

Annex 4: Environmental and Social Matrix

Prior Action	Likely Environmental Effects	Likely Social Effects
1.1 National ETS, Carbon Market and International Carbon Credit Framework	Positive: The operationalization of a national ETS and carbon market establishes the first absolute cap on emissions from major industrial and power installations in Viet Nam, covering a substantial share of national GHG emissions. The reforms are expected to strengthen emissions monitoring, improve the reliability of installation-level emissions data, support achievement of Viet Nam's NDC and net-zero targets, and create transparent market-based incentives for investment in low-carbon technologies and emissions reductions. The framework also establishes a legal basis for participation in international carbon markets under Article 6 of the Paris Agreement and may mobilize international climate finance for domestic mitigation activities. Neutral: The reform primarily establishes a regulatory and market framework and therefore has no direct physical environmental footprint. The phased pilot approach, limited initially to the 100 largest emitters and centralized under MAE, is intended to gradually build institutional and private sector implementation capacity. Likely adverse (covered by existing systems): Risks include weak MRV integrity, uneven verification capacity, potential carbon leakage, and the possibility that low-quality international carbon credits may not generate real emissions reductions. Rapid implementation of registry, allocation, and trading systems may also create operational and governance challenges during the pilot phase. These risks are mainly mitigated through Decree No. 119/2025/ND-CP, centralized annual reporting to MAE, alignment with Article 6 of the Paris Agreement, and the establishment of national registry and exchange infrastructure. Residual environmental and implementation risk remains moderate due to evolving institutional capacity and the early-stage nature of the market infrastructure.	Positive: The reforms are expected to strengthen Viet Nam's green finance ecosystem, improve long-term economic efficiency of emissions reductions, and support investment in cleaner industrial production and energy systems. Transparent price discovery through the Viet Nam stock exchange is expected to improve investment certainty and facilitate future low-carbon transition planning by public and private actors. Over time, the framework may also generate future government revenues through auctioning of emission allowances and support broader climate-related investment opportunities. Neutral: The ETS framework itself does not directly require land acquisition, physical displacement, or immediate labour restructuring during the pilot phase. The phased implementation approach is expected to reduce short-term disruption for regulated entities. Likely adverse (covered by existing systems): Compliance costs for carbon-intensive industries may increase and could potentially be passed on to consumers through higher energy and production prices, creating affordability pressures for vulnerable groups. Future industrial restructuring linked to emissions reduction targets could also create transition risks for workers in high-emission sectors. These risks are mainly mitigated through existing labour protection frameworks, MOLISA retraining programmes, and government oversight of energy pricing. However, Viet Nam does not yet have a fully developed just transition or carbon revenue redistribution framework, resulting in moderate residual social and distributional risk.

1.2 Excise Duty Reform for Low-Carbon Vehicles	Positive: The reform is expected to reduce transport-related greenhouse gas emissions by increasing the effective excise duty burden on fossil fuel-based vehicles while exempting low- and zero-emission vehicles. The measure supports implementation of the national Green Energy Transportation Action Program and is expected to accelerate uptake of electric mobility technologies, reduce dependence on imported fossil fuels, and improve urban air quality. The reform also supports longer-term decarbonization of both the transport and energy sectors and may contribute indirectly to increased investment in sustainable transport infrastructure and green manufacturing. Neutral: The reform is a fiscal policy measure and therefore does not itself create a direct physical environmental footprint. The measure primarily changes market incentives affecting vehicle purchasing decisions. Likely adverse (covered by existing systems): Increased uptake of electric vehicles may create battery waste management and end-of-life disposal challenges, particularly if deployment accelerates faster than recycling infrastructure capacity. Expanded electricity demand from electric mobility may also create indirect pressure on the power system if renewable generation growth does not keep pace. These risks are mitigated through Viet Nam's Extended Producer Responsibility provisions under environmental and waste management regulations, although recycling and battery management systems remain at an early stage of development. Residual environmental risk is considered moderate.	Positive: The reform is expected to support long-term public health improvements through reduced urban air pollution and strengthen the transition toward cleaner and more energy-efficient transport systems. Additional fiscal revenues generated through the revised excise regime may also support investment in sustainable transport and green industrial development. The policy may help avoid future emissions lock-in by accelerating the transition from internal combustion engine vehicles to zero-emission mobility technologies during a period of rapidly growing vehicle ownership. Neutral: The reform does not directly require physical displacement or changes to land use and does not immediately alter employment conditions in the transport sector. Likely adverse (covered by existing systems): Affordability constraints may limit access to electric mobility for low-income households, while restructuring pressures may emerge within segments of the automotive supply chain linked to internal combustion engine technologies. Benefits of the transition may initially concentrate in higher-income urban areas with stronger charging infrastructure and financing access. Existing social assistance measures and labour transition frameworks provide partial mitigation, although unequal access to low-carbon mobility technologies remains a moderate social inclusion risk.
1.3 Viet Nam Green Finance Taxonomy	Positive: The establishment of a national green finance taxonomy creates the first unified framework for classification of environmentally sustainable investments across seven sectors and 45 sectoral activities. The reform is expected to improve the quality, transparency, and credibility of green finance flows and reduce fragmentation caused	Positive: The reform is expected to strengthen ESG transparency, increase investor confidence, and facilitate long-term growth of green credit markets and sustainable financial products. By improving access to international climate finance and supporting investment in green sectors, taxonomy may also

	by inconsistent application of international standards. Independent third-party verification requirements are expected to strengthen environmental integrity and reduce greenwashing risks. In combination with broader reforms under the carbon market, renewable energy, and JETP frameworks, the taxonomy is expected to support increased domestic and international investment in sustainable infrastructure and clean technologies. Neutral: The reform primarily establishes a financial and regulatory classification framework and therefore does not generate direct physical environmental impacts. Initial implementation may progress gradually as domestic verification capacity develops. Likely adverse (covered by existing systems): Risks include weak enforcement capacity, inconsistent interpretation of classification criteria, delays associated with limited domestic verification capacity, and potential misclassification of investments during the early implementation phase. While the taxonomy incorporates verification requirements and builds on existing environmental governance frameworks, implementation capacity remains under development and enforcement consistency may vary across sectors and institutions. Residual implementation risk is considered moderate.	contribute to employment creation and sustainable economic development over time. The establishment of a national standard provides regulatory clarity that may support broader participation by financial institutions and investors. Neutral: The taxonomy itself does not directly alter labour conditions, land use, or access to services and primarily functions as a financial sector classification tool. Likely adverse (covered by existing systems): The absence of integrated social criteria within the taxonomy framework may allow investments classified as environmentally sustainable to generate adverse social impacts if broader ESG considerations are not fully incorporated. In the short term, stricter verification requirements may also slow growth in green credit markets due to limited verification capacity and higher compliance costs. Existing labour, land, and environmental laws provide risk mitigation, although the absence of a dedicated social taxonomy framework remains a structural gap within Viet Nam's sustainable finance architecture.
2.1 Revised DPPA Framework and Streamlined Renewable Energy Investment Approvals	Positive: The revised DPPA framework and amendments to the Investment Law are expected to significantly accelerate deployment of renewable energy projects in Viet Nam by improving project bankability, removing price caps on DPPA transactions, increasing transparency of wheeling charges, and streamlining approval procedures. The reforms are expected to mobilize greater private investment into renewable energy generation, support energy security objectives, and contribute to substantial reductions in greenhouse gas emissions. Streamlined approvals for offshore wind and improved grid access are also expected to facilitate integration of larger volumes of renewable energy into the national electricity system. Falling	Positive: The reform is expected to stimulate private sector participation, create employment opportunities in renewable energy development and associated supply chains, and improve long-term energy security and economic resilience. Increased renewable energy investment may also support industrial competitiveness through improved access to cleaner electricity sources and more diversified power supply arrangements. Streamlined investment procedures are expected to reduce administrative barriers and improve investor confidence in the renewable energy sector.

	renewable energy costs combined with improved policy certainty are likely to enable renewable energy deployment to exceed earlier MOIT projections. Neutral: The prior action primarily revises regulatory and investment procedures and therefore does not itself create a direct physical environmental footprint. The reforms represent a targeted adjustment of existing policy mechanisms rather than a fundamental change in the overall renewable energy strategy. Likely adverse (covered by existing systems): Accelerated renewable energy deployment may increase cumulative land-use pressures, biodiversity impacts, marine ecosystem disturbance associated with offshore wind development, and transmission-related environmental impacts if projects are not adequately planned and screened. Delegation of additional approval authority to provincial authorities may also create uneven implementation of environmental safeguards depending on local institutional capacity. These risks are partially mitigated through Viet Nam's Environmental Protection Law 2020, the national ESIA system, MONRE oversight of large-scale projects, and sector-specific permitting procedures. However, cumulative impact assessment capacity and integrated spatial planning for renewable energy development remain under development, resulting in moderate residual environmental risk.	Neutral: The policy action itself does not directly require physical displacement or immediate labour restructuring and primarily focuses on improving investment conditions and regulatory efficiency. Likely adverse (covered by existing systems): Rapid expansion of renewable energy infrastructure may create land acquisition pressures, community-level conflicts, livelihood impacts, fisheries disruption in offshore wind areas, and localized health and safety impacts related to construction activities and worker influx. Increased delegation of approval authority to provincial authorities may also result in inconsistent application of compensation, resettlement, and ethnic minority safeguards across provinces. These risks are partially mitigated through Viet Nam's Land Law 2024, compensation and resettlement frameworks, labour regulations, and E&S consultation requirements. Nevertheless, implementation quality and community engagement capacity continue to vary across subnational jurisdictions, resulting in moderate residual social risk.
2.2 Rooftop Solar PV, Battery Storage and Pumped Storage Hydropower Incentives	Positive: The reform is expected to substantially accelerate deployment of distributed rooftop solar PV systems and battery energy storage systems (BESS), contributing to major reductions in greenhouse gas emissions, improved grid resilience, and reduced dependence on imported fossil fuels. Achievement of the PDP8 target of 56 GW of rooftop solar capacity could generate significant annual renewable electricity production and avoid approximately 53.9 million tCO₂ annually. Increased deployment of BESS and pumped storage hydropower is also expected to improve grid flexibility, address	Positive: The reform is expected to improve household energy resilience, reduce electricity costs over the longer term, and strengthen public participation in the energy transition through decentralized clean energy generation. Increased deployment of rooftop solar and BESS may also support local employment opportunities in installation, maintenance, and manufacturing activities. Improved grid stability and reduced power shortages are expected to provide broader economic and social benefits across industrial and residential consumers.

	intermittency challenges, and strengthen energy system resilience and reliability. Neutral: The reform primarily introduces revised tariff structures, technical regulations, and financial incentives and therefore does not itself generate direct environmental impacts. Household-level distributed renewable energy systems generally involve smaller physical footprints compared to large-scale centralized generation infrastructure. Likely adverse (covered by existing systems): Large-scale deployment of rooftop solar panels and battery systems may generate growing volumes of electronic and battery waste, fire safety risks, and operational grid management challenges if technical standards and end-of-life management systems are not adequately developed. Increased investment in pumped storage hydropower may also create hydrological and ecosystem impacts, including potential changes to river flows, aquatic habitats, and land-use pressures associated with associated infrastructure. These risks are partially mitigated through Viet Nam's Extended Producer Responsibility framework, technical safety regulations, E&S requirements, and hydropower licensing systems. However, recycling infrastructure, battery waste management systems, and cumulative basin-level planning remain under development, resulting in moderate residual environmental risk.	Neutral: The policy action does not directly require land acquisition or large-scale displacement and primarily relies on voluntary household participation and private investment incentives. Likely adverse (covered by existing systems): Access to rooftop solar PV and BESS systems may remain uneven due to high upfront capital costs, financing constraints, roof ownership limitations, and unequal access to credit, potentially excluding lower-income and rural households from the benefits of distributed renewable energy. Expanded pumped storage hydropower infrastructure could also create localized resettlement and livelihood impacts if larger facilities are developed. Existing social assistance frameworks, electricity subsidy mechanisms, land acquisition regulations, and compensation systems provide risk mitigation. However, inclusiveness challenges and unequal access to clean energy technologies remain moderate residual social risks.
2.3 Energy Efficiency Decree and Operationalization of the Revised EE Law	Positive: The decree establishes the first detailed operational framework for implementation of the revised Energy Efficiency Law and is expected to generate substantial environmental benefits through reduced energy consumption, lower greenhouse gas emissions, improved industrial efficiency, and reduced energy imports. Mandatory energy audits, energy management systems, reporting obligations, appliance energy labelling, and support for ESCO development are expected to strengthen energy efficiency practices across industry, transport, and large buildings. The establishment of the National	Positive: The reform is expected to reduce energy-related financial costs for businesses and consumers, strengthen industrial competitiveness, and support creation of employment opportunities associated with energy efficiency services, audits, retrofitting, and clean technology deployment. Reduced pollution and improved energy performance may also generate indirect public health and quality-of-life benefits. The development of ESCO markets may support growth of new private sector service industries linked to the energy transition.

	Energy Efficiency Fund (NEEF) may further support investment in cleaner technologies and energy-saving measures through concessional financing and technical assistance. Neutral: The reform primarily establishes regulatory requirements, reporting systems, and financial support mechanisms and therefore does not itself create direct physical environmental impacts. The decree focuses on improving operational efficiency within existing facilities and sectors. Likely adverse (covered by existing systems): Compliance costs associated with energy audits, reporting obligations, and implementation of energy management systems may create adjustment pressures for inefficient firms and smaller enterprises. Some industries may face temporary operational disruptions during implementation of efficiency upgrades or equipment replacement. These risks are partially mitigated through the ESCO framework, concessional financing support under the NEEF, phased implementation arrangements, and existing industrial support programmes. Residual environmental and implementation risk is considered low to moderate due to evolving institutional and technical capacity.	Neutral: The decree itself does not directly require land acquisition or immediate workforce reductions and primarily focuses on operational and technical efficiency improvements. Likely adverse (covered by existing systems): Increased efficiency requirements may create restructuring pressures for energy-intensive and inefficient firms, potentially affecting employment in sectors unable to rapidly modernize operations. Compliance costs and reporting requirements may also create challenges for smaller enterprises with limited technical capacity. Existing labour retraining programmes, vocational training systems, and industrial support measures provide partial mitigation, although integration between labour transition policies and energy efficiency reforms remains limited. Residual social transition risk is considered moderate.
3.1 Revised Public Debt Management Law, ODA Streamlining and JETP Reform	Positive: The reform is expected to improve Viet Nam's ability to mobilize concessional finance, accelerate implementation of JETP-related investments, and support financing of renewable energy, transmission infrastructure, and other sustainable energy transition projects. Streamlined procedures for project approval, broader ODA eligibility for SOEs, and expanded participation of commercial banks are expected to reduce delays and improve access to international climate and infrastructure finance. Upgrades to transmission infrastructure supported through improved financing access may enhance the electricity system's capacity to integrate larger shares of renewable energy and improve system resilience.	Positive: The reform is expected to improve access to international concessional finance, accelerate investment in sustainable infrastructure, strengthen energy security, and support broader economic development objectives associated with the energy transition. Streamlined JETP implementation arrangements and expanded financing access for SOEs may also support faster modernization of the transmission network and improved electricity system reliability. Reduced project lead times may improve overall effectiveness of climate and energy transition investments.

	Neutral: The prior action primarily revises institutional arrangements, financial governance systems, and administrative procedures and therefore does not itself generate direct environmental impacts. The restructuring of the JETP Secretariat and clarification of institutional mandates are administrative measures intended to improve implementation efficiency. Likely adverse (covered by existing systems): Faster approval procedures and expanded financing eligibility may increase the risk that environmentally sensitive or high-impact infrastructure projects proceed with insufficient screening or oversight if institutional capacity does not keep pace with accelerated investment flows. Expanded transmission infrastructure and energy investments may also create indirect environmental pressures related to land use, ecosystems, and cumulative infrastructure development. These risks are partially mitigated through Viet Nam's ESIA framework, sectoral approval systems, donor safeguard requirements, and MONRE oversight. However, climate-risk tagging, cumulative assessment systems, and institutional coordination capacity remain under development, resulting in moderate residual environmental risk.	Neutral: The reform primarily concerns financial governance and institutional coordination mechanisms and therefore does not directly create immediate social disruption or labour displacement. Likely adverse (covered by existing systems): Increased public borrowing and expansion of concessional financing may create long-term fiscal sustainability risks if debt management and project quality controls are not adequately maintained. Accelerated project approvals may also create risks of weaker stakeholder consultation or uneven implementation of social safeguards for large infrastructure projects. These risks are partially mitigated through MOF fiscal oversight systems, public debt management regulations, donor safeguard requirements, and existing land acquisition and consultation frameworks. Nevertheless, institutional coordination capacity and integration of climate-related fiscal risk analysis remain partially developed, resulting in moderate residual social and governance risk.
3.2 Electricity Subsidies for Poor and Vulnerable Households	Positive: The reform is expected to support the social sustainability of the energy transition by maintaining access to basic electricity services for poor and vulnerable households during periods of rising electricity investment and tariff adjustments. By helping sustain public acceptance of energy transition reforms, the measure may indirectly support continued implementation of renewable energy and decarbonization policies. The subsidy mechanism may also reduce incentives for unsustainable household energy use practices associated with energy poverty. Neutral: The subsidy mechanism itself does not generate a direct environmental footprint and primarily represents a targeted social	Positive: The reform is expected to improve energy affordability, support poverty reduction, and protect vulnerable households from cost-of-living pressures associated with energy transition investments and electricity tariff rebalancing. The subsidy mechanism is particularly important for households unable to benefit directly from rooftop solar PV and battery storage support measures and therefore strengthens the inclusiveness and social acceptability of the broader energy transition programme. Improved access to reliable electricity may also support broader social development and quality-of-life outcomes.

	protection measure linked to electricity affordability. Likely adverse (covered by existing systems): Subsidized electricity tariffs may create a limited rebound effect through increased electricity consumption and may indirectly reduce incentives for energy efficiency among some beneficiary households. Continued electricity subsidies could also create indirect fiscal pressure if electricity pricing reforms are delayed or poorly targeted. These risks are partially mitigated through consumption thresholds, targeted eligibility criteria established under Prime Minister Decision 14/2025/QD-TTg, and provincial implementation oversight mechanisms. Residual environmental risk is considered low.	Neutral: The measure is a targeted financial support mechanism and does not involve physical displacement, land acquisition, or labour restructuring. Likely adverse (covered by existing systems): Risks include targeting inefficiencies, uneven implementation across provinces, fiscal sustainability pressures, and the possibility that some eligible households may not be effectively reached due to administrative capacity constraints. There is also a risk that subsidy levels may become insufficient if electricity tariffs continue to increase significantly over time. These risks are partially mitigated through provincial implementation arrangements, national social protection systems, and eligibility criteria established under the Prime Minister's tariff structure decision. However, variations in provincial administrative capacity may result in moderate residual implementation risk.
--	--	---

