




**GENERAL DIRECTORATE OF
TURKISH STATE RAILWAYS**

**TCDD MAINTENANCE MODERNIZATION PROJECT
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)
ANKARA
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TCDD-ESMP

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TCDD Maintenance Modernization Project

Environmental and Social Management Plan (ESMP)

I. Introduction

TCDD Maintenance Modernization Project (“the Project”) has been planned and prepared by the Turkish State Railways (TCDD), operating under the Ministry of Transport and Infrastructure (MoTI), to ensure effective implementation and compliance with national legislation. The Project will also be implemented in accordance with the environmental and social policies (ESP) of the Asian Infrastructure Investment Bank (AIIB).

Railway maintenance machinery to be procured under the Project will be used in the construction and maintenance of railway superstructure and catenary lines as part of the maintenance and modernization of TCDD's national railway network. The Project will also ensure that TCDD personnel receive targeted training to use this machinery. By strengthening institutional capacity, the Project will make a significant contribution to the long-term sustainability of Türkiye's railway operations.


All machinery to be procured under the TCDD Maintenance Modernization Project, including equipment for track maintenance, catenary line maintenance, ballast regulation and the procurement and inspection of general inspection equipment shall comply with the TS EN ISO 14001:2015 standard, as reviewed in 2023. This ensures alignment with internationally recognized environmental management practices. Activities such as the identification and control of environmental risks, legal and corporate compliance, sustainability and efficient use of resources, auditing and continuous improvement, and ensuring stakeholder confidence will be carried out within the scope of the Environmental Management System (EMS).

This Environmental and Social Management Plan (ESMP) has been prepared for 99 machines to be procured under the TCDD Maintenance Modernization Project.

II. Project Background

The Project consists of two components: (i) the procurement of railway maintenance machinery and (ii) the strengthening of institutional capacity. With the aim of modernizing railway maintenance activities and increasing operational efficiency, the Project will add 99 railway maintenance machines to the inventory of TCDD, with financing provided from AIIB, and a training program will be prepared within the framework of the ESMP.

- a. **Component A: Maintenance Machine Procurement:** This will cover 99 machines to be procured with AIIB financing.
- b. **Component B: Institutional Capacity Strengthening:** TCDD will implement an ESMP training program that will focus on the identified environmental and social risks, address all necessary training and capacity needs, and include measures to prevent, minimize and mitigate adverse impacts. The training program will cover a comprehensive range of topics

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to enable all Project participants to effectively and responsibly carry out their roles. The Environmental and Social (ES) curriculum will include, but will not be limited to, the following topics:

- **Objectives of Environmental and Social Management Plan (ESMP):** Understanding the role and importance of the ESMP regarding the Project activities.
- **Environmental and Social Sensitivities:** Recognizing and understanding sensitive environmental and social factors within and around the Project area.
- **Awareness of Potential Risks and Impacts:** Increasing awareness of possible risks and impacts associated with Project activities.
- **Grievance Redress Mechanism (GRM):** Information on the grievance redress mechanism developed for the Project, including processes, procedures, service standards, communication channels, and employee rights.
- **Occupational Health and Safety, First Aid and Emergency Preparedness:** Health and safety training in the workplace, first aid techniques and emergency preparedness for the safe operation and use of each machine.
- **Code of Conduct:** Instructions regarding professional code of conduct.
- **Training on Gender Equality and Prevention of Violence Against Women:** Training covering gender-based violence (GBV) and aspects of building a trust-based community.
- **Waste Management Training:** Guidelines for waste classification, storage and environmental planning.
- **Training on Pollution Prevention and Resource Efficiency:** Understanding sources and types of pollution, importance of pollution prevention for environmental protection, as well as the concepts of resource efficiency and sustainability.

This training program is designed to ensure full compliance with occupational health and safety, social security, ethical behavior principles and environmental protection standards enabling all Project participants to contribute to the success of the Project. Details of the training currently available for the Contractor and TCDD under the ESMP requirements are presented in **Table 1**.




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Table 1. Consolidated Training Program

Training Elements	Special Training Topics	Responsible Party	Target Group	Period	Budget
Environmental Management	<ul style="list-style-type: none"> ▪ ISO 14001:2015 Training on Environmental Management System ▪ Training on Zero Waste Awareness ▪ TCDD Zero Waste Practices Training ▪ Introduction to Climate Crisis Training ▪ Energy Efficiency 	▪ TCDD	TCDD Staff	For once, following the completion of Provisional Acceptance Activities and arrival of machine in Türkiye	No additional cost (TCDD Academy)
OHS Management	<ul style="list-style-type: none"> ▪ Basic First Aid ▪ Refresher Training on Occupational Health and Safety ▪ Emergency Training ▪ Use of Personal Protective Equipment ▪ Causes of Work Accidents and Measures to be Taken ▪ Training on Working at Heights ▪ Basic Training on Safety Management System 	▪ TCDD	TCDD Staff	For once, following the completion of Provisional Acceptance Activities and arrival of machine in Türkiye	No additional cost (TCDD Academy)
Training on Railway Safety Rules (551) (Online)	<ul style="list-style-type: none"> ▪ Railway Safety Rules ▪ Safety in Railway Operations Principles and Rules for Ensuring Safety of Trains and Employees ▪ Accidents and Emergency ▪ Hazardous and Safe Area ▪ Safety Measures ▪ Work Permit Requests ▪ Safety Plans 	▪ Contractor	Contractor Staff	For once, following the completion of Provisional Acceptance Activities and arrival of machine in Türkiye	No additional cost (Training Fee of 1.200,00 TL will be covered by the Contractor. TCDD/Directorate of Ankara Training Center)

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Training Elements	Special Training Topics	Responsible Party	Target Group	Period	Budget
Workforce Management	<ul style="list-style-type: none"> ▪ Behavioral Patterns (TCDD Academy) ▪ Railway Maintenance Machine Operator Refresher Training (TCDD Academy) ▪ Training on Gender Equality in the Workplace Based on Human Rights (Presidency Distance Education Portal (CUEK) ▪ Training on the Psychological and Social Dimensions of Violence (CUEK) ▪ Training on the Legal Dimension of Combating Violence Against Women (CUEK) ▪ Training on Diversity, Equity, and Inclusion with Gender Perspective (TCDD Academy) ▪ Training on Gender Equality for Inclusive Work Environment (TCDD Academy) ▪ Training on Agile Stakeholder Interaction and Team Development (TCDD Academy) ▪ Training on Law No. 3071 on the Exercise of the Right to Petition and Law No. 4982 on the Right to Access Information (CUEK) 	▪ TCDD	TCDD Staff	For once, following the completion of Provisional Acceptance Activities and arrival of machine in Türkiye	No additional cost

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Suppliers shall also obtain the Environmental, Health and Safety, and Labour Management training courses and their corresponding training certificates specified in Table 1 through their own companies.

It is intended that the Occupational Health and Safety Knowledge Refresher Training included in OHS Management Training shall be conducted once a year. These trainings are regularly conducted online and free of charge once a year for relevant TCDD personnel. There is no limit on the number of participants.

The Railway Safety Rules (551) Training that suppliers will receive online is provided to TCDD personnel working in the field as basic training. The mentioned training, which was conducted face-to-face before the pandemic, is now conducted online. In addition, the participants are required to take an exam at the end of the training and get the training certificate of completion.

TCDD has taken the following measures to ensure that emergency protocols are correctly and fully implemented during the online training of the Railway Safety Rules (551):

- **Scenario-Based Training Modules:**

The training content is structured to include possible emergency scenarios. Participants learn interactively what actions to take in critical situations such as fire, collision, derailment and signal failure.

- **Visual and Audio Materials:**

Emergency procedures are supported by animations, videos, and simulations enabling participants to apply their theoretical knowledge into practice.

- **Live Question-and-Answer and Feedback Mechanism:**


Interactive sessions with the trainer are organized during the training process, allowing participants to directly ask questions and clarify any issues they may have.

- **Mandatory Assessment and Exams:**

To measure the correct understanding of emergency procedures, participants are required to take mandatory exams at the end of the training; those who do not meet the success criteria are required to repeat the training until they pass it.

- **Recording and Monitorability:**

All online sessions are recorded, and the training process and participant performance are monitored through digital systems. This allows for intervention if any deficiencies in the training are identified.

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III. Machine Procurement

The procurement process of 99 railway maintenance machines under the Project will consider not only technical and financial capability but also ES responsibility criteria.

In this context,


- Special paragraphs regarding Environmental, Health, and Safety requirements will be added to the procurement documents.
- Suppliers will be required to comply with international good industry practices such as waste management, worker's health and safety, emission control and noise reduction.
- All suppliers will comply with the Environmental and Social Exclusion List (ESEL) of AIIB and observe national legislation.
- Necessary measures will be taken during the delivery and handover phases in order to ensure the safe transportation and installation of machine without causing harm to the environment and communities around.
- The actions taken will be monitored by TCDD for guidance purposes.

The roles and responsibilities for the processes mentioned above are defined as follows:

a. Role of Suppliers:

- They are responsible for taking the necessary measures to avoid harming the environment during transportation, unloading, temporary storage, and installation activities.
- They have to ensure the use of personal protective equipment (PPE) in accordance with occupational health and safety standards, maintain a safe working area and conduct risk assessments.
- They shall prepare and implement plans to prevent risks such as possible leakage, spillage or noise pollution during transportation.
- Any waste generated (packaging materials, oil, fuel, etc.) shall be collected and disposed of in accordance with environmental legislation.
- They must ensure no harmful or adverse impacts occur to communities during transportation and installation. If any such impact arises, full restoration must be guaranteed.
- They shall be responsible for ensuring compliance with the AIIB's ESEL, including the prohibition of forced labor and child labor in the supply chain.

The contractor shall immediately notify TCDD of any negative environmental and social issues that may arise during the transportation phase.

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b. Role of TCDD:

- TCDD will monitor suppliers' compliance with environmental and social requirements and conduct regular on-site inspections.
- It will check the environmental suitability and safety of sites prior to installation and coordinate the necessary access and safety measures.
- In the event of any environmental incident, accident or non-compliance, it will ensure that corrective actions are initiated and reported to the AIIB.
- It will also ensure that the staff, including TCDD staff and those working with suppliers, are informed about environmental and occupational safety issues.
- It will ensure a working environment for staff in compliance with national legislation and AIIB's Environmental and Social Framework (ESF), and provide access to a worker's GRM for resolution of grievances, including those related to GBV/SHA
- It will ensure that all relevant stakeholders are engaged and informed about the Project, including access to the GRMs, such as the CIMER system.
- Report on an agreed basis to AIIB on ES aspects, including any incidents, accidents and grievances, as outlined in the relevant sections of this report.

In this way, the aim is to minimize environmental impacts during the transportation and installation of machinery, protect workers and community health, and strengthen the social acceptance of the Project.

This approach aims not only to reduce environmental risks in machine procurement, but also to help manage the Project's communal, social and workers safety risks.


IV. Machinery Operation and Maintenance

Railway maintenance machines to be procured under the Project will be used for safe and sustainable operation of national railway lines. The main maintenance activities to be conducted with these machines include bringing rails to the appropriate profile through grinding and milling, periodic inspection and maintenance of catenary lines, regulation and compaction of ballast profile, adjustment of track geometry through tamping work and track maintenance and inspection.

These activities will be planned and carried out in accordance with Turkish environmental legislation (e.g., Environmental Law, Waste Management Regulation, Noise Control Regulation) and TS EN ISO 14001:2015 Environmental Management System (EMS) Guidelines. This will ensure that environmental risks (noise, vibration, waste oil, emissions, etc.) are controlled and reduced.

To ensure worker safety during the use of machinery, TCDD will implement the following procedures and guidelines:

- The Occupational Health and Safety Law (Law No. 6331) and the associated Regulation on Health and Safety Conditions in the Use of Work Equipment shall be followed.

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- TCDD will ensure that all operators and maintenance personnel are trained in accordance with the operating and safety instructions provided by the machine manufacturer.
- The use of personal protective equipment (PPE) will be mandatory; the suitability of equipment such as protective clothing, work shoes, gloves, goggles and earplugs for operators will be regularly inspected.
- Daily safety checks (e.g., brakes, hydraulics, signaling, warning systems) will be performed on machines before the usage in the field.
- An accident and near-miss reporting system will be established to ensure the recording and analysis of all incidents.
- Work safety performance will be regularly monitored within the framework of TCDD's TS ISO 45001:2018 Occupational Health and Safety Management System and included in the continuous improvement process.
- Only authorized and trained personnel will be involved in the maintenance and repair of machinery.

With this approach, TCDD aims to ensure the safe operation of machinery, thereby protecting both workers' health and operational safety at the highest level.


Additionally:

- Resource Efficiency: Technically and financially practicable measures will be taken regarding the use of water, fuel, oil and spare parts and the efficiency of machines will be enhanced through regular maintenance and calibration practices.
- Energy Sources: Low-emission engine technologies that reduce carbon footprint will be preferred for diesel-powered machines.
- Permit Procedures: Permits and supervisions regarding noise emissions, waste disposal, emission measurement and worker's health and safety will be carried out by the Ministry of Environment, Urbanization and Climate Change and other competent authorities in accordance with relevant Turkish legislation.


This approach not only ensures environmental sustainability in the operation of machinery but also contributes to the establishment of management framework by TCDD for maintenance activities, which comply with national and international standards.

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Group No	Machine Type (groupable)	Features	Explanation of Purpose
1	Switch tamping machine	The machine will complete the tamping of 1 (one) switch (both the main track and the diverging track) in no more than 30 minutes.	It will be used on railway lines, switches, and crossings for tamping that adjusts the track geometry to appropriate dimensions during the maintenance and renewal works of line.
	Tamping Machine (Continuously Action with 32 tamping tines)	The hourly tamping capacity of the machine on straight track will be at least 1200 m/h.	It will be used on railway lines for tamping that adjusts the track geometry to appropriate dimensions during the maintenance and renewal work of line.
2	Dynamic Track Stabilizer	The operating capacity of the machine in work mode will be at least 2000 m/h.	It will be used in the maintenance and renewal works of railway lines in order to ensure the stability of ballast bed by creating lateral vibration on the rails while moving along the track and simultaneously applying vertical pressure to the rail and by allowing the ballast to rearrange itself and fill the gaps without affecting the compaction results.
3	Ballast Regulator	The sweeping capacity of the machine will be at least 3000 m/h and the regulating capacity of the machine will be 10000 m/h. The machine will continuously and regularly perform ballast regulation/sweeping at the applied speeds.	It will be used for regulating the ballast profile on railway lines during the maintenance and renewal works of railway lines.
4	Rail Grinding Machine	The machine will re-profile the section between +70° and -15° on the UIC 60 rail by grinding. The machine will grind the rail profile in the section between +70° and -15° with a maximum of 3 (three) times at a rate of 0.3 mm.	It will be used for bringing rails into the proper profile by grinding the rail during the maintenance and renewal works of railway lines.
5	Rail Milling Machine	The machine will be able to continuously remove chips and perform polishing both longitudinally and transversely on the rail head profile. The machine will have the capacity to mill in a single pass at the speeds specified in the technical specification, depending on the material depth.	It will be used for re-profiling rails by milling during the maintenance and renewal works of railway lines.
6	Catenary Maintenance Vehicle	The machine will be able to run at a minimum speed of 100 km/h in both directions either self-powered or hauled (within the train set) under all weather	It will be used for measuring, maintaining, repairing, and adjusting catenary (electric power lines) lines during the maintenance and renewal works of railway lines.

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Group No	Machine (groupable)	Type	Features	Explanation of Purpose
			conditions. The machine will be able to haul a 40-ton load at a minimum speed of 15 km/h on a 25‰ (per thousand) gradient on the railway and have the ability to start and stop.	
7	Track Vehicle	Maintenance	The machine will be able to haul a load of at least 150 tons at a minimum speed of 10 km/h on a 25‰ gradient under all weather conditions.	It will be used for personnel transport, loading/unloading, transportation of tools/equipment/materials, hauling wagons/ machines in track repair and maintenance works during the maintenance and renewal works of railway lines.

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Predictable, site-specific and manageable environmental risks may arise during the maintenance works, depending on the use of 99 railway maintenance machines to be procured. These risks include noise and vibration, waste oil and fuel leaks, emissions, dust formation, impacts arising from chemical use and waste management issues.

These environmental impacts can be effectively controlled through appropriate planning and standard environmental management practices. In line with the Environmental Management System (EMS) approach, following measures are envisaged to prevent or minimize the environmental risks that may arise from the use of the machines:

- **Waste Management:** Collecting and storing the waste oil, filters, batteries, and other hazardous wastes generated during the use and delivering them to licensed companies, in accordance with the legislation.

Management of Hazardous and Other Waste:

Waste oils, oil filters, batteries and other hazardous waste generated during the use and maintenance of machinery will be managed in accordance with the provisions of the Waste Management Regulation, the Hazardous Waste Control Regulation and the Waste Oil Management Regulation. *In this context:*

- Waste oils and filters will be temporarily stored in leak-proof containers, labeled and collected separately according to their type.
- Batteries and cells will be stored in containers that prevent acid leakage and delivered to companies with a recycling license.
- Hazardous waste will be transported only by transportation companies licensed by the Ministry of Environment, Urbanization and Climate Change under the supervision of the relevant units of TCDD.
- All transportation and disposal operations will be tracked through Mass Balance System (MBS) and Waste Transportation Form (WTF) records.

Packaging Materials and Used Machinery Parts:

- Wooden crates, pallets, plastic packaging, nylon and cardboard materials used in machine packaging will be sorted by type and sent to the municipality or licensed recycling facilities for recycling.
- Metal scrap and old machine parts will be recorded according to the TCDD inventory and relevant delivery notes for scrap materials delivered to the Machine and Chemical Institute will be kept.

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- Areas where waste will be temporarily stored will be marked, leak-proof, and equipped with fire safety measures in accordance with the TS EN ISO 14001:2015 Environmental Management System.

TCDD's Waste Management Partnerships:

- TCDD currently works with waste disposal and transportation companies that are accredited in accordance with national legislation. These companies are organizations that hold a Hazardous Waste Transportation License and a Recovery/Disposal License issued by the Ministry.
- TCDD's cooperation with these companies is periodically updated in the current "List of Licensed Waste Collection and Disposal Companies" on the Ministry's website at <https://ced.csb.gov.tr>.
- Therefore, the waste transportation and disposal services to be used within the scope of the Project will only be selected from among the authorized companies included in this list. TCDD will check the validity dates and license scopes of the aforementioned companies before each delivery.
- **Emission and Dust Control:** Carrying out regular maintenance of machine engines, using high-quality AdBlue fluids in engine and implementing the methods such as irrigation to **prevent dust formation**.
- **Noise and Vibration Management:** Conducting activities in noise-sensitive areas within limited hours and ensuring employees use personal protective equipment.
- **Prevention of Chemical and Fuel Leaks:** Installing secondary containment systems in fueling areas and possessing spill kits to prevent potential leaks.
- **Environmental Training and Awareness:** Providing training to machine operators and maintenance personnel on environmental impacts, worker safety and grievance mechanism and implementing best practices in the field.

As a result, environmental risks that may arise from the use of railway maintenance machines are predictable and manageable. These risks will be effectively reduced through environmental management practices that comply with Turkish environmental legislation, EMS (Environmental Management System) guidelines, and international standards. In this way, the sustainability of railway maintenance activities will be ensured.

There are seven Railway Mechanical Workshop Directorates in Istanbul, Ankara, Izmir, Sivas, Malatya, Adana and Afyonkarahisar in each Regional Directorate where the maintenance of railway maintenance machines included/to be included in the TCDD inventory is carried out and 1 TCDD Railway Maintenance Vehicles Factory Directorate in Ankara, where heavy maintenance and overhauls are carried out. The maintenance requirements of new machinery to be added to the TCDD inventory will be met by the aforementioned 7 Mechanical Workshop Directorates. 1 Factory Directorate will carry out heavy maintenance and overhauls. The existing maintenance

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infrastructure is suitable for operating new machines with high availability rates. The effectiveness of maintenance processes can be increased through staff training, spare parts logistics and Environmental Management System (EMS) integration.

V. Environmental and Social Management

a. National and International Legislations

Turkish and International Legislation	Explanation
Civil Servants Law No. 657	This law regulates the conditions of service, qualifications, appointment and training, advancement and promotion, duties, rights, obligations and responsibilities, salaries and allowances, and other personnel matters of civil servants.
Decree-Law No. 399 on the Regulation of the Personnel System of Public Economic Enterprises	This decree-law regulates the recruitment, duties and powers, qualifications, appointment, advancement, promotion, rights and obligations, and other personal rights of the personnel of public economic enterprises and affiliated companies subject to Decree-Law No. 233.
Labour Law, No. 4857	<p>The purpose of this law is to regulate the rights and responsibilities of employers and employees working under an employment contract with regard to working conditions and the working environment.</p> <p>Subordinate regulations under the Labour Law No. 4857:</p> <ul style="list-style-type: none"> • Regulation on Health and Safety Conditions in the Use of Work Equipment • Regulation on the Use of Personal Protective Equipment in Workplaces • Regulation on the Procedures and Principles for Occupational Health and Safety Training of Employees • Regulation on the Conditions for Employing Pregnant or Breastfeeding Women • Regulation on the Procedures for the Employment of Child and Young Workers
Social Insurance and General Health Insurance Law No. 5510	The purpose of this Law is to provide security for individuals in terms of social insurance and general health insurance, to determine the persons who will benefit from these insurances and the rights to be provided, the conditions for benefiting from these rights and the methods of financing and coverage and to regulate the procedures and principles related to the operation of social insurance and general health insurance.
Law No. 4904 on the Turkish Employment Agency	With this law, Turkish Employment Agency is established in order to assist in the protection, development, and expansion of employment, as well as in activities aimed at preventing unemployment, and to administer unemployment insurance services.

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Turkish and International Legislation	Explanation
Law No. 6284 on the Protection of the Family and the Prevention of Violence Against Women	This law regulates the procedures and principles regarding the measures to be taken for the protection of women, children, family members who have been subjected to violence or are at risk of violence, and persons who are victims of unilateral stalking and for the prevention of violence against these persons.
Regulation on Grievance and Applications by Civil Servants No. 17926	This Regulation has been prepared in accordance with Article 21 of the Civil Servants Law No. 657, as amended, with the aim of determining the procedures and principles regarding the grievance and applications by civil servants.
Occupational Health and Safety Law No. 6331	Compliance with this law is achieved through the General Order No. 1906 on Occupational Health and Safety Supervision at TCDD workplaces.
Environmental Law No. 2872	Environmental Law No. 2872 sets out fundamental principles consistent with sustainable development and environmental objectives for the protection of the environment. This law provides a legal framework for the development of environmental regulations in accordance with national and international standards. (Official Gazette Date: 11.08.1983; Number: 18132)
Energy Efficiency Law No.5627	This law covers the procedures and principles applicable to increasing and promoting energy efficiency in energy generation, transmission, distribution and consumption phases at industrial establishments, buildings, power generation plants, transmission and distribution networks, as well as in transportation, agriculture, and service sectors; raising public awareness regarding energy; and utilizing renewable energy sources. (Official Gazette Date: 18.04.2007; Number: 26510)
Climate Law No.7552	This law covers the reduction of greenhouse gas emissions which is fundamental in combatting climate change, as well as adaptation to climate change, planning and implementation tools, revenues, permits and supervisions and procedures and principles of the relevant legal and institutional framework (Official Gazette Date: 09.07.2025; Number: 32951)
Paris Agreement	Paris Agreement is fundamentally based on United Nations Framework Convention on Climate Change and aims to regulate the climate change regime after 2020, the expiration date of the Kyoto Protocol. The objective of the Agreement is to strengthen global socioeconomic resilience against the threat of climate change in the post-2020 period. The Agreement, signed by Türkiye in 2016, was published in the Official Gazette dated 7 October 2021 and numbered 31621, following the Law on Approval of the Paris Agreement.

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United Nations Framework Convention on Climate Change	The United Nations Framework Convention on Climate Change (UNFCCC), which aims to “achieve to stop the greenhouse gas accumulations in the atmosphere at a level that will prevent the dangerous human-induced impact on the climate system” was opened for signature at the Summit held in Rio in 1992. Türkiye joined the UNFCCC as the 189th Party on 24 May 2004, following Law no 4990 dated 16.10.2003, published in the Official Gazette dated 21.10.2003 and numbered 25266.
Regulation on Increasing Efficiency in the Use of Energy Resources and Energy	This regulation establishes procedures and principles for increasing efficiency in using energy sources and energy in order to use energy effectively, avoid energy waste, ease the burden of energy costs on the economy and protect environment (Official Gazette Date: 27.10.2011; Number: 28097)
Regulation on Procedures and Principles for Increasing Energy Efficiency in Transportation	This regulation covers the procedures and principles relating to reducing unit fuel consumption of motor vehicles, raising efficiency standards in vehicles, promoting the use of environmentally friendly alternative fuels, reducing air pollutants and greenhouse gas emissions, generalizing public transportation, effectively implementing smart transportation systems, improving transportation infrastructure in a sustainable manner and preparing urban transportation plans in order to increase energy efficiency in transportation. (Official Gazette Date: 02.05.2019; Number: 30762)
Regulation on the Control of Packaging Waste	<p>This regulation set outs following strategies, policies and administrative, financial and technical procedures and principles for the sustainable protection and development of the environment:</p> <ul style="list-style-type: none"> a) The production and placing on the market of packaging that meets certain environmental criteria, basic conditions and features as well as the obligations and responsibilities of economic establishments, b) Preventing the generation of packaging waste and reducing the amount of unavoidable packaging waste to be disposed by using methods such as reuse, recycling and recovery. c) The management of packaging and packaging waste within a specific management system, including deposit management system and a zero-waste management system, based on the principles of circular economy and resource efficiency. d) Implementation of the deposit management system. e) The activities of the Turkish Environment Agency under its duties and authorities in the management of

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Turkish and International Legislation	Explanation
	packaging and packaging waste. (Official Gazette Date: 26.06.2021; Number: 31523)
Regulation on Waste Management	This regulation set outs procedures and principles related to managing waste from its generation to its disposal without harming the environment and human health; reducing the use of natural resources by reducing waste generation, reusing, recycling and recovering waste; and ensuring waste management. It also specifies procedures and principles regarding the production, market surveillance and supervision of products which are within the scope of this regulation and which meet certain criteria and fundamental requirements in terms of environmental and human health. (Official Gazette Date: 02.04.2015; Number: 29314)
Regulation on Waste Oil	This regulation defines the procedure and principles of the technical and administrative principles regarding temporary storage, transportation, refining, energy recovery process and disposal of waste oil as well as protection of human health and environment and efficient use of natural resources. (Official Gazette Date: 21.12.2019; Number: 30985)
Regulation on The Control of Waste Batteries and Accumulators	<p>This regulation defines the legal and technical principles to define principle, policies and programs regarding the following issues from the production to ultimate disposal of waste batteries and accumulators:</p> <ul style="list-style-type: none"> a) Production of batteries and accumulators in line with the certain environmental criteria, conditions and specifications, b) Prevention of direct or indirect disposal to a receiving environment in a harmful way for human health and environment, c) Ensuring the controlling of quality, import and harmful substance content with tagging and labelling of batteries and accumulators, d) Designation of principals regarding their import, export and transiting, e) Ensuring required technical and administrative standards are met in the management. f) Prevention of production, export, import and sale of the batteries and accumulators containing harmful substances, g) Establishment of a collection system and a management plan for recycling or ultimate disposal of waste batteries and accumulators. (Official Gazette Date: 31.08.2004; Number: 25569)
Regulation on The Regular Waste Storage	This regulation defines the technical and administrative issues and general principles to be followed in the process of disposal of waste with regular collection regarding the following:

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Turkish and International Legislation	Explanation
	<ul style="list-style-type: none"> a) Preventing environmental pollution by minimizing the negative impacts of possible seepage and landfill gas on soil, air, ground and surface water, b) Technical designing of waste storage floors appropriate to the waste type and construction of regular storage facilities, c) Process of waste acceptance to the regular storage facilities, d) Operation, closure and post-closure control and maintenance processes of regular storage facilities, e) Prevention of potential negative impacts including greenhouse effect, threatening human health and environment, that can occur during operation, closure and post-closure maintenance processes f) Improvement, closure and post-closure maintenance processes of current regular storage facilities. (Official Gazette Date:26.03.2010; Number: 27533)
Regulation on The Management of Waste Electrical and Electronic Equipment	<p>This Regulation designates strategy, policies; administrative, legal and technical procedure and principles to sustainably protect the environment on the following:</p> <ul style="list-style-type: none"> a) Taking circular economy and resource efficiency principles as basis, prevention of waste electrical and electronic equipment generation; determining methods and goals for separate collection of waste electrical and electronic equipment in cases prevention fails and preparation for reuse, recycling and recovery in order to reduce waste electrical and electronic equipment, b) Environment and human health friendly management of waste electrical and electronic equipment within a management system including zero waste management, c) Determining the framework for the application of extended producer responsibility for electronic and electrical equipment producers. (Official Gazette Date:26.12.2022; Number: 32055)
Zero Waste Management	<p>This regulation defines general procedure and principles regarding the establishment, generalization, development, monitoring, financing and documentation via recording of zero waste management system which aims to protect human health and all resources during waste management processes in line with the sustainable development principles with the efficient use of raw materials and natural resources. (Official Gazette Date:12.07.2019; Number: 30829)</p>
Regulation on The Environmental Noise Control	<p>This regulation defines the matters regarding prevention of negative impacts of environmental noise on environment and human health, preparation of noise maps and noise action</p>

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Turkish and International Legislation	Explanation
	plans, application of noise control measures for reducing the environmental noise and informing the public on the studies of management of environmental noise. (Official Gazette Date:30.11.2022; Number: 32029)
Regulation on The Noise Emission in the Environment by Equipment for use Outdoors	This regulation designates the procedure and principles regarding application of noise emission standards for the noise created by the equipment for use outdoors, collecting technical documents and information, conformity assessment procedure and marking in order to protect human health and contribute proper operation of the domestic market. (Official Gazette Date:30.12.2006; Number: 26392)
Regulation on The Substances Depleting the Ozone Layer	This regulation designates the procedure and principles regarding the use and prohibition of the substances brought under control by The Montreal Protocol on Substances that Deplete the Ozone Layer, of which Türkiye is a signatory. (Official Gazette Date:07.04.2017; Number: 30031)
Regulation on The Surface Water Quality	This regulation defines the procedure and principles for determining biological, chemical, physico-chemical and hydromorphic quality of surface, coastal and transitional waters; classification of them; monitoring the water quality and quantity; introducing the intended purpose of use in line with the development goals by considering the usage balance; protecting water resources and achieving good water status.
Regulation on The Water Pollution Control	This regulation covers the procedure and principles of planning guidelines and prohibitions regarding the protection of water quality, principles of sewage disposal and necessary permits for sewage disposal, the principles regarding the wastewater facilities and the principles of monitoring and inspecting activities to prevent water pollution. (Official Gazette Date:31.12.2004; Number: 25687)
Regulation on The Control of Pollution by Dangerous Goods in Water and Its Environment	This regulation covers the technical and administrative principles regarding determining the hazardous substances polluting surface, estuary and regional waters; creating pollution reducing programs; preventing and monitoring the pollution; making inventory of the dangerous goods discharged to water; determining discharge standards and quality criteria. (Official Gazette Date:26.11.2005; Number: 26005)


b. Organizational Structure

The Railway Maintenance Department and Regional Railway Maintenance Units carry out the necessary work related to the quality management system, occupational health and safety management, disaster and emergency management, and environmental health in coordination with the relevant units.

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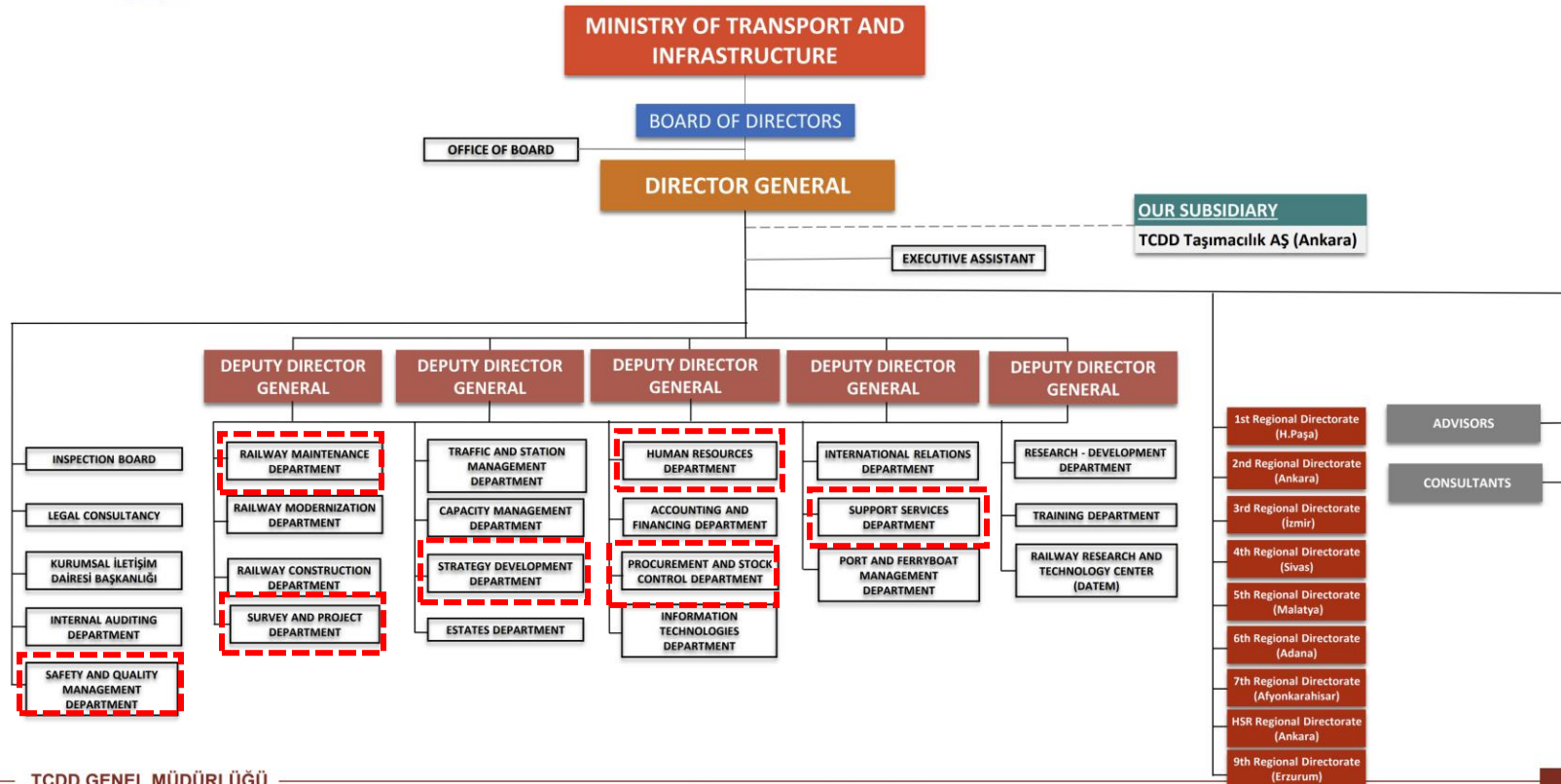
There are 7 departments concerned with environmental and health matters in TCDD. These are: (1) Railway Maintenance Department (2) Support Services Department (3) Survey and Project Department, (4) Human Resources Department, (5) Strategy Development Department, (6) Safety and Quality Management Department and (7) Procurement Stock Control Department.


- The Railway Maintenance Department and 1-9th Regional Directorates shall be responsible for ensuring that suppliers manage the health and safety risks and impacts during the transportation, delivery and installation of machinery to the relevant workshops and report them to TCDD in an appropriate manner.
- The Railway Maintenance Department and the Procurement and Stock Control Department shall be responsible for ensuring that ES and H&S provisions are included in procurement documents.
- Strategy Development Department, Survey and Project Department, Railway Maintenance Department and 1-9th Regional Directorates shall monitor the Environmental and Social Management System and the subjects related to Environment and Social.
- Safety and Quality Management Department and 1-9th Regional Directorates shall monitor the subjects related to Occupational Health and Safety.
- The Project Management Commission established within TCDD will monitor whether the above are being implemented and will be responsible for monitoring progress reporting.

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General Directorate of Turkish State Railways Central Organization Chart



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The following works are under responsibility of the **Support Services Department**:


- Guard and security services,
- Disaster and emergency management,
- Museum, art gallery,
- Social facilities and cafeteria management,
- Meal services for workers,
- Allocation of public residences,
- Free travel pass for staff,
- General cleaning and daily maintenance of service buildings,
- Support services such as shuttle services for the employees,
- To carry out the tasks and procedures related to the separate collection of waste generated in the service buildings of the General Directorate and Regional Directorates and the recycling of the waste generated within the scope of the 'Zero Waste Project', and to ensure coordination with the relevant units,
- Coordinating the works necessary for quality management system, occupational health and safety management, environmental health and civil defense in communication with relevant units.

Feasibility and EIA Division within the **Survey and Project Department** have the following responsibilities on environment:

- Doing or getting done needs and demand analysis, feasibility study, benefit and cost analysis, Environmental Impact Assessment (EIA) studies (Project Information File, EIA Report) required for Project preparation or assessment within its remit,
- Collecting, evaluating and analyzing data regarding the works under responsibility of its division, and doing or getting done the required technical studies in coordination with relevant units.
- Examining and evaluating feasibility study, benefit and cost analysis and EIA reports submitted for the corporate review; taking required steps for creating and issuing corporate view,
- Doing or getting done the monitoring and control works within the EIA reports of the projects started to be constructed
- Providing necessary technical assistance for projects, creating and improving regulations, resource management etc., conducting research and development studies

Human Resources Department and the Regulations and Discipline Division and Sanitary Affairs Division within have the following social responsibilities:

- Preparation and delivery of the documents required by the courts during the legal proceedings against the Enterprise, doing the necessary follow up and informing the relevant units for the timely implementation of the court's decision.

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- Maintaining relations with public unions, associations and all other non-governmental organizations on behalf of the Enterprise,
- When necessary, periodical performance of security clearance and archive investigation for the officials and contracted personnel,
- Ensure the coordination between Public Officials Ethics Council and the Enterprise,
- Making statements and expressing opinions on the application of the terms of the association agreements and the topics of the effective law, code and regulations that cause hesitancy and concern officers and contracted personnel and announcing those issues to personnel,
- Doing necessary works regarding the requests made within the scope of The Right to Information Act, parliamentary written questions, reports of the Turkish Court of Accounts, activity reports,
- Informing the Inspection Board of workplaces needed to be included in the annual inspection program, preparing General Directorate Approval for the other inspection and examination requests,
- Ensuring in-house coordination for the application of the terms of the effective law, code, regulation concerning handicapped people; doing necessary works for employment and training of handicapped people and their personnel affairs, evaluating their requests and complaints,
- Carrying out necessary works within the Health and Psychotechnics Directive of Directorate General of Turkish State Railways
- Determining codes of practice of the Health and Psychotechnics regulation and informing the organization of the amendments,

Here, the duties undertaken by the Human Resources Department and its affiliated divisions regarding to social and administrative matters are detailed. They perform important functions, particularly in areas such as personnel disputes, union relations, ethics coordination, the rights of disabled personnel and health/psychotechnical applications. These duties contribute to the lawful and comprehensive implementation of the institution's human resources policies. Detailed information and guidance regarding to the project can be found in the Grievance Redress Mechanism (GRM) section.

Strategy Development Department and the Environment and Climate Change Division within have the following responsibilities on the environment:

- Constant development of the environmental performance of the Enterprise and ensuring efficient energy use for the activities, prevention of energy waste, creating action plans by determining energy efficiency and climate change policies and informing and coordinating all units for reducing the energy cost,

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- Contributing to the planning and execution of the investments and activities of the Enterprise in line with the principles of environmental sustainability and regulations,
- Monitoring the application regarding the environment regulation, climate change and energy efficiency and ensuring the coordination between relevant units for the elimination of possible problems and faults,
- Coordinating the works regarding environmental railway noise mapping, preparation and application of action plans,
- Establishment of the Greenhouse Gas Emission Management and Carbon Footprint Calculation Systems for the Enterprise, providing necessary support to the relevant units in monitoring and reporting greenhouse gas emissions,

Additionally, complaints and investigations on social matters are made by Inspectors of the Inspection Board and determining the issues preventing effective investigation; analyzing the economic, social, administrative and legal reasons behind the incidents; taking measures for improving the systems in the establishments and developing an inspection system that encourages the personnel to work efficiently are regarded as the policy. Organization, duties, powers, responsibilities, working procedure and rules of the Inspection Board of Turkish State Railways are given place in the TCDD Inspection Board Regulation in detail.

Safety and Quality Management Department and Occupational Health and Safety Division and Regional Safety and Quality Management Units within have the following responsibilities regarding the environmental and social issues:

- Examining risk assessments and analysis within Safety Management System (SMS) for the third parties working on or around the railways, evaluating the results with the relevant units and proposing solutions,
- Within the framework of the national safety procedures, establishing, maintaining and developing a SMS to keep the potential safety risks that can be faced within the activity area of TCDD at the acceptable levels; determination, development, coordination and following-up of the strategies and policies regarding the occupational health and safety and relevant activities; developing quality criteria and taking necessary steps for the coordination of quality management activities.
- Safety and Quality Management Department of TCDD is the primary unit responsible for safety audits. Planned internal audits are conducted at least once a year by TCDD Safety and Quality Management Units. These audits check occupational safety practices, risk assessment results and the effectiveness of corrective actions. Follow-up audits are conducted at yearly intervals to ensure that non-conformities identified in previous audits have been rectified and to monitor the continuous improvement process.

c. Environmental and Social Management

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i. Environmental and social management during machinery procurement

Within the scope of the Project, Environmental and Social (ES) Management activities will be carried out by the contractor/supplier. The supplier is responsible for managing ES risks, taking necessary measures, and keeping records in accordance with the legislation throughout the Project implementation.

TCDD aims to monitor the effectiveness of ES management, evaluate reports, and ensure corrective measures are taken where necessary.

Within this framework, ES updates will be integrated into the Project Progress Report prepared each agreed period. Within the scope of ES management updates:


- The status of implemented environmental and social management plans,
- Conducted audit and monitoring activities,
- Environmental and social risks encountered and measures planned and taken,
- Improvement works undertaken by the supplier and its progress based on machinery specifications,
- Stakeholder participation, information meetings, and applications received under the complaints mechanism along with solutions to these applications,
- Developments regarding OHS practices,
- Monitoring results regarding the employee rights and working conditions will be monitored throughout the project period.

ES updated will also monitor the following indicators throughout the project period.

- Implementations of the Environmental and Social Management Plan (ESMP),
- Progress on the training plan and certification activities related to safe transport and use of machinery
- Identified environmental and social risks and issues, including incident reports and follow-up measures
- Data on the receipt of grievances and resolution processes.

These updates will be submitted to AIIB, as integrated in the Project Progress Report on a regular basis.

Within the scope of the Information Disclosure Policy, summaries of these reports or appropriate content will be published regularly on TCDD website. This will ensure that project stakeholders and the public are kept informed in a timely and transparent manner about the environmental and social impacts of project implementation.

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ii. Environmental Management System during operations and maintenance

The Procedure of Environmental Management ensures determining and minimizing environmental risks of new maintenance machines (continuous operation, maintenance, fuel supply, waste production, storage, maintenance movements etc.) and management of them in line with the regulations. When new machinery or processes are added, or when a new activity presents different environmental risks, the EMS may be updated. The Procedure covers legal harmonization, risk assessment for cases specific to the work field, operational control, monitoring/measuring, emergency action, training and continuous improvement elements. It is integrated within the framework of ISO 14001 and implemented on Regional/ Workshop/ Factory bases. As part of progress reports, updates on Environmental Performance, Occupational Health and Safety (OHS), Social Performance, Action Plans and Compliance Status are monitored. The Environmental Management System (EMS) is a framework used to systematically manage the environmental impacts that may arise from the organization's activities. Within the relevant units of TCDD, this system is implemented in accordance with the TS EN ISO 14001:2015 standard.

Establishing the organization's environmental policies and objectives, monitoring environmental risks and impacts arising from activities, ensuring the reduction or control of these risks, implementing improvement processes, and verifying compliance with legislation and permit conditions are the fundamental procedures and functions of the Environmental Management System (EMS).

1. Implementation Steps:

- **Determining Regulations & Standards:** The Environmental Management Procedure is prepared in accordance with both national and international regulations. In this context, legislation such as the Hazardous Waste Control Regulation, Waste Management Regulation, and Air Quality Assessment and Management Regulation in force in Turkey is taken as a basis, while at the international level, the ISO 14001 Environmental Management System Standard and the Stage V emissions regulations for new machines NRMM (Non-Road Mobile Machinery)/ Stage V emission regulations to be applied to new machinery are also referenced. This approach enables TCDD to implement an environmentally conscious system that is fully compliant with laws and standards in the procurement and operation processes of its new maintenance machinery.
- **Risk Assessment According to the Field:** A detailed environmental risk and sensitivity assessment is carried out for each Regional Directorate and workshop, depending on the type of machinery to be used. The areas of operation of equipment such as rail repair, ballast adjustment, overhead line maintenance or welding machines are considered in relation to nearby settlements, nature conservation areas, water resources and ecological

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values. As a result, potential environmental impacts (noise, emissions, spillage, vibration, waste, etc.) are monitored for each site and measures are planned to minimize these impacts.

- **Operational Instructions:** Standard operating procedures are prepared and implemented to reduce environmental risks in machine operations. These procedures include refueling, oil changes, filter and waste management, temporary storage, spill and leak response procedures, and exhaust and filter checks. These instructions, prepared specifically for each machine group, are distributed to all maintenance and operating personnel working in the field. The purpose of the instructions is to control any potential harmful effects on the environment in advance and to ensure that activities are carried out in accordance with environmental legislation.
- **Training & Proficiency:** The level of knowledge and awareness of field personnel is critical for the effective implementation of the Environmental Management System. Therefore, regular training programs are provided to all operators, maintenance teams and environmental officers. The training includes the principles of the Environmental Management System, waste separation methods, emission reduction techniques, noise control, correct intervention steps in emergencies, and the use of personal protective equipment.
- **Monitoring & Reporting:** The key environmental performance indicators defined within the EMS are monitored regularly. These include the amount of waste generated, energy and water consumption rates, emission measurement results, noise exposure levels, and environmental incidents (spills, leaks, violations, etc.).
- **Emergency Management:** Environmental incidents that may arise from fuel and oil leaks, fires, chemical spills or machine malfunctions are monitored for each workshop and area. This enables a rapid, safe and effective response to potential environmental incidents, aiming to minimize environmental impacts.

2. Air Quality Management

The following precautions to be taken and the applications to be made for reducing the local air pollutants created by machines (PM, NO_x, CO, HC), and consequently, the carbon footprint of the Project.

- **Preferring low emission equipment:** Machines with Stage V engine that takes place in the low emission class are preferred during the procurement process. Thus, particle and NO_x emissions are reduced directly and energy efficiency is improved. Stage V motors are requested in the technical specifications of the machines.
- **Periodical engine/ exhaust maintenance:** Combustion efficiency is intended to be improved by timely changing fuel injection systems and air filters and tightly following the producers' maintenance plans.

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- **The policy of preventing idle running:** Idle running of the machines will be avoided through field procedures and working hours will be optimized by waiting/logistics arrangements.
- **Fuel quality management and considering alternative fuels:** Low-sulfur, quality guaranteed fuels will be preferred in the supply chain.

3. Waste Management


The following steps will be taken for minimizing waste production, separation of wastes as hazardous/ non-hazardous, safe storage, transportation and ensuring disposal/ recycling in comply with the regulations:

- **Classification & Recording:** In every workshop office wastes (used oil, oil filters, accumulators, cooling liquids, solvent packings, scrap metal, paper/plastic etc.) are classified as hazardous and non-hazardous and quantities are recorded.
- **Temporary storage conditions:** Protected, leakproof, marked and insulated (from rain and the outer environment) areas are created for hazardous wastes. Separated waste container systems are provided for non-hazardous wastes.
- **Transportation and disposal:** Hazardous wastes are only delivered to the licensed disposal or recycling facilities by licensed transporters and delivery notices/ manifests are kept for each delivery. The process is completed in line with Turkish regulation (Control of the Hazardous Wastes etc.).
- **Scrap disposal and recycling:** Scrap metal, old/new machine parts and other recyclable material are separately stored; relevant delivery records are kept for the scrap material delivered to the Mechanical and Chemical Institution.
- **Waste reducing and re-use:** Supplier-application advices (recyclable packings, reusable parts) are promoted to reduce waste filters, packings and metals.
- **Training and supervising:** Waste sorting, labelling, temporary storage and spill response training is provided for the workshop staff.

4. Noise and Vibration Control Management

The following applications to be made in order to reduce occupational noise and vibration exposure, the negative impacts of the noise and vibration on public and operate in comply with the law:

- **Engineering controls:** Ensuring machine maintenance and using exhaust diversion, using vibration limiting machine beds/ connections to absorb noise sources.
- **Operational measures:** Time constraints are applied in the operations near settlements. Loud works are planned to be made in the daytime.

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- **PPE and health control:** Proper ear protecting and vibration absorbing equipment are provided for the workers exposed to noise. Periodical hearing tests and health checks are performed (in accordance with the Law (No: 6331) on Occupational Health and Safety and relevant regulations).

iii. Occupational Health and Safety

Is carried out in accordance with the Occupational Health and Safety Law No. 6331. Compliance with this law is ensured by General Order No. 1906 on Occupational Health and Safety Inspections to be Conducted at TCDD Workplaces.

TCDD possesses an existing OHSMS Manual that outlines TCDD's occupational health policy, workplace safety within the organization, its structure, and the practices implemented under the TS EN ISO 45001:2018 Occupational Health and Safety Management System Standards.


TCDD Occupational Health and Safety and Safety Policy is outlined below.

TCDD OCCUPATIONAL HEALTH AND SAFETY POLICY

As TCDD, in accordance with our vision of “carrying out all our railway operations in line with international standards to ensure everyone and everything reaches their destination safely, and increasing the confidence of all our stakeholders in the railway,” we consider it our fundamental priority to continue our operations in a healthy and safe working environment, through our extensive knowledge and experience.

Our Occupational Health and Safety (OHS) approach, adopted to ensure the safety of our employees and the protection of our environment, is based on determining and continuously improving the most favorable working methods in full compliance with national legislation. Within this framework, our commitments are as follows:

- ✓ Recognizing that our employees are our most valuable asset, implementing all necessary measures to ensure they work in a healthy and safe environment,
- ✓ Establishing OHS culture as a fundamental way of life at TCDD, encouraging our employees to have a high level of occupational health and safety awareness.
- ✓ Ensuring participation at all levels for the continuous improvement of OHS practices and making our employees an active part of this process.
- ✓ Engaging all our stakeholders in our goal for a healthy and safe working environment, increasing cooperation and awareness efforts,
- ✓ Establishing open communication channels to meet OHS needs and expectations, and integrating employee feedback into the process,
- ✓ Encouraging service providers and other business partners to improve their OHS performance, raising our standards in this area to the highest level,

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- ✓ Supporting safe work processes by integrating the latest equipment and technologies in the field of OHS into the working environment,
- ✓ Fully complying with national and international legislation and fulfilling all our legal obligations,
- ✓ Continuously improving our processes by adopting proactive approaches to prevent accidents and incidents,
- ✓ To raise awareness among our employees and stakeholders regarding OHS, organizing continuous training and awareness programs.

TCDD SAFETY POLICY

In TCDD, in order to comply with national and international standards; the promotion of a safety culture, ensuring that all processes are carried out with safety awareness, the achievement of safety objectives, and the monitoring and improvement of safety are ensured through the Safety Management System (SMS).

In order to ensure the effective operation of SMS processes and enhance safety performance,

- Safety is the responsibility of managers and employees at all levels.
- Managers and employees are obliged to know the rules, instructions, regulations and all safety management processes required for their positions, to comply with safety measures, to take the safety measures required for their duties and to fulfil their safety responsibilities.
- The management will provide all necessary resources to ensure, maintain and improve safety. All employees are obliged to use resources efficiently and to apply national and international standard procedures throughout the life cycle for railway safety-related equipment and operations.
- Employee participation, communication and information sharing in order to improve safety will be supported by managers. At every stage, consistency between other company policies and safety will be ensured.
- A culture of safety will be ensured in all levels of staff, and all employees will behave in accordance with this culture. Managers will lead their staff in this regard.
- The competence and motivation of employees are fundamental requirements for ensuring safety. To support these, measures will be taken to promote suitability for work, competence, and supervision.
- Continuous monitoring and improvement of safety performance and the achievement of safety targets is possible by recording and evaluating accidents/incidents and near misses that occur during all maintenance and operational activities. In order to prevent accidents and incidents, employees will report all malfunctions, errors, near misses and hazards, including their own mistakes.
- All units will be prepared for emergency management and contingency operating conditions.

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- Risk management, one of the fundamental components of the Safety Management System, will be adopted and implemented by all departments.
- In order to eliminate hazards and risks or maintain them at an acceptable level, all units are responsible for identifying hazards and managing risks associated with their activities, taking appropriate control measures, addressing any deficiencies in their employees' knowledge and training in this area, carrying out checks and inspections, and implementing continuous improvement activities.


These documents cover the occupational safety organization, risk assessment, training, inspection and performance monitoring specified below.

- **Risk Assessment:** Occupational safety risks are identified for each workshop/machine type and preventable control measures are implemented.
- **Training & Certification:** Operators, maintenance staff and field managers receive periodic OHS training; certification/guidance is provided according to competencies.
- **Inspection & Performance Monitoring:** Periodic OHS inspections are carried out in accordance with General Order No. 1906 and internal audit programs; follow-up on the rectification of non-conformities is mandatory.
- **Emergency & first aid:** Emergency response plans, fire-fighting equipment and spill response kits are kept in workshops.
- **Documentation:** Accident/incident records, investigation reports, training records and inspection findings are systematically maintained and reviewed by management.
- **Integration:** OHS practices are integrated with the EMS; environmental risks and OHS risks are addressed together.

iv. Public Health and Safety Management

The following inspections will be carried out for supplier control mechanisms that will reduce risks to public health and safety during machine delivery, temporary acceptance areas or the use of public land.

- **Contract terms:** Public health and safety requirements, environmental protection obligations and penalties applicable in the event of a breach will be clearly stated in supplier contracts. (Requirements referenced in ISO 45001 have been added to the tender technical specifications.)
- **Field permits & public information:** If necessary, the required administrative permits for temporary field use will be obtained; the local community will be informed and a complaints hotline will be set up.
- **Field inspections & checklists:** Machine installation/delivery activities will be inspected by TCDD staff.
- **ISO 45001 integration:** Supplier inspections are carried out in accordance with the principles of risk management and supplier management within the framework of ISO 45001; where necessary, an improvement plan is required from the supplier.

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v. Energy Efficiency

Our Enterprise holds the ISO 50001 Energy Management Certification. The railway sector aims to improve energy efficiency, reduce greenhouse gas emissions, and establish a more sustainable balance between modes of transport. Especially with the aim of improving energy efficiency and reducing greenhouse gas emissions, our Enterprise has prepared the 'TCDD Energy Management and Climate Change Action Plan (2023-2025)'. The TCDD Energy Management and Climate Change Action Plan (2023-2025) covers three themes: 'Green Transport on Railways', 'Zero Carbon Future' and 'Reliable Energy Supply' and consists of 9 objectives, 20 targets and 82 actions. The Action Plan includes the following key objectives for ensuring energy efficiency:


- Achieving a 5% reduction in energy consumption on TCDD's catenary lines
- Achieving at least a 20% reduction in energy consumption in TCDD owned buildings and fixed installations through measures that reduce energy demand and ensure efficient energy use
- Converting 15% of TCDD-owned buildings to Class A buildings as at the end of the planned energy efficiency improvement works
- Obtaining Class A energy performance certificates for all new buildings belonging to TCDD with a construction area exceeding 1,000 m².
- Obtaining green building certification for 100% of existing high-speed train stations and stations (buildings not subject to registration by the Conservation Board) with a total construction area exceeding 8,000 m² belonging to TCDD
- Obtaining green building certification for 100% of new high-speed and rapid train stations to be constructed belonging to TCDD
- Obtaining green building certification for 100% of new buildings with a total construction area exceeding 5,000 m² belonging to TCDD
- Reducing TCDD's total carbon footprint by 10% compared to 2023 levels
- Providing a carbon-neutral passenger transport infrastructure on TCDD's HSR lines.

vi. Grievance Redress Mechanism (GRM)

Grievance mechanism & corrective actions: Presidency's Communication Centre (CİMER) and TCDD Internal Grievance policies are followed for recording and evaluating the public or internal complaints and taking corrective actions. GRM includes following steps:

a. **Receiving Grievances**

Complaints can be submitted through various channels as part of the project:

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- Applications and grievances related to the project submitted via **CİMER**¹ (<https://www.iletisim.gov.tr/cimer>) are labelled as “TCDD Railway Maintenance Modernization Project” by Corporate Communications Department of TCDD and evaluated in line with the opinions of the relevant units.
- Environmental grievances are received via the **ALO 181 – Ministry of Environment and Urbanization** hotline and are forwarded to the relevant Provincial Directorates and responded within 15 days at the latest.
- **Personnel grievances** are evaluated within the framework of the ‘Regulation on Complaints and Applications of Civil Servants’ dated 12/1/1983 and numbered 17926.
- **Grievances regarding to the tender process** shall be submitted in writing to Procurement and Stock Control Department of TCDD, which conducts the tender, and forwarded to the relevant units and the Bank.
- **Grievances from third parties** outside the Administration regarding to the project shall be forwarded to the relevant units or the Inspection Board.

b. Documentation and Management of Grievances

A **systematic recording and labelling system** will be implemented for the effective management of grievances. In this context:


- Before being recorded, the grievances are divided into 3 categories according to subject and area of impact:
 - Environmental grievances
 - Social grievances
 - Technical/Administrative grievances
- The following steps are followed for each grievance:

Registration:

- Grievances will be received in writing, and each grievance will be assigned a reference number.
- Essential information to be included in the record:
 - Name of the complainant (confidentiality may be provided upon request).
 - Subject and date of the grievance.
 - Type of grievance (environmental, social, technical/administrative).
 - Date of initial response and responsible person/unit.

Verification and Assessment:

¹ (<https://www.iletisim.gov.tr/images/uploads/dosyalar/cimeryonetmeligi.pdf>)

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- The relationship between the grievance and project activities will be analyzed.

Response and Resolution:

- A response will be provided to the complainant within 15 days at the latest.

Closure and Archiving:

- The grievance will be closed once responded and the decisions taken will be recorded.
- All documents will be kept available for inspection throughout the project period.

c. Reporting to AIIB

Routine Reporting (Periodic Notification):

TCDD shall include the following complaint summaries in the project progress reports submitted to the AIIB:

- Total number and category of grievances
- Responded/closed and open/ongoing grievances
- Measures taken
- Grievance response times/date

Direct Reporting

It may be reported directly to AIIB Project Complaints Mechanism (PPM) in the following circumstances:

- If it causes severe environmental or social harm,
- If it involves human rights violations, forced labor, etc.
- If it cannot be resolved by local mechanisms.

Contact: ppm@aiib.org

The PPM will assess the grievance and initiate an independent investigation if necessary.

d. Worker Grievance Mechanism (Worker GRM)

Workers employed under the project may submit grievances regarding to the working conditions, wages, leave, discrimination and similar matters directly or anonymously through the human resources unit. The grievances are handled according to the following principles:

- Impartiality, confidentiality, timely response
- The grievances must not conflict with disciplinary mechanisms
- The compliance with trade union rights and national legislation

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Worker grievances should be responded within 15 calendar days and the relevant employee should be informed.

e. Grievances Related to Gender-Based Violence (GBV) and Discrimination

In Türkiye, the provisions for preventing gender-based violence are implemented under Law No. 6284 on the Protection of the Family and Prevention of Violence Against Women.

- Grievances regarding to the gender-based violence (GBV), harassment in the workplace, discrimination and similar issues are managed under the coordination of Human Resources Department based on the opinions and investigations of the relevant units.
- Grievances are handled with sensitivity, confidentiality is maintained and if necessary, they are forwarded to the judicial authorities.
- All contractors within the scope of the project are obliged to create an internal procedure for reporting and following up on GBV cases.

For the grievances submitted to the GRM mechanism, the complainant has the right to appeal to the administrative or judicial courts if he/she is dissatisfied with the administration's response/solution.

vii. Workforce Management


Approximately 229 (two hundred and twenty-nine) operators are required in total for the 99 railway maintenance machines to be procured as part of the Project. Some of the machine operators needed will be recruited as new staff, while others will be sourced from the existing operator staff.

In addition, extra staff will be required to perform maintenance at the maintenance centers where the relevant machine is serviced. Some of the required maintenance staff will be recruited as new staff, while others will be sourced from the existing maintenance staff.

The orientation training for newly recruited staff, along with basic machine user training and maintenance staff training, will be conducted within the TCDD Academy. As the aforementioned orientation training and basic machine operator and maintenance personnel training are courses that existing personnel have already taken, and as there are no changes in the curriculum, there is no need for existing personnel to retake these courses.

TCDD operates within the framework of national legislation and corporate policies regarding workforce management.

- **Employment Procedure:** Employment is carried out through open call methods, in cooperation with relevant ministries and through the Turkish Employment Agency (İŞKUR). Permanent and temporary labor requirements are met in accordance with the provisions of Labor Law No. 4857 and the decisions of the TCDD Board of Directors.
- **Corporate Policies:**

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- **The decisions of the TCDD Board of Directors dated 08.07.2020, numbered 15/131, and dated 03.08.2023, numbered 20/127,** allow for the implementation of flexible employment arrangements, provided that they do not contradict national laws.
- **Employment of Persons with Disabilities:** A quota of 4% for persons with disabilities is applied in accordance with Labor Law No. 4857, and this requirement is fulfilled in coordination with the Turkish Employment Agency (İŞKUR).
- **Ethical and Conduct Principles:** Prohibition of discrimination, equal opportunity and protection of professional reputation are fundamental principles under the TCDD Ethical Conduct Principles and Ethical Commission Guidelines.
- **GBV/SEA/SH Training:** Information and awareness-raising activities are organized for employees with the aim of strengthening social welfare and inclusive social values, ensuring gender equality, preventing violence against women, and creating a safe society.
- **Health and Psychotechnical Guidelines:** Employee health examinations, periodic psychotechnical assessments and occupational health services are carried out regularly. These guidelines aim to ensure the ongoing job competence of employees in terms of occupational health and safety.
- **Gender and Participation Strategy:** The employment of female professionals is encouraged, and equal opportunities are ensured in recruitment processes.
- **Newly Hired Staff:** Newly hired staff receive basic training from TCDD Academy.


The principle of equal opportunity and non-discrimination has been adopted in the project. Within this framework, TCDD, as the project implementer, is obliged to provide equal opportunities to all candidates in the recruitment process.

However, within the scope of the current project, the possibility of employing female or disabled personnel is considered low. The reasons for this are explained below:

Technical and Operational Conditions

- Due to the nature of the work (e.g. works carried out on rails, with heavy equipment, in long-term field conditions), high physical endurance and continuous field presence are required.
- These tasks are generally carried out in a day-night shift system and in areas requiring long-distance and extensive travel.
- These conditions make it difficult for individuals with certain types of disabilities or female personnel with specific family/logistical responsibilities to take on these roles.

Structure of the Current Corporate Pool

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- TCDD's current technical personnel pool consists mainly of male and field-experienced employees.

Safety and Infrastructure Constraints

- Some project sites do not yet have fully accessible infrastructure (e.g. ramps, accessible vehicles) for persons with disabilities.
- This situation limits the ability of persons with disabilities to perform their duties effectively and safely in the field.

viii. Machine operation and maintenance training for employees

Training Provider: Training courses will be coordinated by machine manufacturers/suppliers through TCDD Academy under the organization of Training Department of TCDD, where TCDD's training activities are carried out.

Participant Selection: Maintenance and operations staff from the relevant Regional Directorates will participate in the training. Selection will be based on technical competence, job description and needs analysis.

Training Subject: Trainings for the use and maintenance of machines will be provided. Training for the use of the machines will be provided to operators and the training for the maintenance of the machines will be provided to maintenance staff working in workshops.

Training will be provided in two main groups: Machine and Unit Use and Maintenance (Operator) Training and Machine Maintenance and Repair (Mechanic/Technician) Training. Each training will be provided twice (2) under the related training subject.


The first group of training sessions will be held after provisional acceptance, and the second group of training sessions will be held at least one (1) year after final acceptance in the form of refresher training.

Gender Component: The participation of female staff in trainings will be encouraged, and equal opportunities will be ensured.

PSS TCDD Requirements: The training program will be conducted in accordance with the training plan outlined in the PDS and in-service training guidelines of TCDD.

At the end of the training sessions, a report will be drawn up between the contractor and the administration confirming that the training has been successfully completed.

ix. Stakeholder Participation

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TCDD will maintain transparent and regular interaction with stakeholders throughout the project.

- **Stakeholders:** Railway train operators, railway maintenance teams, the Asian Infrastructure Investment Bank, the Ministry of Transport and Infrastructure, and the local community near the railway line and the unions (worker and officer unions).
- **Participation Plan:** Regular briefing meetings, site visits and feedback mechanisms will be carried out during the **procurement** and delivery phases. The details of meetings conducted, participants and topics discussed will be included in the periodic monitoring reports to AIIB.
- **Grievance Mechanism:** In accordance with the AIIB ESF, affected communities and stakeholders may submit complaints using the existing complaint resolution mechanisms of TCDD.
- **Inclusive Participation:** Transparent communication will be ensured during the participation process without discrimination based on gender, age, disability or socio-economic status. The project will be announced via the TCDD website. (<https://www.tcdd.gov.tr/>)
- **PSS TCDD Requirement:** The stakeholder list and engagement plan will be prepared and implemented within the scope of the Project Support System (PSS). In accordance with the principle of transparency, the annual monitoring reports of the Environmental and Social Management Plan and the relevant environmental and social performance data will be published regularly on the TCDD website and made available to stakeholders.

x. AIIB Policy on the Project Affected Persons Mechanism (PPM)


AIIB has established the Project Affected Persons Mechanism (PAPM) to provide an independent and impartial review process for individuals who believe they have been adversely affected or are likely to be affected by failures in the implementation of its Environmental and Social Policy (ESP), where their grievances cannot be satisfactorily addressed through the project-level Grievance Redress Mechanism (GRM) or the Bank's other management processes.

The availability of the PPM:

- It will be published on the TCDD website alongside ES tools
- It will be publicly available on the AIIB official PPM portal <https://www.aiib.org/en/about-aiib/who-we-are/project-affected-peoples-mechanism/how-we-assist-you/index.html>


Within the scope of the project, a transparent and inclusive communication process will be implemented by ensuring appropriate guidance and information sharing between GRM and PPM.

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VI. Annexes

- a. ISO 14001 certificate
- b. ISO 45001 certificate
- c. Management System Policy
- d. Facility Management Procedures
- e. Energy Management and Climate Action Plan (2023-2025)
- f. TCDD Information Request and Complaint Procedures Policy
- g. TCDD Human Resources Policy, Gender and Disability Employment
- h. Guidelines on Ethical Conduct Principles and the Working Procedures and Principles of the Ethics Committee
- i. Health and Psychotechnical Guidelines
- j. Occupational Health and Safety Law No. 6331
- k. Environmental Law No. 2872
- l. Energy Efficiency Law No. 5627
- m. Climate Law No. 7552
- n. Paris Agreement
- o. United Nations Framework Convention on Climate Change
- p. Regulation on Increasing Efficiency in the Use of Energy Resources and Energy
- q. Regulation on Procedures and Principles for Increasing Energy Efficiency in Transportation
- r. Regulation on the Control of Packaging Waste
- s. Regulation on Waste Management
- t. Waste Oil Regulation
- u. Regulation on the Control of Waste Batteries and Accumulators
- v. Regulation on the Regular Storage of Waste
- w. Regulation on the Management of Waste Electrical and Electronic Equipment
- x. Zero Waste Regulation
- y. Environmental Noise Control Regulation
- z. Regulation on Environmental Noise Emissions from Equipment Used in Open Areas
- aa. Regulation on Substances that Deplete the Ozone Layer
- bb. Surface Water Quality Regulation
- cc. Water Pollution Control Regulation
- dd. Regulation on the Control of Pollution Caused by Hazardous Substances in Water and the Environment
- ee. TCDD Inspection Board Regulation
- ff. Public Procurement Law No. 4734
- gg. Petition Right Law No. 3071
- hh. Right to Information Law No. 4982
- ii. Regulation No. 17926 on Complaints and Appeals by Public Officers

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jj. Protection of the Family and Prevention of Violence against Women Law No. 6284

kk. Labor Law No. 4857

ll. ISO 50001 Energy Management Certificate

mm. Law No. 657 on Civil Servants

nn. Law No. 5510 on Social Insurance and General Health Insurance

oo. Law No. 4904 on the Turkish Employment Agency

pp. Decree Law No. 399 on the Regulation of the Personnel System of Public Economic Enterprises

qq. Regulation No. 17926 on the Complaints and Applications of Civil Servants