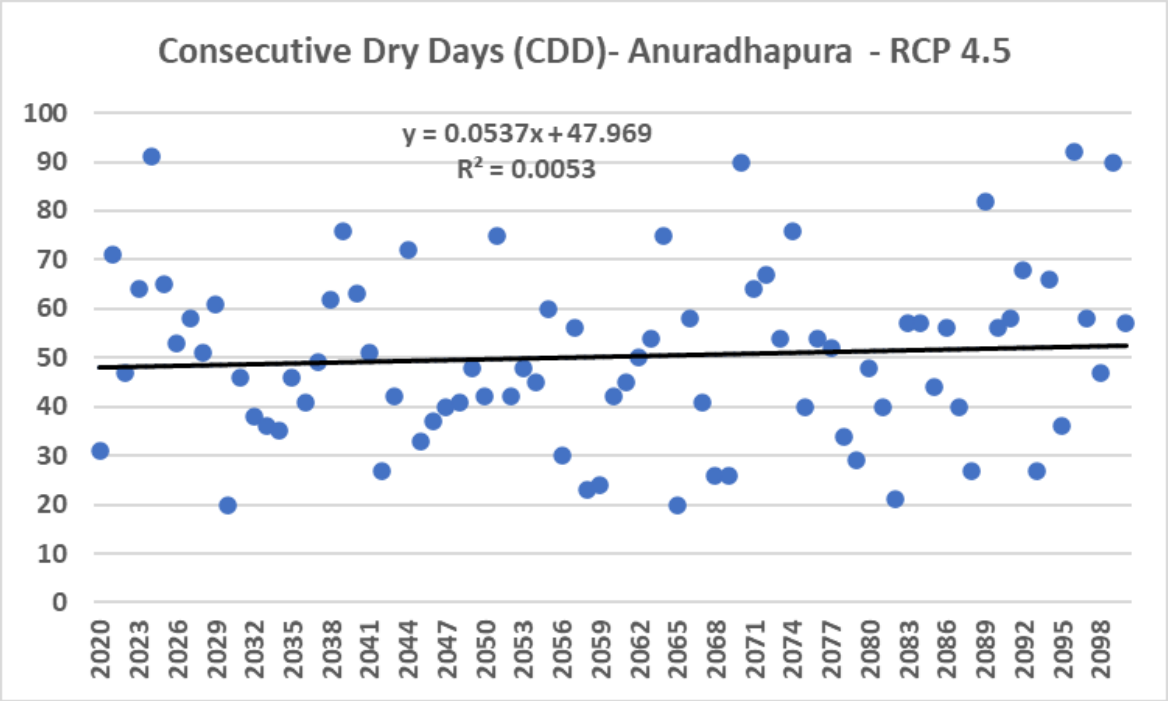



**Figure C2 – Sample Graph CCD Verses Year**

The data reveals an increasing trend in Trincomalee. However, statistical analysis indicates that the increasing trends is statistically insignificant, as the p-values associated with the station exceed the established significance threshold (typically $p > 0.05$). This suggests that the observed downward trends is likely to be due to random variability rather than representing a consistent, significant change over time.

## 2. Consecutive Wet Days (CWD)

**Table C2- CWD - Maximum number of consecutive wet days with RR>1mm (The longest wet spell)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = 0.0008x + 9.7267 | 8E-06 | 0.608 |

The data indicates a clear increase in Trincomalee. Statistical analysis reveals that the increasing trend in Trincomalee station is not statistically significant, as the p-value exceeds the significance threshold of 0.05, suggesting that the observed increase may be due to random variability rather than representing a true, persistent trend.

## 3. Annual count of days when Rainfall >=10 mm (R10mm)

R10mm represents Number of heavy rain days.

**Table C3 - R10mm represents Number of heavy rain days.**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = 0.0484x + 8.6488 | 0.0506 | 0.099 |

Overall, the R10mm index exhibits an increasing trend in Trincomalee Station. Statistical analysis confirms that this trend is not statistically significant, with p-value above the established significance level (0.05), indicating that the observed decrease is unlikely to have occurred by chance and reflect a consistent and meaningful change in precipitation patterns over time.

**4. Annual count of days when Rainfall >=20 mm (R20mm)**

**Table C4 - R20mm Number of very heavy rain days.**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = 0.0378x + 25.127 | 0.01240.0455 | 0.418 |

Overall, the R20mm index exhibits an increasing trend in Trincomalee. Statistical analysis confirms that this trend is statistically insignificant, with p-values above the established significance level (typically p > 0.05), indicating that the observed increases are unlikely to have occurred by chance and reflect a consistent and meaningful change in precipitation patterns over time.

**5. Maximum 1-day rainfall (RX1Day)**

This index shows reported maximum daily rainfall in a year

**Table C5- Maximum 1-day rainfall (RX1Day)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = 0.3322x + 127.62 | 0.0139 | 0.395 |

The RX1Day index shows an increasing trend in Trincomalee but it is statistically insignificant as p value > 0.05.

**6. Maximum 3-day rainfall (RX3Day)**

This index shows reported maximum 3-day cumulative rainfall in a year

**Table C6- Maximum 3-day rainfall (RX3Day)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = -0.797x + 230.42 | 0.0144 | 0.059 |

The trend bis a decreasing trend which is statistically insignificant.

**7. Maximum 5-day rainfall (RX5Day)**

This index shows reported maximum 5-day cumulative rainfall in a year.

**Table C7- Maximum 5-day rainfall (RX5Day)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Trincomalee | y = 1.2505x + 224.47 | 0.0668 | 0.059 |

The trend bis an increasing trend which is statistically insignificant in this case as p>0.05.

### 8. Annual Total Precipitation (PTOT)

**Table C8- Annual Total Precipitation (PTOT)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| Trincomalee | y = 1.4973x + 1594.9 | 0.0044 | 0.630 |

The sum of daily rainfall equal to or exceeding 1mm in a year, referred to as PTOT, represents the total wet-day rainfall for that year. This serves as an approximation of the total annual rainfall, considering a day as 'rainy' if the daily rainfall is counted with any daily catch is greater than or equal to 0. 3mm.The trend is a discernible increasing one which is statistically insignificant.

### Future Rainfall Prediction

Future rainfall projections were made under the IPCC AR5 two emission scenarios RCP 4.5 (Moderate emission) and RCP 8.5 (High emission). Extreme rainfall indices which are calculated for the historical climate have been calculated.

### 1. Consecutive Dry Days (CDD)

**Table C9- CDD- maximum number of consecutive days with rainfall <= 1 mm (The longest dry spell)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 0.0007x + 35.464 | 1E-06 | 0.159 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.2211x + 27.526 | 0.0887 | 0.001 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically insignificant, whereas for RCP 8.5 the trend is statistically significant ($p<0.05$).

### 2. Consecutive Wet Days (CWD)

**Table C10 - CWD - Maximum number of consecutive wet days with RR>1mm (The longest wet spell)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = -0.0277x + 66.209 | 0.0008 | 0.062 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.018x + 68.964 | 0.0003 | 0.030 |

For RCP 4.5, the trend is decreasing, and for RCP 8.5, the trend is increasing. For RCP 4.5 the trend is statistically insignificant, whereas for RCP 8.5 the trend is statistically significant ($p<0.05$).

### 3. Annual count of days when Rainfall >=10 mm (R10mm)

**Table C11- R10mm represents Number of heavy rain days.**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 0.1226x + 19.283 | 0.1484 | 0.000 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.1632x + 20.764 | 0.1526 | 0.000 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically significant, whereas for RCP 8.5 too, the trend is statistically significant ($p<0.05$).

### 4. Annual count of days when Rainfall >=20 mm (R20mm)

**Table C12 - R20mm represents Number of very heavy rain days**.

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 0.031x + 2.1485 | 0.1164 | 0.000 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.058x + 1.8938 | 0.1561 | 0.000 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically significant, whereas for RCP 8.5 too, the trend is statistically significant ($p<0.05$).

### 5. Maximum 1-day rainfall (RX1Day)

This index shows reported maximum daily rainfall in a year

**Table C13- Maximum 1-day rainfall (RX1Day)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 0.018x + 26.507 | 0.0064 | 0.138 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.0789x + 25.668 | 0.0761 | 0.002 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically insignificant, whereas for RCP 8.5, the trend is statistically significant ($p<0.05$).

## 6. Maximum 3-day rainfall (RX3Day)

This index shows reported maximum 3-day cumulative rainfall in a year

**Table C14 - Maximum 3-day rainfall (RX3Day)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 0.0792x + 57.486 | 0.0261 | 0.018 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.1964x + 56.725 | 0.0971 | 0.000 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically insignificant, whereas for RCP 8.5, the trend is statistically significant ($p<0.05$).

## 7. Maximum 5-day rainfall (RX5Day)

This index shows reported maximum 5-day cumulative rainfall in a year.

**Table C15- Maximum 5-day rainfall (RX5Day)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 0.0792x + 57.486 | 0.0261 | 0.018 |
| **RCP 8.5** | | | |
| Trincomalee | y = 0.1964x + 56.725 | 0.0971 | 0.000 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically insignificant, whereas for RCP 8.5, the trend is statistically significant ($p<0.05$).

## 8. Annual Total Precipitation (PTOT)

**Table C16- Annual Total Precipitation (PTOT)**

| Station | Trend Equation | $R^2$ | P Value |
|---|---|---|---|
| **RCP 4.5** | | | |
| Trincomalee | y = 2.6489x + 825.08 | 0.2128 | 0.000 |
| **RCP 8.5** | | | |
| Trincomalee | y = 3.0726x + 861.65 | 0.1952 | 0.000 |

For RCP 4.5, and RCP 8.5 the trend is increasing. For RCP 4.5 the trend is statistically insignificant, and for RCP 8.5 too, the trend is statistically significant ($p<0.05$).

**B: Rise in Temperature (Temperature Increases and Heat Waves)**

**Risk to Transmission Line Operation:** Rising temperatures and increasing frequency of heatwaves can stress transmission lines and their components. High temperatures can cause power lines to sag, increasing the risk of physical contact with vegetation or other infrastructure, leading to short circuits and potential outages.

**Potential Impacts:**

- Overheating of power lines, leading to sagging and possible failure.
- Increased energy demand due to air conditioning usage, straining the transmission grid.
- Reduced efficiency of the transmission system due to elevated temperatures, particularly during peak periods.

**Data Scarcity**

Long-term observational data are essential for identifying consistent climate trends over time. However, long-term temperature data are not available for all s. Anuradhapura has long-term records, but Polonnaruwa and Trincomalee do not, with records for Polonnaruwa starting more recently, limiting the ability to assess long-term trends in the. While Trincomalee does have a long-term observational record, it is not considered a unique representative location for the North Central Province.

Analysis of annual variations in both maximum daytime temperatures and minimum nighttime temperatures reveals that there has been no significant trend in daytime maximum temperatures over past four (4) decades (1981-20199). However, there is a significant increase in nighttime minimum temperatures, which have risen by approximately 0.18°C per decade (Figure 2). This represents a statistically significant trend, indicating that night-time temperatures are warming faster than daytime temperatures. On a broader scale, the average temperature in Sri Lanka has increased by approximately 0.1°C to 0.3°C over the past several decades.

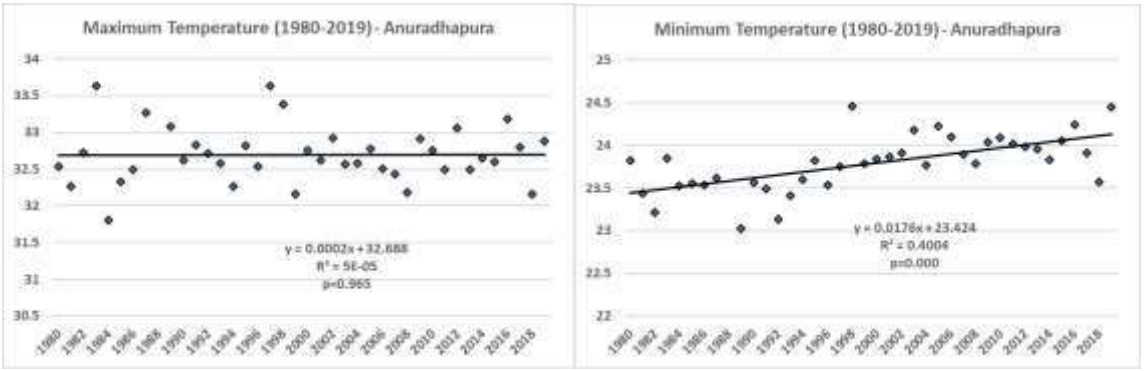



**Figure C3 Temperature Trends (Maximum and Minimum)**

**Temperature Indices**

Analysis of 4 temperature related indices are given in Table C17 below.

**Table C17- Temperature Indices**

| No. | Temperature Parameter | Slope | P Value | Remarks |
|---|---|---|---|---|
| 1 | Percentage of days when minimum temperature is less than 10th percentile (TN10P) – cold nights | -0.177 | 0.003 | Generally, the TN10P index, which measures the percentage of cold nights (those with temperatures below the 10th percentile of the historical distribution), is showing a significant decreasing trend across all regions of Sri Lanka. This trend has been observed with a very high level of statistical significance, indicating a consistent pattern over time. Specifically, Anuradhapura has also exhibited a similar decrease in the TN10P index, confirming that the reduction in cold nights is not limited to specific areas but is a widespread phenomenon across the country.<br><br>The declining TN10P index suggests that, as the climate continues to warm, cold nights will become increasingly rare in the future climate scenario of Sri Lanka. This shift is indicative of broader climatic changes, where the frequency of cooler nights diminishes, leading to warmer overall conditions during the night. Such changes in temperature patterns may have implications for agriculture, human health, and ecosystems, as the reduced occurrence of cold nights could impact crop growth cycles, pest populations, and the overall climate resilience of various sectors.<br><br>Percentage of days when minimum temperature greater than 90th percentile (TN90P) – Hot nights |
| 2 | TN90P index | 0.473 | 0.000 | Generally, the TN90P index, which measures the percentage of hot nights (those with temperatures above the 90th percentile of the historical distribution), is showing a marked increasing trend across all regions of Sri Lanka. This increase has been observed with a very high level of statistical significance, indicating that the rise in hot nights is consistent and widespread throughout the country. Specifically, Anuradhapura has also displayed a similar upward trend in the |

| No. | Temperature Parameter | Slope | P Value | Remarks |
|---|---|---|---|---|
| | | | | TN90P index, aligning with the broader national pattern.<br>This rising trend in the TN90P index further reinforces the increase in temperature extremes already highlighted by the decreasing TN10P index (cold nights). The concurrent rise in both hot nights and the decline in cold nights signals a broader shift toward warmer temperatures, particularly during the night, which is a clear indication of climate warming. In practical terms, this suggests that, in the future, hot nights will become more frequent and persistent across Sri Lanka. |
| 3 | Percentage of days when maximum temperature greater than 90th percentile (TX90P) – Hot days | 0.015 | 0.875 | The TX90P index, which measures the percentage of extremely hot days (those with maximum temperatures above the 90th percentile of the historical distribution), is showing an increasing trend across all regions of Sri Lanka, including both the Dry and Intermediate zones. This trend is statistically significant in several s, indicating a widespread pattern of rising daytime temperatures across the country. However, in Anuradhapura, while an increasing trend is observed, it is statistically insignificant, suggesting that while temperatures are rising, the evidence for this trend is not as robust in this specific region when compared to other areas. |
| 4 | Percentage of days when maximum temperature less than 10th percentile (TX10P) — cold days | -0.048 | 0.433 | Generally, the TX10P index, which measures the percentage of cool days (those with maximum temperatures below the 10th percentile of the historical distribution), is showing a consistent decreasing trend across all regions of Sri Lanka. This trend has been observed with a very high level of statistical significance, highlighting a widespread reduction in the occurrence of cool days across the country. Specifically, Anuradhapura has also exhibited a similar decreasing trend, but the statistical significance of this trend is weaker, indicating that while a reduction in cool days is evident, the evidence is not as strong or consistent in this particular compared to others. |

**Temperature Projections**

**Table C18- Temperature Projections for Different RCP Scenarios and Time Horizons**

| Station | Time Horizons | | | |
|---|---|---|---|---|
| | | | | |
| | **2020-2039** | **2040-2059** | **2060-2079** | **2080-2100** |
| **RCP 4.5** | | | | |
| **Maximum** | | | | |
| Trincomalee | 0.7 | 1.1 | 1.5 | 1.7 |
| **Minimum** | | | | |
| Trincomalee | 0.7 | 1.2 | 1.6 | 1.8 |
| | | | | |
| **RCP 8.5** | | | | |
| **Maximum** | | | | |
| Trincomalee | 0.8 | 1.5 | 2.3 | 3.2 |
| **Minimum** | | | | |
| Trincomalee | 0.8 | 1.6 | 2.4 | 3.3 |

## C: Sea-Level Rise

### BAU Scenario

**Risk to Coastal Transmission Lines:** Sea-level rise, driven by global warming, threatens Sri Lanka's coastal regions. Power transmission lines running along coastal areas are particularly vulnerable to storm surge, flooding, erosion, and saltwater intrusion. These phenomena can undermine the structural integrity of transmission towers and cause corrosion of electrical components, leading to power outages.

**Potential Impacts:**

- Structural damage due to flooding or erosion.
- Corrosion of electrical components due to prolonged exposure to saltwater.
- Disruption of the electricity grid during storm surges or tidal flooding.

The IPCC AR6 (Intergovernmental Panel on Climate Change Sixth Assessment Report) stated that Global mean sea level has been approximately increased by 0.20 m (0.15 – 0.25) between 1901 and 2020 (high confidence). Global Mean Sea Level rise has accelerated since the late 1960s, with an average rate of 2.3 (1.6 to 3.1) mm $yr^{-1}$ over the period 1971–2018 increasing to 3.7 (3.2 to 4.2) mm $yr^{-1}$ over the period 2006–2018 (high confidence).

### Regional Variability

Sea level rise is not uniform across the globe. Local factors such as land subsidence, ocean circulation patterns, and glacial rebound (land rising after ice sheets melt) can cause regional variations in sea level changes.

Coastal Regions: Low-lying coastal areas are particularly vulnerable to the impacts of rising sea levels, with increased risks of flooding, erosion, and saltwater intrusion into freshwater resources.

### Projections of Future Sea Level Rise

The AR6 provides multiple sea level rise scenarios depending on the greenhouse gas emissions pathway.

- RCP 4.5 (Moderate emissions): Under this scenario, the projected global rise is 0.32 to 0.63 meters by 2100.
- RCP 8.5 (High emissions): In this high emissions scenario, global mean sea level could rise by 0.44 to 0.84 meters by 2100, with a high likelihood of extreme values reaching up to 1 meter or more by the end of the century.

**Sea Level Rise (Sri Lanka)**

There is no historical data to find the sea level rise along Sri Lanka, but recently it has been calculated from the data available from 1993 to 2021 in "Copernicus data portal" and the results identified are (Malith Fernando, Sarath Premalal, 2023 Not published)

- Global - 2.9 mm /year (Error ±0.048mm)
- BOB - 3.6 mm / year (Error ±0.280mm)
- Arabian Sea - 3.3 mm /year (Error ±0.243mm)
- Near Colombo coast -3.4 mm /year (Error ±0.540mm)

In 2009, Disaster Management Centre, Sri Lanka published hazard profile. Future projection for Sea level rise in Sri Lanka has been identified according to the IPCC AR4 scenario. According to the hazard profile in Sri Lanka Sea level rise along Sri Lanka will be increased by 0.508 m, 0.658 m, 0.808 m and 0.958 m for the years 2025, 2050, 2075 and 2100 respectively with respect to the sea level rise at 2000. The hazard profile further stated that inundation area over the Trincomalee is 2,315 ha, 2,529 ha, 2,791 ha, 3033 ha by 2025, 2050, 2075 and 2100 respectively (including water bodies). Additional inundation area excluding water bodies are 252 ha, 467 ha, 729 ha, 971 ha by 2025, 2050, 2075 and 2100 respectively.

**D. Extreme Rainfall and Flooding**

**Risk to Infrastructure and Access:** Sri Lanka experiences heavy rainfall, especially during the monsoon seasons, leading to flash floods and landslides. Transmission lines in flood-prone areas are at high risk of damage, especially if access roads become submerged or landslides affect power line routes.

**Potential Impacts:**

- Power lines may be brought down due to heavy rainfall, flooding, or landslides.
- Waterlogging and soil erosion around transmission towers can destabilize their foundations.
- Difficulty in accessing and maintaining transmission lines in flooded or landslide-**d. Extreme Wind and Cyclones:**

**Risk to Transmission Lines and Towers:** Sri Lanka is prone to cyclones and strong winds, particularly during the northeast monsoon period. These extreme weather events can cause significant damage to power transmission lines, including uprooting of transmission towers, detachment of power lines, and destruction of key electrical infrastructure.

**Potential Impacts:**

- Damage to transmission towers and lines from high winds and flying debris.
- Extensive power outages caused by infrastructure damage.

- Prolonged repair and restoration times due to the severity of the event.

**Tropical Cyclone**

A cyclone is a large-scale weather system in which air circulates at speeds exceeding 62 km/hr around a center, anticlockwise in the Northern Hemisphere, and clockwise in the Southern Hemisphere. On average, about 80 cyclonic storms/cyclones form over the globe annually. Of these 04 occur in the Bay of Bengal and 01 in the Arabian Sea area. Although a large number of cyclonic disturbances had either formed or passed close to Sri Lanka, only 16 cyclonic storms/cyclones had crossed the coasts during the period 1881 – 2009. Most of them have crossed the coast in November and December. Therefore, in Sri Lanka November and December is reckoned as the cyclone season.

Tropical cyclones are by far the most destructive large-scale storms in the world. They develop over warm tropical oceans and will decay over the land.

The initial stage of the formation of a cyclone is known as a low or a low-pressure area. The intermediate stage is known as depression. These different stages in the development of a tropical cyclone are defined according to the maximum average wind associated with the system.

Classification of tropical revolving systems in Sri-Lanka is given in table 4 below.

**Table C19 Classification of Tropical Cyclones**

| No. | Weather System | Maximum Wind Speed |
|---|---|---|
| 1. | Low pressure area | Wind speeds less than 17 kt (31 km/h) |
| 2. | Depression | Wind speed between 17 and 33 kt (31 and 61 km/h) |
| 3. | Cyclonic storm | Wind speed between 34 and 47 kt (62 and 88 km/h) |
| 4. | Severe cyclonic storm | Wind speed between 48 and 63 kt (89 and 118 km/h) |
| 5. | Very severe cyclonic storm | Wind speed 64 and 119 kt (119 and 221 km/h) |
| 6. | Super cyclonic storm | Wind speed 120 kt and above (222 km/h) |

**Cyclones which affected Sri Lanka**

**History of Cyclone Crossed Over Sri Lanka**

Seventeen (17) Cyclones crossed Sri Lankan area during the period 1901 – 2009 (Table 2).

Table 2 : Number of cyclonic storms that reached the coat of Sri Lanka in different months during the period 1881 – 2011

| Month | Number | Year |
|---|---|---|
| January | 01 | 1906 |
| February | - | - |
| March | 02 | 1907, 1925 |

| Month | Number | Year |
|---|---|---|
| April | 01 | 1939 |
| May | - | - |
| June | - | - |
| July | - | - |
| August | - | - |
| September | - | - |
| October | 01 | 1967 |
| November | 06 | 1912, 1922, 1925, 1966, 1978, 1992 |
| December | 08 | 1908, 1913, 1919, 1931, 1964, 1967, 1980, 2000 |

Seventeen cyclones (five are severe cyclonic storms) crossed the coasts of Sri Lanka during the past 128-year period (1881- 2009). There are five other cases which are still doubtful whether they were cyclones or depression.

Thirteen (13) of these cyclones have crossed Sri Lankan East coast (Figure 3) during the period from November to December. The months of November and December are considered as cyclone prone months.

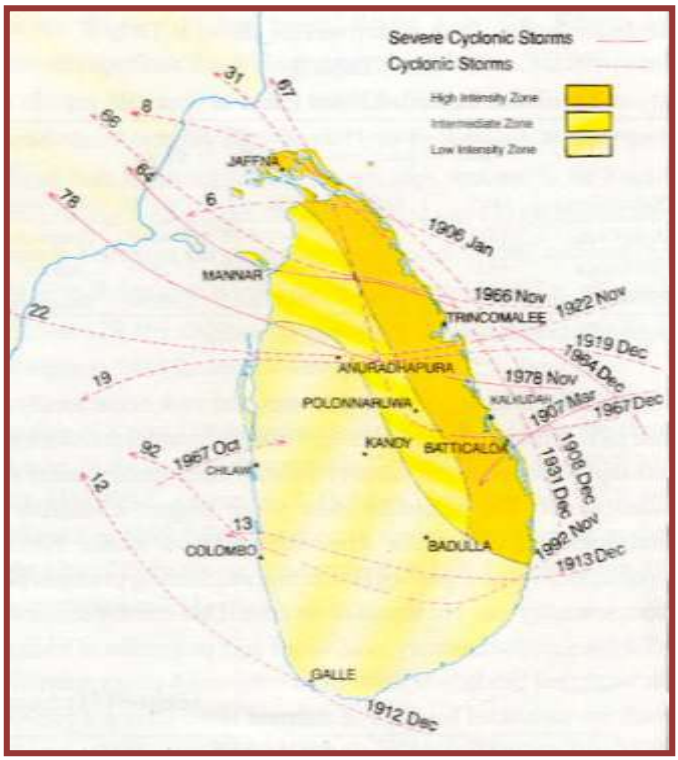
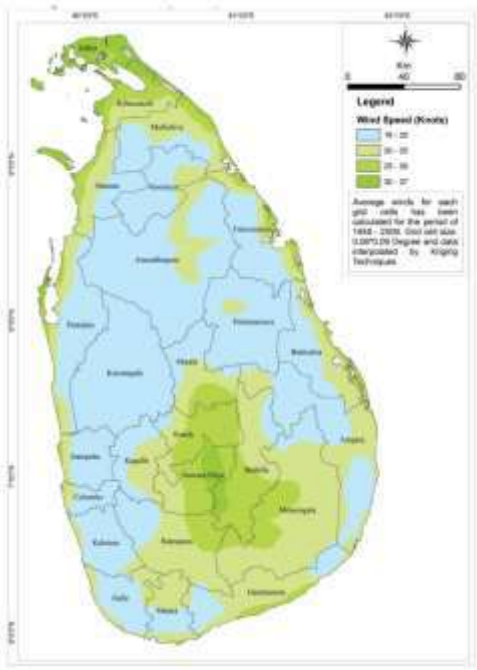
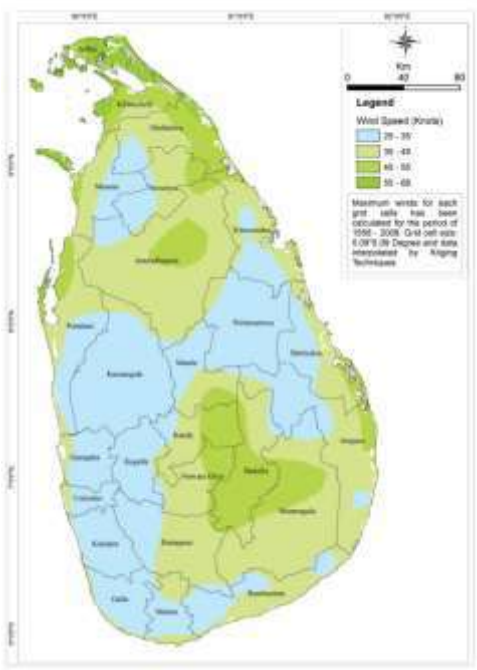



**Figure C4 High Risk Zone for Cyclone and its Landfall (1900-2000)**



Average wind hazard map of Sri Lanka for the period 1958-2009



Maximum sustained wind speed map when TC crossed vicinity of Sri Lanka

**Figure C5 Possible strong wind potential area Due to a Cyclone**

## Cyclone Statistics in the Bay of Bengal

Statistics for the total No of Depressions developed in the Bay of Bengal (1950-2007) (Figure 5) and the total number of Cyclones developed in the Bay of Bengal (1900-2007) (Figure 6) are shown below.

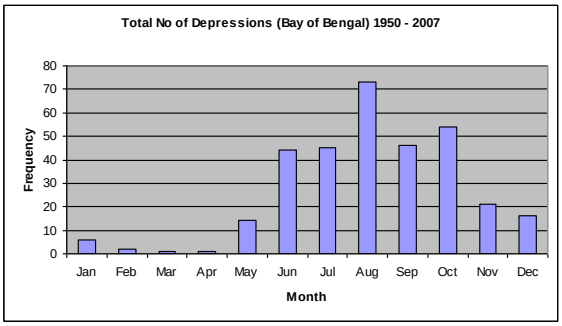



Fig 5 : Total No of Depressions developed in the Bay of Bengal (1950-2007)

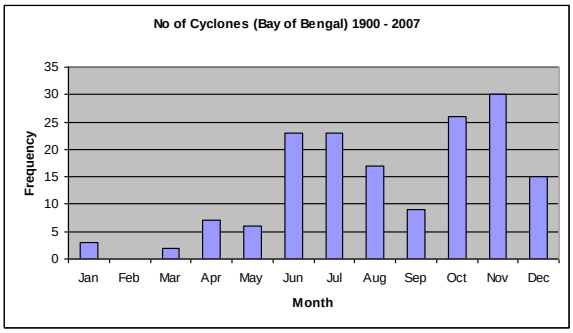



Fig 6 : Total No of Cyclones developed in the Bay of Bengal (1900-2007)

**Figure C6- Cyclone Statistics in Bay of Bengal**

## Cyclones that made landfall in Sri Lanka

A brief review of notable past cyclones that made landfall in Sri Lanka during past 130 years given in the table 2. According to the classification of revolving tropical systems adopted in Sri Lanka (Table xx) maximum sustained wind speeds of 62-88km/h and 89-118 km/h are categorized as cyclonic storms and severe cyclonic storms respectively (DoM, 2010)

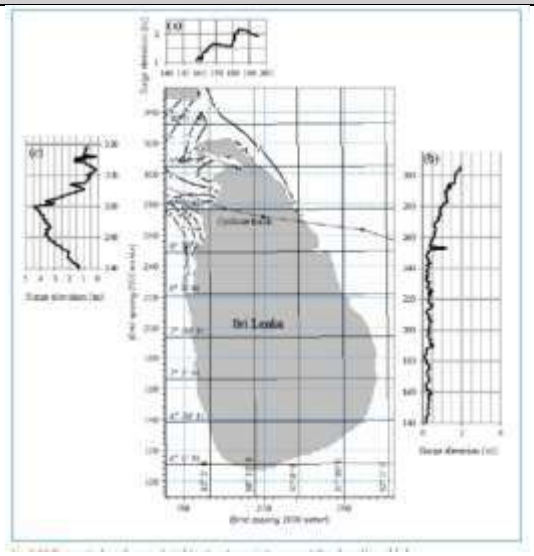
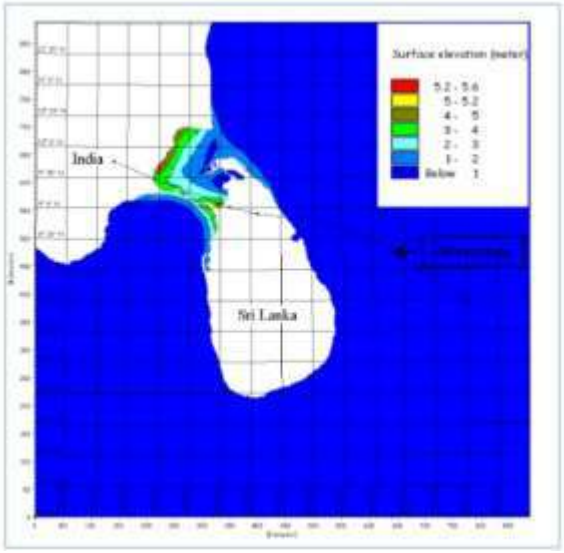
| 1964 Cyclone | |
|---|---|
|  |  |
| Computed peak surge heights at water points nearest the shoreline (a) North coast (b) East Coast (c) Northwest coast | Computer maximum heights due to the passage of 1964 cyclone |

**Figure C7- 1964 Cyclone**

The 1964 Rameswaram cyclone (also known as the Dhanushkodi cyclone) was regarded as one of the most powerful storms to ever strike India on record. (Rao et.al 1994) The system was first identified as an area of low pressure over the Andaman Sea on December 15. Following interaction with a tropical wave, it began to develop and became depression by December 18. Increasingly rapid intensification ensued over the following days with the cyclone attaining hurricane-force winds around 5°N the next day. Early on December 23, the storm struck Ceylon near Trincomalee with winds estimated at 240 km/h (150 mph), ranking it as a modern-day super cyclonic storm. Weakening somewhat, the storm soon struck Tamil Nadu. Rapid weakening followed once the cyclone was onshore, and it degenerated into a depression on December 24 as it emerged over the Arabian Sea. The system later dissipated on December 26 over open water.

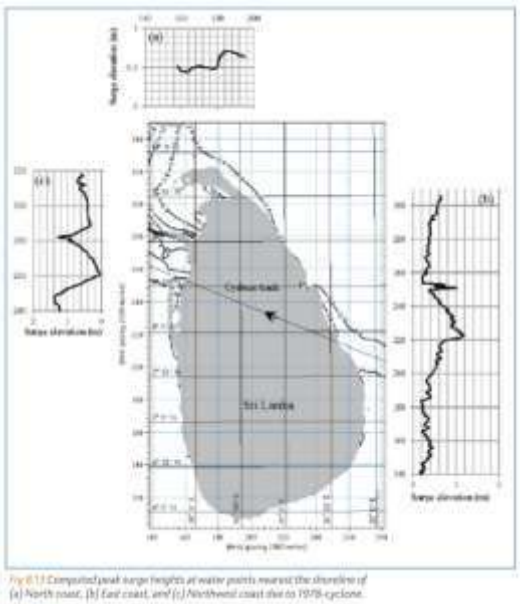
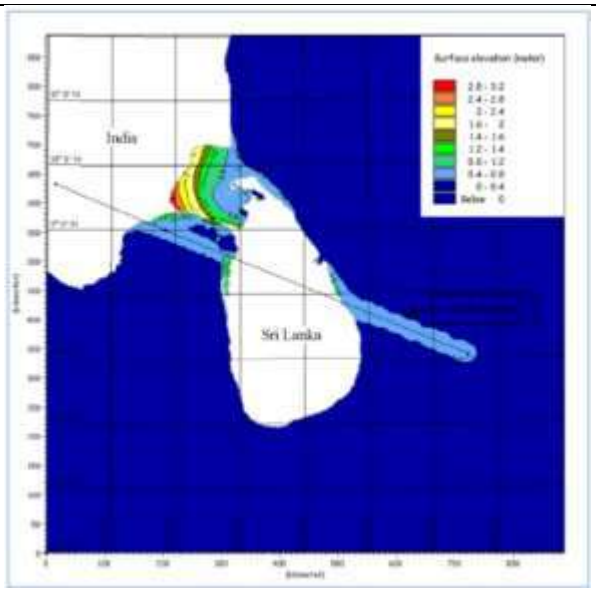
| 1978 Cyclone | |
|---|---|
|  |  |
| Computed peak surge heights at water points nearest the shoreline (a) North coast (b) East Coast (c) Northwest coast | Computer maximum heights due to the passage of 1964 cyclone |

**Figure C8- 1978 Cyclone**

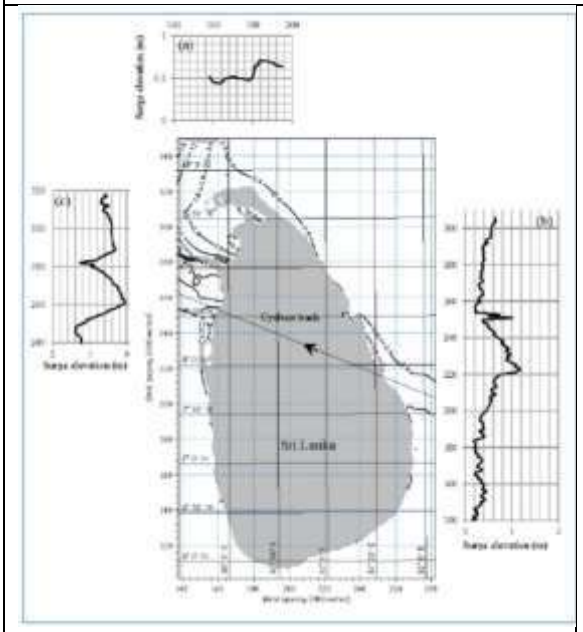
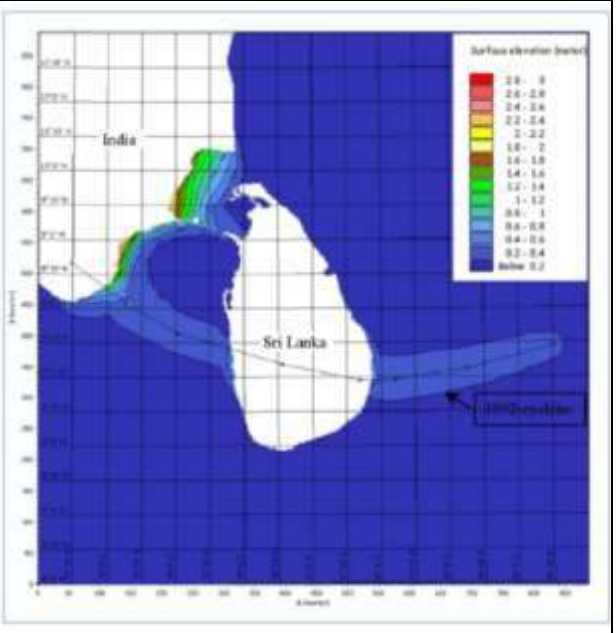
| 1992 Cyclone | |
|---|---|
|  |  |
| Computed peak surge heights at water points nearest the shoreline (a) North coast (b) East Coast (c) Northwest coast | Computer maximum heights due to the passage of 1964 cyclone |

**Figure C9- 1992 Cyclone**

### Storm Surge

A storm surge is an abnormal rise in sea level that occurs when a low-pressure weather system, such as a cyclone, hurricane, or typhoon, passes over a coastal area. It is primarily caused by the combination of strong winds, low atmospheric pressure, and storm tides. Storm surges are one of the most devastating effects of tropical cyclones and can result in significant coastal flooding, erosion, and property damage.

During the period 130 years only 16 cyclones were landfall in Sri Lanka.

Storm surge around Sri Lanka has been constructed under 4 different scenarios as

- Wind speed of 270 km/h with an estimated recurrence interval of 300 years (Scenario 1)
- A wind speed of 215 km/h with an estimated recurrence interval of 90 years (Scenario 2)
- A wind speed of 160 km/h with an estimated recurrence interval of 30 years (Scenario 3)
- A wind speed of 110 km/h with an estimated recurrence interval of 10 years (Scenario 4)

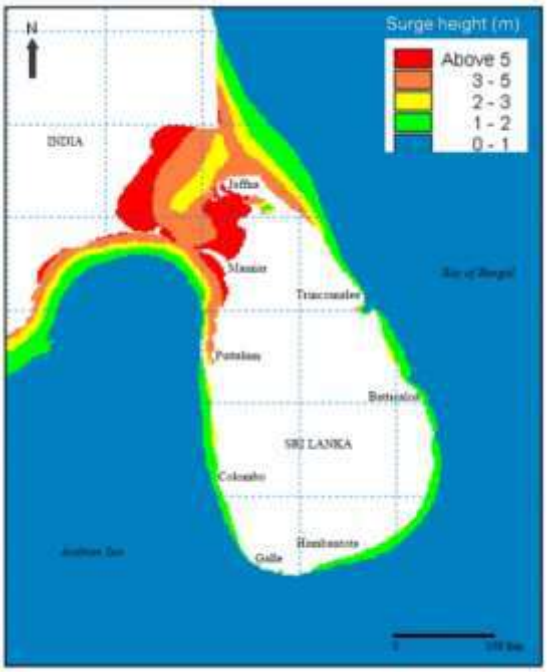
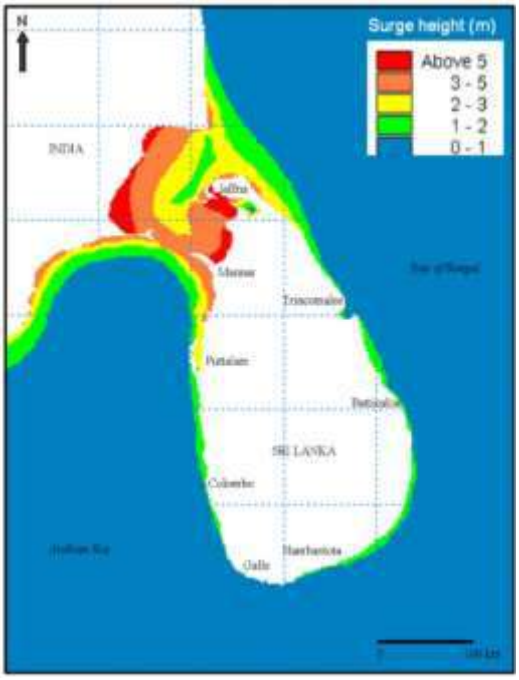
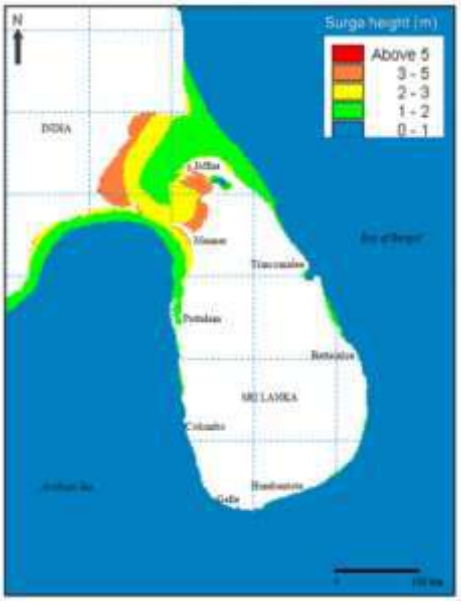
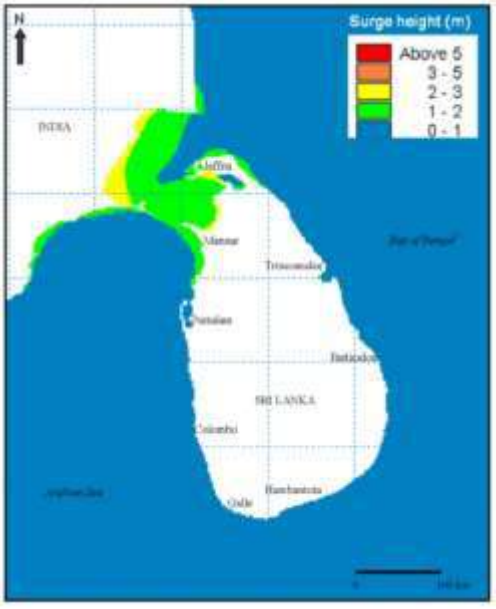
| | |
|---|---|
|  |  |
| Wind speed of 270 km/h with an estimated recurrence interval of 300 years (Scenario 1) | A wind speed of 215 km/h with an estimated recurrence interval of 90 years ( Scenario 2) |
|  |  |
| A wind speed of 160 km/h with an estimated recurrence interval of 30 years (Scenario 3) | A wind speed of 110 km/h with an estimated recurrence interval of 10 years ( Scenario 4) |

**Figure C10- Storm Surge Scenarios**

**Thunder and Lightning**

Lightning is one of the oldest and most powerful natural phenomena on Earth. It is caused by the buildup and discharge of electrical energy in the atmosphere, typically during

thunderstorms. In Sri Lanka, an average of 40 people lose their lives each year due to lightning strikes, making it a significant weather-related hazard.

**Vulnerability to Lightning Strikes**

Certain groups of people are at a higher risk of being struck by lightning, particularly those engaged in outdoor activities such as:

- Farmers working in open fields
- Heavy machinery operators
- Sports players and outdoor laborers

People and animals seeking shelter in unsafe, partially covered structures (especially those with galvanized metal roofs) are also highly vulnerable to lightning strikes. These structures conduct electricity, increasing the risk of injury or death.

**Rural vs. Urban Impact**

Lightning-related deaths and injuries are reported more frequently in rural areas compared to urban regions. This discrepancy is due to several factors:

- Lack of lightning protection systems in rural homes and workplaces
- Increased use of electrical appliances in unsafe conditions
- Greater exposure to open areas with limited shelter

Urban areas, on the other hand, tend to have better mitigation mechanisms, such as grounding systems and lightning rods installed in residences, offices, and factories, reducing the likelihood of casualties.

**Geographical and Environmental Influence**

The impact of lightning is also influenced by geographical and environmental factors, including:

- **Terrain**: Elevated land and mountainous regions can enhance lightning activity due to orographic lifting.
- **Soil Conductivity**: Different soil types, such as sandy or clay-rich soil, can affect how lightning energy disperses after a strike.
- **Climate Factors**: Higher solar radiation and calm winds during certain seasons create favorable conditions for thunderstorm development (First inter-monsoon and Second Inter-monsoon seasons in Sri Lanka)

## Lightning-Prone Areas in Sri Lanka

The southwestern region of Sri Lanka is the most vulnerable to thunderstorms due to its unique topographical and climatic features. The central highlands contribute to frequent thunderstorm activity by promoting moisture uplift through the orographic effect. Additionally, during the two inter-monsoon seasons, increased solar radiation and convective activity intensify storm formation (Figure C11).

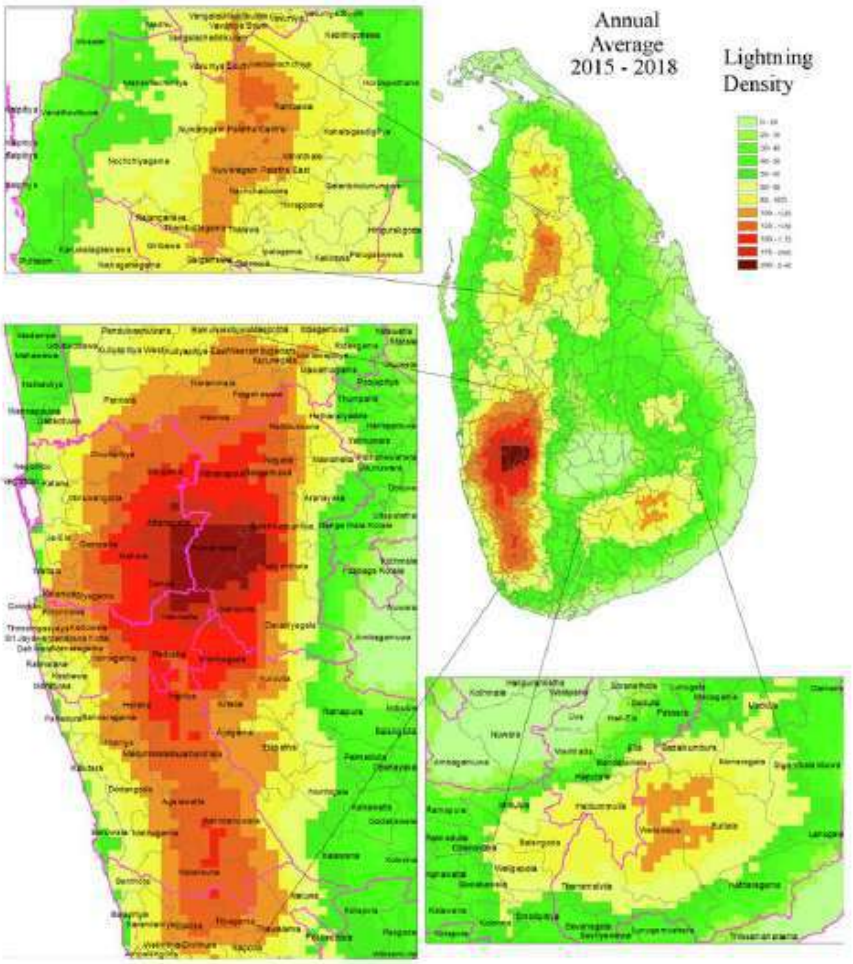



**Figure C11- Spatial distribution of annual average (2015 to 2018) lightning density (LD) (strokes km$^{-2}$ yr$^{-1}$)** (Source : Jayawardena and Makela, 2021).

**Time of Highest Risk**

The most dangerous time for lightning strikes is afternoon and evening, when atmospheric instability is at its peak. Sea breezes, particularly from the southwest, transport moisture inland, fueling convective storms that increase the frequency and intensity of lightning activity.

According to meteorological studies (Premalal & Kumarasinghe, 2015), individuals without proper shelter, particularly those living in houses with galvanized metal roofs, face the highest risk. These findings highlight the urgent need for improved lightning protection measures, especially in rural and high-risk areas, to reduce casualties and property damage.

**Seasonal Distribution of Lightning**

**Seasonal Distribution of Lightning**

The areas of concern (DS divisions) where the powerline is laid in Polonnaruwa, Anuradhapura, and Trincomalee include:

1. Medirigiriya
2. Hingurakgoda
3. Muttur
4. Kinniya
5. Kantalai
6. Verugal
7. Seruvila
8. Palagala
9. Kekirawa
10. Palugaswewa

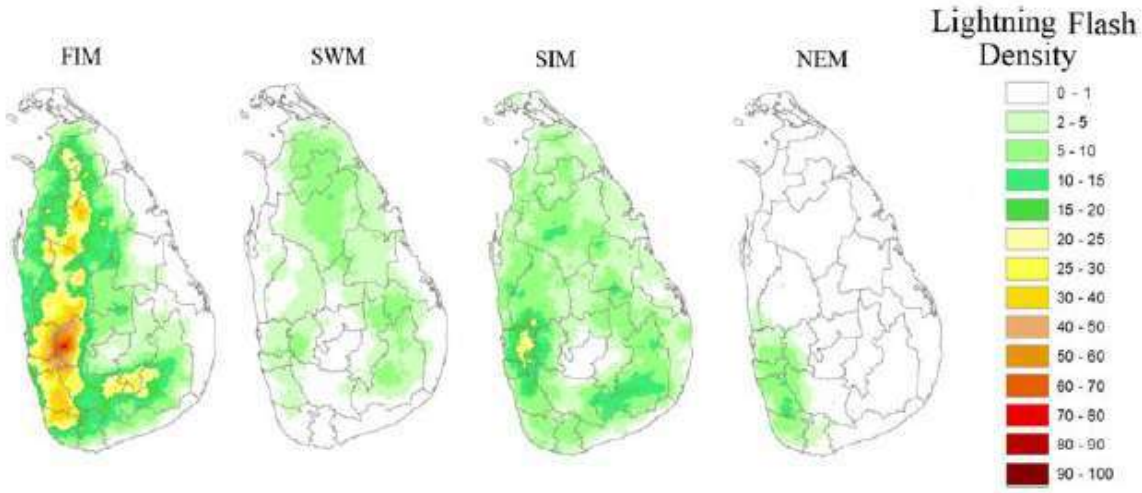



**Figure C12-: Spatial distribution of seasonal (Source: Jayawardena and Makela, 2021)**

The First Inter-monsoon and Second Inter-monsoon seasons are the most vulnerable periods for lightning activity in Sri Lanka. Figure 2 illustrates the seasonal distribution of thunderstorms (measured in strokes $km^{-2}$ $month^{-1}$), showing that the project's concerned locations experience lightning mainly

during the Second Inter-monsoon and the Southwest Monsoon. The probability of lightning during the other two seasons is significantly lower. ( See annexure 1 for more details)

Even within the two monsoon seasons, the months of May, September, and October are the most vulnerable to thunderstorms (Figure 3). In May, severe thunderstorms occur due to pre-monsoon disturbances and interactions with the Intertropical Convergence Zone (ITCZ) near Sri Lanka. September thunderstorms are also frequently associated with the ITCZ.

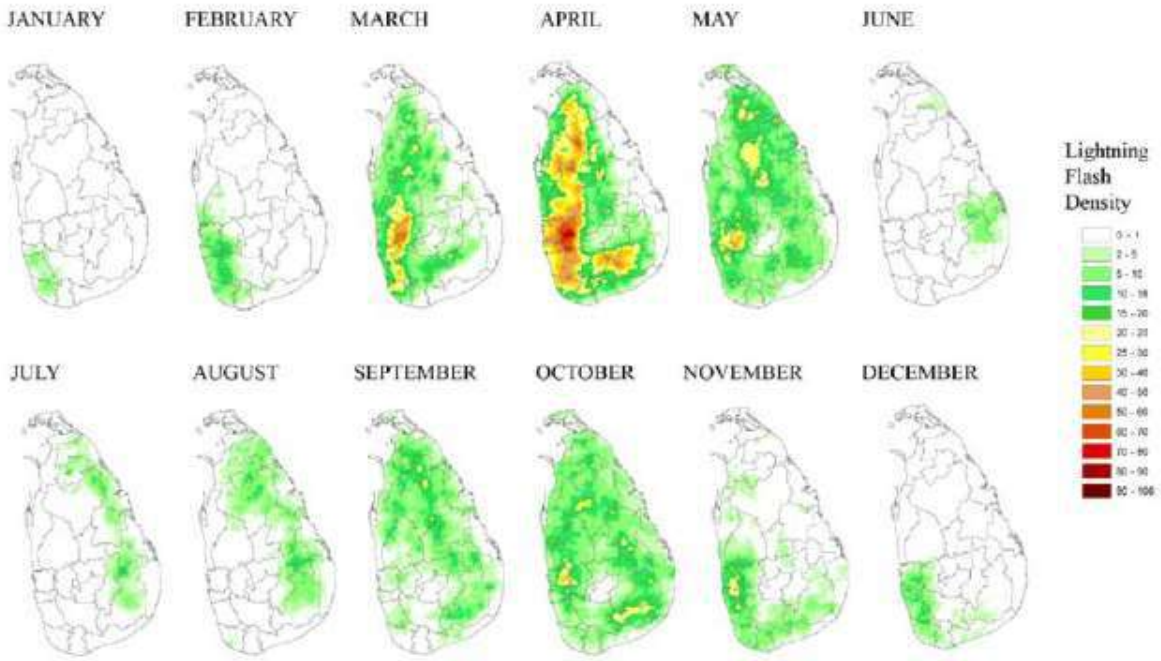
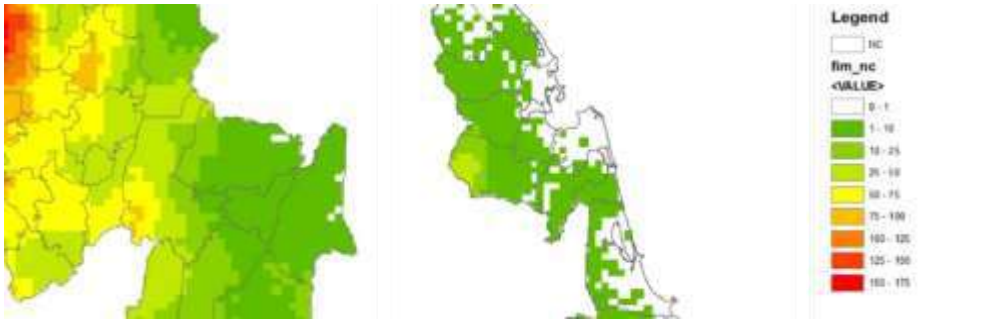
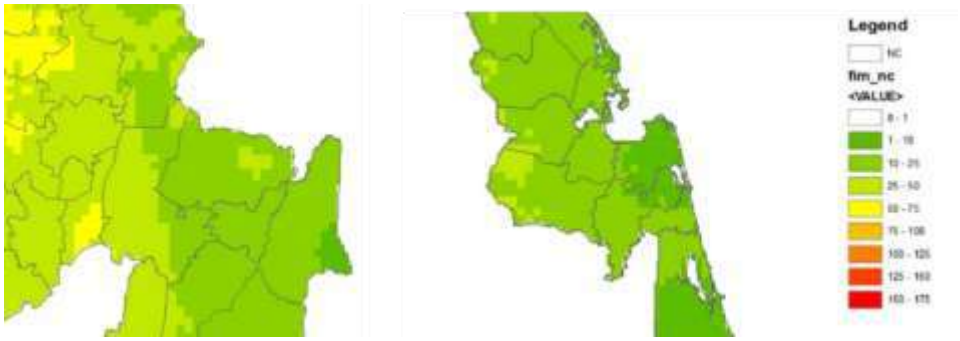



**Figure C13: Spatial distribution of monthly lightning density (LD) (st km_2 month_1) (Jayawardena and Makela, 2021).**

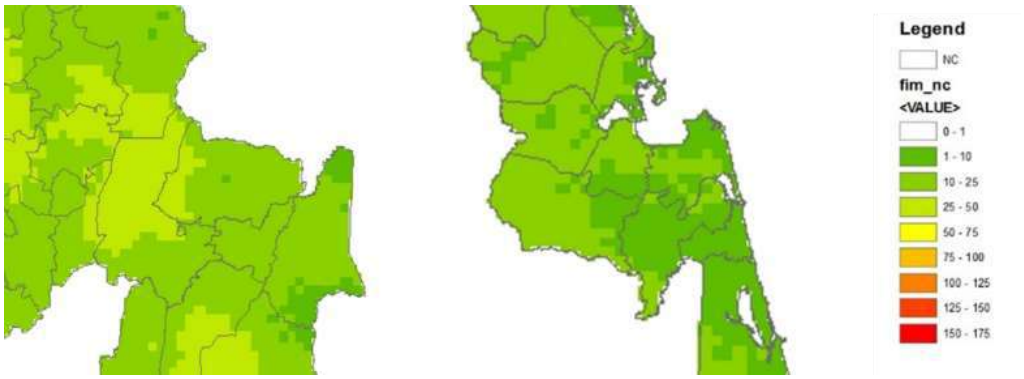
**First Inter-Monsoon Season**




**Southwest Monsoon**




**Second Intermonsoon**




**Northeast Monsoon**

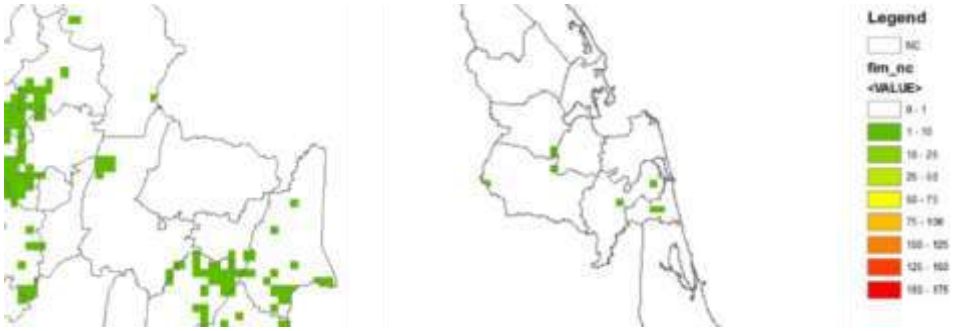



**Figure C14: Spatial distribution of monthly lightning density-Trincomalee**

**Climate Change and Thunderstorms**

Rising global temperatures due to climate change result in warmer air, which can hold approximately 7% more moisture per 1°C of warming. This increase in moisture enhances the likelihood of

thunderstorms, leading to more violent storms and frequent lightning strikes. Additionally, intense downpours can contribute to localized flash flooding. *(Source: Royal Meteorological Society, Berkeley Education)*

**Flood Level Increase**

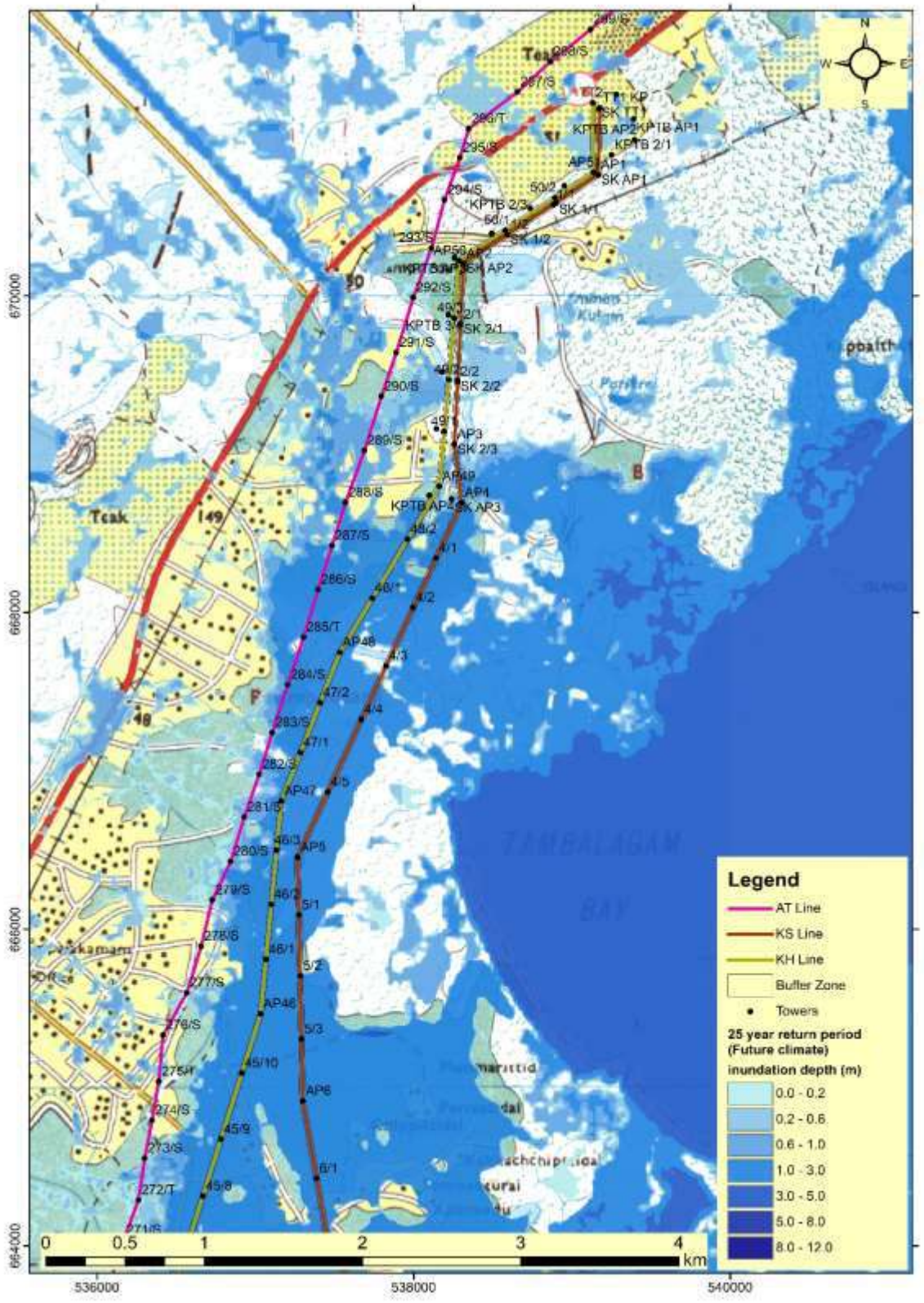



**Figure C15- Flood Map for the Future Climate Change Scenario 25 Year on RCP 8.5 -AP1 to 6/1**

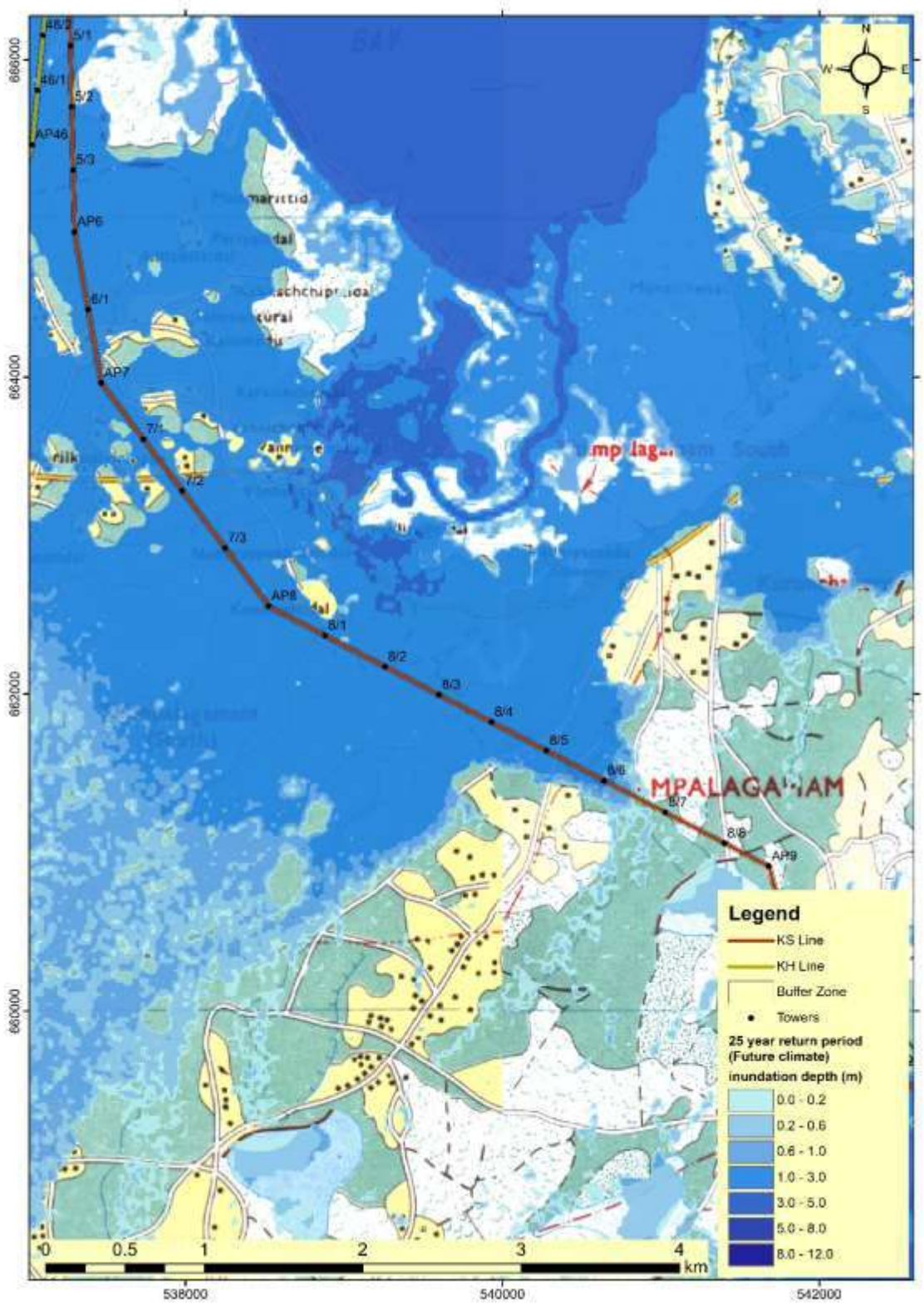



**Figure C16- Flood Map for the Future Climate Change Scenario 25 Year on RCP 8.5 6/1 to AP9**

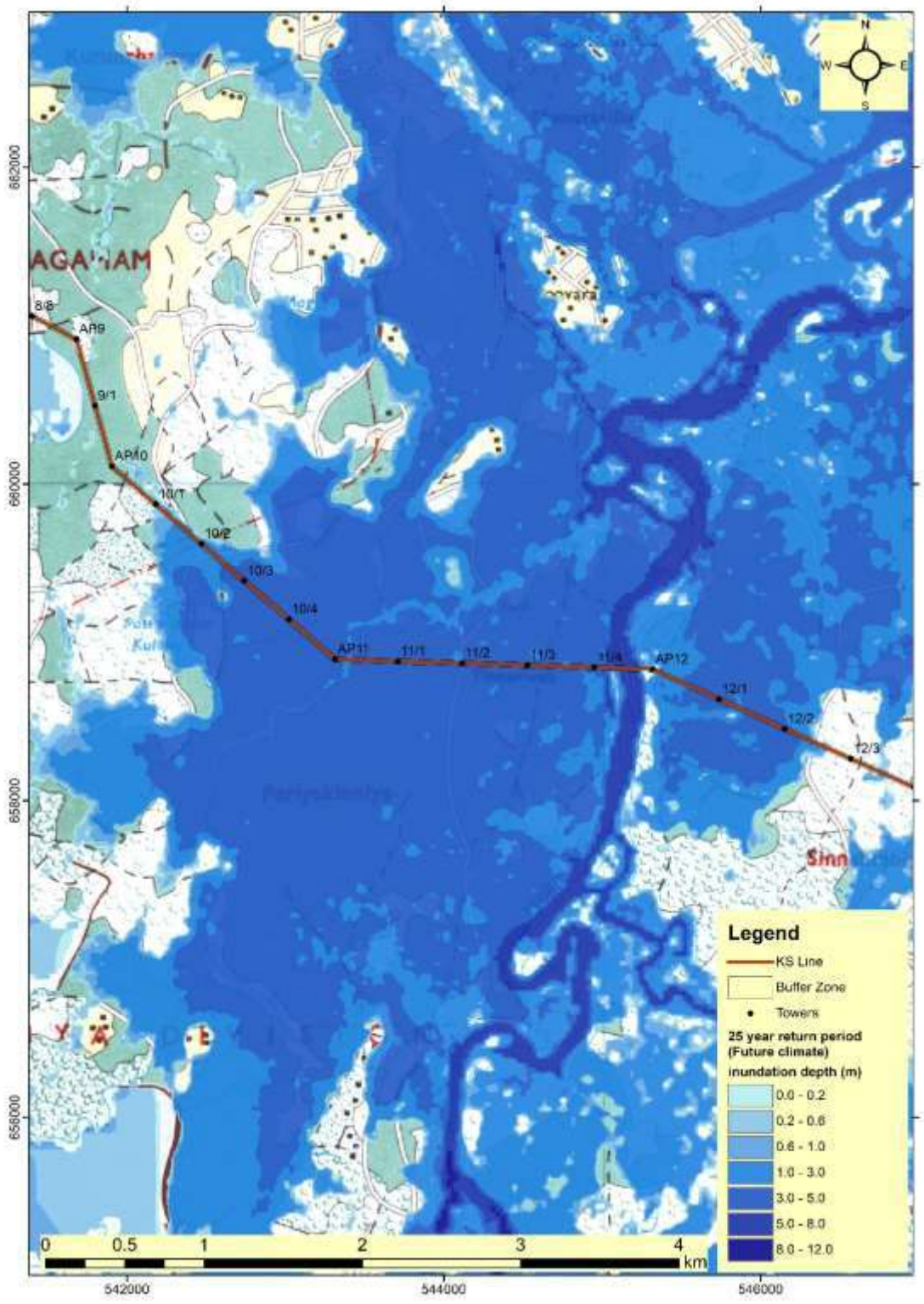



**Figure C17- Flood Map for the Future Climate Change Scenario 25 Year on RCP 8.5 AP9 to 12/3**

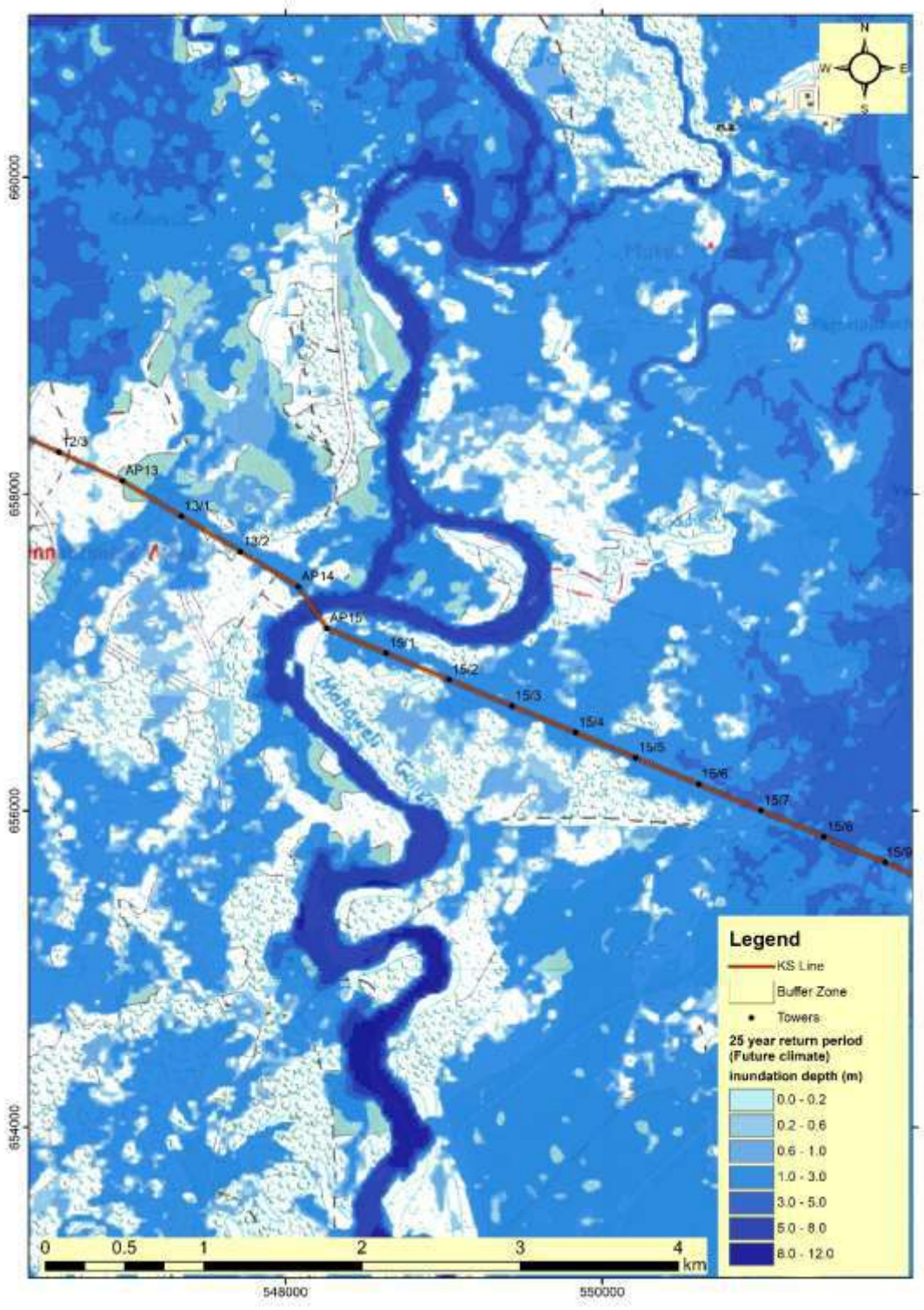



**Figure C18- Flood Map for the Future Climate Change Scenario 25 Year on RCP 8.5 12/3 to 15/9**

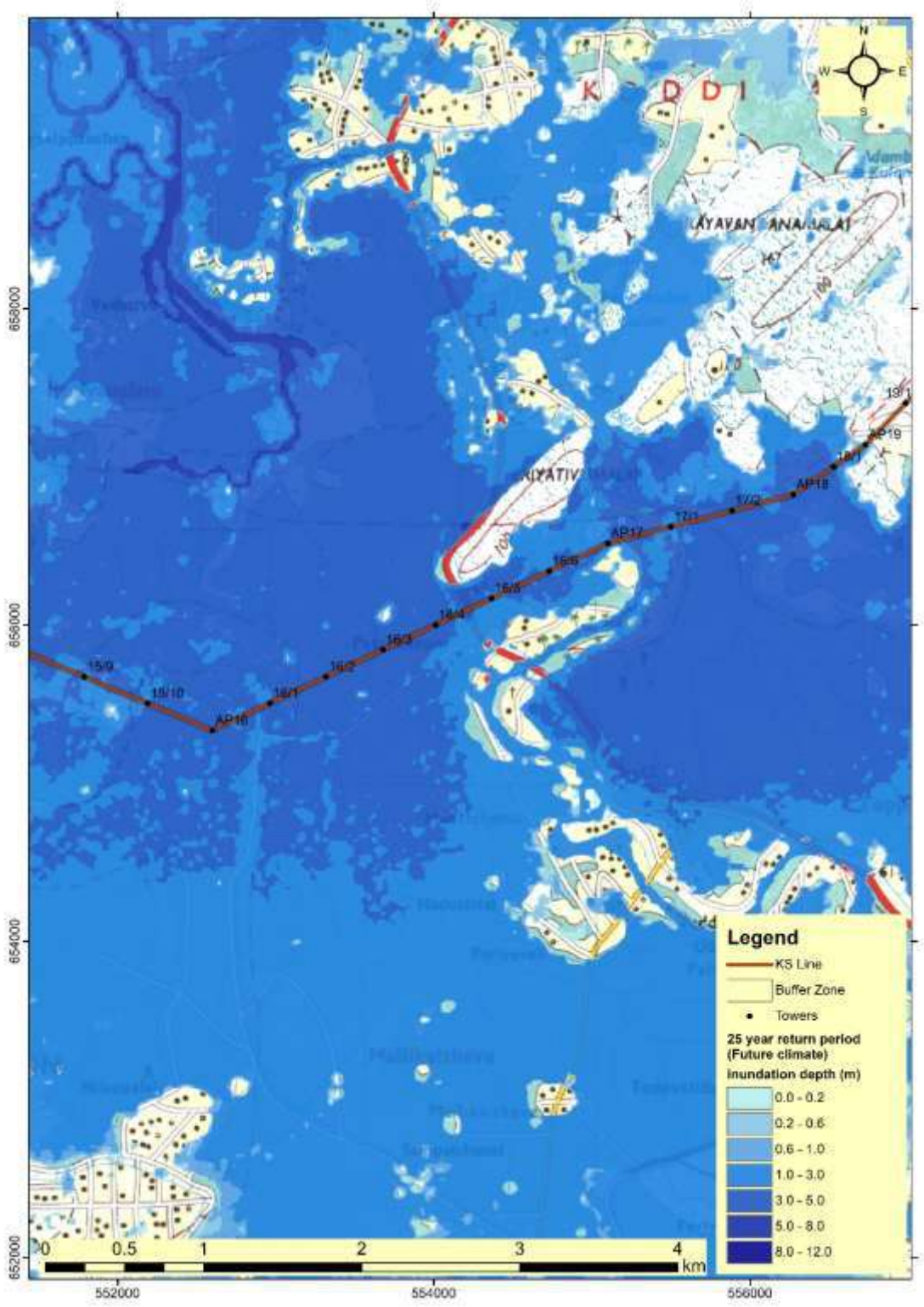



**Figure C19- Flood Map for the Future Climate Change Scenario 25 Year on RCP 8.5 15/9 to AP19**

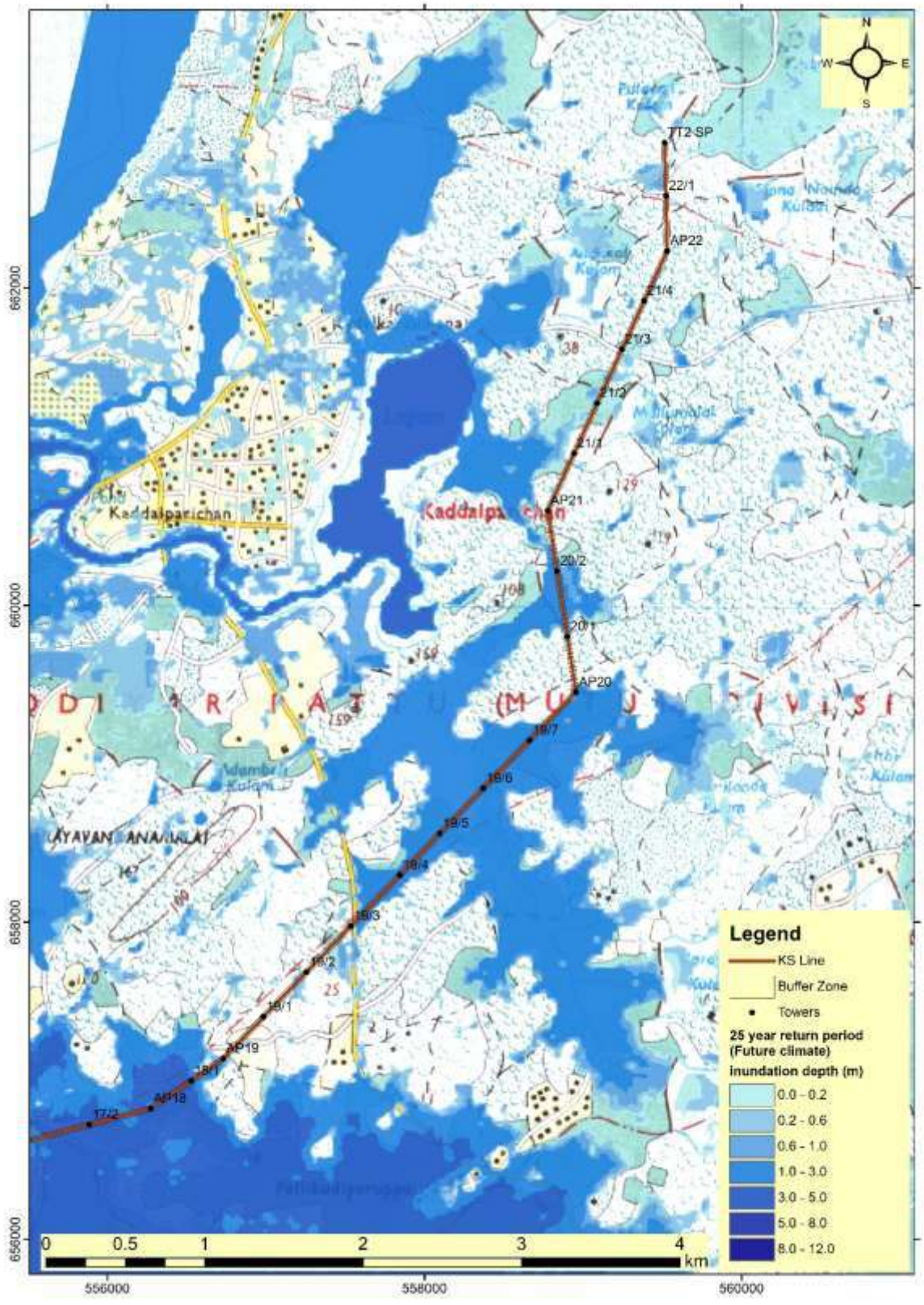



**Figure C19- Flood Map for the Future Climate Change Scenario 25 Year on RCP 8.5 AP19 to T12SP**

### Flood Level Increase Due to Climate Change

Future flood levels due to the Climate Change were predicted using two criteria.

Flood level increase due to the Climate Change was reflected by 8.1% increasing the rainfall of the contributory local catchment by a and, by increasing the discharge of Manampitiya by 30%, which represents the Mahaweli Basin Discharge in the upstream of the model, and by applying the future sea level rise in the downstream boundary of the flood model.

The 8.1% of discharge increase was obtained from factor obtained from the CRIP Study for the Mahaweli Basin as given below for the used 6 day rain derived from the same report.

**Table C20 – Proration Factor for Rainfall**

Consultancy Services for Development of Basin Investment Plans (DBIP) for Selected Basins
Volume 7: Computational Framework Specific to Mahaweli Ganga Basin

**Table 4-5 Climate Change Scenario Selection for the 1: 25 Year Flood Conditions**

| | RCP6_CSIRO_MK3_6_0 | RCP6_FIO_ESM | RCP6_GISS_E2_H | RCP6_IPSL_CM5A_MR | RCP6_MIROC5 | RCP8.5_CSIRO_MK3_6_0 | RCP8.5_FIO_ESM | RCP8.5_GISS_E2_H | RCP8.5_IPSL_CM5A_MR | RCP8.5_MIROC5 | *40%ile* | *50%ile* | *60%ile* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-day | 4.8% | -0.1% | -0.8% | 1.2% | 6.6% | 7.5% | 2.9% | 5.4% | 5.2% | 5.5% | 4.0% | 5.0% | 5.3% |
| 2-day | 4.8% | -1.9% | -0.8% | 1.4% | 4.6% | 7.0% | 2.6% | 6.5% | 5.7% | 4.5% | 3.8% | 4.6% | 4.7% |
| 3-day | 4.7% | -1.8% | -1.1% | 1.8% | 4.3% | 7.7% | 3.3% | 7.0% | 6.2% | 4.3% | 3.9% | 4.3% | 4.4% |
| 4-day | 4.1% | -1.5% | -0.9% | 1.6% | 3.9% | 6.5% | 3.1% | 7.6% | 6.9% | 3.9% | 3.6% | 3.9% | 4.0% |
| 5-day | 3.7% | -1.7% | -1.0% | 1.9% | 4.7% | 6.2% | 3.1% | 7.1% | 6.6% | 3.8% | 3.4% | 3.7% | 4.2% |
| 6-day | 4.1% | -2.0% | -1.0% | 2.1% | 4.9% | 7.2% | 3.6% | 8.1% | 6.8% | 3.8% | 3.7% | 3.9% | 4.4% |
| 7-day | 3.9% | -2.1% | -1.4% | 2.2% | 4.8% | 6.5% | 3.8% | 8.2% | 6.5% | 3.5% | 3.7% | 3.9% | 4.2% |

This 30% increase of discharge was taken from the sources in Table C20.

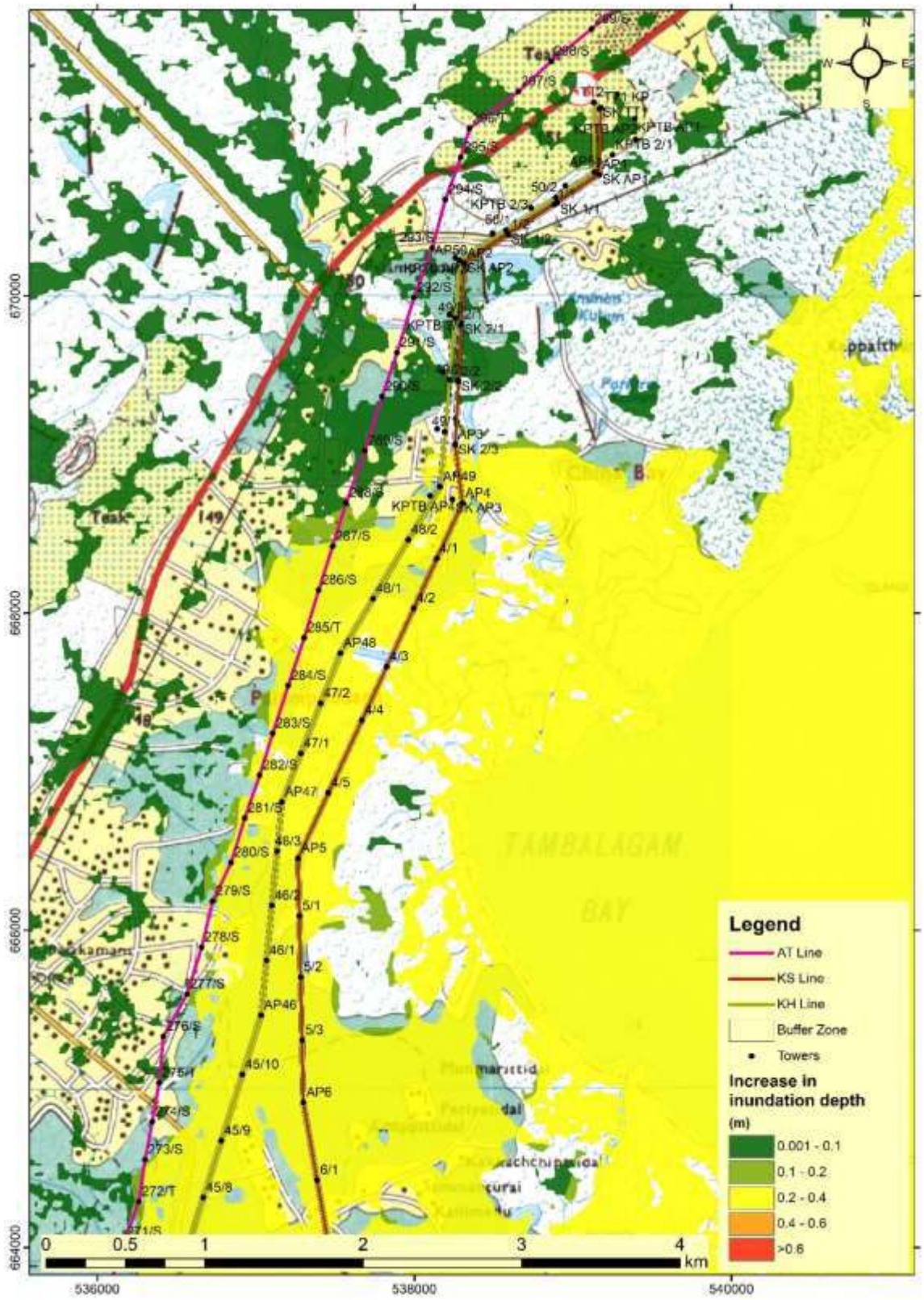
FLOODFREQ Cost Action ESO901; European Cooperation in Science and Technology, Center for Ecology and Hydrology, 2013; http://www.cost-floodfreq.eu

A summary of existing European guidelines on climate change adjustment factors on design floods and design rainfall is presented in the following.

**Table C21- A summary of existing European guidelines on climate change adjustment factors on design floods and design rainfall**

| Country | Region | Variable | Guideline | Reference |
|---|---|---|---|---|
| Belgium | Flanders | Design Floods | 30% increase | Boukris and Willems (2008) |
| Belgium | National | Design rainfall | 30% increase | Willems (2011) |
| Denmark | National | Design rainfall | 20%, 30% and 40% increase for return periods 2, 10 and 100 years | Arnbjerg-Nielson (2008) |
| Germany | Bavaria | Design flood with 100-year return period | 15% increase | Hennegriff *et al.* (2006) |
| Germany | Baden – Wurrtemberg | Design floods | Increase between 0% and 75% depending on location and return period | Hennegriff *et al.* (2006) |
| Norway | National | Design floods | 0%, 20% and 40% increase based on region, prevailing flood season and catchment size | Lawrence and Hisdal (2011) |
| Sweden | National | Design rainfall | Increase between 5% and 30% depending on location | SWWA (2011) |
| United Kingdom | National | Design floods | 20% increase for 2085 | Defra (2006) |
| United Kingdom | National | Design rainfall | 10%, 20% and 30% increase for 2055, 2085 and 2115 | Defra (2006) |

Maps showing the flood level increase due to the climate change were formulated by deducing the flood levels of the baseline flood level raster from RCP 8.5 flood raster that reflect the flood levels due to the climate change. Results for the 25 Year flood are given in the following figures.


Legend
AT Line
KS Line
KH Line
Buffer Zone
Towers
Increase in inundation depth
(m)
0.001 - 0.1
0.1 - 0.2
0.2 - 0.4
0.4 - 0.6
>0.6
0
0.5
1
2
3
4
km
536000
538000
540000
670000
668000
666000
664000
AP1
AP2
AP3
AP4
AP5
AP6
AP46
AP47
AP48
AP49
AP50
SK AP1
SK AP2
SK AP3
SK 1/1
SK 2/1
SK 2/2
SK 2/3
KPTB 2/1
KPTB 2/3
KPTB AP1
KPTB AP2
KPTB AP3
KPTB AP4
KPTB AP5
KPTB AP6
KPTB AP7
KPTB AP8
KPTB AP9
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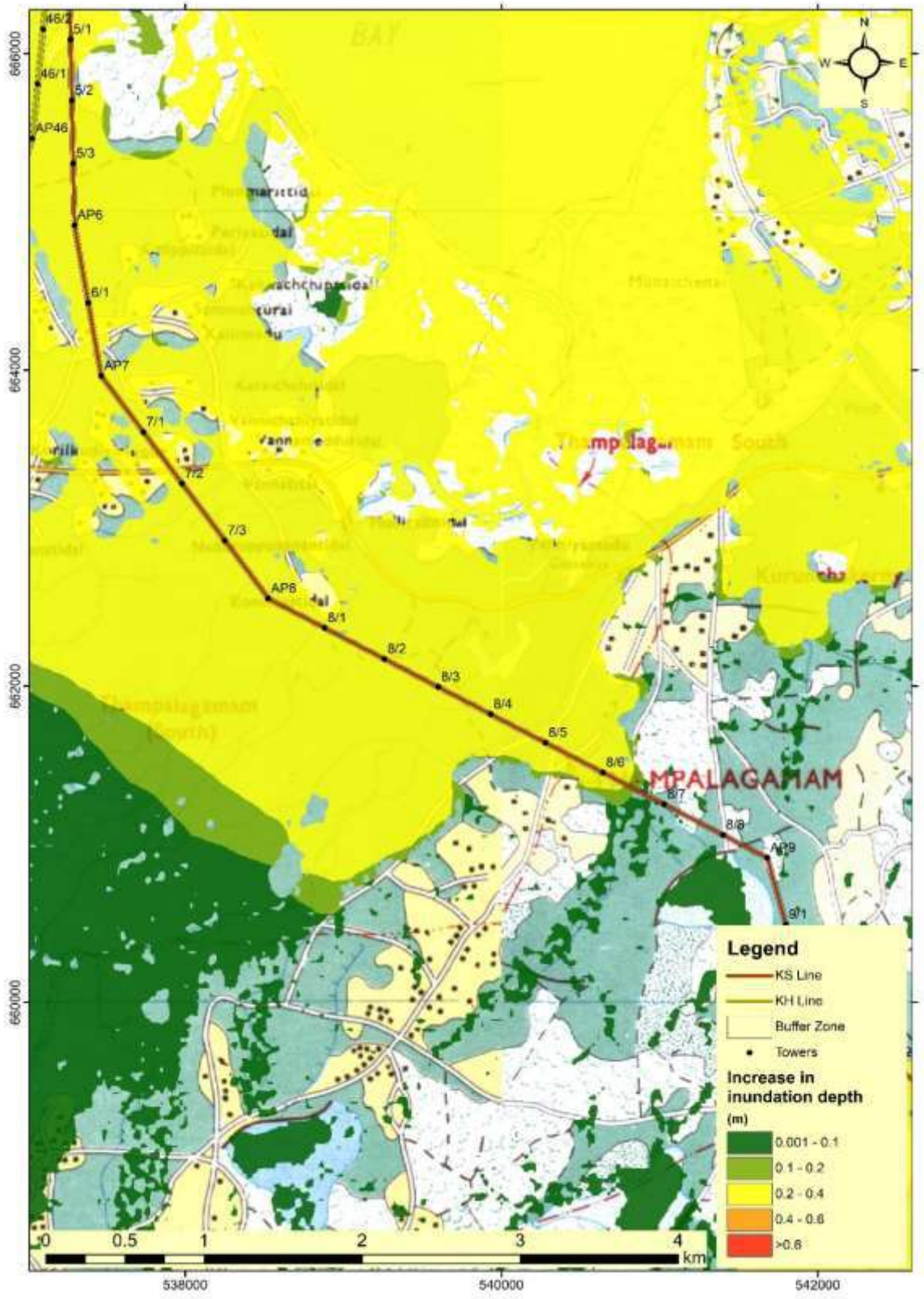


**Figure C21- Increase in Flood Level for 25 Year on RCP 8.5 from BAU – from 6/1 to AP9**

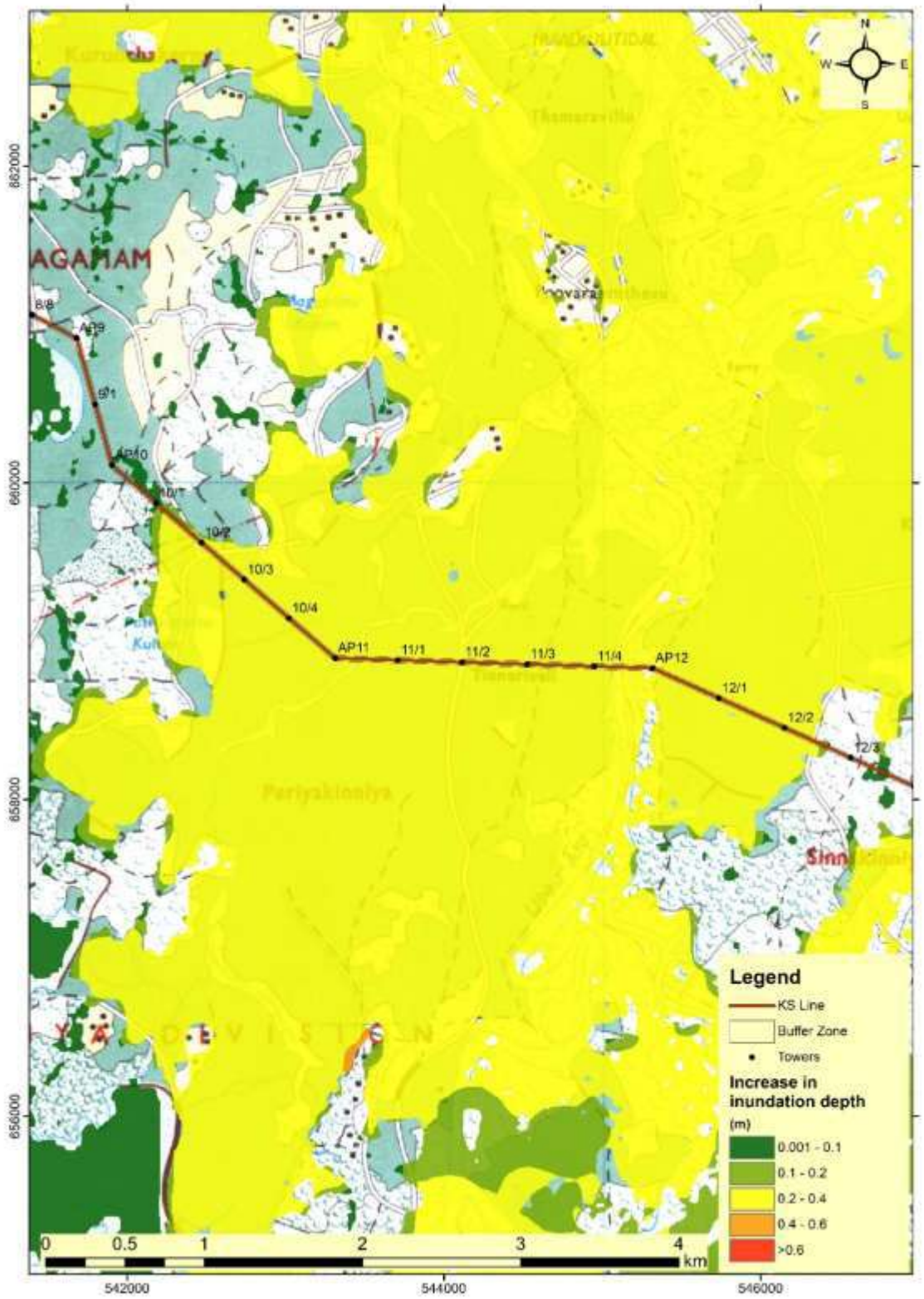


**Figure C22- Increase in Flood Level for 25 Year on RCP 8.5 from BAU – from AP9 to 12/3.**

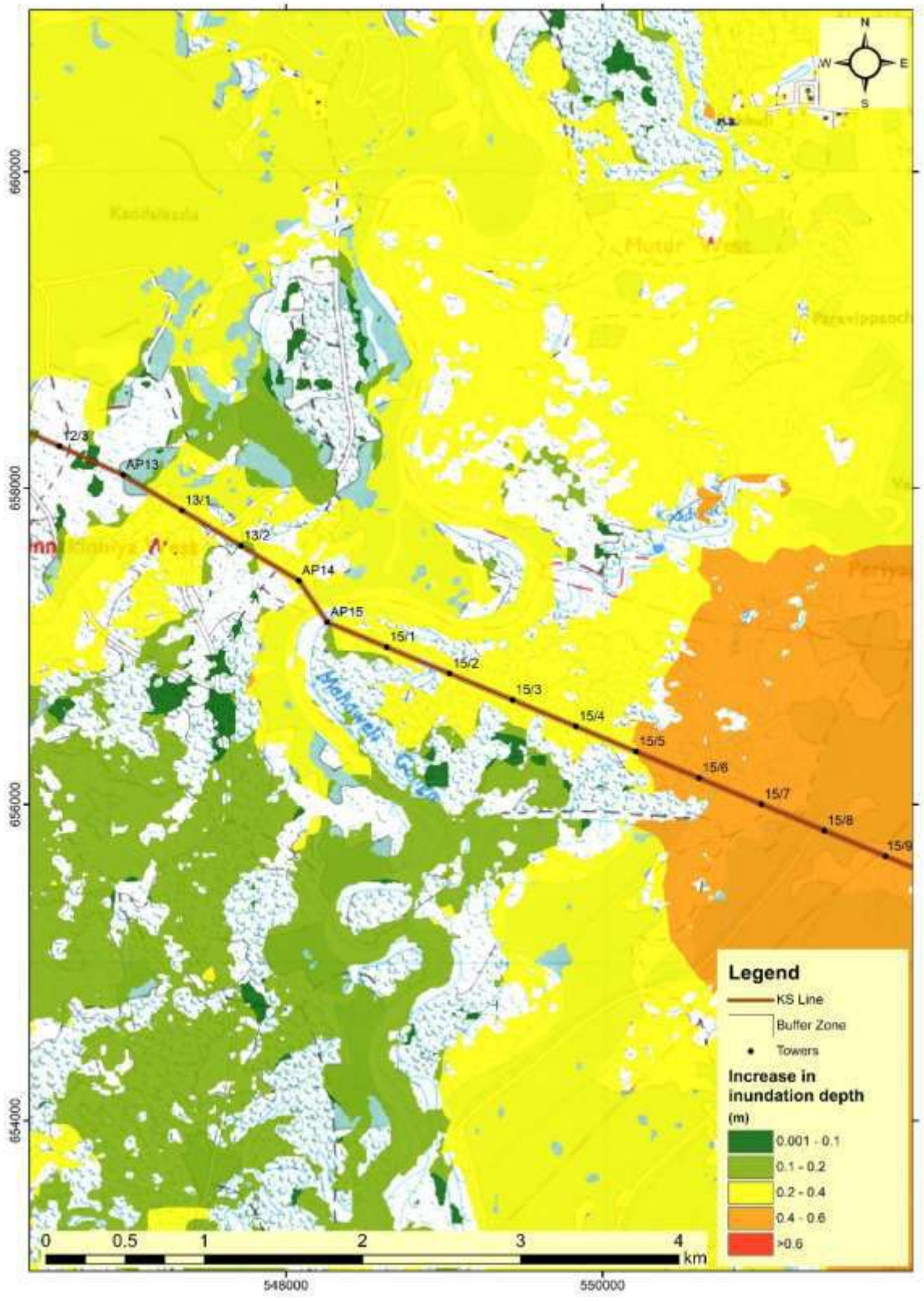


**Figure C23- Increase in Flood Level for 25 Year on RCP 8.5 from BAU – from 12/3 to 15/9.**

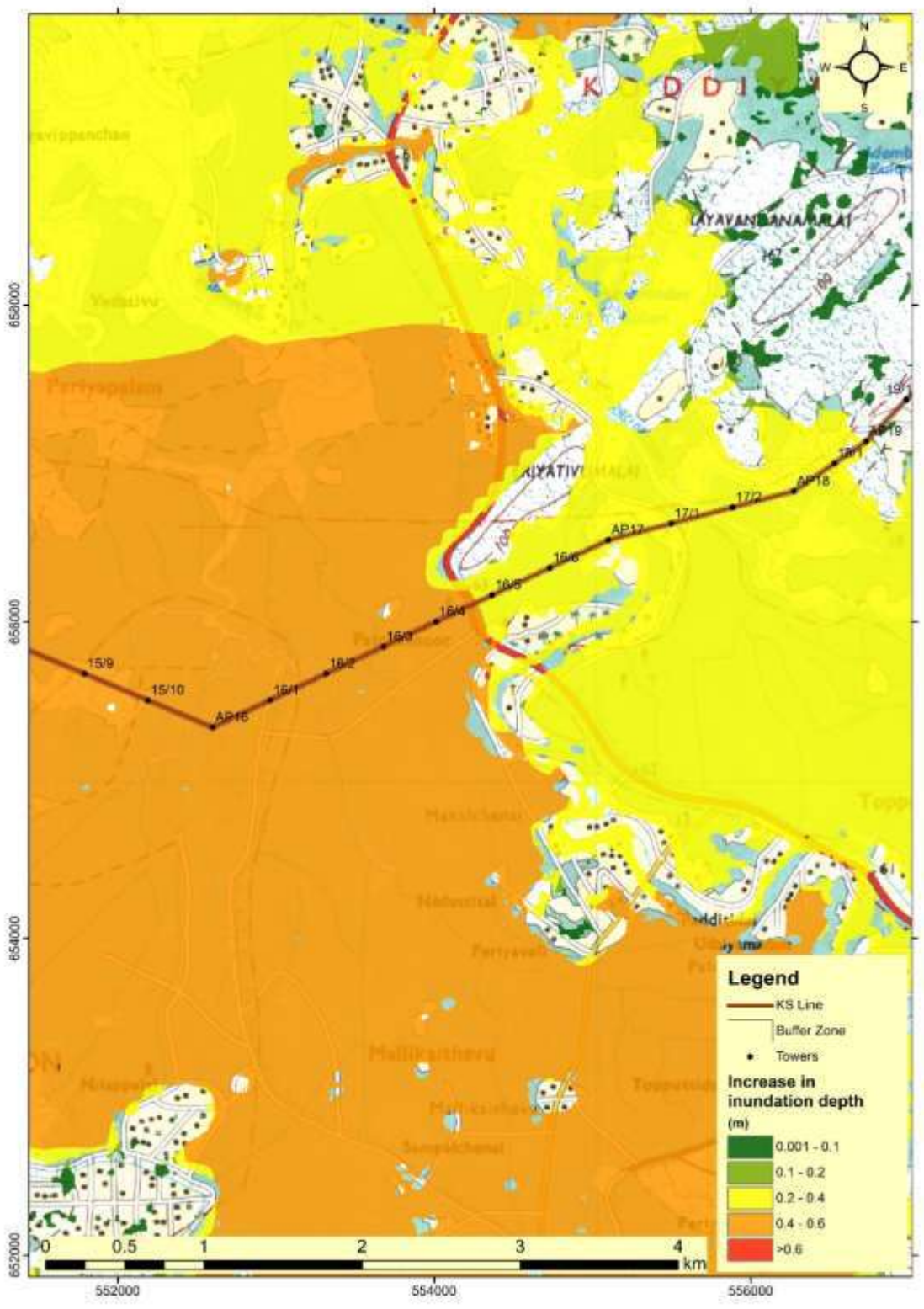


**Figure C24- Increase in Flood Level for 25 Year on RCP 8.5 from BAU – from 15/9 to 19/1.**

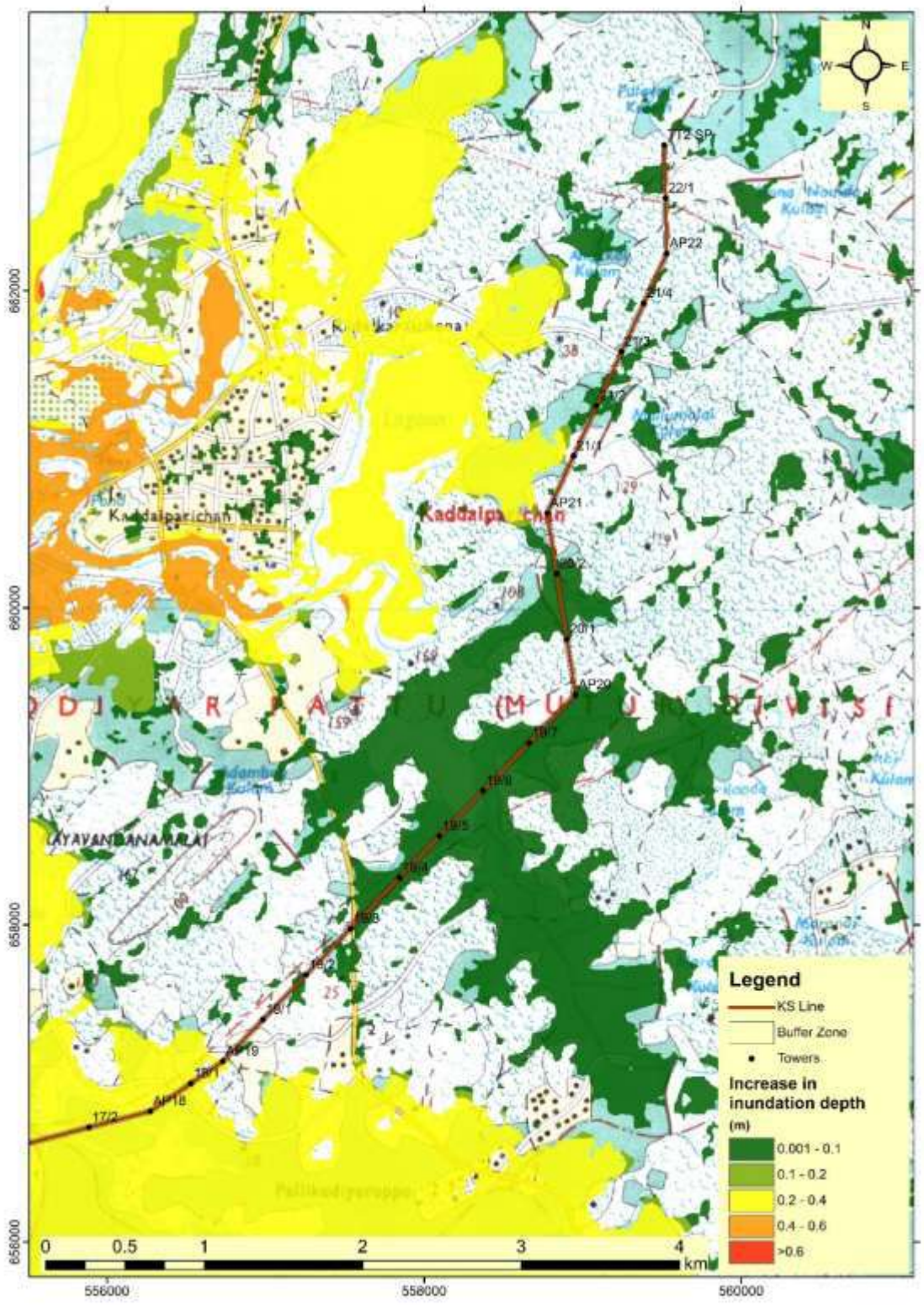


**Figure C25- Increase in Flood Level for 25 Year on RCP 8.5 from BAU – Sampur GSS Site**

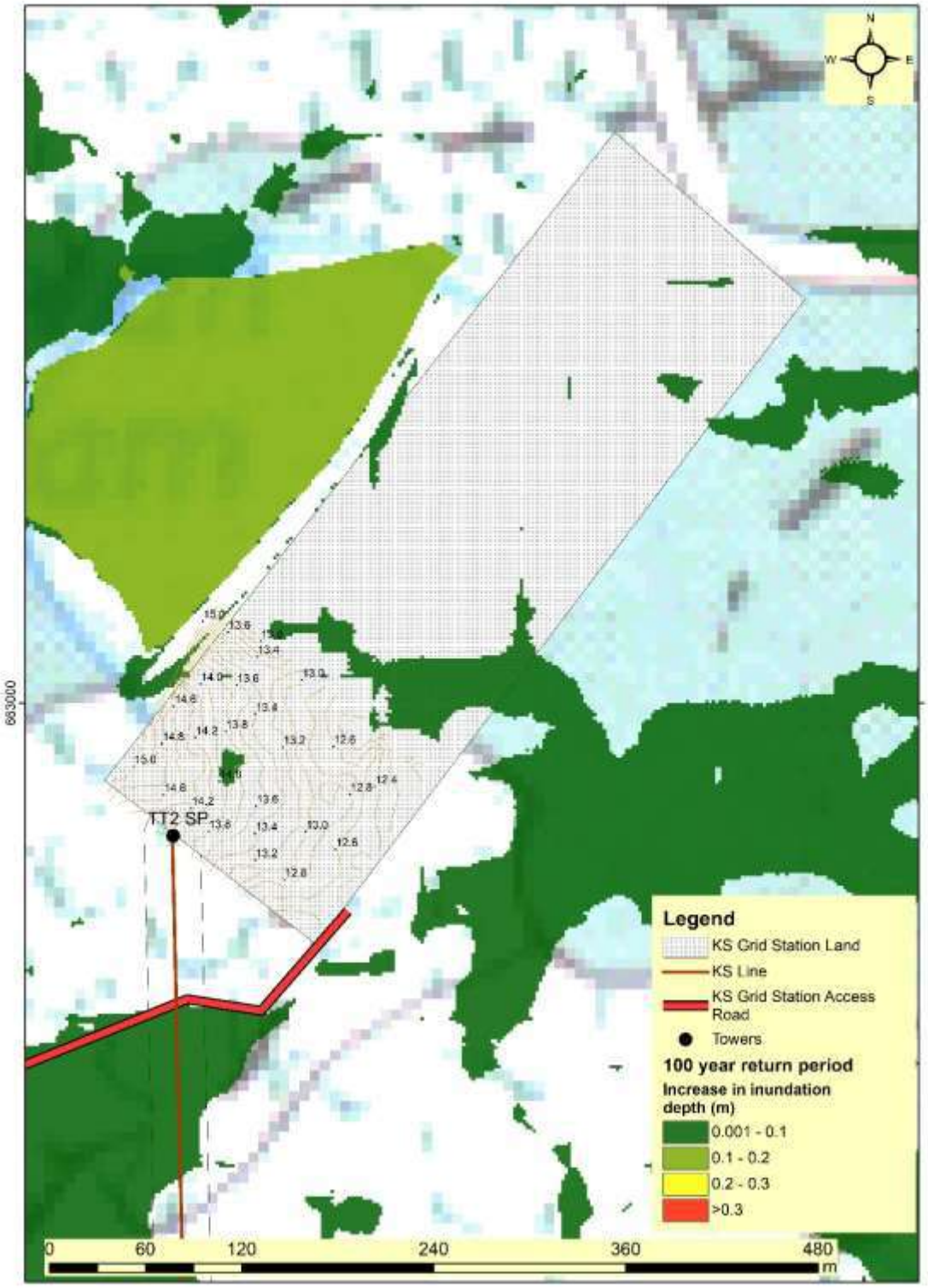


**Figure C26- Flood Level Increase in the Sampur GSS**

## Climate Change Impact

### Impact on the rainfall and Sea Level Rise on Flood Levels

From the analysis of the rainfall, it is seen that there in an increasing tendency of rainfall. The CRIP Report says that the 25 Year rainfall for a six-day design rain is increased by a factor of 8.1 that leads to increase of flood levels. Increased flood level is also connected to the sea level rise as the increased downstream sea level with retard the flood recession. This will cause temporary inundation of the foundations and the steel elements of the pylons for a longer time.

### Increase in Temperature

Studies show an increase in temperature in the Project Area. Such increase of temperature will cause thermal expansion and buckling of steel elements etc.

### Impacts of cyclones

### General

Severe loss or damage due to tropical cyclones could arise from wind, rain and associated floods, coastal erosion, storm surge. Falling trees and flying objects due to strong winds may cause serious loss of life and damage to property. Rain and floods cause loss of agricultural products and damage to public works, highways and property.

During the passage of cyclone low-lying coastal areas may get further affected due to storm surge, a large mass of water, which rises above the normal level of the sea, due to low air pressure within the cyclone and the pilling up of water due to strong winds.

### Wind Damage

**Destruction of Infrastructure**: Cyclones produce extremely strong winds (often exceeding 200 km/h or 124 mph), which can cause widespread damage to buildings, roads, bridges, power lines, and communication networks. The force of the wind can tear roofs off buildings, uproot trees, and cause power outages.

### Flooding

**Heavy Rainfall**: Cyclones are often accompanied by torrential rainfall that can lead to widespread flooding.

### Storm Surge

A storm surge is an abnormal rise in sea level caused by the strong winds and low pressure associated with cyclones. It can result in coastal flooding, inundating low-lying areas and causing significant damage to infrastructure, homes, and agricultural land.

### Infrastructure and Reconstruction Challenges

**Damage to Infrastructure**: Infrastructure such as electricity pylons, grid stations could get damaged. The restoration of essential services can take time.

### Impacts on Climate and Future Risk

**Cyclones and Climate Change**: Climate change is projected to increase the intensity of cyclones due to rising sea surface temperatures and changes in atmospheric patterns. Warmer oceans provide more energy for cyclones, which can lead to stronger storms, larger storm surges, and more intense rainfall.

**Increasing Frequency and Severity**: In some regions, the frequency and severity of cyclones are expected to increase as a result of climate change, further heightening the risks to vulnerable coastal and low-lying areas.

Low-pressure systems typically begin to develop in the northern Bay of Bengal, below the 10°N latitude, during late April or early May. According to historical cyclonic events, these systems can intensify into cyclones as they move northward into the Bay of Bengal above the 10°N latitude.

Later, after November, low-pressure areas again begin to develop in the northern Bay of Bengal, below the 10°N latitude. These cyclonic storms can potentially cross the eastern coast of Sri Lanka.

**Impact on Lightening**

According to research, it is seen that number of lightening streaks increase due to Climate Change, although there are no projected data for Sri Lanka.

**Transmission Line Resilience and Protection Measures for Climate Change Impacts**

**1. Introduction**

The New Habarana-Kappalthurai 220kV Transmission Line is a critical component of Sri Lanka's power infrastructure. Given the impacts of climate change, it is essential to ensure the resilience of the transmission infrastructure to temperature variations, flooding, sea-level rise, and increased lightning activity. This report outlines the technical considerations, resilience measures, and protective mechanisms incorporated in the project to mitigate these environmental challenges.

**2. Resilience of Transmission Infrastructure to Temperature Increase**

**2.1 Pylon Material – Steel Towers**

- The transmission towers are constructed using galvanized high-tensile steel, ensuring superior resistance to corrosion and mechanical stress.
- Galvanization Process: Hot-dip galvanization provides a protective coating, reducing oxidation and degradation due to heat.
- Thermal Expansion: The high-tensile steel conforms to IEC 60826 (Design Criteria of Overhead Transmission Lines) and BS EN 1993-3-1 (Structural Design of Steel Towers) to prevent excessive expansion-related stresses.

**2.2 Foundation Concrete**

- The concrete used in tower foundations is designed for high thermal resistance, preventing cracking due to temperature fluctuations.
- Sulfate-resistant cement is used in areas with saline exposure to mitigate degradation risks.
- Proper curing techniques are followed to enhance structural longevity.

**2.3 Grid Substation Equipment (GSS Elements)**

- Transformers, circuit breakers, and insulators adhere to IEC 60076 (Power Transformers Standard) and IEC 62271 (High-voltage Switchgear and Control gear) for extreme temperature operation.

- Cooling Mechanisms: Oil-filled and air-cooled radiators enhance thermal performance, preventing overheating.

**3. Resilience to Flooding and Sea Level Rise**

**3.1 Pylon Foundation Design for Flood-Prone Areas**

- Geotechnical assessments determine foundation depth, ensuring pylon stability in flood-prone areas.
- Reinforced pile foundations are used where soil conditions are vulnerable to saturation.
- Drainage systems are integrated at the base of transmission towers to prevent water stagnation.

**3.2 Substation Resilience to Flooding**

- Elevated Platforms: Critical substation equipment is placed on elevated platforms to reduce exposure to floodwater.
- Waterproof Enclosures: Transformers and switchgear are enclosed in waterproof housing to prevent damage.
- Drainage Networks: Flood barriers and improved surface drainage systems divert excess water away from substations.

**4. Increased Lightning Strikes and Protection Measures**

**4.1 Lightning Protection for Transmission Towers**

- Optical Ground Wire (OPGW) is integrated to protect conductors from direct lightning strikes.
- The earthing system at each pylon is designed to maintain resistance below 10 ohms, ensuring effective dissipation of lightning energy.
- Where necessary, a counterpoise earthing system will be installed to achieve the required resistance.

**4.2 Insulation and Surge Arresters**

- Polymeric composite insulators and silicone rubber insulators reduce flashovers from lightning surges.
- Surge arresters at substations protect transformers and switchgears from transient overvoltage.

**4.3 Grid Substation Protection**

- Gas-insulated switchgear (GIS) provides superior protection against lightning-induced surges.
- Shielding devices and earthing grids ensure safe discharge of lightning energy.
- At grid substations, the ground resistance is maintained below 1 ohm by installing a copper mesh grounding system.

**5. Compliance with International Standards**

The following standards will be complied with.

- IEC 62305 (Lightning Protection Standards) ensures comprehensive lightning safety.
- IEEE 998 (Guide for Direct Lightning Stroke Shielding of Substations) governs effective shielding measures.

- IEC 60076 and IEC 62271 ensure grid components operate safely under various environmental conditions.

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5. D. Rao; S. K. Dube; P. Chittibabu (1994). "Finite Difference Techniques Applied to the Simulation of Surges and Currents Around Sri Lanka and Southern Indian Peninsula". *International Journal of Computational Fluid Dynamics*. **3** (1): 71-77. Bibcode:1994IJCFD...3...71R. doi:10.1080/10618569408904500.
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# 15.9 Hazard Identification and Risk Assessment (HIRA)

## A. DEFINITIONS

**Hazard:** A Hazard is any condition, situation, practice, or behavior that has the potential to cause harm, injury, disease, death, and property and equipment damage.

**Hazard Identification:** This is the process of examining each work area and work task for the purpose of identifying all the hazards which are “inherent in the job”. Work areas include but are not limited to transmission line corridor including tower foundation locations, access routes, pilot roads, stockpiles, grid locations, waterbodies, paddy fields, etc. Tasks can include (but may not be limited to) using screen-based equipment, audio and visual equipment, industrial equipment, hazardous substances and/or teaching/ dealing with people, driving a vehicle, dealing with emergency situations, construction. This process is about finding what could cause harm in work task or area.

**Category of Hazards:**

- **Physical Hazards:** Mechanical equipment, or machinery that has the potential to cause a disturbance or an adverse effect.
- **Chemical Hazards:** Chemicals, pesticides, or poisons that have the potential to cause an adverse effect.
- **Biological Hazards:** Living organisms such as bacteria, viruses, weeds, or insects that have the potential to cause an adverse effect.
- **Ergonomic Hazards:** An ergonomic hazard is a physical factor within the environment that harms the musculoskeletal system. Ergonomic hazards include themes such as repetitive movement, manual handling, workplace/job/task design, uncomfortable workstation height and poor body positioning.
- **Psychological Hazards:** Psychological hazards include but aren't limited to stress, violence and other workplace stressors. Work is generally beneficial to mental health and personal wellbeing. It provides people with structure and purpose and a sense of identity.
- **Mechanical Hazard:** The hazards that are created as a result of either powered or manual (human) use of tools, equipment or machinery and plant.
- **Electrical Hazard:** The hazard that creates an unsafe condition where a person makes an electrical contact with energized equipment or a conductor.

**Risk:** The likelihood, or possibility, that harms (injury, illness, death, damage etc.) may occur from exposure to a hazard.

**Risk Assessment**: Risk is defined as the process of assessing the risks associated with each of the hazards identified so the nature of the risk can be understood. This includes the nature of the harm that may result from the hazard, the severity of that harm and the likelihood of this occurring.

**Risk Control**: Taking actions to eliminate health and safety risks so far as is reasonably practicable. Where risks cannot be eliminated, then implementation of control measures is required, to minimize risks as far as is reasonably practicable. A hierarchy of controls has been developed and is described below to assist in selection of the most appropriate risk control measure/s.

**Monitoring and Review:** This involves ongoing monitoring of the hazards identified, risks assessed and risk control processes and reviewing them to make sure they are working effectively.

**Normal Condition:** During the routine activities or processes, if any pre-determined risk is coming up.

**Abnormal Condition:** Abnormal events could cause risk or could increase risk consequences of an incident. Some process or activities have greater risk during start-up than when the process is

stabilized.

**Emergency Condition:** Unplanned or unexpected events that need an urgent application of specific competencies, resources, or processes to prevent or mitigate their actual or potential consequences. Emergency condition can result in risk on the organization.

## B. HIRA INTRODUCTION

The process of **Hazard Identification and Risk Assessment** is intended to establish a standard procedure for determining Occupational Health and Safety Risks and their overall significance relating to the organizational activities. Risks arise from the interaction between people, equipment, materials and the work environment. This Procedure is primarily concerned with personal injury and ill health risks and does not address damage to plant and equipment, except when such damage may injure people. The task of risk assessment should involve both identification of the hazards and undertake an evaluation of the impacts of the risks Involved.

To ensure that there is a formal process for hazard identification, risk assessment and control to effectively manage workplace and safety hazards at the construction sites of Sampoor-Kappalthurai and Kappalthurai-New Habarana Transmission Line Project of CEB. A Hazard Identification and Risk Assessment (HIRA) document has been prepared that evaluates risk associated with a specific hazard and is defined by probability and frequency of occurrence, magnitude, severity, exposure, and consequences.

This manual provides in-depth knowledge of the hazards and vulnerabilities that affect construction sites. This document uses an all-hazards approach when evaluating the hazards that affect the construction process, and the associated risks and impacts each hazard presents. This HIRA provides the basic information necessary to develop effective hazard mitigation/prevention strategies. Moreover, this document provides the foundation for ensuring safe construction practices by providing prior knowledge to the construction engineers, workers and the contractors and enlists the preventive actions and precautions that should be taken to prevent their occurrence.

## C. HIRA PROCEDURE

CEB shall constitute a core group for conducting **Hazard Identification and Risk Assessment** of all project activities before the activities are performed at site. The process of Risk Assessment is based on the steps described here.

### 1. Identification of hazards associated with a task or activity, considering the following:

- Look at all aspects of the work.
- Include non-routine activities such as maintenance, repair, or cleaning.
- Look at incident / near-miss records.
- Include people who work "off-site" either at home, on other job sites, drivers, teleworkers, with clients, etc.
- Look at the way the work is organized or "done" (include experience and age of people doing the work, systems being used, etc.).
- Look at foreseeable unusual conditions (for example: possible impact on hazard control procedures that may be unavailable in an emergency situation, power outage, etc.).
- Examine risks to visitors or the public.
- Include an assessment of groups that may have a different level of risk such as young or inexperienced workers, persons with disabilities, or new or expectant mothers.

### 2. Assessment of Risk

Following steps are used to identify, assess and control the identified hazards at workplace:

- Collect information about existing hazards and potential hazards for all the project activities.
- Assess the risk

- Set priorities
- Communicate information about the hazards and risks
- Develop, select and implement controls and monitor their effectiveness.
- Maintain Records.

## Probability

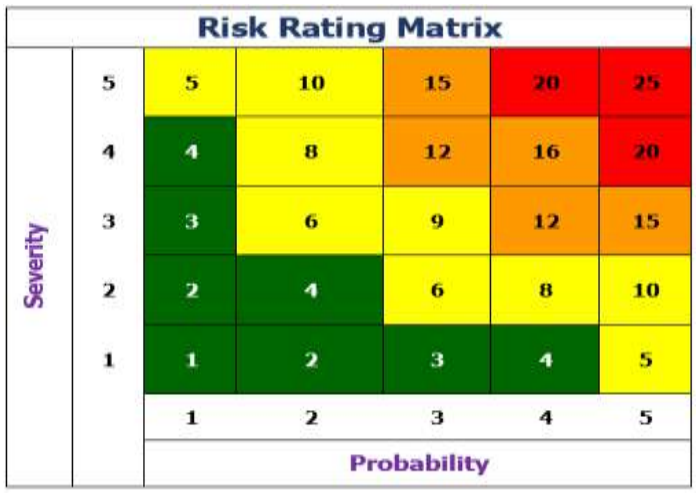
The chance that hazardous event will occur, stated as a score ranging from 1 to 5

| **Probability of an Occurrence (The highest category will always be used)** | | |
|---|---|---|
| **Score Level** | **Descriptor** | **Description** |
| **5** | Very much likely | Happens >12 times per year in our IC |
| **4** | Most Likely | Happened <=12 times per year in our IC |
| **3** | Likely | Happened once per year in our IC |
| **2** | Unlikely | Known to happen in Construction Industry |
| **1** | Most Unlikely | Never happened in Construction Industry |

| **Severity of an Occurrence (The highest category will always be used)** | | | |
|---|---|---|---|
| **Score Level** | **Category** | **Description** | |
| | | **Safety** | **Health** |
| **5** | Catastrophic | Fatality or multiple major injuries. | Fatal diseases |
| **4** | Major Extensive Injuries | Serious injuries or (includes amputations, major fractures, multiple injuries). | Life-threatening occupational disease (occupational cancer, acute poisoning) |
| **3** | Moderate Risk | Injury requiring medical treatment (includes lacerations, burns, sprains, minor fractures). | Or ill-health leading to disability (dermatitis, deafness, work-related upper limb disorders) |
| **2** | Minor | Injury requiring first-aid only (includes minor cuts and bruises). | Ill-health requiring first-aid only (irritation, ill-health with temporary discomfort) |
| **1** | Insignificant | Not likely to cause injury. | Not likely to cause ill-health |

## Severity

The consequence of the hazardous event that causes an effect on human or the environment, stated as a score ranging from 1 to 5




1 – 4 | 5 – 11 | 12 – 16 | 17 – 25 Very

## Risk Rating

The risk is the combination of probability and severity.

- **Risk Rating = Probability × Severity**
- **Maximum Risk Rating = 5×5 =25**

**Insignificant Risk** **Significant Risk**

In HIRA Table

**Insignificant Risk** is indicated as

**Significant Risk** is indicated as

## Insignificant risk/impact levels shall be considered for ALARP level

1. Once the **Probability** and **Severity** have been established, the **Risk / Impact** level can be determined.
2. To determine the **Risk / Impact** level, select the appropriate row for Severity and the appropriate column for Probability; the cell where they intersect indicates the Risk / Impact Level.

## As Low as Reasonably Practicable – ALARP

As Low as Reasonably Practicable (ALARP) used for setting up a value for acceptable risk. The basic idea behind the concept of ALARP is that risk should be reduced to a level that is as low as possible without requiring "excessive" investment. Boundaries of risk that are acceptable, marginally acceptable, and unacceptable shall be established. Between those boundaries, a balance between risk and benefit must be established. If an activity proposes to take a high level of risk, then the resulting benefit must be very high.
Risk matrix can be used to set the boundaries of acceptable and unacceptable risk. The middle squares in such a matrix represent the risk levels that are marginally acceptable. Boundaries for risk as per the risk rating matrix are:

| Risk Range | Risk/Impact Perception | Risk & Impact Category |
|---|---|---|
| 1 - 4 (Low) | Acceptable | Insignificant |
| 5 - 11 (Medium) | Marginally acceptable | Insignificant |
| 12 – 25 (High & Very High) | Unacceptable | Significant |

## Control of Risk / Impact

Based on the level determined, controls should be selected to reduce the **Risk / Impact** level to an acceptable level. This can be done by reducing the **Severity** and/or

**Probability** of **Health & Safety Risks**.

1. As indicated in the risk matrix, when the risk level is **“Very High” or “High”**, effective and practicable risk controls must be implemented to bring down the **“Very High” or “High”** to **ALARP Level “As low as reasonably practicable”**.

2. Environment Impact due to the environment aspects are considered as **“Very High” or “High”** and they are **SIGNIFICANT**.

## Residual Risks Impact

Residual **Risk/Impact** are the risks/ impacts for which the planned Hierarchy of hazard controls are ineffective, and it can be addressed by **Emergency Response Plan** and **Mock Drills.**

## 3. Management of risk when planning work

Risks should be reduced to the lowest reasonably practicable level by taking preventative measures, in order of priority. The table below sets out an ideal order to follow when planning to reduce risk from construction activities. Consider the headings in the order shown, do not simply jump to the

easiest control measure to implement.

## D. Hierarchy of Risk Control

| Sl. No | Hierarchy of Control | Description |
|---|---|---|
| 1. | **Elimination** | Redesign the job or substitute a substance so that the hazard is removed or eliminated. For example, duty holders must avoid working at height where they can. |
| 2. | **Substitution** | Replace the material or process with a less hazardous one. For example, use a small MEWP to access work at height instead of step ladders. Care should be taken to ensure the alternative is safer than the original. |
| 3. | **Engineering Controls** | Use work equipment or other measures to prevent falls where you cannot avoid working at height. Install or use additional machinery such as local exhaust ventilation to control risks from dust or fume. Separate the hazard from operators by methods such as enclosing or guarding dangerous items of machinery/equipment. Give priority to measures which protect collectively over individual measures. |
| 4. | **Administrative Controls** | These are all about identifying and implementing the procedures you need to work safely. For example: reducing the time workers are exposed to hazards (E.g., by job rotation); prohibiting use of mobile phones in hazardous areas; increasing safety signage and performing risk assessments. |
| 5. | **Personal Protective Equipment** | Only after all the previous measures have been tried and found ineffective in controlling risks to a reasonably practicable level, must personal protective equipment (PPE) be used. For example, where you cannot eliminate the risk of a fall, use work equipment or other measures to minimize the distance and consequences of a fall (should one occur). If chosen, PPE should be selected and fitted by the person who uses it. Workers must be trained in the function and limitation of each item of PPE. |

## 4. Review of HIRA Register

HIRA shall be reviewed when:

1. There is a significant change in work processes that could affect **Environment, Occupational Health & Safety**. For example, the introduction of new machinery or change in work procedure.
2. After an **incident** as a result of exposure to a hazard.
3. HIRA shall be revised when there is a change in Legal requirements.
4. There is a change in Project Scope.
5. Based on Incident Potential Rate & Project Risk Index
6. Data analytics on observations and near miss cases
7. Prevailing EHS Culture at Project site.

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 1 | Excavate the earth pit | Physical | **Risk:**<br>Fall of person<br>Fall of materials<br><br>**Opportunities:**<br>Adopting new technology to avoid fall incidents | The person may get injuries and property damage | 4 | 4 | 16 | | | | • Isolate the excavation areas as much as possible to avoid fall of men and animals<br>• Excavate the required size of the pit to construct the earth rod.<br>• After buried the earth rod and constructing the pit and mark it.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures<br>• Appropriate information, instruction and supervision shall be provided to worker.<br>• Wear Appropriate PPE | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 2 | Working at height | Physical | **Risk:**<br>Fall of person<br>Fall of materials<br><br>**Opportunities:**<br>Adopting new technology to avoid fall incidents | The person may get injuries and property damage | 5 | 4 | 20 | | | | • Access to working platforms and the top pulley shall be provided by ladders.<br>• The selection and use of correct access equipment.<br>• Correct provision and handling of tools and materials (especially getting them up and down from work locations).<br>• Nature and duration of the task to be carried out.<br>• Level of competence of the persons to be involved.<br>• Means of access and egress.<br>• Suitability of the equipment to be used, and its maintenance.<br>• Use of working platforms, guard-rails and toe- boards, Weather conditions, Health condition of the individuals (e.g. vertigo or a heart condition).<br>• Compliance with relevant regulations.<br>• Pep talk shall be given before the execution of the work | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | • Adopt safe work systems.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Appropriate PPEs to be provided | | | | | | |
| 3 | Slips, trips, and falls | Physical/ Mechanical | **Risk:** The person may fall.<br><br>**Opportunities:** Ensure proper Housekeeping to maintain clean & neat surrounding. | Damage and loss to Property injury to employees | 5 | 5 | 25 | | | | • Prevent floors from getting wet or contaminated in the first place<br>• Have procedures in place for both routine and responsive cleaning<br>• If a spillage does happen, clean it up quickly<br>• If floors are left wet after cleaning, stop anyone walking on them until they are dry and use the right cleaning methods and products<br>• Look out for trip hazards, such as uneven floors or trailing cables, and encourage good housekeeping by workers<br>• Make sure workers wear footwear that is suitable for the environment they are working in<br>• Make sure flooring is suitable, or floors likely to get wet are of a type that does not become unduly slippery | 3 | 3 | 9 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 4 | Fall of persons inside the trench | Physical | **Risk:** Material or vehicle falling from the sides into any excavation<br><br>People falling into excavations.<br><br>**Opportunities:** Implement Human | Damage to property<br><br>The person may be injured or fatal. | 4 | 3 | 12 | | | | • Ladder shall be used to enter or leave the trench.<br>• Height of the ladder shall extend the ground level by at least 1m.<br>• Barriers should consist of guard-rails (as for a scaffold work platform) to prevent people falling in, and toe- boards to prevent objects being kicked down into the excavation.<br>• Good lighting (both within the excavation and at the edges) and signage should be provided.<br>• Long excavations shall be | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | proximity sensor Barricading | | | | | | | | provided with crossing points (bridges) that should be similarly guarded in with barriers and toe-boards.<br>• Access to the excavation should be achieved by properly positioned and secured ladders.<br>• Ladders should extend five rungs above the edge of the excavation to give a secure stepping-off point. They should be routinely inspected.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 5 | Collapse of soil | Physical | **Risk:**<br>Material or vehicle falling from the sides into any excavation<br><br>**Opportunities:**<br>Adopting new excavation technologies | Damage to property<br><br>The person may be injured or fatal. | 5 | 5 | 25 | | | | • Suitable safety measures, discussed in Trenching Activity, shall be adopted to avoid collapse of soil.<br>• Battering - the sides of the excavation can be sloped back (battered) at an angle that is sufficiently shallow that the soil will not slip.<br>• Shoring - the sides of the excavation can be supported (shored) with metal or timber that is fixed in place inside the excavation<br>• Trench box - the sides of the excavation can be temporarily supported by a metal box that can be lifted into the excavation and moved along to give a protected work area.<br>• Toolbox Talk shall be given | 3 | 3 | 9 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 6 | Ground Water seepage leading to collapse of soil | Physical | | Edge collapse, cave-in | 5 | 5 | 25 | | | | • Dewatering shall be done to prevent water accumulation.<br>• A suitable location for the discharge of pumped water shall be identified.<br>• If water table is high, well-pointing technique can be implemented for dewatering purpose.<br>• Pep talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 3 | 3 | 9 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 7 | Mechanical hazards | Physical/ Mechanical | **Risk:** Crushing<br><br>**Opportunities:** Implement Human proximity sensor | The person may get injury or fatal Property damage | 5 | 4 | 20 | | | | • Control levers are secured in the neutral position and, whenever possible, the power is shut-off whenever winches are left unattended.<br>• When not in use the hammer shall be in dropped position and shall be held in place by a cleat, timber or any other suitable means.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 8 | Falling on exposed rebar | Physical | **Risk:** Falling on personal<br><br>**Opportunities:** NA | The person may get physical injuries or fatal | 5 | 5 | 25 | | | | • Banksman to be present and maintain exclusion zone 2m around auger when working.<br>• No access unless augers stopped<br>• Cause gates to be closed when possible<br>• Cause auger cleaner to be used when practical<br>• Plan traffic and plant movements guided by Banksman.<br>• Unless unavoidable rebar tops below.<br>• Expose bars capped.<br>• Excavator to be used to move concrete hose especially if snagged | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 9 | Contact with Overhead Electrical Lines | Physical / Electrical | **Risk:** The person may affect with the electrocution<br><br>**Opportunities:** Adopting new technologies | The person affects with electric shock | 5 | 4 | 20 | | | | • Minimum clearance between construction machinery and electrical lines shall be maintained as given below:<br>○ 11 kV and below 1.40m<br>○ 33 kV and below 3.60m<br>○ 132 kV and below 4.70m<br>○ 273 kV and below 5.70m<br>○ 400 kV and below 6.50m<br>• If the clearance is less than those specified above, it shall be ensured that the overhead power lines shall be shut down and the residual charges grounded before commencing to use the construction machinery.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines<br><br>Ceylon Electricity Board Act of Sri Lanka |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 10 | Contact with concrete | Chemical | **Risk:**<br>The person exposed to chemicals<br><br>**Opportunities:**<br>Implement Human proximity sensor | The workers affect with skin diseases (contact Dermatitis) | 5 | 5 | 25 | | | | • Provision of Barrier cream for workers to avoid dryness in the skin and ensure that the workers are applying the cream.<br>• Periodical medical check-up shall be carried out to the workers.<br>• Implementation of Job rotation<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to worker.<br>• Goggles shall be used for protecting eyes from dust and alkali resistant (PVC) gloves and gumboots and apron to prevent contact with wet concrete. | 3 | 3 | 9 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 11 | Radiation | Physical | **Risk:**<br>Exposed to UV rays.<br><br>**Opportunities:**<br>Adopting new technologies | The person may affect with thermal radiation | 5 | 4 | 20 | | | | • Cover the area which is exposed to UV rays<br>• Provide the First Aid Kit<br>• Make the Drinking Water facility for operator<br>• Operator shall consume adequate water to avoid bodily water loss due to heat radiation.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 12 | Excessive noise from welding processes | Physical / Psychological | **Risk:** Operator and nearby workers can suffer hearing loss.<br><br>**Opportunities:** Adopting new technologies | The person may affect with temporary or permanent hearing loss such as noise induced hearing loss | 5 | 5 | 25 | | | | • Where possible, control noise at the source.<br>• Provide operators with appropriate hearing protection for the level of noise exposure.<br>• Where necessary, undertake audiometric testing of both the work area and operators and put controls in place.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines<br><br>Noise Regulations of Sri Lanka |
| 13 | Undiscovered buried obstructions and existing piles | Physical | **Risk:** Accidents may occur due to the buried services<br><br>**Opportunities:** Project Pre-planning | During removing the buried services, the person may get physical injuries or fatal Property damage | 5 | 5 | 25 | | | | • Before commencing excavation work, the Site Engineer/ CM/ In-charge shall look for the presence of underground utilities using detectors and checking for the presence of markers & other suitable methods.<br>• Trial pits shall be excavated manually before using the equipment to identify the underground utilities (if any).<br>• Workmen involved shall essentially use safety shoes, electrical safety hand gloves and insulated crowbars & other tools.<br>• Work permit shall be taken & the utility shall be de-energized/emptied and all the safety requirements mentioned in the permit shall be complied with.<br>• In case of underground electrical cables, the cable shall be de-energized and if the excavation is to be done manually, the tools like crowbar, spade, etc. shall be well insulated to prevent electrical | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | shock.<br>• All the exposed underground utilities shall be supported when excavation is open.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 14 | Common Power Tools accidents | Physical | **Risk:**<br>Caught in moving parts, electrical shock, struck by particles, Falling in the work area<br><br>**Opportunities :**<br>Induction Sensors | Abrasions, Cuts, Lacerations, Amputations, Burns, Electrocution, and Broken Bones | 5 | 4 | 20 | | | | • Use the correct tool for the job. Do not use a tool or attachment for something it was not designed to do.<br>• Select the correct bit, blade, cutter, or grinder wheel for the material at hand. This precaution will reduce the chance for an accident and improve the quality of your work.<br>• Keep all guards in place. Cover exposed belts, pulleys, gears, and shafts that could cause injury.<br>• Always operate tools at the correct speed for the job at hand. Working too slowly can cause an accident just as easily as working too fast.<br>• Do not rely on strength to perform an operation.<br>• Before clearing jams or blockages on power tools, disconnect from power source. Do not use your hand to clear jams or blockages, use an appropriate tool.<br>• Never reach over equipment while it is running.<br>• Never disable or tamper with safety releases or other | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | automatic switches.<br>• When the chance for operator injury is great, use a push stick to move material through a machine.<br>• Disconnect power tools before performing maintenance or changing components.<br>• Keep a firm grip on portable power tools.<br>• Remove chuck keys or adjusting tools prior to operation.<br>• Keep bystanders away from moving machinery.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Training shall be conducted in Electrical safety for workers<br>• Wear Appropriate PPE | | | | | | |
| 15 | Risk of falling into water and drowning | Physical | **Risk:** Operatives falling into Water body<br><br>**Opportunities:** Implement Human proximity sensor | Injury and possible fatal | 5 | 5 | 25 | | | | • Working with a partner or team when working around or on water. Preferably at least two people need to be in sight of each other at all times. A rescue vessel may also be required.<br>• Communication devices are necessary, and they must be waterproof, suitable to the area of operation and tested before work commences. There must be an emergency plan, including provision for rescue and contact, if necessary, with the emergency services.<br>• Proper provision must be made for first aid. Specialist training and equipment may be required.<br>• Lifebuoys, meeting an approved standard with a suitable buoyant lifeline of adequate length attached, should be available within around 50m of any working | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
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| | | | | | | | | | | | position where a person could fall into the water.<br>• Suitable personal buoyancy equipment, such as lifejackets, should be provided by employers and worn by everyone at risk.<br>• All electrical installations and equipment should be constructed, installed, operated, protected and maintained to prevent the risk of danger from electric shock or burns. | | | | | | |
| 16 | Constraint space | Ergonomic/ Psychological | **Risk:** Ergonomic factors, such as stresses put on the body from awkward positions, repetitive motions.<br><br>**Opportunities:** Adopting new technologies like robots to work inside Confined Space. | Person may get Musculoskeletal Disorders and work-related stress. | 5 | 5 | 25 | | | | • Implement work /rest schedule.<br>• Adopt safe manual handling techniques.<br>• Job rotation.<br>• All the persons shall be properly trained to work in confined space<br>• One attendant shall be outside for the emergency rescue purpose.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment.<br>• The respirators must be given to the workers. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 17 | Generation of dust | Chemical | **Risk:** Exposure to toxic chemicals/ Dust<br><br>**Opportunities:** Adopting new technologies for dust | Respiratory problems or skin irritation or fatal | 5 | 4 | 20 | | | | • Prior to the disturbance/removal of any identified or suspect hazardous materials, take the necessary precautions to ensure worker and community safety.<br>• Advice the workers do not use any waste chemical containers to use.<br>• Chemical handling and occupational hygiene training | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines<br><br>Interim Standards of Air Quality of Sri |

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| | | | suppression | | | | | | | | must be imparted before the work start.<br>• Ensure that the power equipment which using, it should be well insulated and not to produce any ignition in the hazardous area.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment | | | | | | Lanka |
| 18 | Extremes of Weather (e.g. heat, rain, cold, Fog etc.) | Physical | **Risk:**<br>The person exposed to high temperatures<br><br>**Opportunities:**<br>NA | The person may affect with heat stress, heat stroke, heat cramp, heat exhaustion. The person may affect with frost bite, hypothermia and frost nip | 5 | 4 | 20 | | | | • Get up-to-date information about road and weather conditions.<br>• Avoid driving at extreme weather conditions<br>• Check the wiper condition of vehicles before driving.<br>• Servicing the vehicles according to manufacturers' recommendations<br>For a hot environment:<br>• Provide good workplace ventilation – moving air has a cooling effect.<br>• Insulate heat sources – by lagging hot pipes.<br>• Shield heat sources – to control radiant heat and prevent contact burns.<br>• Provide cool refuges – where workers can escape the heat.<br>• Provide easy access to drinking water or isotonic drinks.<br>• Provide frequent breaks and job rotation.<br>• Provide appropriate clothing for use in the hot work environment | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | | | | | | | but consideration must be given to other workplace hazards.<br>For a cold environment:<br>• Prevent or protect workers from draughts.<br>• Shield/lag extremely cold surfaces.<br>• Provide warm refuges – where workers can warm up.<br>• Provide PPE – such as insulated jackets, trousers, boots, balaclavas, etc.<br>• Provide frequent breaks and job rotation.<br>• Provide easy access to hot food and drinks.<br>• Scrape, salt, or grit icy floors. | | | | | | |
| 19 | Chemicals used as corrosion resistance | Chemical | **Risk:**<br>The person may be exposed to toxic chemicals<br><br>**Opportunities:**<br>Adopting new technologies to identify the toxic atmosphere | The person may affect with skin diseases or respiratory problem or fatal | 3 | 4 | 12 | | | | • Display the Chemical Risk Warning Boards in the store and Designated place.<br>• Training the man force to adopt the safe work practices on chemical Handling.<br>• Make them aware about risk associated with the chemicals what are they handling through safety warning boards and MSDS and Purpose of PPEs.<br>• Label the Containers properly<br>• Instruct the workers do not eat in and around the Chemical storage area.<br>• Provide the Secondary Container and spill drip tray to avoid spill in the workplace.<br>• Chemical handling and Health hygiene training must be provided frequently and keep on increase the awareness on chemical hazards.<br>• Install the fire extinguisher at the chemical storage area.<br>• Ensure that do not store the | 4 | 1 | 4 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines<br><br>CEA guidelines for use of chemicals |

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| | | | | | | | | | | | waste debris and waste materials stored in the stores.<br>• In places where inflammable substances are stored or present all electrical installations shall be explosion proof.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 20 | Gases are stored with incompatible chemicals or in Inappropriate locations. | Chemical | **Risk:** Fire and explosion Gases may explode injuring operators and nearby workers.<br><br>**Opportunities :** Adopting new technologies for storage of chemicals | The person may affect with burn injury or fatal Property damage | 5 | 5 | 25 | | | | • Store gases in accordance with their classification and quantities<br>• Store gas cylinders in well ventilated areas and protected from weather but not at the expense of ventilation.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 21 | Road Traffic | Physical | **Risk:** The risk to members of public.<br><br>**Opportunities:** Traffic Management Plan | The people may have injured or fatal Property damage | 5 | 4 | 20 | | | | • Implement Traffic Management Plan requirements with respect to the roads and locations of work.<br>• Designated pedestrian walkways and vehicle routes are provided, with appropriate markings, barriers, signage and lighting for each.<br>• Vehicles are suitable for their intended use and environment and are maintained in safe working order.<br>• Drivers are appropriately qualified, medically fit and given | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | | | | | | | information, instruction, training and supervision.<br>• Lighting is essential for safe movement through a workplace, so lights should be routinely inspected and replaced/repaired, as necessary.<br>• Regular inspection and monitor the systems. | | | | | | |
| 22 | Oxygen deficient atmosphere inside confined space | Chemical | **Risk:** Asphyxia due to breathing oxygen-depleted air.<br><br>**Opportunities:** Adopting new technologies like robots to work inside Confined Space. | The person may have breathing problem or fatal | 5 | 5 | 25 | | | | • The air in a confined space must be tested first for oxygen, then for flammable or combustible gases and vapours, and then for toxic gases and vapours. Before the monitoring process begins, the employer must understand when an employee is considered to be exposed to a hazardous substance.<br>• the confined space for hazardous gas, fume, vapour, dust, and the concentration of oxygen<br>• the gas-purging of toxic or flammable substances with air or inert gas such as nitrogen<br>• the provision of good ventilation sometimes by mechanical means<br>• the stipulation of a minimum gang size for large, confined spaces such as reservoirs details of any information required by the workforce<br>• the methods of communication between people inside, from inside to outside and to summon help in an emergency<br>• Ventilation by a blower or fan may be necessary to remove harmful gases and vapours from a confined space.<br>• All the persons shall be properly trained to work in confined space<br>• One attendant shall be outside for | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | | | | | | | the emergency rescue purpose.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment.<br>• The respirators must be given to the workers. | | | | | | |
| 23 | Contact with micro-organisms, such as viruses, bacteria, or fungi etc. | Biological | **Risk:** Exposure to pathogenic micro-organisms, Leptospirosis<br><br>**Opportunities :** Related Vaccination drives | Fungal infections, tetanus, Weil's disease, and pigeon droppings. The person may affect with infectious diseases, dermatitis, or lung conditions such as hypersensitivity pneumonitis. Sewers, grain silos and manure pits are examples of confined | 5 | 5 | 25 | | | | • Ensure that the Oxygen Level should be not less than 19.5%.<br>• Before commencing the work, using of Gas detectors to ascertain the Toxic gases like Methane, and appropriate measures should be taken.<br>• Ensure the oxygen content of the area if it deficient of oxygen then oxygen supply must give continuously during the course of work.<br>• Medical check-up of the person must be done for using the respirators.<br>• All the persons shall be properly trained to work in sewage tanks.<br>• One attendant shall be outside for the emergency rescue purpose.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | spaces where biological hazards may be present. | | | | | | | • The respirators must be given to the workers. | | | | | | |
| 24 | Moving parts and flying particles | Physical/ Mechanical | **Risk:** The person may get entanglement<br><br>**Opportunities:** Implement Human proximity sensor | A worker may be injured by back-and forth or up-and-down motion when struck by or caught between moving and stationary parts | 5 | 5 | 25 | | | | • Suitable Measures shall be taken to avoid accidental contact with moving wire rope and rotating parts of the winch and the engine.<br>• The exposed rotating parts of the crane shall be shielded and ensure that crane is equipped with back horn.<br>• Trained person must be deployed for signaling the crane operator and ensure that there is no movement of workmen within the swing area of the crane.<br>• No workman is allowed to go inside shaft for guiding the crane operator for placing the machine/pipes, if it is necessary, the person shall be trained.<br>• The precautionary measures FRP Ladders, Cranes/hydra cranes/hydraulic lift trolley truck or tractors are to be dealt with banks man, ensure de-energizing the power source while working underneath any live cable with PTW system.<br>• PVC, Latex, or rubber gloves shall be used for hand and wrist protection<br>• Safety goggles shall be used for protection of eyes from high-speed splatters from the nozzle | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| 25 | Generation of waste oil | Physical/ Chemical | **Risk:** Fire hazards as a result of spills and leaks of inflammable liquids that may ignite to contact with open flames.<br><br>**Opportunities:** Adopting new technologies for recycling | Property damage The person may affect with the burn injury | 3 | 3 | 9 | | | | • Review project specifications and drawings to determine if there are any operations that may generate hazardous waste or utilize hazardous materials<br>• Ensure that all potential impacts associated with hazardous waste or hazardous materials are properly identified and managed<br>• Identify waste minimization programs<br>• Ensure required plans are developed, implemented, and maintained<br>• Ensure all monitoring equipment is properly calibrated and maintained<br>• All employees must be trained on the proper use, storage, labeling, and disposal of chemicals in the workplace<br>• All chemicals must be properly labeled<br>• All information contained on labels must comply with State and local laws and/or regulations and include the identity of the chemical products or substances in the container, hazard warnings and names and addresses of the manufacturer or the responsible parties<br>• Educate the employees via monthly toolbox talks regarding hazardous waste and waste management on the project site<br>• Required daily/ weekly /quarterly inspections<br>• Train the persons in fire safety.<br>• Wear appropriate PPE. | 2 | 1 | 2 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| 26 | Welding on wet or poorly insulated floor | Physical | **Risk:** Operator can receive an electric shock<br><br>**Opportunities:** Ensure proper Housekeeping to maintain clean & neat surrounding | The person may affect with fibrillation followed by cardiac arrest, muscular contraction or fatal | 5 | 5 | 25 | | | | • Diesel Generator (if used) shall be provided with neutral earthing.<br>• Power supply for the welding machine shall be through RCCB/ELCB of sensitivity rating 30mA and if the machine is having metallic body, should be earthed.<br>• Power supply shall be tapped from IP 55 distribution board.<br>• Primary terminals on welding shall not be exposed; they shall be closed completely.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 27 | Personal protective equipment / Inadequate or unsuitable equipment | Physical | **Risk:** The person contacts with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.<br><br>**Opportunities:** NA | The workers may affect with communicable diseases or injury or fatal | 5 | 4 | 20 (VH) | | | | • Ensure the operatives to be supplied with and to wear suitable, Head, Foot, Ear protection, Overalls and any other protective equipment identified in this risk assessment associated with the work.<br>• Use of appropriate personal protective equipment and replace as necessary.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers | 4 | 2 | 8 (M) | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 28 | Failure of Lifting Tackles | Physical/ Mechanical | **Risk:** Crane may collapse.<br><br>**Opportunities :** Automated Fail-Safe mechanism | Serious physical Injury, Fatality | 5 | 5 | 25 | | | | • Check for the lifting point for its strength and to be inspected by competent person prior to lift<br>• Lifting plan if it is heavy load, odd load, tandem lifting.<br>• Do not attach any substandard components to lifting gears.<br>• Ensure that safe rigging practices are adopted under competent person.<br>• Certified Operator, Cranes, Equipment and Lifting Tackles to be used.<br>• EHS shall check and verify the load chart rating prior to heavy lift.<br>• Do not carry out the lifting operation in adverse weather conditions.<br>• Lifting activity to plan to minimize risk of exposure to workmen below /Working under suspended load to be avoided.<br>• Ensure that the area below is secured with barricade and safety signage posted.<br>• Tag line having sufficient length to be provided to guide the formwork material without coming under suspended load.<br>• Closed supervision for the activity. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 29 | Incompetent operator, Uncertified lifting tools and equipment, | Physical Mechanical | **Risk:** Improper rigging and lifting operations which leads to accidents.<br><br>**Opportunities:** NA | The person may affect with fracture or fatal | 5 | 4 | 20 | | | | • All the lifting and tackles to be certified by the Govt. Approved Third Party/Competent Person.<br>• Thorough inspection by responsible person periodically before and after the task.<br>• Select the suitable type of crane with appropriate tools and tackles for handling the materials.<br>• The mobile crane shall only be operated on a firm, level ground that adequately supports the | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | | | | | | | weight of the crane and loads.<br>• Before lifting, fully extend outriggers and ensure their stability on the ground.<br>• The weight of the load shall not exceed the Safe Working Load.<br>• Never abruptly swing or stop the crane.<br>• Loads shall not be dragged on the ground.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Conduct periodical Mock Drill at site<br>• Use of appropriate personal protective equipment. | | | | | | |
| 30 | Potential to cause harm, leads to panic situations, chances of turning into the real critical situation | Physical / Chemical / Biological | **Risk:** Misunderstanding of the situation, public disturbance, negative reactions from the public, media, Incidents<br><br>**Opportunities:** Adopting new technologies | The person may get physical injuries, fatal injuries, electrical shock, Property damage, environmental damage, social disturbances, chances of losing reputation, Business loss | 5 | 5 | 25 | | | | • Pre-intimation shall be given/provided to the people in neighborhood before conducting the mock-drill.<br>• Emergency equipment using for the mock-drill must be sound in condition and shall be inspected before the mock-drill.<br>• Permissions shall be attaining from the relevant government authorities.<br>• Conducting the mock drill in presence of government bodies such as Police Department, Fire Department, and CEA.<br>• Practice drills for the identified emergency situations, including rescue operations shall be undertaken<br>• Steps shall be taken to ensure that every person on site, aware | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

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| | | | | | | | | | | | of the emergency steps to be followed and that emergency drills are tested periodically.<br>• Providing necessary arrangements such as fire extinguishers, first aid, medical facility, ambulance<br>• Understanding Legal and Other Requirements<br>• Addressing residual risk | | | | | | |
| 31 | Harm to wildlife from construction activities<br><br>And<br><br>Harm to employees from wildlife | Physical | **Risk:** Un-identification of animals and their behaviours Hunting and pouching<br><br>**Opportunities:** N/A | Damages to elephants and other wild animals Disturbances to animals' movements | 5 | 4 | 20 | | | | • Consult DWLC and seek help during working time<br>• Activities should not be carried out after sunset or before sunrise<br>• Check for the environmental condition<br>• Ensure that the adequate buffer is maintained from the working place to animal corridors<br>• Animal crossings and corridors should not be blocked<br>• No poaching should allow<br>• Adopt safe working procedures<br>• Pep talks shall be given before activities<br>• An emergency vehicle shall be kept at site all the time<br>• Train the people with first aid and make them available at the site<br>• In case of attack, first aid should be administered and taken to the nearest hospital<br>• Workers who engage in the field activities should be made aware on the associated risks and instruct to wear required PPEs such as gumboot, helmets, gloves, and long sleeves shirts and trousers to cover body parts | 2 | 2 | 4 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>FFO of Sri Lanka |

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| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 32 | Snake Bites/Insect bites | Biological | **Risk:** Un-identification of snakes/insects and their behaviours Mis-judgements<br><br>**Opportunities:** N/A | Injuries and fatal | 5 | 4 | 20 | | | | • Consult DWLC and seek help during working time<br>• Activities should not be carried out after sunset or before sunrise<br>• Check for the environmental condition<br>• Use chemical repellent to avoid snakes at site<br>• Ensure that the adequate lighting is provided at the site<br>• Adopt safe working procedures<br>• Pep talks shall be given before activities<br>• An emergency vehicle shall be kept at site all the time<br>• Train the people with first aid and make them available at the site<br>• In case of snake bite, first aid should be administered and taken to the nearest hospital<br>• Workers who engage in the field activities should be made aware on the associated risks and instruct to wear required PPEs such as gumboot, helmets, gloves, and long sleeves shirts and trousers to cover body parts | 3 | 2 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>FFO of Sri Lanka |
| 33 | Serpents and venomous insects | Biological | **Risk:** Un-identification of insects and their behaviours<br><br>**Opportunities:** N/A | Dizziness, mental confusion, faintness, collapse and shock bleeding from the mouth, nose and wounds or fatal | 5 | 2 | 10 | | | | • Storage spaces to be kept clean and well ventilated<br>• Periodical Sprinkling to contain insect menace<br>• Drinking water to be distinctly identified, Containers need to be cleaned and kept covered<br>• High level of Cleanliness to be maintained for working & lay down areas<br>• Frequent maintenance of sewage lines, Toilets<br>• Ensure food items are kept protected<br>• Adopt permit to work system.<br>• Adhere to the safe operating | 3 | 2 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>FFO of Sri Lanka |

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| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | procedures.<br>• Training shall be conducted in work at height for workers<br>• Pep talk shall be given before the execution of the work<br>• Provision of appropriate PPE | | | | | | |
| 34 | Working alone | Physical | **Risk:** loneliness, sleepiness, laziness, boredom<br><br>**Opportunities:** Concentrate on the job | Accidents and injuries | 5 | 3 | 15 | | | | • Eliminate\avoid person working alone<br>• Ensure first aid and emergency communication suitable for lone workers is available, and regular contact e.g. every 2 hours between the lone worker and supervisor by either telephone, two-way radio or an agreed 'check in' procedure.<br>• Check a lone worker has returned to their base or home on completion of a task.<br>• Arrangements for regular voice contact between the lone worker and the supervisor automatic warning devices to alert others if a specific signal is not received from the lone worker action<br>• Arrangements for working alone should be agreed in consultation with contractors, health and safety representatives and workers.<br>• Appropriate information, instruction, training and supervision shall be provided to the workers<br>• Implement the safe system of work in forest. | 3 | 2 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 35 | Working at night | Physical | **Risk:** Poor Illumination**,** loneliness, sleepiness, laziness, boredom, long working hours | Accidents Injuries Low productivity Long-term illnesses | 5 | 3 | 15 | | | | • Artificial lighting shall be provided for the work.<br>• Increased visibility of work vehicles, equipment, materials, hazards.<br>• Be caution with the insects and animals in the forest. | 3 | 2 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | **Opportunities:** N/A | | | | | | | | • Provide good meals facilities for night/shift workers<br>• Appropriate information, instruction, training and supervision shall be provided to the workers<br>• Wear appropriate PPE. | | | | | | |
| 36 | Water Logging | Physical | **Risk:** Drowning, Soil collapse, trapping in muds<br><br>**Opportunities:** N/A | Drowning Accidents Vehicle breakdowns | 4 | 3 | 12 | | | | • Placing of bright Warning signs at invisible trench/ ditches/ drains/ pits.<br>• Removing and cleaning of Debris to avoid overflow drains/ chocked drains.<br>• Prevent Stagnation of water<br>• Housekeeping and Making access obstacle free<br>• Issue permit to work system<br>• Adopt safe operating procedures.<br>• Appropriate information, instruction, training and supervision shall be provided to the workers<br>• Wear appropriate PPE. | 2 | 3 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 37 | Lightning strikes/ | Physical and Ergonomics | | Fatal Injuries Property damages | 5 | 4 | 20 | | | | • Prevent movement of personal outdoors during lightning<br>• Ensure structures near shelters are earthed for lightning protection<br>• Avoid movement near trees when high speed winds are blowing<br>• Chemicals to protected from water ingress to avoid any undesirable chemical reaction<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Training shall be conducted in work at height for workers<br>• Pep talk shall be given before the execution of the work<br>• Provision of appropriate PPE | 3 | 2 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 38 | Site Security | Physical | **Risk:** Lack of safety for men, material, money, machinery, etc<br><br>**Opportunities:** Searching new method of increasing security including administrative controls | Robbery<br>Loss of property<br>Injuries | 4 | 5 | 20 | | | | • High standard of site security shall be established and maintained at all times because the Public, and in particular, Children are curious to the work and it can be ignorant of potential hazards which exist.<br>• The demolition site shall be segregated from the public by erecting effective barrier.<br>• Don't allow unauthorized person in the site<br>• Appoint a site security person and ensure that the person full time at the site.<br>• Appropriate information, instruction and supervision shall be provided to workers.<br>• Ensure all permits and legal requirements are in place<br>• Place of Warning sign wherever it is necessary. | 2 | 2 | 4 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines<br><br>Penal Codes of Sri Lanka |
| 39 | Health hazard | Biological | **Risk:** Spreading of diseases<br><br>**Opportunities:** N/A | Illnesses (short terms and long term)<br>Accidents<br>Injuries<br>Fatal<br>Loss of productivity | 3 | 2 | 6 | | | | • Pre-employment medical checkup has to be carried out.<br>• Enforce the personal hygiene standards at site level.<br>• No persons are allowed to take food in the working area.<br>• Provision of hand wash to the workers and ensure that hand washing practices among workers.<br>• Air quality is to be maintained in the shaft during the operation, if required artificial breathing system shall be provided to the people working inside the shaft<br>• Suitable control measures shall be taken to protect the operators/workmen from the injuries caused by vibration and Heat effects as well (Deploying workmen in shift basis can one of | 2 | 2 | 4 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | the solutions)<br>• Sufficient Illumination shall be ensured during the night time works.<br>• Breathing mask shall be used for protection against small sand particles/powder entering into our airways.<br>• Periodical medical check up to the workers.<br>• Appropriate information, instruction on health hygiene standard and supervision shall be provided to workers | | | | | | |
| 40 | Gender based Violence in Site | Physical Psychological | **Risk:** Risk factors that increase the potential for GBVH in construction include:<br>• Large-scale influx of transient male workers into small and often rural host communities with low capacity to absorb the sudden increase of workers.<br>• Remote locations where people have limited access to resources to report GBVH and receive support.<br>• Presence of security | • Reduces workers' physical and emotional wellbeing and weaken occupational health and safety (OHS).<br>• Face with reputational damage, financial risks and legal liabilities for companies, investors and construction contractors.<br>• Poor relationships and social license to operate in communities. This can | 4 | 4 | 20 | | | | • Conduct worker awareness on prevention of Gender Based Violence (GBV)<br>• Worker Code of Conduct should be included as part of the employment contract - that defines workers' commitment in attitudes and behaviour preventing, combating and responding GBV.<br>• Ensure codes of conduct are publicly disclosed in local languages and are widely accessible to all workers and all groups of people in project areas<br>• Contractor will implement robust measures to prevent sexual harassment/GBV including training of workforce and sanctions for non-compliance (e.g. termination).<br>• Implement proper job-related health protection plan<br>• No drugs and alcohol use allowed within working area<br>• Give due respect to all women, children below age 18years and men without considering their race, country, religion, caste, | 2 | 3 | 6 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines<br><br>AIIB Policies |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | personnel, who can provide protection but can also abuse their positions of power and status to perpetrate GBVH.<br>• Male workers transporting goods (e.g. truck drivers), who can perpetrate GBVH on routes and at truck stops associated with the project, even if not on the project site.<br>• Poorly designed or maintained physical spaces on project sites and in worker accommodation for example bad lighting in and around grounds and access routes. | result from irregular dialogue to understand and track project GBVH risks as well as the ineffective use of measures to prevent and respond to GBVH.<br>• Narrow the pool of potential workers that companies can draw upon, including women workers from nearby communities, because of lower perceived risk of GBVH | | | | | | | colour, politics, etc<br>• Provide safe, secure and separate living spaces for male and female construction workers.<br>• Provide lighting around project sites, including around latrines and access routes.<br>• Install separate, lockable latrines for female construction workers<br>• No child labour and prevent from physical assault allowed in the work sites<br>• Develop confidential grievance reporting, referral and support systems for workers.<br>• Establish safe, confidential and accessible grievance mechanisms for local communities.<br>• Include options to report anonymously if preferred.<br>• Consider engaging expertise to conduct mappings of formal services (healthcare, counselling) and informal resources (including through womens' organisations) to support those who have experienced GBVH.<br>• Deliver periodic mandatory training on GBVH to all workers, including contractors, subcontractors and core suppliers, as well as relevant consultants and clients.<br>• Consider engaging expertise (e.g. from local women's rights organisations or NGOs working on GBVH) to conduct awareness campaigns to provide information to local communities, such as what is unacceptable behaviour and how to report an incident of GBVH | | | | | | |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 41 | Dehydration | Biological | **Risk:** Leading to illnesses and reduce productivity<br><br>**Opportunities:** N/A | Illnesses (short terms and long term)<br>Loss of productivity | 4 | 3 | 12 | | | | • Workmen shall consume adequate water to avoid bodily water loss due to heat radiation.<br>• Provide good workplace ventilation – moving air has a cooling effect.<br>• Insulate heat sources – by lagging hot pipes.<br>• Shield heat sources – to control radiant heat and prevent contact burns.<br>• Provide cool refuges – where workers can escape the heat.<br>• Provide easy access to drinking water or isotonic drinks.<br>• Provide frequent breaks and job rotation.<br>• Provide appropriate clothing for use in the hot work environment but consideration must be given to other workplace hazards | 2 | 2 | 4 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 42 | Extreme temperature | Physical / Psychological | **Risk:** The person exposed to high temperatures<br><br>**Opportunities :** Adopting new technologies & Job rotation | The person may affect with heat stress, heat stroke, heat cramp, heat exhaustion. The person may affect with frost bite, hypothermia, and frost nip | 5 | 4 | 20 | | | | • Implement heat stress management program at site.<br>• Ensure that water supply is always maintained.<br>• Follow the rest rotation<br>• Provide forced ventilation to keep temperature in control inside confined space to go unheard<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 43 | Cable Termination | Physical/ Electrical | **Risk:** Cut, Flying particles, Electric Shock<br><br>**Opportunities :** Induction Sensors | The person may get injuries | 4 | 5 | 20 | | | | • A tagging system and labelling scheme shall be devised to avoid looping or wrong terminations.<br>• Cable shall be handled after disconnecting mail line.<br>• The Power Supply for all the power tools shall be taken through RCCB set at 30mA Sensitivity.<br>• Wires should be cut at right angles.<br>• Pliers or wire cutters that have a grip span of 6 cm-9 cm (2 1/2- 3 1/2 in.) shall be used to prevent palm or fingers from being pinched.<br>• Adjustable pliers that allow the person to grip the work piece firmly while maintaining a comfortable handgrip.<br>• Make sure that the cutting edges of the tools are sharp.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to worker.<br>• Safety glasses or goggles, or a face shield (with safety glasses or goggles) shall be provided to the workmen whenever there is a potential hazard from flying particles, pieces of wire, etc. | 4 | 2 | 8 (M) | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 44 | Lack of, or poorly maintained, emergency management plan and emergency | Physical | **Risk:** Operators cannot effectively respond in emergency such as | The workers will receive burns or fatal injuries. | 5 | 5 | 25 | | | | • Ensure the workplace has fire safety equipment such as alarm systems, fire extinguishers, hydrants, hoses, and fire blankets.<br>• Regularly inspect and test fire safety equipment as per | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | equipment (Including lack of training on How to use it). | | explosions or fire,<br><br>**Opportunities :**<br>Implementation of Off-Site & On-Site emergency plan | | | | | | | | equipment requirements.<br>• Have an emergency plan in place<br>• Ensure workers have been trained in emergency procedures.<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | | | | | | |
| 45 | Breakdown of vehicles | Physical | **Risk:**<br>Hit with other vehicles or people.<br><br>**Opportunities:**<br>NA | The person may get physical injuries or fatal Property damage. | 4 | 3 | 12 | | | | • Minimum visual inspection – Oil level, fuel level, air check, lights, indicators, viper, brakes, clutch Accelerator, Engine Sound, Doors, windshield and mirrors etc. to be done by the driver before start of the vehicle for the day.<br>• Always inform to Admin or immediate superior about travel destination and arrival time. (call or text immediately when reached destination)<br>• Have the spare wheel ready and other accessories and ensure for all the necessary things to use in case of vehicles break down.<br>• Driver shall ensure that emergency servicing kit (including of tools and jack, spare wheel).<br>• Before and after the journey, driver sure nuts are tight, stop and check them again after about 50 km.<br>• Servicing the vehicles according to manufacturers' recommendations<br>• Periodical check of vehicles' oil, water, tyre pressures and general cleanliness on a monthly basis, | 4 | 1 | 4 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | then record the inspections.<br>• Compliance to maintenance schedules as per vehicles' manuals. | | | | | | |
| 46 | Passenger safety | Physical | **Risk:**<br>The driver may hit with other vehicles or people.<br><br>**Opportunities:**<br>NA | The person may get physical injuries or fatal Property damage. | 4 | 4 | 16 | | | | • Have clear Journey Plan and contact numbers<br>• Know the driver and his contact number<br>• Ensure the Seat Belt used throughout the Journey.<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to workers<br>• Use of appropriate personal protective equipment. | 4 | 1 | 4 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 47 | Affecting the resistance of earthing | Physical | **Risk:**<br>High voltage or current<br><br>**Opportunities:**<br>Induction Sensors | The person may affect with fibrillation and fatal or property damage | 5 | 4 | 20 | | | | • Coal is made of carbon which is good conductor minimizing the earth resistant.<br>• Salt use as electrolyte to form conductivity between GI Plate Coal and Earth with humidity.<br>• Sand has used to form porosity to cycle water & humidity around the mixture.<br>• All earth pits shall be inspected in a maximum frequency of 15 days jointly by P&M & EHS, and the values will be recorded<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to worker.<br>• Wear Appropriate PPE | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 48 | Use of damaged electrical equipment's | Physical / Electrical | **Risk:** Exposure to electric hazard<br><br>**Opportunities:** Induction Sensors | The person may affect with electric shock, fibrillation and fatal or property damage | 5 | 4 | 20 | | | | • Specific procedures to lockout/tag out specific pieces of equipment are required before entering the space. It is essential to reenergize and lock out all electrical circuits and physically disconnect mechanical equipment prior to any work in the confined space.<br>• All lines must be physically disconnected, blanked off, or isolated using a double block and bleed system. Only employees trained in lockout/tag out procedures should conduct lockout/tag out operations.<br>• All actions must be verified to ensure the safety of items and that they are safely placed out of and returned to service<br>• Adequate and suitable lighting shall be provided for entry and work in a confined space.<br>• Access and passage into a confined space shall be provided with illumination of not less than 50 lux. All portable electrical hand tools and inspection lamps used underground or in a confined space at an excavation or tunneling work are operated at a voltage not exceeding twenty-four volts. Temporary lights shall be equipped with heavy- duty electric cords with connections and insulation maintained in safe condition.<br>• Temporary lights and electrical services should be protected by an earth leakage circuit breaker (ELCB).<br>• Working spaces, walkways, and similar locations shall be kept | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | | | | | | | | | clear of cords so as not to create a hazard to workers. All electrical equipment should be protected by an ELCB. | | | | | | |
| 49 | Improper Shut down procedure | Physical Electrical | **Risk:** High voltage or current<br><br>**Opportunities:** Induction Sensors | The person may affect with fibrillation and fatal or property damage | 5 | 5 | 25 | | | | • Line verification should be done in person to prevent induction / back feeding from other sources.<br>• All spike rod resistance to be checked.<br>• Front line supervisor should issue work permit slip to the workman who is climbing on the pole.<br>• Workman who is climbing the pole should wear safety shoes & safety harness.<br>• Use FRP ladder to climb the pole.<br>• Hook the safety harness once the workman climbs<br>• Helmet mounted induction tester should not be removed until completion of work<br>• Should not keep any hand tools on the pole<br>• Toolbox Talk shall be given before the execution of the work<br>• Adopt permit to work system.<br>• Adhere to the safe operating procedures.<br>• Appropriate information, instruction and supervision shall be provided to worker.<br>• Wear Appropriate PPE | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| 50 | Foreseeable emergencies | Physical | **Risk:** Excavation collapse, Collapse of lifting machines and transport equipment, Fire and Lighting, Electrocution, Bomb Threats, Spillage of oil, Animal Attacks, Medical Emergencies<br><br>**Opportunities:** Adopting new technologies | Person Injury and property damage | 5 | 5 | 25 | | | | • The emergency procedures shall be regularly reviewed and updated. Emergency Assembly Area shall be identified.<br>• All visitors arriving on site shall be instructed on the emergency arrangements prior to being allowed on site.<br>• To increase Awareness among the employees' Mock drill shall be conducted for selecting specific scenarios to improve the efficiency and readiness of the response procedures.<br>• Practice drills for identified emergency situations, including rescue operations shall be undertaken.<br>• Steps shall be taken to ensure that every person on site, aware of the Emergency steps to be followed and that emergency drills are tested periodically. | 4 | 2 | 8 | CEB | Low Risk | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |
| 51 | Social factors Workload Work hours Victimization Harassment Bullying | Physical / Psychological | **Risk:** Overload of work, dissatisfaction, staff attrition, workmen turnover, project delay, strikes, formation of unions, insecurity, Productivity loss, Business loss, Effect on Brand image.<br><br>**Opportunities:** Awareness, Counselling & | Mental stress, disorientation, mental fatigue Human errors due to stress, Depression, behavioural change, inferiority, feeling insecure in the working area, not able to work in | 4 | 5 | 20 | | | | • Working in regular shifts or rotation of the job<br>• Implementing Biometric system for the standard working hours<br>• Providing behaviour-based safety training to all employees<br>• Adherence to Drug & Alcohol Policy, Mobile Phone Usage and Smoke Free Policy.<br>• Monitoring the behaviour of workers, supervisors in the working area.<br>• Providing regular intervals in between the working hours based on the necessity and activity.<br>• Unsafe Behaviour of staff/workers/sub-contractor shall be addressed during the Safety Committee Meeting. | 4 | 2 | 8 | CEB | Low | Factory Ordinance of Sri Lanka<br><br>ILO Guidelines |

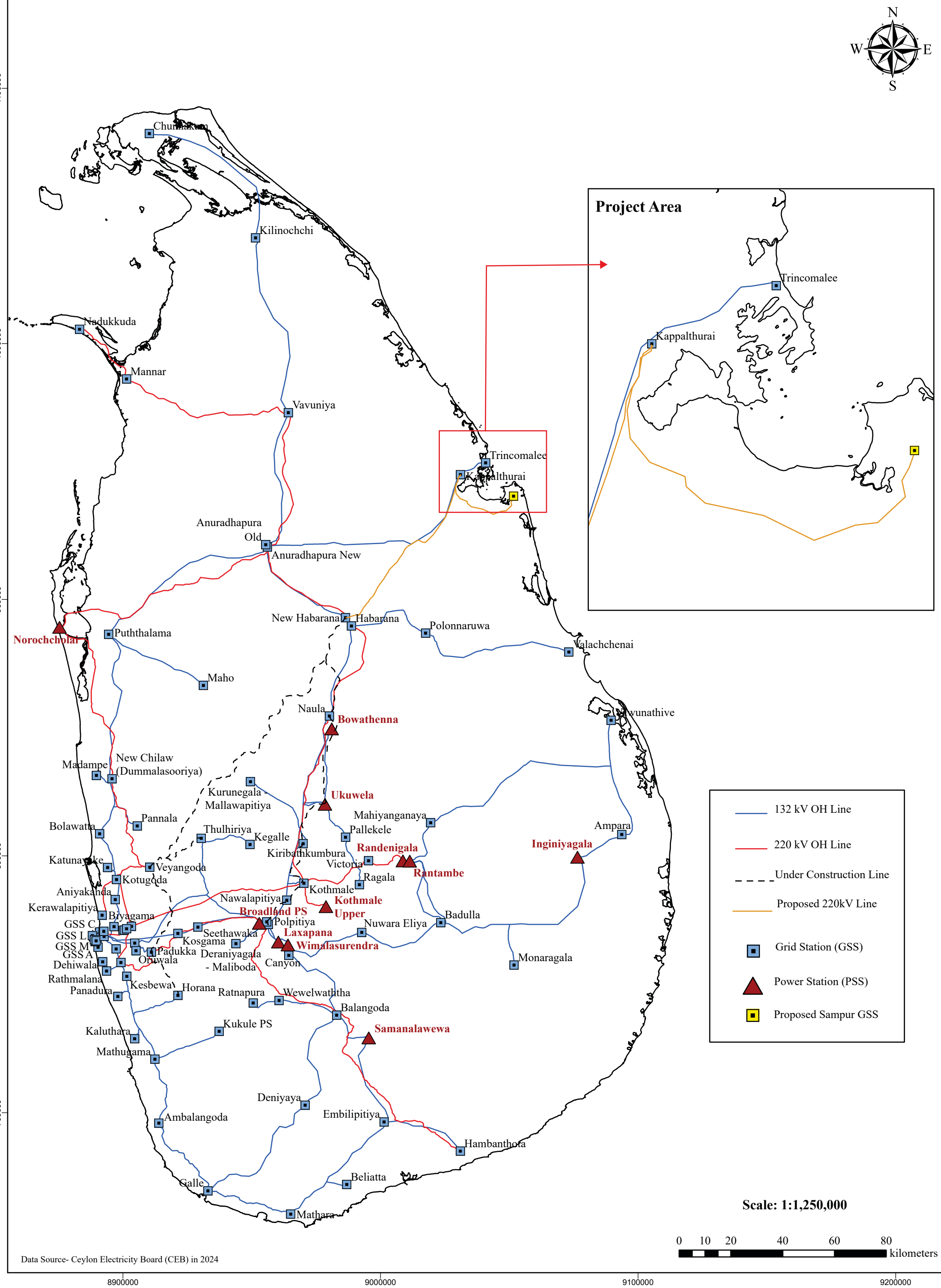
| Sl. No | Hazards | Categories of Hazards | Risk & Opportunities | Consequence | Pre-Risk Evaluation | | | Condition | | | Control Measures | Post Risk Evaluation | | | Action By | Residual Risk | Applicable Legal Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (P) | (S) | RL= (P×S) | Normal | Abnormal | Emergency | | (P) | (S) | RL= (P×S) | | | |
| | | | Training for Staff and Workmen | team, | | | | | | | • Counselling of staff/ workers. | | | | | | |

# 15.10 Maps

All maps were prepared based on the following data sources:

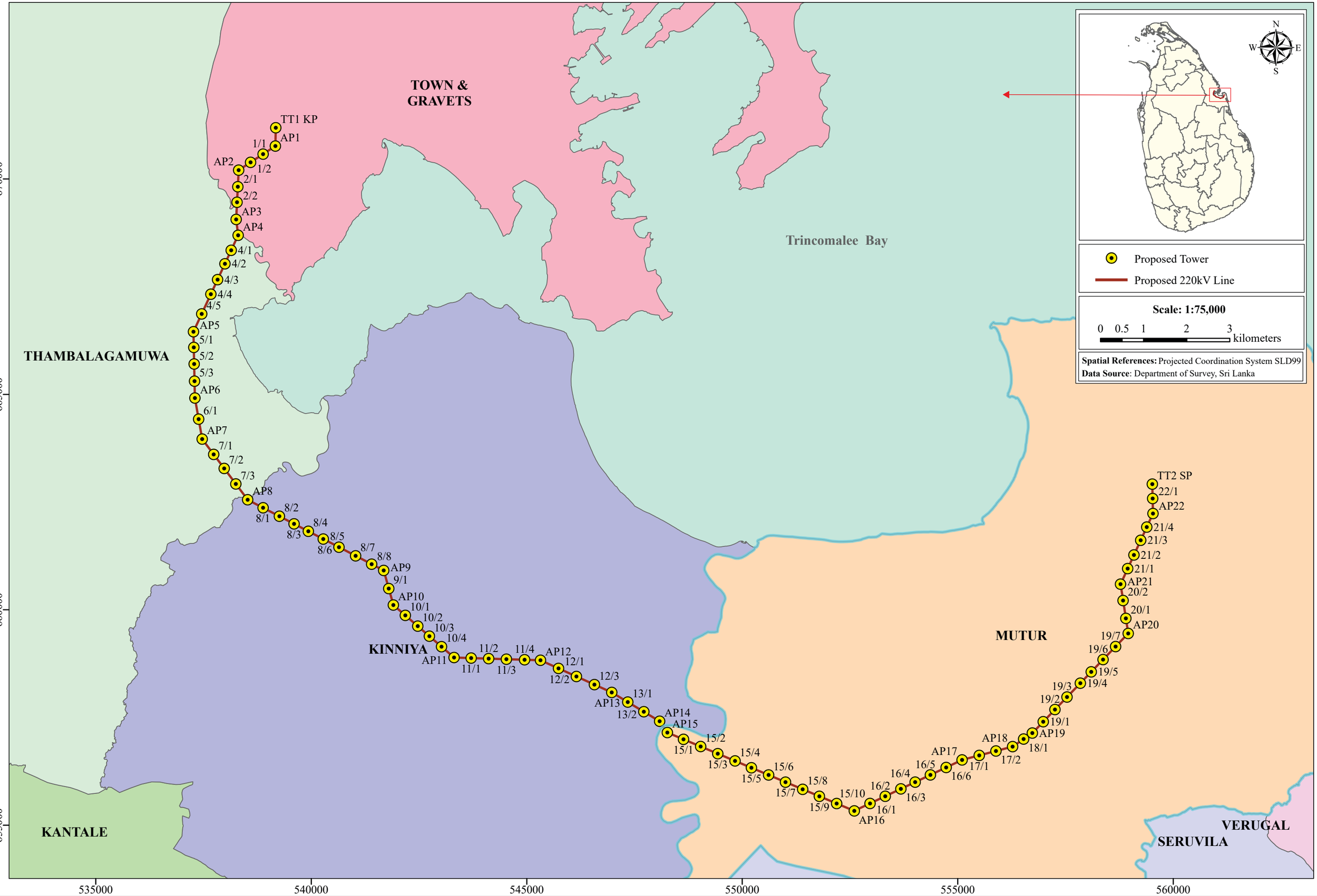
1. Field observation data
2. Geospatial data from Ceylon Electricity Board (CEB)
3. Geospatial data from Department of Survey Sri Lanka
4. Satellite Imagery: Sentinel 2/ Google Earth Pro
5. Geospatial data from Department of Wildlife
6. Geospatial data from Department of Forest
7. Geospatial data from Geological Survey and Mines Bureau (GSMB), Sri Lanka

# 15.10.1 Sri Lanka Transmission Line Network in 2024

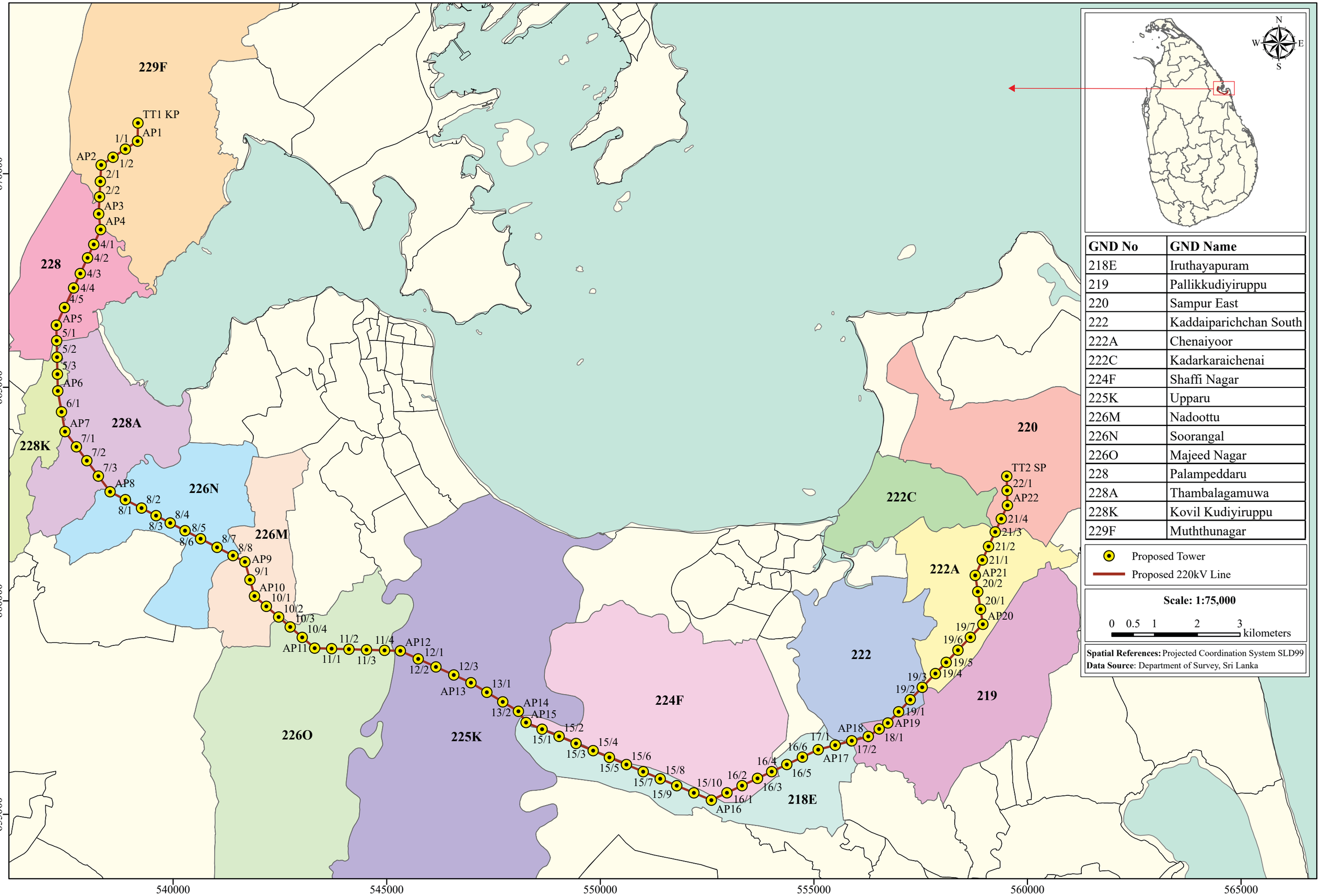


# 15.10.2 Location of the 220kV proposed transmission line from Sampur to Kappalthurai

# 15.10.3 Divisional Secretaries (DSD) along the 220kV proposed transmission line from Sampur to Kappalthurai



# 15.10.4 Grama Niladhari Divisions (GNDs) along the 220kV proposed transmission line from Sampur to Kappalthurai




| GND No | GND Name |
|---|---|
| 218E | Iruthayapuram |
| 219 | Pallikkudiyiruppu |
| 220 | Sampur East |
| 222 | Kaddaiparichchan South |
| 222A | Chenaiyoor |
| 222C | Kadarkaraichenai |
| 224F | Shaffi Nagar |
| 225K | Upparu |
| 226M | Nadoottu |
| 226N | Soorangal |
| 226O | Majeed Nagar |
| 228 | Palampeddaru |
| 228A | Thambalagamuwa |
| 228K | Kovil Kudiyiruppu |
| 229F | Muththunagar |

Proposed Tower

Proposed 220kV Line

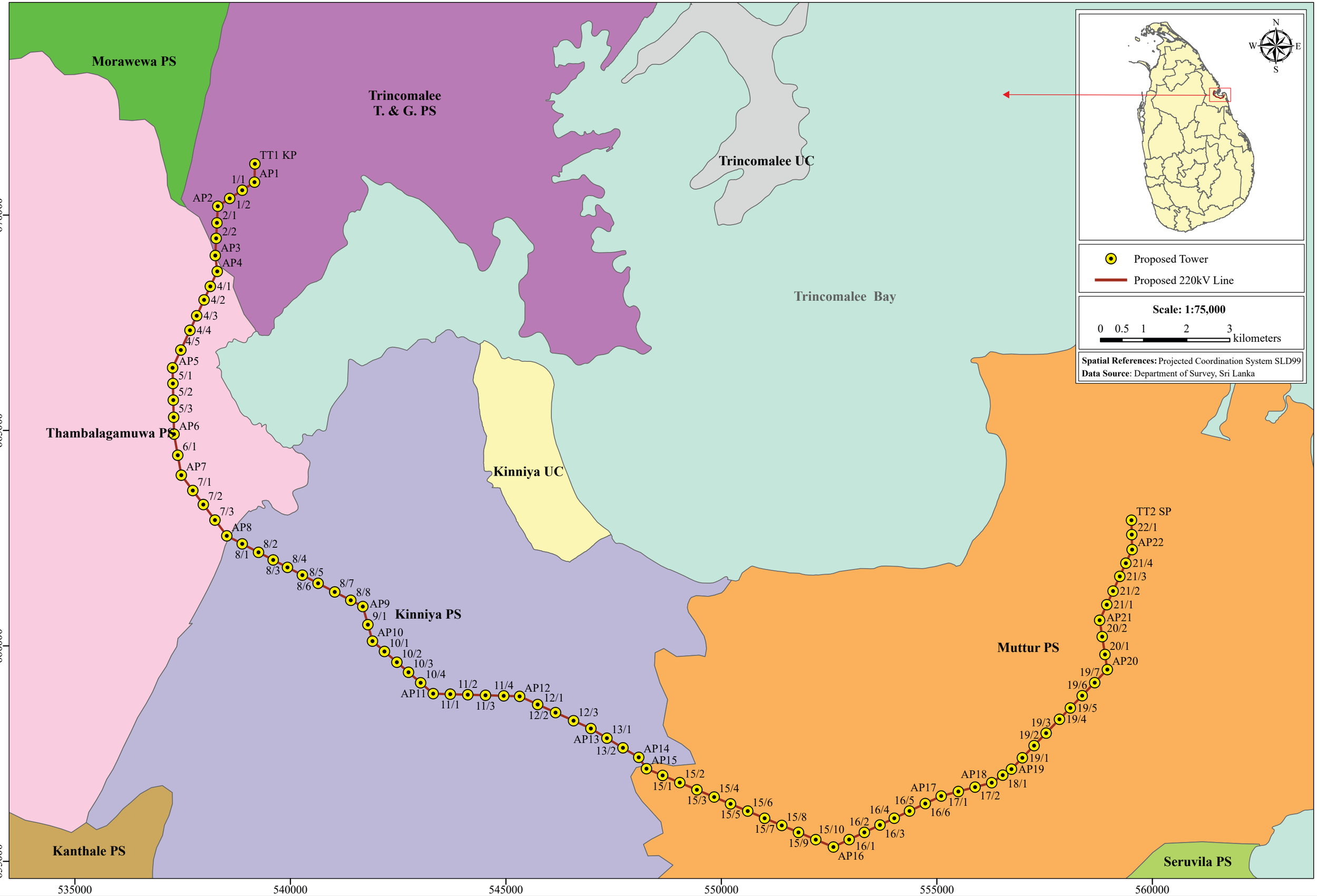
**Scale: 1:75,000**

0 0.5 1 2 3 kilometers

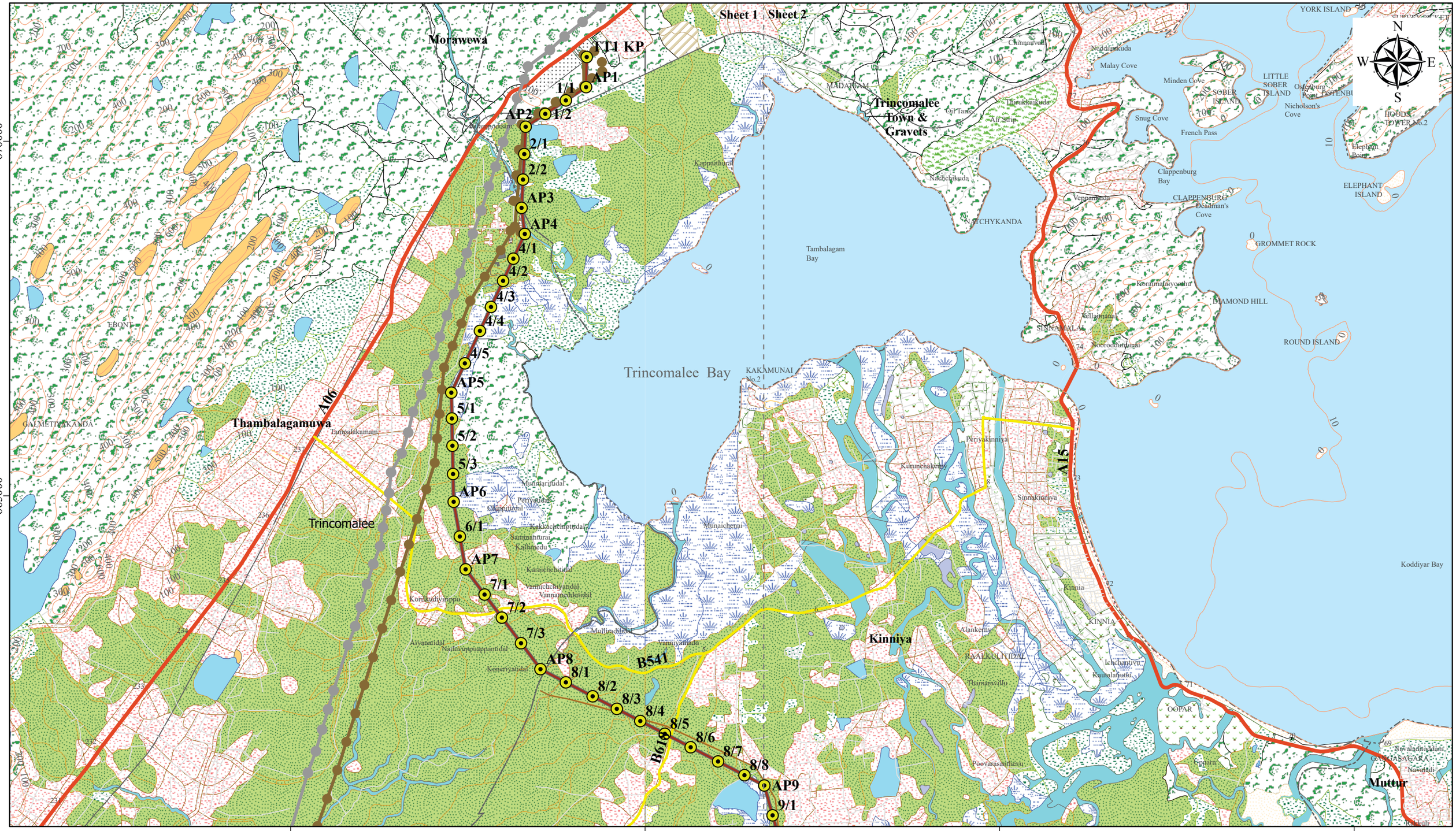
**Spatial References:** Projected Coordination System SLD99

**Data Source**: Department of Survey, Sri Lanka

# 15.10.5 Local authorities along the 220kV proposed transmission line from Sampur to Kappalthurai



# 15.10.6 Distribution of land use along the 220kV proposed transmission line from Sampur to Kappalthurai- Sheet 1 - TT1 to AP9




DSD Boundary
Major Road (A)
Minor Road (B)
Rail Road
Other Roads
Foot Road
Outer Circular Road
Contour (ft)

Proposed Tower
Proposed 220kV Line
Proposed 220kv New Habarana to Kappalturai Line
132kV New Anuradhapura-Trincomalee Line

Built up area
Coconut
Chena
Sparse Forest

Grassland
Homesteads/Garden
Lagoon
Marsh

Other cultivation
Paddy
Pond
Rock

Sand
Scrub land
Sea
Stream

Tank

**Scale: 1:50,000**

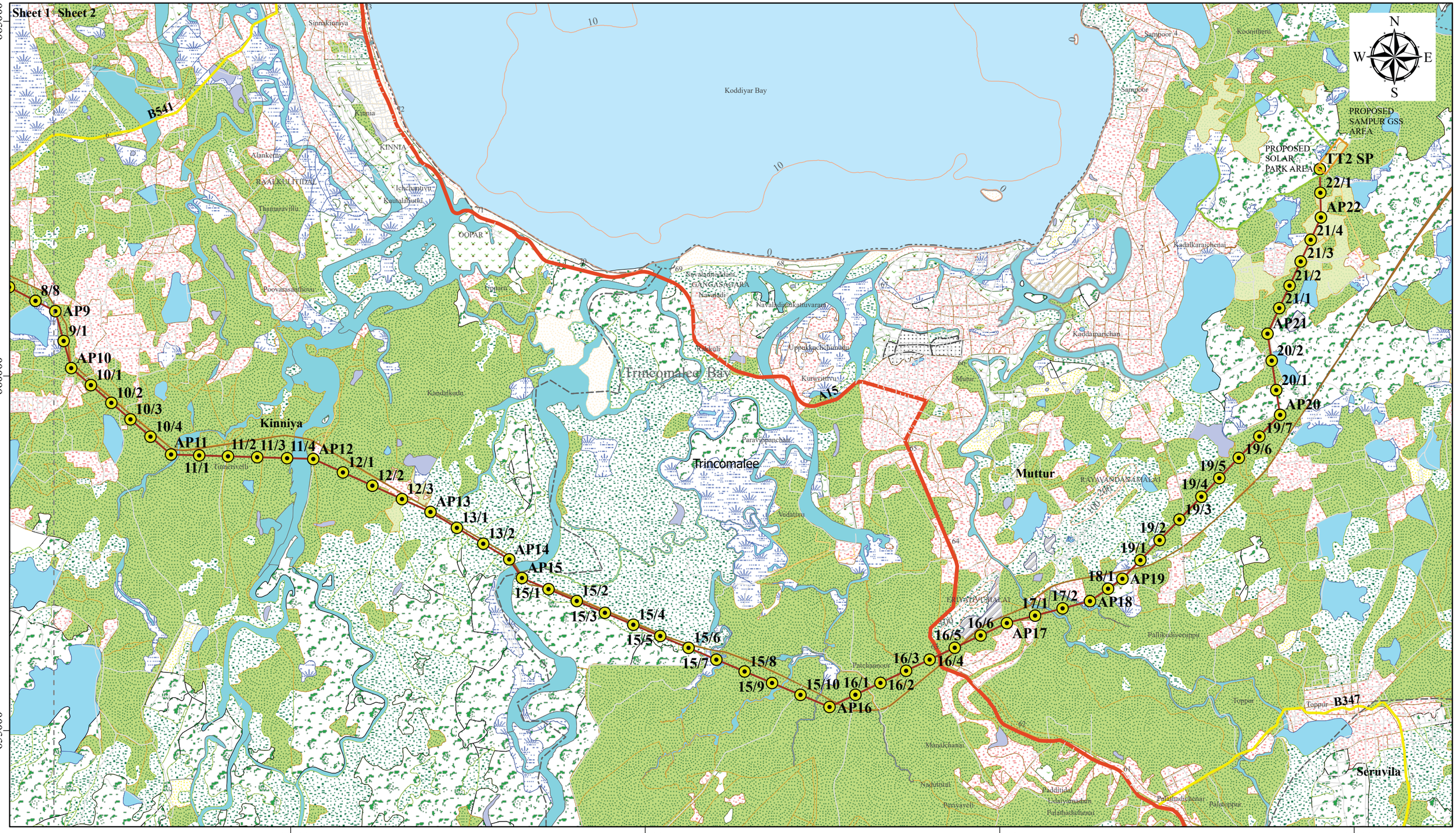
0 0.5 1 2 3 kilometers

**Map sheet 1 of 2**

**Spatial References:** Projected Coordination System SLD99

**Data Source**: 1:50000 land use data of Department of Survey, Sri Lanka, Sentinel images, Google Earth Pro, Field data

# 15.10.6 Distribution of land use along the 220kV proposed transmission line from Sampur to Kappalthurai- Sheet 2 - AP9 to TT2




DSD Boundary
Major Road (A)
Minor Road (B)
Other Roads
Foot Road
Outer Circular Road
Contour (ft)

Proposed Tower
Proposed 220kV Line
Proposed 220kv New Habarana to Kappalthurai Line
132kV New Anuradhapura-Trincomalee Line

Built up area
Coconut
Chena
Sparse Forest

Grassland
Homesteads/Garden
Lagoon
Marsh

Other cultivation
Paddy
Paddy Abandoned
Pond

Quarry
Rock
Sand
Scrub land

Sea
Stream
Tank

**Scale: 1:50,000**

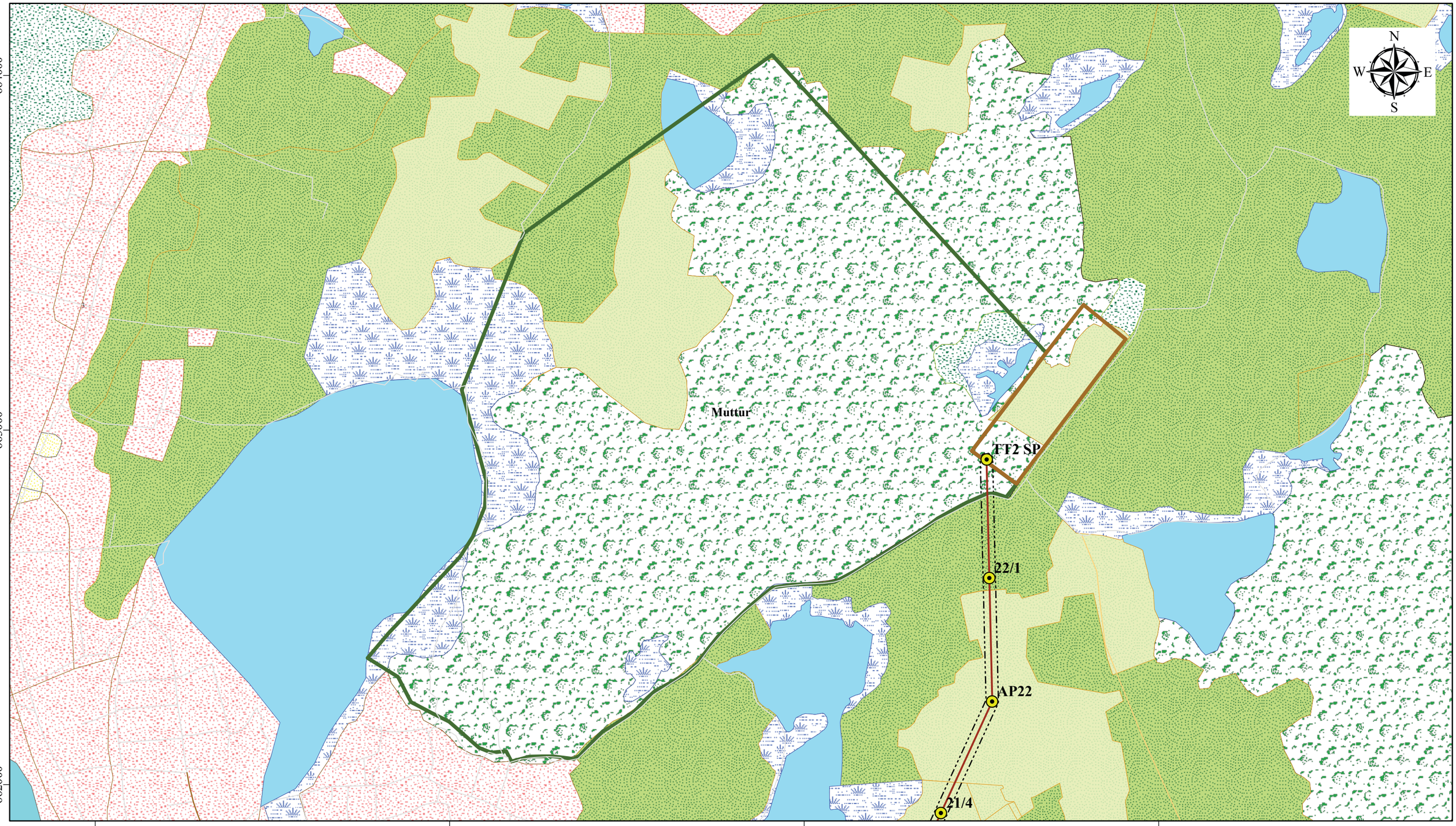
0 0.5 1 2 3 kilometers

**Map sheet 2 of 2**

**Spatial References:** Projected Coordination System SLD99

**Data Source**: 1:50000 land use data of Department of Survey, Sri Lanka, Sentinel images, Google Earth Pro, Field data

# 15.10.6.1 Distribution of land use along the proposed Sampur GSS area and solar park area




Other Roads
Foot Road
Outer Circular Road
Contour (ft)
Proposed Tower
Proposed 220kV Line
35m Line Corridor
Proposed Sampur GSS Area
Proposed Solar Park Boundary
Homesteads/Garden
Marsh
Paddy
Scrub land
Sparse Forest
Stream
Tank

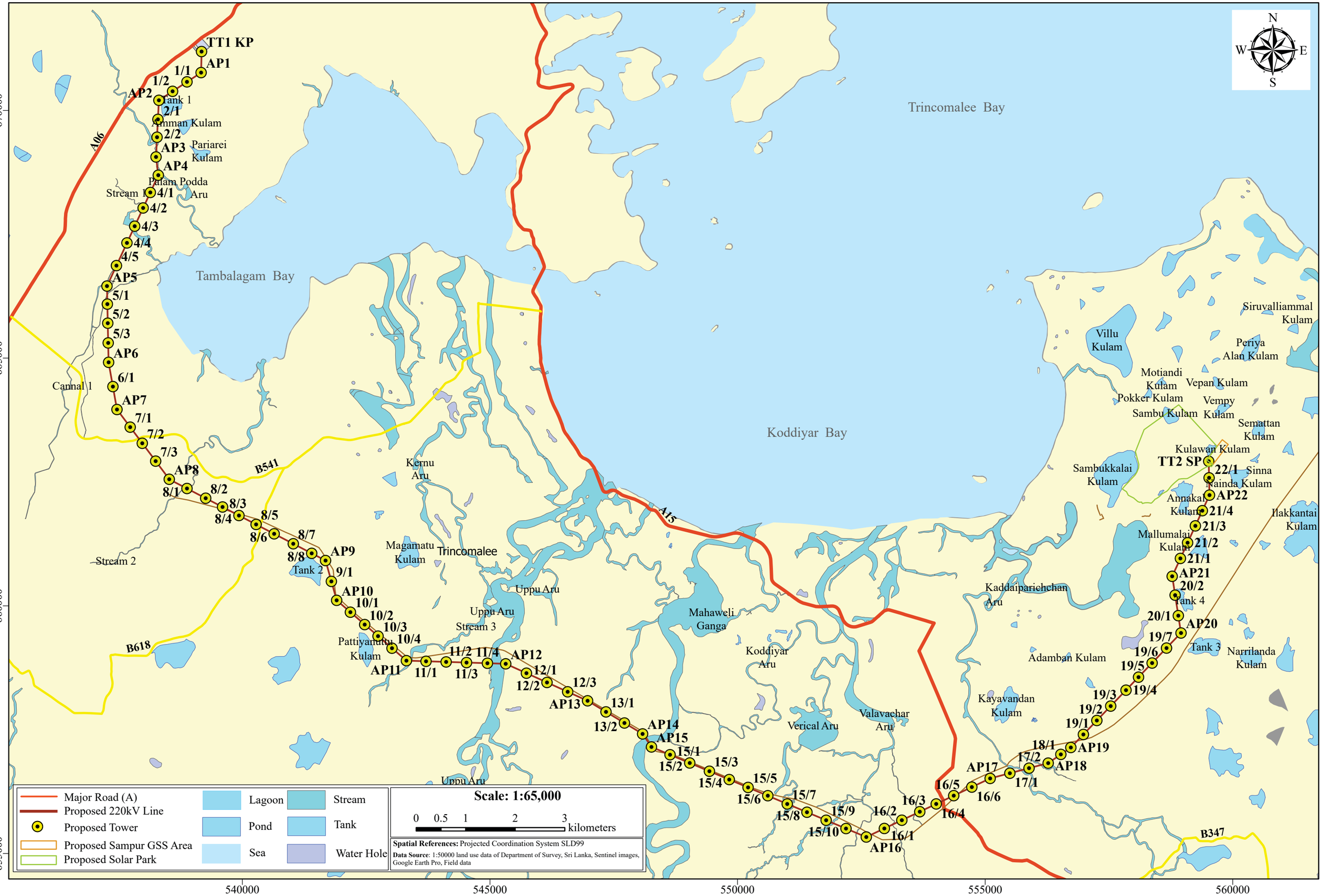
**Scale: 1:10,000**

0 0.13 0.25 0.5 kilometers

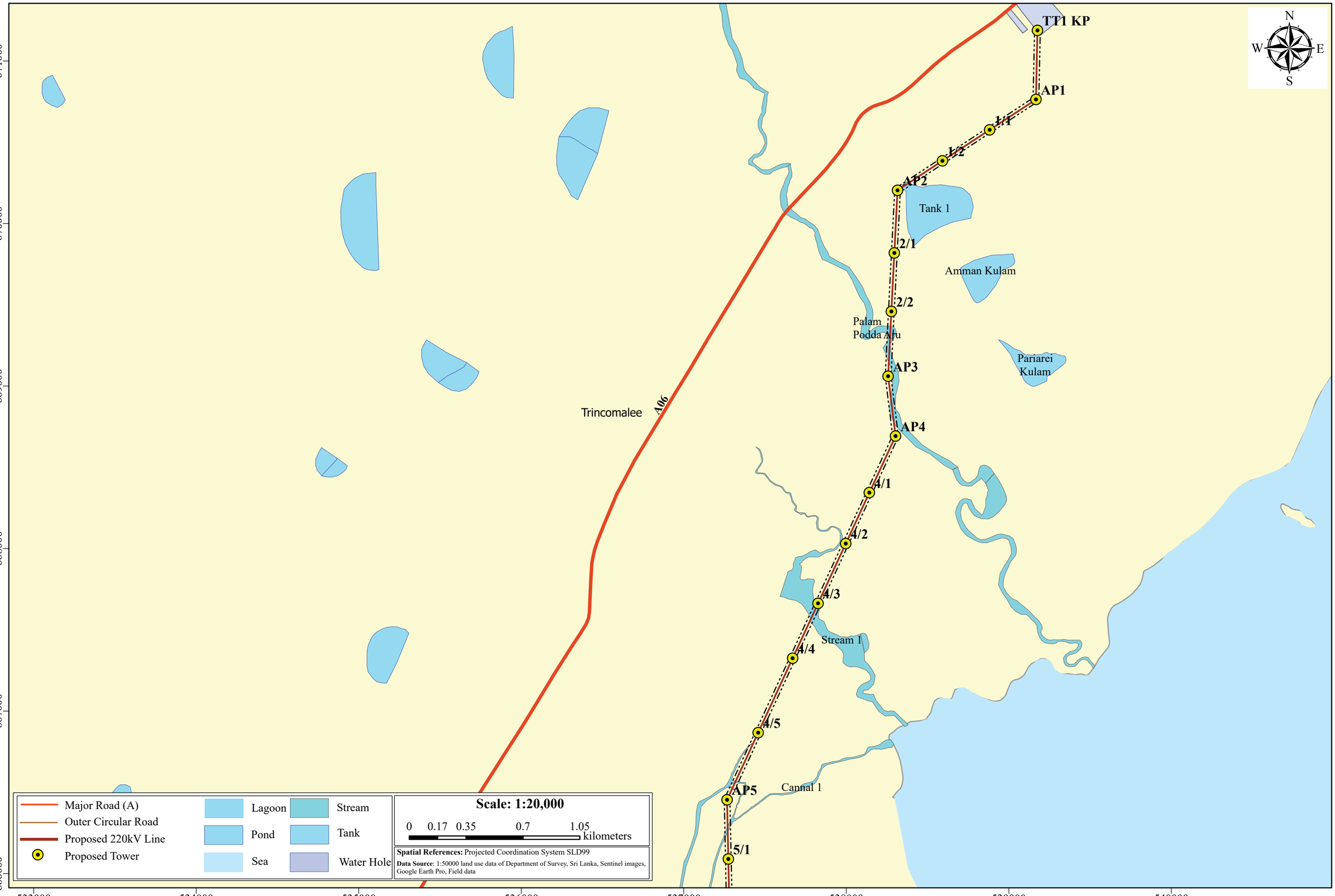
**Spatial References:** Projected Coordination System SLD99

**Data Source**: 1:50000 land use data of Department of Survey, Sri Lanka, Sentinel images, Google Earth Pro, Field data

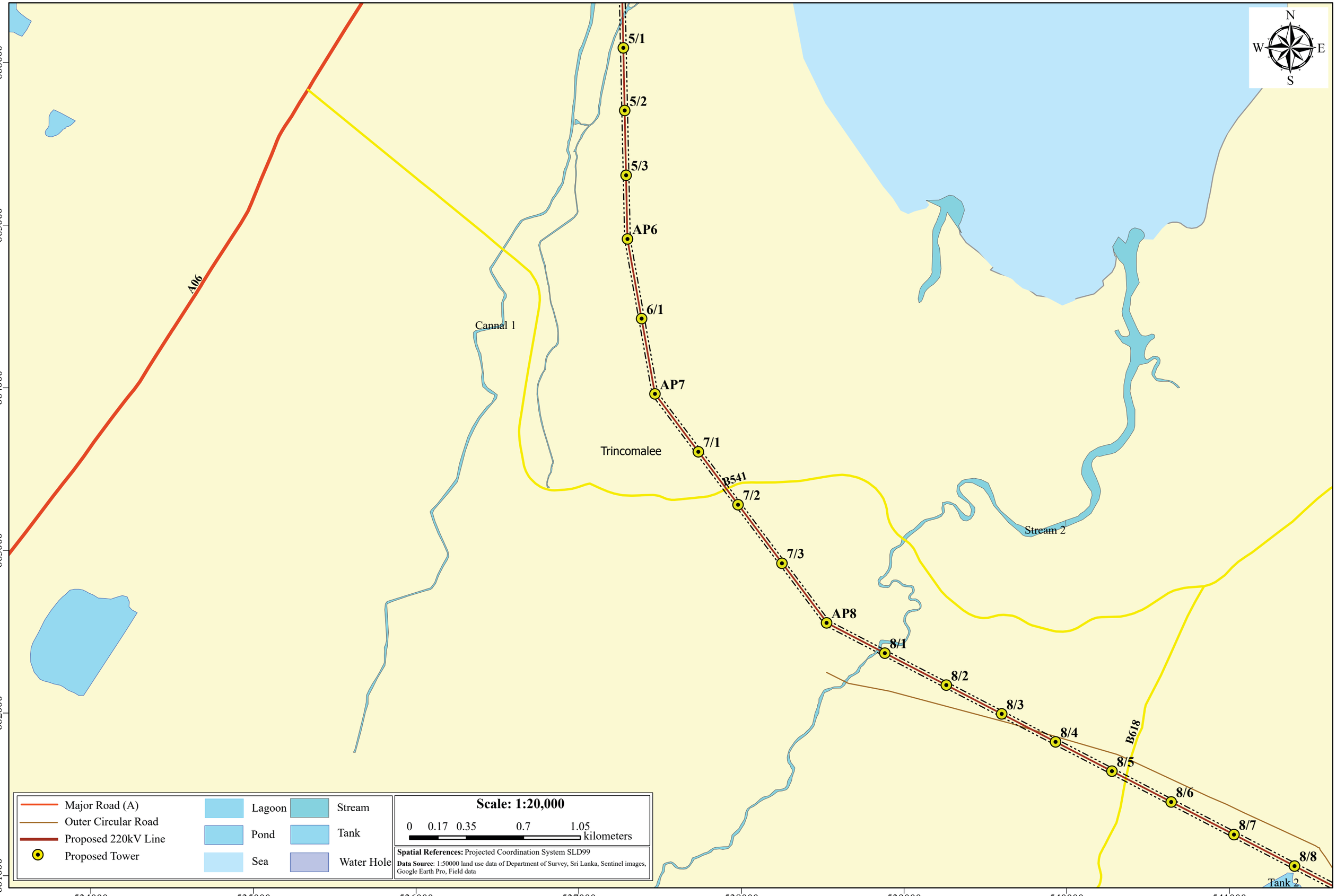
# 15.10.7 Distribution of surface water bodies along the 220kV proposed transmission line from Sampur to Kappalthurai



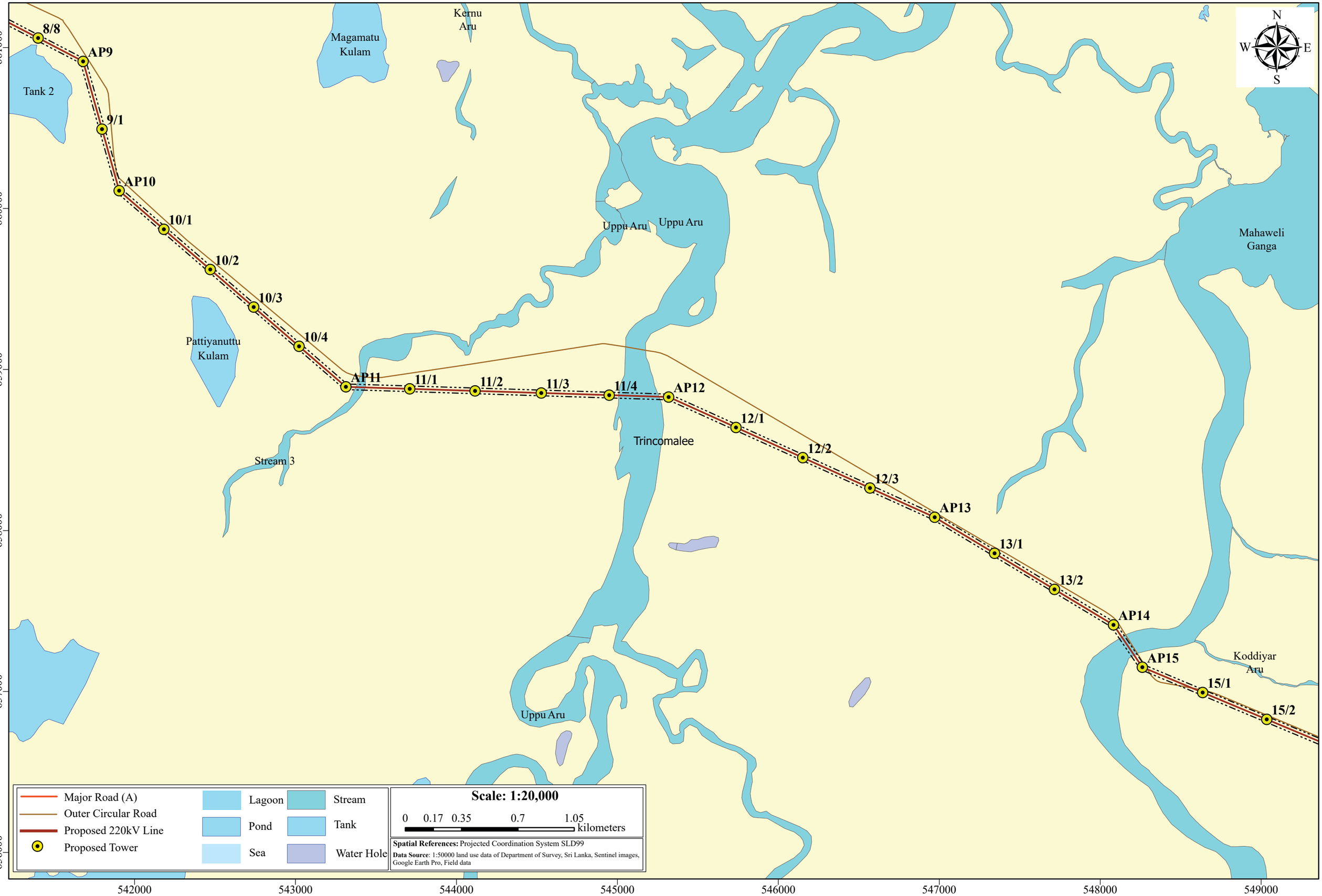
# 15.10.7.1 Distribution of surface water bodies along the 220kV proposed transmission line from Sampur to Kappalthurai - TT1 to 5/1



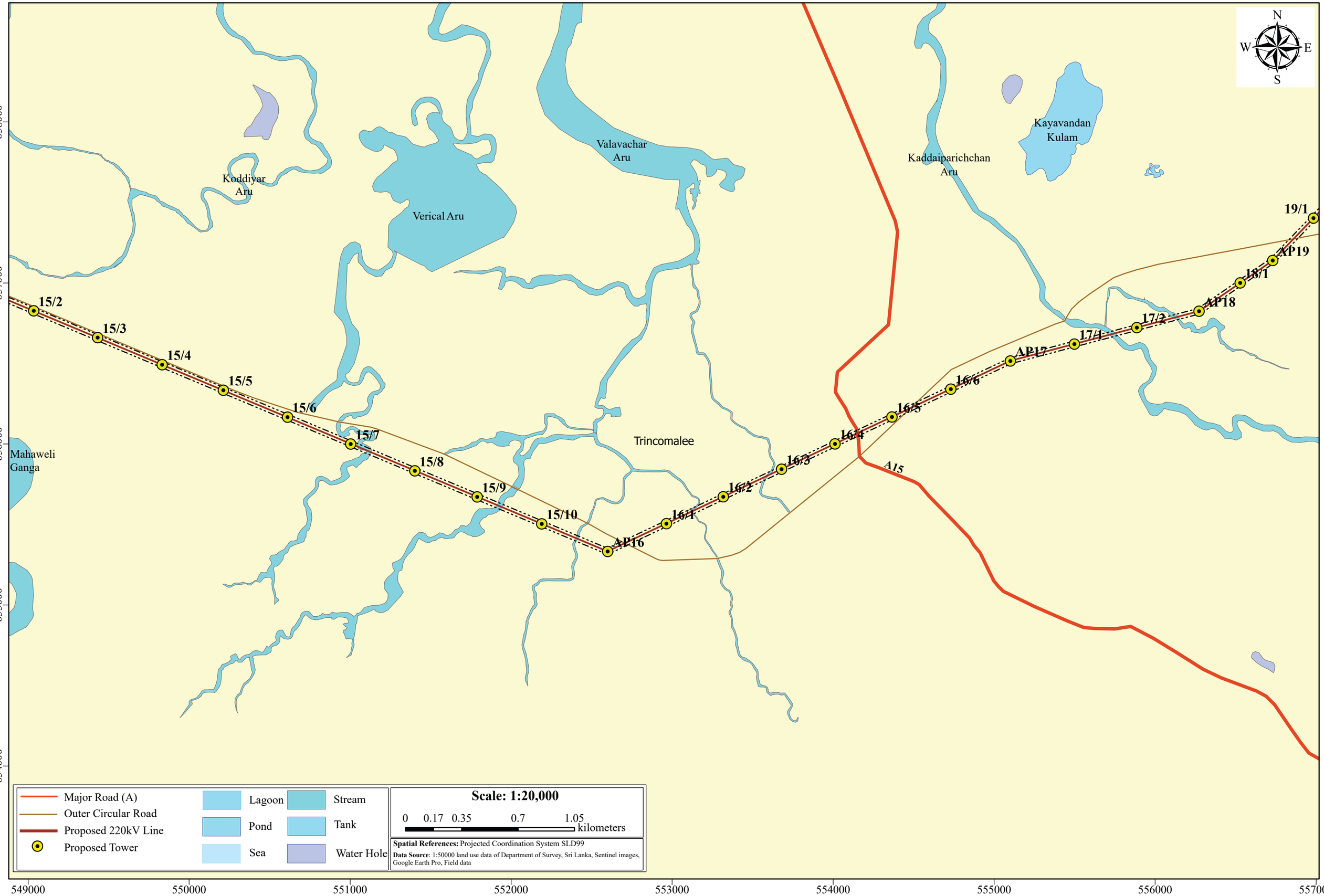
# 15.10.7.2 Distribution of surface water bodies along the 220kV proposed transmission line from Sampur to Kappalthurai - 5/1 to 8/8



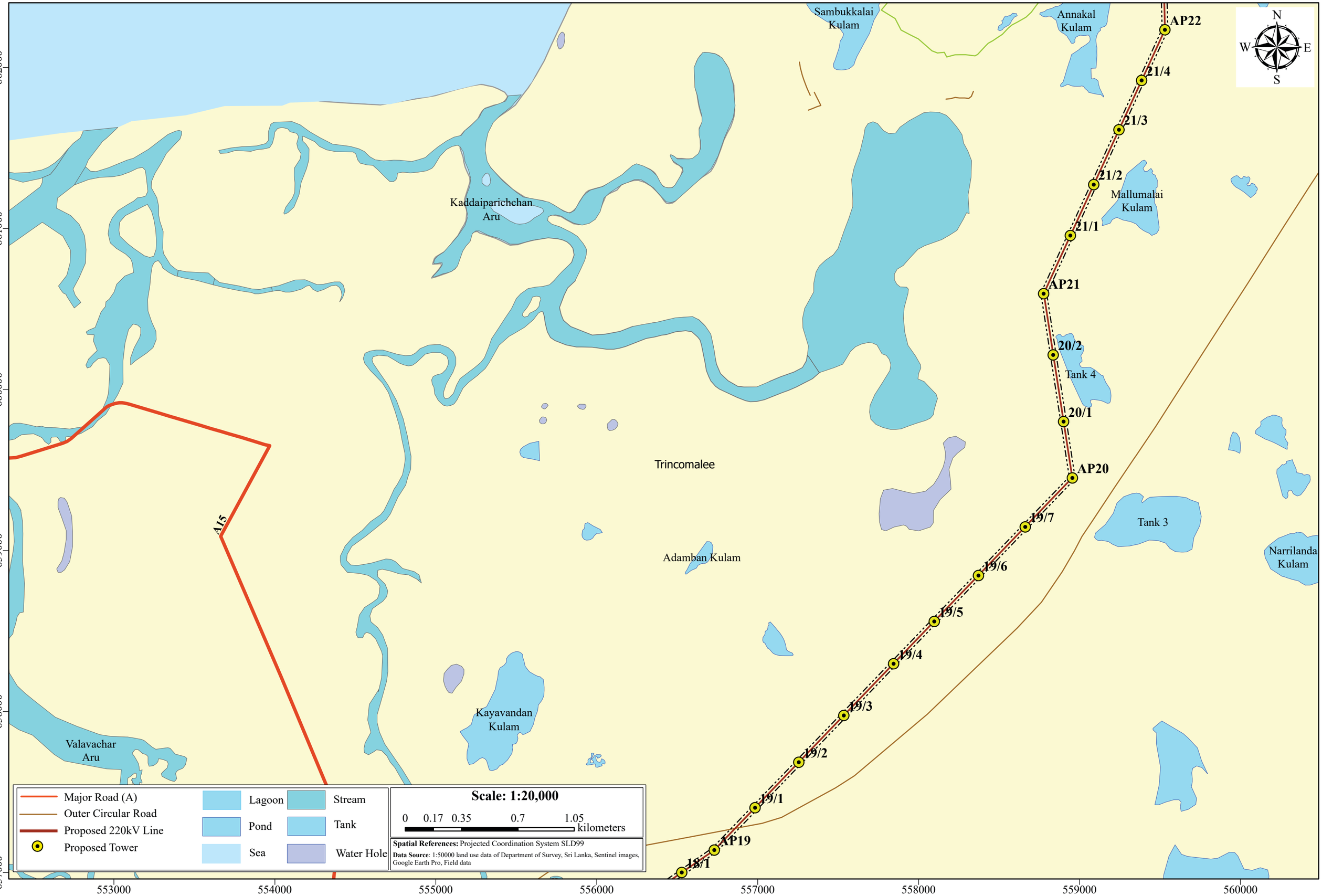
# 15.10.7.3 Distribution of surface water bodies along the 220kV proposed transmission line from Sampur to Kappalthurai - 8/8 to 15/2



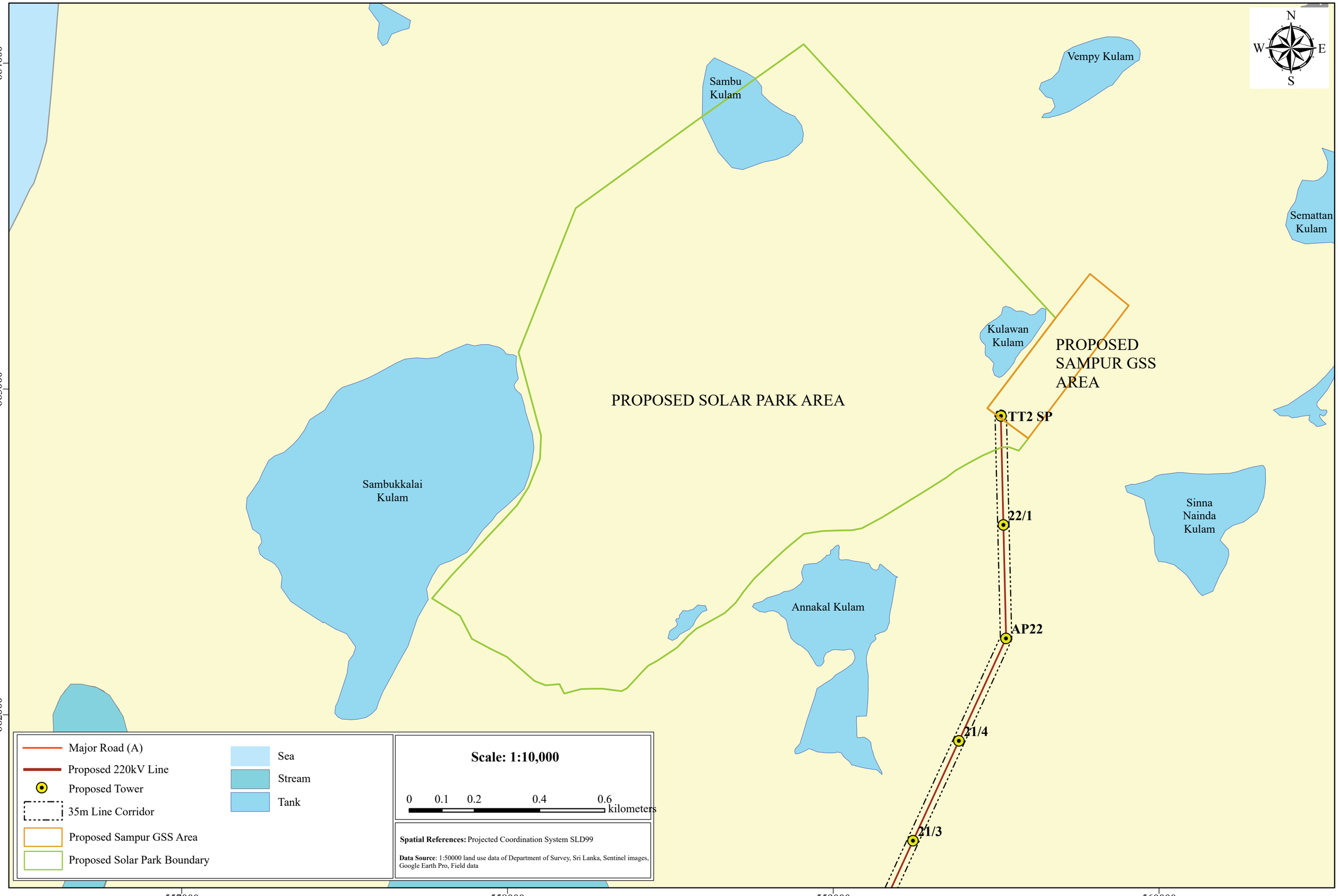
# 15.10.7.4 Distribution of surface water bodies along the 220kV proposed transmission line from Sampur to Kappalthurai - 15/2 to AP19



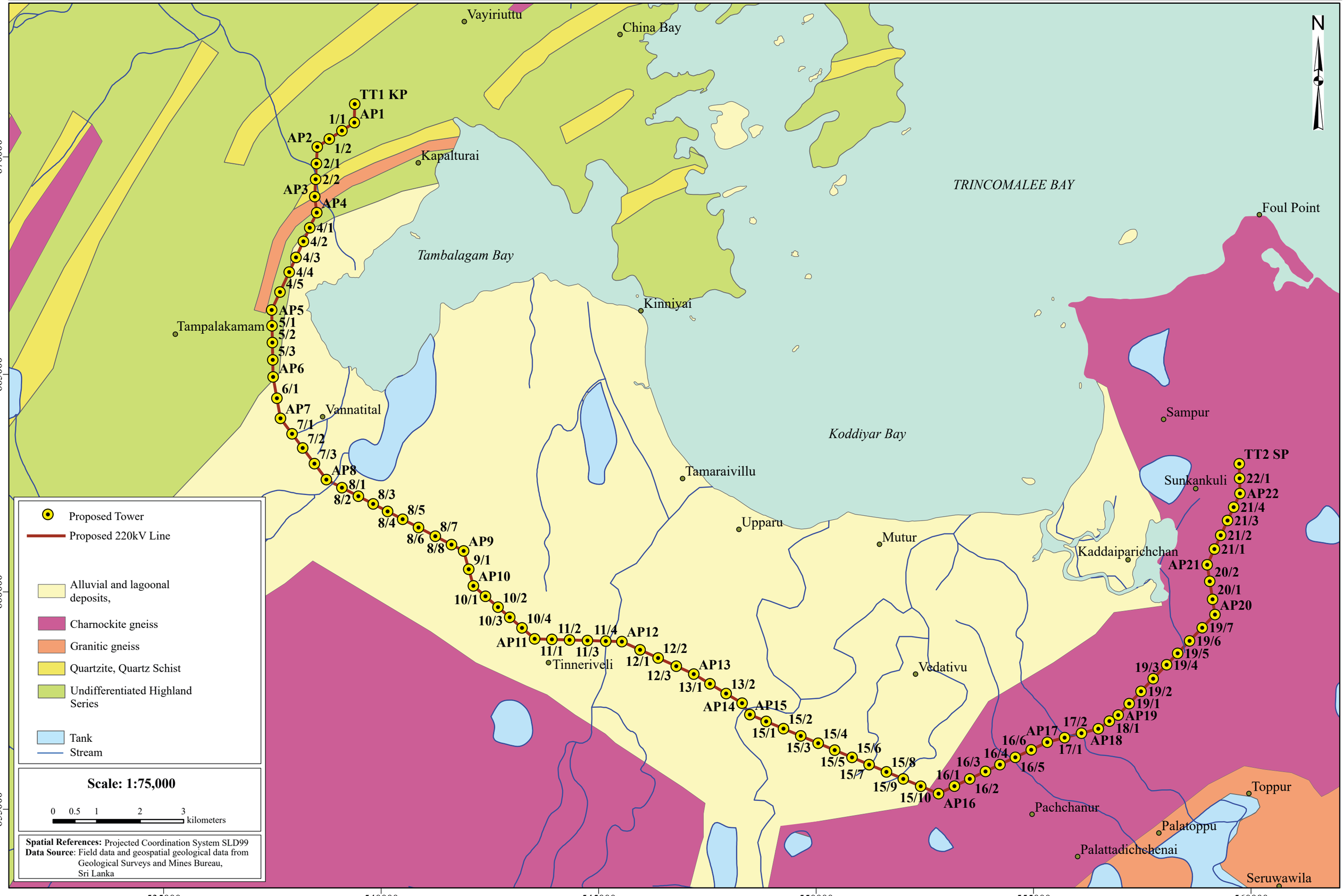
# 15.10.7.5 Distribution of surface water bodies along the 220kV proposed transmission line from Sampur to Kappalthurai - AP19 to AP22



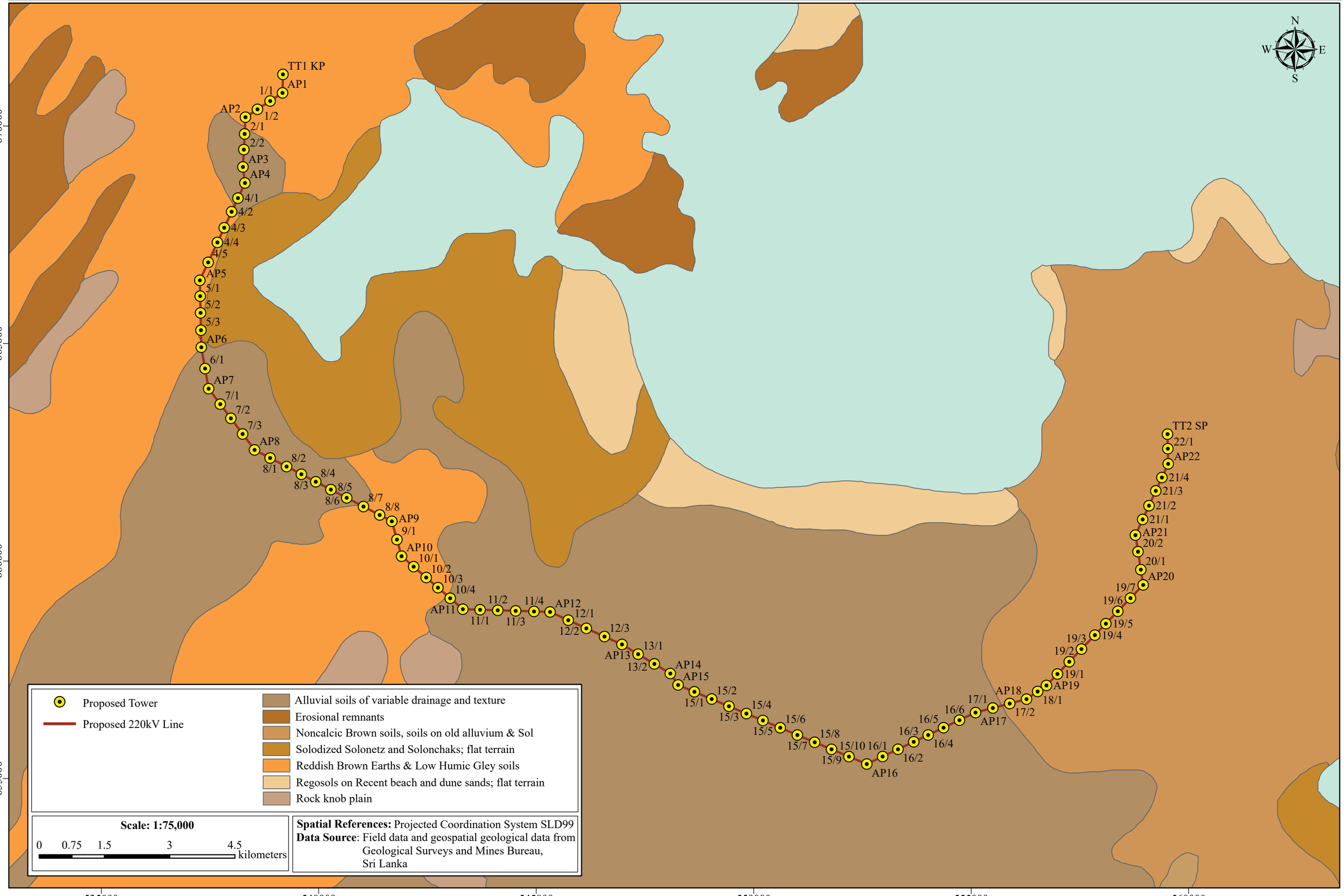
# 15.10.7.6 Distribution of surface water bodies in proposed Sampur Grid Sub Station area



# 15.10.8 Distribution of Geology along the 220kV proposed transmission line from Sampur to Kappalthurai

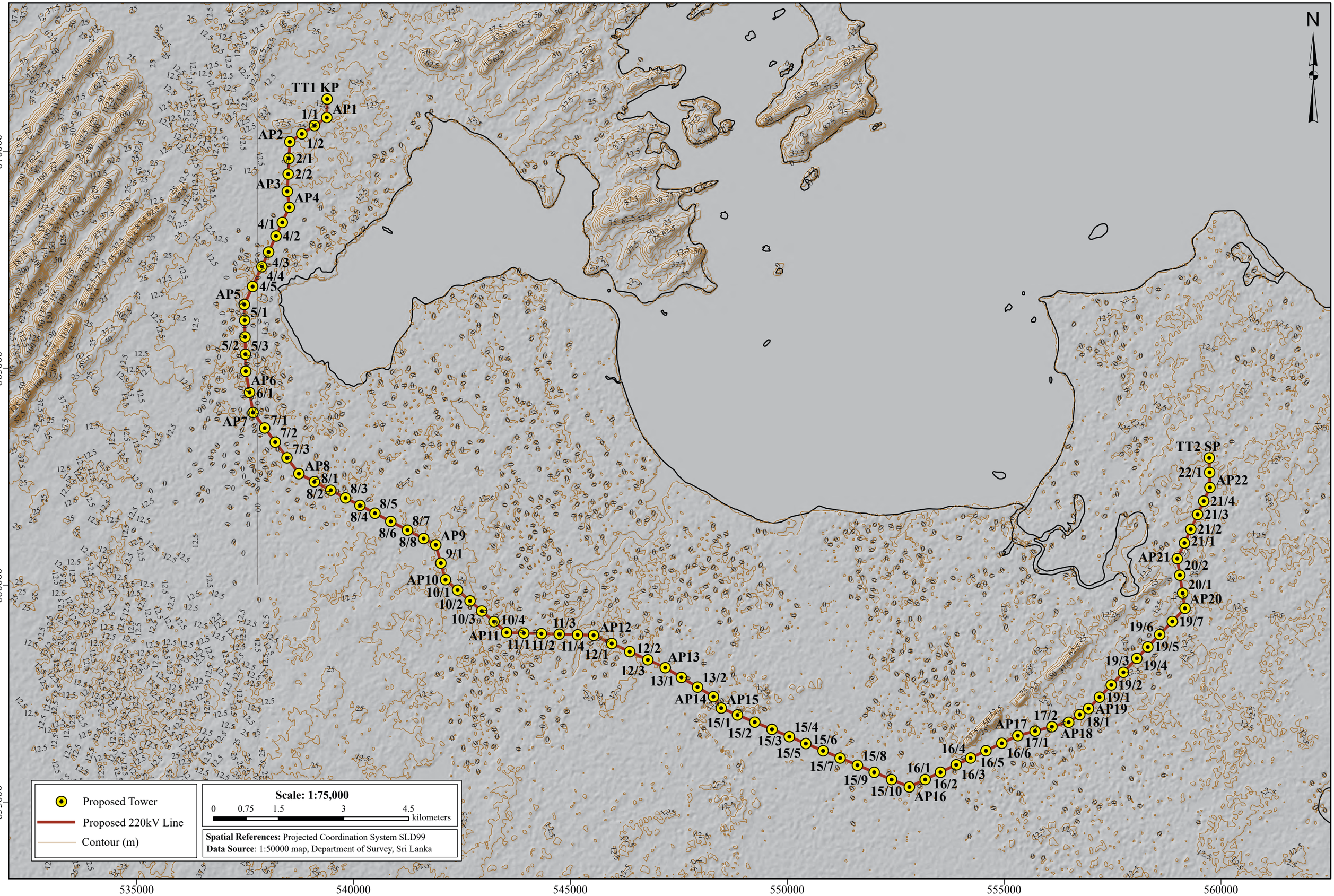


# 15.10.9 Distribution of soil along the 220kV proposed transmission line from Sampur to Kappalthurai

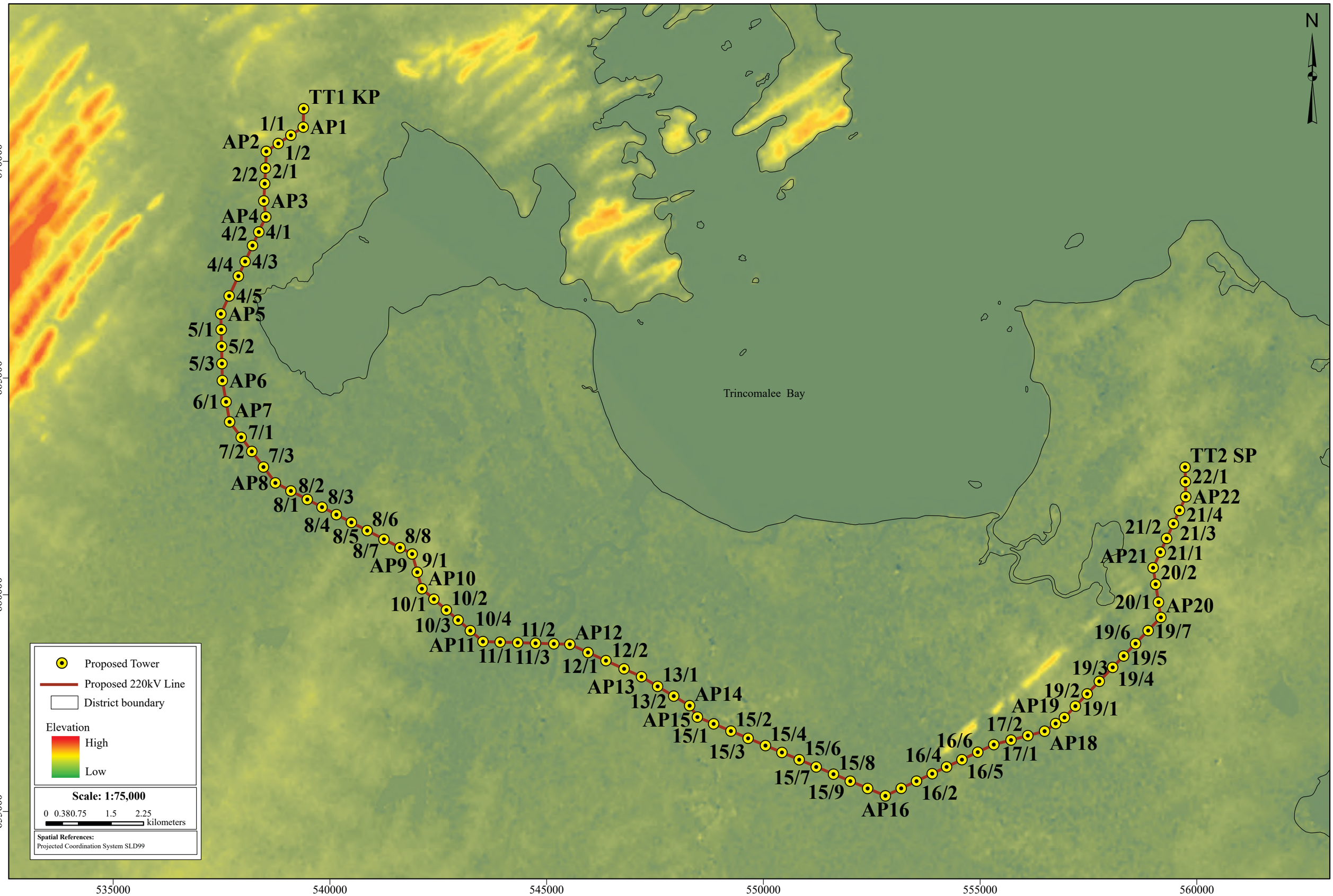


# 15.10.10 Wildlife and forest areas along the 220kV proposed transmission line from Sampur to Kappalthurai

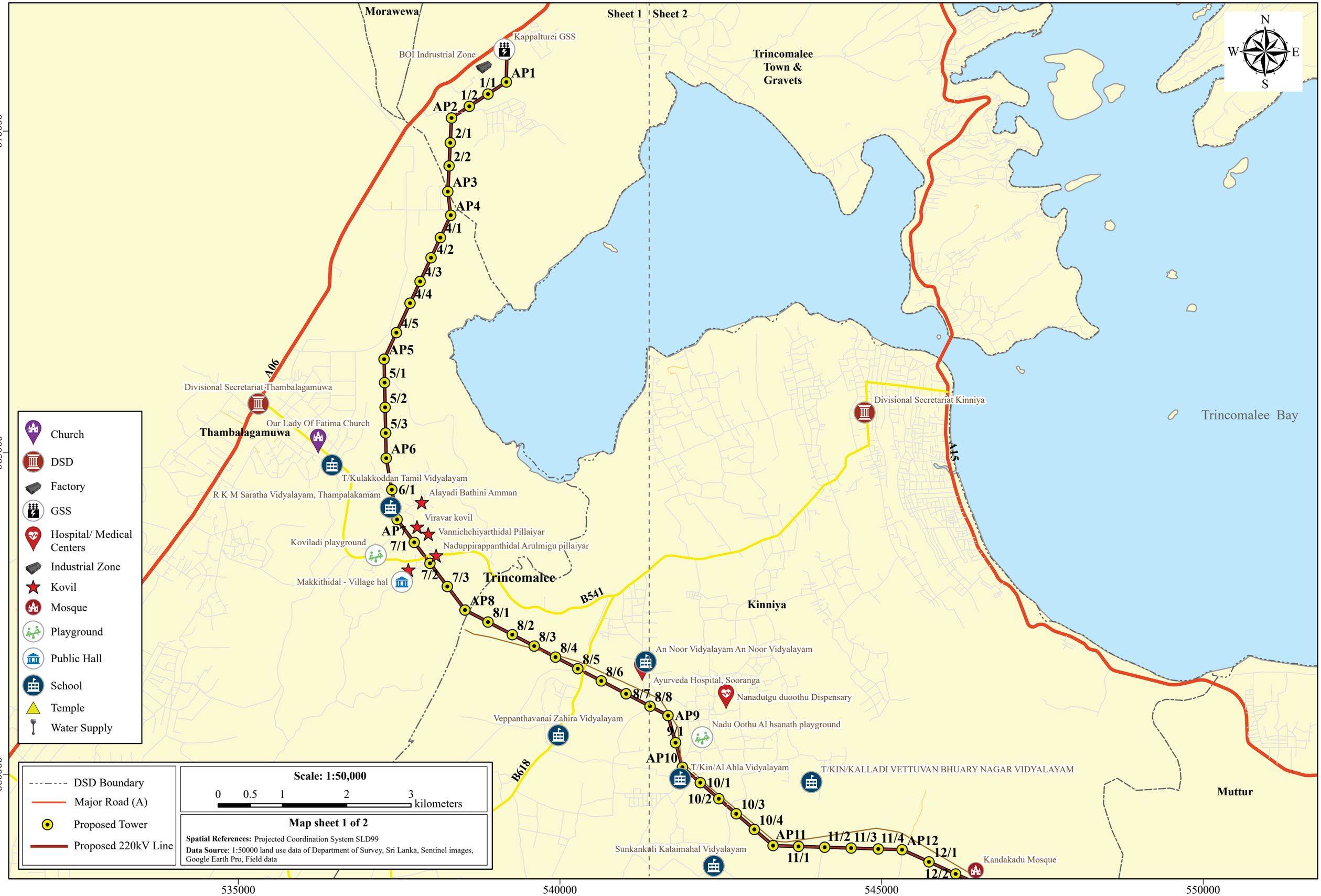
# 15.10.11 Terrain along the 220kV proposed transmission line from Sampur to Kappalthurai



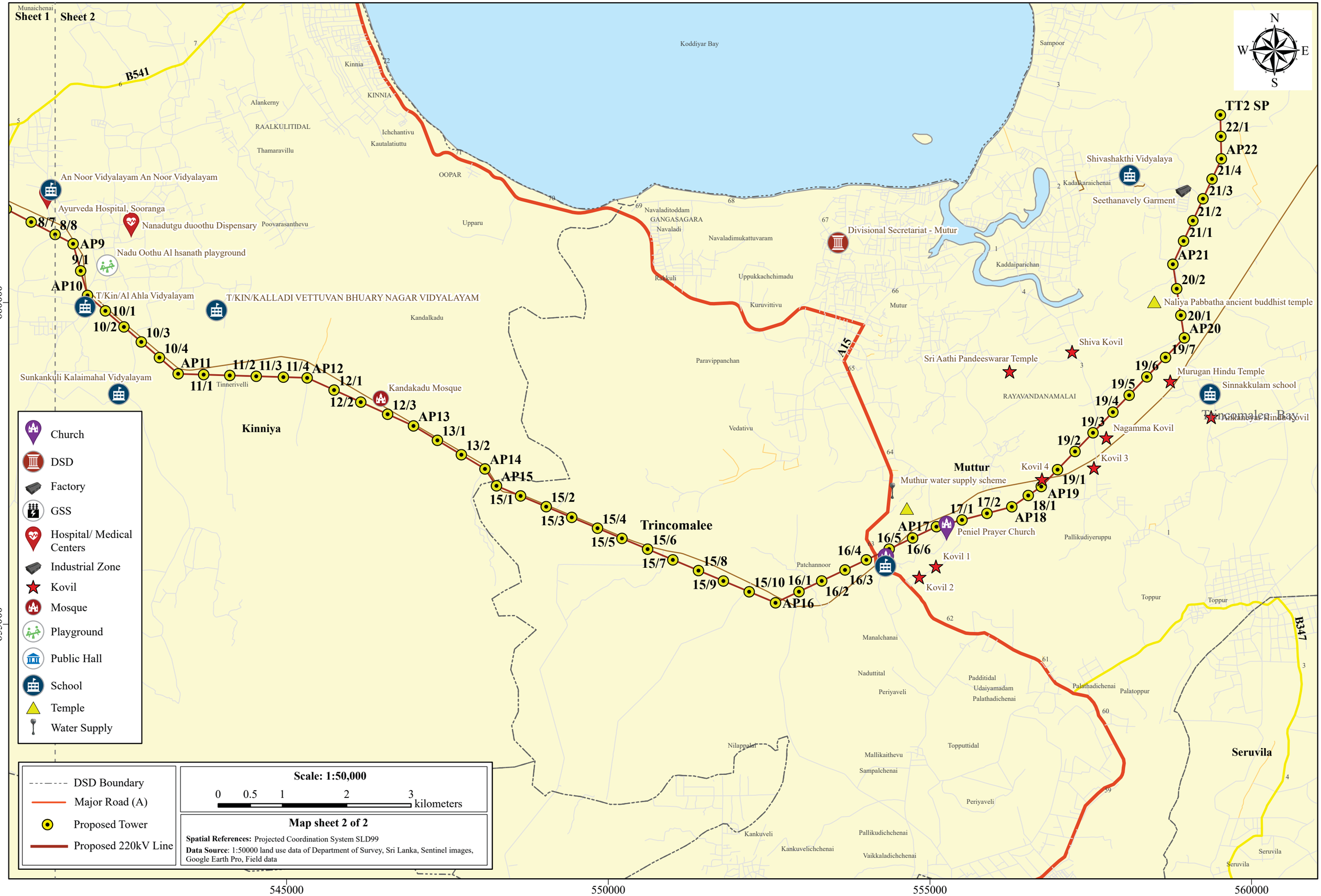
# 15.10.12 Digital Elevation Modal (DEM) of the area in the 220kV proposed transmission line from Sampur to Kappalthurai



# 15.10.13 Distribution of social service facilities, schools and regional places along the 220kV proposed transmission line from Sampur to Kappalthurai- Sheet 1 -TT1 to 8/8



# 15.10.13 Distribution of social service facilities, schools and regional places along the 220kV proposed transmission line from Sampur to Kappalthurai- Sheet 2- 8/8 to TT2



# 15.10.14 Distribution of Roads and Road Infrastructures along the 220kv proposed transmission line from Sampur to Kappalturai

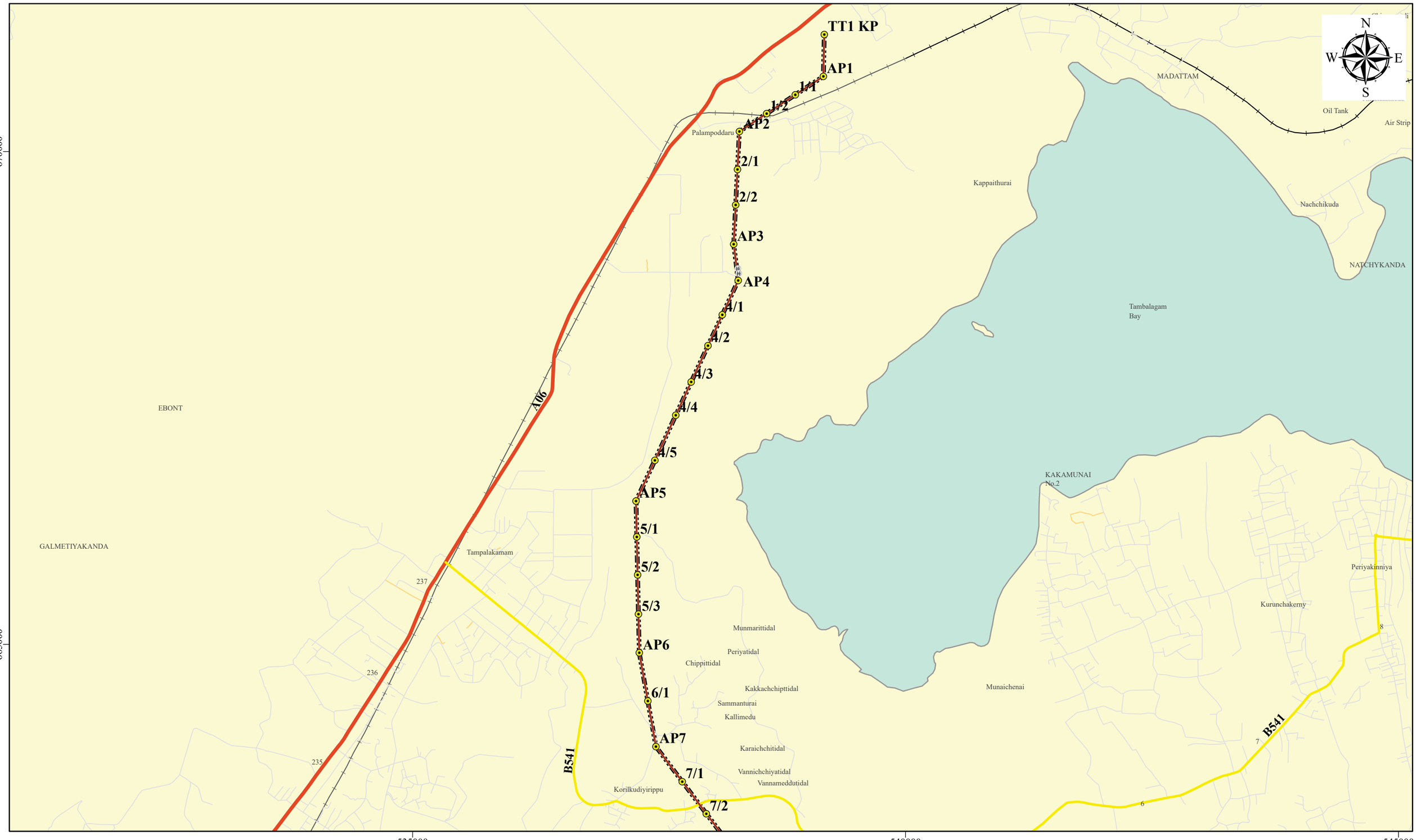
Major Road (A)
Minor Road (B)
Rail Road
Other Road
Foot Road
Outer Circular Road
Bridge
35m Line Corridor
Proposed Sampur GSS Area
Proposed Solar Park Boundary

**Scale: 1:70,000**

0 0.75 1.5 3 4.5 kilometers

**Spatial References:** Projected Coordination System SLD99
**Data Source**: 1:50000 data, Department of Survey, Sri Lanka

# 15.10.14.1 Distribution of Roads and Road Infrastructures along the 220kv proposed transmission line from Sampur to Kappalturai - TT1 to 7/2



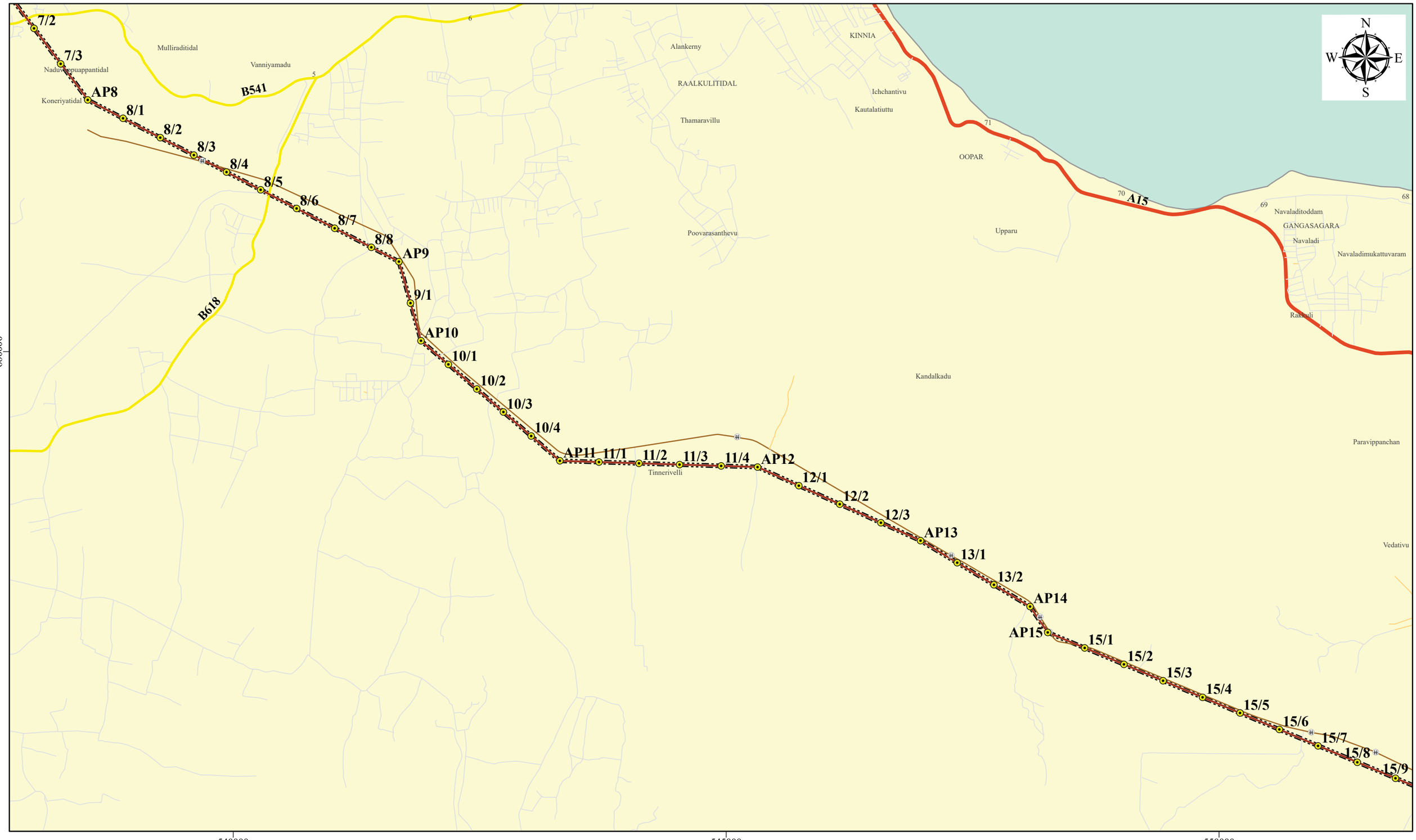

Major Road (A)
Minor Road (B)
Rail Road
Other Road
Foot Road
Outer Circular Road
Bridge

**Scale: 1:35,000**

0 0.4 0.8 1.6 2.4 kilometers

**Spatial References:** Projected Coordination System SLD99
**Data Source**: 1:50000 data, Department of Survey, Sri Lanka

# 15.10.14.2 Distribution of Roads and Road Infrastructures along the 220kv proposed transmission line from Sampur to Kappalturai - 7/2 to 15/9



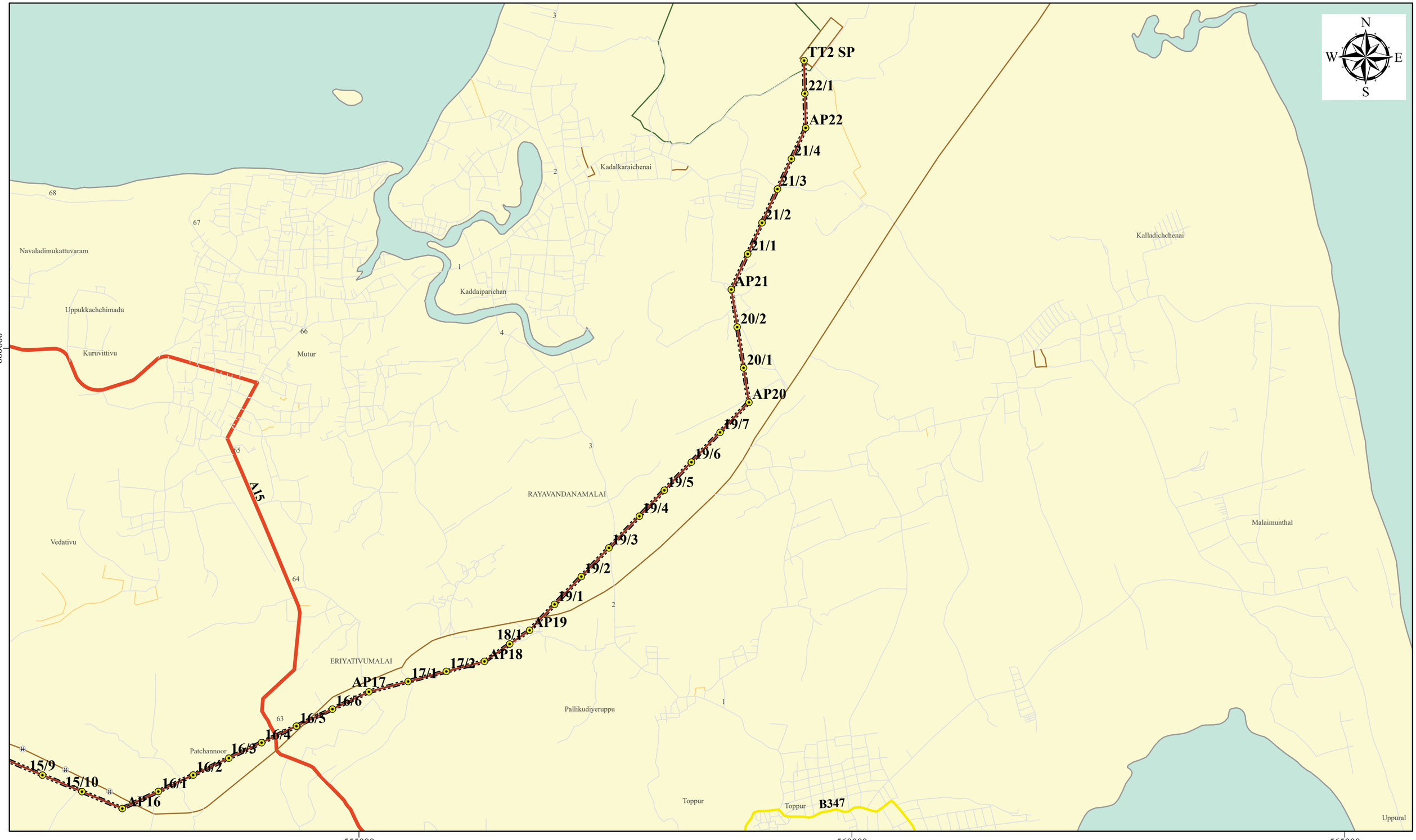

Major Road (A)
Minor Road (B)
Rail Road
Other Road
Foot Road
Outer Circular Road
Bridge

**Scale: 1:35,000**

0 0.4 0.8 1.6 2.4 kilometers

**Spatial References:** Projected Coordination System SLD99
**Data Source**: 1:50000 data, Department of Survey, Sri Lanka

# 15.10.14.3 Distribution of Roads and Road Infrastructures along the 220kv proposed transmission line from Sampur to Kappalturai -15/9 to TT2




Major Road (A)
Minor Road (B)
Rail Road
Other Road
Foot Road
Outer Circular Road
Bridge

**Scale: 1:35,000**

0 0.4 0.8 1.6 2.4 kilometers

**Spatial References:** Projected Coordination System SLD99
**Data Source**: 1:50000 data, Department of Survey, Sri Lanka

## 15.11 Inventory of Trees to be removed

## 15.11.a Government Tree list -Forest Area Trincomalee & Kantale – SKTDP

අඩවිය- ත්‍රිකුණාමලය , බීට්ටුව-කින්නියා

**Division - Trincomalee**

**Beat - Kinniya**

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල්) | උස (මීටර) | English Name |
|---|---|---|---|---|
| 1 | කුඹුක් | 63 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 2 | මයිල | 32 | 7 | Bauhinia *(Bauhinia racemosa)* |
| 3 | කුඹුක් | 32 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 4 | කුඹුක් | 31 | 7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 5 | කුඹුක් | 32 | 7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 6 | කුඹුක් | 33 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 7 | හික් | 22 | 8 | Indian Ash Tree Moya Wodier |
| 8 | මැයි මාර | 34 | 7 | royal poinciana, flamboyant, flame of the forest, or flame tree |
| 9 | දමුනු | 63 | 8 | Grewia helicterifolia wall |
| 10 | කුඹුක් | 33 | 10 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | English Name |
|---|---|---|---|---|
| 11 | කුඹුක් | 33 | 10 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 12 | හුරි මාර | 32 | 9 | Black Siris *(Albizia odoratissima)* |
| 13 | කුඹුක් | 34 | 9 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 14 | කුඹුක් | 35 | 9 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 15 | කුඹුක් | 34 | 9 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 16 | මාර | 22 | 7 | Siris Tree |
| 17 | කුඹුක් | 33 | 9 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 18 | කුඹුක් | 32 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 19 | කුඹුක් | 32 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 20 | මාදං | 29 | 8 | Java Plum Tree |
| 21 | මයිල | 63 | 8 | Bauhinia *(Bauhinia racemosa)* |
| 22 | මයිල | 19 | 7 | Bauhinia *(Bauhinia racemosa)* |
| 23 | යකඩ මරං | 29 | 7 | Perfume Flower Tree |
| 24 | කුඹුක් | 22 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 25 | මාදං | 64 | 8 | Java Plum Tree |
| 26 | මාදං | 65 | 8 | Java Plum Tree |
| 27 | මාදං | 32 | 8 | Java Plum Tree |
| 28 | මයිල | 33 | 8 | Bauhinia *(Bauhinia racemosa)* |
| 29 | මයිල | 22 | 8 | Bauhinia *(Bauhinia racemosa)* |
| 30 | මාදං | 34 | 10 | Java Plum Tree |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | English Name |
|---|---|---|---|---|
| 31 | කරව් | 25 | 8 | Syzygium rubicundum |
| 32 | කරව් | 25 | 8 | Syzygium rubicundum |
| 33 | මාදං | 33 | 7 | Java Plum Tree |
| 34 | කුඹුක් | 32 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 35 | කුඹුක් | 33 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 36 | කුඹුක් | 22 | 8 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 37 | කුඹුක් | 65 | 6 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 38 | කුඹුක් | 33 | 7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 39 | මාදං | 32 | 8 | Java Plum Tree |
| 40 | මාදං | 22 | 8 | Java Plum Tree |
| 41 | මාර | 22 | 7 | Siris Tree |
| 42 | දුමුනු | 25 | 8 | Grewia helicterifolia wall |
| 43 | කුඹුක් | 19 | 7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 44 | මාදං | 31 | 8 | Java Plum Tree |
| 45 | මාදං | 19 | 8 | Java Plum Tree |
| 46 | මාදං | 27 | 7 | Java Plum Tree |
| 47 | මාදං | 19 | 8 | Java Plum Tree |
| 48 | මාදං | 19 | 6 | Java Plum Tree |
| 49 | මාදං | 27 | 9 | Java Plum Tree |
| 50 | මයිල | 25 | 7 | Bauhinia *(Bauhinia racemosa)* |
| 51 | මාදං | 25 | 8 | Java Plum Tree |
| 52 | මාදං | 27 | 8 | Java Plum Tree |
| 53 | මාදං | 32 | 9 | Java Plum Tree |
| 54 | මාදං | 32 | 9 | Java Plum Tree |
| 55 | මාදං | 33 | 8 | Java Plum Tree |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | English Name |
|---|---|---|---|---|
| 56 | මාදං | 34 | 10 | Java Plum Tree |
| 57 | මාදං | 33 | 9 | Java Plum Tree |
| 58 | දිවුල් | 25 | 8 | Wood Apple Tree |
| 59 | මාදං | 32 | 9 | Java Plum Tree |
| 60 | දිවුල් | 24 | 8 | Wood Apple Tree |
| 61 | මාදං | 32 | 9 | Java Plum Tree |
| 62 | මාදං | 32 | 9 | Java Plum Tree |
| 63 | මාදං | 25 | 8 | Java Plum Tree |
| 64 | මාදං | 32 | 7 | Java Plum Tree |
| 65 | මාදං | 32 | 8 | Java Plum Tree |
| 66 | මාදං | 32 | 9 | Java Plum Tree |
| 67 | මාදං | 25 | 8 | Java Plum Tree |
| 68 | කෝන් | 33 | 10 | Ceylon Oak *(Schleichera oleosa)* |
| 69 | හැලඹ | 25 | 9 | True Kadamb Tree |
| 70 | බටදොඹ | 27 | 8 | Batapath Damba(Syzygium paniculatum) |
| 71 | පලු | 32 | 10 | Ceylon Ironwood |
| 72 | පලු | 32 | 10 | Ceylon Ironwood |
| 73 | දිවුල් | 32 | 9 | Wood Apple Tree |
| 74 | දිවුල් | 22 | 9 | Wood Apple Tree |
| 75 | දිවුල් | 23 | 10 | Wood Apple Tree |
| 76 | බටදොඹ | 22 | 7 | Batapath Damba |
| 77 | බටදොඹ | 22 | 8 | Batapath Damba |
| 78 | මාදං | 33 | 10 | Java Plum Tree |
| 79 | දිවුල් | 32 | 8 | Wood Apple Tree |
| 80 | දිවුල් | 32 | 7 | Wood Apple Tree |
| 81 | මාදං | 32 | 8 | Java Plum Tree |
| 82 | දිවුල් | 32 | 8 | Wood Apple Tree |
| 83 | සියඹලා | 64 | 9 | Tamarind |
| 84 | සියඹලා | 34 | 10 | Tamarind |
| 85 | බුරුත | 32 | 9 | Ceylon satinwood or East Indian satinwood |
| 86 | සියඹලා | 66 | 10 | Tamarind |
| 87 | මාර | 16 | 8 | Siris Tree |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල්) | උස (මීටර) | English Name |
|---|---|---|---|---|
| 88 | බුරුත | 32 | 9 | Ceylon satinwood or East Indian satinwood |
| 89 | කිරිය | 65 | 10 | wind-tree |
| 90 | ඇහැටු | 160 | 10 | Indian Rosewood Tree |
| 91 | ඇහැටු | 65 | 8 | Indian Rosewood Tree |

**අඩවිය-කන්තලේ , බීට්ටුව-මුතුර්**

**Division - Kantale**

**Beat - Muttur**

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල්) | උස (මීටර) | වට ප්‍රමාණය (මීටර) | English Name |
|---|---|---|---|---|---|
| 1 | නුග | 101 | 6 | 2.6 | Banyan Tree *(Ficus benghalensis)* |
| 2 | නුග | 78 | 4 | 2 | Banyan Tree *(Ficus benghalensis)* |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | වට ප්‍රමාණය (මීටර) | English Name |
|---|---|---|---|---|---|
| 3 | කහපෙනල | 51 | 3 | 1.3 | Soapberry Tree *(Sapindus trifoliatus)* |
| 4 | විලෝ | 78 | 8 | 2 | Willow Tree *(Salix spp.)* |
| 5 | කුඹුක් | 273 | 9 | 7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 6 | කුඹුක් | 105 | 10 | 2.7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 7 | කුඹුක් | 47 | 4 | 1.2 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 8 | කුඹුක් | 35 | 3 | 0.9 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 9 | කුඹුක් | 55 | 8 | 1.4 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 10 | කුඹුක් | 117 | 6 | 3 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 11 | කුඹුක් | 101 | 5 | 2.6 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 12 | බොරදමන | 48 | 6 | 1.23 | - |
| 13 | කහපෙනල | 59 | 6 | 1.5 | Soapberry Tree *(Sapindus trifoliatus)* |
| 14 | ගැඩුබ | 45 | 5 | 1.15 | Charcoal Tree |
| 15 | තිබිරි | 121 | 5 | 3.1 | Gaub Tree |
| 16 | මසන් | 74 | 7 | 1.9 | Indian Jujube |
| 17 | බොරදමන | 51 | 3 | 1.3 | - |
| 18 | කුඹුක් | 125 | 11 | 3.2 | Arjuna / Kumbuk Tree |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | වට ප්‍රමාණය (මීටර) | English Name |
|---|---|---|---|---|---|
| | | | | | *(Terminalia arjuna)* |
| 19 | කුඹුක් | 41 | 2 | 1.06 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 20 | කහපෙනල | 55 | 3 | 1.4 | Soapberry Tree *(Sapindus trifoliatus)* |
| 21 | කහපෙනල | 39 | 5 | 1 | Soapberry Tree *(Sapindus trifoliatus)* |
| 22 | කුඹුක් | 66 | 6 | 1.7 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 23 | කිරිය | 51 | 7 | 1.3 | Rath Kihiriya or Acacia catechu |
| 24 | කුඹුක් | 39 | 6 | 1 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 25 | තිබිරි | 82 | 6 | 2.11 | Gaub Tree |
| 26 | මාදං | 117 | 12 | 3 | Java Plum Tree |
| 27 | කුඹුක් | 156 | 10 | 4 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 28 | මාර | 44 | 6 | 1.12 | Siris Tree |
| 29 | වෙලං | 39 | 4 | 1 | Fishing Rod Tree |
| 30 | මාර | 39 | 5 | 1 | Siris Tree |
| 31 | මාර | 43 | 6 | 1.1 | Siris Tree |
| 32 | කුඹුක් | 101 | 4 | 2.6 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 33 | ඇහැටු | 113 | 6 | 2.9 | Indian Rosewood Tree |
| 34 | ඇහැටු | 62 | 6 | 1.6 | Indian Rosewood Tree |
| 35 | මාර | 39 | 4 | 1 | Siris Tree |
| 36 | කැටකෑල | 35 | 6 | 0.9 | Kuhir Tree |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | වට ප්‍රමාණය (මීටර) | English Name |
|---|---|---|---|---|---|
| 37 | කැටකැල | 31 | 4 | 0.8 | Kuhir Tree |
| 38 | මයිල | 23 | 4 | 0.6 | Bauhinia *(Bauhinia racemosa)* |
| 39 | මයිල | 27 | 3 | 0.7 | Bauhinia *(Bauhinia racemosa)* |
| 40 | හික් | 25 | 5 | 0.65 | Indian Ash Tree Moya Wodier |
| 41 | දමුණු | 43 | 4 | 1.1 | Grewia helicterifolia wall |
| 42 | මයිල | 51 | 5 | 1.3 | Bauhinia *(Bauhinia racemosa)* |
| 43 | හික් | 51 | 6 | 1.3 | Indian Ash Tree Moya Wodier |
| 44 | දමුණු | 43 | 5 | 1.1 | Grewia helicterifolia wall |
| 45 | දමුණු | 41 | 6 | 1.05 | Grewia helicterifolia wall |
| 46 | කීරිය | 59 | 7 | 1.5 | Rath Kihiriya or Acacia catechu |
| 47 | හික් | 43 | 7 | 1.1 | Indian Ash Tree Moya Wodier |
| 48 | හික් | 47 | 6 | 1.2 | Indian Ash Tree Moya Wodier |
| 49 | දමුණු | 47 | 4 | 1.2 | |
| 50 | වෙලං | 33 | 4 | 0.85 | Fishing Rod Tree |
| 51 | හික් | 43 | 6 | 1.1 | Indian Ash Tree Moya Wodier |
| 52 | මාර | 39 | 5 | 1 | Siris Tree |
| 53 | බුරුත | 43 | 4 | 1.1 | Ceylon satinwood or East Indian satinwood |

| අනු අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අගල්) | උස (මීටර) | වට ප්‍රමාණය (මීටර) | **English Name** |
|---|---|---|---|---|---|
| 54 | ඇහැටු | 109 | 6 | 2.8 | Indian Rosewood Tree |
| 55 | මාදං | 35 | 4 | 0.9 | Java Plum Tree |
| 56 | මාර | 31 | 4 | 0.8 | Siris Tree |
| 57 | මිල්ල | 27 | 5 | 0.7 | Peacock Chaste Tree |
| 58 | වෙලං | 47 | 5 | 1.2 | Fishing Rod Tree |
| 59 | මාර | 43 | 4 | 1.1 | Siris Tree |
| 60 | කෝන් | 51 | 4 | 1.3 | Ceylon Oak *(Schleichera oleosa)* |
| 61 | කෝන් | 59 | 6 | 1.5 | Ceylon Oak *(Schleichera oleosa)* |
| 62 | වෙලං | 49 | 4 | 1.25 | Fishing Rod Tree |
| 63 | කුඹුක් (අතු ඉවත් කිරීම) | 64 | 7 | 1.65 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |
| 64 | කුඹුක් (අතු ඉවත් කිරීම) | 50 | 6 | 1.27 | Arjuna / Kumbuk Tree *(Terminalia arjuna)* |

## 15.11.b Non Forest Area Tree List

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| 17/04/0229F/008/P/0019 | 1 | කොහොඹ (வேம்பு) ( Neem) | 43" |
| Hariyenthiran AC- 1.51 | 1 | බටදොඹ(Batapath Damba(Syzygium paniculatum)) | 18" |
| | 1 | කොහොඹ (வேம்பு) ( Neem) | 12" |
| | 1 | කොහොඹ (வேம்பு) ( Neem) | 36" |
| | 1 | බටදොඹ(Batapath Damba(Syzygium paniculatum)) | 36" |
| 17/04/0229F/008/P/0020 | 2 | කොහොඹ (வேம்பு) ( Neem) | 24" |
| R.Kandeepan AC- 1.26 | | | |
| 17/04/0229F/008/P/0031 | 3 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 24" |
| Thalaiyasingam Puvanenthiran | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 12" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 36" |
| **17/04/0229F/008/P/0037** | 2 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 24" |
| Velayutham Suntharalingam | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 36" |
| AC- 2.51 | | | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| **17/04/0229F/008/P/0038** | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 21" |
| Magadevan Kaalipillai | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 36" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 26" |
| | 3 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 36" |
| පාලම් පට්ටාරු ඇල රක්ෂිතය | 2 | දිවුල්(விளா) | 30" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 36" |
| | 1 | දිවුල්(விளா)( Wood Apple) | 40" |
| | 1 | දිවුල්(விளா) ( Wood Apple) | 47" |
| | 1 | වල් ලී(காட்டு மரம்)( Wel beli Tree or Sea Hibiscus ) | 36" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 12" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 12" |
| | 3 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 24" |
| | 2 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 30" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 28" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 26" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 24" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 36" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 24" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 45" |
| | 1 | දිවුල්(விளா)(Wood Apple) | 24" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 44" |
| | 1 | කපුරු(Camphor Tree) | 26" |
| | 1 | මාර(மாரா மரம்)(Siris Tree) | 48" |
| | 1 | දමුනු(தாமுனு)( Grewia helicterifolia wall) | 24" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 24" |
| පාලම් පට්ටාරු පාලමේ සිට AP2 දෙසට මුහුණ ලා සිටි විට දකුණු පස පසඇල ඉවුර | 1 | වෙලන්(வெலாங்)( Fishing Rod Tree ) | 48" |
| | 1 | තල් මධ්‍යම(பனை நடுத்தர(Palmyra palm or Toddy palm) | |
| | 1 | හික්(Indian Ash Tree Moya Wodier) | **66"** |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | | | |
| | 1 | හික්(Indian Ash Tree Moya Wodier) | **22"** |
| | 1 | හික්(Indian Ash Tree Moya Wodier) | 36" |
| | 1 | තේක්ක(தேக்கு) (Teak Tree) | 42" |
| කෝවිල අසල (கோவில் அருகில்) | 1 | කොහොඹ(வேம்பு) (neem) ( need only cut a branch) | 72" |
| | 1 | කොහොඹ(வேம்பு) (neem) | 105" |
| කෝවිල අසල ඇළ ඉවුර | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 42" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 60" |
| | 1 | මයිල(ஆத்தி) (Bauhinia (Bauhinia racemosa) | 60" |
| | 1 | කුඹුක්(வெண் மருது)( (Arjuna / Kumbuk Tree (Terminalia arjuna) | 90" |
| **siruvasawam** | 6 | පොල් පැළ(தென்னை செடி) (Young Coconut) | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | | | |
| **M.Thiruvasakam - 560903022V** | 5 | පොල් මධ්‍යම (Young Coconut)<br><br>(தென்னை(நடுத்தரமான)) | |
| | 1 | තල් සරු(பனை நன்கு வளர்ந்த)( Palmyra palm or Toddy palm) – high growth | |
| | 1 | තල් මධ්‍යම(பனை நடுத்தர )( Palmyra palm or Toddy palm) – Medium sized | |
| | 1 | වෙලන්(வெலாங்) ( Fishing Rod Tree ) | 60" |
| | 1 | ( Wel beli Tree or Sea Hibiscus )ලී(காட்டு மரம்) | 12" |
| kukul kotuwa athi idama | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 25" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 40" |
| V.Inthumathy - 197675802706 | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 12" |
| **17/06/00228/0002/P/00085** | 1 | කොහොඹ(வேம்பு) ( Neem) | 24" |
| | 2 | තල් මධ්‍යම(பனை நடுத்தர) )( Palmyra palm or Toddy palm) – Medium sized | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | මුරුංගා(முருங்கை) (Drumstick Tree) | 30" |
| | 1 | මුරුංගා(முருங்கை) (Drumstick Tree) | 36" |
| | 1 | මුරුංගා(முருங்கை) (Drumstick Tree) | 43" |
| | 1 | අට්ටික්කා(அட்டிகா) (Cluster Fig Tree) | 60" |
| | 1 | අට්ටික්කා(அட்டிகா) (Cluster Fig Tree) | 48" |
| **M.wimalan** | 1 | ඉඹුල්(இபுல் ) (White Lead Tree - Ipil Ipil) | 36" |
| **17/06/00228/0002/P/00057** | 1 | පලු((Ceylon Iron Wood) | 72" |
| M.Vimalenthiran - 712801662V | 1 | කොහොඹ (வேம்பு) ( Neem) | 45" |
| | 1 | කොහොඹ (வேம்பு) ( Neem) | 36" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | මාර(மாரா மரம்)(Siris Tree) | 50" |
| | 1 | අට්ටික්කා(அட்டிகா) (Cluster Fig Tree) | 60" |
| T.puwaneswaran | 1 | වෙලන්(வெலாங்) ( Fishing Rod Tree ) | 48" |
| 772394594 ඇල ඉවුර | 4 | පොල් පැළ(தென்னை செடி) (Young Coconut) | |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 40" |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 27" |
| | 1 | වෙලන්(வெலாங்) ( Fishing Rod Tree ) | 36" |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 28" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 24" |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 24" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 24" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) ( Wel beli Tree or Sea Hibiscus ) | 36" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 24" |
| | 1 | වල් ලී(காட்டு மரம்) ( Wel beli Tree or Sea Hibiscus ) | 36" |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 48" |
| | 1 | මී(இலுப்பை) (Butter Tree or Mahua Tree) | 32" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 78" |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 60" |
| | 1 | මී(இலுப்பை) (Butter Tree or Mahua Tree) | 46" |
| | 1 | මී(இலுப்பை) (Butter Tree or Mahua Tree) | 36" |
| | 1 | මී(இலுப்பை) (Butter Tree or Mahua Tree) | 54" |
| | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 100" |
| | 1 | කරවී(Syzygium rubicundum) | 85" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | කරවී(Syzygium rubicundum) | 46" |
| S.Krishnakumari - 745783210V | 1 | කෝන්(சங்கு )( (Ceylon Oak (Schleichera oleosa) | 60" |
| 17/06/00228/0002/P/00118 | 1 | කැටකැල(முள்வேங்கை) (Kuhir Tree )( (Kuhir Tree ) | 60" |
| S.Kalirasa - | 1 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| 17/06/00228/0002/P/00194 | | | |
| 17/06/0228K/0001/P/00117 | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 80" |
| R.Ganaselvam (Ulthanda Vayal) | | | |
| 17/06/00228K/0003/P/00091 | 1 | කුඹුක්(வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna) | 30" |
| Kovil vayal kaakathaiyan keeru | | | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| ඇල ඉවුර( 6/1 අසල) | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 36" |
| ඇල ඉවුර(සාරතා පාර පාසල අසල) | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 103" |
| | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 36" |
| 17/06/0228A/0002/P/00169 | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 113" |
| K.Suntharalingam | | | |
| 17.16.0226N.002.P.0046 | 9 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| A.H.KALEELUL RAHMAN | | | |
| Ac- 10.1 | | | |
| 17.16.0226N.002.P.0045 | 2 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| M.C.M.NAWAS | | | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| AC-5.49 | | | |
| ඇල ඉවුර (8\1 -8\2 අතර) | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 82" |
| **0226N** | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 75" |
| | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 72" |
| ඇල ඉවුර( 8\2 අසල)0226N | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 132" |
| | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 60" |
| | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 108"<br>MARKED AS ''B'' |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 100" |
| | 1 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 84" |
| **17.16.0226N.002.P.0069** | | | |
| Sri Aathikoneswara Nayagam Aalayam | 7 | කුඹුක්(வெண் மருது)<br>(Arjuna / Kumbuk Tree<br>(Terminalia arjuna) | 84"<br>MARKED AS ''B'' |
| AC-4.77 | | | |
| NEXT LAND FOR JARASATH CONTACT JARA0226M | 1 | කොහොඹ(வேம்பு) ( Neem) | 60" |
| | 1 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| LAND -A 0226M | 1 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| CONTAct K.M nafar 0757578188 | 1 | ඇහැටු((Indian Rosewood Tree) | 36" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| land-B 0226M | 1 | ඇහැටු(Indian Rosewood Tree) | 48" |
| CONTAct K.M nafar 0757578188 | 1 | තල් සරු(பனை நன்கு வளர்ந்த) | |
| **17.16.0226M.010.P.0019 J.M.RAMEES** | 1 | තල් සරු(பனை நன்கு வளர்ந்த) MARKED AS ''B'')( Palmyra palm or Toddy palm) – high growth | |
| පට්ටියතුවට්ටෘ කුලම් වැව් තාවුල්ල 0226O | 1 | තල් සරු(பனை நன்கு வளர்ந்த) MARKED AS ''B'')( Palmyra palm or Toddy palm) – high growth | |
| | 17 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| 17.17.0226O.053.P.018 | 1 | නුග(ஆல்) | 132" |
| K.M.M.Ibrahim 7A 3R 12P ( 3.13H) 0756090025 | | | |
| CONTACT KUSAIMA 0225K | 1 | කොහොඹ(வேம்பு) ( Neem) | 45" |
| 17.17.0225K.009.P.0004 | 1 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 168" |
| KUSAIMA - 1.29H | | | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| 17.17.0225K.010.P.0005<br>U. ABDUL RASAK - 4.15H | 1 | කරඳ(புங்கை மரம்) (Indian Beech Tree) | 72" |
| | 1 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 168" |
| | 2 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| **17.17.0225K.012.P.0020**<br>**A.A. FASMEER -1.28H** | 1 | කොහොඹ(வேம்பு) (neem)<br>MARKED AS ''B'' | 70" |
| 17/20/0244F/017/P/0003<br>JARIYA | 1 | සියඹලා(புளி) (Tamarind Tree ) | 120" |
| **17/20/218E/003/P/0008**<br>**HALIMA UMMAHA** | 1 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| **17/20/218E/004/P/0022** | 1 | කොහොඹ(வேம்பு)<br>MARKED AS ''B''( Neem) | 46" |
| AATHAVAN FO | | | |
| **17.19.219.012.P.0009** | 1 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 95" |
| A.SAROOJA | | | |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| R.Kirusanthini<br>17/18/222/010/P/0006 | 1 | කෝන්(கூழா மரம்) (Ceylon Oak (Schleichera oleosa) | 90" |
| | 1 | හික්(Indian Ash Tree Moya Wodier) | 60" |
| | 1 | කෝන්(கூழா மரம்) (Ceylon Oak (Schleichera oleosa) | 75" |
| S.NANTHAN | 1 | කපුරු(Camphor Tree) | 60" |
| 17/18/222/10/P/0009 | | | |
| 4A 2R | | | |
| ඉවුරඇල (19/7අසල )0222A | 1 | කුඹුක් (வெண் மருது) (Arjuna / Kumbuk Tree (Terminalia arjuna)<br><br>MARKED AS ''B'' | 48" |
| **17/18/0222A/003/P/0026<br>S.KANAPATHIPILLAI** | 1 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 48" |
| | 1 | සියඹලා(புளி) (Tamarind Tree ) | 90" |
| වැලි පාර අසල 0222A | 1 | සියඹලා(புளி) (Tamarind Tree ) | 90" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | | | |
| SRI MURALITHARN NAGALATCHUMI 0222A/ | 1 | වෙලන්(வெலாங்) | 46" |
| | 1 | කැටකැල(முள்வேங்கை) | 75" |
| | 1 | (Ceylon Oak (Schleichera oleosa)<br><br>(கூழா மரம்) | 48" |
| | 1 | කෝන්(கூழா மரம்) (Ceylon Oak (Schleichera oleosa) | 54" |
| A.KANPATHIPILLAI 17/18/0222A/001/P/0024 | 1 | තල් සරු(பனை நன்கு வளர்ந்த) )( Palmyra palm or Toddy palm) – high growth | |
| M.UTHAYARAJ 17/18/0222A/001/P/0001 | 3 | පොල් පැළ(தென்னை செடி) (Young Coconut) | |
| | 3 | පොල් මධ්‍යම தென்னை(நடுத்தரமான) (Young Coconut) | |
| **land C 0222C** | 1 | සියඹලා(புளி) (Tamarind Tree ) | 60" |
| **land D 0222C** | 1 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 72" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| டயனெ நு 0222ஊ | 1 | හික්(Indian Ash Tree Moya Wodier) | 46" |
| land F 0222C | 1 | හික්(Indian Ash Tree Moya Wodier) | 48" |
| | 1 | හික්(Indian Ash Tree Moya Wodier) | 44" |
| | 1 | බුරුත(முதிரை) (Ceylon satinwood or East Indian satinwood) | 33" |
| land G (SANMUGARASA) 0222C | 1 | හික්(Indian Ash Tree Moya Wodier) | 72" |
| land H 0222C | 1 | බුරුත(முதிரை) (Ceylon satinwood or East Indian satinwood) | 40" |
| land I 0222C | 1 | හික්(Indian Ash Tree Moya Wodier) | 80" |

| අයිතිකරුවන්ගේ නම් සහ ලිපිනයන්<br><br>உரிமையாளரின் பெயர் மற்றும் விலாசம் | කැපිය යුතු ගස් ගණන<br><br>அகற்றப்படும்மரங்களின் எண்ணிக்கை | කැපිය යුතු ගස්වල විස්තරය ඉඩමේ විස්තරය<br><br>அகற்றப்படும் மரங்கள் சம்பந்தமான விபரங்கள் | |
|---|---|---|---|
| | 2 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 120" |
| | 1 | හික්(Indian Ash Tree Moya Wodier) | 72" |
| **j.selvarani** | 1 | නුග(ஆல்) (Banyan tree or Indian Banyan) | 108" |
| 17/18/0222C/05/P/0015 | | | |

## 14.11.c SLPA Land

| අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල් වලින්) | උස (මීටරවලින්) | English Names |
|---|---|---|---|---|
| 1 | කැටකැල | 60 | 2 | Soap Bush |
| 2 | කැටකැල | 54 | 4 | Soap Bush |

| අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල් වලින්) | උස (මීටරවලින්) | English Names |
|---|---|---|---|---|
| 3 | කැටකෑල | 60 | 5 | Soap Bush |
| 4 | වෙලන් | 34 | 5 | Fishing Rod Tree |
| 5 | කැටකෑල | 72 | 4 | Soap Bush |
| 6 | වෙලන් | 24 | 4 | Fishing Rod Tree |
| 7 | වෙලන් | 34 | 5 | Fishing Rod Tree |
| 8 | වෙලන් | 46 | 2 | Fishing Rod Tree |
| 9 | වෙලන් | 24 | 2 | Fishing Rod Tree |
| 10 | වෙලන් | 26 | 3 | Fishing Rod Tree |
| 11 | වෙලන් | 32 | 5 | Fishing Rod Tree |
| 12 | තෝර | 40 | 5 | sickle senna or sickle wild sensitive-plant |
| 13 | වෙලන් | 36 | 2 | Fishing Rod Tree |
| 14 | ඇහැටු සමග නුගය | 174 | 4 | Combination of Golden Shower Tree *(Cassia fistula)* and Banyan Tree |
| 15 | වල් ලී | 60 | 2 | Wel beli Tree or Sea Hibiscus |
| 16 | වල් ලී | 52 | 2 | Wel beli Tree or Sea Hibiscus |
| 17 | කැටකෑල | 60 | 3 | Soap Bush |
| 18 | මයිල | 32 | 4 | Bauhinia *(Bauhinia racemosa)* |

| අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල් වලින්) | උස (මීටරවලින්) | English Names |
|---|---|---|---|---|
| 19 | වෙලන් | 33 | 5 | Fishing Rod Tree |
| 20 | වෙලන් | 36 | 5 | Fishing Rod Tree |
| 21 | වෙලන් | 24 | 5 | Fishing Rod Tree |
| 22 | යකඩමරං | 36 | 3 | Perfume Flower Tree |
| 23 | යකඩමරං | 24 | 3 | Perfume Flower Tree |
| 24 | ඇහැටු සමග නුගය | 180 | 3 | Combination of Golden Shower Tree *(Cassia fistula)* and Banyan Tree |
| 25 | ඉපිල් | 46 | 5 | Ipil-Ipil |
| 26 | කැටකැල | 54 | 4 | Soap Bush |
| 27 | ලෝලු | 30 | 5 | Indian Cherry |
| 28 | කැටකැල | 30 | 6 | Soap Bush |
| 29 | යකඩමරං | 26 | 2 | Perfume Flower Tree |
| 30 | වෙලන් | 24 | 4 | Fishing Rod Tree |
| 31 | වල් ලී | 30 | 5 | Wel beli Tree or Sea Hibiscus |
| 32 | වල් ලී | 30 | 3 | Wel beli Tree or Sea Hibiscus |
| 33 | වෙලන් | 32 | 3 | Fishing Rod Tree |
| 34 | වල් ලී | 47 | 3 | Wel beli Tree or Sea Hibiscus |
| 35 | වල් ලී | 32 | 2 | Wel beli Tree or Sea Hibiscus |

| අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල් වලින්) | උස (මීටරවලින්) | English Names |
|---|---|---|---|---|
| 36 | දමුනු | 36 | 4 | Grewia helicterifolia wall |
| 37 | වෙලන් | 54 | 5 | Fishing Rod Tree |
| 38 | වල් ලී | 34 | 2 | Wel beli Tree or Sea Hibiscus |
| 39 | වල් ලී | 26 | 2 | Wel beli Tree or Sea Hibiscus |
| 40 | වෙලන් | 42 | 2 | Fishing Rod Tree |
| 41 | හල්මිල්ල | 28 | 5 | |
| 42 | වෙලන් | 42 | 2 | Fishing Rod Tree |
| 43 | වෙලන් | 32 | 4 | Fishing Rod Tree |
| 44 | වෙලන් | 42 | 2 | Fishing Rod Tree |
| 45 | වෙලන් | 36 | 2 | Fishing Rod Tree |
| 46 | වල් ලී | 28 | 5 | Wel beli Tree or Sea Hibiscus |
| 47 | වෙලන් | 36 | 3 | Fishing Rod Tree |
| 48 | වෙලන් | 24 | 4 | Fishing Rod Tree |
| 49 | යකඩමරං | 24 | 2 | Perfume Flower Tree |
| 50 | වෙලන් | 24 | 3 | Fishing Rod Tree |
| 51 | යකඩමරං | 20 | 3 | Perfume Flower Tree |
| 52 | වෙලන් | 48 | 4 | Fishing Rod Tree |
| 53 | වෙලන් | 32 | 2 | Fishing Rod Tree |
| 54 | වෙලන් | 48 | 4 | Fishing Rod Tree |
| 55 | වෙලන් | 30 | 4 | Fishing Rod Tree |
| 56 | වෙලන් | 30 | 5 | Fishing Rod Tree |

| අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල් වලින්) | උස (මීටරවලින්) | English Names |
|---|---|---|---|---|
| 57 | වෙලන් | 36 | 3 | Fishing Rod Tree |
| 58 | වෙලන් | 36 | 2 | Fishing Rod Tree |
| 59 | යකඩමරං | 24 | 3 | Perfume Flower Tree |
| 60 | වෙලන් | 60 | 4 | Fishing Rod Tree |
| 61 | වෙලන් | 34 | 3 | Fishing Rod Tree |
| 62 | වල් ලී | 60 | 6 | Wel beli Tree or Sea Hibiscus |
| 63 | වල් ලී | 60 | 5 | Wel beli Tree or Sea Hibiscus |
| 64 | වල් ලී | 38 | 3 | Wel beli Tree or Sea Hibiscus |
| 65 | වල් ලී | 42 | 6 | Wel beli Tree or Sea Hibiscus |
| 66 | යකඩමරං | 24 | 3 | Perfume Flower Tree |
| 67 | යකඩමරං | 48 | 3 | Perfume Flower Tree |
| 68 | වෙලන් | 30 | 4 | Fishing Rod Tree |
| 69 | වල් ලී | 30 | 3 | Wel beli Tree or Sea Hibiscus |
| 70 | වල් ලී | 30 | 4 | Wel beli Tree or Sea Hibiscus |
| 71 | වල් ලී | 42 | 4 | Wel beli Tree or Sea Hibiscus |
| 72 | වෙලන් | 32 | 3 | Fishing Rod Tree |
| 73 | වීර | 46 | 2 | Drypetes sepiaria |
| 74 | වෙලන් | 30 | 2 | Fishing Rod Tree |

| අංකය | ගස් වර්ගය | වට ප්‍රමාණය (අඟල් වලින්) | උස (මීටරවලින්) | English Names |
|---|---|---|---|---|
| 75 | වීර | 30 | 4 | Drypetes sepiaria |
| 76 | වල් ලී | 30 | 3 | Wel beli Tree or Sea Hibiscus |
| 77 | වෙලන් | 24 | 5 | Fishing Rod Tree |
| 78 | වෙලන් | 30 | 3 | Fishing Rod Tree |
| 79 | නා ඉඹුල් | 48 | 4 | Firjan Longan Island Lychee or Pacific Lychee |
| 80 | යකඩමරං | 30 | 4 | Perfume Flower Tree |

**15.12. Inventory of structures, towers and Land use along the 37.6 km of the Proposed 220Kv Transmission line from Sampur to Kappalthurai during 2025 within 100 m from both sides of the line corridor edge**

| **Angle Tower Location 1** | | **Angle Tower Location 2** | | **Distance Between Towers (m)** | **No of Angle / Terminal Towers** | **No of Suspension Towers** | **Structures on RHS** | **Structures on LHS** | **Land Use Between Towers Within 35m Corridor** |
|---|---|---|---|---|---|---|---|---|---|
| Tower Point | Coordinate | Tower Point | Coordinate | | | | | | |
| TT1 | 8.548670°, 81.129610° | AP 1 | 8.544830°, 81.129523° | 426 m | 0 | 0 | CEB circuit bungalow | Proposed line bay area | Spares forests, scrubland, teak plantation |
| AP1 | 8.544830°, 81.129523° | AP2 | 8.539781°, 81.121780° | 1024m | 0 | 2 | No | No | Spares forest, scrublands and marsh |
| AP2 | 8.539781°, 81.121780° | AP3 | 8.529438°, 81.121243° | 1147m | 0 | 2 | Pig farm situated beyond the 35-meter corridor boundary | No | Scrublands, paddy fields, marsh, stream |
| AP3 | 8.529438°, 81.121243° | AP4 | 8.526109°, 81.121656° | 374 m | 0 | 0 | 6-7 Houses situated beyond the 35-meter corridor boundary | No | Marsh, stream, home gardens, paddy fields, home gardens |
| AP4 | 8.526109°, 81.121656° | AP5 | 8.505879°, 81.112223° | 2472m | 0 | 5 | 1 houses situated beyond the 35-meter corridor boundary | No | Paddy fields, marsh, scrub vegetation, |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | home gardens |
| AP5 | 8.505879°, 81.112223° | AP6 | 8.491961°, 81.112514° | 1535m | 0 | 3 | No | No | Paddy fields, marshes, scrublands, home gardens |
| AP6 | 8.491961°, 81.112514° | AP7 | 8.483347°, 81.114040° | 969m | 0 | 1 | Saratha vidyalaya, Thampalakamam, lies 20 meters outside the 35-meter corridor boundary, | Houses situated beyond the 35-meter corridor boundary | Paddy fields, home gardens |
| AP7 | 8.483347°, 81.114040° | AP8 | 8.470606°, 81.123613° | 1767m | 0 | 3 | Houses situated beyond the 35-meter corridor boundary | Houses are situated beyond the 35-meter corridor boundary | Paddy fields, home gardens |
| AP8 | 8.470606°, 81.123613° | AP9 | 8.455743°, 81.152267° | 3573m | 0 | 8 | Part of Trincomalee ring road | Part of Trincomalee ring road<br><br>Houses are situated beyond the 35-meter corridor boundary | Paddy fields, lake and marsh |
| AP9 | 8.455743°, 81.152267° | AP10 | 8.448481°, 81.154294° | 836m | 0 | 1 | No | Part of Trincomalee ring road,<br><br>2 houses situated beyond the 35-meter corridor | Paddy fields |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| AP10 | 8.448481°, 81.154294° | AP11 | 8.437453°, 81.167077° | 1867m | 0 | 4 | No | Part of Trincomalee ring road<br><br>Houses are situated beyond the 35-meter corridor | Paddy fields, tanks, home gardens |
| AP11 | 8.437453°, 81.167077° | AP12 | 8.436859°, 81.185287° | 2020m | 0 | 4 | No | Part of Trincomalee ring road, | Paddy field, scrub land, Mahaweli river |
| AP12 | 8.436859°, 81.185287° | AP13 | 8.430093°, 81.200294° | 1820m | 0 | 3 | No | Part of Trincomalee ring road, houses situated beyond the 35-meter corridor, also 2 houses are located within the line corridor,<br><br>3 Argo Wells | Paddy fields, scrubland, home gardens |
| AP13 | 8.430093°, 81.200294° | AP14 | 8.424036°, 81.210376° | 1296m | 0 | 2 | No | Part of Trincomalee ring road<br><br>Bridge | Scrubland, Marsh |
| AP14 | 8.424036°, 81.210376° | AP15 | 8.421658°, 81.212000° | 320m | 0 | 0 | No | Part of Trincomalee ring road<br><br>Mahaweli river crossing bridge | Scrubland, spares forest, marsh land and streams |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| AP15 | 8.421658°, 81.212000° | AP16 | 8.405170°, 81.251372° | 4718m | 0 | 10 | Part of Trincomalee ring road | Part of Trincomalee ring road<br><br>Bridge | Scrubland, marsh, paddy fields streams, |
| AP16 | 8.405170°, 81.251372° | AP17 | 8.415840°, 81.274097° | 2790m | 0 | 6 | Houses situated beyond the 35-meter corridor,<br><br>Part of Trincomalee ring road<br><br>Trincomalee Batticaloa highway | Houses situated beyond the 35-meter corridor,<br><br>Part of Trincomalee ring road<br><br>Trincomalee Batticaloa highway | Paddy fields, streams, major Road, minor Road, home gardens |
| AP17 | 8.415840°, 81.274097° | AP18 | 8.418621°, 81.284744° | 1215m | 0 | 2 | Houses are situated beyond the 35-meter corridor, | Houses are situated beyond the 35-meter corridor, | Paddy fields, streams, tank, minor road, home gardens |
| AP18 | 8.418621°, 81.284744 | AP19 | 8.42146, 81.2889 | 558m | 0 | 1 | United Lanka A&I Company (Pvt) Ltd<br><br>Houses are situated beyond the 35-meter corridor | No | Paddy fields, home gardens, minor Road, abandoned paddy fields |
| AP19 | 8.421464, 81.2889 | AP20 | 8.442336°, 81.309136° | 3217 m | 0 | 7 | Part of Trincomalee ring road | Malai Pillaiyar<br><br>Agro Well<br><br>Houses are situated beyond the 35-meter corridor | Scrublands, home gardens, paddy fields, marsh |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| AP20 | 8.442336°, 81.309136° | AP21 | 8.452686°, 81.307528° | 1168M | 0 | 2 | No | No | Scrublands, paddy fields, tanks |
| AP21 | 8.452686°, 81.307528° | AP22 | 8.467497°, 81.314391° | 1814m | 0 | 4 | No | Houses are situated beyond the 35-meter corridor | Scrublands, paddy fields, home gardens |
| AP22 | 8.467497°, 81.314391° | TT2 | 8.473670°, 81.314261° | 687m | 1 | 1 | No | No | Scrublands, abandoned paddy Fields, paddy fields |

### 15.12.2 Inventory of structures, towers and Land use along with the proposed Sampur Grid Substation 2025

| **No Terminal towers** | **No of Suspension towers** | **Structures** | **Land use** |
|---|---|---|---|
| 1 | 0 | No | Scrubland, abandoned paddy Fields |

### 15.12.3 Inventory of structures, towers and Land use along with the proposed Sampur solar park area 2025

| No of Angle / Terminal towers | No of Suspension towers | Structures | Land use |
|---|---|---|---|
| 0 | 0 | No | Scrubland, spares forest, tanks |

### 15.12.3 Inventory of structures, towers and Land use along Kappalthurai GSS proposed line bay area 2025

-

| No of Angle / Terminal towers | No of Suspension towers | Structures | Land use |
|---|---|---|---|
| 1 | 0 | Existence line bay area<br><br>CEB circuit bungalow | Scrubland |

## 15.13 Approved Compansation rates for removal of tress

ලංකා විදුලිබල මණ්ඩලය
இலங்கை மின்சார சபை
CEYLON ELECTRICITY BOARD

Your ref: My ref: CEB/CEATP-1/TE/81 Date: February 20, 2025

Divisional Secretary,
Muthur,

**Subject: Standardization of Compensation Rates for Tree Removal in Transmission Line Corridors –Sampur-Kappalthurai 220 kV Transmission Line**
**Reference:** Clean Energy Absorption Transmission Project (CEATP-1)

On behalf of the Ceylon Electricity Board (CEB), I extend my sincere appreciation for the continued cooperation, dedication, and assistance of the Muthur Divisional Secretariat in facilitating the preliminary activities of the Sampur-Kappalthurai 220 kV Transmission Line. Your collaboration, along with the efforts of relevant officers in your office and Grama Niladharis (GNs), has been instrumental in successfully carrying out essential activities such as identifying landowners, distributing W & E notices, conducting objection hearings, and resolving related issues.

As we proceed to the next stage of the project, which involves tree removal and compensation payments for landowners, we wish to ensure a standardized and fair compensation system across all affected Divisional Secretariats.

**Compensation Framework Based on Kantale Compensation Committee Decision**

The wayleave marking of trees along the transmission line corridors has been completed, and the finalized lists for trees within forest lands have already been submitted to the Forest Conservation Department. Compensation will now be provided for privately owned trees within the affected land areas.

As per the Sri Lanka Electricity Act No. 20 of 2009, as amended by Act No. 31 of 2013, and in line with **Section 4** of the Guidelines regarding determination and payment of compensation for felling of trees or branches for wayleave clearance required for power lines (issued by the Public Utilities Commission of Sri Lanka), a **Compensation Committee** was appointed at the Kantale Divisional Secretariat to determine appropriate compensation rates for the New Habarana –Kappalthurai 220kV transmission line project which is executed under same project management unit (CEATP-1).

A committee meeting, chaired by the Kantale Divisional Secretary, was held on December 06, 2024, at the Kantale Divisional Secretariat with the participation of all committee members. The committee resolved to adopt the following compensation methodology (committee report attached for reference):

1. **For landowners without legal land title (i.e., without a title deed, freehold grant, or permit)**
   - Compensation will be provided for tree value only.
   - No payment will be made for cutting charges.
2. **For landowners with legal land title (i.e., possessing a title deed, freehold grant, or permit)**
   - Full compensation will be provided, including tree value, cutting charges, and timber value.

OFFICE OF THE PROJECT MANAGER – CEATP-1
3rd Floor, GOBA Building, No. 65/1. Sir Chittampala A. Gardiner Mawatha, Colombo 00200. Sri Lanka.
Tel: +94 11 2 337 636 | Fax: +94 11 2 337 634 | e-mail: chameera.rajapaksha@ceb.lk | www.ceb.lk

Cont..

Request for Implementation of Standardized Compensation Across All Divisions

To ensure **fairness and uniformity** among all affected landowners across **all seven (07) Divisional Secretariats** impacted by both transmission line projects (New Habarana-Kappalthurai 220 kV Transmission Line and Sampur-Kappalthurai 220 kV Transmission Line), we propose that the compensation rates established by the Kantale Compensation Committee be applied uniformly across **all Divisional Secretariats**.in both transmission lines.

A consistent approach will prevent **potential disputes and grievances** among landowners while maintaining **equity** in the compensation process.

Accordingly, I kindly request your **approval and implementation** of these standardized compensation rates within the Muthur Divisional Secretariat for tree removal along the transmission line corridors.

Your prompt action in this matter will help ensure the smooth and fair execution of the compensation process, and I appreciate your cooperation in facilitating this initiative.

Thank you once again for your invaluable support in this critical project.

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**Yours faithfully,**

**CEYLON ELECTRICITY BOARD**

Eng. R.C.P. Rajapaksha
**Project Manager**
**Clean Energy Absorption Transmission Project - I (CEATP-I)**

. **Eng. R. C. P. Rajapaksha**
Project Manager (CEATP-I)
Ceylon Electricity Board

වන්දි ගෙවීතු, නව හබරණ-කප්පල්තුරේ 220kV සම්ප්‍රේෂණ මාර්ගය
පිරිසිදු බලශක්ති අවශෝෂණ සම්ප්‍රේෂණ ව්‍යාපෘතිය
ලංකා විදුලිබල මණ්ඩලය

இழப்பீட்டு விகிதங்கள், புதிய ஹபரணை-கப்பல்துறை 220kV டிரான்ஸ்மிஷன் லைன்
சுத்தமான ஆற்றல் உறிஞ்சுதல் பரிமாற்ற திட்டம்
இலங்கை மின்சார சபை

| අංකය இல | Description விளக்கம் ගස් වර්ගය மரங்களின் வகை | | පැළ කන්දු | වට අඩි ප්‍රමාණය மரத்தின் சுற்றளவு 6" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cutting Cost | | | 0.00 | 150.00 | 200.00 | 250.00 | 1,000.00 | 2,500.00 | 3,000.00 | 4,000.00 | 5,000.00 | 6,000.00 |
| | | | | | | | | | | | | |
| 1 | කොස් | பலா | 500 | 1,200 | 6,000 | 7,200 | 12,000 | 24,000 | 36,000 | 42,000 | 54,000 | 60,600 |
| 2 | පලු | பாலை மரம் | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 3 | ගොරකා | கொரக்கா | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 4 | බුලු/අරලු | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 5 | පිහිඹිය | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 6 | ෆයිනස් | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 7 | මාර | மாற / செம்மயில்கொன்றை | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 8 | ඇට්ටෝනියා/ගිනිකුරු | அற்றோனியா | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 9 | බෝ | அரச மரம் | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 10 | මැයි | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 11 | වෙලන් | வெலாங் | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 12 | මහෝගනී | மகோகனி | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 13 | කොහොඹ | வேம்பு | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 14 | තේක්ක | தேக்கு | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 15 | බුරුක | முதிரை | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 16 | හල්මිල්ල | சமண்டலை | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 17 | කලුමැදිරිය/කළුවර | கருங்காலி மரம் | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 18 | මී | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 19 | කුඹුක් | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 20 | කායා | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 21 | නුග | அரச மரம் | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 22 | ඇහැටු | | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 23 | ටර්පන්ටයින්/ඇකේෂියා | அக்கேசியா | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 24 | මිල්ල | மில்லை | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 25 | ගම්මාලු | வேங்கை மரம் | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 26 | කොලොං | பெங்சா லம்ப | 500 | 1,000 | 2,400 | 3,600 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 |
| 27 | මයිල | ஆத்தி மரம் | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 28 | කෝං /කිරි කෝං /දෙමට | கூழா மரம் | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 29 | කොරදමන/ගල් දමන | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 30 | දාබු/ජාබු/මීදෙල්ල | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |

| Description விளக்கம் | | | | වට අඩි ප්‍රමාණය மரத்தின் சுற்றளவு | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| අංකය இல | ගස් වර්ගය மரங்களின் வகை | | පැළ කන්නු | 6" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 31 | දමුණු/හතු | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 32 | හොර | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 33 | මාදං/දං | නාවල් | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 34 | මැයි මාර/හුරී මාර | மாற / செம்மயில்கொன்றை | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 35 | වැලිකෝන් | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 36 | වීර | වීර මරම් | 300 | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 37 | දඹ/ ඇට්ටෙරියා | නාවල් / | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 38 | විලෝ | | 300 | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 39 | වල් දෙල් | காட்டு ஈரப்பலா | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 40 | බක් මී/බකිනි | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 41 | දොඹ | புன்னை மரம் | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 42 | කහට/කස | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 43 | කැටකැළ | | 500 | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 44 | කොට්ට/පුලුන් | இலவ (பஞ்சு) மரம் | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 45 | රුක්අත්තන | காட்டாமணக்கு / ஏழிலைப் பாலை | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 46 | සපු | சப்பு மரம் | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 47 | ලුනුම්දෙල්ල | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 48 | තෙලඹු | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 49 | ගිනිසිරියා | | | 500 | 1,000 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 50 | සේරු | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 51 | තිඹිරි/ගොඩකිරිල්ල | பனிச்சை மரம் | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 52 | තොවිල්ල | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 53 | බෝමී | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 54 | දැව් | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 55 | ගොඩවෙරලු | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 56 | බුලුපෙත්ත | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 57 | කායං / ගල් කායං / කොරකැහැ | | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 58 | කොට්ටමඤ | கல்தேக்கு | | 500 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 |
| 59 | ඇහැළ | கொன்றை மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 60 | කරඳ | புங்கை மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 61 | ගැඩුඹ | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 62 | කැන්ද/කැප්පෙට්ටියා | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 63 | වල් ඇහැල | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 64 | නා | நாக மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 65 | සල් | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 66 | ඇටඹ | காட்டு மா மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 67 | අට්ටික්කා/අංකෙන්ද | அத்தி | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 68 | දුනුමඩල | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 69 | එරබදු | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 70 | ගන්සූරිය | பூவரசு மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |

| Description விளக்கம் | | | | වට අඩි ප්‍රමාණය மரத்தின் சுற்றளவு | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| අංකය இல | ගස් වර්ගය மரங்களின் வகை | | පැළ කන්නු | 6" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 71 | තික්/හුලං තික් /කුඩු දඬුල /හැලඹ | ඔලින්දු | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 72 | ඉඹුල්/කොට්ට/ඉපිල් | / இலவு/ இபிலிப்பில் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 73 | ජෑම් | ஜாம் மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 74 | කදුරු/කුකුරු/කපුරු | காஞ்சிலை | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 75 | කහ පෙනෙල | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 76 | කලපොතු | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 77 | කරවු | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 78 | කිරළ/කීරිය | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 79 | කොටසිඹුලා | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 80 | ලෝලු | තோழி மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 81 | මදටිය | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 82 | මකුල්ල | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 83 | මාරත් මල් | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 84 | මොර | முரளிப் பழ மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 85 | නබඩ | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 86 | නාවා | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 87 | නිතුල්/ජන | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 88 | ඕසුල්ල | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 89 | රණවරා | ஆவாரை/ ஆவாரம்பூ மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 90 | සූරියමාර | வாகை/ காட்டு வாகை மரம் | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 91 | මසං | | | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
| 92 | බදුල්ල | | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 93 | ඉඟිනි | தேற்றா/ தேற்றான் கொட்டை மரம் | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 94 | දඹු වැහැ | | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 95 | වැවරණ | | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 96 | අහු | மஞ்ச நோனா | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 97 | ගොඩරත්මල් | | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 98 | ගොන්න | | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 99 | කහකොහොන | | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| 100 | නික | | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 101 | දික්වැන්න / යකඩමරං | | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 102 | වල්ලි / වල්දෙනි | காட்டு மரம் | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 103 | වා | | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 104 | අන්දර | விடத்தல் | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 105 | කනේරු/යකිනාරං | | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 106 | වල් | | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |
| 107 | කුරවියා | | | 250 | 500 | 750 | 1,000 | 1,250 | 1,500 | 1,750 | 2,000 | 2,250 |

வன்தி ஹஸ்து, நவ ஹபரண-கப்பல்துரே 220kV සම්ප්‍රේෂණ මාර්ගය
පිරිසිදු බලශක්ති අවශෝෂණ සම්ප්‍රේෂණ ව්‍යාපෘතිය
ලංකා විදුලිබල මණ්ඩලය

இழப்பீட்டு விதிதங்கள், புதிய ஹபரணை-கப்பல்துறை 220kV டிரான்ஸ்மிஷன் லைன்
சுத்தமான ஆற்றல் உறிஞ்சுதல் பரிமாற்ற திட்டம்
இலங்கை மின்சார சபை

## සාදික්කා

சாதிக்காய்

| | | එල නොදරන | අර්ධ සරු | සරු | ඉතා සරු | වෙනත් |
|---|---|---|---|---|---|---|
| | | பலன் தரா மரம் | நடுத்தரமாக வளர்ந்த மரம் | நன்கு வளர்ந்த மரம் | நல்ல வளமான மரம் | ஏனையவை |
| | **Cutting cost** | **500.00** | **500.00** | **500.00** | **500.00** | |
| කුඩා | சிறிய மரம் | 2,000.00 | | | | |
| මධ්‍යම | நடுத்தரமான மரம் | 10,000.00 | 15,000.00 | 25,000.00 | 35,000.00 | |
| වැඩිහූ | வளர்ந்த மரம் | 10,000.00 | 70,000.00 | 110,000.00 | 135,000.00 | |

## කරාබු

கராம்பு

| | | එල නොදරන | අර්ධ සරු | සරු | ඉතා සරු | වෙනත් |
|---|---|---|---|---|---|---|
| | | பலன் தரா மரம் | நடுத்தரமாக வளர்ந்த மரம் | நன்கு வளர்ந்த மரம் | நல்ல வளமான மரம் | ஏனையவை |
| | **Cutting cost** | **500.00** | **500.00** | **500.00** | **500.00** | |
| කුඩා | சிறிய மரம் | 4,000.00 | | | | |
| මධ්‍යම | நடுத்தரமான மரம் | 10,000.00 | 20,000.00 | 30,000.00 | 50,000.00 | |
| වැඩිහූ | வளர்ந்த மரம் | 10,000.00 | 60,000.00 | 95,000.00 | 130,000.00 | |

## පොල්/ තැඹිලි

தென்னை

| | | පැළ | පැළ ලොකු | මධ්‍යම | සරු | කනාටු |
|---|---|---|---|---|---|---|
| | | கன்று | பெரிய கன்று | நடுத்தரம் | நன்கு வளர்ந்த மரம் | நடுத்தரமாக வளர்ந்த மரம் |
| **Cutting cost** | | **100.00** | **250.00** | **2,000.00** | **2,000.00** | **2,000.00** |
| පොල්/ තැඹිලි | தேங்காய்/ ஆரஞ்சு | 5,000.00 | 10,000.00 | 50,000.00 | 100,000.00 | 30,000.00 |

වන්දි ගෙවීම්, නව හබරණ-කප්පල්තුරේ 220kV සම්ප්‍රේෂණ මාර්ගය
පිරිසිදු බලශක්ති අවශෝෂණ සම්ප්‍රේෂණ ව්‍යාපෘතිය
ලංකා විදුලිබල මණ්ඩලය

இழப்பீட்டு விதிகள், புதிய ஹபரணை-கப்பல்துறை 220kV டிரான்ஸ்மிஷன் லைன்
சுத்தமான ஆற்றல் உறிஞ்சுதல் பரிமாற்ற திட்டம்
இலங்கை மின்சார சபை

பலகுரு වර්ග பழமரங்களின் வகை

| අංකය இல. | ගස් වර්ගය | மரங்களின் வகை | පැළ கன்று | පැළ ලොකු பெரிய கன்று | මධ්‍යම நடுத்தரம் | සරු நன்கு வளர்ந்த மரம் | අර්ධ සරු நடுத்தரமாக வளர்ந்த மரம் | කනාවු வயதானமுதிர்ந்த மரம் |
|---|---|---|---|---|---|---|---|---|
| Cutting Cost | | | 0.00 | 150.00 | 200.00 | | 500.00 | |
| 1 | අඹ | மா | 1,000.00 | 8,000.00 | 20,000.00 | 30,000.00 | 20,000.00 | 5,000.00 |
| 2 | අනෝදා | சீதாப்பழம் | 500.00 | 1,400.00 | 6,000.00 | 11,000.00 | 7,000.00 | 2,000.00 |
| 3 | ඇඹරැල්ල | அம்பர்லா | 500.00 | 700.00 | 7,000.00 | 11,000.00 | 7,500.00 | 1,500.00 |
| 4 | අලිපේර | அவகேடோ | 700.00 | 1,500.00 | 8,500.00 | 20,000.00 | 9,100.00 | 1,500.00 |
| 5 | රඹුටන් | றம்புட்டான் | 700.00 | 1,400.00 | 2,800.00 | 15,000.00 | 7,000.00 | 2,000.00 |
| 6 | ඉස්ලබු | பப்பாளி | - | 700.00 | 1,400.00 | 3,500.00 | 2,100.00 | 700.00 |
| 7 | ජම්බෝල | ஜம்போன / பம்பிளிமாசு | 500.00 | 700.00 | 1,400.00 | 2,800.00 | 2,100.00 | 700.00 |
| 8 | දිවුල් | வினாத்தி | 700.00 | 3,000.00 | 12,000.00 | 15,000.00 | 10,000.00 | 5,000.00 |
| 9 | දෙළුම් | மாதுளை | 500.00 | 700.00 | 1,400.00 | 3,500.00 | 2,100.00 | 700.00 |
| 10 | දොඩම් | தோடை | 500.00 | 700.00 | 5,600.00 | 11,200.00 | 6,300.00 | 700.00 |
| 11 | පේර | கொய்யா | 500.00 | 700.00 | 1,400.00 | 2,800.00 | 2,100.00 | 700.00 |
| 12 | බිලිං | விலிம்பிக்காய் | - | 350.00 | 1,400.00 | 2,100.00 | 1,400.00 | 350.00 |
| 13 | බෙලි | வில்வம் | 500.00 | 3,000.00 | 12,000.00 | 15,000.00 | 10,000.00 | 5,000.00 |
| 14 | ලවුල්/සැපදිල්ලා | லாவுல் | 500.00 | 700.00 | 1,400.00 | 2,800.00 | 1,400.00 | 700.00 |
| 15 | වෙරළු | வெரலு | 700.00 | 1,400.00 | 4,200.00 | 7,000.00 | 4,200.00 | 1,400.00 |
| 16 | රට නෙල්ලි | அரைப்புளி நெல்லி | - | 700.00 | 1,400.00 | 2,100.00 | 1,400.00 | 700.00 |
| 17 | නෙල්ලි | நெல்லி | 700.00 | 1,400.00 | 3,500.00 | 5,600.00 | 3,500.00 | 1,400.00 |
| 18 | සිදරන්/නාරං | நாரத்தை | - | 700.00 | 1,400.00 | 4,200.00 | 2,100.00 | 700.00 |
| 19 | කජු | கஜு | 1,000.00 | 6,000.00 | 10,000.00 | 15,000.00 | 10,500.00 | 5,000.00 |
| 20 | කොමරංකා | புளி மதுரங்காய் | 500.00 | 1,400.00 | 2,800.00 | 4,200.00 | 3,500.00 | 700.00 |
| 21 | ජම්බු | ஜம்பு | 500.00 | 1,400.00 | 2,800.00 | 4,200.00 | 3,500.00 | 700.00 |
| 22 | දුරියන් | தூரியன் | 700.00 | 14,000.00 | 49,000.00 | 150,000.00 | 56,000.00 | 11,200.00 |
| 23 | කෙසෙල් (පදුරු) | வாழை | 140.00 | 700.00 | 1,400.00 | 3,500.00 | 1,400.00 | 140.00 |
| 24 | මන්ගුස් | மங்குஸ் | - | 5,000.00 | 20,000.00 | 30,000.00 | 15,000.00 | 5,000.00 |
| 25 | ඔඩුඔඩ | கடுகுடா | - | 2,800.00 | 5,600.00 | 7,000.00 | 5,600.00 | 1,400.00 |
| 26 | අන්නාසි (පදුරු) | அன்னாசி | - | 150.00 | 300.00 | 1,000.00 | 400.00 | 150.00 |
| 27 | උගුරැස්ස | உகுரல்ல | 700.00 | 2,800.00 | 8,400.00 | 11,200.00 | 8,400.00 | 2,100.00 |
| 28 | නම්නාට | | 500.00 | 700.00 | 2,100.00 | 5,000.00 | 2,800.00 | 700.00 |

## එළවළු මරක්කறி வகை

| අංකය | ගස් වර්ගය | | පැළ | පැළ ලොකු | මධ්‍යම | සරු | අර්ධ සරු | කනාටු |
|---|---|---|---|---|---|---|---|---|
| இல. | | மரங்களின் வகை | கன்று | பெரிய கன்று | நடுத்தரம் | நன்கு வளர்ந்த மரம் | நடுத்தரமாக வளர்ந்த மரம் | வயதானமுதிர்ந்த மரம் |
| **Cutting cost** | | | **0.00** | **150.00** | **200.00** | **500.00** | | |
| 1 | කතුරුමුරුංගා | அகத்தி | 500.00 | 700.00 | 1,400.00 | 2,800.00 | 2,100.00 | 700.00 |
| 2 | මුරුංගා | முருங்கை | 500.00 | 1,400.00 | 2,100.00 | 5,000.00 | 2,800.00 | 1,400.00 |
| 3 | දෙහි | தேசி | 700.00 | 1,400.00 | 3,500.00 | 7,000.00 | 5,600.00 | 700.00 |
| 4 | දෙල් | ஈரப்பலா | 2,500.00 | 5,000.00 | 20,000.00 | 30,000.00 | 10,000.00 | 5,000.00 |
| 5 | මංඤ්ඡොක්කා | | | 300.00 | 500.00 | 1,000.00 | | |
| 6 | කරපිංචා | | | 300.00 | 1,000.00 | 2,500.00 | | |
| | | | | | | | | |

## අපනයන බෝග වර්ග ඒற்றுமதிப் பயிர் வகைகள்

| අංකය | ගස් වර්ගය | | පැළ | පැළ ලොකු | මධ්‍යම | සරු | අර්ධ සරු | කනාටු |
|---|---|---|---|---|---|---|---|---|
| **Cutting cost** | | | **0.00** | **150.00** | **200.00** | **500.00** | | |
| இல. | | மரங்களின் வகை | கன්று | பெரிய கன்று | நடுத்தரம் | நன்கு வளர்ந்த மரம் | நடுத்தரமாக வளர்ந்த மரம் | வயதானமுதிர்ந்த மரம் |
| 1 | කොකෝවා | கொக்கோ | 700.00 | 1,400.00 | 2,800.00 | 5,600.00 | 3,500.00 | 1,400.00 |
| 2 | පුවක් | பாக்கு | 700.00 | 1,400.00 | 3,500.00 | 7,000.00 | 4,200.00 | 1,400.00 |
| 3 | සියඹලා | புளி | - | 700.00 | 11,200.00 | 25,200.00 | 14,000.00 | 1,400.00 |
| 4 | තේ | தேக்கு | 500.00 | 700.00 | 1,400.00 | 1,800.00 | 1,100.00 | 300.00 |
| 5 | ගම්මිරිස් | மிளகு | 700.00 | 3,500.00 | 5,600.00 | 14,000.00 | 4,200.00 | 700.00 |
| 6 | කුරුඳු | கறுவா | 500.00 | 1,120.00 | 1,400.00 | 5,000.00 | 1,680.00 | 280.00 |
| 7 | කටුකිතුල් | கித்துள் | - | 700.00 | 1,400.00 | 2,100.00 | 1,400.00 | 700.00 |
| 8 | කටුපොල් | முள்ளுத்தேங்காய் | - | 700.00 | 7,000.00 | 21,000.00 | 14,000.00 | 1,400.00 |
| 9 | වැනිලා | வனிலா | - | 280.00 | 2,100.00 | 2,800.00 | 2,100.00 | 700.00 |
| 10 | කරදමුංගු | ஏலக்காய் | - | 700.00 | 1,400.00 | 2,800.00 | 1,400.00 | 700.00 |
| 11 | බුලත් (වැලකට) | வெற்றிலை | - | 280.00 | 5,600.00 | 7,000.00 | 5,600.00 | 1,400.00 |
| 12 | කෝපි | கோப்பி | 700.00 | 3,500.00 | 5,600.00 | 14,000.00 | 4,200.00 | 700.00 |
| 13 | ගොරකා | கொரக்கா | 700.00 | 1,400.00 | 4,200.00 | 16,800.00 | 8,400.00 | 4,200.00 |
| 14 | එනසාල් | ஏலக்காய் | 500.00 | 1,120.00 | 1,400.00 | 3,500.00 | 1,680.00 | 280.00 |

## අනෙකුත් ගස් වර්ග ஏனைய வகை மரங்கள்

| අංකය | ගස් වර්ගය | | පැළ | පැළ ලොකු | මධ්‍යම | සරු/මෙරු | අර්ධ සරු | කනාටු |
|---|---|---|---|---|---|---|---|---|
| இல. | | மரங்களின் வகை | கன්று | பெரிய கன்று | நடுத்தரம் | நன்கு வளர்ந்த மரம் | நடுத்தரமாக வளர்ந்த மரம் | வயதானமுதிர்ந்த மரம் |
| **Cutting cost** | | | **0.00** | **150.00** | **200.00** | **500.00** | | |
| 1 | තල් | பனை | 1,400.00 | 7,000.00 | 11,200.00 | 25,000.00 | 14,000.00 | 4,200.00 |
| 2 | කිතුල් | கித்துள் | 5,000.00 | 20,000.00 | 40,000.00 | 45,000.00 | | |
| 3 | උණ | மூங்கில் | 500.00 | 500.00 | 750.00 | 750.00 | - | - |
| 4 | රට ඉඳි | | | 700.00 | 2,000.00 | | - | - |
| 5 | ඉඳි | | | 400.00 | 750.00 | | - | - |
| 6 | අලි මංඤ්ඡොක්කා | | | 200.00 | 500.00 | 1,000.00 | - | - |
| | | | | | | | | |

## රබර් ගස් இறப்பர் மரம்

| අංකය | ගස් වර්ගය | | පැළ | අවුරුදු 2 - 5 දක්වා | අවුරුදු 5 - 10 දක්වා | අවුරුදු 10 - 15 දක්වා | අවුරුදු 15 - 20 දක්වා | අවුරුදු 20 ට වැඩි |
|---|---|---|---|---|---|---|---|---|
| இல. | | மரங்களின் வகை | கன்று | 02 தொடக்கம் 05 வருடங்கள் வரை | 05 தொடக்கம் 10 வருடங்கள் வரை | 10 தொடக்கம் 15 வருடங்கள் வரை | 15 தொடக்கம் 20 வருடங்கள் வரை | 20 வருடங்களுக்கு மேற்பட்டது |
| **Cutting cost** | | | **0.00** | **150.00** | **500.00** | **1,000.00** | | |
| 1 | රබර් | இறப்பர் | 7,500.00 | 11,000.00 | 16,000.00 | 15,000.00 | 12,000.00 | 7,500.00 |

## 15.14 Letters from Stakeholders, and other approvals

# මධ්‍යම පරිසර අධිකාරිය
மத்திய சுற்றாடல் அதிகாரசபை
# Central Environmental Authority

පරිසර පියස, 104, ඩෙන්සිල් කොබ්බෑකඩුව මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.
"பரிசர பியச", 104, டென்சில் கொப்பேகடுவ மாவத்தை, பத்தரமுல்லை, இலங்கை.
"Parisara Piyasa", 104, Denzil Kobbekaduwa Mawatha, Battaramulla, Sri Lanka. Web: www.cea.lk


අපේ යොමුව ඉමදු தொடர்பு Our Ref. EA/TC/IEE/59/2015

ඔබේ යොමුව உமது தொடர்பு Your Ref.

දිනය திகதி Date 27.12.2023


RECEIVED
31 JAN 2024
Transmission Design & Environment


Deputy General Manager/ Transmission Design & Environment
Ceylon Electricity Board,
No. 50, 6th Floor
Sir Chittampalam A Gardiner Mawatha
Colombo 02.

Dear Sir,

**Approval for 220kV Transmission Line from Sampoor to Kappalthurai.**
**Ceylon Electricity Board.**

This is to inform you that the Central Environmental Authority (CEA), being the Project Approving Agency for the above project has studied the Initial Environmental Examination (IEE) report dated October 2023 and your responses to the clarifications sought by the Technical Evaluation Committee (TEC) has decided in terms of regulation 9 (i) of the National Environmental (Procedure for approval of projects) Regulations No. 1 of 1993 as amended by the Gazette (Extra Ordinary) No. 1159/22 dated 22.11.2000 to grant approval for the implementation of the above project subject to the terms and recommendation given below.

## 1. GENERAL RECOMMENDATIONS

1.1 This environmental approval is valid for the implementation for the construction of 220kv, 2xZebra, 37.6km double circuit Transmission Line from Kappalthurai Grid Substation to Sampoor proposed Grid Substation through Town & Gravets, Thambalagamuwa, Kinniya, Seruwila and Muthur Divisional Secretariat Division by the Ceylon Electricity Board as specified in the IEE report dated October 2023 (Annexure 5).

1.2 This approval is valid for three years from the date of issue of this letter unless upon written application to the CEA within thirty days prior to the expiry date, the validity period is extended.

1.3 Ceylon Electricity Board (CEB) hereinafter referred to as the Project Proponent (PP) should obtain fresh approvals in respect of any alterations that are intended to be made to the initial project proposal, as per the IEE report dated October 2023.

1.4 The PP is bound to ensure that the terms and conditions given in this letter are adhered to and have full control over a third party that may be involved in project implementation by entering into agreements which contain the conditions stipulated in this letter with such parties. CEA should have access to the contract documents pertaining to environmental aspects, entered into by the PP and any outside contractors. The PP would be held responsible for breach of any such condition by any contractor or sub-contractor.

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority
Eastern Province Office
Kanthale

1.5 The PP shall intimate to CEA, the date of commencement of project activities/construction activities.

1.6 A copy of this letter of environmental approval should be kept at suitable locations of the project site for purposes of perusal.

1.7 It is the duty of the PP to inform the CEA of any adverse environmental impacts arising during project implementation, which are not anticipated at this stage. In such an event, relevant guidelines and necessary mitigatory measures should be implemented as directed by the CEA. The PP should ensure that such impacts are properly assessed and addressed even at a later stage of project implementation.

1.8 The PP is obliged to temporarily suspend any project activity on the instructions of the CEA, if unforeseen adverse impacts associated with the project cannot be adequately mitigated.

1.9 The PP should co-ordinate closely with planning agencies such as the Urban Development Authority (UDA), and relevant Provincial and Local Authorities, Divisional Secretariats to resolve any conflicts with existing development activities within the trace.

1.10 The PP should obtain prior approval of the Forest Department for the project activities within the Forest Reserve/ Forest Land.

1.11 Approval of relevant Local Authorities should be obtained for construction activities of the project.

1.12 Prior Approvals of government agencies such as Road Development Authority, Sri Lanka Railways etc should be obtained for construction of transmission line over the lands and railway line belong to such agencies. Conditions imposed by such agencies should also be adhered to by the PP.

1.13 The PP shall transport heavy machinery on roads in consultation with the relevant Authorities such as Road Development Authority, Provincial Road Development Authority and Local Authority taking into consideration the necessary safeguards to minimize impacts on the transport route.

1.14 Other mitigatory measures suggested in the IEER should be implemented by the PP in addition to the specific mitigatory measures specified elsewhere in this letter.

1.15 Cost to be incurred in giving effete to the implementation of the terms and conditions of this approval letter should be borne by the PP as project implementation costs.

1.16 Any additional conditions stipulated by the CEA as and when required shall be strictly adhered to during implementation of the project.

## 2 SOCIO-ECONOMIC ASPECTS

2.1 The PP should refrain from locating the towers where ever possible in lands which are small in size and close to existing buildings.

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority
Eastern Province Office
Kanthale.

2.2 The PP should prepare a final list of individual land owners whose land or/and houses will be directly affected by the line / towers and should use that information to develop the compensation package in consultation with the Divisional Secretary (DS), Agrarian Development Department (ADD) together with the Grama Niladhari (GN) of related area.

2.3 The PP shall pay compensation to the land owners for damage, disturbance, or loss of property value as a result of the construction of tower footings, transmission line and maintenance of the way leave in accordance with the Electricity Act No. 20/2009 and its subsequent amendments. Compensation values should be based on current market rate.

2.4 Compensation for removal of trees/crop for clearing the RoW should be estimated considering the future economic value that can be obtained if the trees were not removed. Values of trees/crops should be estimated as per the most recent value estimation guidelines obtained from relevant Government Agencies such as Coconut Cultivation Board, State Timber Corporation, Agriculture Department and Department of Export Agriculture etc as mentioned in IEER. In addition, timber value of such trees (if any) should also be included.

2.5 The PP should take required mitigation measures such as heightening the towers wherever possible to avoid hindrance to the existing and proposed development activities. Height of the transmission line should be increased as much as possible in densely populated areas allowing constructions.

2.6 Transportation and construction activities shall be minimized from 6.00 p.m. to 6.00 a.m. at places in close proximity to settlements to avoid causing nuisance to the public.

2.7 Access to houses / lands should not be obstructed due to any construction activity.

2.8 When the towers are constructed in paddy fields, excavated soil should be removed without being kept in the paddy fields. The PP shall abide by the conditions laid down by the Agrarian Development Department regarding the towers located in the paddy fields.

2.9 A Grievance Redress Committees should be appointed with the chairmanship of respective Divisional Secretary in order to address grievances of the affected parties.

2.10 Approval of the Archeological Department should be obtained for excavation activities near a site declared as an archeologically important site.

2.11 If anything of archaeological value is found during the implementation of the project, it should be immediately informed to the Director General of Archeology.

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority
Eastern Province Office
Kanthale.

## 3 SAFETY

3.1 The contractors shall be bound by the **Ceylon Electricity Board** procedures for the safety of workers and shall adhere to relevant provisions of the Factories Ordinance No. 45 of 1942 as amended from time to time.

3.2 The minimum safety clearance between ground surface and the lowest point of transmission line (conductors) should be kept in order to avoid any health and safety hazard with special attention to residential buildings following system design standards of CEB for transmission lines.

3.3 Construction site should be properly barricaded to control access of neighboring people and to avoid entering fauna to the construction site, in order to avoid accidents. Suitable sign boards should be erected to make people aware about potential construction hazards at construction sites.

3.4 Excavation of rock for tower foundations should be carried out using controlled blasting techniques and should be done under supervision of a qualified mining engineer after obtaining approvals/licenses of relevant authorities such as Geological Survey and Mines Bureau (GS&MB) and CEA.

3.5 The PP shall take appropriate preventive action against fire or other forms of hazards.

3.6 A contingency plan should be drawn up to provide immediate redress of persons affected by any unforeseen circumstances due to project activities.

## 4 HYDROLOGY, DRAINAGE AND WATER QUALITY ASPECTS

4.1 Locating tower foundations close to river banks should be avoided as much as possible and the PP should work in consultation with the Irrigation Department when the transmission line traverses through rivers/streams.

4.2 In case of locating tower foundations close to river banks is unavoidable, best engineering practice should be adopted to avoid/minimize disturbance to banks and not to obstruct any natural process such as surface water runoff and stream water flow.

4.3 Construction of temporary access roads should be avoided where ever possible and sufficient drainage provisions should be made available across temporary access roads that will be constructed for project requirement.

4.4 Temporary access roads should be removed progressively as completely as possible and as soon as the construction of towers is completed.

4.5 Natural drainage network within the site and adjacent areas should not be obstructed by the project. A suitable storm water drainage management system should be implemented in the site.

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority

4.6 Natural streams and gullies should be kept free from any obstruction by any kind of construction or waste dumping. Excess soil / unstable material should not be dumped near the construction site or near waterways and such material should be disposed at disposal site approved by the CEA.

4.7 All filling activities of the proposed Grid Substation (GSS) sites shall be carried out with minimum hindrance to the local drainage patterns and any waterways obstructed shall be properly diverted in order to maintain an uninterrupted drainage in the area.

## 5 SOIL EROSION

5.1 Foundations of transmission towers should be located in stable hard soil and at relatively flat locations to minimize soil erosion.

5.2 The tower foundations on flood plains (alluvium soils) should be designed to suit weak clay soil condition and tolerate scouring due to high flow rate of water.

5.3 Leveling of land and permanent measures on soil erosion prevention should be carried out progressively while completion of civil work.

## 6 FAUNA, FLORA AND ECOLOGICAL ASPECTS

6.1 Land clearing activities of the project site shall be carried out in close coordination of the Department of Wildlife Conservation (DWC) and Forest Department.

6.2 Removal of trees should be restricted to 35 m wide corridor as suggest of the Forest Department (Annexure 05 of the IEE Report) and should be carried out after consideration of the height of the line and sag.

6.3 List of trees to be cleared along the line route should be provided to the respective Divisional Secretary and the Forest Department and approval obtained prior to felling.

6.4 Trees in the State Lands should be enumerated and removed in consultation with the Forest Department and the State Timber Corporation.

6.5 Threatened and near threatened of the removable plant should be restored consultation with Forest Department (FD) & Department of Wild Life (DWL) in near suitable forest area after completion of the project activities as mentioned in IEER – Mitigation Action & Bio Diversity Management/Action Plan (Annex 7).

6.6 Wild animals, migratory paths of wild animals and their habitats should not be disturbed by the project activities.

6.7 Spreading of invasive species at the impact area of the project should be controlled by suitable means in consultation with the land owners.

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority
Eastern Province Office
Kanthale.

6.8 Adequate mitigatory measures should be taken to prevent inundation and siltation of ecologically sensitive low lands during construction.

6.9 The tower height should be increased as much as possible within the Government Forest Land

6.10 The officers/workers should not camp or stay within the Forest Reserves.

## 7 NOISE, VIBRATION

7.1 Appropriate mitigatory measures should be adopted in order to maintain noise levels within the standards stipulated by the CEA in Gazette Extra Ordinary No. 924/12 dated 23rd May 1996 during construction period.

7.2 Appropriate mitigatory measures should be adopted in order to maintain the vibration levels generated by operation of Machines, construction activities, vehicle movements and blasting activities at the construction site.

## 8 AIR QUALITY

8.1 Emission of dust should be suppressed by implementing suitable mitigatory measures such as application of water on exposed areas, imposing of speed limits to transportation vehicles, covering of material during transportation in open topped vehicles, construction of wind barriers.

## 9 DISPOSAL OF SOLID AND LIQUID WASTE

9.1 The PP should refrain from locating labour camps close to waterways. Proper sanitation facilities should be provided for the workers at locations away from the waterways.

9.2 The wastewater generated from the domestic activities shall not be freely discharged into the environments and such wastewater shall only be released into a properly constructed septic tank and soakage pit.

9.3 Solid waste associated with the work force shall be disposed of in consultation with the relevant Local Authority.

9.4 Measures should be taken to prevent the discharge of cement, cement mix, fuel oil, waste lubricant oils, or polythene into water bodies.

9.5 Any type of hazardous/electronic waste should not be stored in the open area and should not be disposed into outside area. A facility for hazardous waste management should be established within the project area.

9.6 The PP shall ensure that Scheduled Waste Licence from the CEA in terms of Gazette Extra Ordinary Notification No. 1534/18 dated 01.02.2008 amended by gazette no 2264/17 dated 27.01.2022 is obtained one month prior to operation of the project.

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority
Eastern Province Office
Kanthale.

9.7 Plant debris/unusable material should not be disposed into a water body or at a site where it is likely to enter a water body. Every action should be taken to dispose of such materials in a disposal site located away from the water bodies.

9.8 Spoil material (soil & rock etc.) generated during site clearance shall be used wherever possible for site levelling, back-filling etc.

## 10 ENVIRONMENTAL MANAGEMENT PLAN (EMP) AND MONITORING PROGRAMME

10.1 The PP should improve the EMP provided in the IEE report incorporating the implementation mechanism. The amended EMP should be submitted to the CEA.

10.2 CEA will appoint a monitoring committee consisting of relevant agencies for the purpose of overseeing implementation of the EMP.

10.3 The PP should send quarterly reports within the construction period to the CEA with respect to progress of the project and implementation of the EMP for monitoring purposes.

10.4 The PP should bear all costs required for the environmental monitoring programme.

Yours faithfully,

**A.G.D.L.Karunarathna**
**Director / Eastern Province**
**Central Environmental Authority**
**Eastern Provincial Office**
**Kantale.**

A.G.D.L.KARUNARATHNE
Director/Eastern Province
Central Environmental Authority
Eastern Province Office
Kanthale.

CC :
General Manager / Department of Railway.
Director General / Dept. of Wildlife Conservation.
Conservator General of Forests / Forest Department.
Commissioner General / Agrarian Development Dept.
Chairman / Road Development Authority.
Director General / Urban Development Authority.
Director General / Irrigation Department.
Director General, Dept. Of Agriculture.
Director General / Department of Archaeology.
Divisional Secretary / Muthur, Kinniya, Thambalagamuwa, Town & Gravets, Seruwila
Deputy Director General (EM &IA) / CEA.
Director (EIA) / CEA.
Secretary, Pradeshiya Sbha / Muthur, Kinniya, Thambalagamuwa, Town & Gravets, Seruwila

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மத்திய சுற்றாடல் அதிகாரசபை
**Central Environmental Authority**
පරිසර පියස, 104, ඩෙන්සිල් කොබ්බෑකඩුව මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.
"பரிசர பியச", 104, டென்சில் கொப்பேகடுவ மாவத்தை, பத்தரமுல்லை, இலங்கை.
"Parisara Piyasa", 104, Denzil Kobbekaduwa Mawatha, Battaramulla, Sri Lanka. Web: www.cea.lk

අපේ යොමුව / எமது தொடர்பு / Our Ref. EA/TC/08/IEE/H/MIN/004/2022

ඔබේ යොමුව / உமது தொடர்பு / Your Ref.

දිනය / திகதி / Date 1 June 2023

Officer In-charge
Trincomalee Power Company Limited (TPCL)
2nd Floor, Land Mark Building
No 385, Galle Road
Colombo 03.

**Proposed 50 mw Solar Power Plant at Sampoor, Muthur in Trincomalee District.**

This is to inform you that the Central Environmental Authority (CEA), being the Project Approving Agency for the above project after study of the Initial Environmental Examination (IEE) report and its annexes submitted on 25.05.2023, and the clarifications sought during the Technical Evaluation Committee (TEC) held on 27.04.2023, has decided in terms of regulation 9 (i) of the National Environmental (Procedure for approval of projects) Regulations No. 1 of 1993 as amended by the Gazette (Extra Ordinary) No. 1159/22 dated 02.11.2000 to grant approval for the implementation of the above project subject to the terms and conditions given below;

01. **General Conditions**

1.1 This environmental approval is granted for implementation of proposed 50 MW solar power project in Sampoor, Muthur in Trincomalee district using Photo voltaic method as indicated in the IEE report submitted on 25.05.2023.

1.2 This Environmental approval is valid for the implementation of proposed 50MW Solar Power Project at Lot no 1389 as depicted in Topo Pp No 41 in field sheet No. 11 caused to be prepared by the Surveyor – General.

1.3 A layout plan drawn on the survey plan indicating all the project components including internal transmission line, open area, wild elephant movement area, buffer zones, reservation area, water bodies and reservation of the public places adjoining to the project site should be submitted to this Authority within three months from the date of this letter.

1.4 Construction activities should be strictly confined to the area as depicted in the above mentioned layout plan (condition no 1.3). Buffer zones, reservation area, water bodies and reservation for the public places within the project area shall not be used for any project activities.

M.Sivakumar
Director/Eastern Province
Central Environment Authority
Eastern Provincial Office
Kanthale.



| Chairman | Tel : 2872361, 2872348 Fax : 2872347 | Director General | Tel : 2872359 Fax : 2872608 | General Office | Tel : 2872278, 2873447, 2872419, 2873448, 7877277-280 | Complaint : 2888999 |
|---|---|---|---|---|---|---|

| D. D. G | HRD. Admin. & Finance | Envt. Pollution Control | Envt. Mgt. & Assess. | Envt. Edu. & Awareness | Waste Mgt. | Regional Oper. |
|---|---|---|---|---|---|---|
| | Tel : 2865296 Fax : 2877515 | Tel : 2873453 Fax : 2872605 | Tel : 2872388 Fax : 2872296 | Tel : 2872297 Fax : 2872609 | Te. 2872409 Fax : 2882152 | Tel : 2872370 |

1.5 Trincomalee Power company Limited, hereinafter referred to as the Project Proponent (PP) should obtain fresh approval in respect of any alteration that are intended to be made to the initial project proposal, as per IEE report submitted on 25.05.2023.

1.6 This approval is granted on the basis that all the information provided by the PP, in the IEE report dated May 2023.

1.7 This approval is valid for three years from the date of issue of this letter unless upon written application to the CEA within thirty days prior to the expiry date, the validity period is extended.

1.8 The PP is bound to ensure that the terms and conditions given in this letter are adhered to and have full control over a third party that may be involved in project implementation by entering into agreements which contain the conditions stipulated in this letter with such parties. The CEA should have access to the contract documents pertaining to environmental aspects, entered into by the PP and any outside contractors. The PP would be held responsible for breach of any such condition by any contractor or sub-contractor.

1.9 The PP shall intimate to the CEA, the date of commencement of the project activities/construction activities.

1.10 A copy of this of environmental approval and the IEE report submitted on 25.05.2023 should be kept at suitable locations of the project site for purposes of perusal.

1.11 It is the duty of the PP to inform the CEA of any adverse environmental impacts arising during project implementation, which are not anticipated at this stage. In such an event, relevant guidelines and necessary mitigatory measures should be implemented as directed by the CEA. The PP should ensure that such impacts are properly assessed and addressed even at a later stage of project implementation.

1.12 The PP should co-ordinate closely with planning agencies such as the Urban Development Authority (UDA) if applicable, relevant Provincial and Local Authorities and Divisional Secretariats to resolve any conflict with existing development activities within the project area while ensuring the implementation of social safe guard measures listed under cooperate social responsibility plan mentioned in the IEER.

1.13 The PP should obtained approval from the Archaeological Department prior to commencement of the construction of the project.

1.14 Cost to be incurred in giving effect to the implementation of the terms and conditions of this approval should be borne by the PP as project implementation costs.



M.Sivakumar
Director/Eastern Province
Central Environment Authority
Eastern Provincial Office
Kanthale.

1.15 Other mitigatory measures suggested in the IEE report submitted on 25.05.2023 should be implemented by the PP in addition to the specific mitigatory measures specified elsewhere in this letter.

1.16 Any additional conditions stipulated by the CEA as and when required shall be strictly adhered to during implementation of the project.

02. **Specific Conditions**

**2.1 Ecological Aspects**

2.1.1 Fauna and Flora in the project area should be prevented and preserved as per the clarifications sought during the Technical Evaluation Committee (TEC) for elephant and other wildlife movement area and tank reservation area held on 27.04.2023 and Bio Diversity management/ action plan (annex 7) in the IEE report submitted on 25.05.2023.

2.1.2 Wild animals, migratory paths of wild animals and their habitats should not be disturbed by the project activities and upper part of the area notified in the project layout plan shall not be cleared and shall be kept intact which allowed free movement of wild animals passing three tanks in the project area.

2.1.3 Adequate space shall be provided between the parallel transmission lines to prevent the possible electrocution of avifauna and bats.

2.1.4 Land clearing activities of the project site shall be carried out in close coordination of the Department of Wildlife Conservation (DWC) and Forest Department.

2.1.5 Necessary approval should be obtained from the DWC in case of any measures to be taken to prevent entering of wild elephants and other animals into the project site.

2.1.6 Artificial avifauna resting places shall be established to attract more local and migratory birds in the tank and its reservation areas.

2.1.7 Minimum number of trees should be cut during the construction of the project from the list of trees enumerated in the IEER if needed detail tree enumeration shall be done covering the entire project area.

2.1.8 Removal of critically endangered plants identified in the IEER shall be propagated locally and nationally and to be replanted in the reservation areas. Important trees shall not be felled and if necessary these plants shall be replanted using root balling technique.

2.1.9 Trees should be preserved as far as possible. Removal of cut trees should be done in consultation with Forest Department, Divisional Secretory, Muthur and the State Timber Corporation



M.Sivakumar
Director/Eastern Province
Central Environment Authority
Eastern Provincial Office
Kanthale.

2.1.10 An exceptionally large old Tamarind tree found in the project area shall be protected and kept intact from any project activities.

## 2.2 Hydrology, Drainage Management and Soil Conservation

2.2.1 In consultation with the Agrarian Service Department, 40 m reservation area shall be kept from the High Flood Line of the Sampukulam tank and 20 m reservation area shall be kept from the High Flood Line of the Pulawankulam and Illuppankulam tanks and abstraction amount of irrigation water to lower tail farmers shall not be affected by any project activities.

2.2.2 Natural drainage network within the site and adjacent areas should not be obstructed by the project. A suitable storm water drainage management system should be implemented in the site.

2.2.3 Adequate silt traps should be established and maintained in all drainage channels at critical locations.

2.2.4 All the construction should be designed to blend with the surrounding landscape with minimum disturbance to soil.

2.2.5 Soil/unsuitable materials removed during the land preparation and constructions activities should not be disposed within the project site likely to erode to water way or agricultural fields.

## 2.3 Debris Disposal

2.3.1 Plant debris/unusable material should not be disposed into the lands within the biodiversity important areas. Every action should be taken to dispose of such materials in a disposal site located away from the water bodies.

2.3.2 Spoil material (soil & rock etc.) generated during site clearance shall be used wherever possible for site levelling, back-filling etc.

## 2.4 Noise Pollution

2.4.1 Noise level at the boundary of the Land during construction stage should be maintained at or below 75dB (A) during day time (i.e. from 0600 hrs to 2100 hrs).

2.4.2 All machineries which generate excessive noise should confirm to the levels specified for the relevant local authority area as specified in the Gazette Extra-Ordinary No.924/12 0f 23rd May 1996 during the construction and operation.

2.4.3 Generator shall be installed in sound proof chamber and as far as away from the residence to reduce spread of noise.



M.Sivakumar
Director/Eastern Province
Central Environment Authority
Eastern Provincial Office
Kanthale.

## 2.5 Solid Waste Management

2.5.1 Solid waste generated from project activities and from workers quarters shall not be allowed to stagnate within the premises. Solid waste associated with the work force shall be disposed in consultation with the Muthur Pradeshiya Sabha.

2.5.2 All solid waste should be stored in a designated place adopting every measure to prevent ground water contamination until composting/ dispatching to recycling centers/ disposed through Local Authority.

2.5.3 Any type of hazardous/electronic waste (broken solar panels etc.) should not be stored in the open area and should not be disposed into outside area. A facility for hazardous waste management should be established within the project site.

2.5.4 The PP shall ensure that Scheduled Waste Licence from the CEA in terms of Gazette Extra Ordinary Notification No. 1534/18 dated 01.02.2008 amended by gazette no 2264/17 dated 27.01.2022 is obtained one month prior to operation of the project.

## 2.6 Wastewater Management

2.6.1 Chemical or any detergents shall not be used for cleaning/ washing of the solar panels and only rubbing, cleaning and water flushing is allowed.

2.6.2 All wastewater arising due to cleaning/ washing of the solar panels shall be collected and disposed into properly designed soakage fits no such wastewater is allowed to be discharged into any water body.

## 2.7 Water Requirement

2.7.1 In case, groundwater is to be extracted for the project, a report from the Water Resources Board on the availability ground water, extraction locations, safe yield etc. should be obtained and a copy of the same should be submitted to the CEA.

2.7.2 Possibility of adopting a proper surface rain water harvesting system should be looked into in consultation with the National Water Supply & Drainage Board and it shall be implemented.

2.7.3 If town supply is envisaged the approval should be obtained from National Water Supply & Drainage Board and Pradeshiya Shaba, Muthur.

## 2.8 Air Emission

2.8.1 Fugitive Dust Emission during construction shall be controlled by adopting appropriate mitigatory measures.

## 2.9 Fire Safety

2.9.1 Fire detection and fire fighting systems shall be provided, and maintained in proper working order.



M.Sivakumar
Director/Eastern Province
Central Environment Authority
Eastern Provincial Office
Kanthale.

2.9.2 Fire protection equipment and facilities shall be made available at suitable locations within the power station.

**2.10 Transmission Line**

2.10.1 The PP should adhere to the approved trace of the transmission line to grid connection as identified by the CEB. Identified transmission line should be submitted to the CEA.

**2.11 Monitoring Programme**

2.11.1 The PP should carry out a comprehensive monitoring programme as specified in the Chapter 6 of the IEE report. The PP should submit periodic monitoring reports as specified above for review purposes.

2.11.2 The CEA will appoint a monitoring committee consisting of relevant agencies for the purpose of overseeing implementation of mitigatory measures.

2.11.3 The PP should bear all costs required for the environmental monitoring programme.

03. **This approval is granted on the basis that all information provided by the project proponent is true and accurate. If at any time it is found that any information furnished by the PP in the IEE report is incorrect, this authority reserves the right to cancel the approval.**

04. **The CEA reserves the right to cancel/ suspend/ withdraw this approval in the event that major environmental problems arise due to operation of the project or in a situation where the surrounding environment has been altered or changed due to the natural factors or otherwise and continued operation of the project may pose an unacceptable risk/ danger.**

**M. Sivakumar**
Director/ Eastern
Eastern Provincial Office
Central Environmental Authority

M.Sivakumar
Director/Eastern Province
Central Environment Authority
Eastern Provincial Office
Kanthale.

CC :

1. General Manager/Ceylon Electricity Board
2. Director General/ Sri Lanka Sustainable Energy Authority
3. Director General/Archaeology Department
4. Director General / Dept. of Wildlife Conservation
5. Director General/Urban Development Authority
6. Conservator General of Forests / Forest Department
7. Divisional Secretary/ Muthur
8. Commissioner/ Department Agrarian service.
9. Secretary/ Pradeshiya Sabha/ Muthur
10. Director / EIA / CEA

Ministry of Energy
Secretary's Office
21 JUL 2023

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# Department of National Planning
Ministry of Finance, Economic Stabilization and National Policies

මහලේකම් කාර්යාලය (පළමු මහල), කොළඹ 01. செயலகம் (முதலாம் மாடி), கொழும்பு 01. The Secretariat (First Floor) Colombo 01

මගේ අංකය எனது இல. My No. NP/PP/PUT/PWE/23/01

ඔබේ අංකය உமது இல. Your No. Power

දිනය திகதி Date 14.07.2023

Addl. Secretary (Development) plcom discuss with concerned officers

Secretary,
Ministry of Power & Energy

07/21

**Project concept paper for the Transmission Development for the construction of 220/33 kV Solar Collector Grid Substation at Sampur, Trincomalee (Development – Phase 1).**

This is in reference to your letter number PE/PL/A/2018/23 Vol vi dated 26.06.2023 in response to my letter number NP/PP/PUT/PWE/23/01 dated 14.02.2023 including the minutes of the meeting held on 03.02.2023 at the Department of National Planning (NPD), email dated 23.01.2023 received from Ceylon Electricity Board (CEB) in response to the information requested on 11.01.2023 by the NPD and your letter number PE/PL/A/2018/23 Vol Vi dated 30.12.2022 along with the above project proposal.

Addl Sec (Dev)
Approved
Pls comply with above
A
26/7

Since it has already been granted by the Cabinet of Ministers, decision dated 27.03.2023 in response to the Cabinet Memorandum No. 23/0612/621/027 dated 24.03.2023 forwarded by the Ministry of Power and Energy on the above project, you are kindly requested adhere therein.

R.H.W.A. Kumarasiri
Director General

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Cc:
1. General Manager, Ceylon Electricity Board
2. Director General, Department of External Resources

For your information & necessary action, pls

Mr. Harshana
forward with Comments
Papers
7/26

Ms. Hemamali
Pl. submit to the file — Cabinet Memo
Letter No)

දුරකථන Telephone 0094 11 248 4566 (Director General) 0094 11 248 4612 (Office) 0094 11 248 4613
ෆැක්ස් Fax 0094 11 244 8063 0094 11 243 1020
විද්‍යුත් තැපෑල Email/ Web page dgnp@npd.treasury.gov.lk www.npd.gov.lk

My No: TC/G/21/2015

Divisional Forest Office,
Trincomalee.

Dec. 01st, 2015

Director,
Eastern Province Office,
Central Environmental Authority,
Priyantha Mawatha,
Kantale.

**Proposed 220 KW Transmission Line Project from Sampur to Kappalthurai**

Reference to your letter EA/TC/IEE/59/2015 dated on 19/11/2015 regarding the above project. From the Forest Department, I suggest the following comments to be addressed in the IEE report of the said project for granting the environment clearance.

1. Minimum number of trees should be felled as per the requirement along the transmission line. Whenever necessary of removing trees in reserved forests or other state forest lands, the approvals should be taken from the Forest Department and after the enumeration the trees should be removed by the State Timber Corporation as per the government regulations.
2. The teak plantation at the Kappalthurai site should be removed by the State Timber Corporation after following the general procedure.
3. The project should not touch the Thambalagamuwa mangrove forest; a highly environmental sensitive area. In addition the project could raise several sign boards in that area for awareness raising of the local community regarding the value of the said ecosystem.
4. Since a considerable number of trees to be felled during the project implementation, irrespecting of their economic value, the forest cover of the area will be reduced. Hence the project could address this issue by providing assistance to Forest Department for enhancing the forest cover in the area.

Dr. Wasantha Liyanage
Divisional Forest Officer,
Trincomalee

Dr.WASANTHA LIYANAGE
(Enviromental Engineer)
Divisional Forest Officer
Trincomalee.

Scanned by CamScanner

මගේ අංකය - රාදැස/පෙ/එම්/පිරිනමන දැව පොදු,
ප්‍රාදේශීය කාර්යාලය,
රාජ්‍ය දැව සංස්ථාව,
අනුරාධපුරය,
2024.12.06.

සහකාර ප්‍රාදේශීය කළමණාකාර,
ත්‍රීකුණාමලය.

**Subject : Request For Approval and Instructions Regarding the Removal of Trees for the Sampur - Kappalthurai 220KV Transmission Line project.**
**2024/දෙසැ/1664**

ත්‍රීකුණාමලය දිසාවන නිළධාරීගේ අංක TC/DFO/FIM - 11/2024 හා 2024.12.03 දිනැති ලිපිය හා බැඳේ.

එම ලිපිය මඟින් සැම්පුර් සිට කප්පල්තුරේ දක්වා ඉදිකිරීමට යෝජිත ද.වෝ 220 විදුලි රැහැන් මාර්ගය ඉදිකිරීමේදී අවශ්‍යව පිහිටි විවිධ වර්ගයේ ගස් 155 කපා ඉවත් කරන ලෙස මා වෙත දන්වා ඇත.

ඒ අනුව ඉහත ස්ථානයේ පිහිටි ගස් කඩිනමින් පරීක්ෂා කර දැව පරීක්ෂණ වාර්තා ලබා දීමට කටයුතු කරන්න. ඉහත ලිපියේ පිටපතක් මේ සමග අමුණා ඇත.

.....
ප්‍රාදේශීය කළමණාකාර
අනුරාධපුරය.

ප්‍රාදේශීය කළමණාකාර
රාජ්‍ය දැව සංස්ථාව
අංක 418, ගොඩගේ මාවත,
අනුරාධපුර.
ටෙලි: 025-2

පිටපත්
: දිසාවන නිළධාරී, දිසාවන කාර්යාලය, ත්‍රීකුණාමලය. - ඔබගේ ඉහත අංක හා දිනැති ලිපිය අනුව ගස් කපා ඉවත් කිරීමට කටයුතු කරන බව කාරුණිකව දන්වා සිටිමි.
: ස.ප්‍රා.ක මඟින් වැඩබිම් නිළධාරී - දැව ඉවත් කර වාර්තා කරන්න.

දිසා වන කාර්යාලය - ත්‍රිකුණාමලය
மாவட்ட வன காரியாலயம் - திருகோணமலை
**Divisional Forest Office -Trincomalee**
ඇතුල් වරාය පාර, ත්‍රිකුණාමලය.
உட்துறைமுகவீதி,திருகோணமலை
Inner Harbor Road, Trincomalee.

**MY NO: - TC/DFO/FIM-11/2024** **YOUR NO: -** **DATE: - 2024.12**

Regional Manager,
State Timber Corporation,
Anuradhapura

**Subject: Request for Approval and Instructions Regarding the Removal of Trees for the Sampur-Kappalthurai 220 kV Transmission Line Project**

Reference: Conservator of Forests (Silviculture & Forest Plantation Management), Letter No. S&FM/03/E/Anuradhapura/2024, dated 26th November 2024 (copyof the letter attached)

This letter pertains to the proposed 220 kV Transmission Line Project from Sampur to Kappalthurai, as referenced above. A total of 155 trees have been identified for removal 91 trees from the Trincomalee Range and 64 trees from the Kantale Range. The list of trees is attached herewith for your reference.

The Conservator General of Forests has granted approval for the removal of these trees in accordance with the provisions of the National Environmental Act and other applicable legislation. However, this approval is subject to ensuring that an appropriate compensation mechanism is implemented to mitigate the environmental impact resulting from the removal of these trees. The State Timber Corporation is required to handle the tree removal process and submit the necessary documentation, including mass fraction reports, to ensure compliance with regulatory requirements.

Accordingly, you are requested to proceed with the removal of the above-mentioned trees in compliance with the approved guidelines. Please ensure that the removal process adheres to the National Environmental Act, other relevant laws, and the compensation mechanisms in place to address forest damage. Additionally, submit all required documentation, including mass fraction reports, in a timely and proper manner. For further details, please refer to the attached annexure.

M.A. Chandana Abaysena
Divisional Forest Officer
Trincomalee

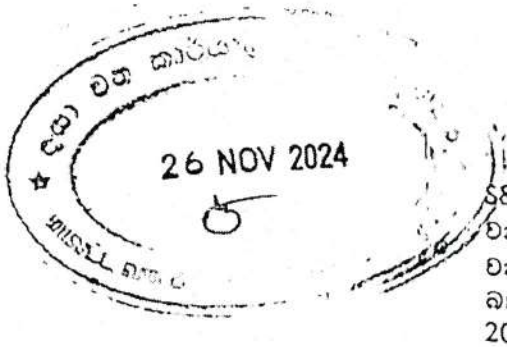
M.A.CHANDANA ABAYSENA
Divisional Forest Officer
Trincomalee

Attachments:
- List of trees from Trincomalee Range (91) and Kantale Range (64)
- Copy of the letter from the Conservator General of Forests
- Copy of the letter from the Project Manager, CEB

Copyto:
1. Conservator of Forests, Silviculture & Forest Plantation Management
2. Project Manager, Sampur-Kappalthurai Transmission Development Project
3. Assistant Regional Manager State Timber Corporation - Kappalthurai

026-2222306 026-2222612 dfotco@yahoo.com

(01)




S&FM/03/E/Anuradhapura/2024,
වන විද්‍යා හා වන වගා කළමනාකරණ අංශය,
වන සංරක්ෂණ දෙපාර්තමේන්තුව,
බත්තරමුල්ල.
2024.11.

දිසා වන නිලධාරී,
ත්‍රිකුණාමලය.

<u>ඉදිකිරීමට යෝජිත යාම්පුර් කප්පල්තුරෙහි ද.වෝ.220 විදුලි සම්ප්‍රේෂණ රැහැන් මාර්ගය ඉදිකිරීම</u>

උක්ත කරුණ සම්බන්ධයෙන් කලාප නියෝජ්‍ය වන සංරක්ෂක (උතුරු මැද/නැගෙනහිර) මහින් මා වෙත යොමු කල ඔබේ අංක: TC/DFO/FIM-11/2022-2024 හා 2024.06.11 දිනැති ලිපිය හා බැඳේ.

02. ඒ අනුව ඉදිකිරීමට යෝජිත යාම්පුර් සිට කප්පල්තුරෙයි දක්වා කි.මී. 06 ක් දුරට ඉදිකරනු ලබන විදුලි රැහැන් පද්ධතිය ස්ථාපිත මාර්ගයේ අවහිරව පවතින විවිධ වර්ගයේ ගස් 91 ක් ත්‍රිකුණාමලය දිස්ත්‍රික්කයේ කන්තලේ රක්ෂිතයෙන් ද විවිධ වර්ගයේ ගස් 64 ක් මුතුර් රක්ෂිතයෙන් ද ඉවත් කිරීමේ දී ජාතික පාරිසරික පනතේ ප්‍රතිපාදනයන්ට අනුව හා අදාල ගස් ඉවත් කිරීම හේතුවෙන් වන වගවත්ට වන හානිය ප්‍රතිපූර්ණය කිරීම සඳහා සුදුසු ක්‍රමවේදයකට යටත්ව රාජ්‍ය දැව සංස්ථාව මඟින් එම ගස් 155 කපා ඉවත් කිරීමට වන සංරක්ෂක ජනරාල් විසින් අනුමැතිය ලබා දී ඇත. අදාල විවිධ වර්ගේ ගස් 155 රාජ්‍ය දැව සංස්ථාව මඟින් විධිමත් පරිදි ඉවත් කර රිට අදාල ස්කන්ධ භාග වාර්තා මා වෙත ලබාදීමට කටයුතු කරන මෙන් කාරුණිකව දන්වමි.

වී.වී.ඩී.එන්.ජී. විදානගේ,
සහකාර වන සංරක්ෂක ,
වන සංරක්ෂක(වන විද්‍යා හා වනවගා)වෙනුවට

අ/කලේ: කේ.ඒ.ඩී.යූ.අයි. කලන්සූරිය,
වන සංරක්ෂක,
(වන විද්‍යා හා වනවගා කළමනාකරණ)

<u>පිටපත</u>:

කලාප නියෝජ්‍ය වන සංරක්ෂක,
(උතුරු මැද/නැගෙනහිර) කලාපය

මා වෙත යොමු කල ඔබේ අංක: RDCF/NC-E/DI/01/01/01 හා 2024.10.29 දිනැති ලිපියට අනුව කාරුණික දැන ගැනීමට හා අවශ්‍ය කටයුතු සඳහා.

ප්‍රදේශය - ත්‍රිකුණාමලය අධිවාය - ත්‍රිකුණාමලය බිවටුව - කින්නියා

2024 ඉගෝජින සෘණිපුර් කප්පල්තුරෙයි ද.ඉවත්.220 විදුලි සම්ප්‍රේෂණ රැහැන් මාර්ගය ඉදිකිරීමට සඳහා ඉවත් කිරීමට

| අනු අංකය | වර්ගය | DBH | ගසේ උස (M) |
|---|---|---|---|
| 1 | කුඹක් | 63 | 8 |
| 2 | මයිල | 32 | 7 |
| 3 | කුඹක් | 32 | 8 |
| 4 | කුඹක් | 31 | 7 |
| 5 | කුඹක් | 32 | 7 |
| 6 | කුඹක් | 33 | 8 |
| 7 | හික් | 22 | 8 |
| 8 | වැයිමාර | 34 | 7 |
| 9 | දඹුන | 63 | 8 |
| 10 | කුඹක් | 33 | 10 |
| 11 | කුඹක් | 33 | 10 |
| 12 | හුරිමාර | 32 | 9 |
| 13 | කුඹක් | 34 | 9 |
| 14 | කුඹක් | 35 | 9 |
| 15 | කුඹක් | 34 | 9 |
| 16 | මාර | 22 | 7 |
| 17 | කුඹක් | 33 | 9 |
| 18 | කුඹක් | 32 | 8 |
| 19 | කුඹක් | 32 | 8 |
| 20 | මාදං | 29 | 8 |
| 21 | මයිල | 63 | 8 |
| 22 | මයිල | 19 | 7 |
| 23 | යකඩමරං | 29 | 7 |
| 24 | කුඹක් | 22 | 8 |
| 25 | මාදං | 64 | 8 |
| 26 | මාදං | 65 | 8 |
| 27 | මාදං | 32 | 8 |
| 28 | මයිල | 33 | 8 |
| 29 | මයිල | 22 | 8 |
| 30 | මාදං | 34 | 10 |
| 31 | කරවී | 25 | 8 |
| 32 | කරවී | 25 | 8 |
| 33 | මාදං | 33 | 7 |
| 34 | කුඹක් | 32 | 8 |
| 35 | කුඹක් | 33 | 8 |
| 36 | කුඹක් | 22 | 8 |
| 37 | කුඹක් | 65 | 6 |
| 38 | කුඹක් | 33 | 7 |
| 39 | මාදං | 32 | 8 |
| 40 | මාදං | 22 | 8 |
| 41 | මාර | 22 | 7 |
| 42 | දඹුන | 25 | 8 |
| 43 | කුඹක් | 19 | 7 |
| 44 | මාදං | 31 | 8 |
| 45 | මාදං | 19 | 8 |

| අනු අංකය | වර්ගය | DBH | ගසේ උස (M) |
|---|---|---|---|
| 46 | මාදං | 27 | 7 |
| 47 | මාදං | 19 | 8 |
| 48 | මාදං | 19 | 6 |
| 49 | මාදං | 27 | 9 |
| 50 | මයිල | 25 | 7 |
| 51 | මාදං | 25 | 8 |
| 52 | මාදං | 27 | 8 |
| 53 | මාදං | 32 | 9 |
| 54 | මාදං | 32 | 9 |
| 55 | මාදං | 33 | 8 |
| 56 | මාදං | 34 | 10 |
| 57 | මාදං | 33 | 9 |
| 58 | දිවුල් | 25 | 8 |
| 59 | මාදං | 32 | 9 |
| 60 | දිවුල් | 24 | 8 |
| 61 | මාදං | 32 | 9 |
| 62 | මාදං | 32 | 9 |
| 63 | මාදං | 25 | 8 |
| 64 | මාදං | 32 | 7 |
| 65 | මාදං | 32 | 8 |
| 66 | මාදං | 32 | 9 |
| 67 | මාදං | 25 | 8 |
| 68 | මකොන් | 33 | 10 |
| 69 | හැලඹ | 25 | 9 |
| 70 | බටදොඹ | 27 | 8 |
| 71 | පලු | 32 | 10 |
| 72 | පලු | 32 | 10 |
| 73 | දිවුල් | 32 | 9 |
| 74 | දිවුල් | 22 | 9 |
| 75 | දිවුල් | 23 | 10 |
| 76 | බටදොඹ | 22 | 7 |
| 77 | බටදොඹ | 22 | 8 |
| 78 | මාදං | 33 | 10 |
| 79 | දිවුල් | 32 | 8 |
| 80 | දිවුල් | 32 | 7 |
| 81 | මාදං | 32 | 8 |
| 82 | දිවුල් | 32 | 8 |
| 83 | සියඹලා | 64 | 9 |
| 84 | සියඹලා | 34 | 10 |
| 85 | බුරුත | 32 | 9 |
| 86 | සියඹලා | 66 | 10 |
| 87 | මාර | 16 | 8 |
| 88 | බුරුත | 32 | 9 |
| 89 | කීරිය | 65 | 10 |
| 90 | ඇහැටු | 160 | 10 |
| 91 | ඇහැටු | 65 | 8 |

දිසාව - ත්‍රිකුණාමලය  අඩවිය - කන්තලේ

| ගස් අංකය | වර්ගය | DBH | දළ උස මීටර් | කාරණය |
|---|---|---|---|---|
| 1 | නුග | 2.60 | 6 | ගස ඉවත් කිරීම |
| 2 | නුග | 2 | 4 | ගස ඉවත් කිරීම |
| 3 | කහපෙනෙල | 1.3 | 3 | ගස ඉවත් කිරීම |
| 4 | විලෝ | 2 | 8 | ගස ඉවත් කිරීම |
| 5 | කුඹුක් | 7 | 9 | ගස ඉවත් කිරීම |
| 6 | කුඹුක් | 2.7 | 10 | ගස ඉවත් කිරීම |
| 7 | කුඹුක් | 1.2 | 4 | ගස ඉවත් කිරීම |
| 8 | කුඹුක් | 0.9 | 3 | ගස ඉවත් කිරීම |
| 9 | කුඹුක් | 1.4 | 8 | ගස ඉවත් කිරීම |
| 10 | කුඹුක් | 3 | 6 | ගස ඉවත් කිරීම |
| 11 | කුඹුක් | 2.6 | 5 | ගස ඉවත් කිරීම |
| 12 | බොරදමන | 1.23 | 6 | ගස ඉවත් කිරීම |
| 13 | කහපෙනෙල | 1.5 | 6 | ගස ඉවත් කිරීම |
| 14 | ගැඩම | 1.15 | 5 | ගස ඉවත් කිරීම |
| 15 | තිබිරි | 3.1 | 5 | ගස ඉවත් කිරීම |
| 16 | මයන් | 1.9 | 7 | ගස ඉවත් කිරීම |
| 17 | බොරදමන | 1.3 | 3 | ගස ඉවත් කිරීම |
| 18 | කුඹුක් | 3.2 | 11 | ගස ඉවත් කිරීම |
| 19 | කුඹුක් | 1.06 | 2 | ගස ඉවත් කිරීම |
| 20 | කහපෙනෙල | 1.4 | 3 | ගස ඉවත් කිරීම |
| 21 | කහපෙනෙල | 1 | 5 | ගස ඉවත් කිරීම |
| 22 | කුඹුක් | 1.7 | 6 | ගස ඉවත් කිරීම |
| 23 | කිරිය | 1.3 | 7 | ගස ඉවත් කිරීම |
| 24 | කුඹුක් | 1 | 6 | ගස ඉවත් කිරීම |
| 25 | තිබිරි | 2.11 | 6 | ගස ඉවත් කිරීම |
| 26 | මාදං | 3 | 12 | ගස ඉවත් කිරීම |
| 27 | කුඹුක් | 4 | 10 | ගස ඉවත් කිරීම |
| 28 | මාර | 1.12 | 6 | ගස ඉවත් කිරීම |
| 29 | වෙලං | 1 | 4 | ගස ඉවත් කිරීම |
| 30 | මාර | 1 | 5 | ගස ඉවත් කිරීම |
| 31 | මාර | 1.1 | 6 | ගස ඉවත් කිරීම |
| 32 | කුඹුක් | 2.6 | 4 | ගස ඉවත් කිරීම |
| 33 | ඇහැටු | 2.9 | 6 | ගස ඉවත් කිරීම |
| 34 | ඇහැටු | 1.6 | 6 | ගස ඉවත් කිරීම |
| 35 | මාර | 1 | 4 | ගස ඉවත් කිරීම |
| 36 | කැටකැලෑ | 0.9 | 6 | ගස ඉවත් කිරීම |
| 37 | කැටකැලෑ | 0.8 | 4 | ගස ඉවත් කිරීම |
| 38 | මයිල | 0.6 | 4 | ගස ඉවත් කිරීම |
| 39 | මයිල | 0.7 | 3 | ගස ඉවත් කිරීම |
| 40 | ඟින් | 0.65 | 5 | ගස ඉවත් කිරීම |
| 41 | දඹුණු | 1.1 | 4 | ගස ඉවත් කිරීම |
| 42 | මයිල | 1.3 | 5 | ගස ඉවත් කිරීම |
| 43 | ඟින් | 1.3 | 6 | ගස ඉවත් කිරීම |
| 44 | දඹුණු | 1.1 | 5 | ගස ඉවත් කිරීම |
| 45 | දඹුණු | 1.05 | 6 | ගස ඉවත් කිරීම |
| 46 | කිරිය | 1.5 | 7 | ගස ඉවත් කිරීම |
| 47 | ඟින් | 1.1 | 7 | ගස ඉවත් කිරීම |
| 48 | ඟින් | 1.2 | 6 | ගස ඉවත් කිරීම |

බීට්ටුව - මුකුර්

| ගස් අංකය | වර්ගය | DBH | දළ උස මීටර් | කාරණය |
|---|---|---|---|---|
| 49 | දඹුණු | 1.2 | 4 | ගස ඉවත් කිරීම |
| 50 | වෙලං | 0.85 | 4 | ගස ඉවත් කිරීම |
| 51 | ඟින් | 1.1 | 6 | ගස ඉවත් කිරීම |
| 52 | මාර | 1 | 5 | ගස ඉවත් කිරීම |
| 53 | බුරුන | 1.1 | 4 | ගස ඉවත් කිරීම |
| 54 | ඇහැටු | 2.8 | 6 | ගස ඉවත් කිරීම |
| 55 | මාදං | 0.9 | 4 | ගස ඉවත් කිරීම |
| 56 | මාර | 0.8 | 4 | ගස ඉවත් කිරීම |
| 57 | මිල්ල | 0.7 | 5 | ගස ඉවත් කිරීම |
| 58 | වෙලං | 1.2 | 5 | ගස ඉවත් කිරීම |
| 59 | මාර | 1.1 | 4 | ගස ඉවත් කිරීම |
| 60 | කොන් | 1.3 | 4 | ගස ඉවත් කිරීම |
| 61 | කොන් | 1.5 | 6 | ගස ඉවත් කිරීම |
| 62 | වෙලං | 1.25 | 4 | ගස ඉවත් කිරීම |
| 63 | කුඹුක් | 1.65 | 7 | අතු ඉවත් කිරී |
| 64 | කුඹුක් | 1.27 | 6 | අතු ඉවත් කිරීම |

M.A.CHANDANA ABAYSENA
Divisional Forest Officer
Trincomalee

දුම්රිය
புகையிரதம்
Railway

දුරකථනඅංකය
தொலைபேசி(இல)
Telephone No. 2421281

ෆැක්ස් අංකය
தொலைநகல்
Fax No. 2446490

ඊමේල්
மின்னஞ்சல்
E-mail gmr-sir@sltnet.lk

මගේඅංකය
My No. කා 7/ CEW /Misc/ 202.3

සාමාන්‍යාධිකාරී කාර්යාලය,
කැ. පෙ. 355, කොළඹ 10.

GENERAL MANAGER'S OFFICE,
P.O. Box No. 355, Colombo 10.

# ශ්‍රී ලංකා දුම්රිය සේවය
இலங்கைபுகையிரதசேவை
SRI LANKA RAILWAYS

දිනය
திகதி
Date 14.08.2023

22 AUG 2023
Transmission Design & Environment

CEW

**Requesting Clearance of Railway Department for proposed 220KV Transmission Line Project from Sampur to Kappalthurai.**

I'm sending herewith a copy of the letter No AGM (P) /TDE/EU/TL/14 dated 21.07.2023 received from Deputy General Manager, Transmission Design and Environment, Ceylon Electricity Board along with the copies of the other relevant documents regarding the above subject.

02. Please arrange to submit your report in this regard to enable me to take action accordingly.

**W.A.D.S.Gunasinghe**
**General Manager**
**Sri Lanka Railways**

W.A.D.S. **Gunasinghe**
**General Manager Railways**
**Sri Lanka Railways**
**Colombo 10.**

Copy-

Deputy General Manager
Transmission Design and Environment
Ceylon Electricity Board
Office of the Deputy General Manager (Transmission Design and Environment)
06th Floor
No. 50, Sir Chittampalam A Gardiner Mawatha
Colombo 02

fi

K. P. K. Shanthi
DGM (TD. E)

දුරකථනය
தொலைபேசி
Telephone } 421281

යොමු අංකය
தொலை எண்
Reference No. } GD.530/D.E.(E)/15.2022

විෂය
விடயம்
Subject } .....

ශ්‍රී ලංකා දුම්රිය සේවය
இலங்கை புகையிரத சேவை
SRI LANKA RAILWAYS

GMF 35 B

ප්‍රධාන ඉංජිනේරු කාර්යාලය
பிரதான பொறியியலாளர் அலுவலகம்
Chief Engineer's Office
1. ඩී. ආර්. විජයවර්ධන මාවත,
1. டீ. ஆர். விஜயவர்தன மாவத்தை,
1. D. R. Wijeyawardana Mawatha,
කැ. තැ. 370,
க. பெ. 370,
P. O. Box 370,
කොළඹ
கொழும்பு
Colombo } .....

19.05.2023

Deputy Director General (EMA),
Environmental Management & Assessement Division,
"Parisara Piyasa"
No. 104,
Denzil Kobbekaduwa Mawatha,
Battaramulla.

Dear Madam,

**The Implementation of 220KV Transmission Line Project from the New Habarana GS to KappalThurai GS.**

With reference to the letter No. W.01/WD/E dated 02.05.2023 sent by Superintended Engineer (Eastern) , of Sri Lanka Railways, regarding the above matter.

02. I wish to inform that I have no objection to grant the consent to implement the above project under the following locations.

| No. | Mls | Chs | (PW) Sections | Station Between |
|---|---|---|---|---|
| 01. | 127 | 11 | KRA | HBN & PUW |
| 02. | 153 | 40 | GOA | GOA & APR |
| 03. | 178 | 68 | TAN | TAN & CBY |

03. Furthermore, you may strictly adhere to the following conditions please.

- Exsisting Railway Reservations are 132ft. either side from the Railway track center. Trees identified within the Railway Reservation should be cut and timber logs to be handed – over to the Railway Department and transported up to PUW, GOA and TAN Station Yards respectively.

- Cradle Guard protection need to be cover up to 55 ft length from Centre to entire sides (Totally 110 ft). Minimum distances for erecting up sites to construct, cradle guard is 40 ft. from track centre and minimum height 25 ft from Rail top.

E. M. S. P. K. Deegala,
Deputy Chief Engineer (Tracks),
For Chief Engineer (Way & Works).

Coppies -

1. G. M. R. With reference to your letter No. T7/GMR/Misc./2023 dated 01.03.2023.
   – For your information.

2. Eng. K. P. K. Shanthi, } With reference to your letter No. AGM(P0/CEB/EU/TL/40 of dated 09.02.2023.
   – For your information.

   Deputy Genearal Manager,
   Transmission Design and Environment)
   6 th Floor, No. 50,
   Chittampalam A Gardiner Mawatha,
   Colombo 02.

නාගරික සංවර්ධන හා නිවාස අමාත්‍යාංශය
நகர அபிவிருத்தி மற்றும் வீடமைப்பு அமைச்சு
MINISTRY OF URBAN DEVELOPMENT AND HOUSING

Telephone 2797200, 2872649, 2873644, 2873647, 2873651, 2873652, 2875333, 2875916-18, 2875920, 2863103

නාගරික සංවර්ධන අධිකාරිය
நகர அபிவிருத்தி அதிகாரசபை
Urban Development Authority

Web Site www.uda.gov.lk

Fax 2873637

6th, 7th & 9th Floors, Sethsiripaya, Battaramulla

My No; 21/9/03
27th August 2022.

RECEIVED
05 SEP 2022
Transmission Design & Environment

Urban Development Authority
Eastern Provincial Office,
Trincomalee.

Director,
Central Environmental Authority,
Eastern Provincial Office,
Kantale.

**Requesting comments for the Proposed 220 KV Transmission Line Project from Sampoor to Kappalthurai.**

This is with reference to your request letter No. EA/TC/IEE/59/2015 dated 12th July 2022 regarding the above purpose.

As per the Technical Evaluation Committee meeting held on 27th July 2022 at Thambalagamuwa Divisional Secretariat, it was mentioned that many parts of the proposed Transmission line are proposed to lay through the forest and paddy lands.

According to the Development Plan for the Trincomalee Metro Urban Development Area, that transmission line has fallen under Eco Tourism & Nature park zone and Agricultural zone, and UDA comments are submitted herewith for your information and necessary action, please.

1. Necessary precautions should be taken when the transmission lines go through the residential area.
2. Disturbance to the neighborhood should be minimized during the construction period of the project.

Thank you.

Urban Development Authority

.....
L. J. Liyanage,
Director (Eastern Province)

K. P. K. Shanthi
DGM (TD&E)

*Cc :*

01. Project Manager, Ceylon Electricity Board, 6th Floor
No. 50, Chittampalam A Gardiner Mawatha, Colombo. 02 -- f.i.p.

මාර්ග සංවර්ධන අධිකාරිය
வீதி அபிவிருத்தி அதிகாரசபை
**Road Development Authority**

"මගනෙගුම මහ මැදුර", ඩෙන්සිල් කොබ්බෑකඩුව මාවත,
කොස්වත්ත, බත්තරමුල්ල, ශ්‍රී ලංකාව.

"மகநெகும மஹமெதுர" டென்சில் கொப்பேகடுவ மாவத்தை,
கொஸ்வத்தை, பத்தரமுல்லை, இலங்கை.

"Maganeguma Mahamedura", Denzil Kobbedaduwa Mawatha,
Koswatta, Battaramulla, Sri Lanka.

මගේ අංකය / எனது இல. / My No. RDA/ESD/CEB

ඔබේ අංකය / உமது இல. / Your No. .....

දිනය / திகதி / Date 31st August 2023

RECEIVED
12 SEP 2023
Transmission Design & Environment

Deputy General Manager- Transmission Design and Environment.
Ceylon Electricity Board,
6th floor, No 50,
Sir Chiththappalam A Gardiner Mawatha,
Colombo 02

**Consent for the Implementation of 220kV Transmission Line from Sampoor to Kappalthurai.**

This refers to your letter no. AGM(P)/TDE/EU/TL/14 dated 20th July 2023 on the above subject.

Accordingly, Road Development Authority's Clearance is hereby granted for the above project under the following conditions.

1. The outer most edge of any ground structure such as any tower, pole (inclusive of its foundation) or any other structure belonging to the proposed transmission line shall be positioned 15m away from the center line of a National Road.
2. Minimum vertical clearance between a National Road finished surface and the lowest level at maximum sagging point of the transmission line should be kept at 6.0m considering only for vehicular movement. In addition to this height, Ceylon Electricity Board (CEB) shall separately consider the safety aspects due to the electrical field and electro magnetic field generated during transmission and the sagging due to temperature effects in deriving the heights of towers etc..
3. Any damage occurs to the properties to the National Roads and the roads' users during the construction and implementation periods shall be compensated by the CEB.
4. Prior approval should be taken from the relevant authorities of the RDA (Provincial Director (Eastern Province), and Chief Engineer (Trincomalee Districts)) before commencing any construction activities across or along the National Roads in this area. Re-inspection may necessary in case of design revisions done by the CEB.
5. In case of the proposed transmission line will be under operational stage, and any National Road in this project area will be under construction stage, safety of the workers and construction machinery under National Roads shall be ensured by the CEB at crossing points related to the transmission line.

Telephones:- K. P. K. Shanthi DGM (TD&E)
Chairman 2862767, Director General 2862795, Working Director 2887257, General Number ++94-11-2046200
Additional Director Generals {Projects 2862485, AO&M 2864804, CD 2882194, NP 2886923}
Directorates {Administration 2865245, Construction 2864388, Engineering Services 2864803, EO&M 038-2291373, ESD 2187165
Finance 2864799, Highway Designs 2874024, Internal Audit 2872661, Lands 2889350 Legal 2186044, Mechanical 2872273
MM 2882196, Planning 2882995, Procurement 2886863, QA&PM 2887235, R&D 2632649 Rural Bridges 2623896, Training 2869342}

6. Surface of the carriageway, road furniture, other road properties and associated utility services on National Roads shall not be damaged or disturbed by the proposed transmission line, tower/s, pole/s or other structures.

7. A suitable traffic management plan for the construction stage of the proposed transmission line to be forwarded to the relevant RDA office to obtain the approval before implementation.

8. Safety of the underneath National Roads users need to be considered during the operational stage of the transmission line at the crossing points by the Project Proponent (CEB).

9. Any changes of the transmission line on or above National Roads should be informed to the Director General of RDA prior to commencement of such works.

10. Routine inspections shall be executed during the operation/ maintenance period by the CEB to avoid any potential hazards.

11. Conditions and instructions previously given (if any) on this project by Road Development Authority (RDA) shall be read in conjunction with the conditions in this letter and if there is any ambiguity arises, it should be referred to the Director General, RDA through the relevant Provincial Director for finalization.

Director General
Road Development Authority

*Copies: Director- Maintenance Management* - *f.i.pl.*
*Director (ESDD), RDA* - *f.i.pl.*
*Director (Planning)* -*f.i.pl.*
*Director (Highway Design), RDA* - *f.i.pl.*
*Provincial Director (Eastern Province), RDA* - *f.i.& n.a. pl*

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இலங்கை நிலைபெறுதகு சக்தி அதிகாரசபை
Sri Lanka Sustainable Energy Authority

විදුලිබල හා බලශක්ති අමාත්‍යාංශයේ ව්‍යවස්ථාපිත අධිකාරියකි
மின்சக்தி மற்றும் வலுசக்தி அமைச்சின் சட்டரீதியான அதிகாரசபை
A Statutory Authority of Ministry of Power and Energy

20th December 2024

Project Manager
Clean Energy Absorption Transmission Project - 1 (CEATP-1)
Ceylon Electricity Board
Office of the Project Manager – CEATP-1
3rd Floor, GOBA Building,
No. 65/1, Sir Chittampalam A. Gardiner Mawatha,
Colombo 02.

**Sub: Confirmation on Infrastructure Development Requirements under CEATP-1**
**Ref: Clean Energy Absorption Transmission Project – 1 (CEATP-1)**

I am writing in reference to your letter with ref. no. CEB/CEATP-1/GE/23 dated 11th December 2024, captioned "Confirmation on Infrastructure Development Requirements under CEATP-1."

As part of our ongoing efforts to promote sustainable energy solutions, SLSEA has identified several project sites that possess great potential for the development of renewable energy power plants. Additionally, SLSEA has received numerous project proposals from independent power producers (IPPs) interested in contributing to the country's renewable energy sector. Among those projects considerable amount of Solar capacity is located based on the Trincomalee cluster.

Accordingly, herewith attached the project details of various projects identified under the EOI category and the Feed-in Tariff (FiT) scheme, which can be connected to the proposed new transmission line. We kindly request that you consider these projects in achieving the scope outlined by the Ceylon Electricity Board (CEB) for the Clean Energy Absorption Transmission Project - 1 (CEATP-1).

In this letter, it was stated that the Sri Lanka Sustainable Energy Authority (SLSEA) has issued an Energy Permit for the construction of the 120MW Sampur Solar Power Plant. I would like to bring to your attention that this information needs to be corrected. The correct information is that the SLSEA has issued an Energy Permit for the construction of the 50MW Sampur Solar Power Plant, not 120MW. However, it is important to note that the SLSEA has identified the potential capacity for this area to be approximately 120MW.

We appreciate your attention to this matter and kindly request that the necessary amendments be made in your records.

Thank you for your cooperation.

Yours sincerely,

**Eng. Vimal Nadeera**
**Deputy Director General**

අංක 72, ආනන්ද කුමාරස්වාමී මාවත, කොළඹ 07, ශ්‍රී ලංකාව.
இல. 72, ஆனந்தகுமார சுவாமி மாவத்தை, கொழும்பு 07, இலங்கை.
No. 72, Ananda Coomaraswamy Mawatha, Colombo 07, Sri Lanka.

| කාර්යාලය<br>அலுவலகம்<br>Office<br>+94(0)11 257 5030 | දුරලිපිසටහන<br>தொலைநகல<br>Facsimile<br>+94(0)11 257 5089 | විද්‍යුලිපිනය<br>மின்னஞ்சல்<br>E-mail<br>info@energy.gov.lk | වෙබ් අඩවිය<br>இணையம்<br>Web Site<br>www.energy.gov.lk |
|---|---|---|---|

**Renewable Enegry projects located in Trincomolee cluster under approval process of SLSEA**

| SEA Ref.No. | Company Name | Type | Capacity (MW) | Location | |
|---|---|---|---|---|---|
| | | | | Latitude | Longitude |
| 40580 | Windforce PLC | Solar | 60.00 | 8.561136 | 81.177787 |
| 41110 | Sky Solar Solutions (Pvt) Ltd | Solar | 50.00 | 8.407575 | 81.372738 |
| 41270 | Blue Sun Technology (Pvt) Ltd | Solar | 137.00 | 8.555319 | 81.151524 |
| 41340 | 3W Power Management Ltd | Solar | 100.00 | 8.747021 | 81.132267 |
| 41360 | Orbital Energy Pte Ltd | Solar | 100.00 | 8.475754 | 81.340208 |
| 41920 | Arinma Holding (Pvt) Ltd | Solar | 100.00 | 8.42102 | 81.234718 |
| 43960 | Arinma power Tricomolee (Pvt) Ltd | Solar | 100.00 | 8.434951 | 81.238825 |
| | Sampoor Solar Project | Solar | 120.00 | | |
| **Total** | | | **767.00** | | |

**"Note: Apart from the above large projects, there are a considerable number of projects below 10 MW under the Feed-in Tariff scheme located in the Trincomalee cluster."**

Trincomalee Power Company Ltd.
A joint venture between CEB & NTPC Ltd.

**Ref:** TPCL/Audit

**Date:** February 24, 2025

Director General
Department of Wildlife Conservation

**Ref : Proposed Sampur Solar Power Project Phase 1 (50 MW)**
**Subject: Request for Expert Guidance on Wildlife Conservation Measures**

The national significance of the proposed Sampur Solar Power Project has been recognized by the Government of Sri Lanka, and Cabinet approval was granted for its implementation as a Government-to-Government project on 19-06-2024. Meanwhile the Phase 1 (50 MW) development was approved by the Cabinet on 19-02-2025. Accordingly, this project will be developed by the Trincomalee Power Company Limited, a joint venture between the Ceylon Electricity Board and NTPC India.

As part of the due diligence process, approval for the Initial Environmental Examination (IEE) has been granted by the Central Environmental Authority. During the IEE process, observations confirmed the presence of diverse wildlife within the project site. To ensure ecological balance and minimize potential human-wildlife interactions, the IEE report has proposed two options for an environmentally sensitive corridor within the land, allowing for the safe movement of wildlife including elephants while also ensuring the protection of the solar farm. We seek your expert guidance in selecting the most suitable corridor path from these proposals.

Additionally, signs of rich biodiversity, including leopard footprints and other natural indicators, were identified in the area. While the IEE report primarily focuses on mitigating broader environmental impacts, we would greatly appreciate your expert recommendations on any additional conservation measures that could further enhance habitat protection.

Given the significance of this project and the need to safeguard natural ecosystems, your guidance on best practices to minimize its environmental footprint while ensuring sustainable coexistence with local wildlife would be invaluable in facilitating its timely and responsible implementation.

Yours Faithfully,

TRINCOMALEE POWER COMPANY LIMITED

**Dr. D J Tilak Siyambalapitiya**
Chairman, Trincomalee Power Company Ltd.

Copy: General Manager (CEB)
AGM (Project)/Director TPCL
DGM (Tr. Design & Environment)

1475
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# පුරාවිද්‍යා දෙපාර්තමේන්තුව
## தொல்லியல் திணைக்களம்
## DEPARTMENT OF ARCHAEOLOGY

තැ. පෙ. අංක 532, ශ්‍රීමත් මාකස් ප්‍රනාන්දු මාවත, කොළඹ 07.
த.பெ. இல. 532, சேர் மாக்கஸ் பர்ணாந்து மாவத்தை, கொழும்பு 07.
P. O. Box No. 532, Sir Marcus Fernando Mawatha, Colombo 07.

ප්‍රධාන කාර්යාලය - පොදු අංක
தலைமை அலுவலகம் - பொது இல.
Head Office - General Nos. 011-2692840 / 011-2692841

ක්ෂණික ඇමතුම් උඩැඩි තොඩර්පු Hot Line 1915

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பணிப்பாளர் நாயகம்
Director General

පුරකටන අංක
தொலைபேசி இல.
Telephone No. 011-2695255

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தொலைநகல்
Fax 011-2696250

E - mail : info@archaeology.gov.lk Website : www.archaeology.gov.lk


මගේ අංකය
எனது இல.
My No. Arch/HO/Exp/ASP/CEB/2023

ඔබේ අංකය
உமது இல.
Your No.

දිනය
திகதி
Date 2023/11/20

RECEIVED 20 NOV 2023 PROJECT MANAGER GENERAL SECRETARIAT CEYLON ELECTRICITY BOARD

23 NOV 2023 D.G.M.(TR.PR.) BRANCH

නියෝජ්‍ය සාමාන්‍යාධිකාරී,
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ලංකා විදුලිබල මණ්ඩලය,
01 මහළ, GOBA ගොඩනැගිල්ල,
අංක 65/1,
ශ්‍රීමත් චිත්තම්පලම් ඒ ගාඩිනර් මාවත, කොළඹ 02.

DGM (SWTD)
W.M.K.D.S. Fernando
nGM (Tr. Pr.)-CEB

**සාම්පූර් සිට කප්පල්තුරෙයි දක්වා 220 kv විදුලි සම්ප්‍රේෂණ ව්‍යාපෘතිය සඳහා පුරාවිද්‍යා නිර්දේශ ලබාදීම.**

උක්ත ව්‍යාපෘතියට අදාළව අප වෙත ඉදිරිපත් කරන ලද පුරාවිද්‍යා භාණ්ඩ ඇගයුම් සමීක්ෂණය අයදුම්පත හා බැඳේ.

02. උක්ත ව්‍යාපෘතිය ක්‍රියාත්මක කිරීමට යෝජිත ත්‍රිකුණාමල දිස්ත්‍රික්කයේ නගර හා කඩවත්, කින්නියා මූතූර්, සේරුනුවර යන ප්‍රාදේශීය ලේකම් කොට්ඨාසයන්හි ඉහත සම්ප්‍රේෂණ මාර්ග පද්ධතිය ඉදිකිරීමට යෝජිත භූමි කොටස ත්‍රිකුණාසමලය කාර්යාලයේ නිලධාරීන් විසින් පරීක්ෂාකර වාර්තාව මා වෙත ලබා දී ඇත.

03. එම වාර්තාවට අනුව උක්ත ව්‍යාපෘතිය ක්‍රියාත්මක කිරීමට යෝජිත භූමියේ මතුපිට පුරාවිද්‍යාත්මක වශයෙන් වැදගත්කමකින් යුත් සාධක හමුනොවන බැවින් පහත සඳහන් කොන්දේසි යටතේ උක්ත ව්‍යාපෘතිය සඳහා අනුමැතිය ලබා දෙන බව කාරුණිකව දන්වා සිටිමි.

**කොන්දේසි -**

I. පුරාවිද්‍යා බලපෑම් ඇගයීම් සමීක්ෂණය සිදුකර ඇත්තේ භූමිය මතුපිට පමණි. ව්‍යාපෘතියෙහි කටයුතු අතරතුර පුරාවිද්‍යාත්මක අවශේෂ කිසිවක් හමුවුවහොත් නොපමාව ඒ පිළිබඳ පුරාවිද්‍යා අධ්‍යක්ෂ ජනරාල් හෝ ඒ ඒ පළාත්භාර සහකාර අධ්‍යක්ෂ (ත්‍රිකුණාමලය දූ. ක. 026 - 2221530) දැනුවත් කළ යුතු ය.

II. ඔබ විසින් ලබා දී ඇති සම්ප්‍රේෂණ මාර්ග පද්ධතියෙහි P17 ලෙස සඳහන් කර ඇති ස්ථානයට යාබඳව පවිවනූර් පුරාවිද්‍යා ස්ථානය පිහිටා ඇත.ඒ ආශ්‍රිතව මැනුම් කටයුතු සිදුකිරීමේ දී පුරාවිද්‍යා නිලධාරීන්ගේ අධීක්ෂණය ලබාගත යුතු ය. අධීක්ෂණ කටයුතු වෙනුවෙන් නිළධාරීන් සඳහා අවශ්‍ය ගෙවීම් දැරිය යුතුය.

III. ව්‍යාපෘතිය අතරතුර පුරාවිද්‍යාත්මක සාධක අනාවරණය වන්නේ නම් එහි ව්‍යාප්තිය හඳුනාගැනීම සඳහා පුරාවිද්‍යා සමීක්ෂණ, ගවේෂණ, කැණීම් සිදුකිරීමට අවශ්‍ය වුවහොත් ඒ සඳහා අවශ්‍ය පිරිවැය ව්‍යාපෘති යෝජකයා විසින් දැරිය යුතු වේ.

IV. ඒ හැර මෙම දෙපාර්තමේන්තුවේ පුරාවිද්‍යා අධ්‍යක්ෂ ජනරාල්ගේ බලයලත් නිලධාරීන්ට ඕනෑම අවස්ථාවක ඉහත සඳහන් ස්ථාන පරීක්ෂා කිරීමේ අවකාශය තිබිය යුතු ය.

V. මෙම ව්‍යාපෘතිය ක්‍රියාත්මක කළ යුත්තේ ඔබ විසින් අප වෙත ලබා දී ඇති KML සටහනට අනුව අදාළ රැහැන් පද්ධතියේ ගමන් මාර්ගය සහ විදුලිකුළුණු ස්ථාපිත කරනු ලබන ස්ථානවල පමණි. අනුමැතිය ලබාදුන් භූමි කොටසෙහි වෙනත් ව්‍යාපෘතියක් ක්‍රියාත්මක කිරීම අවසර නොමැත. සම්ප්‍රේෂණ මාර්ගයේ වෙනසක් සිදුවුවහොත් ඒ බව පුරාවිද්‍යා දෙපාර්තමේන්තුව දැනුවත් කළ යුතුය.

VI. මෙම නිර්දේශය නිකුත් කරනු ලබන්නේ පුරාවිද්‍යාත්මක අගය පිළිබඳ සලකා බැලීමෙන් පමණක් වන අතර මහජන විරෝධතා හෝ පාරිසරික බලපෑම් සම්බන්ධයෙන් මෙම දෙපාර්තමේන්තුව හෝ දෙපාර්තමේන්තු නිලධාරියෙකු විසින් වගකීමක් දරනු නොලබන බව වැඩිදුරටත් දන්වා සිටිමි.

VII. ඉහත කොන්දේසි සහ විධිවිධාන කඩකළහොත් පුරාවස්තු ආඥා පනත යටතේ නීතිමය පියවර ගනු ඇත.

ඕ. ආර්.ජයතිලක

වැ. බ. සහකාර අධ්‍යක්ෂ (ගවේෂණ හා ලේඛනගත කිරීම්)

පුරාවිද්‍යා අධ්‍යක්ෂ ජනරාල් වෙනුවට.

පිටපත් -

01. සහකාර අධ්‍යක්ෂ (ත්‍රිකුණාමලය) - අවශ්‍ය අධීක්ෂණ කටයුතු සඳහා.

දුරකථන / தொலைபேசிகள் / Telephones
සභාපති
தலைவர்
Chairman } +94 11 2325559

උප සභාපති
உப தலைவர்
Vice Chairman } +94 11 2380849

කළමණාකාර අධ්‍යක්ෂ
முகாமைப் பணிப்பாளர்
Managing Director } +94 11 2323213

පොදු
பொது
General } +94 11 2421231
+94 11 2421201

විදුලි පණිවුඩ
தந்தி
Telegrams } "ලංකා වරාය"
"இலங்கைத்துறை"
"PORTSLANKA"

ෆැක්ස්
பக்ஸ்
Fax } +94 11 2440651

E-mail : chairman@slpa.lk
Web site : http://www.slpa.lk

අංක 19, චෛත්‍ය පාර, කොළඹ 01, ශ්‍රී ලංකා.
இல. 19, சைத்திய வீதி, கொழும்பு 01, இலங்கை.
No.19, Chaithya Road, Colombo 01, Sri Lanka.

තැ.පෙ. අංකය
த.பெ.இல.
P.O. Box No. } 595

ශ්‍රී ලංකා වරාය අධිකාරිය
இலங்கை துறைமுக அதிகாரசபை
SRI LANKA PORTS AUTHORITY

| ඔබේ අංකය / உமது இல் / Your No. | මගේ අංකය / எமது இல் / My No. | දිනය / திக்தி / Date |
|---|---|---|
| ..... | PD/TPD/CEB/2023/001 ..... | 31. 05. 2023 ..... |

Deputy General Manager (Transmission Projects),
Ceylon Electricity Board,
No.65/1, Sir Chittampalam A. Gardiner Mawatha,
Colombo 02.

Dear Sir,

**Construction of 220 kV Transmission Lines / 33 kV Distribution Lines at Kappalturai Grid Substation (via SLPA Land)**

This refers to your letter no. CEB/DGM (Pr.Tr.)/PMU/008/CEATP-PMU 1 dated 03.04.2023 on the above captioned subject.

SLPA studied the Feasibility Study Report submitted along with the above referred letter and considered the requirement of new 220 kV transmission lines to improve the quality and reliability of the supply in the region.

Accordingly, SLPA has no objection in principle for the proposed electricity line via Line Route Option – 01 as requested in your letter, subject to enter into Memorandum of Understanding (MOU) between both parties under followings.

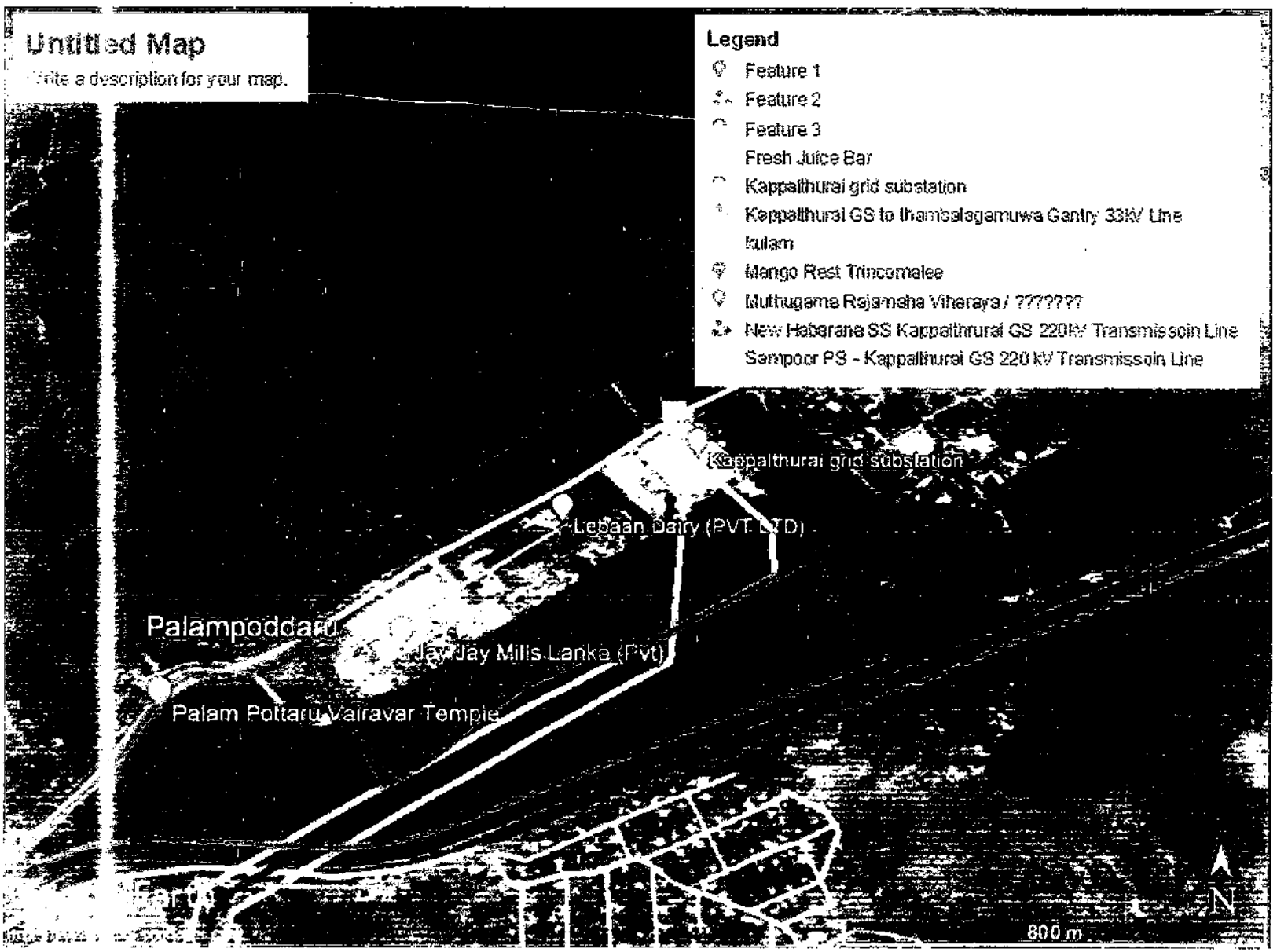
1. One time lease rental shall be paid by CEB for the land lot shown in Annex – 01 based on the valuation done by Valuation Department for 30 years period.
2. Valuation report shall be obtained by CEB with a proper survey plan approved by SLPA.
3. Minimum ground clearance for the lower most transmission line shall be 10 m.

Thanking you

Yours faithfully,
**Sri Lanka Ports Authority**

Chief Engineer (Planning and Development)

Annex - 01


Untitled Map
Write a description for your map.
Legend
Feature 1
Feature 2
Feature 3
Fresh Juice Bar
Kappalthurai grid substation
Kappalthurai GS to Thambalagamuwa Gantry 33kV Line
Pulam
Mango Rest Trincomalee
Muthugama Rajamaha Viharaya / ???????
New Habarana SS Kappalthurai GS 220kV Transmissoin Line
Sampoor PS - Kappalthurai GS 220 kV Transmissoin Line
Kappalthurai grid substation
Lebaan Dairy (PVT LTD)
Palampoddaru
Jay Jay Mills Lanka (Pvt)
Palam Pottaru Vairavar Temple
N
800 m

ශ්‍රී ලංකා මහවැලි අධිකාරිය
අංක 500, ටී. බී. ජයා මාවත, කොළඹ 10.

இலங்கை மகாவலி அதிகாரசபை
இல. 500, டி. பீ ஜயா மாவத்தை, கொழும்பு 10.

**Mahaweli Authority of Sri Lanka**
No. 500, T. B Jayah Mawatha, Colombo 10, Sri Lanka.

දුරකථනය / தொலைபேசி / Telephone: 011-2687491-5
ෆැක්ස් අංකය / பெக்ஸ் இல. / Fax No.: 011-2687240, 011-2687391
විද්‍යුත් තැපෑල් / மின்னஞ்சல் / E-mail: dg@mahaweli.gov.lk
වෙබ් අඩවිය / இணையத்தளம் / Website: www.mahaweli.gov.lk

My File : LUP/RESERVOIR/SYS- B/01

2025-06-18

Deputy General Manager

Transmission Design and Environment

Ceylon Electricity Board

**Requesting preliminary clearance for the prposed 220 KV Transmission line from Sampur to Kappalthurei**

This letter is refer to your No : AGMP/TDE/EV/TL/40 and dated 30th May 2025 .

As per the request made GPS points of proposed transmission line (length of 38 Km) from Sampur Grid substation (GSS) to kappalthurei GSS (The propose Transmission line submitted via whatsapp ) was examined.

Except point No 4/4 (Lat 8.51378 , 81.1159) to Kappalthurei GSS Point and no. 17/2, (Lat 8.4177, Long 81.2812) to Sampur GSS, other mentioned coordinate points are located witin the Mahaweli gazetted boundary. (Attachment -01)

This Project area is not overlapping with MASL Development proposals and Mahaweli Authority is not having objection with implementation of above programme.

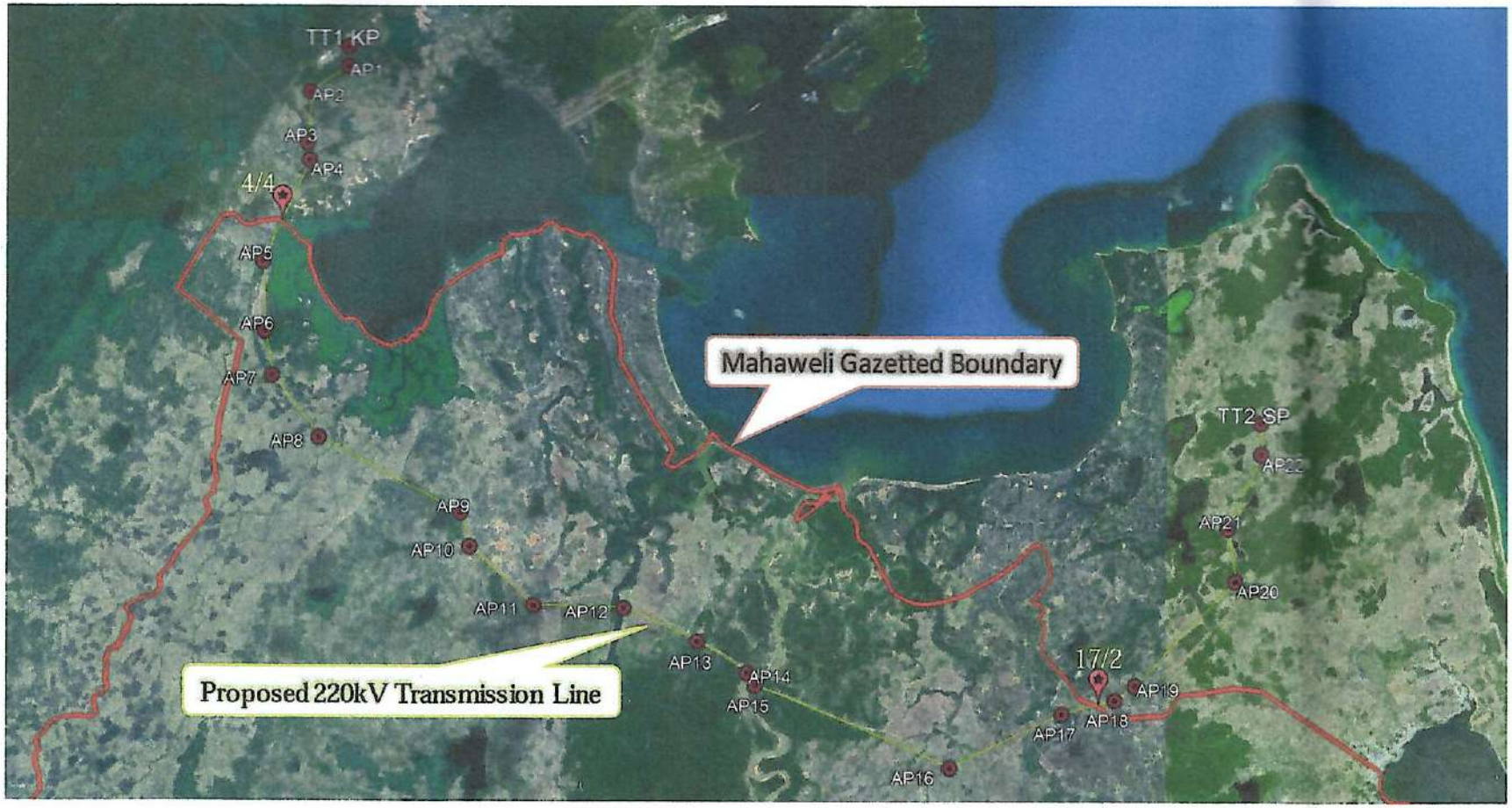
H.M.J.K.Hearath

Director General

Mahaweli Authority of Sri Lanka

AH. 01

# Proposed 220kV Transmission Line from Sampur to Kappalthurei




4/4 GPS Point -
8.513777N 81.115906E

17/2 GPS Point -
8.417704N 81.281234E

H.M.J.K.Herath

වාරිමාර්ග දෙපාර්තමේන්තුව
நீர்ப்பாசனத் திணைக்களம்
**IRRIGATION DEPARTMENT**

28

Director General 011-2584984 | Fax 011-2505890 | Address 230, P.O. Box 1138, BauddhalokaMawatha, Colombo 07, Sri Lanka
Telephone (General) 011-2581162 | E-mail Address dg@irrigation.gov.lk | Web site www.irrigation.gov.lk

My No. DI/ENV/542(Trans) (VI)/2024 | Your No | දිනය திகதி 30/05/2025

**Environment Studies Branch**

**Deputy General Manager,**

Transmission Design and Environment,

Ceylon Electricity Board.

**Proposed 220kV Transmission Line from New Habarana to Kappalthurai.**

This has reference to your letter No. AGM(P)/TDE/EU/TL/40 dated 20.05.2023 regarding above mentioned project.

You are kindly informed that my letter No DI/ENV/542(V)/2019 dated 21.06.2023 is revoked and new No objection letter is hereby issued for the proposed project subject to the following conditions.

i. The proposed transmission line should not disturb the lakes, reservoirs, canals, canal banks and irrigation structures.

ii. All the construction should be proposed outside of the river reservations as tabulated below.

| River/ Canal | | Reservation Limit (from river Bank on either sides) |
|---|---|---|
| Gal Oya<br>Aluth Oya<br>Minneriay-Kanthale Yoda Ela (MKYE) | | 60m |
| Other Canals : | Bedwidth > 4.5m | 40m |
| | Bedwidth ≤ 4.5m | 20m |

iii. The clear height of the proposed transmission line should not be less than 6m if the transmission line crosses any reservoirs, canals, irrigation structures and their reservations.

iv. Proper construction methodology needs to be adopted to overcome loss of cultivations, damages to farm land and structures.

v. Construction should be carried out during off season of cultivation.

This is for your information and necessary action, please.

**Eng. Ajith Gunasekara**
Director General of Irrigation

Eng. Ajith Gunasekara
Director General of Irrigation
Irrigation Department
Bauddhaloka Mawatha,
Colombo 07.

dc

Copies:

01.) Director (EIA), Central Environmental Authority

02.) Director of Irrigation (Trncomalee/ Polonnaruwa/ Anuradhapura)

## 15.15 Documents and letters related to ownership of the Sampur GSS, Kappalthurai GSS and Sampur Solar Park

## Handing Over / Taking Over Statements (In Triplicate)

1. District : Trincomalee
2. DS Division : Muthur
3. G.S Division : Kadatkaraichenai – 222C & Sampur East - 220
4. Village : Sampukali, Sampur & Kadatkaraichenai
5. Name of the Land : Lot 1388 - Sinna Neiyanda vayal and Sinna Naiyanda Kadu
   Lot 1392 - Kilaveli Kuda, Sampukula Vayal and Sampukula Kadu
6. Purpose : Lot 1388 - Construction of grid substation to CEB.
   Lot 1392 - Construction of Coal stock yard for CEB
7. Extent : Lot 1388 - 20 Acre (8.0937 Ha)
   Lot 1392 - 20 Acre (8.0937 Ha)
8. Boundaries :

| | Lot 1388 | Lot 1392 |
|---|---|---|
| North | - Lots1389, 1386 & 1387 | Lots 1393 & 1394 |
| East | - Lot 1387 & Road (Ps) | Lots 1394 & 1389 |
| South | - Road (Ps) & Lot 1389 | Lots 1389 & 1391 |
| West | - Lots 1389 & 1386 | Lots 1393 |

9. The above Land is Vested to CEB according to the approval No LD/05/2008/UDA/216 of Land Commissioner General and section 44 of Land acquisition act No of 15, 28 in 1964.

N. PRATHEEPAN
DIVISIONAL SECRETAR'
MUTUR

Handing Over Date :- 09th July 2014. Signature of the officer handing over

I Don Shirley Terrance Jayakody Officer CEB acknowledges the taking over this land from the officer mentioned above.

Signature of the officer taking over
Date : 09/07/14

Project Director
Trincomalee Coal Power Proje
Ceylon Electricity Board
No 240, 3rd Floor
Highlevel Road
Kirulapone, Colombo 06

***Witness 1***

Name : A. THARMA. (ADS)
Designation : C.I.
Address : D.S. office Muthur

Divisional Secretary
Divisional Secretariat
Muthur

***Witness 2***

Name : N.S.K.J. Pathirana
Designation : Project Manager
Address : TCPP, CEB

Project Manager - II
Trincomalee Coal Power Project
Ceylon Electricity Board

| | | | |
|---|---|---|---|
| பிரதேச செயலாளர் Divisional Secretary | 026 – 2238235 | ඔබේ අංකය உமது இல. Your No | |
| உதவி பிரதேச செயலாளர் Asst. Divisional .Secretary | 026 – 2238237 | මගේ අංකය எனது இல. | MU/DS/LA/C..E.B |
| உ. திட்டமிடல் பணிப்பாளர் Asst. Director of Planning | 026 – 2238867 | දිනය திகதி Date | 2017.11. 23 |
| கணக்காளர் Accountant | 026 – 2238688 | පැක්ස් தொலை நகல் Fax | 026 – 2238234 |
| நிர்வாக உத்தியோகத்தர் Administrative Officer | 026 - 2238868 | E-mail: dsomuthur@gmail.com | |

ප්‍රාදේශීය ලේකම් කාර්යාලය-මූතූර්
பிரதேச செயலகம் - முதூர்
Divisional Secretariat – Muthur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ලංකා විදුලිබල මණ්ඩලය,

කොළඹ.

29 NOV 2017

**ලංකා විදුලිබල මණ්ඩලය සඳහා වෙන්කරන ලද ඉඩම තුළ අනවසරයෙන් ගොඩිතැන් කිරීම**

උක්ත කරුණ සම්බන්ධව මූතූර් ප්‍රාදේශීය ලේකම් කොට්ඨාශයේ සම්පූර් නැගෙනහිර ග්‍රාම නිලධාරි වසමේ කුලවන්කුලවෙලි ග්‍රාමයේ ලංකා විදුලිබල මණ්ඩලය සඳහා වෙන්කරන ලද පහත මායිම් සඳහන් අක්කර 20 ක වපසරියකින් යුක්ත ඉඩම සාම්පූර් ප්‍රදේශයේ පදිංචි නමච්චිවායන් සිවපාල් මහතා ,සින්නෙයියා සින්නිරාවේල් මහතා ,වේලුපිල්ලෙයි කිෂ්ණපිල්ලෙයි මහතා ,රාමලිංගම් පාක්කියරත්නම් මහතා ,යන අයවිසින් ඉහත සඳහන් ඉඩමේ වගා කටයුතු කරන බවට ග්‍රාම නිලධාරි මහතා වසින් වාර්තාවක් ඉදිරිපත් කර ඇත. (අදාල වාර්තාවේ පිටපතක් අමුණා ඇත)

ඉහත සඳහන් ඉඩම ඔබ ආයතනයට පවරාදීම්කර ඇති බැවින් එම ඉඩමට අදාලව සුදුසු කටයුතු කරන මෙන් කාරුණිකව ඉල්ලා සිටිමි.

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| උතුර | - කුලවන්කුලවේලි |
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| නැගෙනහිර | - කිලල්වේලි |
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ඩබ්ලිව්.බී. ගමේගල
සභාපති
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පිටපත් : දිසාපති හා දිස්ත්‍රික් ලේකම් දිස්ත්‍රික් ලේකම් කාර්යාලය, ත්‍රිකුණාමලය - කා.දැ.ස

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05 MAY 2017

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රජයේ ඉඩම් ආඥා පනතේ (1947 අංක 08 දරණ ආඥා පනතේ)

6 වැනි වගන්තිය යටතේ දීමනා පත්‍රය

ශ්‍රී ලංකා ප්‍රජාතන්ත්‍රවාදී සමාජවාදී ජනරජයේ ජනාධිපති වූ ද, මෙහි මින්මතු දීමනාකරු යනුවෙන් හැඳින්වෙන්නාවූ ද, මෛත්‍රීපාල සිරිසේන වන මම මෙහි මින්මතු ප්‍රදානලාභී යනුවෙන් හැඳින්වෙන **1969** අංක **17** දරණ **ලංකා විදුලි බල මණ්ඩල** පනත යටතේ ප්‍රතිෂ්ඨාපිත අංක **50, ශ්‍රීමත් චිත්තම්පලම් ඒ ගාර්ඩිනර් මාවත, කොළඹ 02** දරණ ස්ථානයේ සිය ප්‍රධාන කාර්යාලය පිහිටි ලංකා විදුලි බල මණ්ඩල වෙත මෙහි පළමුවන උපලේඛණයේ සවිස්තරව සඳහන් වන්නා වූ ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයට අයත් ඉඩම හා එහි පිහිටි ගොඩනැගිලි ආදිය මෙහි දෙවන උපලේඛණයෙහි දැක්වෙන කාර්යයන් සඳහා මෙහි තුන්වන උපලේඛණයෙහි දක්වා ඇත්තා වූ කොන්දේසියට සහ රජයේ ඉඩම් ආඥා පනතෙහි විධිවිධාන වලට යටත් කොට එකී **ලංකා විදුලි බල මණ්ඩලය** වෙත කිසිදු ගෙවීමකින් තොරව නිදහස් දීමනාවක් වශයෙන් ප්‍රදානය කොට පවරා දෙමි.

ඉදින් මෙසේ නිදහස් දීමනාවක් වශයෙන් පවරා දෙනු ලබන එකී ඉඩම සහ එහි පිහිටි ගොඩනැගිලි යථෝක්ත කාර්යයන් සඳහාම නොයොදවන ලද්දේ නම් හෝ ඉන් අන්‍ය වූ කාර්යයකට යොදවන ලද්දේ නම් එවිට එය ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයට පෙරළා පැවරෙනු ඇත.

වර්ෂ දෙදහස් .....දහහතක්.....වූ .....අගෝස්තු.....මස .....හතර.....වැනි දින මවිසින් අත්සන් කොට ප්‍රදානය කරන ලදී.

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ජනාධිපති

ජනාධිපතිගේ ප්‍රතිරූප අත්සන මා ඉදිරියේදී මෙහි පිහිටුවන ලද බැව් රජයේ ඉඩම් ආඥා පනතේ (අධිකාරිය 454) 23(2) වැනි වගන්තිය යටතේ සහතික කරමි.

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ජනාධිපතිගේ ලේකම්

රජයේ ඉඩම් ආඥා පනතේ 23(2) වැනි වගන්තිය යටතේ ජනාධිපති ගෙන් ලත් බලය පිටයි.

ඒ. ඒ. උපුල්මලි
ජනාධිපති ජ්‍යෙෂ්ඨ සහකාර ලේකම්

A147/14

2017/05/04

Registered

## පූර්වෝක්ත පළමුවැනි උප ලේඛණය

නැගෙනහිර පළාතේ ත්‍රිකුණාමලය දිස්ත්‍රික්කයේ නගර හා කඩවත් ප්‍රාදේශීය ලේකම් කොට්ඨාශයේ, අංක 229 F, මුතුනගර් ග්‍රාම නිලධාරී වසමේ වෙයිරින්තු ගමෙහි පහත දැක්වෙන මායිම් ඇතුළත පිහිටියාවූද, එෆ්.ඩී.පී.5 දරණ පිඹුරේ කැබලි අංක 192 වශයෙන් පෙන්වා තිබෙන්නාවූද, හෙක්ටයාර් හයයි දශම අටයි බිංදුවයි තුනයි හතයි (හෙක්.6.8037) ක් විශාලයයි ගණන් බලනු ලැබුවාවූද කවඩිකාඩු නමැති ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ ඉඩම් කොටස් වේ.

එකී මායිම්

උතුරට : කැබලි අංක 191 සහ 193

නැගෙනහිරට : කැබලි අංක 193

දකුණට : කැබලි අංක 193

බස්නාහිර : කැබලි අංක 193 සහ 191

(රේඛා චිත්‍ර අංක : ඕ/ත්‍රි 1427 )

## පූර්වෝක්ත දෙවන උප ලේඛණය

පූර්වෝක්ත පළමුවැනි උපලේඛණයෙහි සඳහන් ඉඩම සහ එහි පිහිටි ගොඩනැගිලි ලංකා විදුලි බල මණ්ඩල විසින් උපයෝගී කරන ග්‍රීඩ් උපපොළ ඉදිකිරීම සඳහා පමණක්ම යෙදවිය යුතුය.

## පූර්වෝක්ත තුන්වන උප ලේඛණය

ප්‍රදානලාභීන්ට මෙයින් පවරා දුන් ඉඩම පවරා දුන් දින සිට මෙම ඉඩම ලංකා විදුලි බල මණ්ඩලයේ ග්‍රීඩ් උපපොළ ඉදිකිරීමට හැර වෙනත් කරුණකට යොදා නොගත යුතුය. මෙම ඉඩම හෝ ඉන් කොටසක් තුන්වන පාර්ශවයක් වෙත බදුදීම හෝ අතුරු බදුදීම හෝ බැහැර කිරීම නොකළ යුතුය. එසේ මෙම කොන්දේසිය කඩකරනු ලැබුවහොත් ඒ සමගම පවරා දුන් මෙම දේපල වල අයිතිය පෙරලා ශ්‍රී ලංකා ජනරජය සතු වෙයි.

4/10/17639

LDO
17 OCT 2014
1796

# STATE LANDS ORDINANCE, No. 8 OF 1947

**LEASE OF STATE LAND FOR THE PURPOSE OF** *Development of 2x250 MW Coal Power Plant and Associated Ancillary Facilities including Township (Project).*

I, *Mahinda Rajapaksha* President of the Government of Democratic Socialist Republic of Sri Lanka (hereinafter called "lessor" which expression shall mean the said President and shall include his/her successors in office for the time being) acting herein under the provisions of section 2 of the State Lands Ordinance, No. 8 of 1947,and the regulations framed thereunder, do hereby lease the State land described in schedule "A" hereto (hereinafter referred to as "the land") **to Trincomalee Power Company Limited, incorporated under the Companies Act No. 7 of 2007**(hereinafter called "the lessee", which expression shall include his/her heirs, executors, administrators and permitted assignees) for a term of forty years commencing from the Twentieth Day of the month of June 2014, subject to the terms and conditions in Schedule "B" hereto in consideration of a sum of **Sri Lankan Rupees One Thousand only - per acre per annum(Sri Lankan Rs. 504,982.00 per annum)** paid by the lessee.

## SCHEDULE "A"

All allotment of State land called Kiravalkulikadu, Pillaiyarkudakadu, Kilavelikadu,Sinna Neiyandakadu, Sampukulavayal etc. and Thonakadu situated in the village of Sampukali, Sampur and Kadatkaraichenai in Koddiyar Pattu in the Mutur (Divisional Secretary's Division) of the Trincomalee District of the Eastern Province, and depicted as lot 1389 and 1396 in Topo Pp No. 41 in Field Sheet No. 11 caused to be prepared by the Surveyor-General and kept in his charge and computed to contain Total Amount Two hundred and four Hectares. Three thousand six hundred and sixty three in ten thousand (204.3663 Hectares) in extent and bounded as follows:-

**Lot No. 1389 (202.3428 Ha.)**

| | | |
|---|---|---|
| North by | : | Lots 1392, 1394 and 1386 |
| East by | : | Lots 1386, 1388, Road (ps) Lot 1368) |
| South by | : | Road (ps) (Lot 1368), Lots 1360, 1358, 1345, 1344, 1342, 1340, 1338, 1336,1327, 1326, 1324, 1322, 1320, 1318, 1316, 1307, 1305, 1303, 1301, 1299 and 1368 |
| West by | : | Lots 1390, 1391, 1392, 1394 and 1386 |

**(Plan/ Diagram No. L/ඞ 130)**

LDO/E/02/56,57

17/10/2014
Trincomalee

H.M.H. Saman Kumara
Registrar of Lands and District Registrar
Land and District Registry
Trincomalee.

**Lot No. 1396 (2. 0235 Ha.)**

| | | |
|---|---|---|
| North by | : | Path (Lot 1368) |
| East by | : | Lots 1395 and 1397 |
| South by | : | Lot 1397 |
| West by | : | Reservation along sea (Lot 1167) |

**(Plan/ Diagram No. L/ඉ 131)**

**SCHEDULE "B"**

01. The lessee shall pay a yearly rent in the following manner in advance to the Divisional Secretary, **Mutur** (hereinafter referred to as the Divisional Secretary) at the Divisional Secretariat, on or before **the Twentieth day** of the month of **June** in each year.

a). During the forty years of lease period the rent shall be **Sri Lankan Rupees One Thousand per acre per annum (Sri Lankan Rs. 504,982.00 per annum).**

02. Without prejudice to the provisions contained in Clause 18, if the rent payable for any year is not paid in full on the date on which such rent falls due , the lessee shall pay interest at the rate of 10 percent per annum on such outstanding rent or on any part thereof until such rent or part is paid in full.

03. The lessee shall pay all assessment rates and taxes whatsoever payable in respect of the land and all improvements thereto.

04. The lessee shall, within a period of **Seven** years from the date of the commencement of this lease, at his/her own cost, and in accordance with plan/project proposals and specifications first approved in writing by Divisional Secretary in consultation with the relevant authorities and in conformity with the provisions of this lease documents shall develop the land to the satisfaction of the Divisional Secretary.

Provided that, if the lessee fails to comply with such conditions approved in writing by the Divisional Secretary within the period specified herein, Divisional Secretary/Prescribed Officer may at his discretion allow the lessee to complete the work within such further period as such officer may specify.

05. The lessee shall at all times during the term of this lease keep at his/her own expenses the said project and all additions thereto clean and in good repair to the satisfaction of the Divisional Secretary.

06. The lessee shall permit the Divisional Secretary of any officer authorized by him in writing to enter upon the land at any time deemed reasonable in the daytime and inspect the development thereto.

07. The lessee shall confine the operations of the demised premises to the proposal submitted to the relevant authority as more fully set out in the Clause 9 hereof and specifically the purpose for which the land is leased out as well as any specify targets/objectives set out in the said proposals. The Divisional Secretary or any other relevant authority shall monitor the compliance with the purpose for which the land is leased out and the achievement of the specific targets/objectives contained in the proposal.

08. If in the opinion of the Divisional Secretary the said ***Project*** or any addition thereto is in a ruinous state or is in such a state –

    a. That it has become difficult to keep it clean; or

    b. That it cannot be used for the purpose indicated in Clause 9 of this Schedule and if the Divisional Secretary is further satisfied that it has become necessary to rebuild the said ***Project*** the lessee shall within six months of the receipt of a notice from the Divisional Secretary to that effect or within such further time as may by allowed by the Divisional Secretary maintain and continue to maintain the developments, buildings and all the fixtures to the satisfaction of the Divisional Secretary and in accordance with plans and specifications first approved in writing by the Divisional Secretary.

09. The lessee shall not, without the prior written consent of the Divisional Secretary or other relevant authority or otherwise than in accordance with the conditions of such consent use or permit the use of the land and the buildings thereon, or any part thereof for any purpose what so ever other than for the purpose of ***Project***.

10. The lessee shall not sublet, assign, or otherwise dispose of or deal with his/her interest in this lease, without prior written consent of the Land Commissioner who shall not unreasonably withhold such consent and any such dealing or disposition as foresaid by the lessee without such consent shall be void and inoperative for all purposes.

11. The Jessee shall not, except for the purpose of the Project in line with duly approved plan and specification by the Divisional Secretary without the prior written consent of the Divisional Secretary, or otherwise than in accordance with the conditions of such consent fell, remove or sell or dispose of any earth, cabook. clay, gravel, sand, trees or timber value, forest produce from the land.

12. The lessee shall not, without first obtaining from the prescribed officer a grant or license in that behalf search for, dig for, or carry away any mineral, mineral product or mineral oil in or from the land.

13. The Lessee shall be entitled to mortgage the lease hold rights for obtaining financial assistance required for the development of the said land from any Licensed Commercial Bank and/or a Licensed Specialized Bank (as defined in the Banking Act No. 30 of 1988 and the amendments thereof) or statutorily established financial organization situated within Sri Lanka or international lenders. In the event the lessee mortgages the leasehold rights he shall immediately inform the lessor of such fact and furnish the lessor with all details pertaining to the said mortgage. If the interest of the lessee herein are seized or sold in execution of a decree/under debt recovery provisions in the law against the lessee or in the execution of powers vested in such Licensed Commercial Bank or Licensed Specialized Bank or Financial Institution by statute or international lenders which has an interest in the land as set out above the lessor may be entitled to terminate this lease agreement. However, the lessor will at the request in writing of such financial institution execute a fresh lease agreement for the remaining period of this agreement on the same terms and conditions as this agreement pertaining to the said land to a person selected by such financial institution and approved by the lessor, which approval shall not be unreasonably withheld. Provided however that the lessor shall not be required to execute a fresh lease agreement in favour of the person selected by such financial institution in case the person so selected will continue to use the land for the purpose mentioned herein and specifically set out in Annex/Schedule.

14. The lessee shall during the term of this lease keep at his/her own expenses the landmarks that define the boundaries of the land in good repair.

15. The rights hereby conveyed to the lessee are subject to any right of way or other servitude existing over the land at the date of commencement of this lease.

16. (i) In the event of the land or any portion thereof being required by the State for a public purpose at any time during the pendency of this lessee shall immediately surrender to the lessor the land of the portion so required and this lease shall thereupon terminate in respect of the land or their portion so surrendered, Provided that the lessor shall pay to the lessee as compensation after such surrender (a) a sum which shall bear the same proportion to the rent paid at the commencement of this lease as the extent of the portion surrendered bears to the total extent of the land and (b) a further sum representing the difference between the value of the portion surrendered as appraised at the date of the lease and the enhanced value due to the cultivation and improvements effected by the lessee.

(ii) The lessor shall give notice of such a situation to any financial institution having an interest in the land in terms of Clause 13 of this Schedule.

(iii) If the Divisional Secretary acting on behalf of the lessor, and the lessee are unable to agree on this latter sum, it shall be determined by two arbitrators, to be nominated separately by the Divisional Secretary and lesse, and if they differ between themselves, by an umpire to be chosen by them before they processed to determined the amount.

(iv) Provided further that the lessee shall be entitled to claim a reduction of the rent reserved by Clause 1 of this Schedule in proportion to the extent of land surrendered to the state from an after the date of such surrender.

17 (i) If the interests of the lessee herein are seized or sold in execution of a decree by any party other than any financial institution having an interest in the land in terms of Clause 13 of this Schedule against the lessee, the lease shall forthwith be terminated and the lessor may take possession of the land together with all improvements hereto.

(ii) However, the lessor shall give prior notice of such a situation to any financial institution having an interest in the land in terms of clause 13 of this Schedule.

18. (i) If there shall be any breach or non-observance of any ot the lessee's covenants herein contained, it shall be lawful for the lessor to terminate this lease.

(ii)However, the lessor shall give prior notice of such a situation to any financial institution having an interest in the land in terms of Clause 13 of this Schedule.

(iii) If any payment including rent, either in whole or in part, due under this lease shall be in arrears for a period of ninety days after it has become due (whether legally demanded or not) or if the lessee shall become bankrupt or compound with his/her creditors this lease may be terminated forthwith under the provisions of part X of the State land Ordinance. No. 8 of 1947 and the lessor may enter upon the land and re-possess and enjoy the same.

(iv)

However the lessor shall give further notice of such a situation to any financial institution having an interest in the land in terms of Clause 13 of this schedule and afford such financial institution and opportunity to rectify same within 30 days from such notice by settling the rent in arrears or the amounts due from the lessee to any creditors. However, rectification does not include execution of fresh lease as provided for in Clause 13 of this Schedule "B" . In the event the Financial Institution remedies such position and pays all rentals in arrears or fulfil any other obligation on the lessee the financial institution shall have the right to recover all payments made to lessor from lessees and/or the financial institutions shall be entitled to the rights provided in Clause 13 of this Schedule "B".

19. On the expiry or earlier termination of the lease Clause 17 and 18 lessee shall surrender to the lessor the land in accordance with the covenants in this lease contained (due allowance being made for fair wear and tear). However lessee shall be granted two years from the date of such surrender to remove all improvements, fixtures from the land.

20. The lessee shall not be entitled on such surrender as aforesaid to claim any payment of compensatio for any improvements whatsoever effected to the land or buildings or on any other accoun whatsoever.

21. No permission will be granted for sub-leasing until expiry of 05 years from the date of commencemen of this lease.

22. If the lessee fails to substantiate the purpose for which the land was obtained as well as the objectives/targets within the specified period of time, steps will be taken to cancel the agreement o lease. However in the event the said lessee's rights to the land are mortgaged to a financial institution lessor shall give notice of such event to the financial institution and the financial institution shall be entitled to the rights provided in Clause 13 of this Schedule "B".

.....

Signature of Lessor

I CERTTIFY under section 23(2) of the State Lands Ordinance No. 8 of 1947, that the above Facsimile of the President's signature was stamped hereon in my presence.

At Colombo
This Nineteenth Day of Septembe
Two thousand and Fourteen

.....

Secretary to the President

Chitra Thilakarathna
Senior Assistant Secretary to the Presiden

.....

Signature of the lessee

Witnesses to the Signature of the lessee:

1.....

2.....

Signed at Colombo
This Twentieth Day of June
Two thousand and Fourteen.

ශ්‍රී ලංකා මිනින්දෝරු දෙපාර්තමේන්තුව
இலங்கை நில அளவைத்திணைக்களம்
Sri Lanka Survey Department

පරිමාණය அளவீடை Scale 1 : 15,000.

පරිමාණය මුල් සිටමනට පමණක් අදාළ වේ
அளவீடை மூலப்பிரதி மாத்திரம் பொருந்தும்
Scale applies to original only

වර්ග අංකය பிரிவுக்கை இல. Supplement No: 8

අංකය தாள் இல. Sheet No: 11

Diagram No. 2/සැ/130 Date 2013.07.10

Plan No. and Lot No. Topo PP 41 1389

Name of the Land Kiravalkulikadu, Pillaiyarkudakadu, kilalvelikadu, Sinna Neiyandakadu, Sampukulavoyal etc

Extent of the Land Two hundred and two Ha. three thousand four hundred and twenty eight in ten thousand Hal

BOUNDARIES North Lots 1392, 1394 and 1386

East Lot 1386, 1388, Road (PS) (Lot 1368)

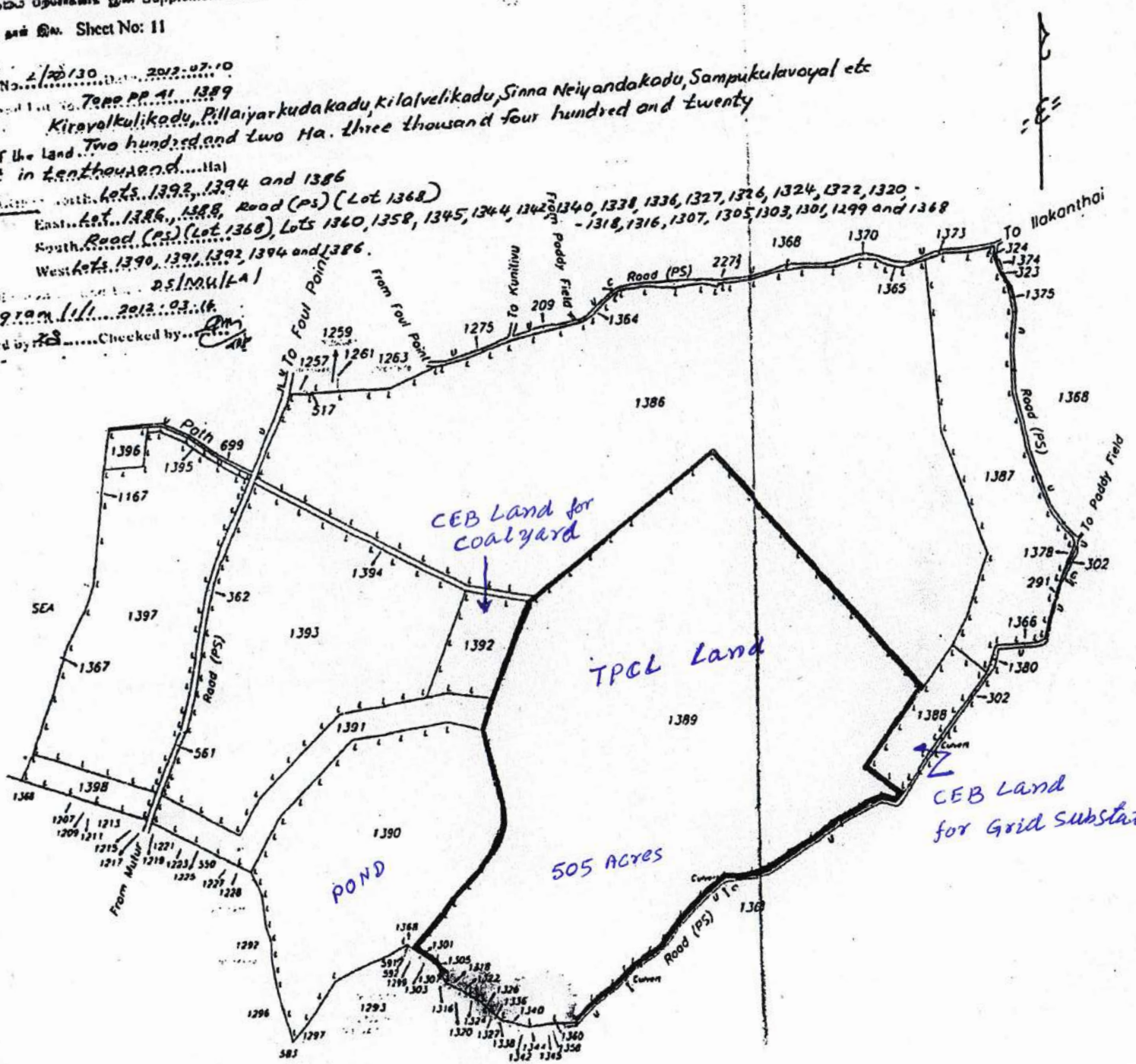
South Road (PS) (Lot 1368), Lots 1360, 1358, 1345, 1344, 1342, 1340, 1338, 1336, 1327, 1326, 1324, 1322, 1320 - 1318, 1316, 1307, 1305, 1303, 1301, 1299 and 1368

West Lots 1390, 1391, 1392, 1394 and 1386.

D.S. MULLA I

Diagram I/I 2012.03.16

Prepared by ..... Checked by .....




ග්‍රාම නිලධාරී කොට්ඨාසය : Sampukali, Sampur and Kadatkaraichenai

கி. நி. பிரிவு G.N. Division : Kadatkaraichenai, Divn. No 222C. Sampur East Divn. No.220

සුළු කොට්ඨාසය : Koddiyar Pattu

சிறு பிரிவு Minor Division

ප්‍ර. ලේ. කොට්ඨාසය : Mutur

உ. செ. பிரிவு D.S. Division

දිස්ත්‍රික්කය மாவட்டம் : Trincomalee District

පළාත மாகாணம் Province : Eastern

සංඥාවලියේ ඉංග්‍රීසි
Legend

| | |
|---|---|
| L | Landmark |
| U | Undefined |
| C | Channel |
| Road (PS) | Road (Pradeshiya Sabha) |

ජාතික සිතියම් යොමුව தேசிய படச் குறிப்பு
National Map Reference

ක්ෂේත්‍ර පොත් අංක E.D.M. පි.459, E.D.M. පි.460.
புலக் குறிப்புப் புத்தக இல
Field Book Nos

මැනීම හා ඇඳීම කළේ
நில அளவை செய்து வரைந்தவர்
Surveyed and Drawn by K.V.Krishnarajah
..... මිනින්දෝරු ..... நில அளவையாளர்
..... Surveyor

From 2012 Feb. සිට திகதி To 2012 Mar.

පරීක්ෂා කළේ මේ හාත්තුවෙන්
Checked by: V.Murugathas
මිනින්දෝරු අධිකාරි நில அளவை அத்தியட்சகர்
Supdt. of Surveys

අනුමත කළේ
அத்தாட்சிப்படுத்தியவர்
Approved By M.A.M.Somalatha
ජ්‍යෙෂ්ඨ මිනින්දෝරු අධිකාරි மேற்பார்வை நில அளவை அத்தியட்சகர்
Snr. Supdt. of Surveys
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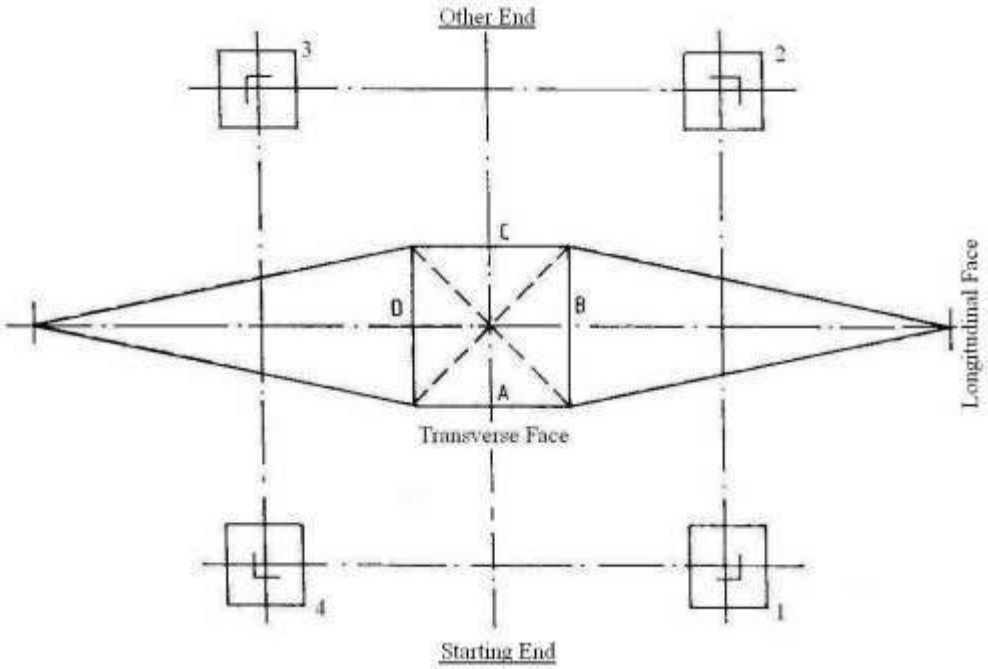
Trincomalee District
මහ මැතිවරු ජනරාල් වෙනුවට
நில அளவை நாயகத்திற்காக பதிலாக
On behalf of the Surveyor General 20.

# 15.16 Method statement for construction of Transmission Line Tower Foundations

## 1.0 EXCAVATION PIT MARKING

1.1 After the location marking has been done, the marking of the pits for excavation for the foundation of the location is carried out. This is based on the specific foundation drawing ofthe type and make of the tower which is to be erected at that location.

1.2 The tower legs, footings and faces are designated as shown in the drawing below.




1. represents leg or pit No. 1
2. represents leg or pit No. 2
3. represents leg or pit No. 3
4. represents leg or pit No. 4

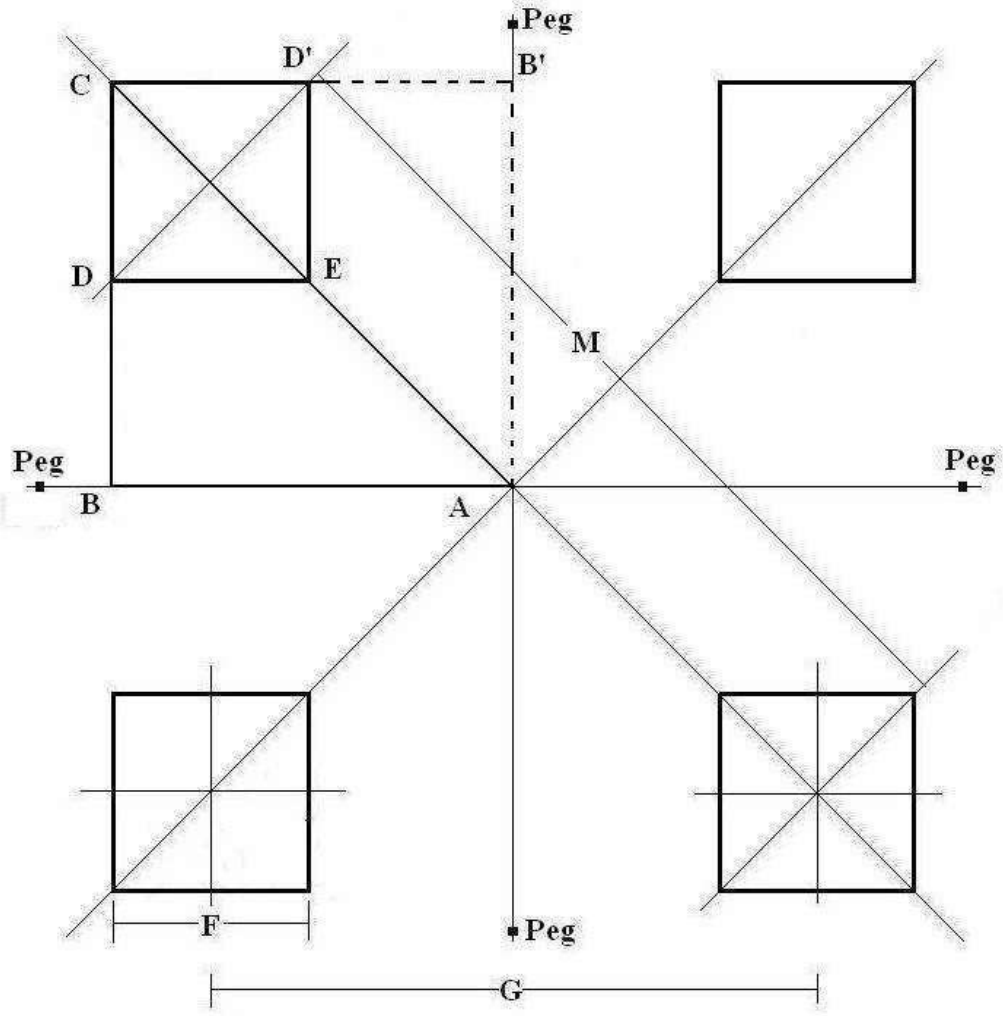
A. represents near side (NS) transverse face
B. represents near side (NS) longitudinal face
C. represents far side (FS) transverse face
D. represents far side (FS) longitudinal face

NOTE 1. : Danger and Number plates are located on face 'A'
NOTE 2. : Leg 1 represents the leg with step bolts and anticlimbing device gate, if any. If two legs with step bolts are required, the next is No. 3 leg.
NOTE 3. : Earthing is provided on Leg 1. Additional earthing, if required, is provided on Leg 3.

1.3 The pit marking shall be carried out according to the pit marking drawing which is preparedfrom the foundation drawing of the tower. The size of the pit, in case of open cut foundations, is worked out by adding 150 mm to the sides of the base pad on all the four sides for allowing working space. No margin is necessary in case of undercut foundations.

1.4 The excavation pit marking drawing indicates the distance of centers, sides and corners of the pits with reference to the center point of the tower. These distances are measured and each pit boundary is marked in the field by means of spade or pick axe along the sides of the pit.

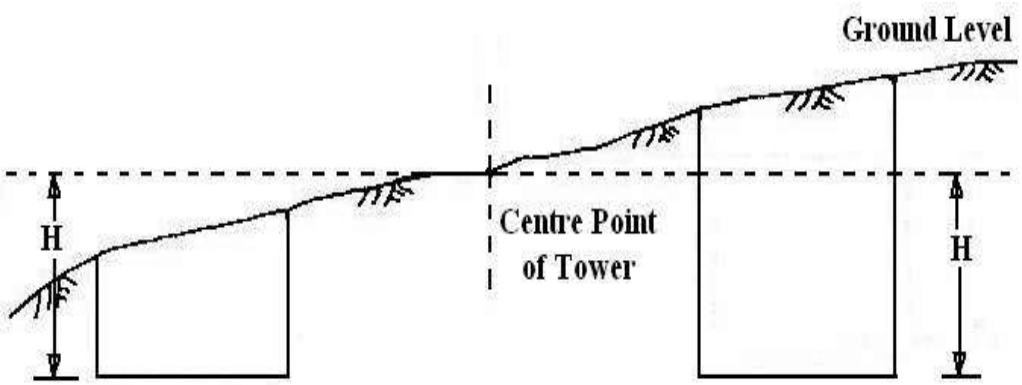
1.5 A typical excavation pit marking drawing is given below.




1.6 From the dimensions shown in the drawing, the triangle ABC is first marked with the help of a measuring tape. The distance CD, equal to F (width of the pit) is marked on the ground.The triangle AB'C is then marked by shifting the point B and without changing the points Aand C. The distance CD', equal to F, is then marked. The sides DE and D'E, both equal toF, are then marked. The procedure is repeated for marking the other three pits.

1.7 The dimension G shown in the drawing is the center-to-center distance between stubs of the tower at their lowest point. The dimension M is the diagonal distance between the ends of the stubs of the tower. The excavation pit marking drawing is prepared on the basis of these dimensions.

1.8 The depth of actual excavation at the pit center is measured with reference to the ground level at the center of the tower location. A typical example of determining the actual depth of excavation of the pits is shown below.




## 2.0 CLASSIFICATION OF SOIL

The different types of soils are generally classified as under.

### *2.1 **Normal Dry Soil***

Normal dry cohesive soils of any color, viz., loose murram / sand, etc. which is readily removable with ordinary spades, pick axes and shovels.

### *2.2 **Hard soil / Hard murram / Dense soil***

Generally any soil such as stiff clay, gravel, cobble stone and black cotton soil which requires the close application of pick axes or jumpers or scarifiers to loosen it.

### *2.3 **Soft / disintegrated / fissured rock***

Soil consisting of decomposed or fissured rock, hard gravel, lime stone, laterite orany other soil of similar nature.

### *2.4 **Hard rock***

Soil in which chiseling, drilling or blasting is required for excavation.

### *2.5 **Sandy soil***

Soil with negligible cohesion which is prone to collapsing when excavated.

## 3.0 CLASSIFICATION OF FOUNDATIONS

3.1 The type of the foundation to be casted at any location depends upon the type of soil, sub – soil water level and the presence of surface water. While classifying foundations, the worst conditions are to be considered and not necessarily the conditions prevailing at the time of inspection. For example, there may be areas where sub – soil water rises when canal wateris let out in the fields raising the sub – soil water level to a considerable degree. Similarly, the effect of monsoon or when nearby reservoirs are full is also to be considered and not theconditions prevailing in open season or summer when work is normally carried out. The classification of foundation is done as

given hereunder.

### *3.2 **Normal Dry Foundation***

This is used at locations where normal dry cohesive soils are met and where sub – soilwater is met below the foundation base level.

### *3.3 **Wet Foundation***

This is used at following kind of locations:

a) Where sub – soil water is met at 1.5 m or more below the ground level.
b) Which are in surface water for long periods with water penetration not exceeding one m below the ground level, e.g., paddy fields or sugar cane fields.

### *3.4 **Partially Submerged Foundation***

This is used at locations where sub – soil water table is met between 0.75 m and 1.50 m below the ground level.

### *3.5 **Fully Submerged Foundation***

This is used at locations where sub – soil water table is met within 0.75 me below the ground level.

### *3.6 **Black Cotton Soil Foundation:***

This is used at locations where soil is clayey / expansive type, not necessarily black in color, extending to the required depth of excavation of the pit, which shrinks when dry & swells when wet resulting in differential movement of the soil.

### *3.7 **Soft Rock or Fissured Rock Foundation***

This is used at locations where decomposed or fissured rock gravel, limestone, laterite or any other soil of similar nature is met. Wet fissured rock foundation is adopted in case of fissured rock locations where water table is met at 1.5 m or more below ground level. A separate foundation design shall be used if water level is encountered at less than
1.5 m below ground level.

### *3.8 **Hard Rock Foundation***

This is used at locations where chiseling, drilling and blasting is required for excavation of hard rock type foundations. Rock anchoring is to be provided to resist uplift forces for theselocations.

### *3.9 **Sandy Soil Foundation***

This is used where soil with negligible cohesion is met.

**The procedure for classification of soil and foundation is as below:**

a) <u>For 400 kV lines:</u> The classification is decided by the Design Wing on the basis of soil

investigation got carried out through Bore Holes at suspension locations and Standard Penetration Test (SPT) at angle locations.

b) For 132 kV & 220 kV lines: The classification is decided by the Field Engineers on the basis of soil encountered after excavation of the pits.

## 3.10 Summary of Foundation Types

Soil types to be applied for foundation design are classified as shown below;Table

***Foundation Types***

| Soil Type | Particular of Soil |
|---|---|
| S1 | Homogeneous Rock |
| S2 | Fractured Rock/ Dense sand and Gravel |
| S3 | Medium Dense Gravel/ Medium Dense Gravel with Sand/ Compact Sand/ Very Stiff to Stiff Clay/ Hard Clay |
| S3A | Medium Dense Gravel/ Medium Dense Gravel with Sand/ Compact Sand/ Very Stiff to Stiff Clay/ Hard Clay (Water Logged) |
| S4 | Loose Sand and Gravel/ Medium Dense Sand/ Stiff Clay/ Firm Clay |
| S4A | Loose Sand and Gravel/ Medium Dense Sand/ Stiff Clay/ Firm Clay (Water Logged) |
| S5 | Soft Clay, Silt, / Loose Sand |
| S5A | Soft Clay, Silt, / Loose Sand (Water Logged) |
| S6 | Very Soft Clays and Silt/ Peat and Organic Soil |
| S7 | Alternative |

The foundations for the towers shall be of the types stated above and shall bedesigned in accordance with the particulars given in the same table.

**Foundation Requirements**

| Foundation Type | | Soil Classification | Presumed allowable Bearing value kN/m$^2$ | Design Uplift Frustum Angle | Level of Water Table | Concrete Density kg/m$^3$ | Solid Density kg/m$^3$ |
|---|---|---|---|---|---|---|---|
| 1 | Rock Anchor | | > 1000 | 45 | | 2240/ 1200[2)] | 2000/ 1000[2)] |
| 2 | Concrete Pad & Chimney | S2 | > 500 | 30 | BelowDatum level[1)] | 2240[2)] | 1800 |
| 3 | Concrete Pad & Chimney | S3 | > 200 | 20 | BelowDatum level[1)] | 2240[2)] | 1600 |
| 3A | Concrete Pad & Chimney | S3A | > 200 | 20 | AboveDatum level[1)] | 2240/ 1200[2)] | 1600/ 1000[2)] |
| 4 | Concrete Pad & Chimney | S4 | > 100 | 10 | BelowDatum level[1)] | 2240[2)] | 1500 |
| 4A | Concrete Pad & Chimney | S4A | > 100 | 10 | AboveDatum level[1)] | 2240/ 1200[2)] | 1500/ 1000[2)] |
| 5 | Concrete Pad & Chimney | S5 | > 50 | 0 | BelowDatum level[1)] | 2240[2)] | 1400 |
| 5A | Concrete Pad & Chimney | S5A | > 50 | 0 | AboveDatum level[1)] | 2240/ 1200[2)] | 1400/ 960[2)] |
| 6 | Piling | S6 | Subject to soil investigation | 0 | AboveDatum level[1)] | 2240/ 1200[2)] | Subject to soil investigation |
| 7 | Any other special | S7 | Subject to detailed soil investigation | 0 | AboveDatum level[1)] | 2240/ 1200[2)] | Subject to detailed soil investigation |

## 4.0 EXCAVATION OF TOWER FOUNDATION PITS

4.1 While excavating, the earth is cut vertically / tapered / in steps as per the soil conditions at site to avoid any kind of mishap caused by collapsing of the pit sides during the course of excavation and foundation work.

4.2 The excavated earth is to be kept at a sufficient distance so that it does not create anyburden on the sides of excavated earth pits.

4.3 During excavation in sandy soil or water bearing strata, and particularly in black cotton soil where there is every likelihood of collapsing of the sides of the pits, shoring and shuttering made of wooden planks of sufficient thickness or steel frames of adequate strength to meet the requirement are to be provided.

4.4 Where water is encountered during excavation, dewatering shall be carried out manually or by mechanical means or power driven pumps to facilitate excavation and casting of foundations. The pumps shall be suitable for handling muddy water.

4.5 Excavation in soft rock is done with the help of chisels. Some types of soft rock soils needto be soaked in water before excavation can be carried out. It is not recommended to use blasting for excavation in soft rock.

4.6 For excavation in hard rock, blasting can be resorted to. Reference shall be made tostatutory rules for blasting and use of explosives for this purpose. No blasting is permitted near permanent work or dwellings. At such locations, excavation shall be done by mechanical methods. To protect persons and animals from injuries and to protect nearby installations from flying debris, the pits can be covered with steel plates. Blasting shall be done in a manner such that the pits excavated are as near to the design dimensions as practicable. Holes are drilled at the base of the excavation for the anchor rods.

## 5.0 SETTING OF TEMPLATES

5.1 A stub setting template is a specific tool for a type, design & make of tower. It is a lightrigid steel framework and is used to hold the tower stubs at the correct alignment and slope during the concreting work. The template is adjustable type which can suit the standard tower as well as towers with standard extensions.

5.2 After the excavation is completed, the sides of the template are assembled and placed on thefour sides of the location. The sides are then connected together, taking into consideration the type of tower (normal or with extension) to be erected, to form the shape of the templatewith the four corners located in the excavated pits.

5.3 The template is lifted and placed on jacks. Eight jacks are used, two for each corner of the template. The jacks are supported on sleepers which are placed across the pits so that the load of the template is distributed away from the excavated pits. The lengths of the sidesand diagonals of the template are measured. These are compared with those given in the drawing and corrected as required.

5.4 Plumb lines, one in the transverse direction and the other in the longitudinal direction, are drawn from the peg markings given for the location.

5.5 The template is centered on the location with the help of the plumb lines. The template is levelled and the height of the base of the template above ground level is kept as given in thedrawing.

5.6 The lengths of the sides and diagonals of the template are finally checked and corrected if required. The levelling of the template is also checked and corrected.

5.7 The stubs are then fixed on the legs of the template. The distance between the end of the stub and the base of the pit is checked with reference to the foundation drawing. If the distance is less, then the pit is accordingly excavated. In case the distance is more, the extra excavation is filled with lean concrete of 1 : 4 : 8 mix and allowed to set before further activities are taken up.

5.8 The details of the dimensions & levels of the template are entered in the stub setting register.

## 6.0 FORMER BOXES

6.1 Generally, the pyramid type of foundation is used which consists of two parts. The lower part is called the frustum and is the base of the foundation. The upper part is called the chimney which covers the stub angle.

6.2 Former boxes of the shape, size and dimensions for the individual type and make of towers as per approved foundation design and drawing are to be used.

6.3 Adequate quantity of former boxes for all types of towers, particularly suspension towers, shall be got fabricated so that work can be carried out at a number of locations and the desired progress can be achieved.

6.4 The dimensional drawing of former boxes shall be approved by the Executive Engineer.

6.5 Former boxes are made out of M. S. Sheets having adequate thickness so as to be rigid during the placing of the concrete. The chimney and pyramid portions are adequately braced to retain proper shape while concreting. To avoid honeycombs in the concrete, the former boxes shall be sufficiently tightened to prevent cement slurry from coming out.

6.6 Window is to be provided on the upper part of one face of large size frustums so that concrete may be placed easily in the lower part. This window shall be fitted back after placing concrete in the lower part.

## 7.0. REINFORCEMENT

7.1 All steel rod reinforcement shall be clean and free from loose mill scale, loose rust, oil and grease or other harmful matter and except at bends shall be truly straight before being surrounded with concrete. Evidence of steel quality shall be provided. The numbers, lengths, diameters, forms and positions of all reinforcing bars shall be in accordance with approved drawings. Reinforcement shall be readily identifiable as to grade and origin.

7.2 The steel reinforcement shall be so connected as to form a rigid cage or mat. To prevent displacement before or during concreting, the bars shall be tied one to the other with 18-gauge soft iron wire. Sufficient pre-cast rings or cover blocks shall be used between the reinforcement and the bottom and sides of the excavations to ensure the correct cover of concrete around the bars. The cover blocks shall be made of concrete of not less strength than that of the concrete in which they occur. Reinforcement bars shall be carefully bonded to the tower steelwork with soft iron wire before concreting.

7.3 Reinforcement shall not be welded except where shown on the construction drawings or as requested by the Contractor and approved by the Engineer

## 8.0 CONCRETING

8.1 Concrete foundations shall extend to at least 300 mm above ground and shall be sloped off around the steel leg section and smoothly finished to ensure drainage away from the steelwork.

8.2 In areas subject to the flooding the encasing concrete shall be extended up the tower members as directed by the Employer. Extended foundations shall be provided in paddy fields and marshy areas and the cost shall be deemed to be included in the normal foundation cost.

8.3 If the cement is added to the drum at site and is thoroughly mixed prior to placing. Alternatively, and at the discretion of the Employer, if the ready mixed lorry carries its own water drum, water may be added to the cement and aggregate in the mixing drum during the lorry's journey provided the concrete is not mixed for more than 45 minutes prior to placing. The Employer decision to reject any of the above methods of supplying ready mixed concrete shall be final.

8.4 Towers shall not be erected until fourteen days after completing the foundation concrete work. At the discretion of the Employer, for the emergency condition duration could be changed. However, in any case towers shall not be erected before back filling is completed.

8.5 Alternative methods of concreting foundations which do not involve formwork are to be first agreed in detail with the Employer before employment at site.

8.6 The backfill of all types of foundations shall be thoroughly rammed, the ramming to be carried out at intervals of not greater than 300 mm to ensure thorough consolidation of the backfill as the Employer requires. Compaction ratio above 95% shall be achieved. In no circumstances, shall peat or equivalent material be used as backfill for foundations. Where necessary excavations in peaty material shall be backfilled in an approved manner with suitable soil or hard-core from an approved source at rates agreed by the Employer.

## 9.0 FOUNDATION INSTALLATION

### 9.1 STUB SETTING

Stubs for tower foundations shall be carefully adjusted to template (which may be the bottom tower section itself for grillage foundations only) or any other method approved by the Employer and shall be held in the correct position while the concrete for the foundation structure is placed. The templates shall not be struck until at least 24 hours after foundations have been completed. The spacing and levels of the stubs after the templates have been struck shall be such as to ensure correct alignment of the towers without forcing of members during erection

### 9.2 MATERIAL

9.2.1 All cement used shall be of Portland or other approved composition obtained from an approved maker. Portland cement shall conform in all respects to BS 12. Where Portland cement concrete may be liable to chemical attack sulphate resistant cement to BS 4027 may be used where approved. Cement shall be stored in an approved manner.

9.2.2 All aggregates shall be obtained from sources approved by the Employer and shall be clean and free of clay, earth, organic matter, salt or other impurities. The aggregate shall comply generally with the requirements of BS 882. The Engineer shall have the right to request the Contractor, at any time, to draw

samples of aggregates from stockpiles on the Site or any other location to be indicated by the Engineer. All sampling and testing shall be in accordance with BS standards. The cost of such tests shall be borne by the Contractor.

a. Coarse aggregate shall be broken stone of angular shape, of approved grading according to BS 882 (Latest).

b. Fine aggregate shall, unless otherwise approved by the Employer, be sand, well graded from 4 mm gauge downwards. No seashore sand shall be used, and unwashed pit or river sand shall not be used unless approved by the Employer.

c. Water shall be obtained only from sources approved by the Employer. It shall be clean, free from deleterious materials and chemically neutral. The water should comply with the requirements of SLS.

## 9.3 FORMWORK

Formworks shall normally be employed to produce the correct foundation shape and ensure no loss of aggregate or cement. All formers shall be sufficiently strong to withstand the pressure arising from the concrete during compaction and shall be capable of removal without undue disturbance to the concrete. Formworks shall not be removed before the concrete has sufficiently hardened and in no case less than 48 hours after pouring. Concrete that is damaged or honeycombed must be removed by chipping to sound concrete and replaced with mortar or concrete.

## 9.4 CONCRETING

9.4.1 All concrete shall be thoroughly mixed & vibrated by machine, with only sufficient water to ensure a workable mix. Where grillage or other types of steel foundation may be used, the Contractor shall be - responsible for ascertaining that the sub-soil is not of a nature such as to cause corrosion of buried steelwork.

9.4.2 Unless otherwise approved, towers with concrete foundations shall not be erected until the foundations have had fourteen days in which to set, or such longer or shorter time as may be approved, depending on the type of cement used and on local conditions.

9.4.3 Foundation setting level diagrams shall be provided to show the foundation and stubs, tower body and leg extensions and concrete leg extensions proposed. The diagram shall be to a scale of 1:100 and extend beyond the limits of the foundation design frustum by 1 meter.

9.4.4 Cement shall be measured by weight, either by use of one or more complete bags or by weighing on site. Other ingredients shall be measured by weight or by volume, and concrete shall be mixed in batches using one or more complete bags of cement.

9.4.5 Only in exceptional circumstances shall a bag of cement be divided. When mixing by volume is adopted, suitable batch boxes of approved dimensions shall be made and used for the measurement of coarse and fine aggregates. A suitable container for the measurement of water shall also be used.

9.4.5 In the event that the Contractor proposes to use ready mixed concrete for foundation work, approval must first be obtained from the Employer, who will inspect the batching plant and sand, cement and broken stone used in the making of concrete at the works. No ready mixed concrete shall be used in foundation work if it has been mixed in the lorry during its journey to site for more than 45 minutes. At the discretion of the Employer, ready mixed concrete may be used in foundations if the journey to site is in excess of 45 minutes.

9.4.6 No concreting may start without the presence of the Employer if not directed otherwise. Concrete shall

not be directly poured from a height more than 1.5 meters to avoid mix segregation. The concrete shall be thoroughly compacted by vibration during the operation of placing and shall be free from honeycombing and other defects.

9.4.7 Consistency tests shall be made when required by the Employer: the slump in a truncated cone 300 mm high and of standard dimensions shall be tested to confirm it within the range as directed by the Employer. Freshly placed concrete shall be properly protected against the weather.

9.4.7 Joints in the concrete foundations are to be avoided as much as possible. Where the construction of the foundation is such that joints are unavoidable adequate bond between the old and new concrete shall be ensured by chipping the old concrete to a rough, clean surface free from loose particles. Immediately before placing the new concrete, this cleaned surface shall be primed with a layer approximately 15 mm thick of a wet mix of cement and fine sand in equal proportions.

9.4.8 The muff (upper surface of the concrete foundation) shall be constructed by a continuous pour of the chimney concrete. The upper surface of the concrete for all types of foundations shall be sloped in an approved manner to prevent accumulation of water and the whole exposed surface shall be rendered with mortar composed of one part of cement to two parts of sand.

9.4.9 Concrete foundations shall extend to at least 300 mm above ground. Extended foundations up to 500 mm above ground shall be provided in paddy fields and marshy areas and the cost shall be deemed to be included in the normal foundation list.

9.4.10 Unless otherwise approved, towers shall not be erected until fourteen days after completing the foundation concrete work. The Contractor shall give sufficient notice and, in any case, not less than 24 hours to the Engineer of the placing of any concrete.The Contractor shall not place any concrete until forms or excavations and reinforcing steel and embedded items have been checked, approved by the Engineer.

### 9.5 **Concrete Curing and Protection**

9.5.1 Freshly cast concrete shall be protected from premature drying and excessively hot or cold temperature. In windy conditions breaks shall be erected to shield the concrete surfaces during and after placement. The concrete shall be maintained at a reasonable constant temperature with minimum moisture loss for the curing period.

9.5.2 The concrete shall be protected from damage due to load over-stresses, heavy shocks and excessive vibrations, particularly during the curing period.

## 10.0 **BACKFILLING**

10.1 For tower foundations where excavations are to be backfilled immediately following the striking of shutters, the concrete shall be thoroughly wetted before backfilling commences. Where shutters are to be struck and backfilling of the excavation is not be take place immediately, the concrete shall be covered by hessian sacking and shall be kept continuously moist to avoid rapid drying of the concrete until backfilling, or as otherwise directed by the Employer.

10.2 Proper precautions shall be taken to ensure that all backfilling and compaction of earth is done thoroughly and evenly round all parts of each separate foundation block or structure. The backfill shall be placed in layers not exceeding 200 mm in thickness and compaction shall be carried out as instructed by the Employer. Backfilling from one side or corner only, of an excavation hole shall not be allowed. In wet or flooded situations adequate provision shall be made to ensure the excavation is kept free from water whilst work is carried out. No backfilling is permitted until the foundations are approved by the Employer.

10.3 Organic matter and silt shall not be used as backfill material. All temporary timbering, shuttering, etc and all decomposable or perishable material shall be removed from the excavations prior to backfilling.

10.4 Backfill shall be such that the original ground contours are restored as nearly as possible and any subsidence of backfill shall be made good before the issue of the Taking over Certificate. In places where settlement is observed during construction works or Defect Liability Period the Contractor shall restore original level with additional fill at no extra cost. Should any of the civil works undertaken interfere with either natural or man-made drainage or be susceptible to erosion by the flow of water the Contractor shall be responsible for constructing suitable alternative drainage and protecting the works against erosion.

# 15.17 Method statement for Tower Erection

## Tower Erection

Tower erection is the process of installing communication towers, wind turbines, and other structures that require tall, sturdy support. It is a complex and technical process that requires specialized knowledge, equipment, and skills to ensure safe and reliable outcomes. With the increasing demand for wireless communication and renewable energy, tower erection is an essential service that plays a crucial role in connecting people and powering communities. In this article, we will explore the various aspects of tower erection and offer tips and insights to help ensure successful installations.

This article mainly focuses on the power distribution line. Tower erection is the main feature of the power distribution system, and according to the voltage level of the transmission line, tower types and the shape of the tower also vary.

## Tower Types of Tower Erection

The following are the main tower types used for tower erection. Those four types of towers are normally used for transmission lines. The type, Size, and Shape of the tower is depending on location, angle of deviation, etc.

1. Suspension Towers
2. Tension Towers
3. Terminal Towers
4. Special Towers

## Suspension Towers

A suspension tower transmits high-voltage electrical power from one location to another as a type of transmission tower. It consists of two tall steel towers with a cross arm at the top and a horizontal conductor suspended between them. Support the conductor with insulators, which permit the flow of electricity while avoiding physical contact with the towers.
Commonly use suspension towers in areas with flat terrain where a clear path for electrical flow is necessary. Employ suspension towers for river crossings by erecting them on opposite banks and suspending conductors over the water. Identify suspension towers as Line towers. The suspension towers are the main tower type of transmission line to get the straight line. It may also vary a maximum angle of 5 degrees. These are designed to carry the only weight of the conductor in straight-line positions. These towers can define as TDL towers.

## Tension Towers:

Use electrical tension towers at locations where the deviation angle exceeds 5 degrees. Design tension towers, also known as tension stringing towers or angle towers, to withstand the tension load of the overhead conductor.
Use them in areas with uneven or hilly terrain to maintain the stability and integrity of the transmission line. Consider factors such as tower height, material, and a number of conductor

attachments when designing tension towers for safe and reliable performance Employ tension towers for turning points and to isolate sections.

- TD1 – towers
- TD3 – towers
- TD6 – towers

**Terminal Towers**

Terminal towers can use for the end of the line. Normally this type of tower identifies as a "TDT" tower and use at the start point of the transmission line at the grid substation and the end of the line at the grid substation. After the terminal tower, the line connects to the substation. Therefore, this is a different design than other towers because this tower gets a heavy load on only one side.

## Tower Erection Operation

Tower erection means the building of a tower or the assembly of tower parts according to a particular drawing. There are four main methods of erecting steel transmission towers in the world.

- Build-up method,
- Section method,
- Ground assembly method,
- Helicopter method.

In Sri Lankan and Indian tower erection projects normally used the "Section method". and the Build-method. The major difference between these two methods is, two Gin poles normally use for the "Build-up Method".

Place two gin poles, one on top of each diagonally opposite corner leg, after erecting the first section of the tower. There are no guy ropes. In the "section method," "there is one "Gin pole". After erecting the first section of the tower, attach the gin pole to the top of one corner leg. Use ropes to move the gin pole for the other three legs. All the above two methods Gin poles are moving up as the tower grows.

## Tools and Equipment in Tower Erection

- Winch
- Tirfor
- Chain blocks
- Single way Pulley.
- Hammer
- Ring Spanner
- D Spanner (as per requirement)
- Box Spanner (as per requirement).
- Drift Pins
- Safety Belts
- Centre Punch
- Helmets

- Crow Bar
- Portable Welding Machine
- Mobile Crane
- Helicopter / Drone

**Construction Sequence:**

The later stated construction sequence is followed for the complete erection of tower, for which certain

 Material is to be sent to the sites of erection (as per tower schedule) from store with proper indent.

 Indent shall contain the following information –

 Type of tower

 No. of towers.

 Extension, if any

 Type of tower to be erected shall be identified from the Foundation check report / Tower schedule & the same to be sent to the required location.

 Site to be visited for checking the condition (accessibility of vehicles, water level, ROW issue, etc)
 Forecast for weather conditions to be checked.
 Checking of foundation oldness with respect to the foundation report.
 Towers shall be erected after the concrete is at least 14 days old, but a gap of 28 days shall be preferred. Unless special procedures or technique are followed for early erection.

- **<u>Inspection & Sorting out</u>** :

 Complete tower which has been sorted out at stores shall be transported to the above predetermined work site / location and are unloaded, checked (as per structural drawing / bill of materials) and stacked at site.

 All the members shall be sorted out properly at the erection site to check that all items are available & shall be placed in a manner such that they are easily located during erection.

 Any shortage shall be immediately reported to the Section in-charge & PM, which is then reported to the concerned supply unit thru mail mentioning the reason of shortage.

 The sorting at site involves identifying the members in the sequence of erection as well as to place them in the respective corners to avoid imbalances during lift and installation.

 The members shall be visually examined for defects in protective surface finish.

 If any defects are found in case of hot dip galvanized members, the damage shall be repaired by applying two coats of zinc rich paint having at least 90% zinc content after cleaning the surface ensuring the surface is dry before the application of paint.

- Members bent in transit shall be straightened such that the protective surface finish is not damaged.
- Any damaged or wrongfully fabricated members considered unsuitable for sound construction shall be scrapped & replaced with correct ones. Reaming of holes (if found of less size) shall be done with knowledge to customer & approval.

**Treatment of Joints** :

Before starting assembly, especially for the lines in coastal or highly polluted areas, the surfaces at connection points shall be applied a coat of aluminium or zinc-rich paint in case of galvanized members, and red oxide or zinc chromate paint in case of painted members. (IS5613-3-2 14.3)

**Assembly :**

Irrespective of the method followed for the erection of towers, the points mentioned below shall be observed:

- Straining of the members shall not be permitted for bringing them into position. It may, however, be necessary to match the hole positions at joints and to facilitate this, drift pins not more than 450 mm long may be used.

- All plan diagonals relevant to a section of tower shall be placed in position before assembly of upper section is taken up.

- All bolts shall have their nuts facing outside the tower for horizontal or nearly horizontal bolt connections and downwards for vertical bolt connections.

- The cross-arms may be assembled on ground facilitating the lifting sequence as; the top cross arm shall be lifted first, followed by the middle and bottom cross-arms.

- The tips shall be fully tightened before lifting into position.

- Such bolts which are not accessible for tightening by ordinary drift spanners, may be tightened with the help of box or ratchet ring spanners.

- Preassembly techniques shall consider placement of the assembled sections to provide for the most efficient, safe lifting for erection.

- Structural assemblies, which are not sufficiently rigid to be raised in one piece, shall be stiffened by means of adequate temporary bracings or ropes tied to secure movement.

- Towers assembled on the ground shall be placed on suitable blocking so as to be kept free of dirt, mud or other foreign material that might adhere to the structure or damage the coating.

- Blocking shall be placed in such a manner as to provide a flat surface in order to prevent overstressing or distortion of members and to maintain the true geometric shape of the assembled members.

- Mud, dirt, white rust and other foreign material shall be removed from the contact surfaces of joints prior to assembly.

- The diameter, type, and length of bolts as shown on these drawings shall be used for each connection.

- Nuts may be tightened during ground assembly, or they may be partly tightened followed by final tightening before stringing.

- In extreme cold weather the assembly or erection workers shall exercise care to avoid subjecting members to sudden stresses, which could cause brittle fractures.

- Care shall be taken to avoid distorting the hole with a drift pin.

- Bolts shall not be driven in any manner that will distort them or damage the threads.

- Tower assembly shall be fitted with number, danger, phase and circuit plates as well as anti-climbing device (except barbed wire) and bird guards (on suspension towers), as described in the approved drawing.

## Methods For Erection

Towers shall be erected by any suitable method in the sequence best adapted to the equipment, workers' experience and site conditions which will not overstress structure members.
Generally there are three main methods of erection of steel transmission towers which are described as below:

1) Air Erection (Erection by Helicopter / Drone)
2) Erection thru Mobile Crane
3) Manual Erection with Gin pole / Derrick .

- Air Erection (Erection by Helicopter)

This method is generally used in hilly areas where no other means of erection are possible.

• The assembled tower on ground is lifted by the helicopter with sufficient lifting ropes attached to the lifting holes provided at different level in the structure.

• At times partial sections are erected, as first section which connects to the stub is firstly erected & then the remaining portion erected in one or two goes.

• The helicopter with lifted assembly hovers over the field, guys are already attached to the required portion of tower.

• This is then secured to firm ground support by the ground crew, then the required bolted connection is joined.

• After completely joining the helicopter releases the tower support & flies back to picking location.

• On completion of the erection the guys are released.

## Built Up or Piecemeal Method

This method is most commonly used for the erection of 132 kV, 220 kV and 400 kV transmission line

- This method consists of erecting the tower member by member.
- The tower members are first set out and kept on the ground serially according to erection sequence to avoid time loss due to searching for them as and when required.
- In order to maintain speed and efficiency, a small assembly party can be sent ahead of the main erection gang for sorting out the tower members, keeping the members in correct position on the ground and assembling those panels on the ground which can be erected as a complete unit. The main corner leg members are prepared by fitting all cleats / plates for joints & bracings and step bolts.
- The erection progresses from the bottom upwards. More than one leg section of each corner leg may be bolted together at the ground and erected in case they are short in length and light in weight.
- The main legs of the tower to be attached to the stub would be lifted by individual pieces and fixed with the stubs using the cleats, plates and bolts as per the drawing.
- Since the legs are not self supported at this stage, they would be anchored individually using guyed ropes diagonally.
- After erections of each leg ensure that the guy must be supported by 32mm crowbar & the angle of guy must be 30°-45° degree from horizontal. Two wire-guys about 60° to 90° apart in the plan view are attached to the top of the gin pole to resist or support the load to be lifted.
- For safety, a third, and preferably a fourth guy, is installed in front to prevent the pole from falling over backward in the event of an unexpected impact or the sudden release of load.
- It is recommended to use 10t capacity turn buckle at the guying support. For smaller base towers / vertical configuration towers, one derrick / gin pole is used. For wide based towers and if one assembled section / panel of the tower is to be erected, then two derricks / gin poles are placed, one each on the top of diagonally opposite corner legs.
- A rope is passed thru the pulley block attached to the top end of the gin pole & other end from the pulley block affixed to the bottom of stub. The free end at bottom of stub is tied to the winch for pulling & the other end is left free for clamping to the members to be lifted.
- First, the leg members of the second section are hoisted and assembled. The temporary rope guys are shifted to the legs of the second section when they are being raised for erection. The legs of the second section / storey are kept in position by fixing the temporary rope guys. The bracings of the second section are then hoisted and assembled.

- The derrick is then shifted to the corner leg member on the top of the second section to raise the parts of third section of the tower in position for assembly. Derrick(s) / Gin pole(s) and the temporary rope guys for the leg members are thus moved up as the tower is built up. This process is continued till the complete tower is erected.

- Ensure that activities are carried out as instructed in the pre-inspection

- The stages in this method of erection are shown overleaf. Cross - arms are assembled on the ground.

- The bird guards and hangers for suspension towers are fitted on the cross - arms.

- A rope is passed through a pulley fixed on the tower peak. The cross - arms are raised up with this rope and fixed to the main body of the tower.

- For heavier towers, a small boom is rigged on one of the tower legs for hoisting purposes The members / sections can be hoisted either manually or by pulling with a winch machines operated from the ground.

**Section Method**

- The major sections of the tower are assembled on the ground and the same are erected as units. The derrick / gin pole used is approximately 10m long and is held in place by means of guys on the side of the tower to be erected.

- The two opposite sides of the tower section of the tower are assembled on the ground. Each assembled side is then lifted clear of the ground with the derrick / gin pole and is lowered into position on bolts to stubs or anchor bolts. One side is held in place with props or rope guys while the other side is being erected. The two opposite sides are then laced together with cross members and bracings / diagonals, and the assembled section is lined up and made square to the line.

- After completing the first section, the derrick / gin pole is set on the top of the first section. The derrick / gin pole is made to rest on a strut of the tower immediately below the leg joint. The derrick / gin pole has then to be properly guyed into position.

- The first face of the second section is raised. To raise the second face of this section, it is necessary to shift the foot of the derrick / gin pole on the strut of the opposite side of the tower. After the two opposite faces are raised, the bracings on the other two sides are fitted and bolted up.

- The last lift raises the top of the towers. After the tower top is placed and all side bracings have been bolted up, all the guy are removed except the one which is to be used to lower the derrick / gin pole.

- Sometimes, one whole face of the tower is assembled on the ground, hoisted and supported in position. The opposite face is similarly assembled and hoisted and then the bracing angles connecting these two faces are fitted.

- The cross - arms are assembled and erected in the manner given above.

**Steps of Erection Methodology** :

- Erection of tower will start from first panel from Ground level i.e. erection progresses from the bottom / Stub upwards. Erection of tower shall be done member by member of the first panel. Four main corner leg members of the first panel of the tower are firstly erected followed by erection of bracings & redundant of transverse face & longitudinal face. Erection of 2nd panel be continued in the above manner and immediately after that the Oblique view & Plan view of the First Panel with all plates be installed & nuts / bolts properly fitted / tightened.

- After this the lattices & bracings are lifted and joint with each other. This completes erection of base structure (leg extension or body extension).

- Then the gin pole is to be attached to a suitable corner. With the help of hook provided on gin pole's base the leg & pole are fixed together on a support strut.

- Proper care shall be taken to provide soft/cushioning material between the pole & leg member to avoid abrading of galvanising due to friction & pressure.

- The top of a single gin pole is kept in the center of the structure by suspending it from the leg members at any elevation using guys & temporary ground anchors hecks before proceeding for erection of next panel :

- Each & every member of transverse & longitudinal face of first two panels to be erected.

- Each & every member of oblique & plan view of the first panel to be erected.

- Every plate to be fitted in the first & second panel. Every leg joint shall have one inside cleat & two cover plate fitted with all nuts/bolts tightened as per approved drawings.

- All Nuts/bolts of proper size & length to be fully fitted & completely tightened. No hole should be vacant without nuts / bolts.

- Before tightening it shall be ensured that spring washers & pack plates are placed in relevant gaps between the members as shown in the drawing.

- Erection of third panel should not be started before completion of all the above in the bottom panels in all aspects and visual verification / confirmation.

- Similarly all panels up to waist levels to be erected as per the above steps / process.

- After erection of tower up to waist level, all nuts/ bolts to be fully tightened completely. Erection of cage to be done as mentioned below :

- Four main corner leg members of the cage of the tower are firstly erected followed by erection of bracings & redundant of transverse face & longitudinal face of the cage, Oblique view & Plan view ( if any) with all plates to be installed & nut/bolts Properly fitted.

- Checks before proceeding for erection of X-arms & Peak are similar to as stated above Erection of X-arms should not be started before completion of Cage in all aspects and visual verification and certify for next panel erection.

- All X-arms & peak to be completely assembled at Ground with all nuts & Bolts tightened completely.
- Assembled X-arms & Peak shall be uplifted to the respective cage level (Starting from Top to bottom) and fitted with all plates & nuts / bolts tightened completely.

- After complete erection of the tower, all blank holes, if any, are to be filled by bolts and nuts of correct size.

## Tightening and Punching of Bolts and Nuts:

- Once the entire tower is installed, the next would be to set out a team for the tightening of all the bolts and also to ensure that all the members are in place.

- All empty holes are to be filled in with nut and bolt of appropriate size and a spring washer.

- All nuts shall be tightened properly using correct size spanners.

- Before tightening it should be seen that filler washers and plates are placed in relevant gaps between members, bolts of proper size and length are inserted, and one spring washer has been inserted under each nut. In case of step bolts, spring washer shall be placed under the outer nut.

- The tightening shall progressively be carried on from the top downwards, care being taken that all bolts at every level are tightened simultaneously.

- It may be better to employ four persons, each covering one leg and the face to his left.

- The threads of bolts projecting outside nuts shall be punched at three positions on the diameter to ensure that the nuts are not loosened in course of time & on the treads of the bolts deep enough not to give room of loosening under any circumstances.

- Suitable punches to create three impressions must be used. This will be implemented till the ACD level (may vary according to client specs).

- If during tightening a nut is found to be slipping or running over the bolt threads, the bolt together with the nuts shall be changed outright.

## Final Inspection

Even after the full completion of the erection of tower, implement a process of checking the same, section wise before the tacking welding works to ensure that the tower is in perfect condition for taking the loads during the stringing operations.

- **Tack Welding of Bolts and Nuts & Painting:**

- Welder must be qualified for welder test before performing Tack welding as per client's requirement.

- Welding electrode must be equivalent to specifications of customer or standards (e.g. code AWS-E6013 of 2.5 to 3.5mm diameter maximum) & also of a reputed make. Local make of welding electrodes are not acceptable (may vary from client to client).

- The threads of all the bolts, projected outside the nuts shall be welded at two / three diametrically opposite places. The circular length of each welding shall be at least 10mm / 6mm (may vary from client to client).

- The welding shall be provided from ground level to bottom cross arm for double circuit towers. However, for river crossing towers, the welding shall be provided from ground level to 30m height from stub level. (May vary from client to client).

- After welding zinc-rich paint with at least 90% zinc content shall be applied to the welded portion. At least two coats of the paint shall be applied. (IS5613-14.5.2)

**Replacement**

- If any replacements are to be effected after stringing and tensioning or during maintenance, leg members and material bracings shall not be taken out without reducing the tension of the tower with proper guying or releasing the conductor. If the replacement of cross-arms becomes necessary after stringing, the conductor shall be suitably tied to the tower at tension points or transferred to suitable roller pulleys at suspension points.

**Fixing of Accessories**

- The U-Bolts for earth wire suspension hardware are fitted on the top plate of the suspension towers.  The supports for the anti - climbing device are fitted on the main corner legs of all the towers. The anti - climbing devices (Flats with edges cut to a sharp point) are installed after the stringing work has been completed.

- The number plates are fitted at the place provided for them on the face of the tower.

- Wherever there are roads near the tower, these should be fitted on the face from which they can be seen from the road.

- The phase plates are fitted on the holes provided for them on the top leg of the cross – arms if the phase sequence is known at the time of erection of towers. Otherwise, these are fitted after the phase sequence is finalized.

## Verticality Checking of Erected Towers:

- The finally erected tower shall be truly vertical after erection and no straining is permitted to bring it in alignment.
- The verticality of the tower is checked using a theodolite/total station placed away from the tower but in the longitudinal and transverse center lines of the tower.
- The tolerance limit for verticality shall be maximum one in 360. (IS5613 C4.2)

## Acceptance Criteria

- Conformity to assembly as per approved drawing.
- Conformity to no Mismatch of holes.
- Conformity to Verticality & Water Level.
- Conformity to Tightening of Nuts Bolts should be as per torque requirement.
- Conformity to Tack Welding & Painting as per requirement.

## Safety Measures/ Precautions:

- Ensure that checks are carried according to the pre-inspection checklist
- Weather forecasting is to be seen before starting the erection work.
- Ensure that erection is started after clearance of foundation for tower erection.
- The material to be loaded at store according to the latest bill of material of the tower, with no mismatch.
- The material to be tied properly so that it does not fall during transportation.
- Material unloading at site to be carried out with safety.
- Adequate warning signals, notice boards, etc should be depicted at or near the working place, highlighting the danger involved in non-observance of safety rules.
- Before start of the job the condition of the stub to be checked by means it is not in loose condition.
- All persons must wear Safety shoe, helmet. Those are going up shall wear double lanyard safety harness along with rope grab fall arrestor. No deviation to be done for working at height.
- In each stub one by one leg to be installed and the leg to be supported with three guy rope so that it should not topple.
- From each leg the bracing members to be erected. To stabilize the leg in the first leg member all the bracing members to be connected.
- Before bringing the derrick pole at site it shall be ensured by the store that the third party certification for the derrick pole is completed. Once the derrick pole dispatched for the site a copy of third party certificate to be dispatched.

- In each leg the double / triple sheaving pulley to be installed to pull the derrick pole.The ropes to be installed in the pulley prior to the tying of pulley in the leg member.
- Simultaneously the fall arrestor rope is also to be installed in the leg and every person those who are climbing shall hook there rope grab fall arrestor.
- At the time of leg member erection a retractable fall arrestor is to be fixed, so that while climbing for fixing the life line rope the person can use the retractable fall arrestor initially. Once one tier gets over the retractable fall arrestor can be shifted to next level.
- While moving from point to point 100% safety harnesses hooking to be ensured and double lanyard harness is to be ensured always.
- Use of tractor for pulling is to be prohibited at site.
- While using a winch it should be ensured that the rotating parts are properly fenced.
- Winch to be operated by competent person only.
- The gang leader shall give the signal for pulling or loosening of the ropes in different points.
- Only in case of any unwanted situation the stop signal can be given by any person.
- Once the member is lifted to the required position unless it is fixed with the load bearing member, in no situation the load shall be release.
- At the time of lifting the bracing assembly persons shall be away from the lifting area. Once the assembly reaches to a particular place near to the fixing point, then only persons shall go near the fixing point.
- While lifting the cross arm, in no case the load should go to tower top. A diversion pulley is to be fixed and only from bottom the pulling needs to be performed.
- The bolts are to be carried in the tool bag at height. While climbing it should not be carried. It should be pulled up with rope from ground so that chances of fall material can be reduced.
- Ensure that unless all the members tightened up to the required torque the stringing activity shall not be started even hanging of insulators shall not be done.

## 15.18 Method Statement for stringing activity

To define, the step by step procedure to be undertaken for the activities involved in stringing of conductors, OPGW and Earth wire Conductor in a manner, which will ensure propriety of sag, tension, and installation of hardware and accessories, besides ways and means of safe working.

***The following steps are basically involved in the implementation of stringing activity:***

- Selection of Stringing section
- Delivery of the Insulator and Hardware fittings
- Insulator String Installation
- Pilot wire Paying out
- Delivery of Conductor Drums and OPGW drums
- TSE Placement
- Conductor Paying out and Rough sagging
- Final Sagging
- OPGW Paying out and Final sagging
- Clamping & jumpering
- Slag Span Stringing & Dropper Connection at Substation
- Final inspection and clearance

**STEPS TO BE UNDERTAKEN & PLANNING OF WORKS (GENERAL)**

Detailed plan in advance of the actual stringing operation shall be prepared. This is to allow adequate time for the deployment of material, Manpower and ancillary equipment. Only approved construction drawing provided by KEC shall be used for the whole scope of work. The equipment shall be installed as per local laws/regulations (e.g. safety regulations) and in accordance with the instructions. Drum usage shall be properly planned, so as to minimize number of mid-span joints and generation of short bits during paying out and final sagging.

**SELECTION OF STRINGING SECTION**

For the selection of stringing section, it is important to have the clearance of corridor as required which can be ensured with patrol of planned section for stringing. It is also important to consider the following aspects and requirements.

- Tower (structure) list
- Towers are completed, inspected & cleared for Stringing
- Stringing plan
- Bill of materials (given in the drawings)
- Manufacturer requirements/Instructions (if any)
- Profile drawings (e.g. crossings)

- Before starting of stringing activities, all the towers in the particular stringing section shall be checked for its readiness

**DRAWINGS / SPECIFICATIONS / DOCUMENTS**

Only approved drawing provided will be used during construction. The Stringing Engineer/ Supervisor shall ensure that all drawing/instructions are made available at site,

The Stringing Engineer/Supervisor is also responsible for as built documentation (e.g. revision of stringing plan) and all records.

**.PREPARATION WORKS & TRANSPORTATION**

All materials, such as insulators, Hardware, Pilot reels, tools and stringing equipment shall be transported to the site and placed as set out in the stringing plan.

**HANDLING AND STORAGE**

The insulators (insulating parts, metallic parts, and attached hardware) shall always be handled and transported in such a way that they are not scratched, chipped, or otherwise damaged by mechanical and/or chemical action. Insulators that come in crates shall be handled and transported in such crates. Insulators and hardware shall be stored in a clean environment. Storage shall be in accordance with manufacturer's instructions.

**INSULATOR STRINGS INSTALLATION**

There are different types of Insulator assembly that will be used for this project,. As Polymer insulators are used in this line, care shall be taken while hoisting the insulators and during stringing operations. Technicians will use rope ladders or Aluminum ladder for reaching the conductor position. The insulators shall be placed on plastic/canvas/wooden sheets while assembling the hardware fittings on the ground. Note that the fittings shall be properly installed on their respective hardware before such hardware or insulator assembly is installed on the structure as per requirement. An insulator assembly shall be assembled on the ground prior to the installation on the structure. Preparation includes correct assembly of insulator unit and hardware as shown on the applicable drawings. The insulator assembly shall be attached to the structure as indicated on the applicable drawing.

**CROSSING PERMITS**

Works on crossing section shall be carried out only on having required outage permits from employer/employer's representative from concerned authorities for crossing HV/LV OHL's as per the requirement for the crossing sections. Due care shall be taken to install the earthing's for working in crossing spans Requisite permit if, any required for River/Road crossing shall be obtained from Employer before commencement of stringing of conductor, considering the required safe working environment

**REINFORCEMENT OF END SUPPORTS**

It is necessary that the end support structures of a stringing section are provided with temporary guys, unless particular structure is designed for unbalanced/dead end loading. This can be achieved by means of long wire slings and anchor spikes/ blocks/dead ends. Anchor spikes/blocks/dead ends have to be positioned adequately away from tower base, so that it is not exceeding 45 with horizontal (ground) as far as the topography permits the same. The end supports/structures of astringing section shall also be provided with cross arm supports.

**INSTALLATION OF STRINGING SHEAVES**

Single block pulley for OPGW and Single conductor shall be used during stringing. These pulley blocks will be installed on the cross-arm of all tension towers selected for a stringing section. Connection on the cross- arm can be done with the use of wire slings and shackles. In suspension towers, the pulley block shall be installed directly to the suspension insulator assembly.

**LAYING OF PILOT WIRES**

Pilot wire, spooled in reels, in varying lengths of approximately 1000meters will be used for normal installation requirements. Pilot wire reels will be distributed along the line and pulled manually or equipment. Individual lengths can be joined together using pilot wire connectors to achieve requisite length of section. Pulling of pilot wire will continue until it reaches the tensioner end, where the pilot wire will be connected with a swivel and attached to the Head Board to which the conductors are connected with Swivel using appropriate size of single end socks. Paying out shall be taken with due clearance of corridor as per the requirement.

**SETTING OF STRINGING EQUIPMENT**

Stringing machines (TSE) will be positioned either below or behind the tension towers at approximately twice the height of the tower based on the terrain topography and space availability. The criteria for selection of Puller/Tensioner locations will have equal consideration to minimize the movement of equipment as much as practicable. One pull length shall comprise of single section or multiple sections involving two or more angle towers according to terrain and site conditions. Machines will be grounded by the means of conventional earthing rods and connecting leads.

**TENSIONER AND REELS (DRUM YARD)**

Tensioner of suitable capacity (5 - 7 Ton or above) will be positioned at one end and Puller will be positioned at the other end with conductor reels at Tensioner side. Reels of pilot wires will be either distributed along the line or positioned at either end, preferably ending at puller end. Care will be taken to ensure that the Tensioner is positioned at almost level ground and also at minimum off-set from Centre line as far as possible. Machine will be anchored using Anchor Blocks/ Anchor spikes to counter the pull force. Reels will be placed on reel stands, facilitated with hydraulic or helical screw jacks. Reel stands will be positioned approximately 5 meters behind tensioner on level ground. In case of soft or uneven ground, necessary anchors may need to be provided. Wooden

battens/ plastics fixed around conductor spools will be removed and conductor end taken out, checked, and inserted in pulling grip attached with a swivel connector then passed around the grooves of Tensioner Bull Wheel using nylon rope.

**PULLER (ENGINE YARD)**

Puller of suitable capacity (5-7 Ton or above) will be positioned at the other end of pulling section, as far as possible on the level ground. Two rear anchors will be provided using concrete blocks /Anchor spikes; Care has to be taken to minimize the angle of pull line.

**STRINGING WORKS & COMMUNICATION**

Communication will be established between winch and tensioner and at designated points along pulling section by way of communication sets.

**CONDUCTOR PAYING OUT**

The Supervisor will confirm if all pilot wires are positioned in the rollers and the connectors are properly secured. On confirmation of above, pulling will be started, slowly but steadily by synchronizing the operation of Puller and Tensioner, through radio communication. Conductor will be kept off the ground and other obstructions by controlled tension. A linesman will walk along with the headboard during stringing with radio equipment monitoring the progress of the pull, especially at rollers where probability of derailing is more likely. Pulling will continue until the conductor reaches the final tower to facilitate sagging and tying in with tower cross arm. Mid Span joints shall be pressed during paying out upon completion one drum with other drum and covered with joint protectors which will be removed at the end of the pull.

**COMPRESSION OF JOINTS AND DEAD ENDS**

Joints and dead ends for conductor shall be pressed using a hydraulic compressor of 100-ton capacity with Suitable die- sets for compressing span joints and dead ends.

**ROUGH SAGGING OF CONDUCTOR**

When pulling of the conductor is complete, the conductors shall be clamped on the tension tower (preferably at Puller side) with suitable automatic come along clamp

Then the conductors shall be tensioned by rewinding the Tensioner machine. The tension of the conductors shall be restricted up to 95% of initial sag tension at the prevailing temperature. In addition, rough sag of the conductor shall be checked by eyesight method using sag scope &targets. Now, the conductor on tension tower (at Tensioner side) shall be clamped to the Cross arm with suitable automatic come along clamps. The excess conductor lengths shall be cut at Cross arm level & Headboard shall be released and attached to the conductor for pulling the next phase conductors. The above said operations are repeated until completion of paying out and rough sag of all six phases. At Places where, Clamping is not possible in Towers, or when continuous stringing method is adopted, conductors are clamped to Anchor Blocks/Spikes placed on suitable anchor

frames or ground using steel wire ropes of 16 mm or higher size. In such cases the Anchor Point shall be barricaded so as to protect from any sabotage of Conductor or clamps.

**SAGGING & SAG MEASUREMENT METHOD**

The span that is nearer to the equivalent span or the longest span of the section shall be identified as sag span to measure the sag, which shall be in the middle of stringing section. Measurement of sag can be done by any of the following methods1.Using sag scope transit and Target (sag board) method2.Using dynamometer Sagging will be carried out in accordance with the following requirements:

- Approved sag tables available, with values applicable for stringing(initial sags)
- A thermometer to read accurate conductor temperature (conductor thermometer will be used for measuring the temperature while sagging).
- All sagging tools are available
- Regulating spans or sag sighting spans identified
- Temporary grounding is provided with requisite points

Temporary back guys are in position Pull lifts of required capacity shall be attached to the Cross arms, with the help of Ø 16 to Ø 20 mm wire rope slings. The other end of the pull lift shall be attached to the automatic come along clamp fixed on the conductor. Load shall be applied on the conductor & will be tensioned up to the assigned sag level. The conductor shall be marked to the sag level; any excess length shall be cut & compression dead end shall be pressed on the conductor. Now the tension insulators attached with the hardware fittings will be connected to the Cross arm and compressed tension clamps will be attached to insulator string. Load from the pull lift shall be slowly released.

**CONDUCTOR CLIPPING**

It is the procedure in which the conductor will be fixed in clamps at final position. Prior to taking up this activity, conductors will be grounded as necessary in order to release the rollers; conductors will be lifted from the roller grooves using pull lifts. Then rollers will be released and lowered and conductors are then clamped into suspension clamps. Armor rods and vibration dampers will be fixed in position up on completion of clipping operation. Ladders may be used for to provide accessibility for the linemen to the working point.

**JUMPER INSTALLATION**

After completion of stringing on both sides of the tension towers jumpers shall be provided for the continuity of the line as per the requirement maintaining to the jumper loops. Jumpers shall be installed as per approved Line clearance diagram foreach type of tower with required vertical drop.

**LAG SPAN STRINGING & DROPPER CONNECTION INSUBSTATION**

Slag Span Stringing is done finally after Completion of Stringing up to Terminal Tower from one end to other end, once the gantry structures are ready inside the substation.

**METHODOLOGY FOR OPGW INSTALLATION8.PURPOSE**

To describe the method / procedure to be adopted for the installation and delivery of Optical ground wire (OPGW).

**GENERAL**

In general, the system and the equipment used for installation of the OPGW Cable are similar to those used for installation of the standard ground wire. Nevertheless, since there is an optical fiber core, special care should be taken to avoid any damage to the fibers by observing the minimum bending radius at all times. Therefore, specific components and machinery are used for the OPGW cable: pullers, tensioners, anti-twisting counterweights, swivels, pulling grips, pulley-blocks, self-gripping clamps, pulling ropes, pulling cables, etc.

**PROCEDURES & SURVEY OF THE LINE**

Prior planning for installation of the OPGW cable is performed by monitoring the line, taking into account the following parameters:

**LENGTH OF EACH DRUM**

The OPGW drum lengths are determined based on the following considerations: position of the tension towers, tower access, distance between supports and crossing with other lines, roads, railways, routes, services and other obstacles.

**SPLICES**

The position of the splices depends on the maximum available length ofOPGW, on the position of the towers and the tower access.

**PRE INSTALLATION TESTS**

Prior to installation, each optical fiber is verified using OTDR for each OPGW drum to verify the fiber optic cable is intact and not damaged in transit, and the results are to be recorded.

**TRANSPORT, LOADING, UNLOADING AND STORAGE**

The following procedures are recommended to prevent damage to the cable during handling, transport and storage

- The drums should always be transported in vertical position withthe cable ends fixed to prevent cable from slackening.
- The drums should never, under any circumstances, be thrown fromthe truck during unloading, nor moved by uncontrolled rolling.
- Loading and unloading are performed so that the drum remains invertical position to avoid any damage.
- Lay direction shall be followed as per the manufacturerrecommendation.

- The ends of the cable should be sealed to prevent water penetration.

**PREPARATION FOR INSTALLATION & Positioning the Drum**

The drum is placed at the selected site (with the space required for its location) so that the cable outlet is on the upper part and aligned with the planned laying direction. The drum must be located at a distance of 5 to 10 meters from the tensioner. The lifting components usually used are hydraulic jacks with the suitable Spindle and Brackets. The drum must be lifted to a height of10 to 15 cm from the ground to enable smooth hauling

**Positioning of Puller and tensioner**

Either the puller or the tensioner must be placed at a minimum distance from the tower equal or greater than 2 times the height of the tower or as possible based on terrain topography. The tensioner as well as the puller should be placed aligned with the conductors. If it is not possible to achieve the alignment, the puller and/or the tensioner are placed close to the following tower, using an additional pulling cable of the required length. The tensioner must be equipped with a dynamometer. Its reels must be protected with material that does not damage the outer layer of the OPGW cable. The puller must also be equipped with a dynamometer with automatic disconnection in case of over tension on the cable. The pulling cable should be joined to the OPGW cable by a swivel and a pulling grip.

The minimum diameter of the reels (where the OPGW is to be coiled) used during the installation should be at least 80 times the diameter of the OPGW cable. For example, the tensioner reels for a 15 millimeter cable should have a diameter of approximately 1.2 meters. Both the braking device and the puller have to be suitably connected to the ground by a system of moveable rollers. This also applies to the OPGW cable and the pulling cable, if it is a metal one.

**Pulleys**

The tower pulleys should have a minimum diameter of at least 0.8 meters in the following cases:

- In all towers with a change in laying direction equal to or greater than 30 degrees.
- In the first and in the last tower of a single installation.
- If the distance between the towers is greater than 600 metres. In all the other cases pulleys with a diameter of 0.6 m can be used. The pulleys have to be under good use conditions. The pulley groove should be protected with neoprene or other similar material. In case of sharp angles, the pulley must be placed so that the cable ways passes through the center of the groove. In this case the recommendation of the manufacturer shall also be taken in to consideration if any for the installation process.

**Auxiliary components**

The swivels are specifically designed for OPGW cables. They are of the suitable size for the cable to be installed and in optimum condition for use. The pulling grip for OPGW cable stringing must be at least 1.5 metres long and designed for stringing OPGW cables. Moreover, it should be of the suitable dimensions and in optimum condition for use. The clamps used during stringing operations have to be specifically designed for OPGW cables and must be suitable for the OPGW cable diameter.

**INSTALLATION OF OPGW CABLES**

As a rule, one drum at a time of OPGW cable Strict controls must be established during installation to ensure that it is performed correctly, without excess tension, twist of the OPGW, unsuitable compression, regulating a correct sagging. The tensioner and the puller should be placed at a distance from the first tower pulley as per the availability of space based on terrain topography at required distance. Intermediate control points if required should be established, with the necessary precautions that are required at critical points during installation (beginning/end of drum, angles, etc.) During installation, the OPGW cable should not strike nor graze any objects other than the pulleys. No obstacles must prevent the pulleys from rotating in the correct way. The minimum bending radius must be controlled during all installation operations. Ensure that the metal part of the pulleys do not contact the cable to prevent it from being damaged.

**Stringing speed**

The maximum permissible stringing speed is 60 meters per minute. It always depends on the stringing conditions and must be reduced to avoid damages to the optical fibers, the aluminum tube and the OPGW cable.

**Pulling tension**

The pulling tension shall be as per the OPGW manufacturer's recommendation. Minimum bending radius.

***The minimum bending radius is as follows:***

On tensioner reels- 40 times the cable diameter

During installation- 400 mm

After installation-20 times the cable diameter

**Communications during stringing**

The personnel located at the puller, the tensioner, the pulley crossings and the cable ends are in communication at all times by communication system.

**Sagging of OPGW**

Generally, the methods used to obtain the correct sag values of the OPGW cables are the same used for conventional ground wire. The specific recommendations are as follows: Pulling is performed by a preformed fitting or tension clamp (in intermediate spans)The installer is responsible to check for any damage to the OPGW cable that may occur due to incorrect procedure adopted during stringing.

**Clamping & Installation of accessories**

Once the sagging is completed the OPGW is released from Rollers and clamped in all suspension towers with suspensions, clamps, in accordance with the manufacturer's instructions and using the

appropriate tools. The tension clamps, earthing clamp and dampers, etc .installed in OPGW shall be as per OPGW Manufacturer's specification. At end towers where splicing is required / Joint Box provided sufficient Down lead of OPGW is provided and the same is properly fixed with Down lead Clamps

**Damper and warning sphere installation**

Clipping will be followed by installation of vibration dampers and warning spheres wherever necessary.

**Post Installation Tests and Splicing**

Once the sagging & Clamping activities are completed, Splicing Team will start doing the Post installation test with OTDR to ensure that there are no damages to the fiber during stringing and then start doing the splicing and the attenuation value of each fiber is recorded. After the splicing is completed, The Joint box is properly fixed in the Tower with sufficient loop of OPGW for any future requirement.

**Final acceptance test of OPGW**

After installation and splicing is completed, a final measurement of the transmission characteristics is done and the reports are prepared.

**FINAL INSPECTION**

After completion of all the activities final checking crew will check the Line for insulator, hardware fittings, Conductor Accessories and OPGW

Fitting and accessories. Shortfall if any shall be rectified. Then the section will be offered for inspection to Client/Consultant

**SAFETY MEASURES**

- Standard PPE will be worn at all times.
- Linesmen working at height shall wear safety harness with doublelanyard and have three point contacts at all times.
- Guy wires shall be checked periodically, if any damages found, they shall be replaced with new/suitable ones.
- First Aid kit shall be provided at site and periodically checked foradequacy of first aid materials.
- Tool box talks will be conducted daily and will include topics of relevantactivity and about Health, Environment & Safety.

- All Light & Heavy Vehicles shall be inspected & approved by KECsafety officer before job start.

- Proper housekeeping shall be maintained in and around the area duringand after Stringing works

- Stringing works shall not be carried out during heavy wind and rain.

- Suitable running earths shall be provided on the conductors during paying out time.

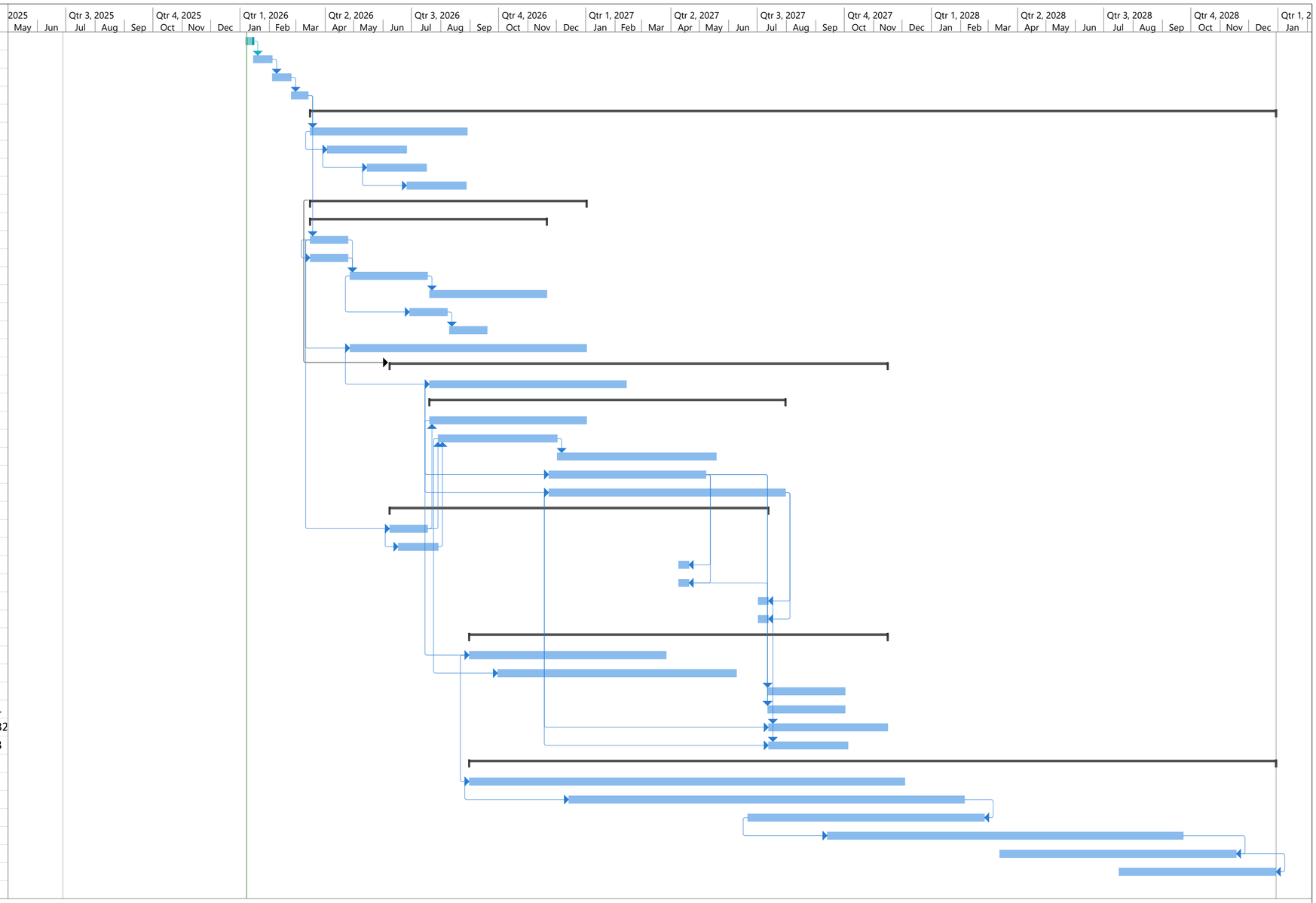
- Whenever line passes through high induction areas (i.e. nearer to highvoltage lines) proper portable earths shall be used on conductors.

- Great care shall be taken for anchoring the machines & temporaryanchoring of conductor in different site conditions.

- Pulling and lifting devices shall be well maintained in order to keep theTools & Plants site worthy.
- Suitable / proper caution notice boards / warning boards shall be provided on the tracks and near the vicinity of work area where stringingwork is under progress to avoid any trespassing.

Project Implementation

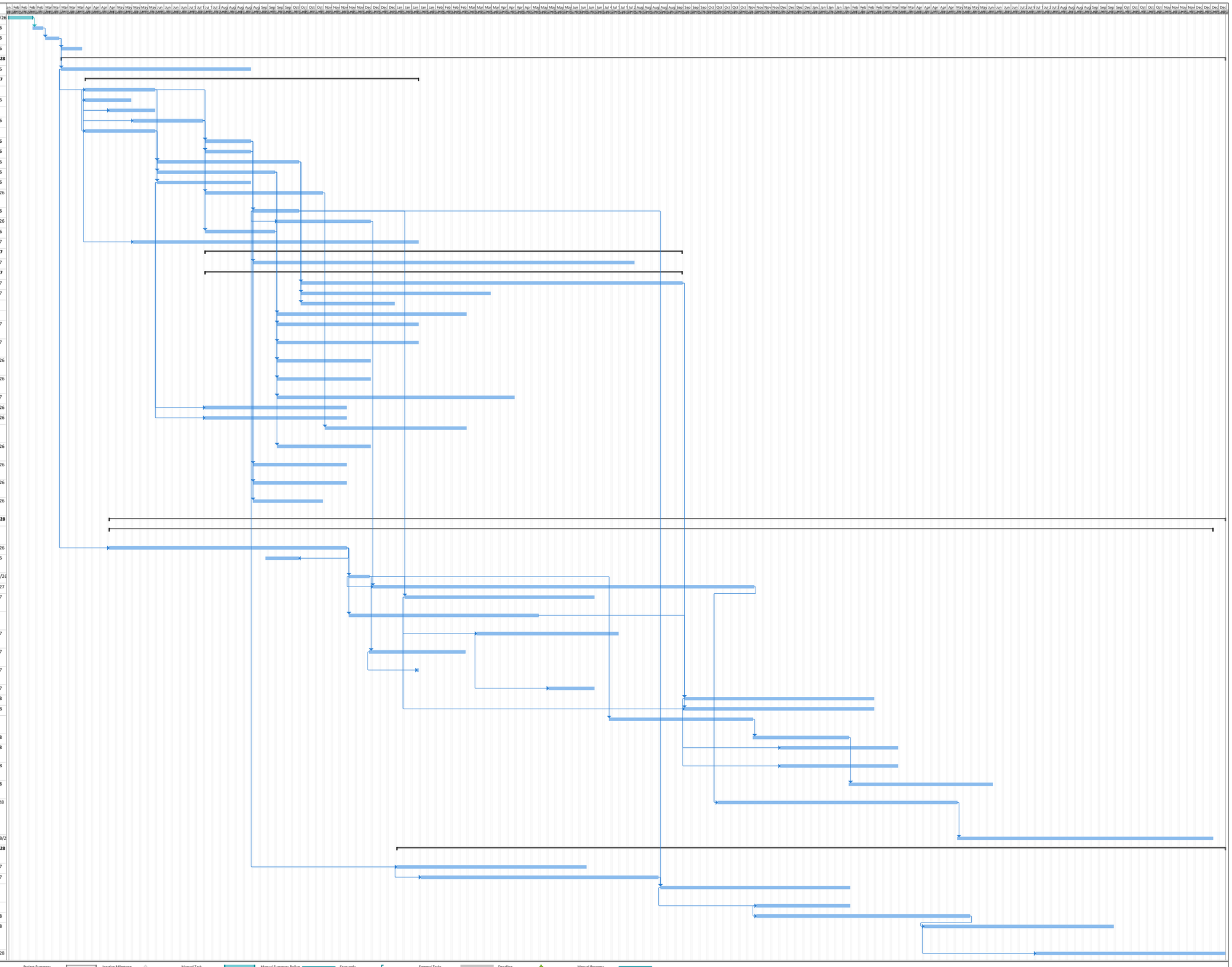
| ID | Task Mode | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|
| 1 | | Letter of Award | 5 days | Thu 1/8/26 | Wed 1/14/26 | |
| 2 | | Acknowledgement of | 14 days | Thu 1/15/26 | Tue 2/3/26 | 1 |
| 3 | | Agreement signing wi | 14 days | Wed 2/4/26 | Mon 2/23/26 | 2 |
| 4 | | Commencement of C | 14 days | Tue 2/24/26 | Fri 3/13/26 | 3 |
| 5 | | **Implimentation of th** | **730 days** | **Mon 3/16/26** | **Fri 12/29/28** | |
| 6 | | Mobilization | 120 days | Mon 3/16/26 | Fri 8/28/26 | 4 |
| 7 | | Check Survey | 60 days | Fri 4/3/26 | Thu 6/25/26 | 6SS+14 days |
| 8 | | Profile Design & Fir | 45 days | Fri 5/15/26 | Thu 7/16/26 | 7SS+30 days |
| 9 | | Tower spotting | 45 days | Fri 6/26/26 | Thu 8/27/26 | 8SS+30 days |
| 10 | | **Design works** | **210 days** | **Mon 3/16/26** | **Fri 1/1/27** | |
| 11 | | **Design and Liais** | **180 days** | **Mon 3/16/26** | **Fri 11/20/26** | |
| 12 | | Sag Tention c | 30 days | Mon 3/16/26 | Fri 4/24/26 | 4 |
| 13 | | Hardware & Ir | 30 days | Mon 3/16/26 | Fri 4/24/26 | 12SS |
| 14 | | Tower Design | 60 days | Mon 4/27/26 | Fri 7/17/26 | 12,13 |
| 15 | | Tower Design | 90 days | Mon 7/20/26 | Fri 11/20/26 | 14 |
| 16 | | Foundation D | 30 days | Mon 6/29/26 | Fri 8/7/26 | 14SS+45 days |
| 17 | | Foundation D | 30 days | Mon 8/10/26 | Fri 9/18/26 | 16 |
| 18 | | Drawings and Dc | 180 days | Mon 4/27/26 | Fri 1/1/27 | 12SS+30 days |
| 19 | | **Procurement proc** | **376 days** | **Mon 6/8/26** | **Mon 11/15/27** | **10SS+60 days** |
| 20 | | LC opening & Pl | 150 days | Mon 7/20/26 | Fri 2/12/27 | 18SS+60 days |
| 21 | | **Manufacturing** | **270 days** | **Mon 7/20/26** | **Fri 7/30/27** | |
| 22 | | Manufacturin | 120 days | Mon 7/20/26 | Fri 1/1/27 | 28 |
| 23 | | Manufacturin | 90 days | Wed 7/29/26 | Tue 12/1/26 | 28,29 |
| 24 | | Manufacturin | 120 days | Wed 12/2/26 | Tue 5/18/27 | 23 |
| 25 | | Manufacturin | 120 days | Mon 11/23/26 | Fri 5/7/27 | 20SS+90 days |
| 26 | | Manufacturin | 180 days | Mon 11/23/26 | Fri 7/30/27 | 20SS+90 days |
| 27 | | **Testing** | **286 days** | **Mon 6/8/26** | **Mon 7/12/27** | |
| 28 | | Tower TDL | 30 days | Mon 6/8/26 | Fri 7/17/26 | 12SS+45 days |
| 29 | | Tower TD1 | 30 days | Wed 6/17/26 | Tue 7/28/26 | 28SS+7 days |
| 30 | | Insulators | 7 days | Fri 4/9/27 | Mon 4/19/27 | 25FF-14 days |
| 31 | | Hardware | 7 days | Fri 4/9/27 | Mon 4/19/27 | 25FF-14 days |
| 32 | | Conductor | 7 days | Fri 7/2/27 | Mon 7/12/27 | 26FF-14 days |
| 33 | | OPGW | 7 days | Fri 7/2/27 | Mon 7/12/27 | 26FF-14 days |
| 34 | | **Shipping of Goo** | **316 days** | **Mon 8/31/26** | **Mon 11/15/27** | |
| 35 | | Stubs | 150 days | Mon 8/31/26 | Fri 3/26/27 | 22SS+30 days |
| 36 | | Towers | 180 days | Wed 9/30/26 | Tue 6/8/27 | 23SS+45 days |
| 37 | | Insulators | 60 days | Mon 7/12/27 | Fri 10/1/27 | 25FS+45 days |
| 38 | | Hardware | 60 days | Mon 7/12/27 | Fri 10/1/27 | 25FS+45 days,31 |
| 39 | | Conductor | 90 days | Tue 7/13/27 | Mon 11/15/27 | 26SS+120 days,32 |
| 40 | | OPGW | 60 days | Tue 7/13/27 | Mon 10/4/27 | 26SS+60 days,33 |
| 41 | | **Construction** | **610 days** | **Mon 8/31/26** | **Fri 12/29/28** | |
| 42 | | Foundation Cons | 330 days | Mon 8/31/26 | Fri 12/3/27 | 35SS |
| 43 | | Tower Erection | 300 days | Mon 12/14/26 | Fri 2/4/28 | 42SS+75 days |
| 44 | | Tower checking | 180 days | Mon 6/21/27 | Fri 2/25/28 | 43FF+15 days |
| 45 | | Stringing | 270 days | Mon 9/13/27 | Fri 9/22/28 | 44SS+60 days |
| 46 | | Clipping Clampir | 180 days | Mon 3/13/28 | Fri 11/17/28 | 45FF+40 days |
| 47 | | Final Checking a | 120 days | Mon 7/17/28 | Fri 12/29/28 | 46FF+30 days |
| 48 | | 1 | | | | |




Project: Project Timeline SKTDP
Date: Sat 6/28/25

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task | Summary | Inactive Milestone | Duration-only | Start-only | External Milestone | Manual Progress |
| Split | Project Summary | Inactive Summary | Manual Summary Rollup | Finish-only | Deadline | |
| Milestone | Inactive Task | Manual Task | Manual Summary | External Tasks | Progress | |

| ID | Task Mode | Task Name | Duration | Start | Finish |
|---|---|---|---|---|---|
| 1 | | Letter of Award | 15 days | Thu 1/29/26 | Wed 2/18/26 |
| 2 | | Acknowledgement of Award | 7 days | Thu 2/19/26 | Fri 2/27/26 |
| 3 | | Agreement signing with Contractor | 10 days | Mon 3/2/26 | Fri 3/13/26 |
| 4 | | Commencement of Contract | 14 days | Mon 3/16/26 | Thu 4/2/26 |
| 5 | | **Implementation of the contract** | **730 days?** | **Mon 3/16/26** | **Fri 12/29/28** |
| 6 | | Mobilization | 120 days | Mon 3/16/26 | Fri 8/28/26 |
| 7 | | **Design works** | **210 days** | **Mon 4/6/26** | **Fri 1/22/27** |
| 8 | | Single Line Diagram | 45 days | Mon 4/6/26 | Fri 6/5/26 |
| 9 | | Draft Layout Design | 30 days | Mon 4/6/26 | Fri 5/15/26 |
| 10 | | Draft Section Design | 30 days | Mon 4/27/26 | Fri 6/5/26 |
| 11 | | Detailed Layout Design | 45 days | Mon 5/18/26 | Fri 7/17/26 |
| 12 | | Detailed Section Design | 45 days | Mon 4/6/26 | Fri 6/5/26 |
| 13 | | Substation Earthing Design | 30 days | Mon 7/20/26 | Fri 8/28/26 |
| 14 | | Lightning Protection Design | 30 days | Mon 7/20/26 | Fri 8/28/26 |
| 15 | | Transformer Design | 90 days | Mon 6/8/26 | Fri 10/9/26 |
| 16 | | Outdoor Switchgears | 75 days | Mon 6/8/26 | Fri 9/18/26 |
| 17 | | Inverter & Battery System | 60 days | Mon 6/8/26 | Fri 8/28/26 |
| 18 | | Communication Equipment and SCADA Design | 75 days | Mon 7/20/26 | Fri 10/30/26 |
| 19 | | Foundation Design | 30 days | Mon 8/31/26 | Fri 10/9/26 |
| 20 | | Control Building Design | 60 days | Mon 9/21/26 | Fri 12/11/26 |
| 21 | | Steel Structure Design | 45 days | Mon 7/20/26 | Fri 9/18/26 |
| 22 | | Drawings and Documentation | 180 days | Mon 5/18/26 | Fri 1/22/27 |
| 23 | | **Procurement process** | **300 days?** | **Mon 7/20/26** | **Fri 9/10/27** |
| 24 | | LC opening & Placing of orders | 240 days? | Mon 8/31/26 | Fri 7/30/27 |
| 25 | | **Manufacturing & Shipping** | **300 days?** | **Mon 7/20/26** | **Fri 9/10/27** |
| 26 | | 220 (132)/33 kV Power Transfor | 240 days | Mon 10/12/26 | Fri 9/10/27 |
| 27 | | 33/0.4 kV Auxiliary Transformer | 120 days? | Mon 10/12/26 | Fri 3/26/27 |
| 28 | | 36 kV Earthing Transformer | 60 days | Mon 10/12/26 | Fri 1/1/27 |
| 29 | | Outdoor Switchgear equipment's | 120 days | Mon 9/21/26 | Fri 3/5/27 |
| 30 | | Equipment for 145 kV Feeder transformer bays | 90 days | Mon 9/21/26 | Fri 1/22/27 |
| 31 | | Equipment for 36 kV transformer bays | 90 days | Mon 9/21/26 | Fri 1/22/27 |
| 32 | | Equipment for 36 kV Generator Feeder bays | 60 days | Mon 9/21/26 | Fri 12/11/26 |
| 33 | | Equipment for 36 kV Auxiliary & Earthing transformer bays | 60 days | Mon 9/21/26 | Fri 12/11/26 |
| 34 | | Insulated Indoor Switchgear | 150 days | Mon 9/21/26 | Fri 4/16/27 |
| 35 | | 220 V Battery system | 90 days | Mon 7/20/26 | Fri 11/20/26 |
| 36 | | Inverter system | 90 days | Mon 7/20/26 | Fri 11/20/26 |
| 37 | | Communication Equipment and SCADA Gateways | 90 days | Mon 11/2/26 | Fri 3/5/27 |
| 38 | | Manufacturing of steel structures & Cable trays & Supports | 60 days | Mon 9/21/26 | Fri 12/11/26 |
| 39 | | Manufacturing of materials for Substation Earthing | 60 days | Mon 8/31/26 | Fri 11/20/26 |
| 40 | | Manufacturing of materials for Lightning Protection System | 60 days | Mon 8/31/26 | Fri 11/20/26 |
| 41 | | Manufacturing of materials for Grounding System | 45 days | Mon 8/31/26 | Fri 10/30/26 |
| 42 | | **Construction** | **700 days?** | **Mon 4/27/26** | **Fri 12/29/28** |
| 43 | | **Construction of Sampur Grid Substation** | **691 days?** | **Mon 4/27/26** | **Mon 12/18/28** |
| 44 | | Earth filling for formation of GS l | 150 days | Mon 4/27/26 | Fri 11/20/26 |
| 45 | | Erection of lightning protection mask | 21 days | Fri 9/11/26 | Fri 10/9/26 |
| 46 | | Surveying & Setting out | 14 days | Mon 11/23/2 | Thu 12/10/26 |
| 47 | | Construction of Control Building | 240 days | Mon 12/14/2 | Fri 11/12/27 |
| 48 | | Foundation Construction for Switchgear & take off structures | 120 days | Mon 1/11/27 | Fri 6/25/27 |
| 49 | | Construction of Transformer Foundations | 120 days | Mon 11/23/26 | Fri 5/7/27 |
| 50 | | Erection of Steel structures for switchgears and takeoff structures | 90 days | Mon 3/15/27 | Fri 7/16/27 |
| 51 | | Construction of cable trenches & Ducts | 60 days | Fri 12/11/26 | Thu 3/4/27 |
| 52 | | Installation of cable brackets, trays, etc. | 1 day? | Fri 1/22/27 | Fri 1/22/27 |
| 53 | | Erection of Bus bars | 30 days | Mon 5/17/27 | Fri 6/25/27 |
| 54 | | Installation of Transformers | 120 days | Mon 9/13/27 | Fri 2/25/28 |
| 55 | | Installation of switchgears | 120 days | Mon 9/13/27 | Fri 2/25/28 |
| 56 | | Installation of Substation earthing system | 90 days | Fri 7/9/27 | Thu 11/11/27 |
| 57 | | Installation of Grounding system | 60 days | Fri 11/12/27 | Thu 2/3/28 |
| 58 | | Installation of Control and LVAC Cables & terminations | 75 days | Mon 12/6/27 | Fri 3/17/28 |
| 59 | | Installation of DC power and Control Cables and terminations | 75 days | Mon 12/6/27 | Fri 3/17/28 |
| 60 | | Installation & termination of cables required for substation lighting | 90 days | Fri 2/4/28 | Thu 6/8/28 |
| 61 | | Installation of all cables for protection, control, instrumentation, communication, SCADA and terminations etc. | 150 days | Tue 10/12/27 | Mon 5/8/28 |
| 62 | | Final Checking and Energization | 160 days | Tue 5/9/28 | Mon 12/18/2 |
| 63 | | **Augmentation of Kapalua Switching Station** | **520 days** | **Mon 1/4/27** | **Fri 12/29/28** |
| 64 | | Retaining wall construction | 120 days | Mon 1/4/27 | Fri 6/18/27 |
| 65 | | Earth filling | 150 days | Mon 1/25/27 | Fri 8/20/27 |
| 66 | | Foundation construction for Switchgears | 120 days | Mon 8/23/27 | Fri 2/4/28 |
| 67 | | Erection of Steel structures | 60 days | Mon 11/15/2 | Fri 2/4/28 |
| 68 | | Installation of switchgears | 135 days | Mon 11/15/2 | Fri 5/19/28 |
| 69 | | Protection, control, instrumentation, communication, SCADA system etc... | 120 days | Mon 4/10/28 | Fri 9/22/28 |
| 70 | | Final Checking and Energization | 120 days | Mon 7/17/28 | Fri 12/29/28 |



Project: Project Timeline SKTDP
Date: Sat 6/28/25

Task, Split, Milestone, Summary, Project Summary, Inactive Task, Inactive Milestone, Inactive Summary, Manual Task, Duration-only, Manual Summary Rollup, Manual Summary, Start-only, Finish-only, External Tasks, External Milestone, Deadline, Progress, Manual Progress

## 15.19 Public Information Leaflet used during the public consultation

ඉහත රූපයේ දක්වා ඇති පරිදි රැහැන් මාර්ගය යට සහ කුළුණු යට අඩු උසින් දිවෙන වගාවන් (ධාන්‍ය, එළවළු, පලතුරු-අඹ, කෙසෙල්, දෙහි යනාදී.) සාර්ථක ලෙස සිදු කල හැකිය.

**සම්ප්‍රේෂණ මාර්ග යට ගොඩනැගිලි ඉදිකළ හැකිද?**

ඉහත රූපයේ දක්වා ඇති පරිදි සාමාන්‍ය ඉදිකිරීම් සඳහා සිරස් උස ඇතිව සම්ප්‍රේෂණ රැහැන් මාර්ගය සැලසුම් ඇති අතර, විශේෂ ඉදිකිරීම් සඳහා ලංවිම පූර්ව අවසරය මත සිදු කල හැක.

**සම්ප්‍රේෂණ මාර්ග නිසා ඒ ආසන්නයේ පිහිටි නිවාස / ගොඩනැගිලි වල අකුණු අනතුරු වැඩිවීමේ ප්‍රවණතාවයක් ඇතිවේද?**

මෙවැනි අධිබලැති රැහැන් මාර්ග වල ඉහලින්ම භූගත කම්බි 02ක් (Earth Wire) ගමන් කරන අතර එම කම්බි දෙකෙළවර ග්‍රිඩ් උපපොළ වලදී නියමිත ලෙස භූගත කර ඇත. එයට අමතරව සියළුම කුළුණු භූගත කර ඇත. එබැවින් මෙවැනි රැහැන් මාර්ගයක් ඉදිකළ පසු අකුණු සඳහා ආරක්ෂිත පද්ධතියක් සැකසෙන අතර අකුණු අනතුරු අවධානම අවම වේ. ඒ අනුව අකුණු අවධානම බහුල ප්‍රදේශයක වුවත් මෙවැනි රැහැන් මාර්ගයක් ඉදිකළ පසු අවධානම අවම වෙයි.

**සම්ප්‍රේෂණ මාර්ග නිසා ඒ ආසන්නයේ පිහිටි නිවාස / ගොඩනැගිලි වල රූපවාහිනී / ගුවන් විදුලි / ජංගම දුරකථන සංඥා වලට බාධා ඇතිවේද?**

සම්ප්‍රේෂණ මාර්ග වල ගමන් කරන විදුලියේ සංකේතාංකය 50HZ පමණ වන අතර අපගේ නිවාස වලට ලබා දී ඇති විදුලි සම්බන්ධතාවය ද 50HZ මට්ටමේ පවතී. නමුත් රේඩියෝ, දුරකථන, රූපවාහිනී සංඥාවල සංකේතාංකය ඉතා ඉහල සංකේත පරාස වල (MHZ, GHZ) වල පවතින බැවින් එම සංඥා වලට බාධාවක් විදුලි සම්ප්‍රේෂණයෙන් ඇති නොවේ.

**සම්ප්‍රේෂණ මාර්ග නිසා ආසන්න පදිංචි කරුවන්ට පිළිකා වැනි බෝ නොවන රෝග වැළදීමේ වැඩි අවධානමක් පවතීද?**

මේ වන තෙක් විද්‍යාත්මකව අධි වෝල්ටීය සම්ප්‍රේෂණ රැහැන් මාර්ග හෝ අඩු වෝල්ටීය බෙදාහැරීම් මාර්ග නිසා මානව සෞඛ්‍ය ගැටලු හෝ බෝ නොවන රෝග ඇති වන බවට තහවුරු කර නොමැත. සාමාන්‍යයෙන් ලංවිම සේවකයෙක් මෙම අධි වෝල්ටීය පද්ධති තුළ/ග්‍රිඩ් උපපොළවල් වල/විදුලි බලාගාර වල දීර්ඝ කාලීනව සේවය කළද විශේෂිතව විවිධ බෝ නොවන රෝගාබාධ වලට ලක් වීමේ ප්‍රවණතාවයක් හදුනාගෙන නොමැත.

**මෙම ව්‍යාපෘතිය පිළිබඳ ව වැඩිදුර තොරතුරු පහත ලිපිනයෙන් හා දුරකථන අංක වලින් දැන ගත හැකිය.**

**ලිපිනය :** ව්‍යාපෘති කළමණාකරු
පිවිතුරු බලශක්ති ලබා ගැනීම සඳහා වූ සම්ප්‍රේෂණ ව්‍යාපෘතිය-I, ලංකා විදුලිබල මණ්ඩලය
තෙවන මහල, ර.නි.ය.ස. ගොඩනැගිල්ල,
නො. 65/1, ශ්‍රීමත් චින්තම්පලම් ඒ ගාඩිනර් මාවත,
කොළඹ 02.

**දුරකථන අංකය:** 0112 337 636

තවද, ඔබගේ ප්‍රාදේශීය ලේකම් කාර්යාලයෙන් මේ සම්බන්ධයෙන් වැඩි විස්තර ලබා ගත හැක.

# ලංකා විදුලිබල මණ්ඩලය

## නව හබරණ ග්‍රිඩ් උපපොළ සිට කප්පල්තුරේ ග්‍රිඩ් උපපොළ දක්වා ඉදිකිරීමට යෝජිත 220kV අධිබල විදුලි සම්ප්‍රේෂණ රැහැන් මාර්ගය

## සහ

## යෝජිත සාම්පූර් ග්‍රිඩ් උපපොළ සිට කප්පල්තුරේ ග්‍රිඩ් උපපොළ දක්වා ඉදිකිරීමට යෝජිත 220kV අධිබල විදුලි සම්ප්‍රේෂණ රැහැන් මාර්ගය

### හැඳින්වීම

ඉතා අඩු වියදමකින් විදුලිය නිපදවිය හැකි සූර්ය බලය, සුළං බලය හා ජලය වැනි පුනර්ජනනීය බලශක්තිය උපයෝගී කර ගනිමින් ඉතා අඩු මුදලකට විදුලිය පාරිභෝගික ජනතාව වෙත ලබා දීමේ අරමුණින්, ලංකා විදුලිබල මණ්ඩලය එම ප්‍රභවයන්ගෙන් නිපදවන විදුලිය ප්‍රධාන සම්ප්‍රේෂණ පද්ධතිය සංවර්ධනය කර අවශෝෂණය කර ගැනීමට සැලසුම් කර ඇත.

එමගින් රජයේ ප්‍රතිපත්තිවලට අනුකූලව, 2030 වන විට සමස්ථ විදුලි ජනනයේ පුනර්ජනනීය බලශක්ති කොටස 70% දක්වා වැඩි කිරීමට බලාපොරොත්තු වෙයි.

## මෙම ව්‍යාපෘතිය සිදු කිරීමේ අවශ්‍යතාවය

- ත්‍රිකුණාමලය ප්‍රදේශයේ සහ ඒ අවට යෝජිත සූර්ය බලාගාර වලින් උත්පාදනය වන බලශක්තිය ජාතික විදුලි සම්ප්‍රේෂණය පද්ධතියට අවශෝෂණය කිරීම.
- ත්‍රිකුණාමලය ඇතුළුව නැගෙනහිර පළාතේ උතුරු කොටස සඳහා දැනට විදුලිය සම්ප්‍රේෂණය කරනු ලබන අනුරාධපුර-ත්‍රිකුණාමලය 132kV සම්ප්‍රේෂණ මාර්ගය දැනට වසර 50 කට වඩා පැරණි වීම සහ විදුලිය ප්‍රමාණවත් නොවීම.
- දැනට විදුලිය ලබා දීමට නොහැකි ප්‍රදේශ සඳහා නව විදුලි පද්ධතිය සංවර්ධනය කර ගැනීමට අවශ්‍යවන විදුලි ධාරිතාව ලබා දීම.
- ත්‍රිකුණාමලයේ වරාය පදනම් කරගනිමින් අනාගතයේ ඇතිවීමට යෝජිත සංවර්ධන ව්‍යාපාර සඳහා වඩාත් ගුණාත්මක සහ විශ්වසනීයත්වයෙන් යුතු විදුලි සැපයුමක් ලබා දීම.

## ව්‍යාපෘතිය පිළිබඳ දත්තයන්

***නව හබරණ ග්‍රිඩ් උපපොළ සිට කප්පල්තුරේ ග්‍රිඩ් උපපොළ දක්වා ඉදිකිරීමට යෝජිත 220kV අධිබල විදුලි සම්ප්‍රේෂණ රැහැන් මාර්ගය***

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|---|---|
| අරමුදල් සහයෝගීතාවය | විදේශීය- Asian Infrastructur Investment Bank (AIIB)<br>දේශීය - |
| සම්ප්‍රේෂණ මාර්ගයේ දිග | කිලෝමීටර 77 |
| ව්‍යාපෘතිය ක්‍රියාත්මක වන පළාත් | උතුරු මැද / නැගෙනහිර |
| ව්‍යාපෘතිය ක්‍රියාත්මක වන දිස්ත්‍රික්ක | අනුරාධපුර , පොළොන්නරුව ත්‍රිකුණාමලය |

***යෝජිත සාම්පූර් ග්‍රිඩ් උපපොළ සිට කප්පල්තුරේ ග්‍රිඩ් උපපොළ දක්වා ඉදිකිරීමට යෝජිත 220kV අධිබල විදුලි සම්ප්‍රේෂණ රැහැන් මාර්ගය***

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|---|---|
| අරමුදල් සහයෝගීතාවය | විදේශීය- Asian Infrastructur Investment Bank (AIIB)<br>දේශීය - CEB |
| සම්ප්‍රේෂණ මාර්ගයේ දිග | කිලෝමීටර 38 |
| ව්‍යාපෘතිය ක්‍රියාත්මක වන පළාත් | නැගෙනහිර |
| ව්‍යාපෘතිය ක්‍රියාත්මක වන දිස්ත්‍රික්ක | ත්‍රිකුණාමලය |

## ව්‍යාපෘතියේ ඉදිකිරීම් කාලයේදී ලැබෙන පාරිසරික හා සමාජීය ප්‍රතිලාභ

- දක්ෂ පුහුණු ඉදිකිරීම් ශ්‍රමිකයන් සඳහා ඉහල වැටුප් සහිත රැකියා අවස්ථා.
- නුපුහුණු ශ්‍රමිකයින් සඳහා රැකියා අවස්ථා සමඟ පුහුණුව.
- සුළු හා මධ්‍ය පරිමාණ ව්‍යාපාර සඳහා ඉහල අවස්ථාවන් ලැබීම (ආහාර හා නවාතැන් පහසුකම් සැපයීම, වාහන හා යන්ත්‍රෝපකරණ සැපයීම, ඉදිකිරීම් අමුද්‍රව්‍ය සැපයීම ආදිය).

## සම්ප්‍රේෂණ මාර්ගයක ඉදිකිරීම් ක්‍රියාවලිය

- හඳුනා ගත් රැහැන් මාර්ගය මිනුම් කටයුතු සිදු කිරීම, හා කුලුණු වල පිහිටීම ලකුණු කිරීම.
- රැහැන් මාර්ගය ගමන් ගන්නා ඉඩම් හිමියන් හඳුනා ගැනීම හා W නිවේදන (W Notice) නිකුත් කිරීම.
- මහජනතාව දැනුවත් කිරීම සහ ඉල්ලීම් සලකා බැලීම.
- සම්ප්‍රේෂණ මාර්ගය ඔස්සේ මීටර් 35 කොරිඩෝව සඳහා ඉවත් කළයුතු ගස් හඳුනාගැනීම, ලකුණු කිරීම, ගස් ඉවත් කිරීම හා වන්දි ගෙවීම.
- රැහැන් මාර්ගය ඉදි කිරීම

## වන්දි ගෙවීම හා ඉදිකිරීම් කලයේදී හානි අවම කිරීම සඳහා ගනු ලබන ක්‍රියාමාර්ග

- 2009 අංක 20 දරණ ශ්‍රී ලංකා විදුලිබල පනතේ විධිවිධාන ප්‍රකාරව, ඉවත් කිරීමට සිදුවන් ගස් සඳහා සහ කුළුණු ඉදිකිරීම සඳහා යට වූ බිම් ප්‍රමාණය සඳහා වෙළඳපල වටිනාකම මත ඉහල සහ සාධාරණ වන්දි අදාළ ප්‍රාදේශීය ලේකම්වරයාගේ නිර්දේශ මත ලබා දීම. මෙහිදී ඉඩම් අත්කර ගැනීමක් සිදු නොවේ.
- කුඹුරු වල කුළුණු ඉදිකිරීමේදී සිදුවන වගා හානිය වෙනුවෙන් වන්දි අදාළ ප්‍රාදේශීය ලේකම්වරයාගේ නිර්දේශ මත ලබා දීම හා වගා හානි අවම වන අයුරින් ඉදිකිරීම් කටයුතු කිරීම.
- මෙම ව්‍යාපෘතිය තුළ කිසිදු නැවත පදිංචි කිරීමේ අවශ්‍යතාවයක් සිදු නොවන පරිදි සැලසුම් කර ඇත.
- නවීන කෘෂි යන්ත්‍රෝපකරණ භාවිතා කිරීමට හැකි වන පරිදි ඉහළින් රැහැන් මාර්ග ඉදිකිරීම.
- ව්‍යාපෘතිය මඟින් සිදුවන නව පරිසර හානිය හා සමාජීය බලපෑම අවම වන අයුරින් රැහැන් මාර්ගය සැලසුම් කිරීම, උසින් වැඩි විදුලි කුළුණු භාවිතය, රැහැන් ඇදීමේදී drone යන්ත්‍ර භාවිතා කිරීම.
- නැවත වන වගා කිරීම සඳහා වන සංරක්ෂණ දෙපාර්තමේන්තුව සමඟ කටයුතු කිරීම.

**සම්ප්‍රේෂණ මාර්ග පිළිබඳව ඔබ දැනුවත් විය යුතු වැදගත් කරුණු කිහිපයක්**

**සම්ප්‍රේෂණ මාර්ග යට වගාවන් කළ හැකිද?**

மேலே உள்ள படத்தில் காட்டப்பட்டுள்ளபடி பயிர்கள் (தானியங்கள், காய்கறிகள்,

பழங்கள்-மாம்பழம், வாழைப்பழம், புளி போன்றவை) வெற்றிகரமாகச் செய்யலாம்.

**கழிவுநீர் கால்வாய்களின் கீழ் தோட்டம் அமைக்க**

மேலே உள்ள படத்தில் காட்டப்பட்டுள்ளபடி, பொது கட்டுமானத்திற்கான செங்குத்து உயரத்துடன் கூடிய டிரான்ஸ்மிஷன் லைனுக்கான திட்டங்கள் உள்ளன மேலும் சிறப்பு கட்டுமானத்திற்காக, CEB இன் முன் அனுமதியுடன் செய்யப்படலாம்.

**ஒலிபரப்பு கம்பிகள் காரணமாக, அருகில் உள்ள வீடுகள் / தோட்டங்களில் மின்னல் விபத்துக்கள் அதிகரித்து வருகின்ற போக்கு உள்ளதா?**

இந்த உயர் மின்னழுத்த டிரான்ஸ்மிஷன் கோடுகள் பெரும்பாலானவை நிலத்தடியில் உள்ளன

02 கம்பிகள் (எர்த் வயர்) பயணம் மற்றும் அந்த கம்பிகள்

இரண்டும் துணை மின் நிலையங்களில் சரியாக தரையிறக்கப்பட்டுள்ளன. அதுமட்டுமின்றி அனைத்து கோபுரங்களும் நிலத்தடியில் உள்ளன. எனவே அத்தகைய கேபிள் வரி கட்டப்பட்ட பிறகு மின்னலுக்கான பாதுகாப்பு அமைப்ப உருவாக்கப்பட்டு, மின்னல் விபத்துக்களின் ஆபத்த குறைவாக உள்ளது. அதன்படி, மின்னல் அபாயம் அதிகம் உள்ள பகுதியிலும், இதுபோன்ற கேபிள் லைன் அமைத்த பின், அபாயம் குறையும்.

அருகிலுள்ள வீடுகள்/தோட்டங்களின் தொலைக்காட்சி/வானொலி/மொபைல் ஃபோன் சிக்னல்களில் டிரான்ஸ்மிஷன் லைன்கள் குறுக்கீடு செய்யுமா ?

டிரான்ஸ்மிஷன் லைன்களில் பயணிக்கும் மின்சாரத்தின் அதிர்வெண் சுமார் 50HZ மற்றும் எங்கள் வீடுகளுக்கு வழங்கப்படும் மின்சார இணைப்பும் 50HZ அளவில் உள்ளது.

ஆனால் வானொலி, தொலைபேசி, தொலைக்காட்சி சமிக்ஞைகளின் சிக்னல் எண் மிக உயர்ந்த சிக்னல் வரம்புகளில் (MHZ,

GHZ) எனவே மின் குறுக்கீடு காரணமாக அந்த சமிக்ஞைகளில் குறுக்கீடு இல்லை.

**அருகிலுள்ள குடியிருப்பாளர்கள் பரவும் பாதைகளால் புற்றுநோய் போன்ற தொற்று நோய்களின் ஆபத்தில் உள்ளதா?**

இதுவரை அறிவியல் ரீதியாக உயர் மின்னழுத்த மின்தேக்கிகள்

கேபிள் லைன்கள் அல்லது குறைந்த மின்னழுத்த டிரான்ஸ்மிஷன் லைன்களால் மனித உடல்நலப் பிரச்சினைகள் அல்லது தொற்று நோய்கள் ஏற்படுகின்றன என்பது உறுதிப்படுத்தப்படவில்லை. இந்த உயர் மின்னழுத்த அமைப்புகளில், இணைப்பு பொதுவாக சுயமாகவே இருக்கும்

துணை மின் நிலையங்கள்/மின் நிலையங்களில் நீண்ட காலமாகப் பயன்படுத்தப்பட்டாலும், பல்வேறு தொற்று நோய்களால் பாதிக்கப்படுவதற்கான குறிப்பிட்ட போக்கு எதுவும் இல்லை.

**இந்தத் திட்டம் பற்றிய கூடுதல் தகவல்களை பின்வரும் முகவரிகள் மற்றும் தொலைபேசி எண்களில் இருந்து பெறலாம்**

**முகவரி: திட்ட முகாமையாளர்**

**சுற்றுச்சூழல் மின்சாரத்தை பெறுவதற்கான தொடர்புடைய சமர்ப்பிக்கப்பட்ட திட்டம்-I, இலங்கை மின்சார சபை**

**மேல் மாடி, ர.நி.ய.ச. கட்டிடம்,**

**இல. 65/1, சிரேஷ்ட சிந்தம்பலம் ஏ. கோடினர் சாலை,**

**கொழும்பு 02.**

**தொலைபேசி எண்: 0112 337 636**

**மேலும், உங்கள் மாவட்ட அலுவலகங்களுடன் தொடர்பு கொண்டு மேலும் விவரங்களை பெறலாம்.**

**இலங்கை மின்சார சபை**

**கப்பல்துறை முதல் புதிய ஹபரணை பிரிவு வரை**

**துணை மின்நிலையம் வரை அமைக்க உத்தேசிக்கப்பட்ட 220kV**

**உயர் மின்னழுத்த பரிமாற்ற வரி மற்றும்**

**சம்பூர் பிரிவில் இருந்து கப்பல்துறை துணைப்பிரிவு வரை**

**முன்மொழியப்பட்ட 220kV உயர் மின்னழுத்த பரிமாற்றம் கேபிள் வரி**

**அறிமுகம்**

சூரிய சக்தி, காற்றாலை மின்சாரம் மற்றும் மிக குறைந்த விலையில் உற்பத்தி செய்யக்கூடிய நீர் போன்ற புதுப்பிக்கத்தக்க ஆற்றலைப் பயன் படுத்தி நுகர்வோருக்குமிகக் குறைந்த விலையில் மின்சாரத்தை வழங்கும் நோக்கத்துடன்
இந்த மூலங்களிலிருந்து உற்பத்தி செய் யப்படும் மின்சாரத்தின் பிரதான பரிமாற்ற அமைப்பை உருவாக்கவும், சேகரிக்கவும் இலங்கை மின்சார சபை திட்டமிட்டுள்ளது.

அரசாங்கத்தின் கொள்கைகளுக்கு இணங்க, 203( ஆம் ஆண்டளவில் மொத்த மின் உற்பத்தியில் புதுப்பிக்கத்தக்க ஆற்றலின் பங்கை 70% ஆக உயர்த்த எதிர்பார்க்கப்படுகிறது.

**இந்த திட்டத்தை நிறைவேற்ற வேண்டிய அவசியம்**

- திருகோணமலை பகுதியிலும் அதைச் சுற்றியுள்ள பகுதிகளிலும் திட்டமிடப்பட்ட சூரிய மின்சார நிலையங்களின் மூலம் உற்பத்தி செய்யப்படும் சக்தியை தேசிய மின்சார பரப்புதல் அமைப்பிற்கு இணைக்கும்.
- திருகோணமலை உட்பட வடக்கு கிழக்கு மாகாணங்களுக்கு
- தற்போது மின்சாரம் வழங்கப்பட்டு வரும் அனுராதபுரம்-திருகோணமலை 132kV பரிமாற்ற சாலை இப்போது 50 ஆண்டுகளுக்கும் மேலாக பழமையானது ,மின்சாரம் போதுமானதாக இல்லை.
- தற்போதைய மின்சார வசதி கிடைக்காத பகுதிகளுக்கான புதிய மின்சார அமைப்பை மேம்படுத்த தேவையான மின்திறனை வழங்குதல். திருகோணமலை துறைமுகத்தை அடிப்படையாக கொண்ட எதிர்காலத்தில் உள்ள திட்டமிடப்பட்ட வளர்ச்சி வேலைகளுக்காக உயர் தரமான மற்றும் நம்பகமான மின்சார வளங்களினை வழங்குவது.

திட்டம் தொடர்பான தகவல்கள்:

**புதிய ஹபரணை பிரிவு முதல் கப்பல்தூர் பிரிவு வரை அமைக்கப்படவுள்ள 220kV உயர் ஆற்றல் பரிமாற்றம் அமைக்க உத்தேசிக்கப்பட்டுள்ளது.**

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| நிதி மற்றும் ஒத்துழைப்பு: | வெளிநாட்டு - வெளிநாட்டு- ஆசிய உள்கட்டமைப்பு முதலீட்டு வங்கி (AIIB), தேசிய - CEB |
| சர்க்யூட் வழியின் நீளம்: | 77 கிலோமீட்டர் |
| திட்டம் செயல்படுத்தப்படும் | மாகாணம் வட மத்திய / கிழக்கு |
| திட்டம் செயல்படுத்தப்படும் மாவட்டங்கள்: | அனுராதபுரம், பொலன்னறுவை, திருகோணமலை |

திட்டம் தொடர்பான தகவல்கள்:

**சம்பூர் பிரிவு கப்பல்தூர் பிரிவுக்கு அமைக்கப்படவுள்ள 220kV உயர் ஆற்றல் பரிமாற்றம் அமைக்க உத்தேசிக்கப்பட்டுள்ளது.**

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| நிதி மற்றும் ஒத்துழைப்பு: | வெளிநாட்டு - வெளிநாட்டு- ஆசிய உள்கட்டமைப்பு முதலீட்டு வங்கி (AIIB), தேசிய - CEB |
| சர்க்யூட் வழியின் நீளம்: | 38 கிலோமீட்டர் |
| திட்டம் செயல்படுத்தப்படும் | கிழக்கு மாகாணம் |
| திட்டம் செயல்படுத்தப்படும் மாவட்டங்கள்: | திருகோணமலை |

திட்டத்தின் கட்டுமானத்தின் போது சுற்றுச்சூழல் மற்றும் சமூக நன்மைகள்

- திறமையான கட்டுமானத் தொழிலாளர்களுக்கு அதிக ஊதியம்
- உடன் வேலை வாய்ப்புகள்
- திறமையற்ற தொழிலாளர்களுக்கு வேலை வாய்ப்புகளுடன்
- பயிற்சி.
- சிறு மற்றும் நடுத்தர நிறுவனங்களுக்கு அதிக வாய்ப்புகள்
- பெறுதல் (உணவு மற்றும் தங்குமிடம் வாகனங்கள் வழங்குதல்
- மற்றும் இயந்திரங்கள் வழங்கல், கட்டுமான

ஒரு பரிமாற்றக் கோட்டின் கட்டுமான செயல்முறை:

- அடையாளம் காணப்பட்ட கேபிள் பாதை அளவீடுகள் மேற்கொள்ளப்படுகின்றன
- தூண்களின் நிலையை உருவாக்குதல் மற்றும் குறிக்கும்.
- கேபிள் பாதை கடந்து செல்லும் நில உரிமையாளர்கள்
- டபிள்யூ அறிவிப்பை அடையாளம் காணுதல் மற்றும் வழங்குதல்
- செய்கிறேன்
- பொது விழிப்புணர்வு மற்றும் கோரிக்கைகளை பரிசீலித்தல்
- பார்வை
- டிரான்ஸ்மிஷன் லைனின் 35 மீட்டர் தாழ்வாரம் அகற்றப்பட வேண்டிய மரங்களை அடையாளம் காணுதல், மதிப்பெண்கள் நடவடிக்கை, மரங்களை அகற்றி இழப்பீடு வழங்க வேண்டும்.

பொதுவாக இழப்பீடு வசூல் மற்றும் கட்டுமானத்தில் ஏற்படும் சேதங்களை குறைக்கப்படும் நடவடிக்கைகள்:

- 2009 ஆம் ஆண்டின் 20 ஆம் இலக்க இலங்கை மின்சாரச் சட்டத்தின் விதிகளுக்கு இணங்க, பிரதேச செயலாளரின் விருப்பத்தின் பேரில் அகற்றப்படும் காணி மற்றும் கோபுரங்கள் அமைப்பதற்கு சந்தை மதிப்பின் அடிப்படையில் உயர் மற்றும் நியாயமான இழப்பீடு வழங்குதல். இங்கு நிலம் கையகப்படுத்துவது இல்லை.
- குறித்த பிரதேச அமைச்சரின் பணிப்புரையின் பேரில் நெற்பயிர்களில் கோபுரங்கள் அமைப்பதால் ஏற்படும் பயிர் சேதங்களுக்கு நட்டஈடு வழங்குதல் மற்றும் பயிர் சேதத்தை குறைக்கும் வகையில் நிர்மாணப் பணிகளை மேற்கொள்ளுதல்.
- இத்திட்டத்தில் மீள்குடியேற்றம் தேவையில்லை என திட்டமிடப்பட்டுள்ளது.
- நவீன விவசாய இயந்திரங்களைப் பயன்படுத்துவதற்கு மேல்நிலை கேபிள் இணைப்புகளை அமைத்தல்.
- இத்திட்டத்தால் ஏற்படும் புதிய சுற்றுச்சூழல் பாதிப்பு மற்றும் சமூகப் பாதிப்பைக் குறைக்கும் வகையில் கேபிள் வழியை வடிவமைத்தல், உயரமான மின் கோபுரங்களைப் பயன்படுத்துதல், வயரிங்கில் ட்ரோன்களைப் பயன்படுத்துதல்.
- மீண்டும் காடுகளை வளர்ப்பதற்காக வனப் பாதுகாப்புத் துறையுடன் தொடர்பு கொள்ளுதல்.

தகவல் தொடர்பு ஊடகங்களை நீங்கள் அறிந்திருக்க வேண்டும்

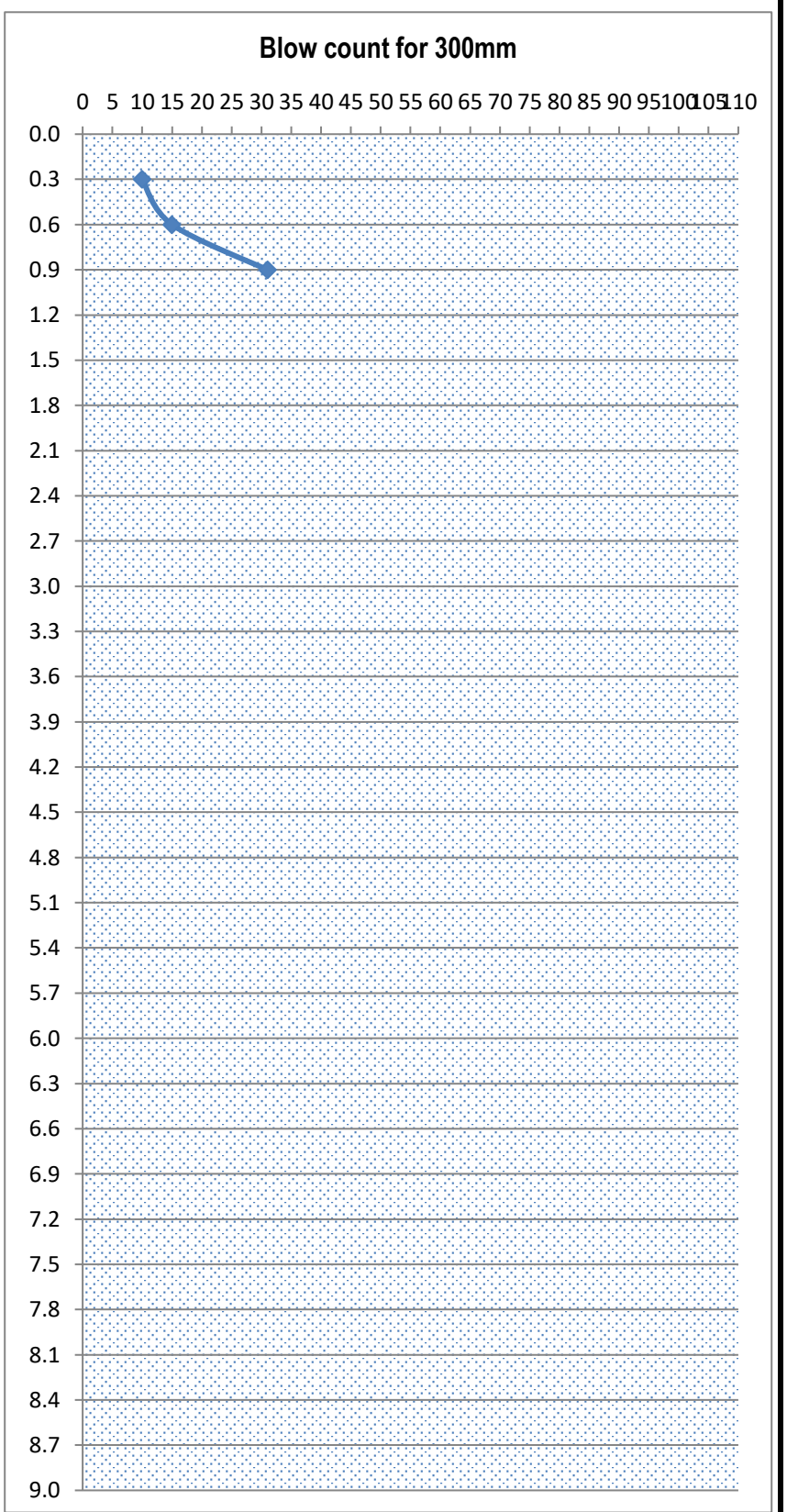
பின்வரும் காரணிகளில் சிலவற்றின் கீழ் பயிர்களை நடவு செய்ய முடியுமா?

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.20 |
| | | TOWER NO | TT-1 Location 1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Bare Land | WEATHER | Cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 5 | 5 | 10 |
| 0.6 | 4 | 5 | 6 | 15 |
| 0.9 | 6 | 6 | 19 | 31 |
| 1.2 | 45 | | | HB |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1200 mm | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | Rod Diameter : 43.0mm | | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

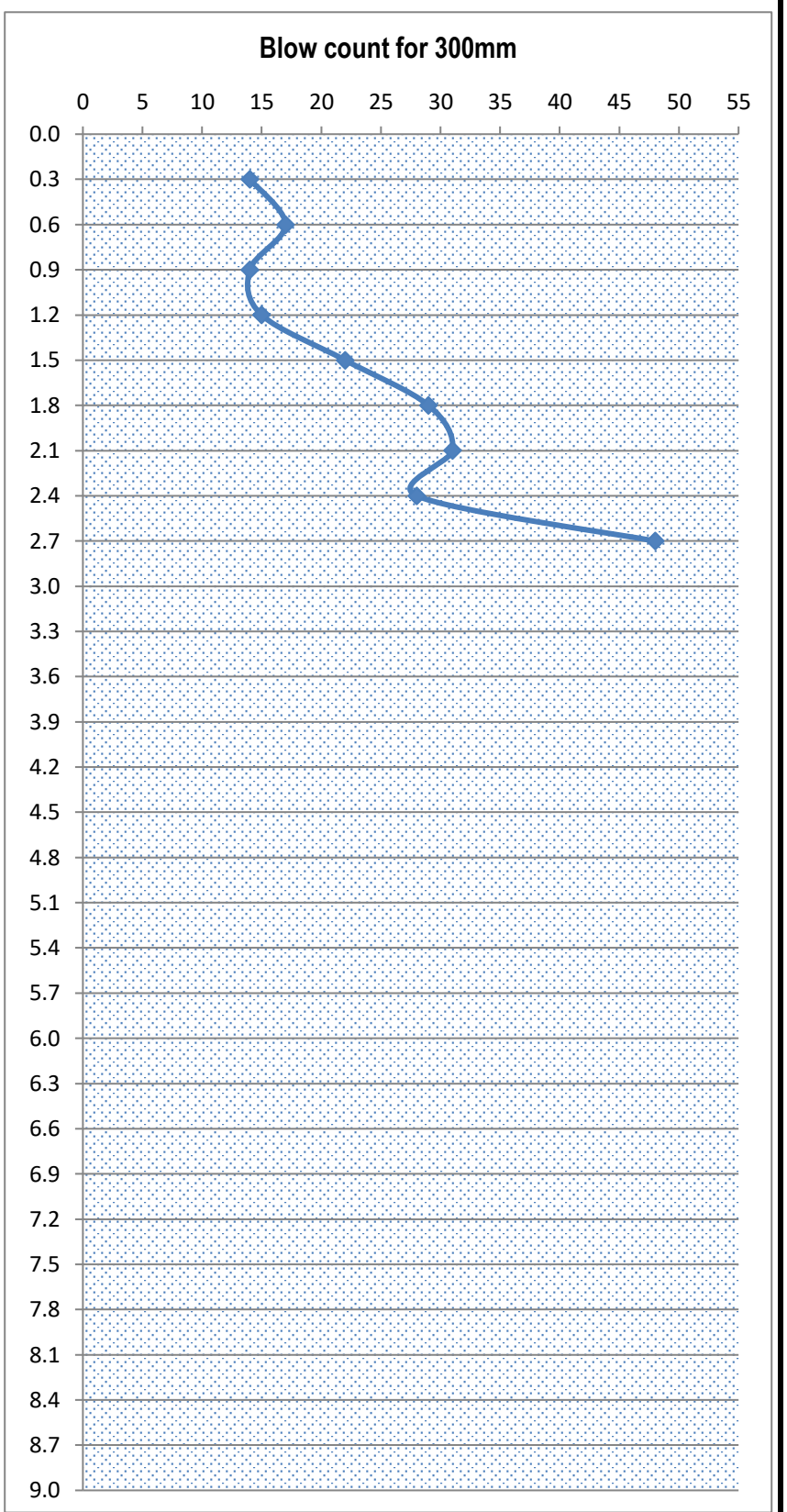
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.06 |
| | | TOWER NO | AP 2 Location 1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 4 | 4 | 6 | 14 | |
| 0.6 | 5 | 5 | 7 | 17 | |
| 0.9 | 5 | 4 | 5 | 14 | |
| 1.2 | 5 | 5 | 5 | 15 | |
| 1.5 | 6 | 8 | 8 | 22 | |
| 1.8 | 7 | 10 | 12 | 29 | |
| 2.1 | 12 | 9 | 10 | 31 | |
| 2.4 | 10 | 10 | 8 | 28 | |
| 2.7 | 8 | 20 | 20 | 48 | HB |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 2700 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

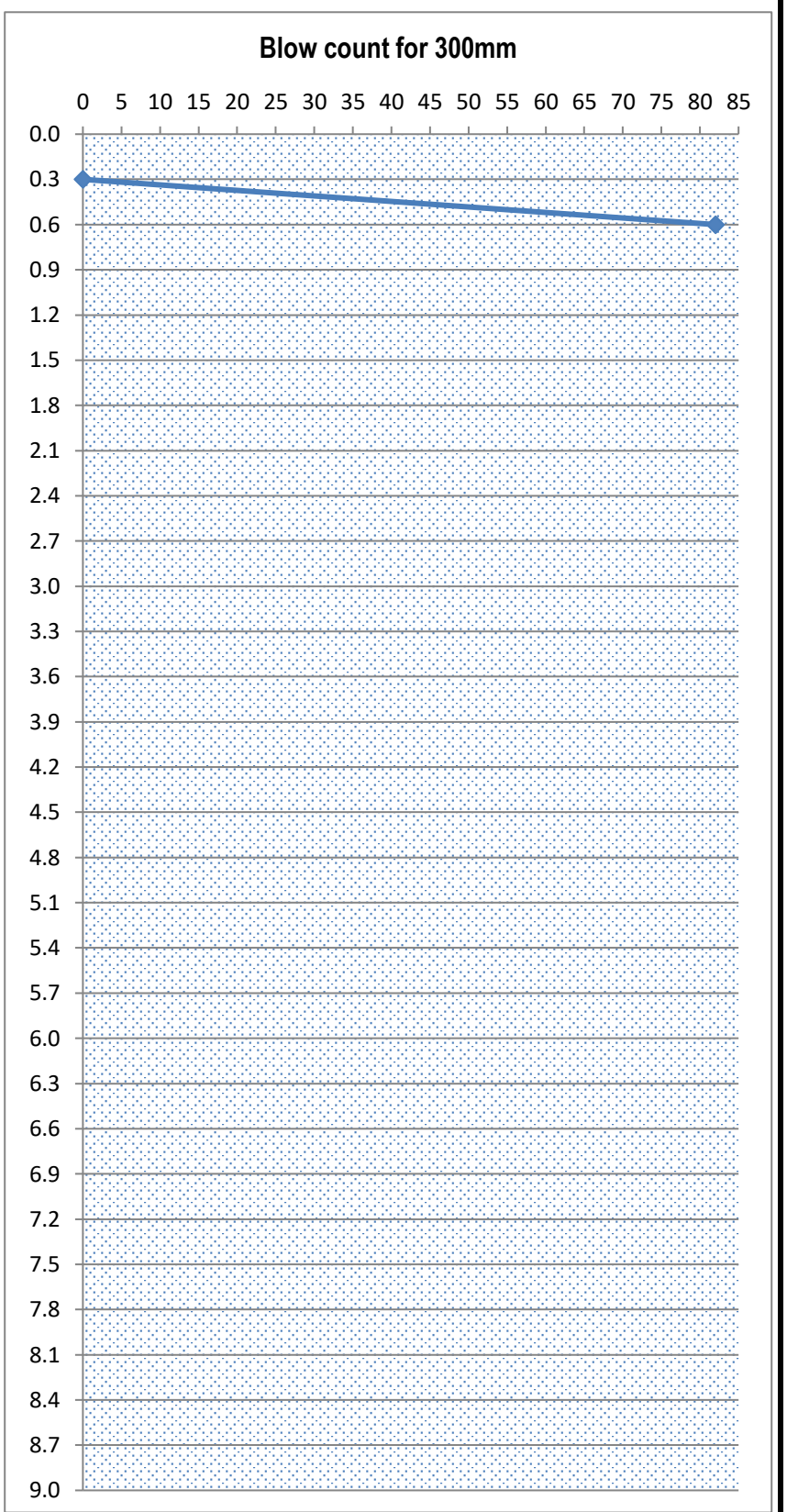
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| **REPORT NO** | SKTDP-DCPT-001 |
| **TEST DATE** | 2023.09.06 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| **TOWER NO** | | AP 2 Location 2 | |
| **PROJECT** | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | **TEST NO** | SKTDP-DCPT-T-001 |
| **DIVISION** | TRANSMISSION PROJECTS | **TEST LOCATION** | |
| **SCOPE** | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | **CORDINATES E** | |
| | | **N** | |
| | | **ELEVATION** | |
| **LAND USE** | Paddy | **WEATHER** | Sunny |
| **TEST METHOD** | BS 1377: PART 9: 1990: 3.2 | **G/ W LEVEL** | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 0 | 0 | 0 |
| 0.6 | 36 | 46 | | 82 HB |
| 0.9 | | | | |
| 1.2 | | | | |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 600 mm | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

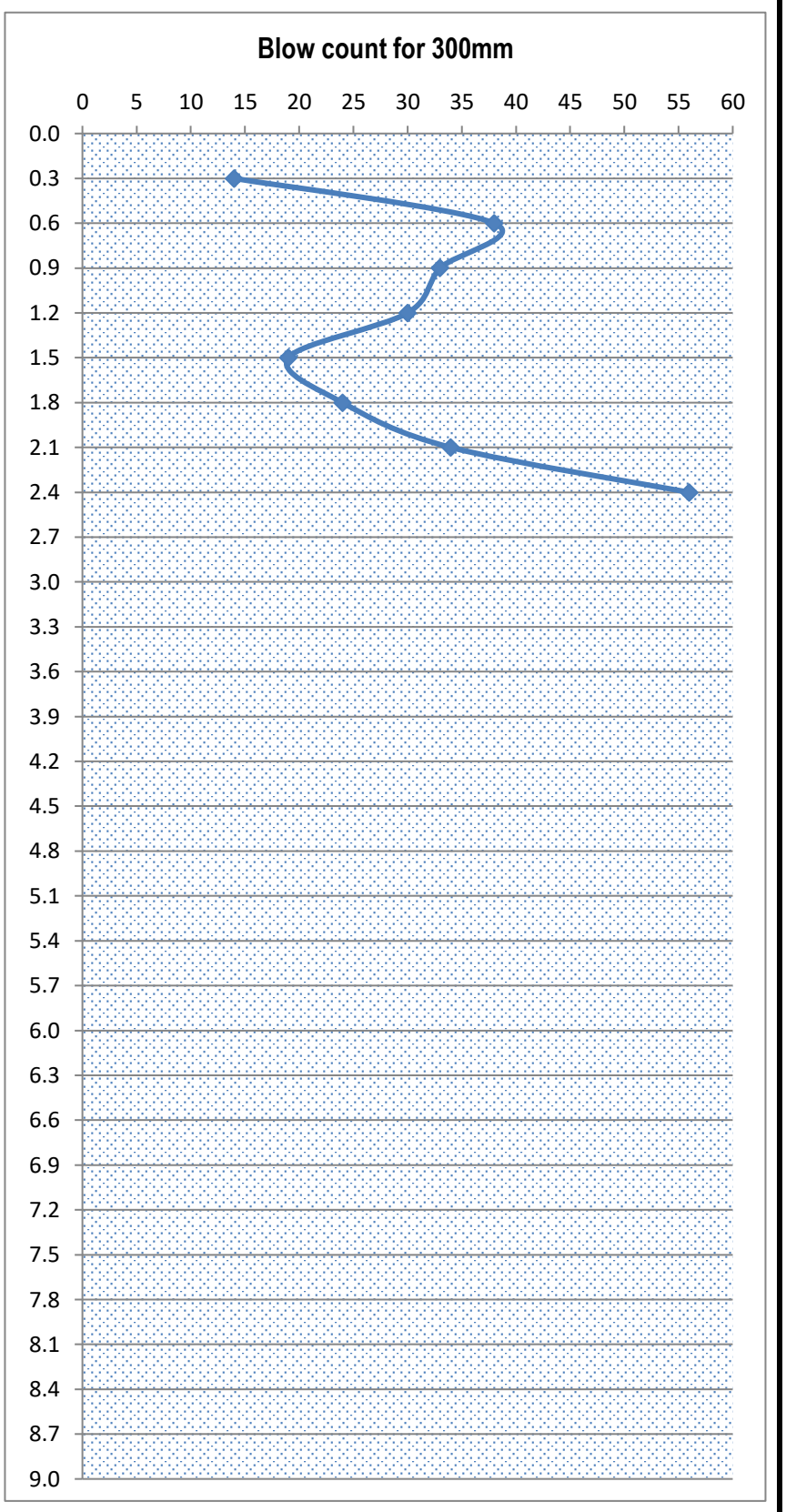
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.14 |
| | | TOWER NO | AP 3 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Bare Land | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 6 | 8 | 14 |
| 0.6 | 10 | 13 | 15 | 38 |
| 0.9 | 11 | 10 | 12 | 33 |
| 1.2 | 10 | 10 | 10 | 30 |
| 1.5 | 7 | 6 | 6 | 19 |
| 1.8 | 8 | 10 | 6 | 24 |
| 2.1 | 7 | 12 | 15 | 34 |
| 2.4 | 26 | 30 | 0 | 56 HB |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | 2300 mm | | | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

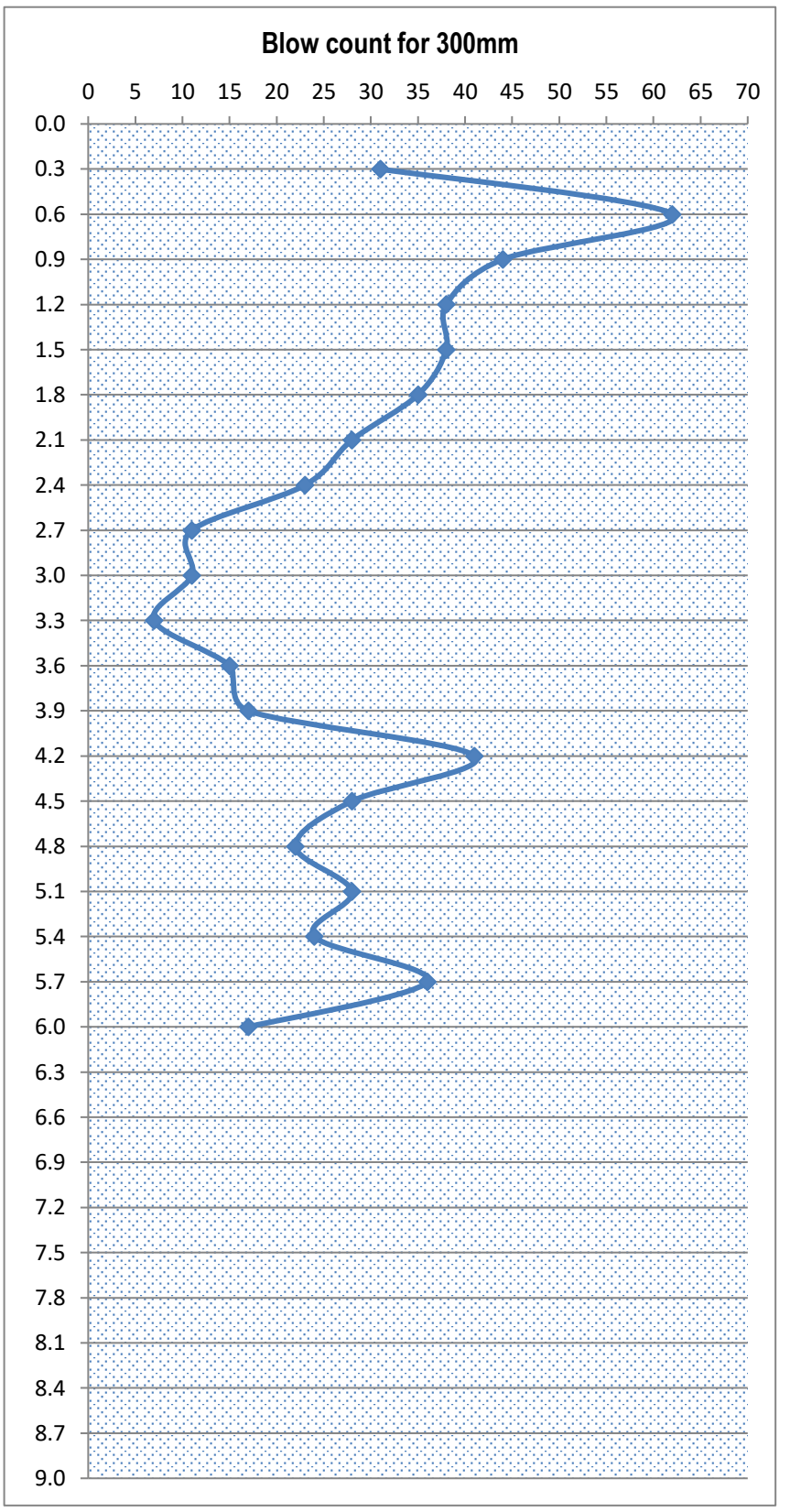
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | **REPORT NO** | SKTDP-DCPT-001 |
| | | **TEST DATE** | 2023.09.06 |
| | | **TOWER NO** | AP 4 |
| **PROJECT** | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | **TEST NO** | SKTDP-DCPT-T-001 |
| **DIVISION** | TRANSMISSION PROJECTS | **TEST LOCATION** | |
| **SCOPE** | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | **CORDINATES E** | |
| | | **N** | |
| | | **ELEVATION** | |
| **LAND USE** | Paddy | **WEATHER** | Cloudy |
| **TEST METHOD** | BS 1377: PART 9: 1990: 3.2 | **G/ W LEVEL** | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | | 8 | 23 | 31 |
| 0.6 | 24 | 20 | 18 | 62 |
| 0.9 | 15 | 14 | 15 | 44 |
| 1.2 | 14 | 12 | 12 | 38 |
| 1.5 | 13 | 12 | 13 | 38 |
| 1.8 | 12 | 11 | 12 | 35 |
| 2.1 | 9 | 10 | 9 | 28 |
| 2.4 | 9 | 10 | 4 | 23 |
| 2.7 | 4 | 3 | 4 | 11 |
| 3.0 | 3 | 4 | 4 | 11 |
| 3.3 | 3 | 2 | 2 | 7 |
| 3.6 | 6 | 4 | 5 | 15 |
| 3.9 | 4 | 4 | 9 | 17 |
| 4.2 | 14 | 14 | 13 | 41 |
| 4.5 | 13 | 10 | 5 | 28 |
| 4.8 | 5 | 5 | 12 | 22 |
| 5.1 | 14 | 7 | 7 | 28 |
| 5.4 | 10 | 6 | 8 | 24 |
| 5.7 | 7 | 8 | 21 | 36 HB |
| 6.0 | 17 | | | 17 |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 5800 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 5800 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

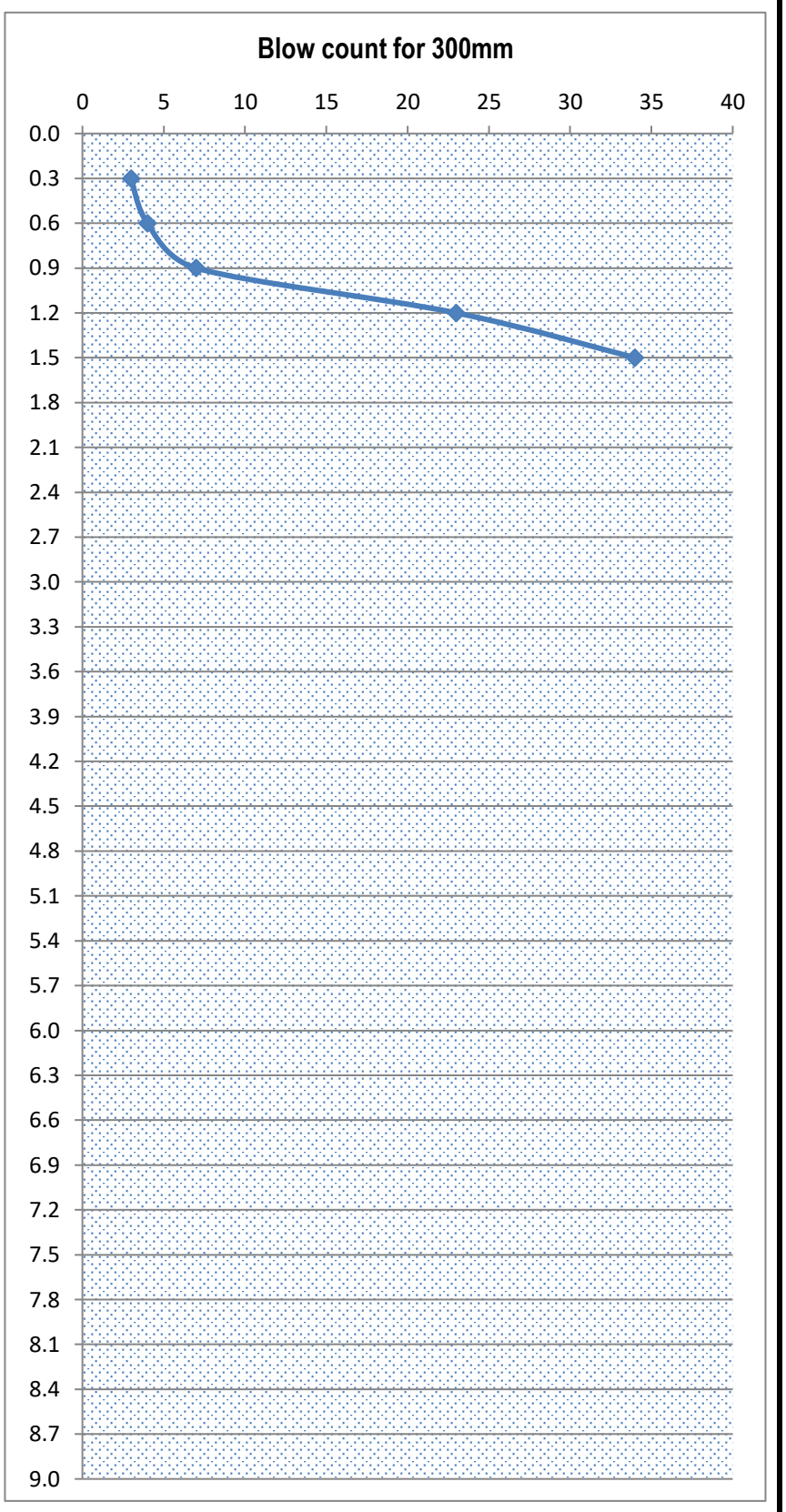
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.09.13 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | AP 5 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 0 | 0 | 3 | 3 | |
| 0.6 | 2 | 1 | 1 | 4 | |
| 0.9 | 2 | 1 | 4 | 7 | |
| 1.2 | 7 | 7 | 9 | 23 | |
| 1.5 | 14 | 20 | 0 | 34 | HB |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 1400 mm | | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

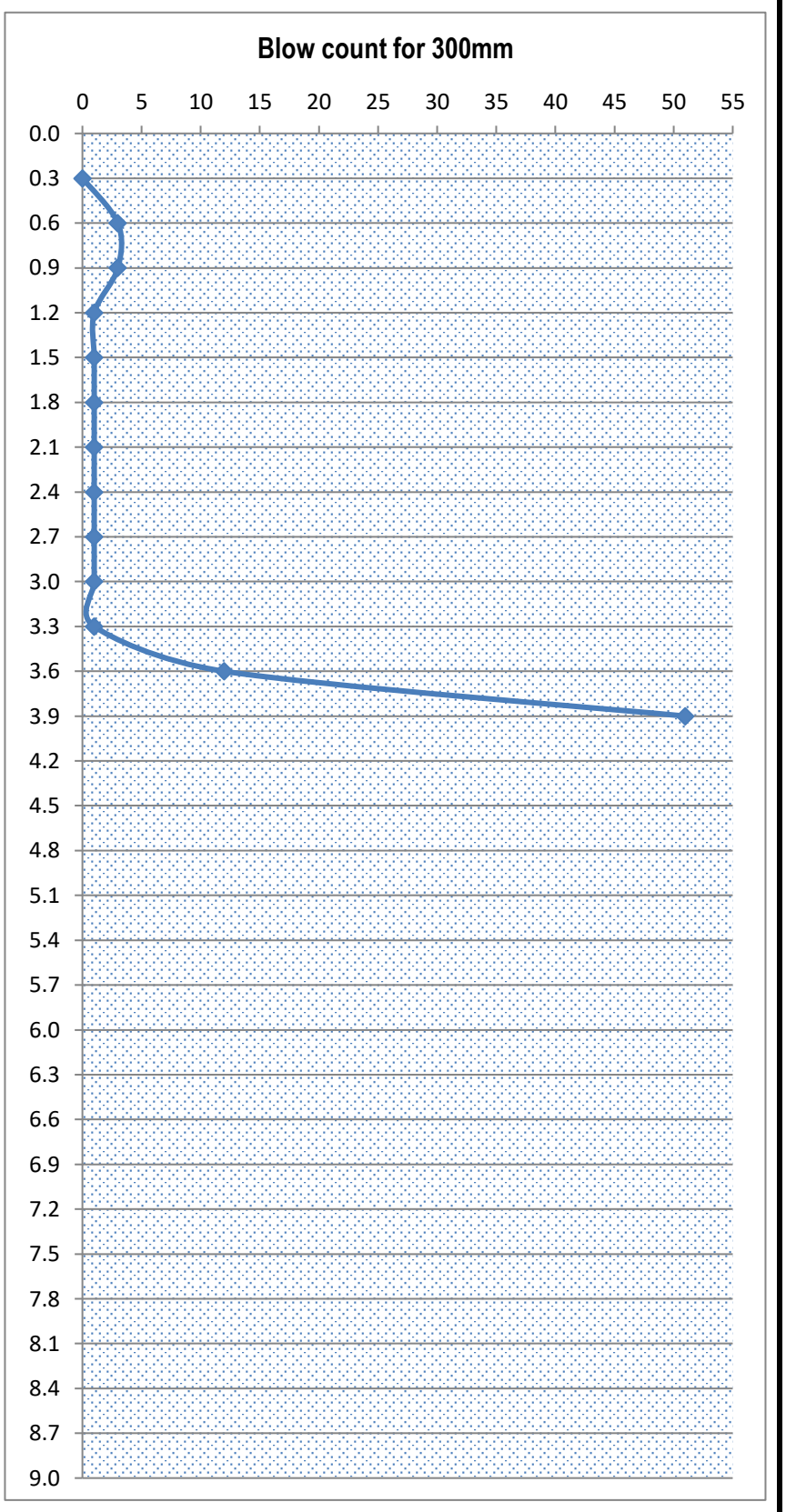
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.14 |
| | | TOWER NO | AP 6 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 0 | 0 | 0 |
| 0.6 | 1 | 1 | 1 | 3 |
| 0.9 | 1 | 1 | 1 | 3 |
| 1.2 | 1 | 0 | 0 | 1 |
| 1.5 | 1 | 0 | 0 | 1 |
| 1.8 | 1 | 0 | 0 | 1 |
| 2.1 | 1 | 0 | 0 | 1 |
| 2.4 | 1 | 0 | 0 | 1 |
| 2.7 | 1 | 0 | 0 | 1 |
| 3.0 | 1 | 0 | 0 | 1 |
| 3.3 | 1 | 0 | 0 | 1 |
| 3.6 | 4 | 3 | 5 | 12 |
| 3.9 | 9 | 20 | 22 | 51 HB |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 3900 mm | |



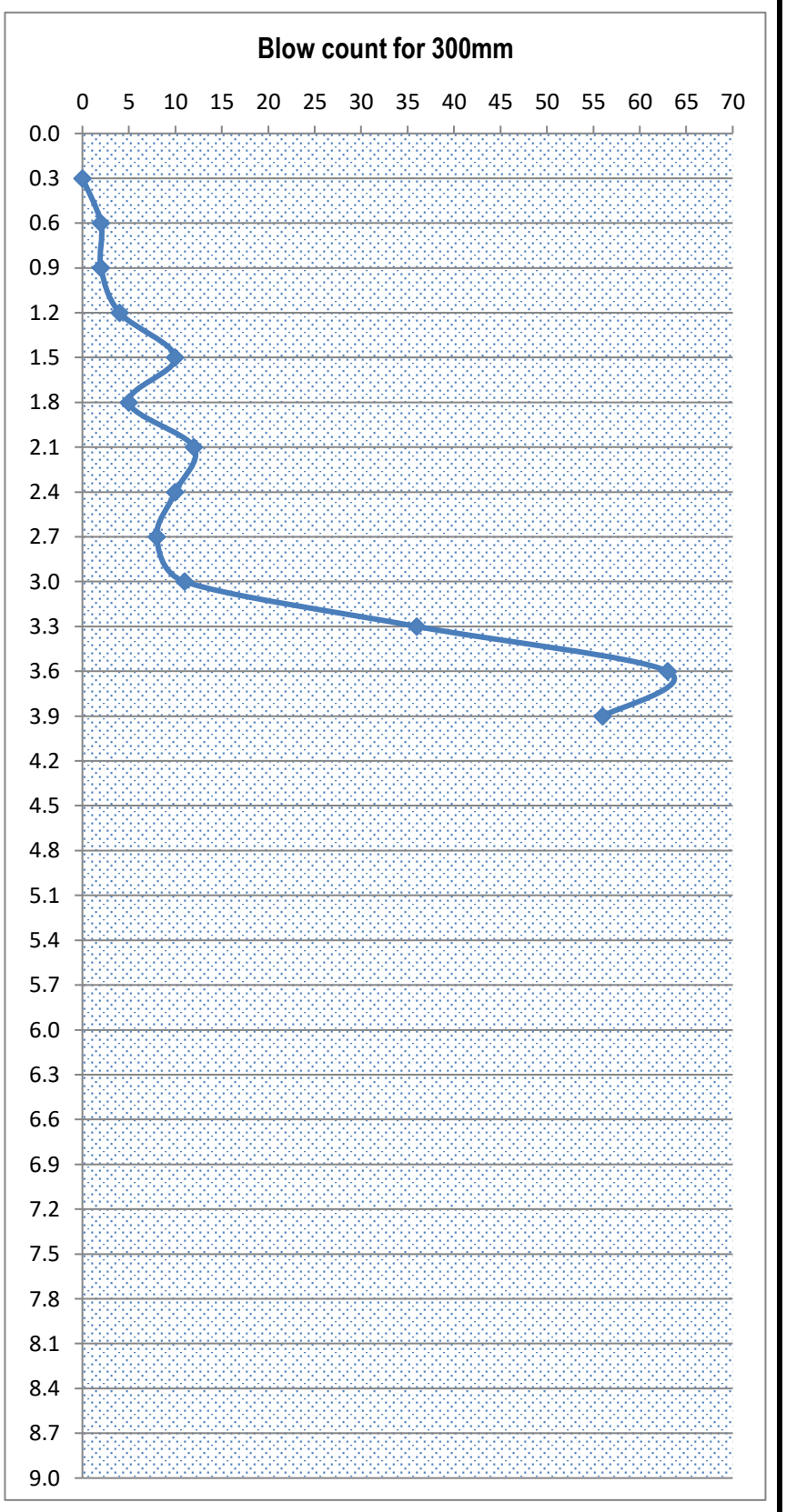

| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.13 |
| | | TOWER NO | AP 7 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 0 | 0 | 0 |
| 0.6 | 1 | 1 | 0 | 2 |
| 0.9 | 1 | 1 | 0 | 2 |
| 1.2 | 2 | 1 | 1 | 4 |
| 1.5 | 3 | 4 | 3 | 10 |
| 1.8 | 2 | 2 | 1 | 5 |
| 2.1 | 4 | 5 | 3 | 12 |
| 2.4 | 3 | 4 | 3 | 10 |
| 2.7 | 3 | 3 | 2 | 8 |
| 3.0 | 3 | 2 | 6 | 11 |
| 3.3 | 8 | 9 | 19 | 36 |
| 3.6 | 21 | 22 | 20 | 63 |
| 3.9 | 20 | 36 | | 56 HB |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 3800 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

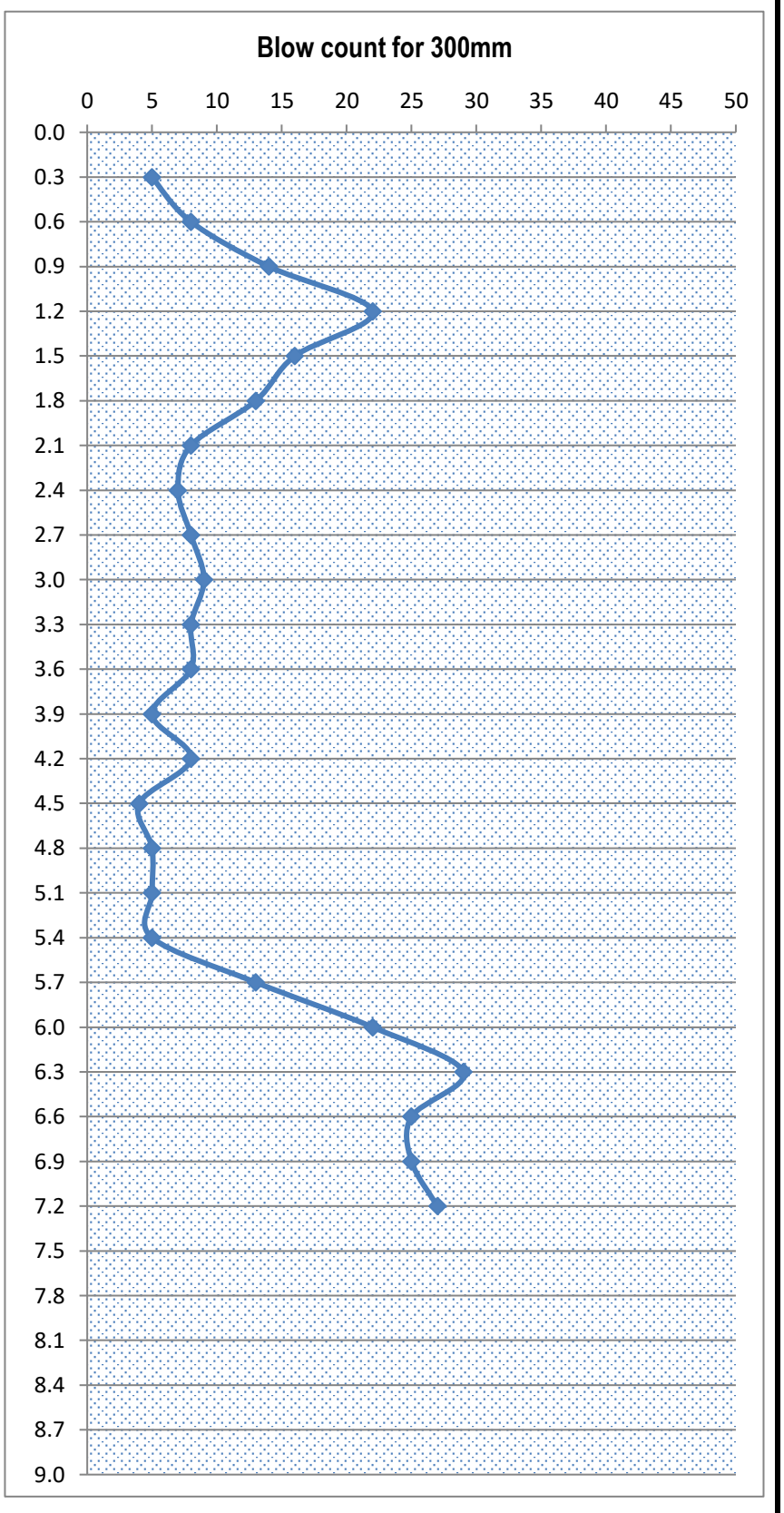
# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.21 |
| | | TOWER NO | AP 08 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 1 | 3 | 1 | 5 |
| 0.6 | 2 | 2 | 4 | 8 |
| 0.9 | 4 | 5 | 5 | 14 |
| 1.2 | 7 | 7 | 8 | 22 |
| 1.5 | 6 | 6 | 4 | 16 |
| 1.8 | 4 | 5 | 4 | 13 |
| 2.1 | 4 | 2 | 2 | 8 |
| 2.4 | 2 | 2 | 3 | 7 |
| 2.7 | 3 | 2 | 3 | 8 |
| 3.0 | 3 | 4 | 2 | 9 |
| 3.3 | 3 | 3 | 2 | 8 |
| 3.6 | 3 | 2 | 3 | 8 |
| 3.9 | 2 | 2 | 1 | 5 |
| 4.2 | 2 | 3 | 3 | 8 |
| 4.5 | 2 | 1 | 1 | 4 |
| 4.8 | 2 | 2 | 1 | 5 |
| 5.1 | 2 | 1 | 2 | 5 |
| 5.4 | 1 | 2 | 2 | 5 |
| 5.7 | 4 | 4 | 5 | 13 |
| 6.0 | 6 | 7 | 9 | 22 |
| 6.3 | 9 | 9 | 11 | 29 |
| 6.6 | 9 | 8 | 8 | 25 |
| 6.9 | 8 | 8 | 9 | 25 |
| 7.2 | 9 | 9 | 9 | 27 |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 7000 mm | |

HB




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

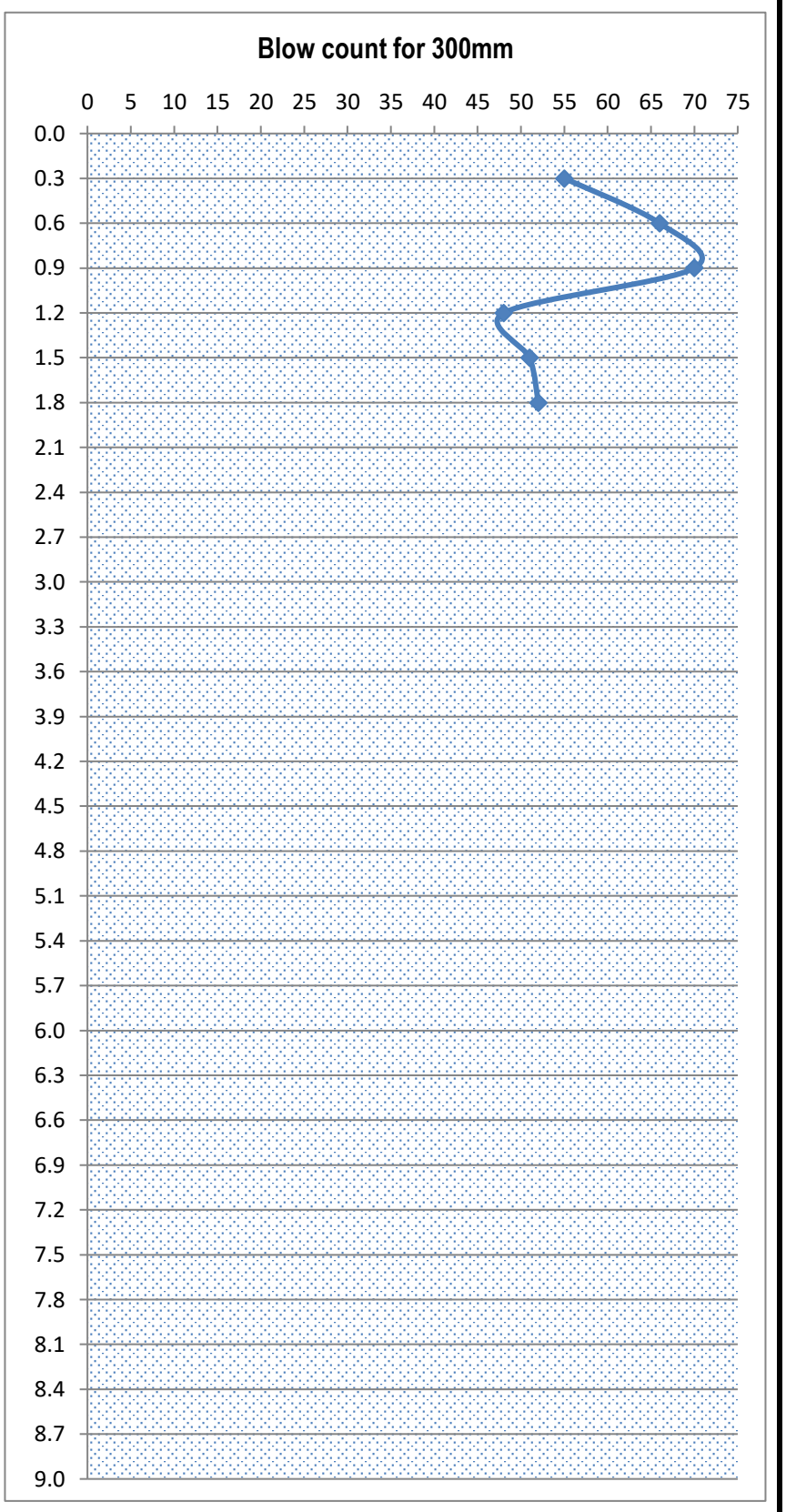
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.14 |
| | | TOWER NO | AP 9 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 30 | 25 | 55 |
| 0.6 | 23 | 25 | 18 | 66 |
| 0.9 | 22 | 26 | 22 | 70 |
| 1.2 | 21 | 12 | 15 | 48 |
| 1.5 | 18 | 15 | 18 | 51 |
| 1.8 | 22 | 30 | | 52 HB |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1700 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

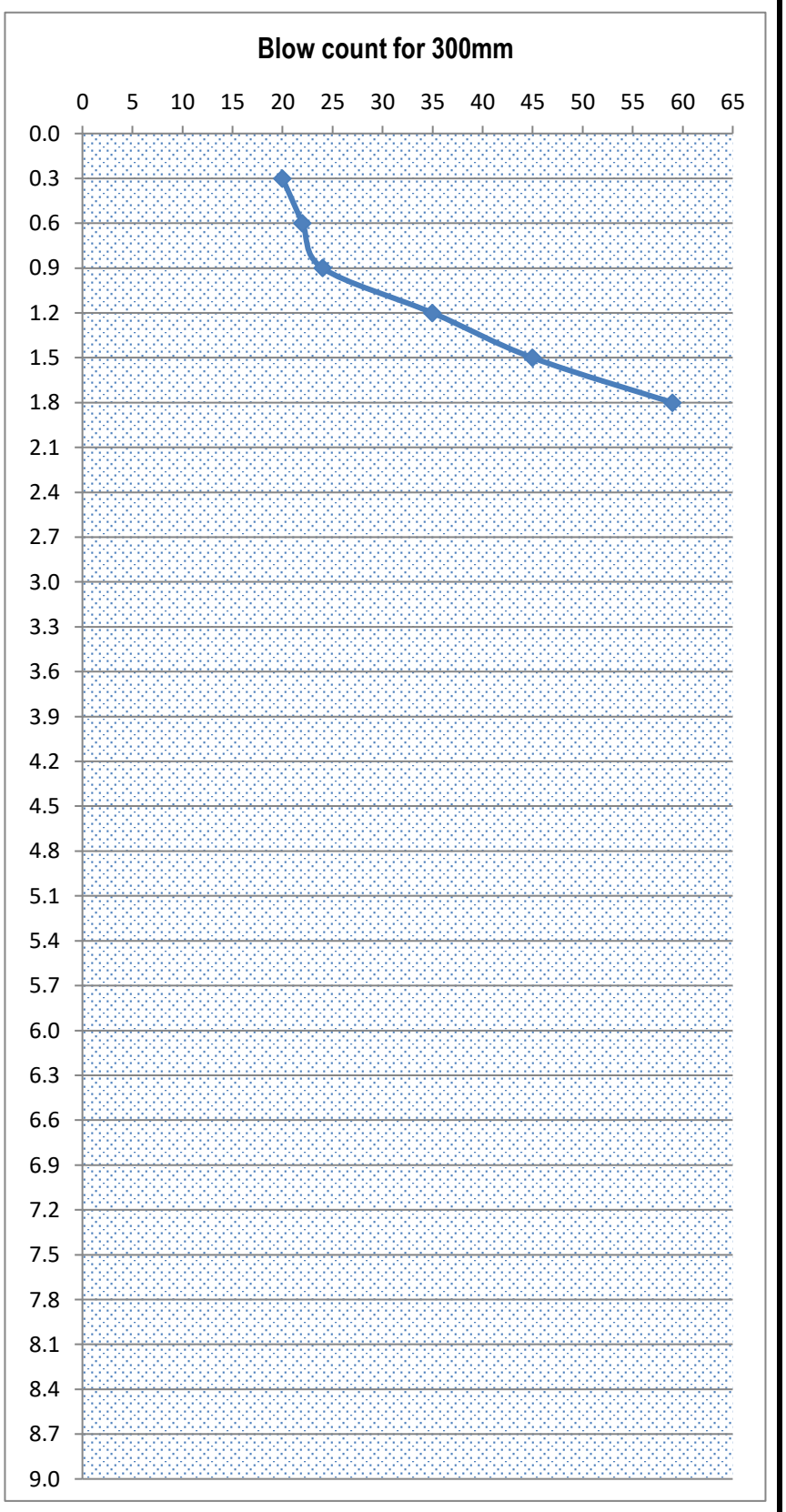
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.15 |
| | | TOWER NO | AP 10 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 12 | 8 | 20 |
| 0.6 | 7 | 7 | 8 | 22 |
| 0.9 | 7 | 8 | 9 | 24 |
| 1.2 | 10 | 14 | 11 | 35 |
| 1.5 | 12 | 11 | 22 | 45 |
| 1.8 | 25 | 34 | | 59 HB |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1700 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

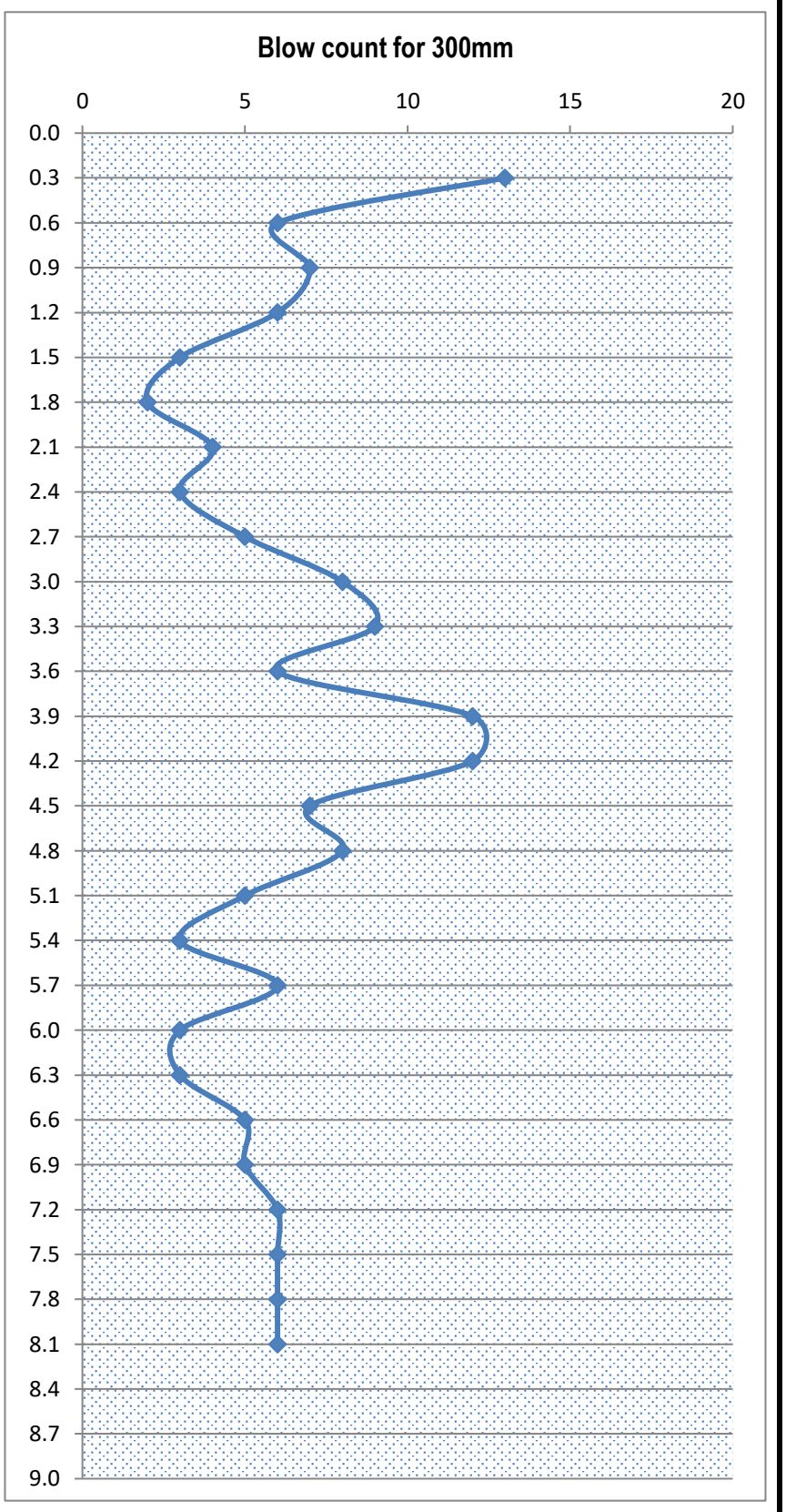
# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.15 |
| | | TOWER NO | AP 11 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 11 | 2 | 13 |
| 0.6 | 2 | 2 | 2 | 6 |
| 0.9 | 2 | 2 | 3 | 7 |
| 1.2 | 3 | 2 | 1 | 6 |
| 1.5 | 1 | 1 | 1 | 3 |
| 1.8 | 1 | 1 | 0 | 2 |
| 2.1 | 2 | 1 | 1 | 4 |
| 2.4 | 1 | 1 | 1 | 3 |
| 2.7 | 1 | 1 | 3 | 5 |
| 3.0 | 3 | 2 | 3 | 8 |
| 3.3 | 4 | 4 | 1 | 9 |
| 3.6 | 2 | 2 | 2 | 6 |
| 3.9 | 3 | 5 | 4 | 12 |
| 4.2 | 4 | 4 | 4 | 12 |
| 4.5 | 3 | 2 | 2 | 7 |
| 4.8 | 4 | 2 | 2 | 8 |
| 5.1 | 2 | 1 | 2 | 5 |
| 5.4 | 1 | 1 | 1 | 3 |
| 5.7 | 2 | 2 | 2 | 6 |
| 6.0 | 1 | 1 | 1 | 3 |
| 6.3 | 1 | 1 | 1 | 3 |
| 6.6 | 2 | 2 | 1 | 5 |
| 6.9 | 1 | 2 | 2 | 5 |
| 7.2 | 2 | 2 | 2 | 6 |
| 7.5 | 2 | 2 | 2 | 6 |
| 7.8 | 2 | 2 | 2 | 6 |
| 8.1 | 2 | 2 | 2 | 6 |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 8100 mm | |

T




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

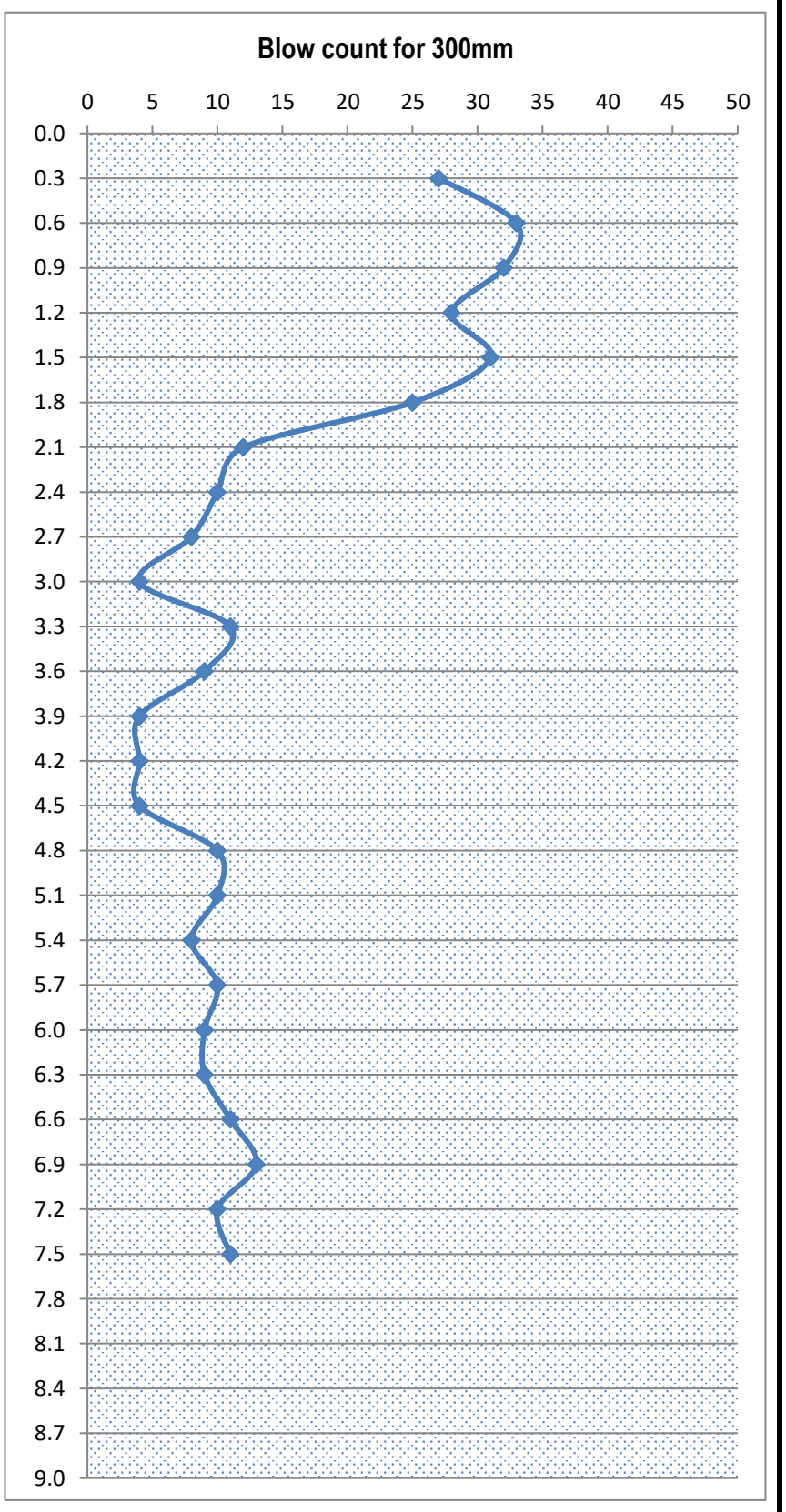
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.21 |
| | | TOWER NO | AP 12 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny / Cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 6 | 11 | 10 | 27 |
| 0.6 | 13 | 9 | 11 | 33 |
| 0.9 | 10 | 10 | 12 | 32 |
| 1.2 | 9 | 9 | 10 | 28 |
| 1.5 | 12 | 10 | 9 | 31 |
| 1.8 | 9 | 9 | 7 | 25 |
| 2.1 | 5 | 3 | 4 | 12 |
| 2.4 | 4 | 3 | 3 | 10 |
| 2.7 | 4 | 2 | 2 | 8 |
| 3.0 | 2 | 1 | 1 | 4 |
| 3.3 | 1 | 5 | 5 | 11 |
| 3.6 | 4 | 3 | 2 | 9 |
| 3.9 | 2 | 1 | 1 | 4 |
| 4.2 | 1 | 2 | 1 | 4 |
| 4.5 | 1 | 1 | 2 | 4 |
| 4.8 | 2 | 3 | 5 | 10 |
| 5.1 | 4 | 3 | 3 | 10 |
| 5.4 | 2 | 4 | 2 | 8 |
| 5.7 | 3 | 4 | 3 | 10 |
| 6.0 | 3 | 3 | 3 | 9 |
| 6.3 | 3 | 3 | 3 | 9 |
| 6.6 | 3 | 4 | 4 | 11 |
| 6.9 | 4 | 4 | 5 | 13 |
| 7.2 | 3 | 4 | 3 | 10 |
| 7.5 | 3 | 4 | 4 | 11 |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 7500 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

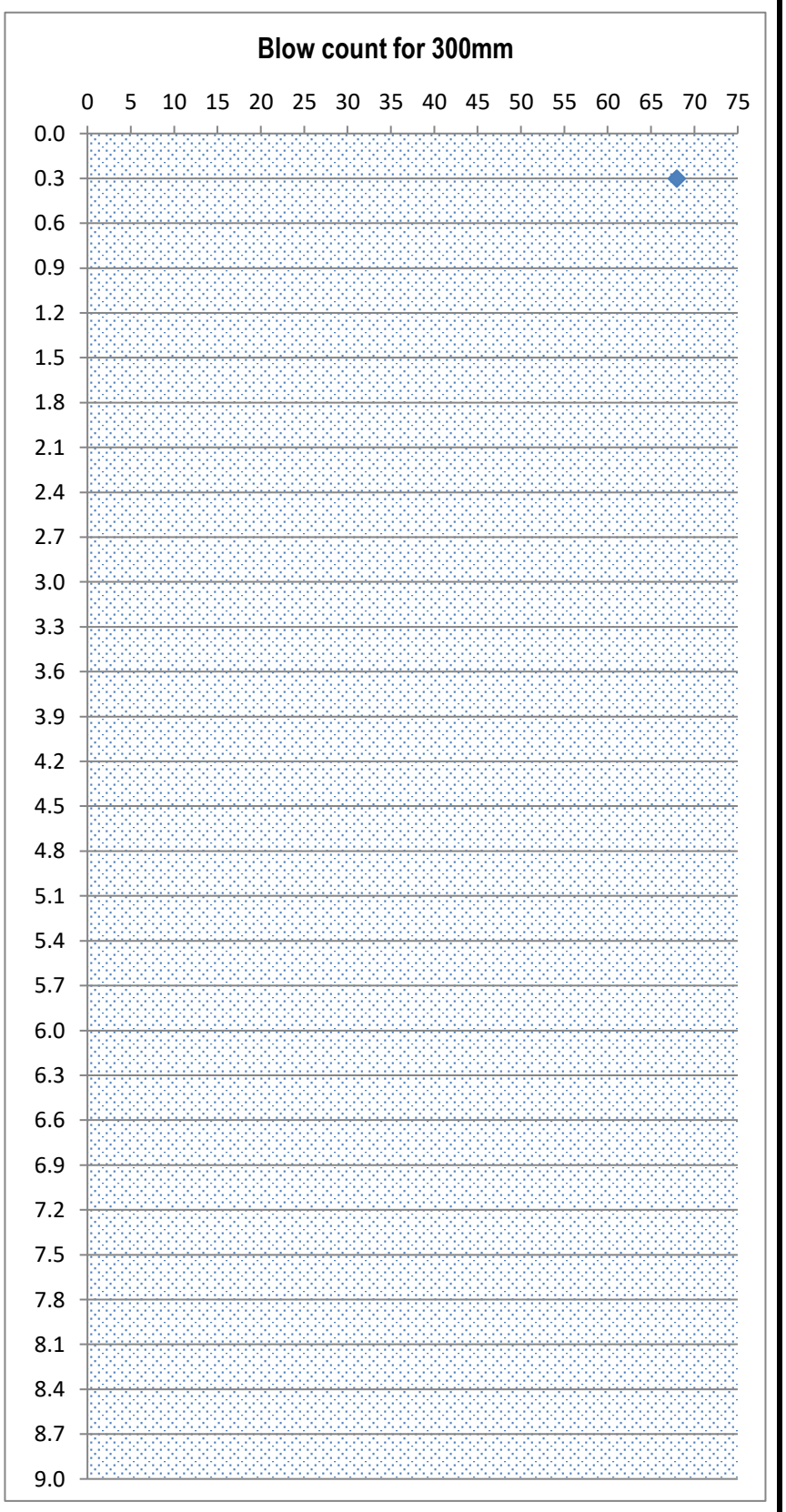
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.19 |
| | | TOWER NO | AP 13 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny / cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 14 | 17 | 37 | 68 | HB |
| 0.6 | | | | | |
| 0.9 | | | | | |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 300 mm | | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

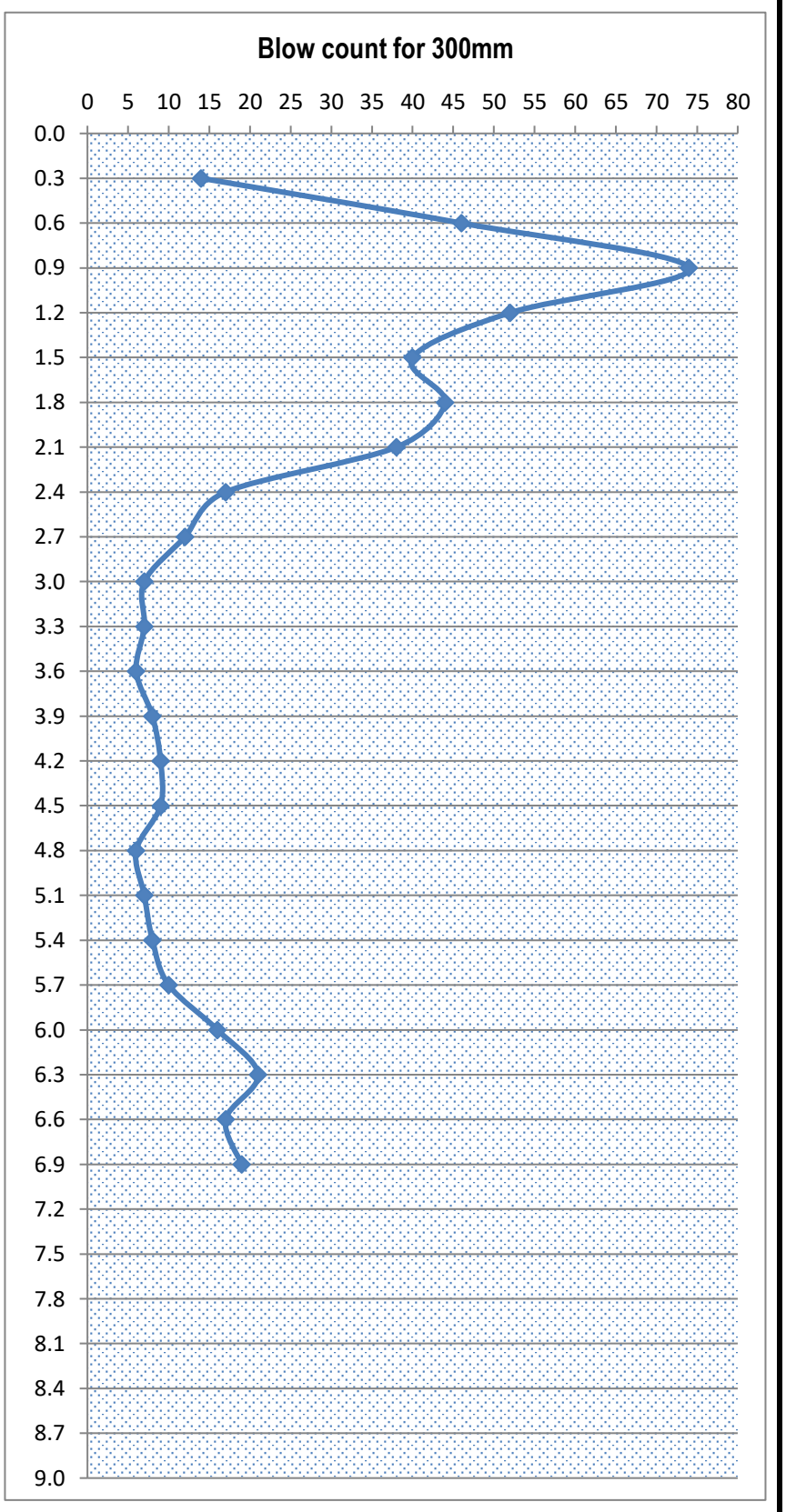
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.20 |
| | | TOWER NO | AP 14 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny / cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 3 | 4 | 7 | 14 |
| 0.6 | 10 | 15 | 21 | 46 |
| 0.9 | 25 | 24 | 25 | 74 |
| 1.2 | 20 | 17 | 15 | 52 |
| 1.5 | 13 | 13 | 14 | 40 |
| 1.8 | 14 | 13 | 17 | 44 |
| 2.1 | 14 | 12 | 12 | 38 |
| 2.4 | 8 | 5 | 4 | 17 |
| 2.7 | 4 | 4 | 4 | 12 |
| 3.0 | 2 | 3 | 2 | 7 |
| 3.3 | 3 | 2 | 2 | 7 |
| 3.6 | 2 | 2 | 2 | 6 |
| 3.9 | 3 | 2 | 3 | 8 |
| 4.2 | 3 | 3 | 3 | 9 |
| 4.5 | 3 | 2 | 4 | 9 |
| 4.8 | 2 | 2 | 2 | 6 |
| 5.1 | 2 | 2 | 3 | 7 |
| 5.4 | 2 | 2 | 4 | 8 |
| 5.7 | 3 | 3 | 4 | 10 |
| 6.0 | 4 | 6 | 6 | 16 |
| 6.3 | 6 | 8 | 7 | 21 |
| 6.6 | 6 | 6 | 5 | 17 |
| 6.9 | 7 | 5 | 7 | 19 |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 7000 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

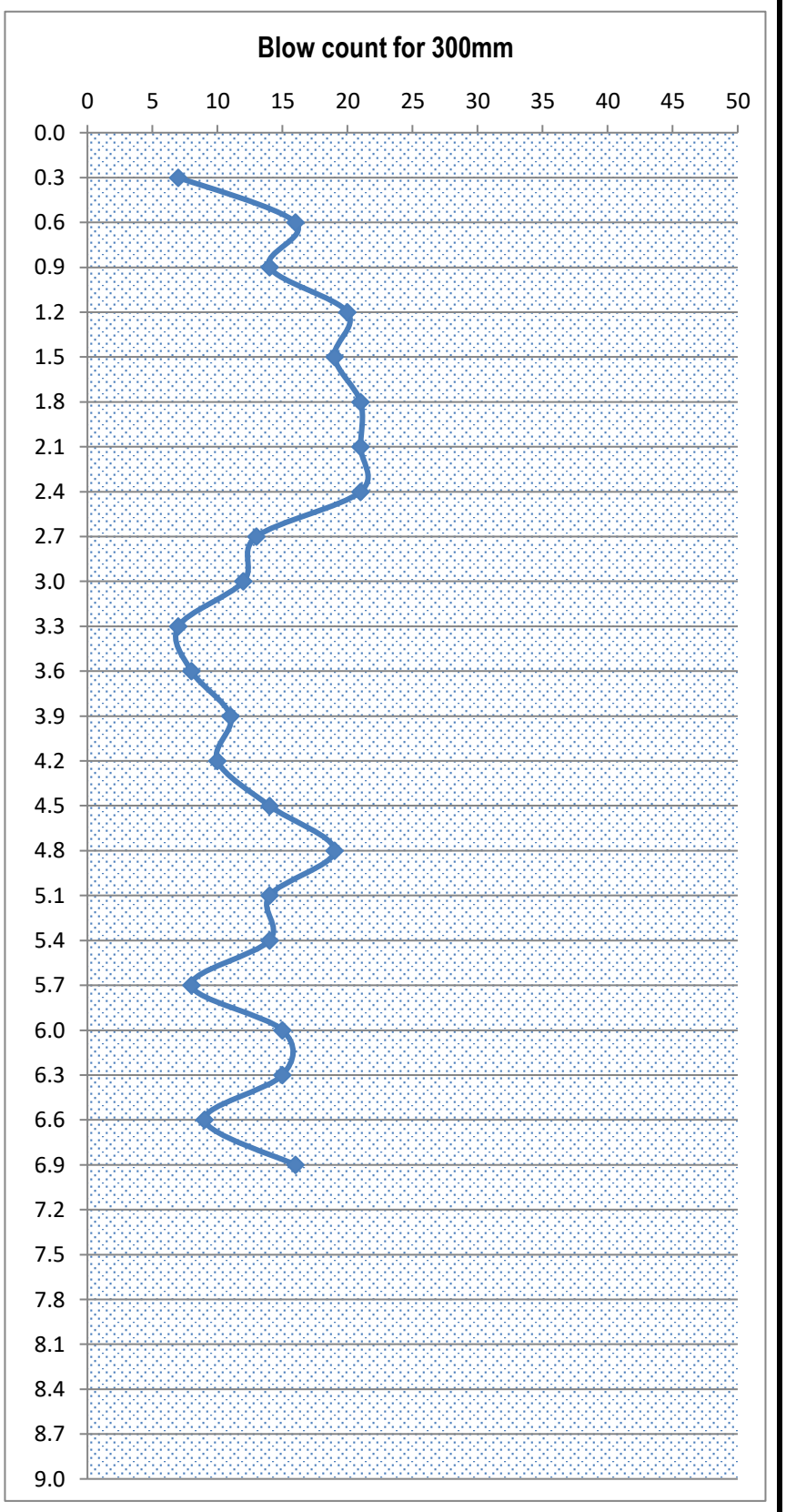
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.09.20 |
| | | TOWER NO | AP 15 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 2 | 2 | 3 | 7 |
| 0.6 | 4 | 6 | 6 | 16 |
| 0.9 | 5 | 5 | 4 | 14 |
| 1.2 | 6 | 6 | 8 | 20 |
| 1.5 | 7 | 6 | 6 | 19 |
| 1.8 | 6 | 8 | 7 | 21 |
| 2.1 | 7 | 8 | 6 | 21 |
| 2.4 | 7 | 8 | 6 | 21 |
| 2.7 | 4 | 4 | 5 | 13 |
| 3.0 | 5 | 4 | 3 | 12 |
| 3.3 | 3 | 2 | 2 | 7 |
| 3.6 | 2 | 3 | 3 | 8 |
| 3.9 | 5 | 3 | 3 | 11 |
| 4.2 | 3 | 3 | 4 | 10 |
| 4.5 | 3 | 5 | 6 | 14 |
| 4.8 | 6 | 7 | 6 | 19 |
| 5.1 | 5 | 4 | 5 | 14 |
| 5.4 | 6 | 5 | 3 | 14 |
| 5.7 | 3 | 2 | 3 | 8 |
| 6.0 | 5 | 5 | 5 | 15 |
| 6.3 | 5 | 5 | 5 | 15 |
| 6.6 | 3 | 3 | 3 | 9 |
| 6.9 | 3 | 6 | 7 | 16 |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 7000 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

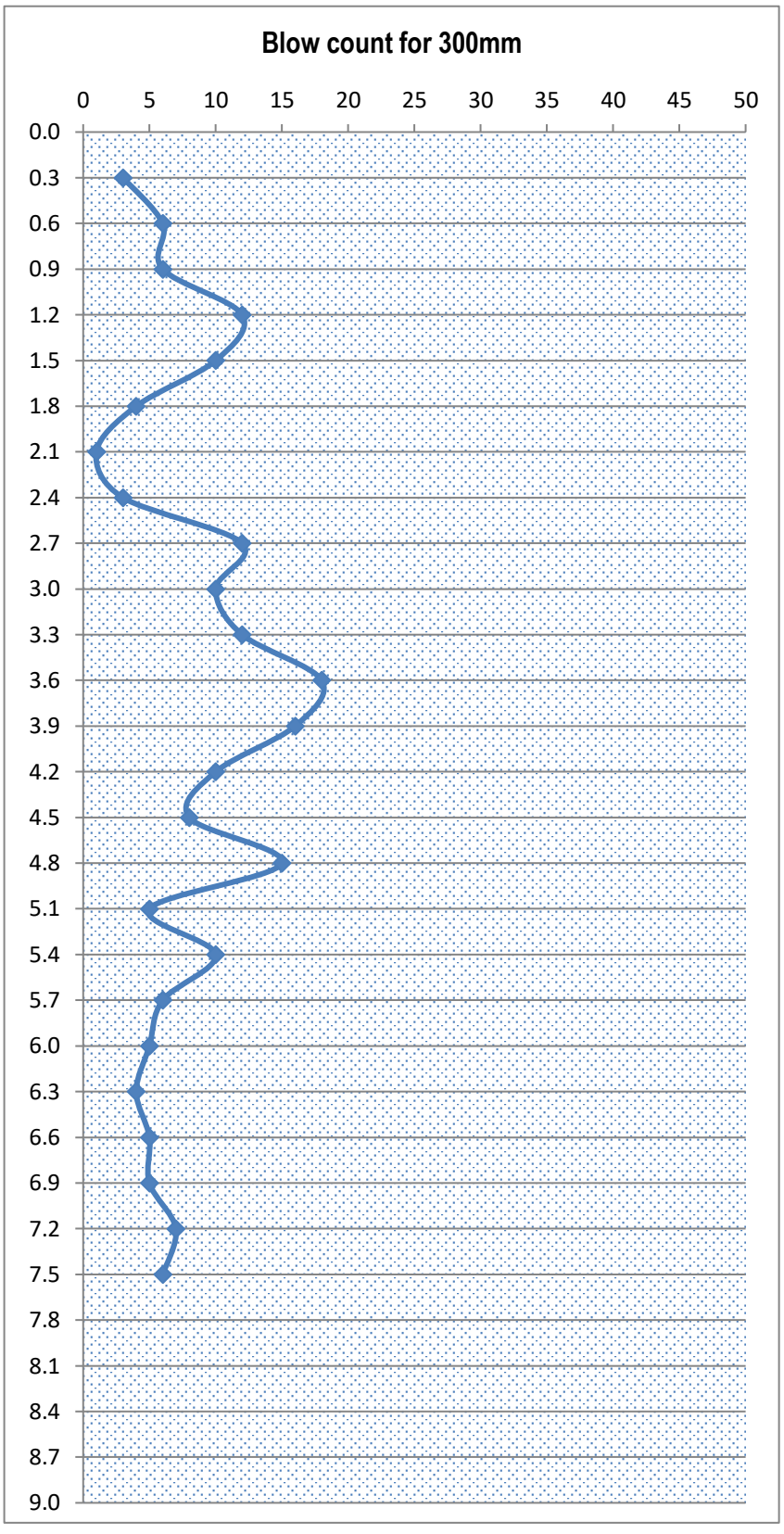
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| **REPORT NO** | SKTDP-DCPT-001 |
| **TEST DATE** | 2023.10.04 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| **PROJECT** | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | **TOWER NO** | AP 16 |
| **DIVISION** | TRANSMISSION PROJECTS | **TEST NO** | SKTDP-DCPT-T-001 |
| **SCOPE** | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | **TEST LOCATION** | |
| | | **CORDINATES E** | |
| | | **N** | |
| | | **ELEVATION** | |
| **LAND USE** | Paddy | **WEATHER** | Sunny |
| **TEST METHOD** | BS 1377: PART 9: 1990: 3.2 | **G/ W LEVEL** | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 1 | 1 | 1 | 3 |
| 0.6 | 2 | 1 | 3 | 6 |
| 0.9 | 2 | 2 | 2 | 6 |
| 1.2 | 3 | 4 | 5 | 12 |
| 1.5 | 4 | 4 | 2 | 10 |
| 1.8 | 2 | 1 | 1 | 4 |
| 2.1 | 1 | 0 | 0 | 1 |
| 2.4 | 0 | 1 | 2 | 3 |
| 2.7 | 2 | 5 | 5 | 12 |
| 3.0 | 5 | 3 | 2 | 10 |
| 3.3 | 3 | 3 | 6 | 12 |
| 3.6 | 6 | 6 | 6 | 18 |
| 3.9 | 6 | 6 | 4 | 16 |
| 4.2 | 4 | 3 | 3 | 10 |
| 4.5 | 2 | 4 | 2 | 8 |
| 4.8 | 6 | 5 | 4 | 15 |
| 5.1 | 2 | 2 | 1 | 5 |
| 5.4 | 5 | 3 | 2 | 10 |
| 5.7 | 3 | 2 | 1 | 6 |
| 6.0 | 2 | 2 | 1 | 5 |
| 6.3 | 1 | 1 | 2 | 4 |
| 6.6 | 1 | 2 | 2 | 5 |
| 6.9 | 2 | 2 | 1 | 5 |
| 7.2 | 3 | 1 | 3 | 7 |
| 7.5 | 2 | 2 | 2 | 6 |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 7500 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

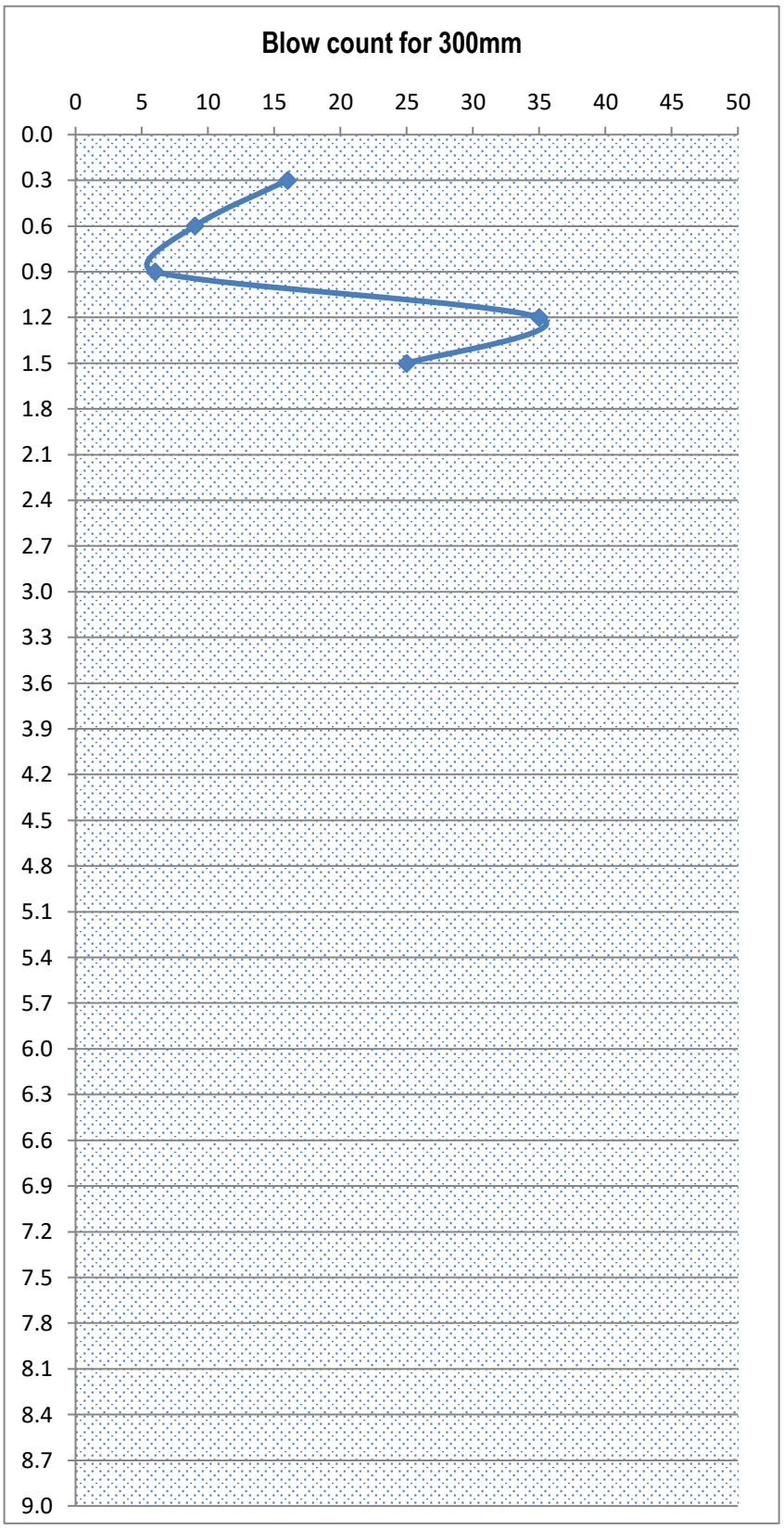
| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.05 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | AP 17 / Location 1 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 5 | 7 | 4 | 16 |
| 0.6 | 3 | 3 | 3 | 9 |
| 0.9 | 2 | 1 | 3 | 6 |
| 1.2 | 7 | 10 | 18 | 35 |
| 1.5 | 25 | | | 25 |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1300 mm | |

HB




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

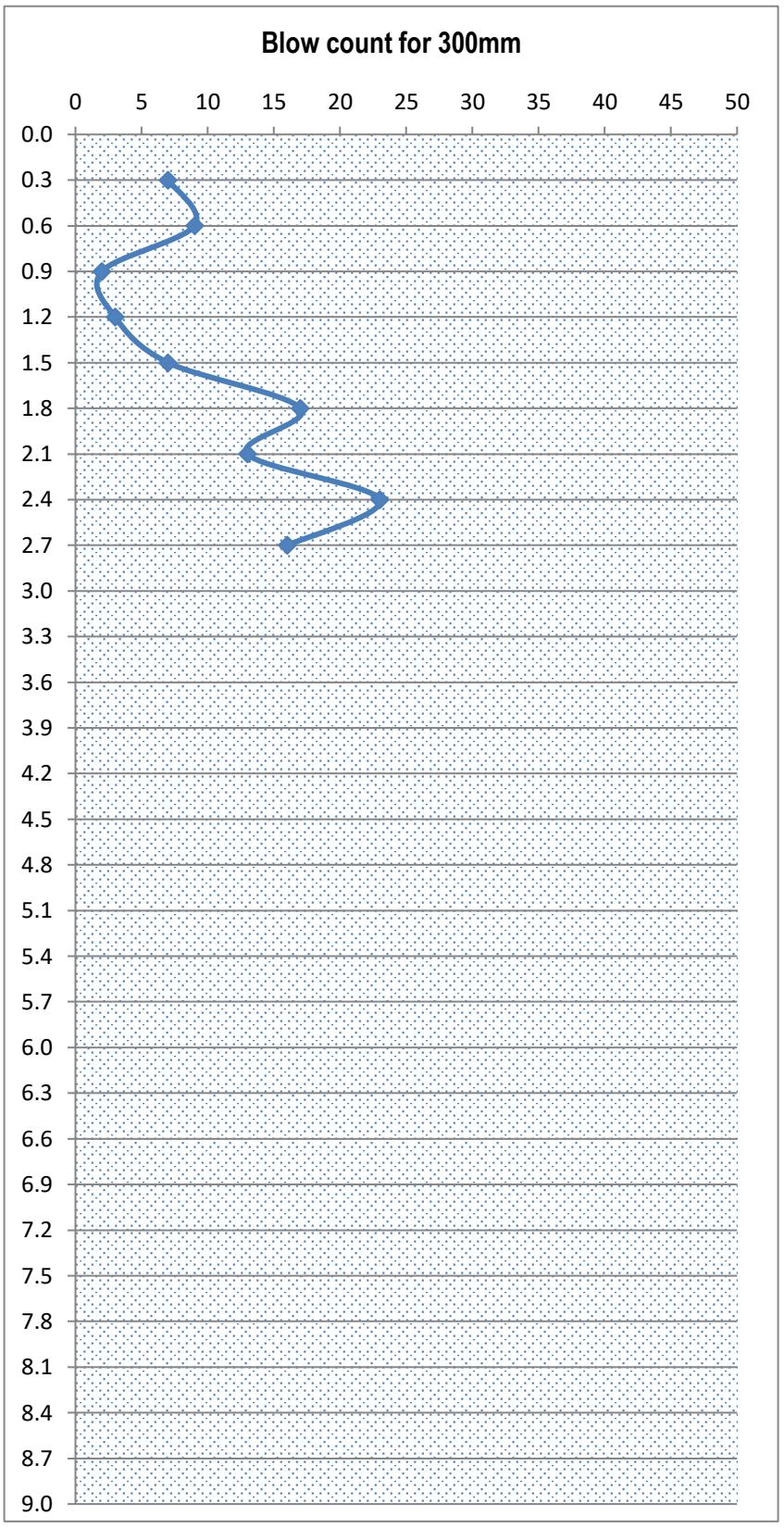
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.05 |
| | | TOWER NO | AP 17 / Location 2 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 1 | 3 | 3 | 7 |
| 0.6 | 3 | 3 | 3 | 9 |
| 0.9 | 1 | | 1 | 2 |
| 1.2 | 1 | 1 | 1 | 3 |
| 1.5 | 1 | 1 | 5 | 7 |
| 1.8 | 6 | 5 | 6 | 17 |
| 2.1 | 4 | 5 | 4 | 13 |
| 2.4 | 4 | 6 | 13 | 23 |
| 2.7 | 16 | | | 16 HB |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 2500 mm | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

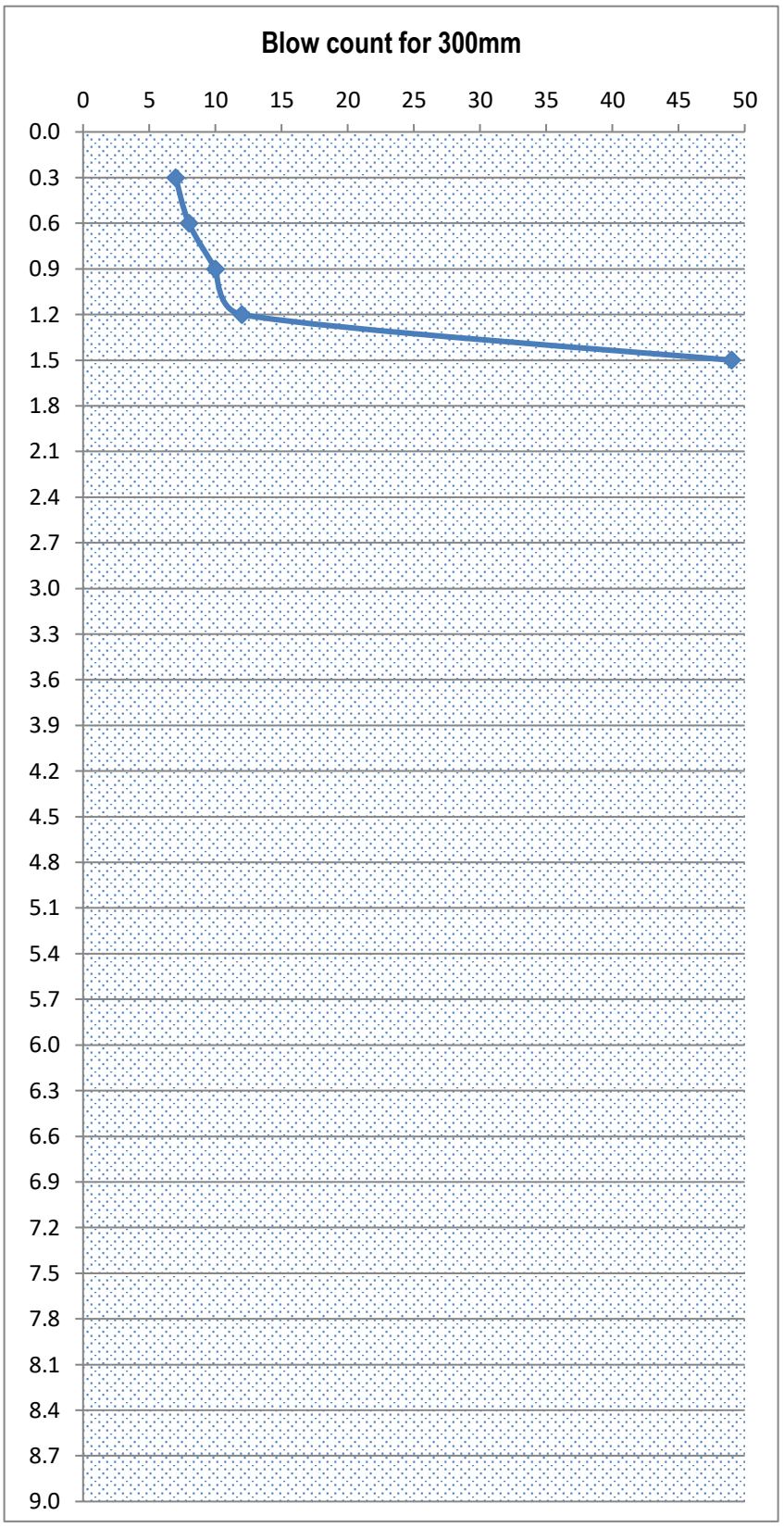
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.05 |
| | | TOWER NO | AP 17 / Location 3 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 2 | 3 | 2 | 7 |
| 0.6 | 1 | 3 | 4 | 8 |
| 0.9 | 3 | 2 | 5 | 10 |
| 1.2 | 7 | 3 | 2 | 12 |
| 1.5 | 10 | 19 | 20 | 49 HB |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1500 mm | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | Rod Diameter : 43.0mm | | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

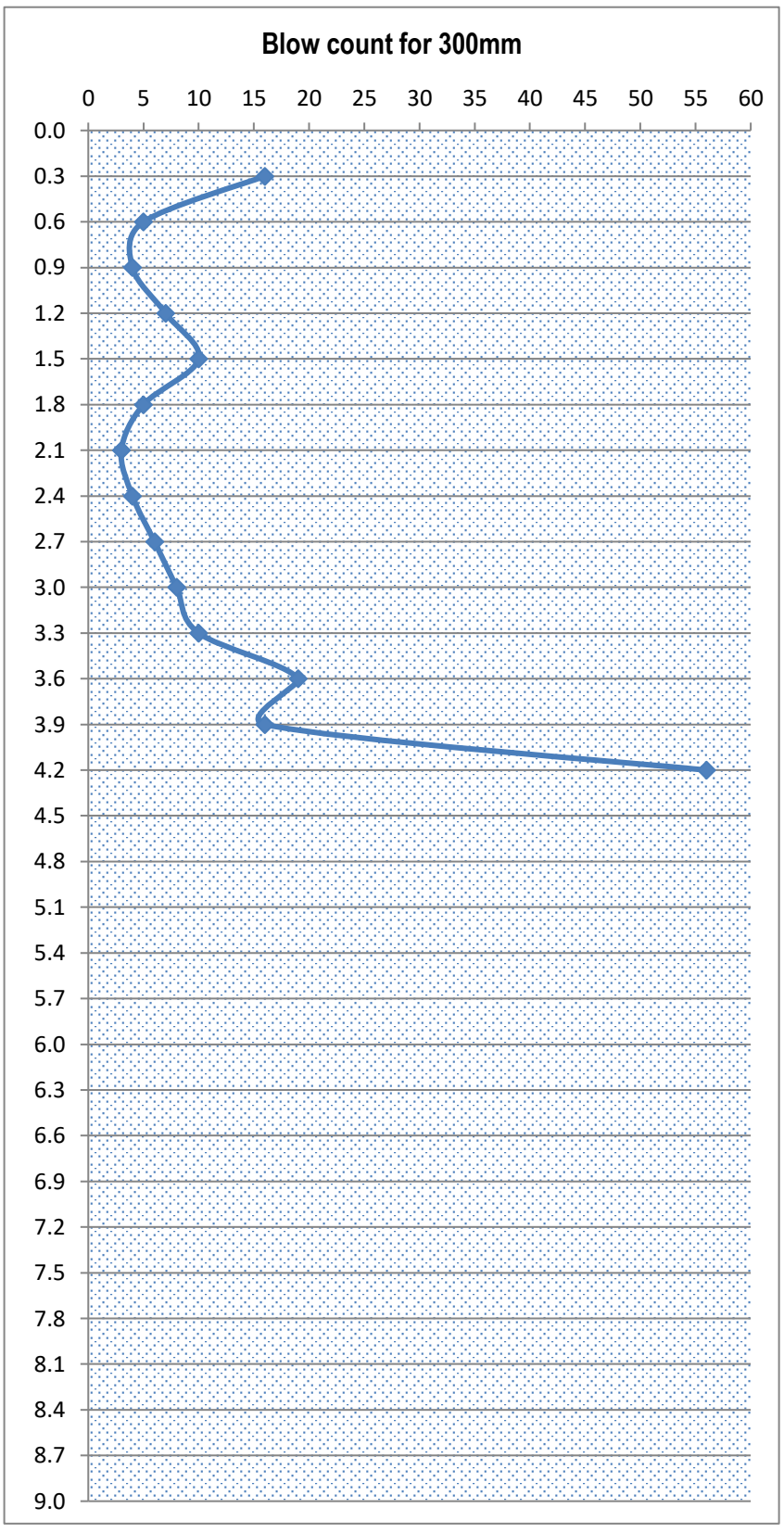
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.07 |
| | | TOWER NO | AP 18 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Bare Land | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 9 | 4 | 3 | 16 |
| 0.6 | 1 | 2 | 2 | 5 |
| 0.9 | 1 | 1 | 2 | 4 |
| 1.2 | 1 | 3 | 3 | 7 |
| 1.5 | 4 | 3 | 3 | 10 |
| 1.8 | 2 | 2 | 1 | 5 |
| 2.1 | 1 | 1 | 1 | 3 |
| 2.4 | 1 | 2 | 1 | 4 |
| 2.7 | 2 | 2 | 2 | 6 |
| 3.0 | 3 | 3 | 2 | 8 |
| 3.3 | 2 | 3 | 5 | 10 |
| 3.6 | 4 | 5 | 10 | 19 |
| 3.9 | 6 | 6 | 4 | 16 |
| 4.2 | 6 | 24 | 26 | 56 HB |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 4200 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

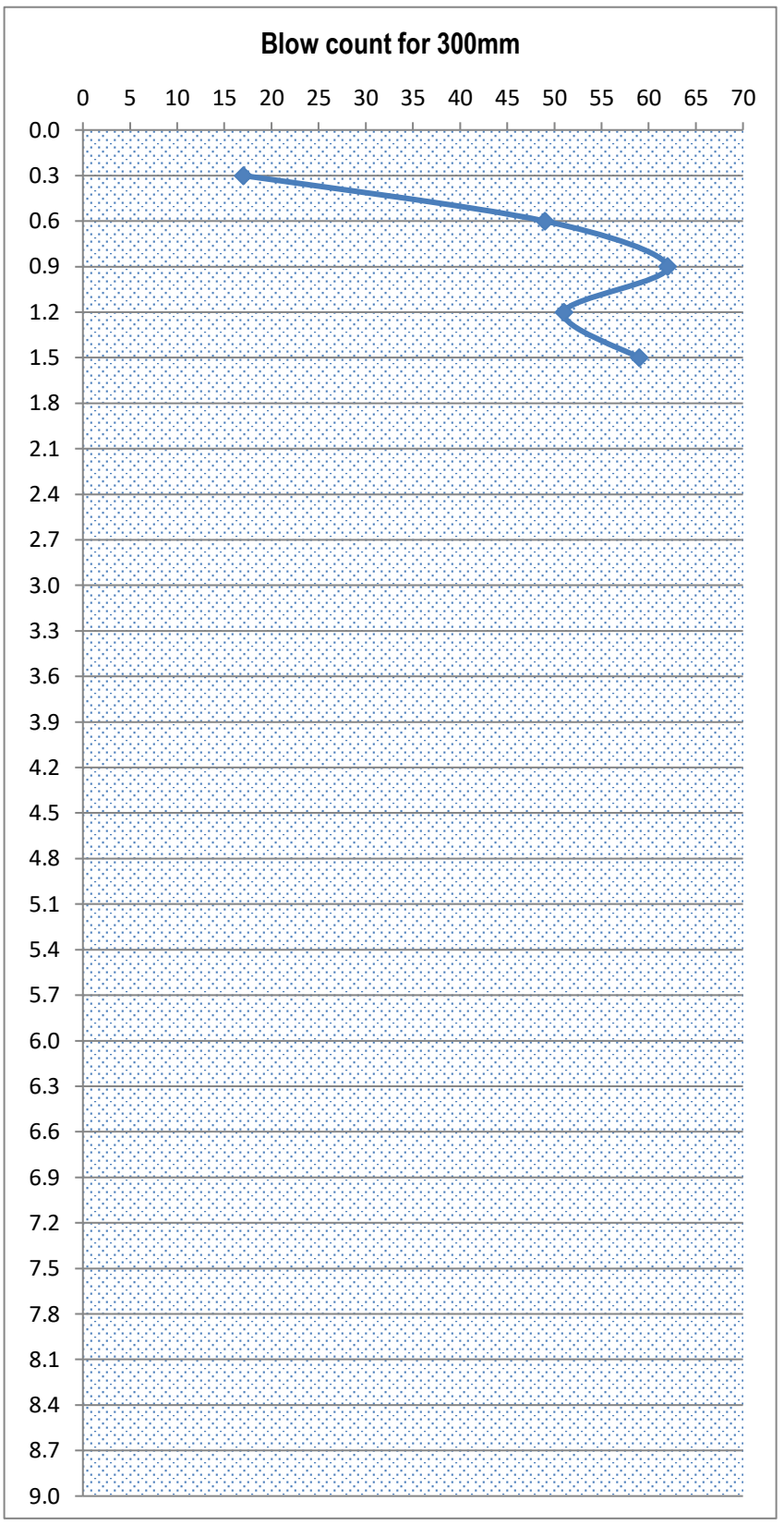
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.07 |
| | | TOWER NO | AP 19 / Location 1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 5 | 6 | 6 | 17 |
| 0.6 | 7 | 20 | 22 | 49 |
| 0.9 | 23 | 21 | 18 | 62 |
| 1.2 | 16 | 17 | 18 | 51 |
| 1.5 | 23 | 36 | | 59 HB |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | 1400 mm | | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

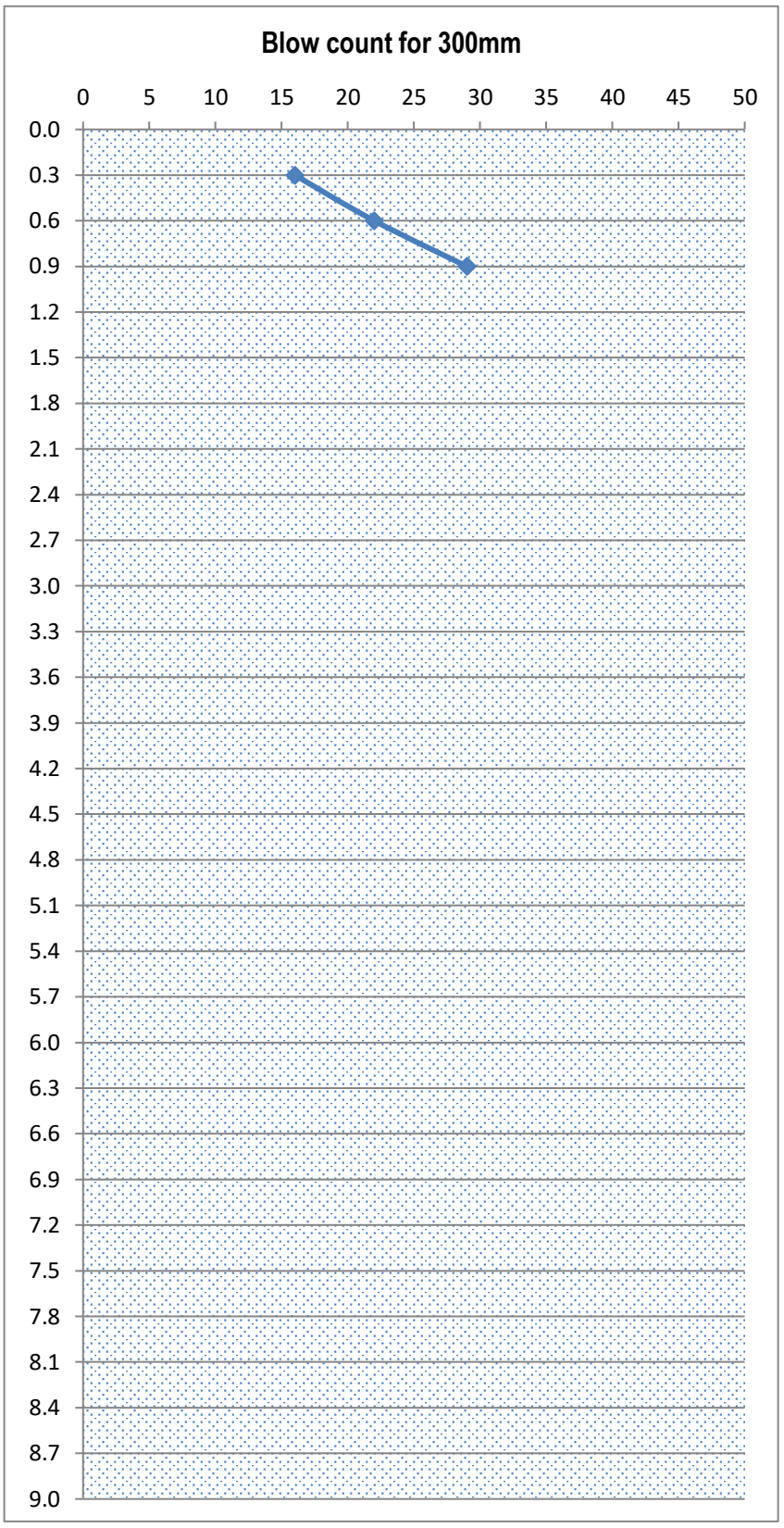
| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.06 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | AP 19 / Location 2 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 6 | 6 | 4 | 16 |
| 0.6 | 4 | 5 | 13 | 22 |
| 0.9 | 29 | | | 29 |
| 1.2 | | | | |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 700 mm | |

HB




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

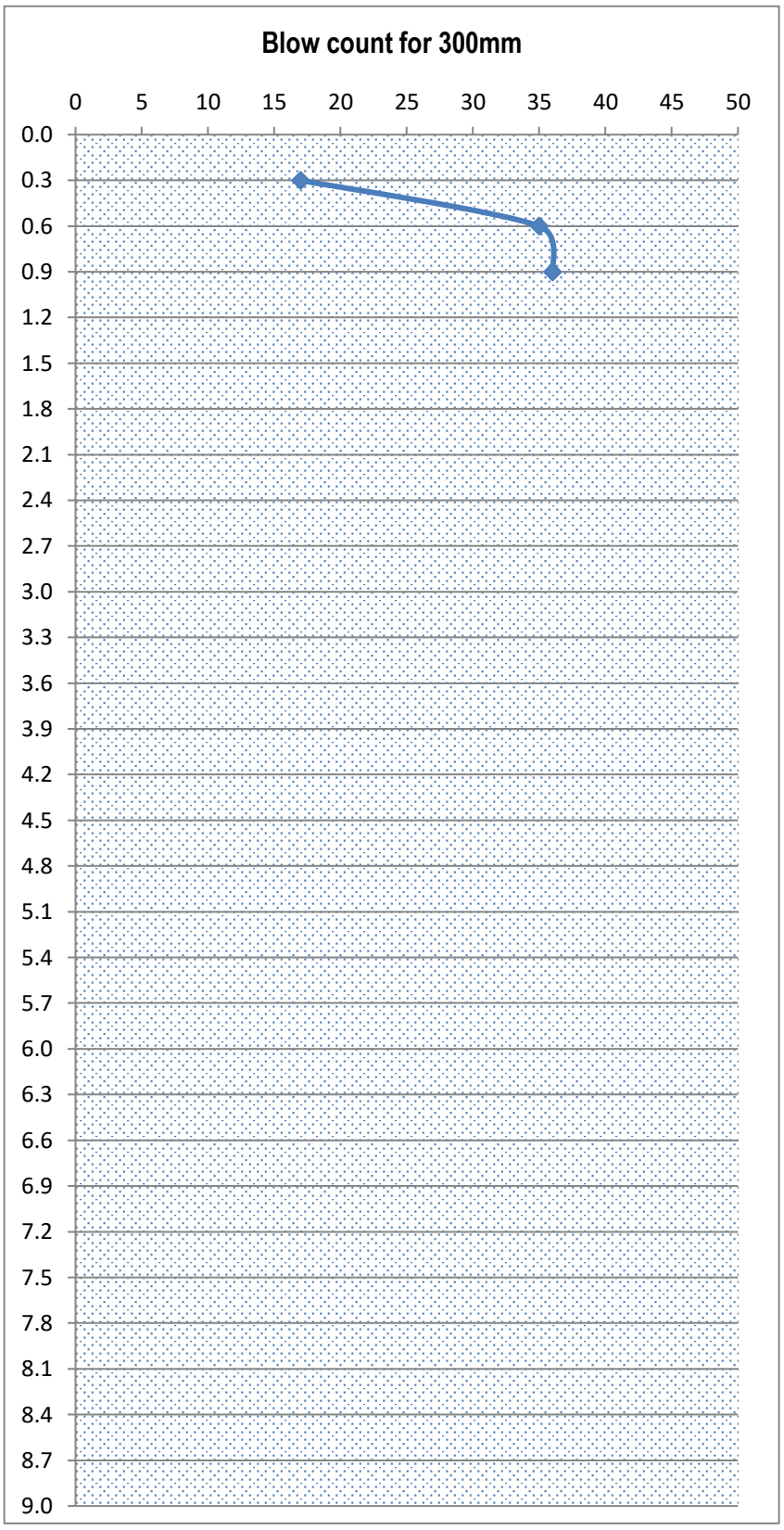
| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.06 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | AP 19 / Location 3 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 6 | 6 | 5 | 17 |
| 0.6 | 7 | 14 | 14 | 35 |
| 0.9 | 16 | 20 | | 36 |
| 1.2 | | | | |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 800 mm | |

HB




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

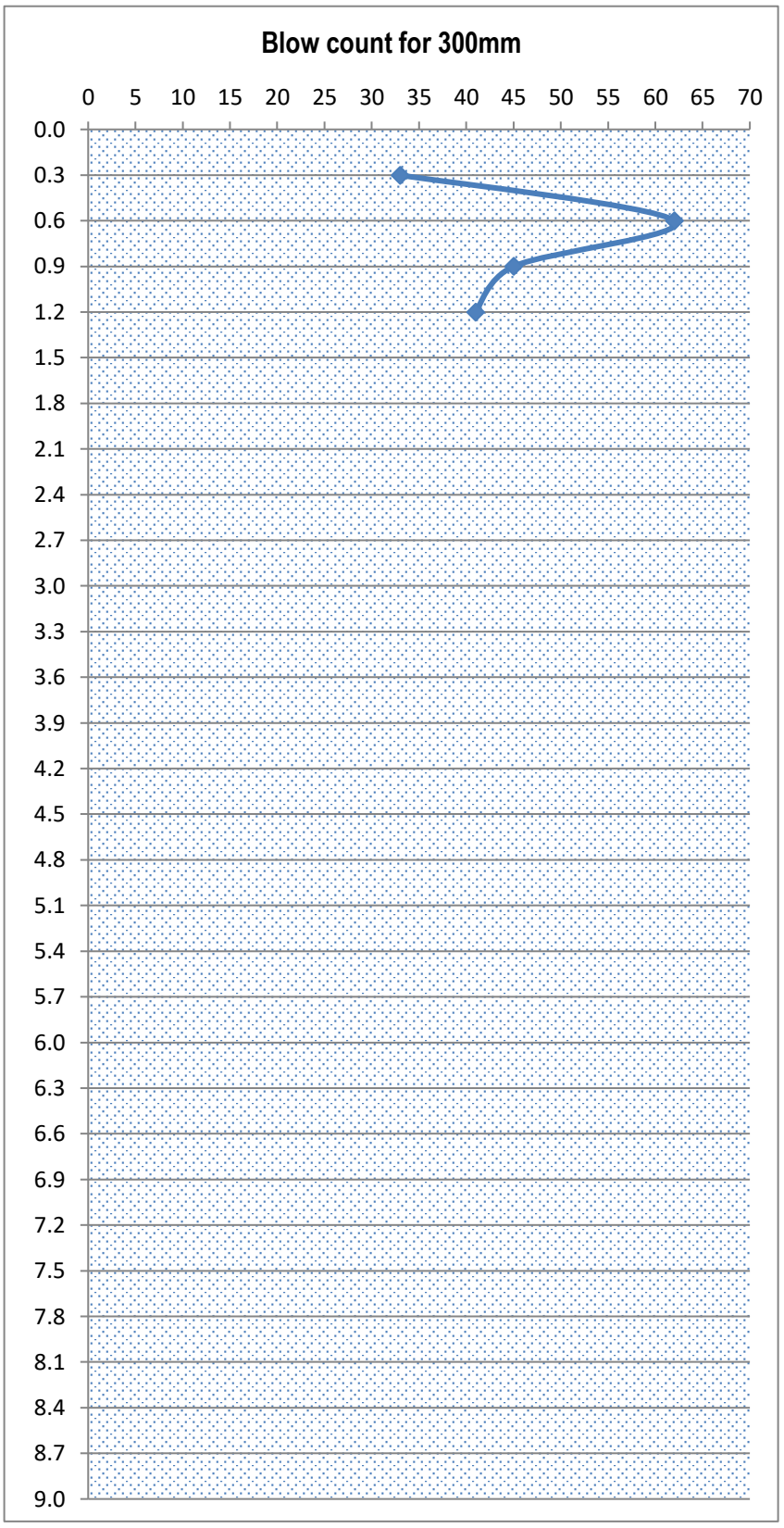
# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.08 |
| | | TOWER NO | AP 20 / Location 1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 8 | 11 | 14 | 33 |
| 0.6 | 17 | 21 | 24 | 62 |
| 0.9 | 20 | 15 | 10 | 45 |
| 1.2 | 8 | 10 | 23 | 41 |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1200 mm | |

HB




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

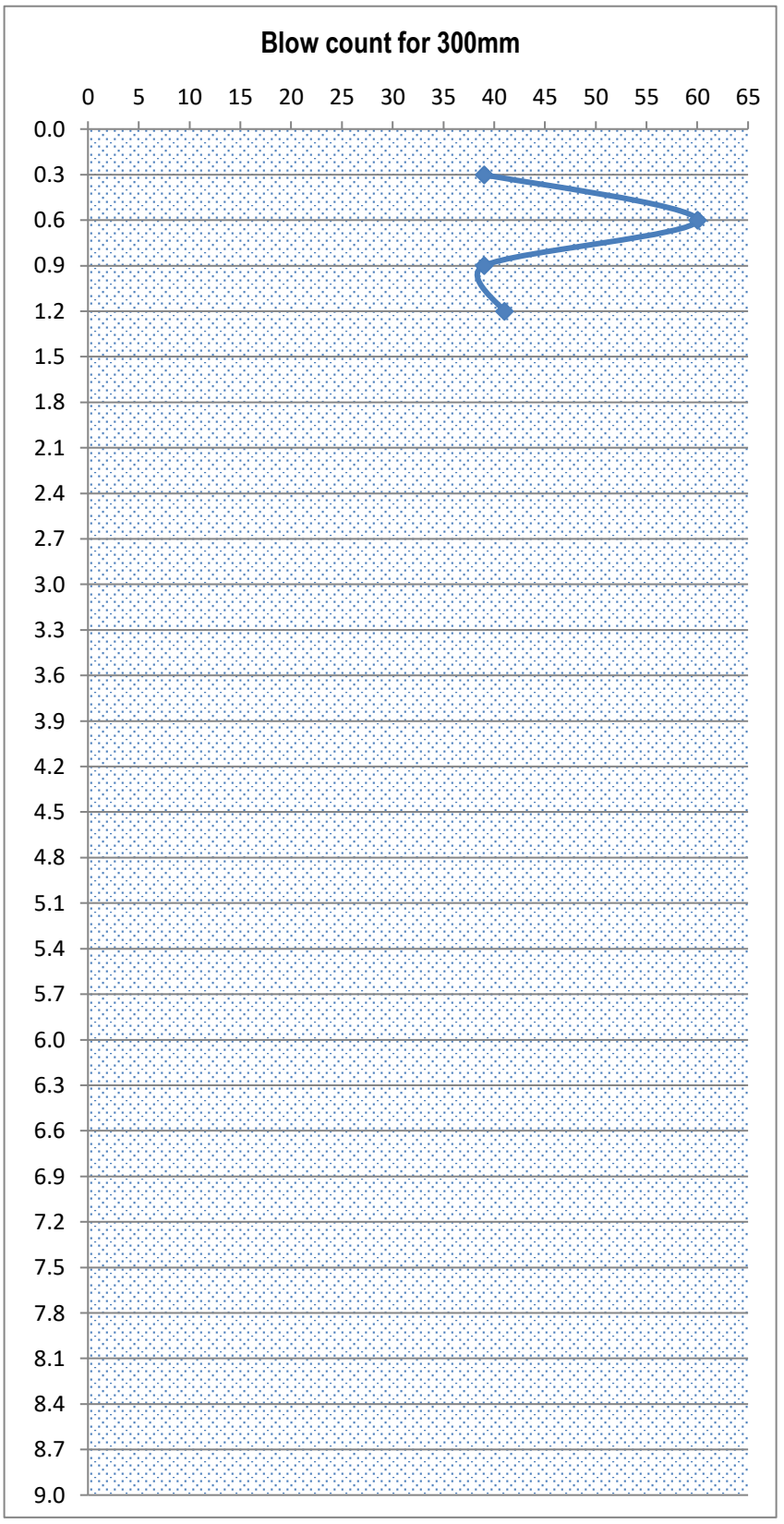
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| **REPORT NO** | SKTDP-DCPT-001 |
| **TEST DATE** | 2023.10.08 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| **TOWER NO** | AP 20 / Location 2 | | |
| **PROJECT** | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | **TEST NO** | SKTDP-DCPT-T-001 |
| **DIVISION** | TRANSMISSION PROJECTS | **TEST LOCATION** | |
| **SCOPE** | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | **CORDINATES E** | |
| | | **N** | |
| | | **ELEVATION** | |
| **LAND USE** | Paddy | **WEATHER** | Sunny |
| **TEST METHOD** | BS 1377: PART 9: 1990: 3.2 | **G/ W LEVEL** | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 12 | 13 | 14 | 39 |
| 0.6 | 20 | 24 | 16 | 60 |
| 0.9 | 14 | 15 | 10 | 39 |
| 1.2 | 14 | 10 | 17 | 41 |
| 1.5 | 25 | | | HB |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1000 mm | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

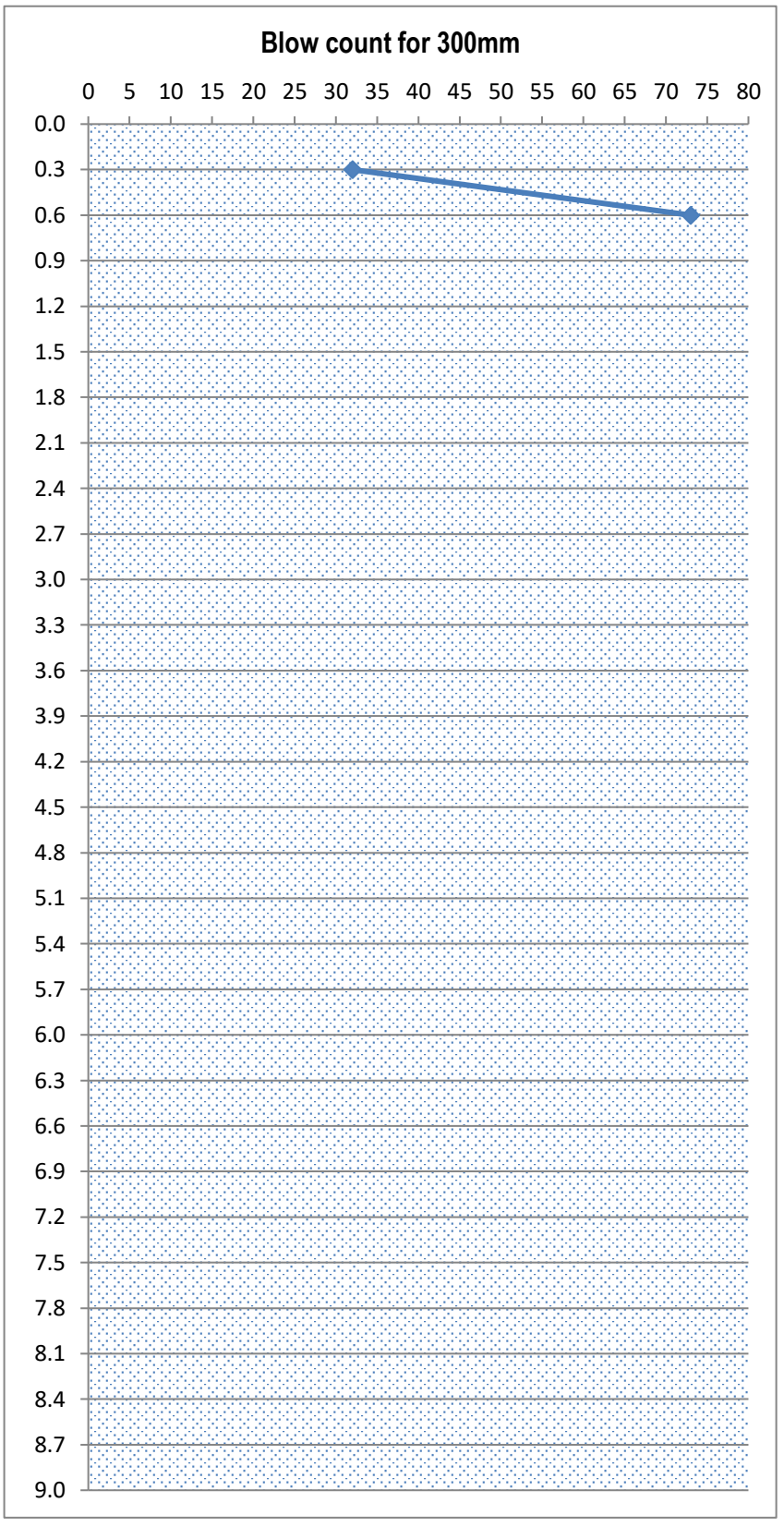
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.09 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| TOWER NO | AP 21 / Location 1 | | |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 6 | 12 | 14 | 32 | |
| 0.6 | 32 | 41 | 0 | 73 | HB |
| 0.9 | | | | | |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 600 mm | | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

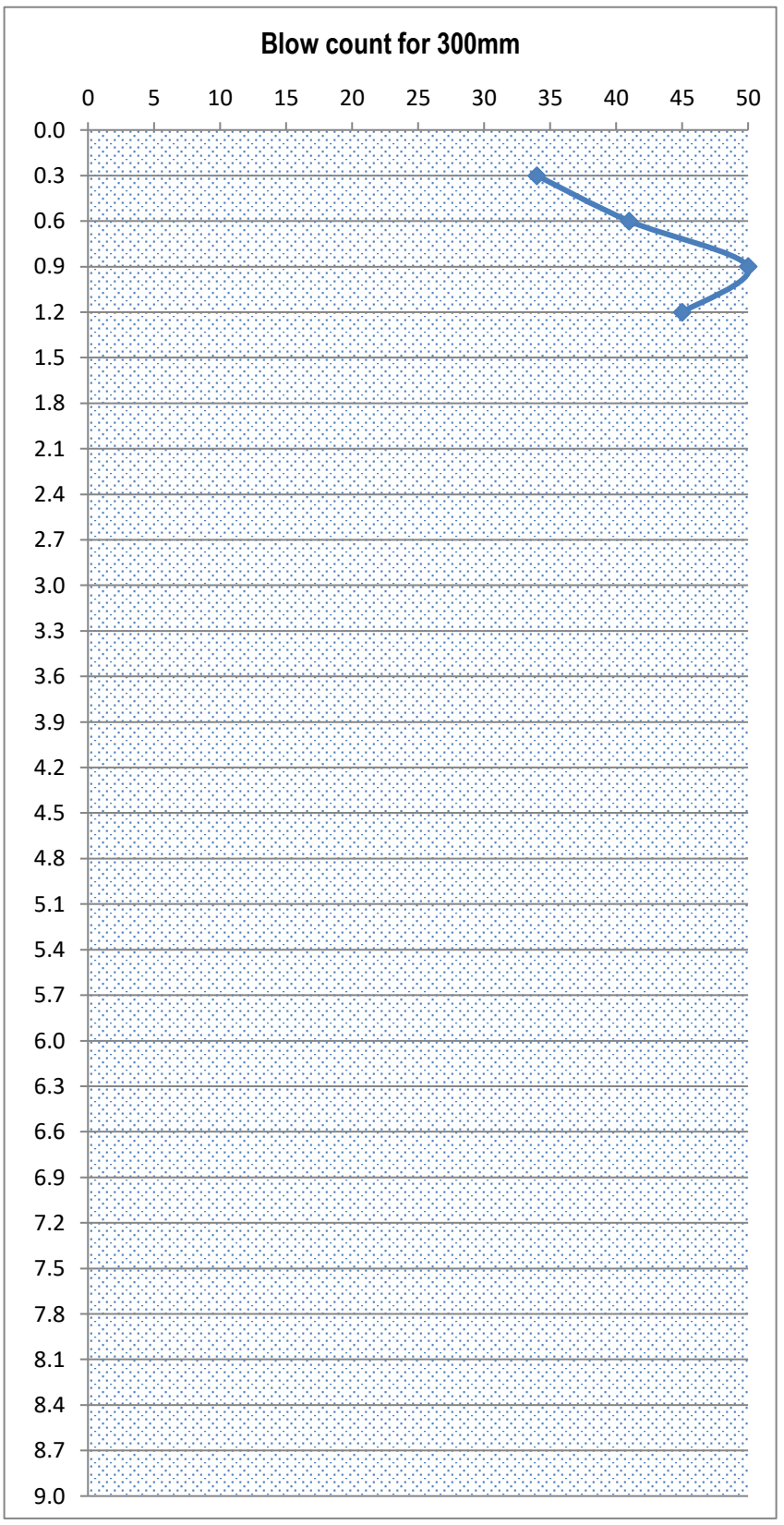
# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | **REPORT NO** | SKTDP-DCPT-001 |
| | | **TEST DATE** | 2023.10.08 |
| | | **TOWER NO** | AP 20 / Location 3 |
| **PROJECT** | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | **TEST NO** | SKTDP-DCPT-T-001 |
| **DIVISION** | TRANSMISSION PROJECTS | **TEST LOCATION** | |
| **SCOPE** | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | **CORDINATES E** | |
| | | **N** | |
| | | **ELEVATION** | |
| **LAND USE** | Paddy | **WEATHER** | Sunny |
| **TEST METHOD** | BS 1377: PART 9: 1990: 3.2 | **G/ W LEVEL** | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 9 | 12 | 13 | 34 |
| 0.6 | 13 | 12 | 16 | 41 |
| 0.9 | 17 | 15 | 18 | 50 |
| 1.2 | 20 | 25 | | 45 |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1000 mm | |

HB




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

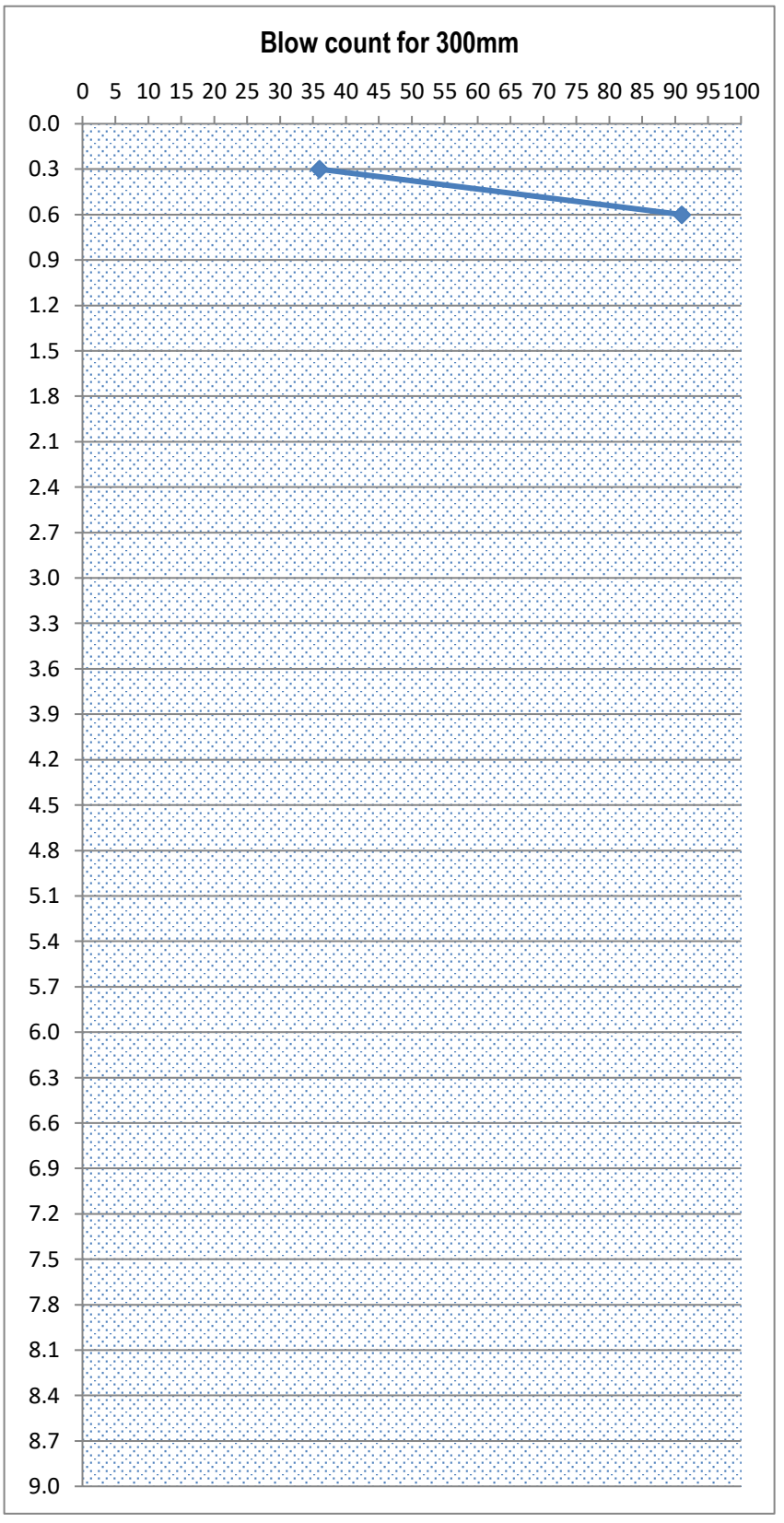
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.09 |
| | | TOWER NO | AP 21 / Location 2 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 7 | 13 | 16 | 36 | |
| 0.6 | 29 | 30 | 32 | 91 | HB |
| 0.9 | | | | | |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 600 mm | | |




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

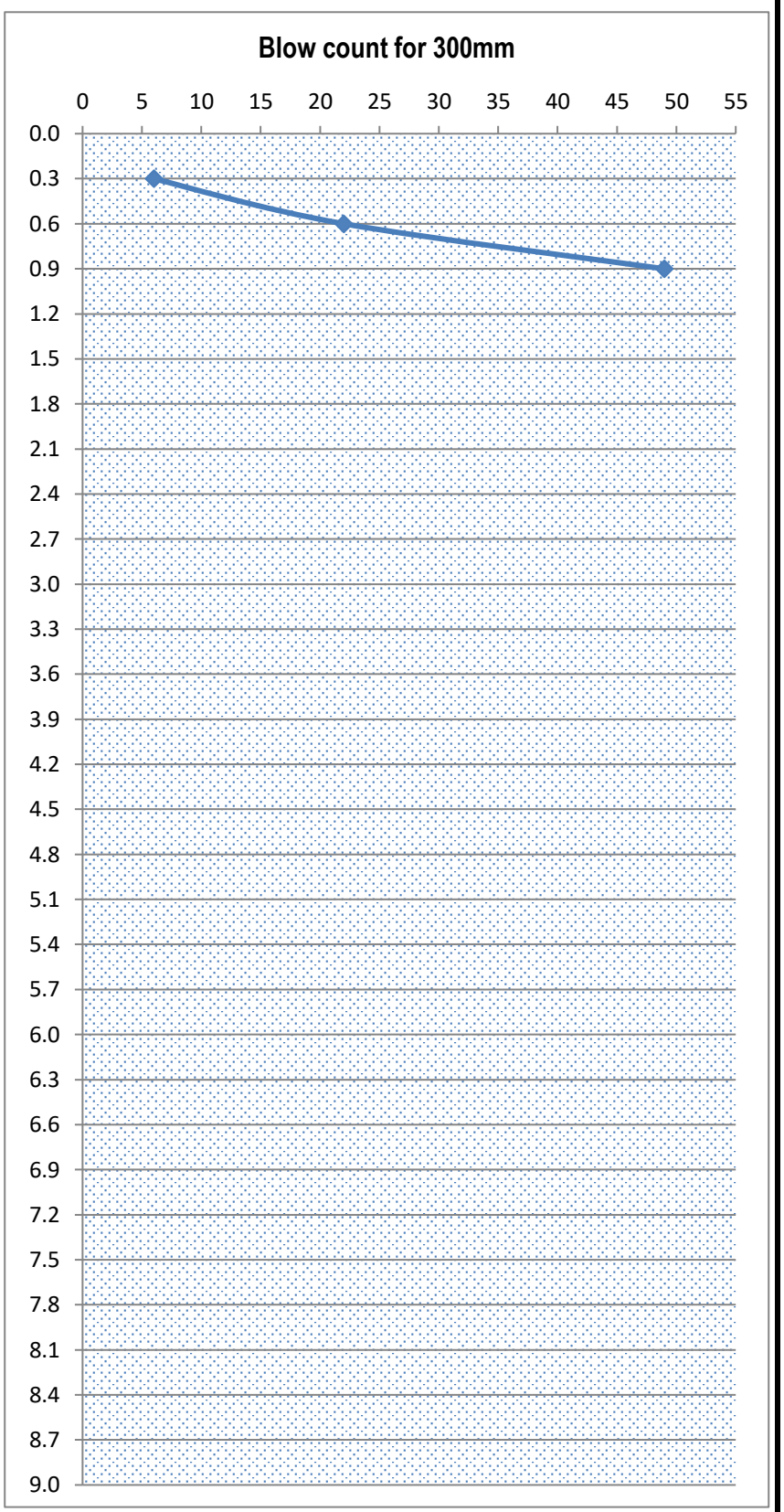
| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.18 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | TT-1 Location 2 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Bare Land | WEATHER | Cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 3 | 3 | 6 |
| 0.6 | 6 | 7 | 9 | 22 |
| 0.9 | 14 | 35 | | 49 |
| 1.2 | | | | |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1100 mm | |

HB




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

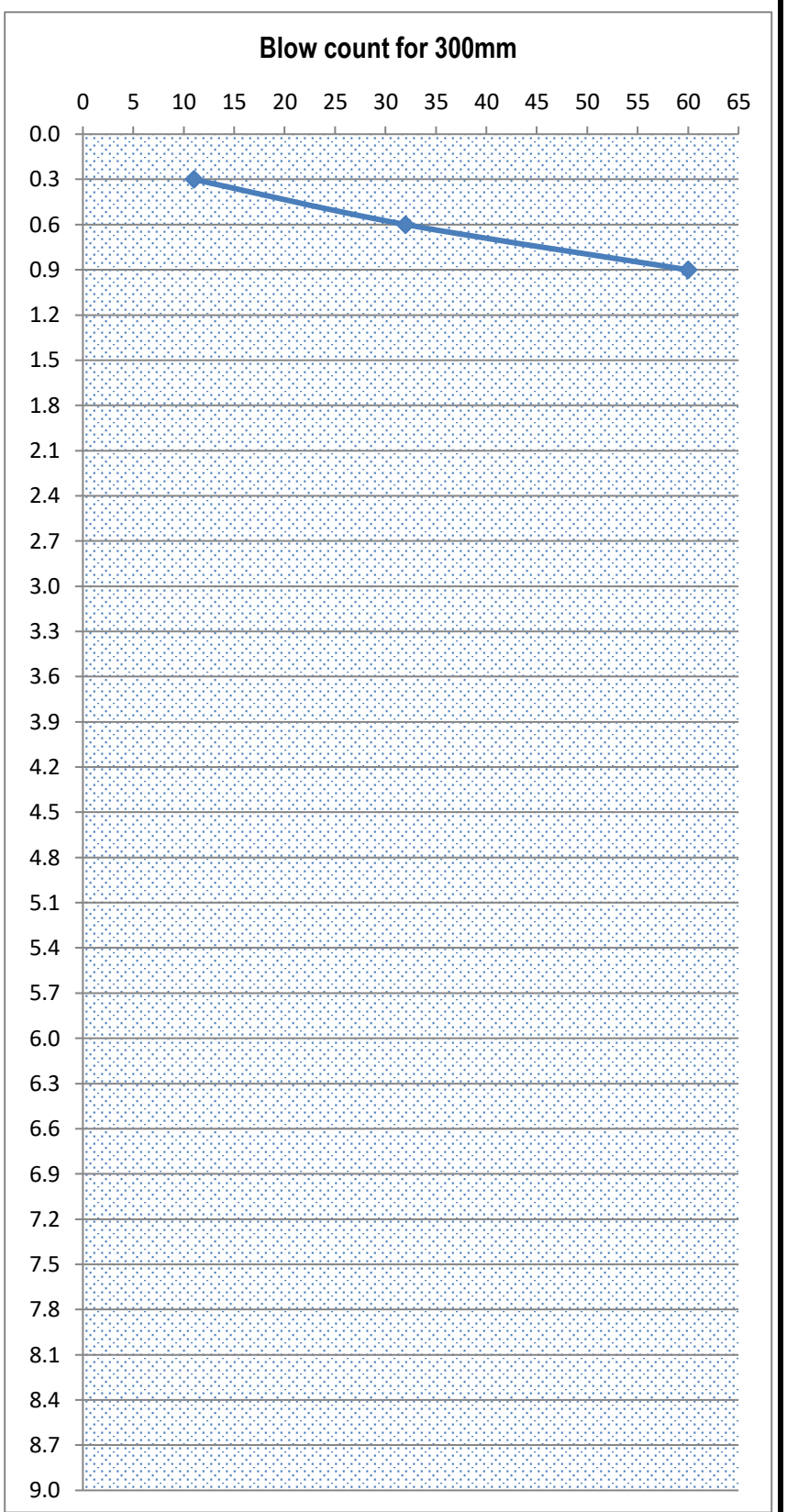
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.18 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | LT 8-8 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Cultivation land | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 0 | 4 | 7 | 11 | |
| 0.6 | 7 | 10 | 15 | 32 | |
| 0.9 | 60 | 0 | | 60 | HB |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 900 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.11.02 |
| | | TOWER NO | LT 16 - 1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Bare Land | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 4 | 4 | 8 |
| 0.6 | 4 | 4 | 4 | 12 |
| 0.9 | 4 | 4 | 4 | 12 |
| 1.2 | 5 | 5 | 5 | 15 |
| 1.5 | 4 | 4 | 5 | 13 |
| 1.8 | 5 | 4 | 4 | 13 |
| 2.1 | 4 | 4 | 4 | 12 |
| 2.4 | 4 | 4 | 3 | 11 |
| 2.7 | 3 | 2 | 2 | 7 |
| 3.0 | 2 | 2 | 2 | 6 |
| 3.3 | 2 | 2 | 2 | 6 |
| 3.6 | 2 | 2 | 2 | 6 |
| 3.9 | 5 | 5 | 4 | 14 |
| 4.2 | 4 | 3 | 3 | 10 |
| 4.5 | 2 | 2 | 2 | 6 |
| 4.8 | 2 | 2 | 2 | 6 |
| 5.1 | 2 | 2 | 2 | 6 |
| 5.4 | 2 | 2 | 2 | 6 |
| 5.7 | 2 | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 5500 mm | |

T

| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

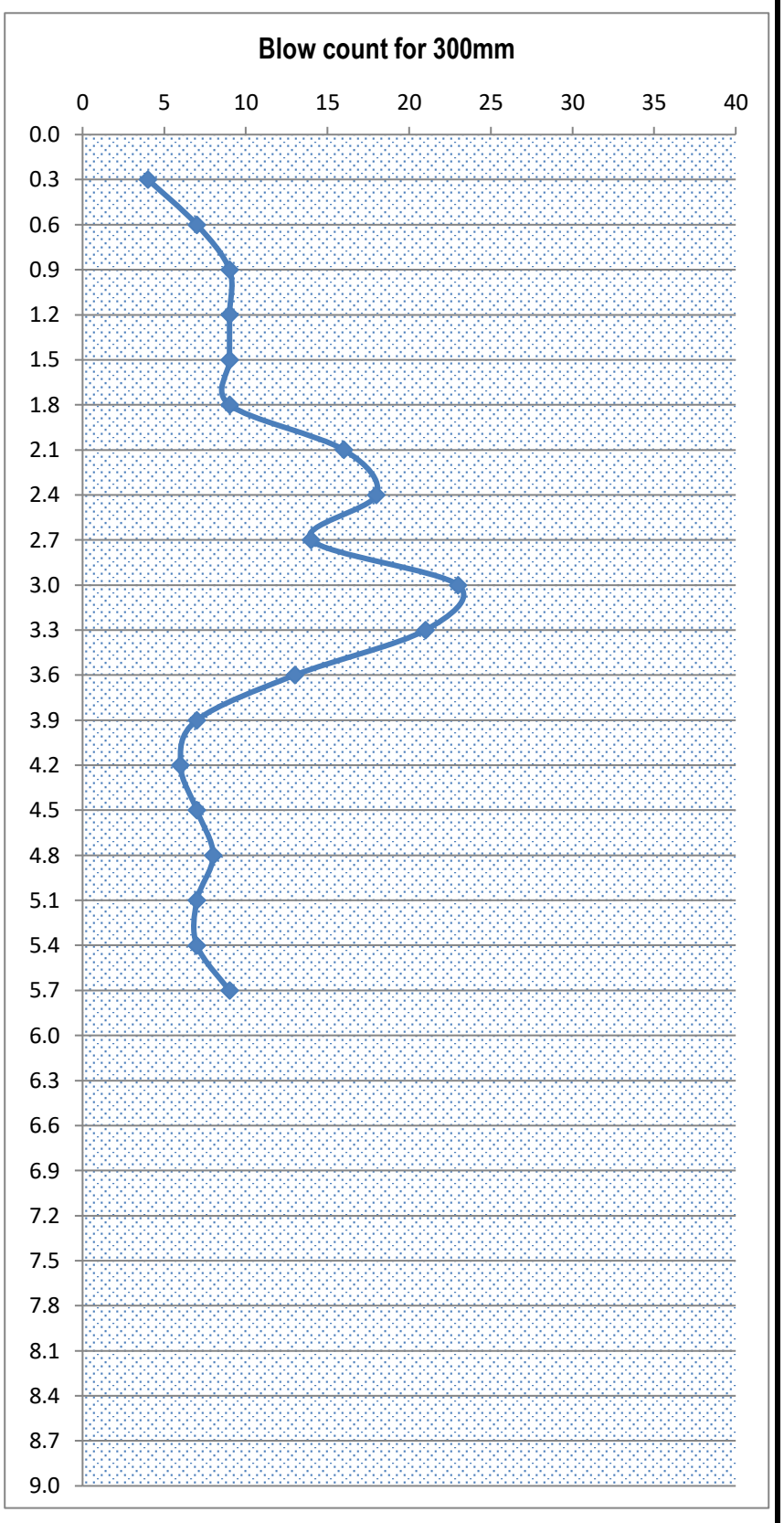
# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.11.06 |
| | | TOWER NO | LT 16-5 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 2 | 2 | 4 |
| 0.6 | 2 | 2 | 3 | 7 |
| 0.9 | 3 | 3 | 3 | 9 |
| 1.2 | 3 | 3 | 3 | 9 |
| 1.5 | 3 | 3 | 3 | 9 |
| 1.8 | 3 | 3 | 3 | 9 |
| 2.1 | 4 | 5 | 7 | 16 |
| 2.4 | 7 | 6 | 5 | 18 |
| 2.7 | 5 | 5 | 4 | 14 |
| 3.0 | 4 | 10 | 9 | 23 |
| 3.3 | 7 | 7 | 7 | 21 |
| 3.6 | 5 | 5 | 3 | 13 |
| 3.9 | 3 | 2 | 2 | 7 |
| 4.2 | 2 | 2 | 2 | 6 |
| 4.5 | 2 | 2 | 3 | 7 |
| 4.8 | 3 | 3 | 2 | 8 |
| 5.1 | 3 | 2 | 2 | 7 |
| 5.4 | 3 | 2 | 2 | 7 |
| 5.7 | 3 | 3 | 3 | 9 |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | 5500 mm | | |

T




| | | | |
|---|---|---|---|
| Hammer weight : 63.5 kg | Cone Diameter: 50mm | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered HB - Hammer Bouncing - No Penitration | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

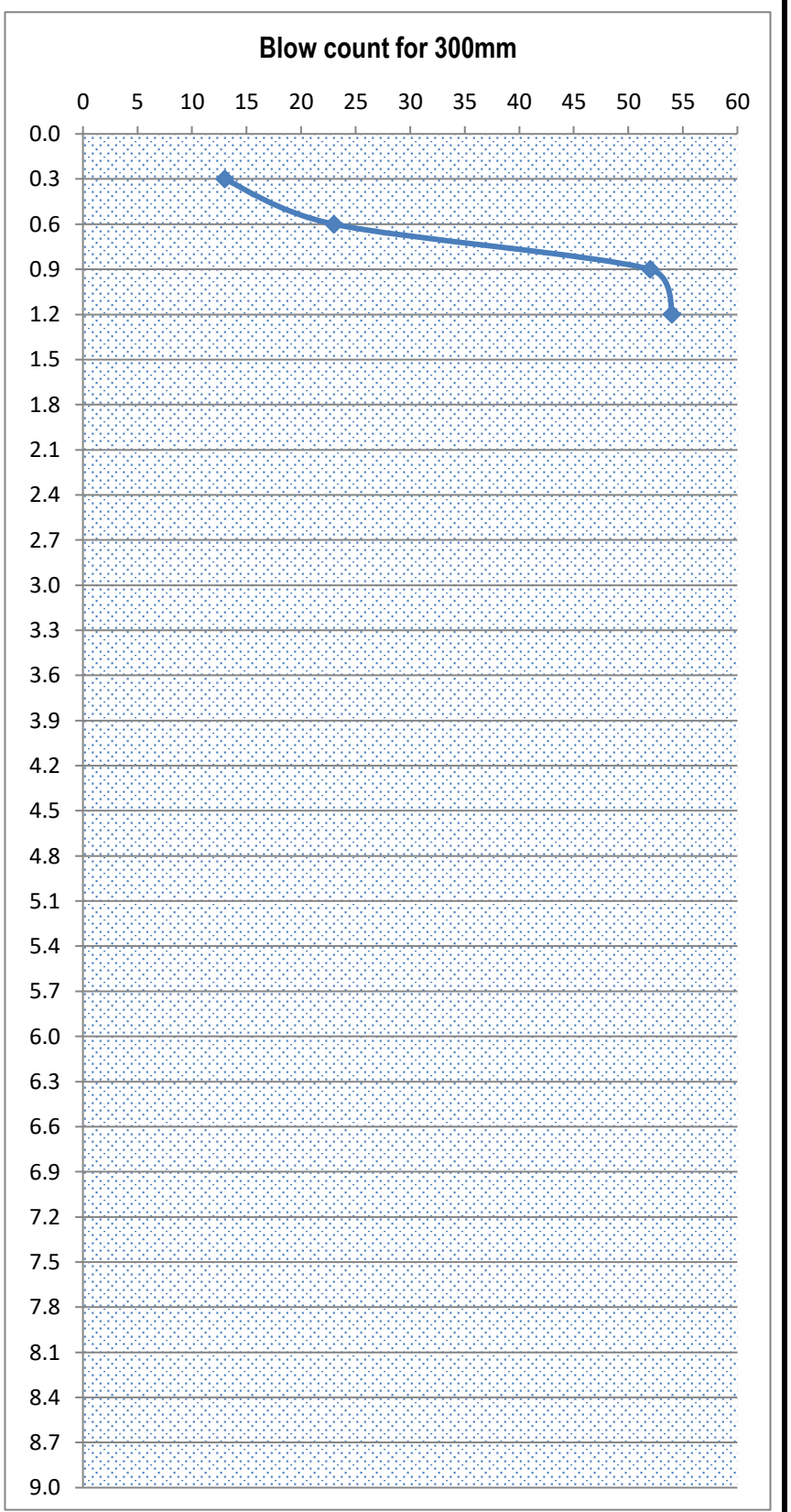
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.10 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | LT 21/3 Location 1 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 4 | 4 | 5 | 13 | |
| 0.6 | 5 | 7 | 11 | 23 | |
| 0.9 | 17 | 19 | 16 | 52 | |
| 1.2 | 30 | 24 | 0 | 54 | HB |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | T |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 1200 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

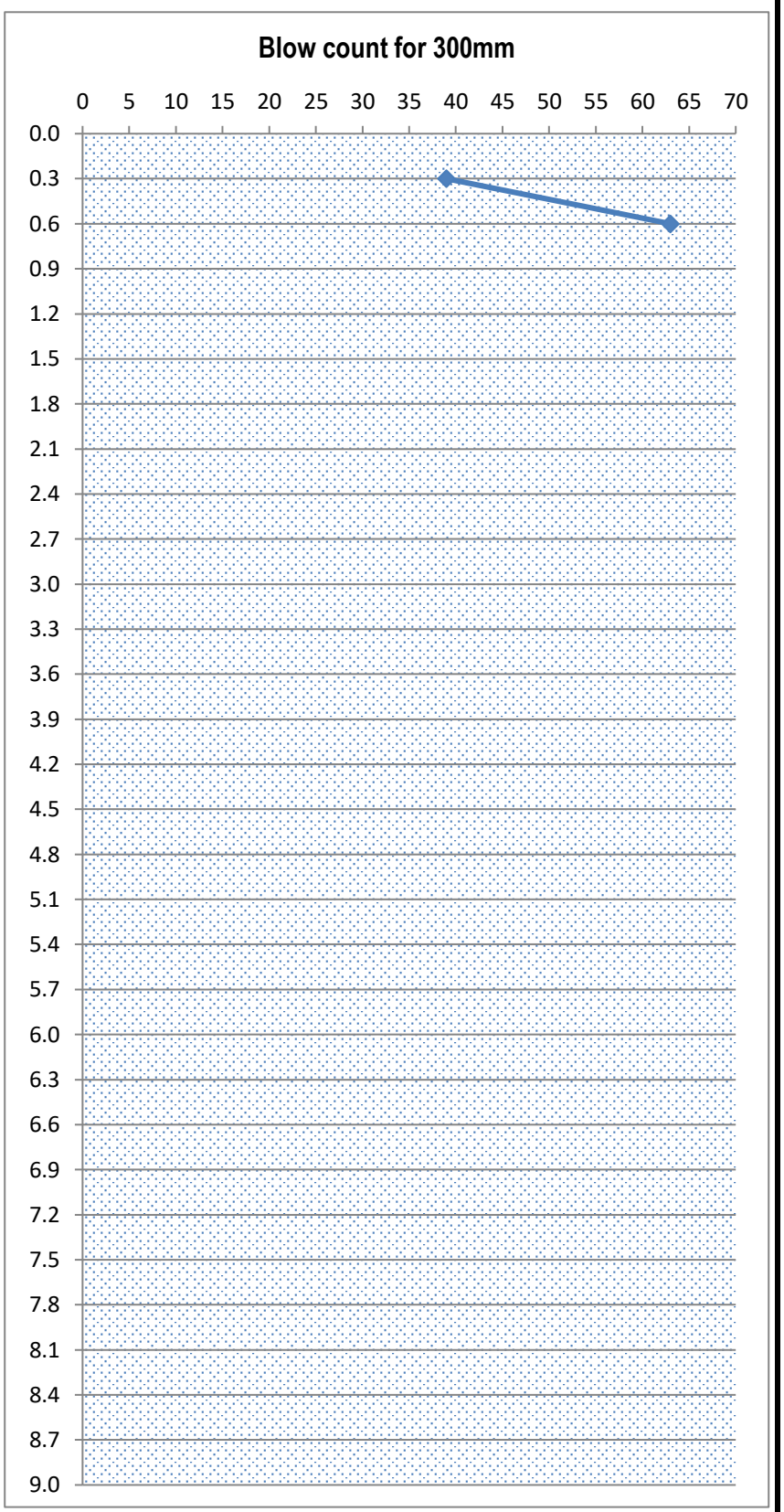
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.10 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| TOWER NO | LT 21/3 Location 2 | | |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 11 | 13 | 15 | 39 | |
| 0.6 | 23 | 40 | | 63 | HB |
| 0.9 | | | | | |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | T |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 600 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

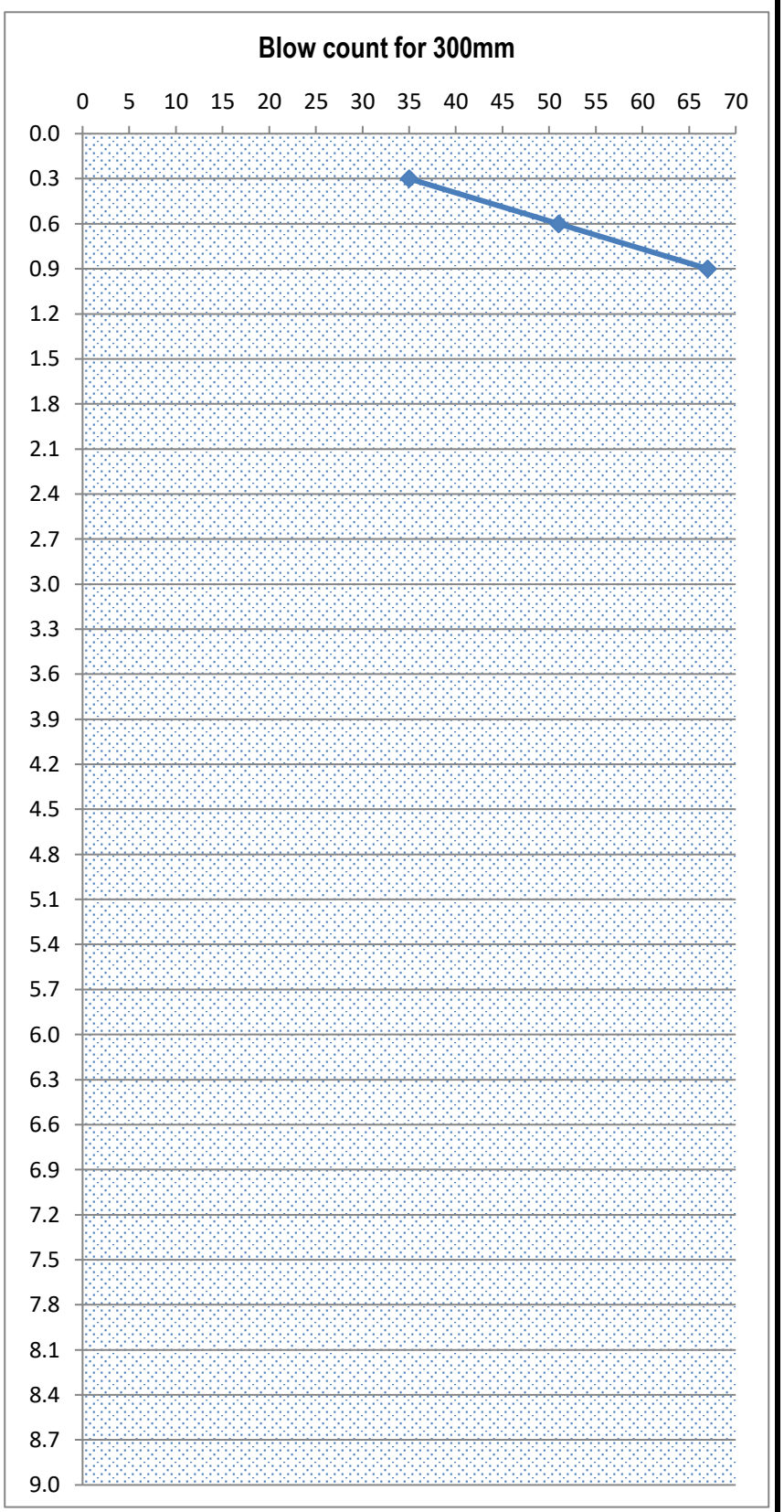
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.10 |
| | | TOWER NO | LT 21/3 Location 3 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 13 | 12 | 10 | 35 | |
| 0.6 | 15 | 19 | 17 | 51 | |
| 0.9 | 32 | 35 | | 67 | HB |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | T |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 900 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

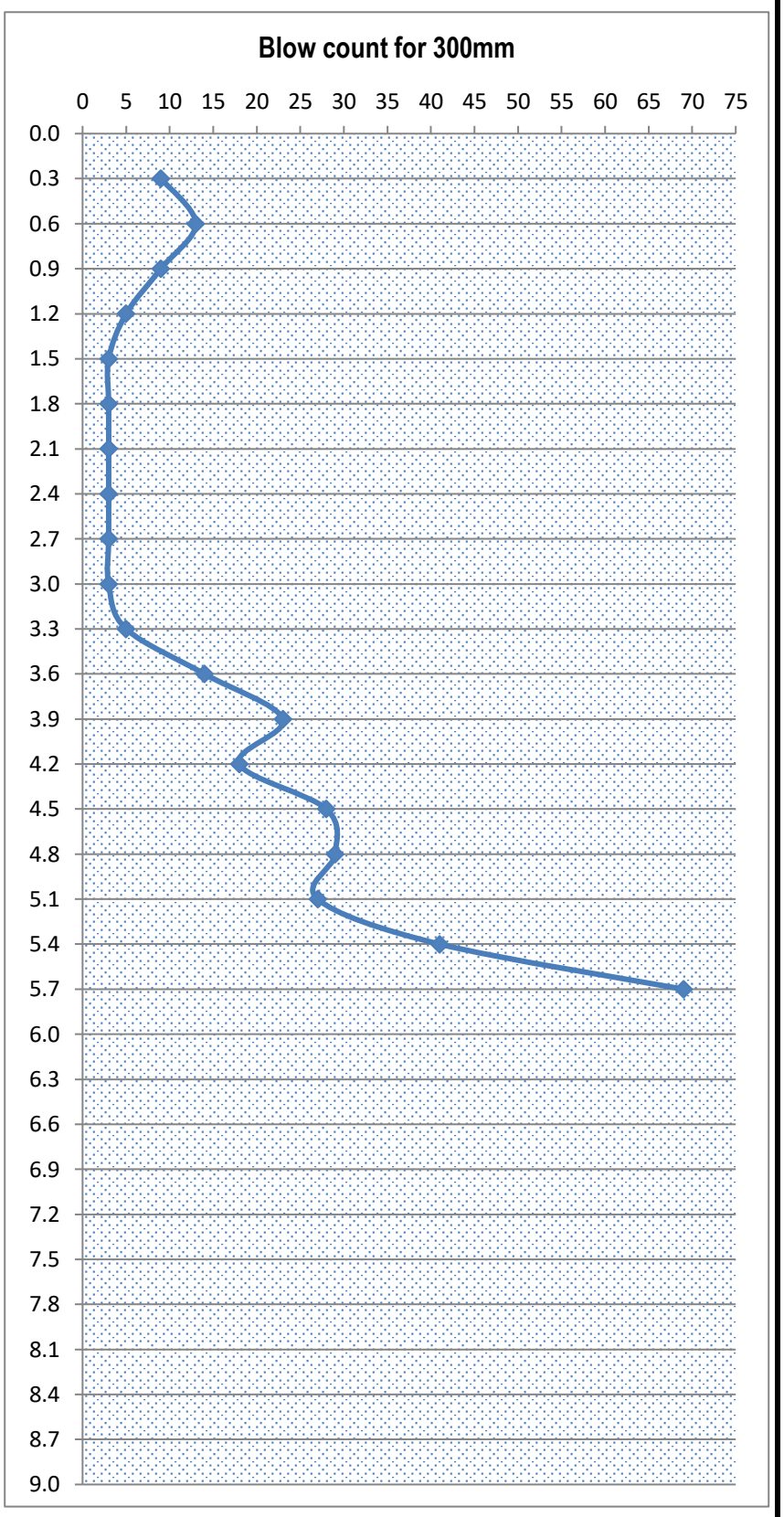
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.23 |
| | | TOWER NO | LT 4-4 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Marshy | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 4 | 5 | 9 |
| 0.6 | 5 | 5 | 3 | 13 |
| 0.9 | 3 | 3 | 3 | 9 |
| 1.2 | 2 | 2 | 1 | 5 |
| 1.5 | 1 | 1 | 1 | 3 |
| 1.8 | 1 | 1 | 1 | 3 |
| 2.1 | 1 | 1 | 1 | 3 |
| 2.4 | 1 | 1 | 1 | 3 |
| 2.7 | 1 | 1 | 1 | 3 |
| 3.0 | 1 | 1 | 1 | 3 |
| 3.3 | 1 | 2 | 2 | 5 |
| 3.6 | 3 | 5 | 6 | 14 |
| 3.9 | 7 | 8 | 8 | 23 |
| 4.2 | 6 | 6 | 6 | 18 |
| 4.5 | 8 | 10 | 10 | 28 |
| 4.8 | 13 | 7 | 9 | 29 |
| 5.1 | 9 | 9 | 9 | 27 |
| 5.4 | 11 | 15 | 15 | 41 |
| 5.7 | 16 | 16 | 37 | 69 |
| 6.0 | 45 | | | HB |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 6000 mm | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | Rod Diameter : 43.0mm | | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

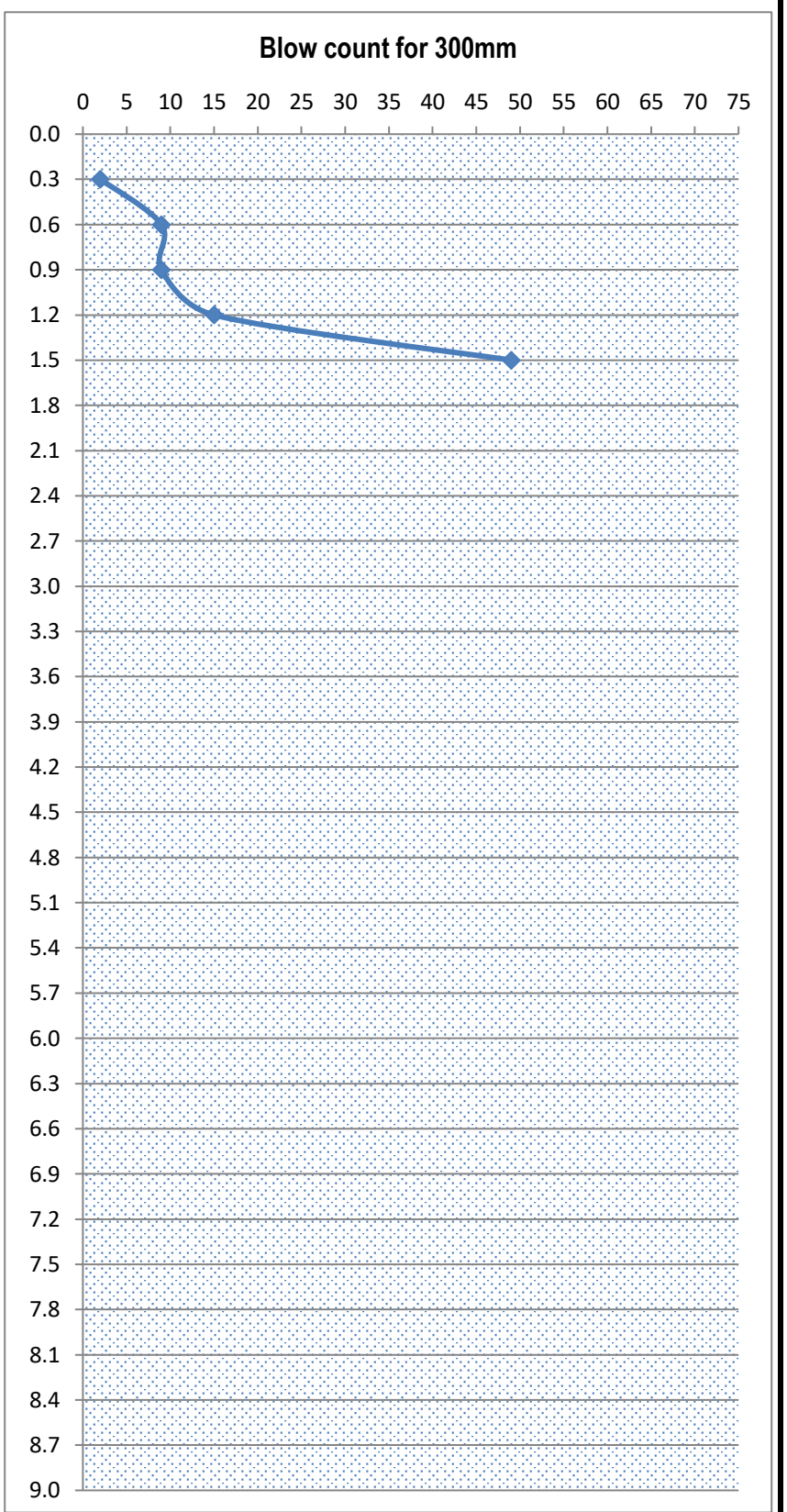
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.10.19 |
| | | TOWER NO | LT 18-1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Paddy | WEATHER | Cloudy |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 0 | 1 | 1 | 2 | |
| 0.6 | 4 | 2 | 3 | 9 | |
| 0.9 | 3 | 3 | 3 | 9 | |
| 1.2 | 5 | 4 | 6 | 15 | |
| 1.5 | 6 | 8 | 35 | 49 | HB |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 6000 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | Rod Diameter : 43.0mm | | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

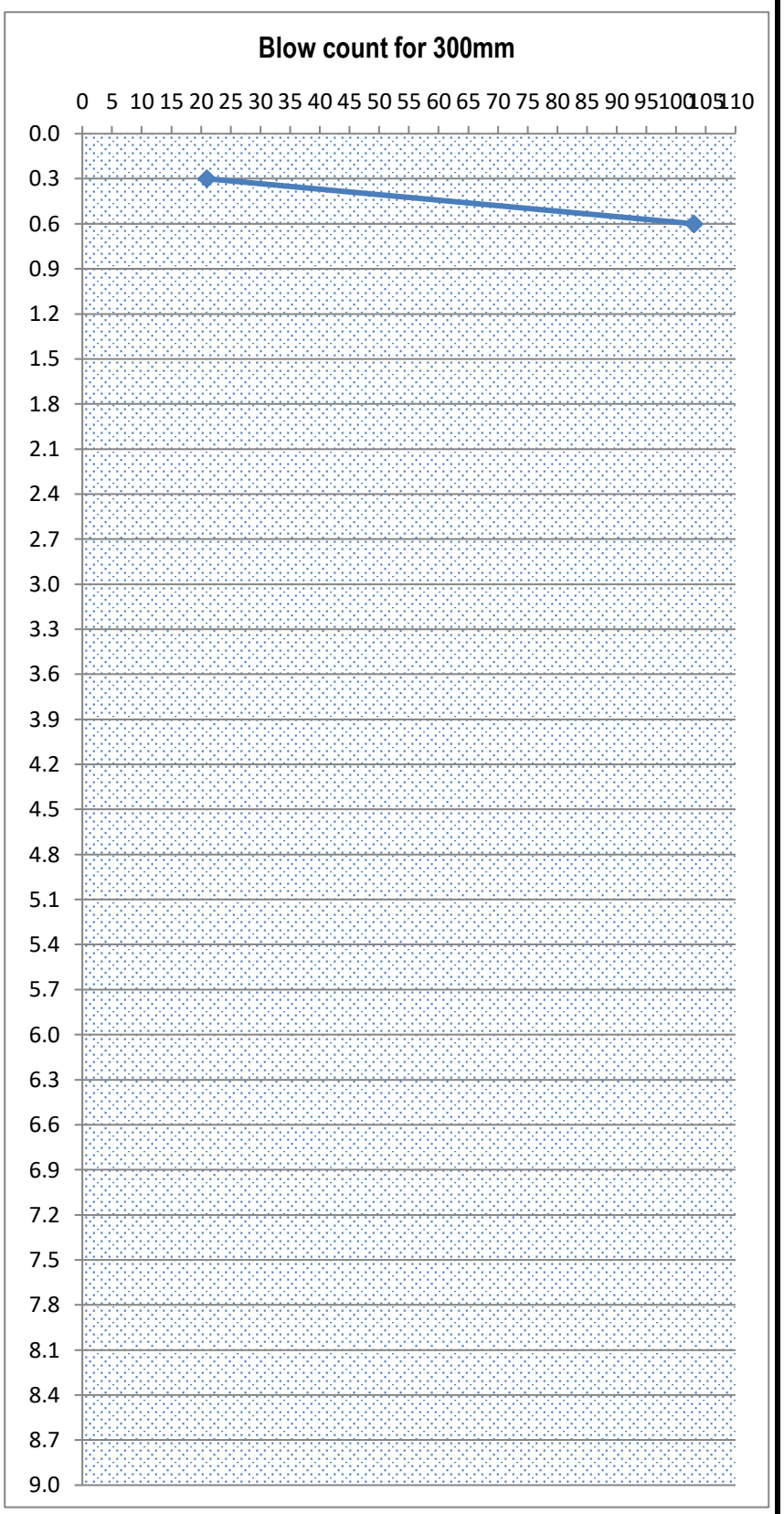
| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.20 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | LT 20-1 Location 1 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 5 | 16 | 21 |
| 0.6 | 23 | 30 | 50 | 103 |
| 0.9 | | | | |
| 1.2 | | | | |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 600 mm | |

HB




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | Rod Diameter : 43.0mm | | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

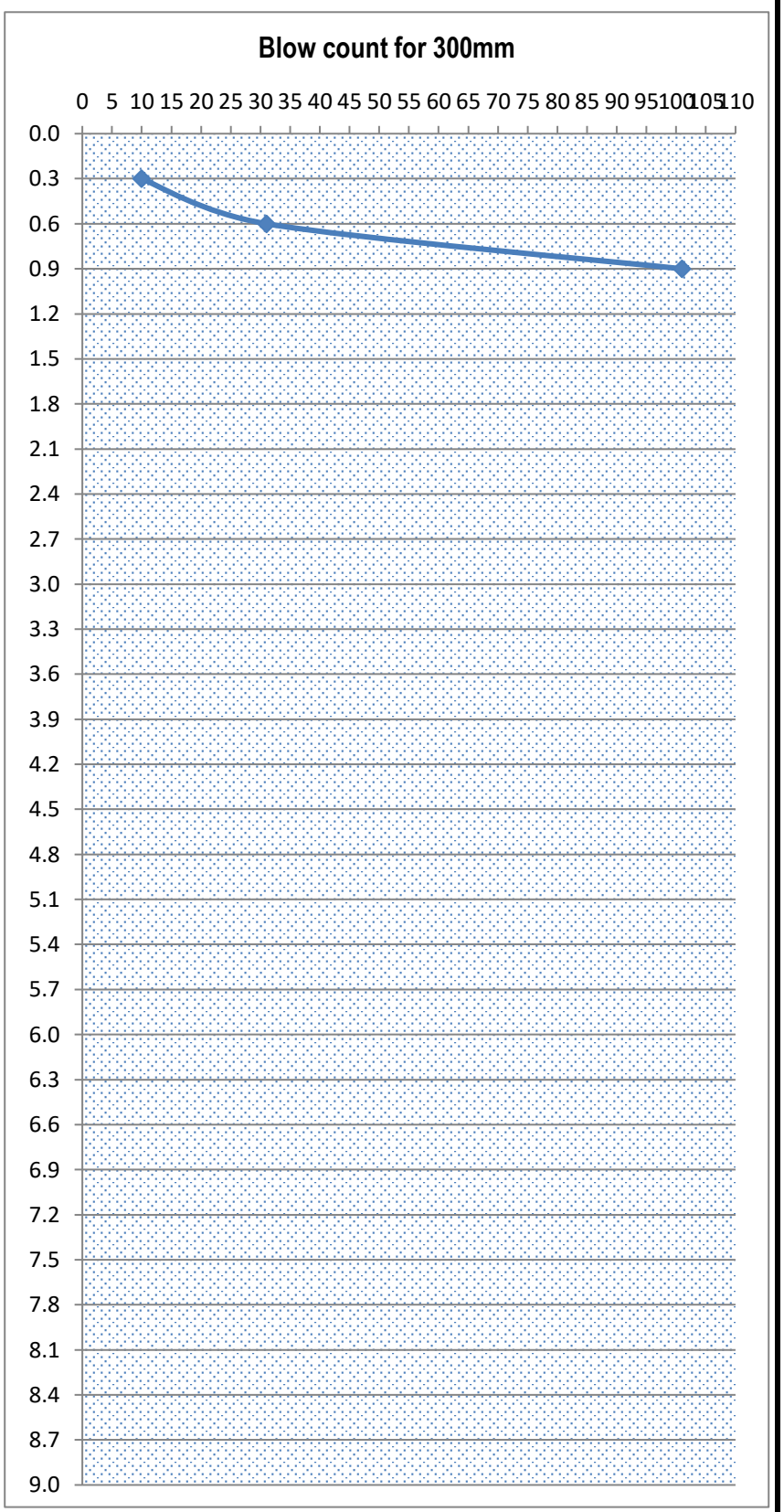
# CEYLON ELECTRICITY BOARD

| | |
|---|---|
| REPORT NO | SKTDP-DCPT-001 |
| TEST DATE | 2023.10.20 |

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TOWER NO | LT 20-1 Location 2 |
| DIVISION | TRANSMISSION PROJECTS | TEST NO | SKTDP-DCPT-T-001 |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | TEST LOCATION | |
| | | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 0 | 4 | 6 | 10 | |
| 0.6 | 5 | 8 | 18 | 31 | |
| 0.9 | 24 | 42 | 35 | 101 | HB |
| 1.2 | | | | | |
| 1.5 | | | | | |
| 1.8 | | | | | |
| 2.1 | | | | | |
| 2.4 | | | | | |
| 2.7 | | | | | |
| 3.0 | | | | | |
| 3.3 | | | | | |
| 3.6 | | | | | |
| 3.9 | | | | | |
| 4.2 | | | | | |
| 4.5 | | | | | |
| 4.8 | | | | | |
| 5.1 | | | | | |
| 5.4 | | | | | |
| 5.7 | | | | | |
| 6.0 | | | | | |
| 6.3 | | | | | |
| 6.6 | | | | | |
| 6.9 | | | | | |
| 7.2 | | | | | |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 900 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

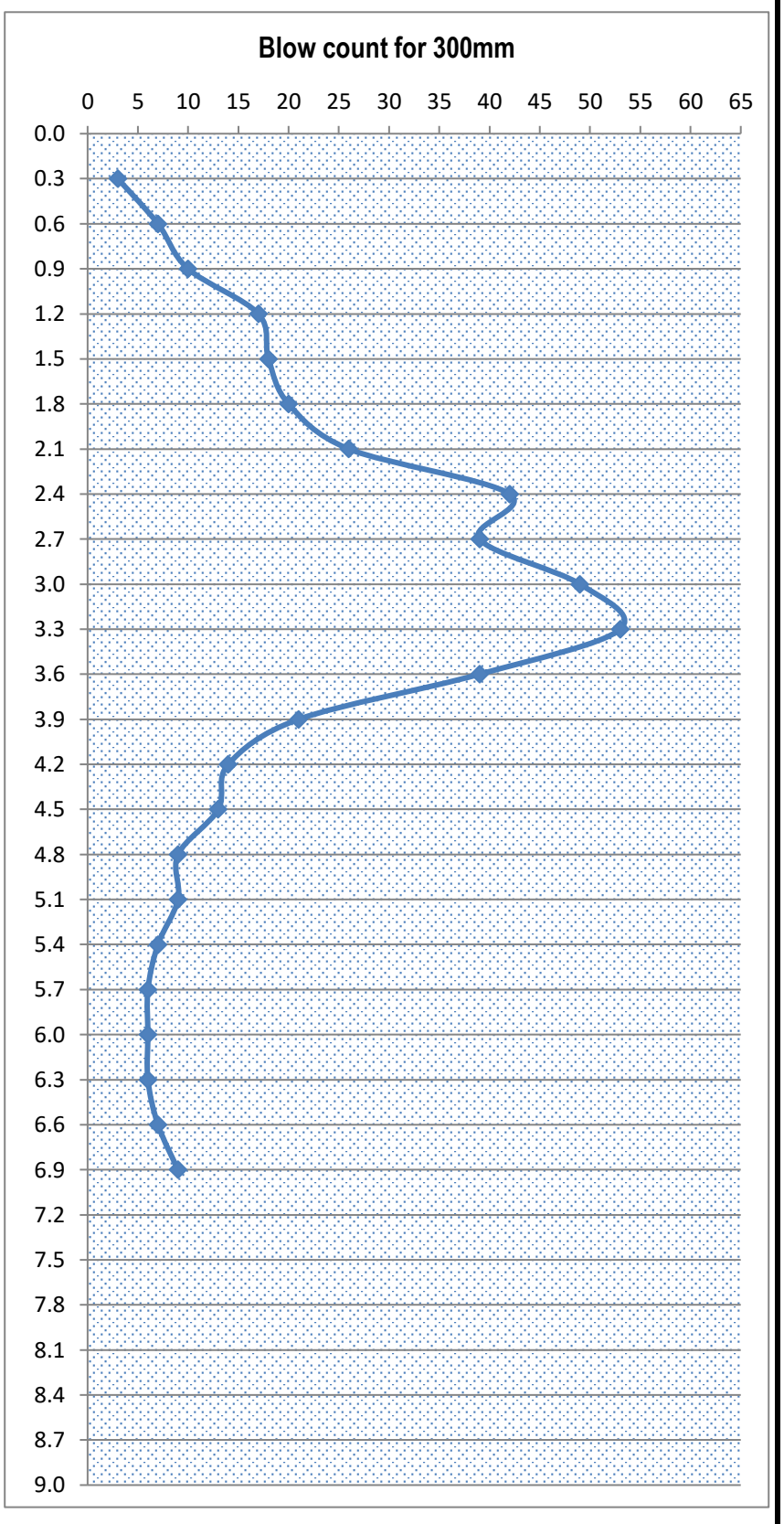
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.11.02 |
| | | TOWER NO | LT 13 - 1 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL | |
|---|---|---|---|---|---|
| 0.0 | | | | | |
| 0.3 | 0 | 1 | 2 | 3 | |
| 0.6 | 2 | 2 | 3 | 7 | |
| 0.9 | 3 | 3 | 4 | 10 | |
| 1.2 | 5 | 6 | 6 | 17 | HB |
| 1.5 | 6 | 6 | 6 | 18 | |
| 1.8 | 6 | 6 | 8 | 20 | |
| 2.1 | 8 | 9 | 9 | 26 | |
| 2.4 | 10 | 16 | 16 | 42 | |
| 2.7 | 12 | 12 | 15 | 39 | |
| 3.0 | 18 | 15 | 16 | 49 | |
| 3.3 | 17 | 18 | 18 | 53 | |
| 3.6 | 18 | 12 | 9 | 39 | |
| 3.9 | 7 | 7 | 7 | 21 | |
| 4.2 | 7 | 3 | 4 | 14 | |
| 4.5 | 5 | 4 | 4 | 13 | |
| 4.8 | 3 | 3 | 3 | 9 | |
| 5.1 | 3 | 3 | 3 | 9 | |
| 5.4 | 3 | 2 | 2 | 7 | |
| 5.7 | 2 | 2 | 2 | 6 | |
| 6.0 | 2 | 2 | 2 | 6 | |
| 6.3 | 2 | 2 | 2 | 6 | |
| 6.6 | 2 | 2 | 3 | 7 | |
| 6.9 | 3 | 3 | 3 | 9 | |
| 7.2 | 3 | | | | T |
| 7.5 | | | | | |
| 7.8 | | | | | |
| 8.1 | | | | | |
| 8.4 | | | | | |
| 8.7 | | | | | |
| 9.0 | | | | | |
| Refusal to Penetration at : | | | 7000 mm | | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

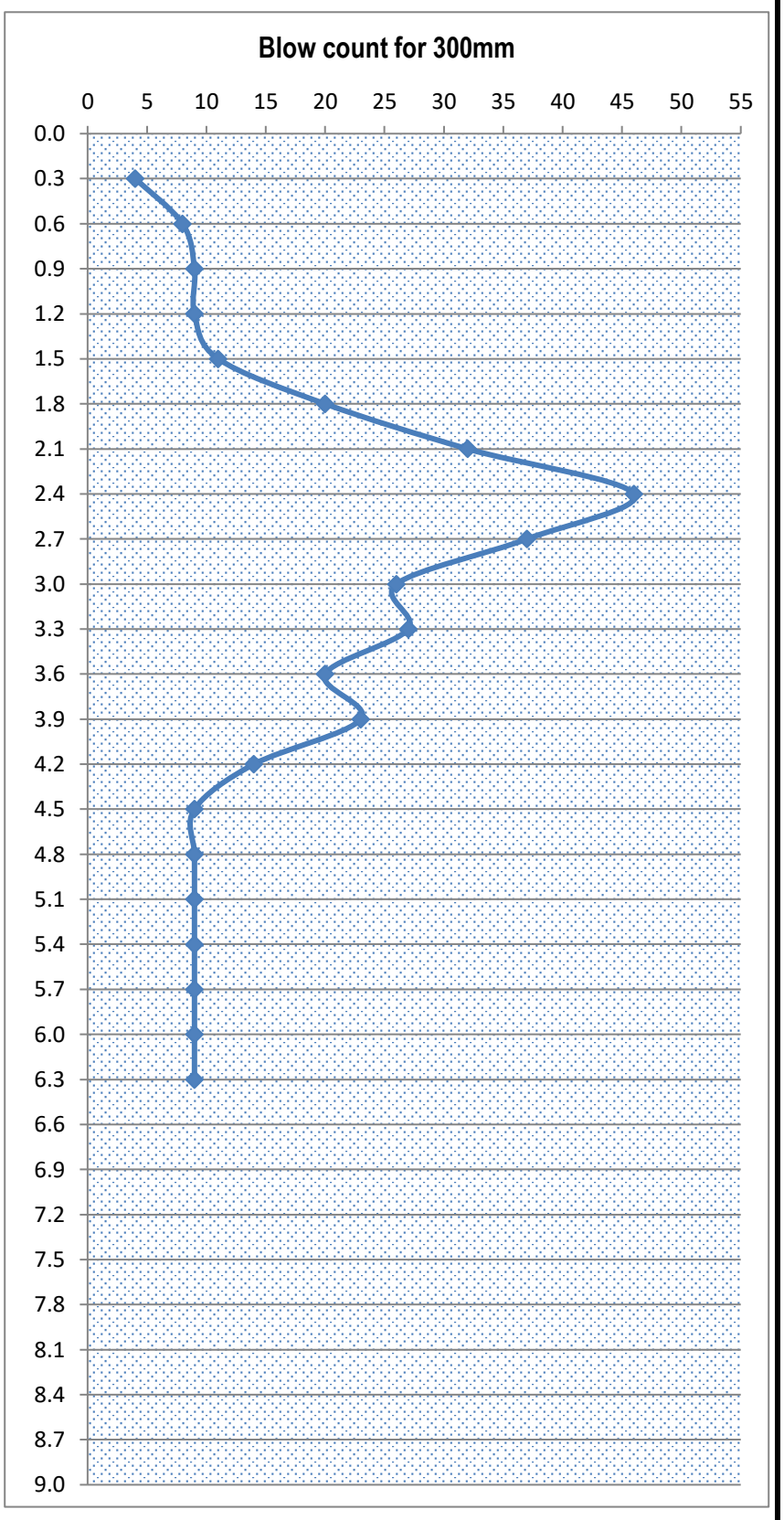
# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.11.05 |
| | | TOWER NO | LT 13-2 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Light Rain |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 2 | 2 | 4 |
| 0.6 | 2 | 3 | 3 | 8 |
| 0.9 | 3 | 3 | 3 | 9 |
| 1.2 | 3 | 3 | 3 | 9 |
| 1.5 | 3 | 4 | 4 | 11 |
| 1.8 | 5 | 7 | 8 | 20 |
| 2.1 | 8 | 10 | 14 | 32 |
| 2.4 | 14 | 16 | 16 | 46 |
| 2.7 | 15 | 12 | 10 | 37 |
| 3.0 | 8 | 9 | 9 | 26 |
| 3.3 | 9 | 9 | 9 | 27 |
| 3.6 | 7 | 6 | 7 | 20 |
| 3.9 | 8 | 8 | 7 | 23 |
| 4.2 | 5 | 5 | 4 | 14 |
| 4.5 | 3 | 3 | 3 | 9 |
| 4.8 | 3 | 3 | 3 | 9 |
| 5.1 | 3 | 3 | 3 | 9 |
| 5.4 | 3 | 3 | 3 | 9 |
| 5.7 | 3 | 3 | 3 | 9 |
| 6.0 | 3 | 3 | 3 | 9 |
| 6.3 | 3 | 3 | 3 | 9 |
| 6.6 | 3 | 0 | 0 | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 6400 mm | |

T




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | | Rod Diameter : 43.0mm | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

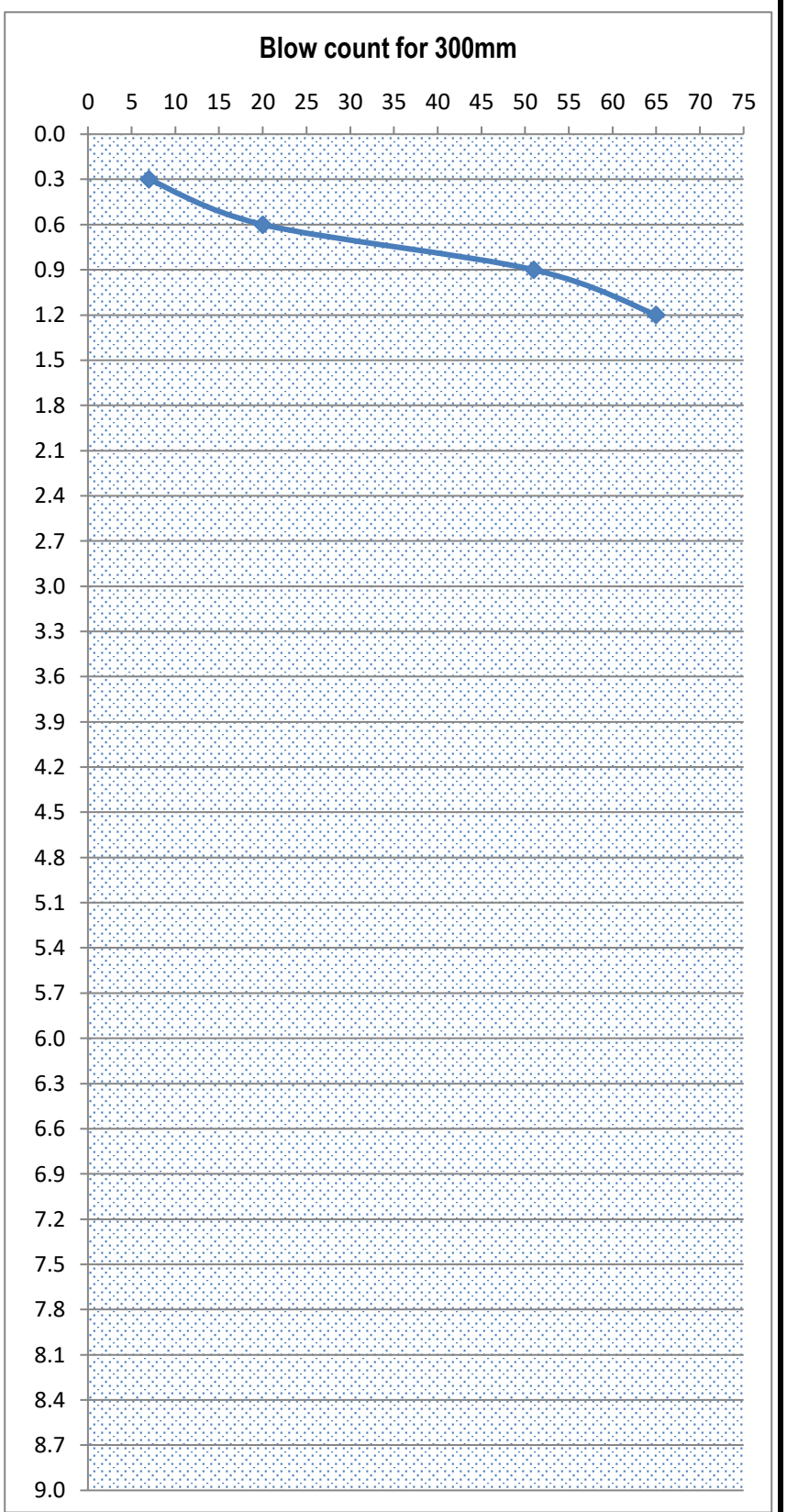
| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

# CEYLON ELECTRICITY BOARD

## DYNAMIC CONE PENETRATION TEST REPORT (DCPT)

| | | | |
|---|---|---|---|
| | | REPORT NO | SKTDP-DCPT-001 |
| | | TEST DATE | 2023.11.05 |
| | | TOWER NO | LT 01-2 |
| PROJECT | SAMPUR - KAPPALTHUREI TRANSMISSION DEVELOPMENT PROJECT | TEST NO | SKTDP-DCPT-T-001 |
| DIVISION | TRANSMISSION PROJECTS | TEST LOCATION | |
| SCOPE | SOIL INVESTIGATION WORKS OF 220 KV TRANSMISSION LINE FROM SAMPUR TO KAPPALTHUREI | CORDINATES E | |
| | | N | |
| | | ELEVATION | |
| LAND USE | Forest | WEATHER | Sunny |
| TEST METHOD | BS 1377: PART 9: 1990: 3.2 | G/ W LEVEL | |

| DEPTH (m) | NO OF BLOWS | | | TOTAL |
|---|---|---|---|---|
| 0.0 | | | | |
| 0.3 | 0 | 3 | 4 | 7 |
| 0.6 | 5 | 7 | 8 | 20 |
| 0.9 | 9 | 12 | 30 | 51 |
| 1.2 | 30 | 35 | | 65 HB |
| 1.5 | | | | |
| 1.8 | | | | |
| 2.1 | | | | |
| 2.4 | | | | |
| 2.7 | | | | |
| 3.0 | | | | |
| 3.3 | | | | |
| 3.6 | | | | |
| 3.9 | | | | |
| 4.2 | | | | |
| 4.5 | | | | |
| 4.8 | | | | |
| 5.1 | | | | |
| 5.4 | | | | |
| 5.7 | | | | |
| 6.0 | | | | |
| 6.3 | | | | |
| 6.6 | | | | |
| 6.9 | | | | |
| 7.2 | | | | |
| 7.5 | | | | |
| 7.8 | | | | |
| 8.1 | | | | |
| 8.4 | | | | |
| 8.7 | | | | |
| 9.0 | | | | |
| Refusal to Penetration at : | | | 1100 mm | |




| | | | | | |
|---|---|---|---|---|---|
| Hammer weight : 63.5 kg | | Cone Diameter: 50mm | Rod Diameter : 43.0mm | | Drop Height : 760 mm |
| Note: NE - Not Encountered | HB - Hammer Bouncing - No Penitration | | | Termination | 600 mm |

| | | | | | |
|---|---|---|---|---|---|
| Prepared By | | Checked By | | Date | |

## 15.21 GPS Coordinates of Tower Locations

Coordinates are given in WGS 1984

| Tower | N | E |
|---|---|---|
| TT1 KP | 8.549 | 81.130 |
| AP1 | 8.545 | 81.130 |
| 1/1 | 8.543 | 81.127 |
| 1/2 | 8.541 | 81.124 |
| AP2 | 8.540 | 81.122 |
| 2/1 | 8.536 | 81.122 |
| 2/2 | 8.533 | 81.121 |
| AP3 | 8.529 | 81.121 |
| AP4 | 8.526 | 81.122 |
| 4/1 | 8.523 | 81.120 |
| 4/2 | 8.520 | 81.119 |
| 4/3 | 8.517 | 81.117 |
| 4/4 | 8.514 | 81.116 |
| 4/5 | 8.510 | 81.114 |
| AP5 | 8.506 | 81.112 |
| 5/1 | 8.503 | 81.112 |
| 5/2 | 8.499 | 81.112 |
| 5/3 | 8.496 | 81.112 |
| AP6 | 8.492 | 81.113 |
| 6/1 | 8.488 | 81.113 |
| AP7 | 8.483 | 81.114 |
| 7/1 | 8.480 | 81.116 |
| 7/2 | 8.477 | 81.119 |
| 7/3 | 8.474 | 81.121 |
| AP8 | 8.471 | 81.124 |
| 8/1 | 8.469 | 81.127 |
| 8/2 | 8.467 | 81.130 |
| 8/3 | 8.466 | 81.133 |
| 8/4 | 8.464 | 81.136 |
| 8/5 | 8.462 | 81.140 |
| 8/6 | 8.461 | 81.143 |
| 8/7 | 8.459 | 81.146 |

| Tower | N | E |
|---|---|---|
| 8/8 | 8.457 | 81.150 |
| AP9 | 8.456 | 81.152 |
| 9/1 | 8.452 | 81.153 |
| AP10 | 8.448 | 81.154 |
| 10/1 | 8.446 | 81.157 |
| 10/2 | 8.444 | 81.159 |
| 10/3 | 8.442 | 81.162 |
| 10/4 | 8.440 | 81.164 |
| AP11 | 8.437 | 81.167 |
| 11/1 | 8.437 | 81.171 |
| 11/2 | 8.437 | 81.174 |
| 11/3 | 8.437 | 81.178 |
| 11/4 | 8.437 | 81.182 |
| AP12 | 8.437 | 81.185 |
| 12/1 | 8.435 | 81.189 |
| 12/2 | 8.433 | 81.193 |
| 12/3 | 8.432 | 81.197 |
| AP13 | 8.430 | 81.200 |
| 13/1 | 8.428 | 81.204 |
| 13/2 | 8.426 | 81.207 |
| AP14 | 8.424 | 81.210 |
| AP15 | 8.422 | 81.212 |
| 15/1 | 8.420 | 81.215 |
| 15/2 | 8.419 | 81.219 |
| 15/3 | 8.417 | 81.223 |
| 15/4 | 8.416 | 81.226 |
| 15/5 | 8.414 | 81.230 |
| 15/6 | 8.413 | 81.233 |
| 15/7 | 8.411 | 81.237 |
| 15/8 | 8.410 | 81.240 |
| 15/9 | 8.408 | 81.244 |
| 15/10 | 8.407 | 81.248 |

| Tower | N | E |
|---|---|---|
| AP16 | 8.405 | 81.251 |
| 16/1 | 8.407 | 81.255 |
| 16/2 | 8.408 | 81.258 |
| 16/3 | 8.410 | 81.261 |
| 16/4 | 8.411 | 81.264 |
| 16/5 | 8.413 | 81.267 |
| 16/6 | 8.414 | 81.271 |
| AP17 | 8.416 | 81.274 |
| 17/1 | 8.417 | 81.278 |
| 17/2 | 8.418 | 81.281 |
| AP18 | 8.419 | 81.285 |
| 18/1 | 8.420 | 81.287 |
| AP19 | 8.421 | 81.289 |
| 19/1 | 8.424 | 81.291 |
| 19/2 | 8.426 | 81.294 |
| 19/3 | 8.429 | 81.296 |
| 19/4 | 8.432 | 81.299 |
| 19/5 | 8.434 | 81.301 |
| 19/6 | 8.437 | 81.304 |
| 19/7 | 8.440 | 81.306 |
| AP20 | 8.442 | 81.309 |
| 20/1 | 8.446 | 81.309 |
| 20/2 | 8.449 | 81.308 |
| AP21 | 8.453 | 81.308 |
| 21/1 | 8.456 | 81.309 |
| 21/2 | 8.459 | 81.310 |
| 21/3 | 8.462 | 81.312 |
| 21/4 | 8.465 | 81.313 |
| AP22 | 8.467 | 81.314 |
| 22/1 | 8.471 | 81.314 |
| TT2 SP | 8.474 | 81.314 |

## 15.22 Survey form used to collect data

## Household Survey for the Proposed Transmission Line from Sampur Grid station to Kappalthurai Grid station In Trincomalee District-2025.

*Introduction.*

*This survey is conducted with reference to a sample of 20% of the householders affected by the proposed power project related activities and the primary purpose is to gather information for writing the report on environmental and social impacts of the proposed power project. The sample is randomly selected as required* ***for ensuring proportional representation for affected households and land users in each DS Division.*** *Your cooperation is highly appreciated. Those who are not selected should not be worried as this survey is only for the above social assessment and it is not used for any other official purposes. And for compensation and other official purposes all the affected individuals, families and parties are considered by the relevant DS office and the CEB duly.*

**Survey Questionnaire**

1.District……..

2. Divisional Secretariat…….

3. GN division and Number……..

4.Village name or the name of the residential area……

5. Name of the householder…….

6. Civil status. A. Married… .B. Unmarried……. C. Divorced…… D. Separated……. E.. Widor…… F. Widower…….

7. Total number of family members…….

8.Number of Family members currently living in the same household……

Provide the following details of family members

| | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|
| | Name | Gender-Male/Female | Relationship to the householder -Wife, Son, Daughter, Nephew, Relative, | Age | Educational Qualification -Write the grade or exams passed. | Occupation | Health condition -Good or any disease or disability. |
| 1 | | | | | | | |
| 2 | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |

16.Ethnicity. ----------

17. Religion. ----------

18.Mother tongue……..

19. Other languages you speak…….

20. How long have you been living in this village. Years……..

21. Was your family displaced by the war……. if yes how long…….

22 When did you resettle…….

23. Did you resettle on your own land……

Provide the following information with your house

24. Do you have electricity…….

25 Do you use electricity for cooking meals….

26. What are the electric kitchen wares you have bought…….

27. Are you concerned with reducing electricity consumption…….

28. Do you use LED bulbs…

Provide the following information related to the proposed project activities.

29. Does the Transmission line passes on your home garden……

30 Is your house is affected by the Transmission line…… If Yes How…….

31 Is there any other building affected by the Tower and/or Transmission line…… if Yes what are those buildings and how they are affected…… write in details…..

32 Do you have a paddy land affected by this project…….

33. How you get water for the paddy land…A. Irrigation cannel….. B. Rainfed…. C. Other…….

34. Do you object to this project... If yes write the reasons for objecting…….

35. Do you like this project…. If yes write the reasons……..

36. What do you expect to replace the loss of home garden trees……

37. What do you expect as benefit from the proposed power project and the CEB……

38. What do you expect to cover the loss of a plot of land for the tower footings if such an impact is there on your lands……

39. Write your monthly expenditure for the following items

| | Type of expenses | Amount in Rs. |
|---|---|---|
| 1 | Foods | |
| 2 | Electricity Bill | |
| 3 | Medicine | |
| 4 | Education of children | |
| 5 | All the other expenses | |

40 Write your means of income and monthly amount of income

41. Write anything you have to inform the CEB on this proposed project……..