

# VIETNAM TECHNICAL ASSISTANCE PROGRAM

MARCH 2023



# Contents

Executive Summary	2
A. Country Targets	4
B. Issues and Challenges in Vietnam’s Energy Transition	6
C. External Donor Assistance for Energy Transition	9
D. ETP High Level Technical Assistance Program in Vietnam	10
Strategic Outcome Area 1: Policy Alignment with Climate Commitments	12
Strategic Outcome Area 2: De-risking of Energy Efficiency and Renewable Energy Investments	19
Strategic Outcome Area 3: Extending Smart Grids	22
Strategic Outcome Area 4: Building Knowledge and Awareness	24
E. Lessons Learned after the second year of ETP operation in Vietnam	26
Annex 1: Vietnam Context and Energy Sector Background	28
A. Energy Sector Overview	28
B. Overview of NDC Target	29
C. Management of Energy Transition	30

# Executive Summary

1. **Over the past two years, Vietnam has made significant political commitments towards reducing its GHG emissions, most recently with the Just Energy Transition Partnership (JETP) Declaration.** This declaration builds on the announcement at COP26 of Vietnam's 2050 net-zero emission target, and is accompanied by the updated NDC 2022. These commitments have helped elevate government discourse on this subject and have heightened the need for cross-sectorial intervention, planning, and action.
2. **[Decision 888/QD-TTg in July 2022](#) of the Government assigned the Ministry of Natural Resources and Environment (MONRE) as the coordinating ministry for energy transition in Vietnam.** Accordingly, MONRE will coordinate the line ministries of Industry and Trade (MOIT), Finance (MOF), Planning and Investment (MPI), Foreign Affairs (MOFA), Transport (MOT), Science and Technology (MOST), Justice (MOJ), Information and Communication (MIC), the Commission for State Capital Management at Enterprises (CMSC) and the State Bank of Vietnam (SBV) to mobilize available resources and to create an overall effort to fulfill the country's commitment at COP26. MONRE is also the lead ministry to implement the JETP declaration.
3. **The rapid issuance of directives from the highest level of Government has led to gaps in regulatory frameworks, policies, financing mechanisms, human capacity, and physical infrastructure.** These gaps have caused uncertainty, which is evident in the fluctuations to renewables commitments in PDP VIII and the market uncertainty surrounding the curtailment of solar PV projects in southern Vietnam.
4. **Bureaucratic challenges still prevail in Vietnam for the development community,** The development community is responding in part to the energy transition needs of the Government of Vietnam, but the bureaucratic and restrictive Decree 114, coupled with a reported reluctance of the Government of Vietnam to engage with programs, is hindering the progress of directed Technical Assistance.
5. **ETP has strengthened and increased its government relationships.** Guided by the gap analysis ETP prepared through donor mapping in Vietnam and multiple discussions with local government agencies of Vietnam, ETP established relationship with four ministries (MONRE, MOIT, MOST, MOF) and two commissions (CMSC and CEC) to develop and implement various technical assistance activities touching different aspects of energy transition, including coal abatement, energy efficiency, carbon pricing and carbon market, smart grid, technical standards and communication.

6. **ETP's program in Vietnam is augmented by its regional program, which provides additional support in various areas related to energy transition.** Examples of the projects encompass addressing knowledge gaps through the Energy Transition Roundtable, which offers in-depth sessions to the Vietnamese stakeholders from both the public and private sectors. The regional program also includes an Energy Efficiency Diagnostic and Political Economy Assessment, as well as an Energy Market Mechanism that reviews the progress of countries in the region in utilizing market mechanisms to ensure access to dynamic prices in the energy sector. The program also integrated the Just Coal Transition Platform to support stakeholders facing transition challenges due to coal phase-down. Additionally, Vietnam is a key component in the ASEAN Power Grid Program, designed to expedite grid coordination and increase renewable energy demand and solutions across the Region.
  
7. **ETP aims to assist Vietnam in achieving its energy-related objectives on four fronts.** This includes: 1) policy alignment with climate commitments (11 projects); 2) de-risking EE and RE investments (4 projects); 3) sustainable resilient infrastructure development (1 projects) ; and 4) knowledge and awareness building (2 projects). All of the planned, on-going, and completed projects by ETP are requested by governmental agencies, align with the Vietnamese government's official energy targets, and aim to resolve the current challenges and maximise the country's potential in sustainable development and energy transition.

## A. Country Targets

8. **Vietnam's strong growth has come with environmental cost.** Vietnam, a vibrant emerging economy with a population of 97.47 million<sup>1</sup>, had been recording an annual GDP growth rate of 8.02% in 2022<sup>2</sup>. This led to a significant upsurge in energy consumption and greenhouse gas emissions. Considering the predictions of continuous economic growth until 2030, if the escalating energy demand is not tackled, it will lead to severe electricity shortages.
9. **During the 26th Conference of Parties (COP 26), Vietnam committed to achieving net-zero carbon emissions by 2050 and phasing out coal-powered electricity generation by 2040.** Since this landmark announcement, the Government of Vietnam has been proactively aligning its Ministries and related targets with this ambition.
10. **On February 11, 2020, the Politburo of Vietnam issued Resolution No. 55, which provides guidelines for the National Energy Development Strategy of Vietnam until 2030 and beyond.** Its primary objective is to prioritize the rapid and sustainable development of the energy sector by creating favorable conditions for all economic sectors, including the private sector, to participate. Additionally, the resolution seeks to eradicate subsidies, monopolies, opacity, and unfair competition in the energy industry.
11. **ETP aims to help Vietnam achieve its energy-related goals as stated in Resolution No. 55 (see Figure 1).** The figure presents the country's major energy-related targets that ETP intends to support. It demonstrates the connection between the targets and ETP's strategic outcomes and the broader impact that ETP will have by implementing projects to assist the Vietnamese government.

---

<sup>1</sup> World Bank. 2021. Databank.

<sup>2</sup> Hai Yen. 2022. Vietnam's GDP growth hits a 12-year high of 8.02% in 2022. Hanoitimes.

**Figure 1. Vietnam’s climate targets in alignment with ETP’s strategic goals and impact**



Mtoe: Millions of tonnes of oil equivalent; Toe: tonnes of oil equivalent  
TEFC: total final energy consumption

## B. Issues and Challenges in Vietnam's Energy Transition

12. **Vietnam's commitment to COP26 in November 2021 presents an ambitious plan to decarbonize its economy by abandoning new coal power plants and transitioning to cleaner energy sources.** This marks a significant departure from previous energy plans and demonstrates Vietnam's political will to shift to a more diverse and less carbon-intensive energy mix. Vietnam's commitment is built upon the recent surge in solar and wind power and underscores the country's need to remain competitive in a global market that values low-carbon energy and environmental sustainability. To drive progress in this direction, Vietnam has passed a number of resolutions, the most notable being Resolution 55 in 2020, which provides a legal framework for Vietnam's transition to renewable energy.
  
13. **Notwithstanding Vietnam's ambitious commitment to decarbonize its economy, obstacles and challenges continue to impede the country's path to a more sustainable and renewable energy future.** As the country grapples with these challenges, it is critical to identify and prioritize areas where external support, such as that offered by the ETP, can be most impactful in accelerating Vietnam's energy transition.
  - a. **Coal Phase-Down:** Vietnam has taken a decisive step towards a sustainable future by joining a coalition of 190 countries at COP26, pledging to phase out coal-fired power generation and halt the construction of new coal power plants. This is reflected through the draft PDP VIII that highlights Vietnam's plan to slow down coal development and prioritize renewable energy sources. However, the path to coal phase-out in Vietnam remains thorny, as the electricity generation mix is still dominated by coal (53% of generation in 2020). In addition, the majority of its existing coal-fired power plants are relatively new, having been in operation for less than a decade. As they have a technical lifespan of 40-50 years, they are likely to remain operational well beyond 2050.
  
  - b. **Funding Challenges and Absence of a Carbon Market:** One of the challenges for Vietnam is how to finance its transition to renewable energy. Estimatedly, Vietnam needs tens of billions of dollars over the next decade to achieve all of its NDC targets<sup>3</sup>. Mobilizing resources transparently and flexibly through developing a carbon market is one way to help Vietnam solve its pressing funding issues. It could incentivise private enterprises to invest in RE

---

<sup>3</sup> USAID. 2022. Carbon Market in Vietnam - Briefing Paper.

and EE, guaranteeing that public financial resources make a significant contribution to the attainment of developmental objectives. Furthermore, a carbon market in Vietnam could facilitate the country's alignment with global carbon pricing initiatives and mechanisms such as EU's Carbon Border Adjustment Mechanism and provide avenues for integration with regional and international carbon markets. Currently, Vietnam has expressed its dedication to establishing a carbon trading market through the issuance of the Law on Environmental Protection and Decree No.06/2022/ND-CP. However, comprehensive research and assistance are required to facilitate the creation and execution of such an instrument.

- c. **Low Energy Efficiency:** Energy efficiency is often referred to as the "primary fuel" in the transition towards clean energy, as it offers one of the most efficient and affordable methods for reducing CO<sub>2</sub> emissions, while simultaneously decreasing energy costs and reinforcing energy security. Energy efficiency measures can deliver a 4% reduction in Vietnam's total energy demand by 2025, and 16% by 2045<sup>4</sup>. In terms of energy usage efficiency, Vietnam lags behind other economies in the region. According to the World Bank, the country's primary energy intensity index in 2019 was approximately 5.94, lower than China, but considerably higher than India and other ASEAN countries, including Malaysia, Indonesia, the Philippines<sup>5</sup>. Lack of technical skills and knowledge related to energy efficiency makes it difficult to implement efficient energy solutions. Limited capacity of regulatory authorities to monitor and enforce energy efficiency regulations, is compounded by the low cost of energy and the lack of incentives. The absence of enforcement or sanctions for violating energy efficiency and conservation laws further exacerbates the situation<sup>6</sup>. Addressing these obstacles requires a comprehensive approach that includes increasing technical expertise and knowledge, improving financing options, incentivizing energy-efficient practices, and strengthening regulatory enforcement.

**14. Complex Renewable Energy Issues:** Vietnam's efforts to incorporate renewable energy sources into its energy mix are hindered by several obstacles, including policies, finances, and technology. The situation is further complicated by the complex administrative procedures that add to the difficulties of addressing these challenges.

- a. **Electricity and Gas Sector Structure:** Currently, the state-owned energy company Electricity Vietnam (EVN) has a monopoly on the transmission, distribution, wholesale, and retail of electricity. Additionally, EVN is the only entity allowed to purchase electricity within the market, giving them exclusive control over the entire process. In addition to EVN, the Vietnam Oil and Gas

---

<sup>4</sup> ETP. 2021. Review and Gap Analysis of the Existing Abatement Scenarios for Vietnam.

<sup>5</sup> Nguyen, V. 2021. Much to ponder for Vietnam's energy efficiency ambitions. Vietnam Investment Review

<sup>6</sup> International Partnership on Mitigation and MRV. Viet Nam - Implementing a National Energy Efficiency Programme. Low Emission Capacity Building Programme.



Group (PVN) has historically been responsible for the natural gas sector's development. However, the company's financial position has weakened due to fluctuating oil prices and its diversification beyond its core business. As a result, the government plans to divest PVN subsidiaries in both core and non-core businesses to secure financing, attract private sector capital and expertise, and establish a more efficient gas market.

To fulfill the increasing demand for electricity in a sustainable manner and meet the NDC targets, restructuring and developing a roadmap to support state-owned enterprises, such as EVN and PVN, is necessary. Furthermore, a clean energy transition is crucial to enhance the overall sector performance. To achieve these goals, the government needs to establish an effective legal, regulatory, and institutional framework that can encourage investment while minimizing potential risks.

- b. **High Capital Investment:** According to the high scenario for government's management, the estimated investment for development during 2021-2030 period is 146.5 billion USD (14.7 billion USD/year), including 131.2 billion USD for power sources and 15.3 billion USD for grid. The estimated investment for the 2031-2045 period is 380 billion USD (25.3 billion USD/year) for both new power sources and the 220-500 kV grid.
- c. **Grid Integration Needs:** The electricity grid in Vietnam is under strain due to the rapid growth of solar and wind power projects, which have exceeded the grid's capacity to integrate them, especially in provinces where these renewable energy sources are concentrated. In 2020, over 100,000 rooftop solar installations and at least 15 solar plants were connected to the grid, while 75 wind plants were added in 2021. This has resulted in many transmission lines reaching full capacity and several projects experiencing curtailment. This insufficient grid capacity is a major impediment in reaching VRE targets. Additionally, grid investments are hampered by limited borrowing capacity of the respective agencies and overall national debt limit. Investment in improved transmission and storage infrastructure is necessary for Vietnam to continue making progress toward its COP26 commitments.
- d. **Planning Challenges:** Vietnam has expressed strong commitments toward net-zero by 2050 in COP26 and entered the JETP. Nonetheless, planning remains a challenge for the country's energy transition. Although various national strategies and action plans have been issued by line ministries, the approval of PDP VIII is still pending, causing renewable energy projects and investments in the energy sector to be put on hold and creating ambiguity.

Decree 114 (former Decree 56) pertains to the management and use of Official Development Assistance (ODA) and/or concessional finance from external donors in Vietnam. A common issue that affects all development partners, particularly in the energy sector, is the significant challenges they encounter when providing support for the country's energy transition to

Vietnam's institutions and SOEs. These challenges are due to the lengthy process defined under this decree, as of May 2020. Although Decision 888 identified the revision of Decree 114 as an urgent task in July 2020, the necessary procedures may take another year to complete, causing further delays for renewable energy projects and investments in the energy sector.

- e. **Lack of Human Capacities and Awareness:** Vietnam faces challenges in human capacities in various energy aspects. This can be attributed to a lack of technical expertise and knowledge in the field, as well as limited access to training and education on renewable energy technologies. The Central Economic Committee's statistics reveal that around 1,200 government officials in provinces handle licensing and monitoring of energy and electricity generation investment projects. However, less than 20% of these officials possess expertise in energy, and the rest manage the sector based on their experience, resulting in an inefficient review and approval process. Therefore, it is crucial to build awareness and capacities at different levels to promote energy transition in Vietnam. In addition, the general public has a limited understanding of energy transition. Many mistakenly equate energy transition with simply converting electricity. Efforts to communicate and raise awareness about energy transition are primarily focused on specific projects, and are limited in terms of their volume, reach, and target audience. However, lack of public awareness can hinder understanding of the importance of taking action, available choices, and collaboration with other stakeholders in the energy transition processes. This can affect the choices made and the success of outcomes. On the other hand, increasing public awareness about the benefits of RE and EE in terms of economy, society, and the environment, together with Vietnam's and international net-zero commitments, can potentially lead to the adoption of sustainable behaviors and support for collaborative action, thus accelerating the energy transition processes.

## C. External Donor Assistance for Energy Transition

15. **Vietnam receives multiple offers of energy transition support from bilateral and multilateral donors but challenges in delivery such support exists.** Implementation of this support is constrained due to a complicated Official Development Assistance (ODA) approval process of Decree 114/2021 (former Decree 56/2016). This process can take years to complete. The donor community has collectively, prior to COP26 expressed its concerns regarding this Decree, however, subsequent change was immaterial to the process.
16. **Consequently, there is a vigorous competition among the donors, leading to high potential of overlaps and waste of resources, as well as poorly targeted steer for the government agencies toward energy transition and away from fossil fuels.** The current donor coordination mechanism of Vietnam Energy

Partnership Group (VEPG). VEPG is dominated and subsequently constrained by the Ministry of Industry and Trade (MOIT), which allows little interaction with other ministries relevant to energy transition. The Energy Transition Council (ETC) platform led by the UK ceased its activities in Vietnam after COP27. Details of donors' support for the energy sector in Vietnam can be found in this [link](#).

17. **Vietnam has sought to empower government agencies to lead the energy transition.** A Decision 888/2022 of July 2022 for COP26 Commitment Implementation (see [link](#)) clarifies the roles of the government agencies and puts the National Steering Committee under the Prime Minister in a lead, while the Ministry of Natural Resources and Environment (MONRE) coordinates government agencies.
18. **The JETP Declaration was announced in December 2022 by the Government of Vietnam and the International Partners Group (IPG).** MONRE is currently leading the JETP implementation together with the IPG. The key challenges to be addressed raised by JETP in Vietnam were (i) capital costs for energy transition; (ii) lack of certainty in the legal framework and government policies and (iii) development of the supply chains for renewable energy development. The JETP aims at “no-one is left behind” in Vietnam.

## D. ETP High Level Technical Assistance Program in Vietnam

19. **ETP can mobilize technical and financial resources and coordination capacity to improve the readiness of Vietnam to pursue its goals and support a transition to a low carbon energy system.** With its four mandated outcomes, ETP will act as an innovative platform that will design and coordinate interventions to enhance the capacity of the Government, private sector, and civil society to promote energy transition and contribute to attain the PDP VIII objectives, Paris Agreement, NDC and particularly the net-zero emission commitment. ETP's TA-plan is high-level and a live document and provides context for the concepts that ETP will explore in detail with its counterparts.
20. **ETP's activities are planned and designed under the four strategic outcomes areas.** These are (i) policy alignment with climate commitments, (ii) de-risking energy transition investments, (iii) extending smart grids, and (iv) knowledge and awareness building. The level of involvement depends on the funding available for its technical assistance program. ETP is currently engaging in cooperation with four ministries (MONRE, MOIT, MOST, MOF) and two commissions (CMSC and CEC) to develop and implement various technical assistance activities touching different aspects of energy transition, including coal abatement, energy efficiency, carbon pricing and carbon market, smart grid, technical standards and communication.

**Figure 2: Summary of ETP's Energy Transition Analysis and Programming**

		By 2050		By 2035		By 2030			
		Energy Transition Challenges		Strategy		VIE - What needs to be done		ETP Programming	
Subsidized electricity tariff and policy inconsistency and insufficiency	<ul style="list-style-type: none"> <li>The country is heavily dependent on coal for electricity production</li> <li>GHG emission must be reduced to 170 MtCO<sub>2</sub>e by 2030</li> <li>Energy efficiency must reach 8%-10% by 2030</li> </ul>	Aligning RE and EE Policies with Climate Commitments	<ul style="list-style-type: none"> <li>National strategies for just transition for coal, oil and gas supply chain, inc. PDP, EMP and JETP RMP.</li> <li>Legal framework for carbon pricing, carbon tax and carbon market</li> <li>EE policies enforcement and roadmap development.</li> <li>Legal framework for power sources and grid investment</li> </ul>	<ul style="list-style-type: none"> <li>Coal Abatement Scenarios Diagnostics</li> <li>Net-zero study in energy sector</li> <li>Net-zero roadmap for CMSC and SOEs</li> <li>CBAM and carbon tax design</li> <li>Carbon market development</li> <li>Just transition roadmap for coal, oil and gas</li> <li>Legal review for auction mechanism in power sources development</li> <li>Diagnostic of Competitive Arrangements for Energy Transition</li> </ul>	More renewable energy, Energy Security, GHG Emission Reduction, Adequate Finance for Sustainable Development	NDC Target - GHG reduction 43.5%	JETP Target - Peak Emission of 240 MtCO <sub>2</sub> e	JETP Target - Peak emission of 170 MtCO <sub>2</sub> e	National Climate Change Strategy Net-Zero Emission
	<ul style="list-style-type: none"> <li>FIT for RE expired in Nov. 2021</li> <li>No legal framework for offshore wind survey and investment licensing</li> <li>ESCO business model has not been legalized</li> <li>Under-developed competitive energy and electricity markets</li> <li>Difficult finance for investment</li> <li>No carbon pricing, tax and market</li> <li>No technical standards</li> </ul>	De-risking RE and EE investments	<ul style="list-style-type: none"> <li>Legal framework for survey and investment in RE and grid</li> <li>Carbon credit exchange</li> <li>ESCO business model development</li> <li>Energy audit and EE benchmarking tool</li> <li>Legal framework for a competitive energy and electricity market</li> <li>Green financing mechanism</li> <li>Technical standards for RE and EE products</li> </ul>	<ul style="list-style-type: none"> <li>Offshore wind survey licensing criteria</li> <li>Carbon trade exchange and financial operation mechanism</li> <li>Competitive energy market development</li> <li>National Green Cooling Program</li> <li>National standards for offshore wind products and battery energy storage</li> </ul>					
	<ul style="list-style-type: none"> <li>Existing grid infrastructure cannot incorporate RE sources</li> <li>Under-developed competitive electricity markets</li> <li>Private sector cannot invest in grid</li> </ul>	Expanding Sustainable Resilient Infrastructure – Smart Grids	<ul style="list-style-type: none"> <li>Smart grid and grid digitalization</li> <li>A transparent competitive electricity market</li> <li>Private sector investment in grid development</li> </ul>	<ul style="list-style-type: none"> <li>Grid modernization and digitalization</li> <li>Competitive electricity market development</li> <li>Legal review for private sector investment in grid expansion (article 4 of the Electricity Law)</li> <li>ASEAN Power Grid Roadmap</li> </ul>					
	<ul style="list-style-type: none"> <li>Limited knowledge and skills for management of renewable energy projects</li> <li>Limited understanding of energy transition concepts and processes</li> </ul>	Knowledge, Skills, Awareness and Capacity Development	<ul style="list-style-type: none"> <li>Improving knowledge for provincial leaders and government officials involved in RE and EE policy development and execution</li> <li>Just Transition programs to ensure access to green jobs</li> <li>Raising public awareness on energy transition</li> </ul>	<ul style="list-style-type: none"> <li>Leadership Training for provincial leaders, policy makers and executors</li> <li>National TV series on energy transition</li> <li>Just Coal Transition Forum</li> <li>Energy Transition Roundtable</li> </ul>					

## Strategic Outcome Area 1: Policy Alignment with Climate Commitments

21. **Policy alignment is at the forefront of ETP's work in Vietnam and in the Region.** The initial steps in scoping appropriate policy interventions are taken on the basis of the donor mapping exercise and mapping of where Government's climate and energy sector ambitions are conflicted by its current policies and regulations. As these guiding directions were reviewed, ETP also developed a more fundamental understanding of the institutional landscape and developed relationships with various agencies that have an impact on the policy decisions and implementation. In undertaking policy dialogue, two critical areas need to be addressed: (i) strategic communications to ensure that the policy proposals are diligently communicated to all levels of government and stakeholders and (ii) capacity is developed in tandem with the design and agreement on implementation procedures. With the current and policy regulatory framework as well as the Government's sector organization point to outdated policy direction when compared with the current declarations, ramping up hinges on an expanding knowledge and leadership across the stakeholders. ETP has identified areas of intervention to support Vietnam to achieve its climate commitments through policy dialogues and targeted Technical Assistance:

- a. **Policy framework for Net Zero Emissions:** Coal abatement review, gap analysis and development of net-zero emission road map for coal-fired power plants aim to identify a basis for a realistic, technologically and financially viable alternative to meeting the rapid growing demand in the country while reducing the dependence on fossil fuel, and provision of continuing communication platform for a dialogue with a wide-range of counterparts for ensuring progressive planning and development of stakeholder understanding of energy transition issues;
- b. **Market Mechanisms for RE Energy:** Creating enabling conditions, enhancing and implementing policies and legal framework to build a competitive and transparent power market that will facilitate energy transition and enable the private sector's involvement in network development;
- c. **Legal Framework Alignment with Climate Commitments:** Support to the revision of Electricity Law on auction for power sources development, grid investment and network development to help expand smart grids and enhance grid flexibility;

- d. **Coal Phase-Down:** Study on solutions for stranded assets of the existing and under development coal-fired power plants, financing possibilities and implementation pathways for coal phase out at a concrete level (in tandem with the work ETP is carrying out at the Regional level through Asia Coal Transition Platform);
- e. **Carbon Market and Price Signals:** Facilitating the government to develop the carbon market which will, later, be linked with the international markets;
- f. **Energy Efficiency:** Energy efficiency standards and policies to foster greater funding for energy efficiency projects; and

**Table 1. Outcome Area 1. Policy Alignment with Climate Commitments**

Title of Program	Current Situation	Objective	Outcome
<p>Completed: Coal Abatement - Review and Gap Analysis of the Existing Abatement Scenarios</p> <p><i>Government request through UK COP26 ETC and RRF<sup>7</sup></i></p>	<p>Abatement scenarios have been conducted by the Government and Development Partners with varied assumptions and results.</p> <p>The draft proposal for the national power development plan (PDP VIII) indicates an increase of 26GW of coal capacity, which is inconsistent with</p>	<p>This review and gap analysis of the existing abatement scenarios has the following objectives:</p> <ol style="list-style-type: none"> <li>1. To identify the shared assumptions and a solid, technologically, and financially viable scenarios for abatement of the coal power generation pipeline</li> <li>2. To propose practical recommendations to support the government in addressing the current gaps and effectively phasing out coal.</li> </ol>	<p>The outcome of this intervention is a set of actionable plans and strategies that can be implemented to reduce coal use and greenhouse gas emissions, as well as increase RE investments to facilitate the transition to cleaner forms of energy. The recommendations proposed in this study can also support the government in developing and improving policies and regulations that incentivize the use of renewables and penalize the use of coal, funding for research and development of new technologies, and</p>

<sup>7</sup> The Rapid Response Facility (RRF), launched by the COP26 Energy Transition Council (ETC), brings together ministers from 25 countries with the development partners. It provides a range of assistance to ETC countries to accelerate energy transitions. A member of the ETC and a 'Spoke' in the RRF, ETP has been selected to lead the Review and Gap Analysis of the Existing Abatement Scenarios in Vietnam.

	the Politburo's Resolution 55.		support for affected communities and industries to transition to new jobs and economic opportunities.
<p>Ongoing: Coal abatement - Net-zero scenarios and roadmap for energy SOEs</p> <p><i>Local counterpart: The Commission for State Capital Management (CMSC)</i></p>	ETP supports CMSC to develop and realise a roadmap for coal phasing-out at coal-fired power plants under the three energy SOEs.	<ol style="list-style-type: none"> <li>1. Produce a roadmap for CMSC to support SOEs in transitioning towards net-zero emissions while maintaining power supply reliability</li> <li>2. Provide recommendations to CMSC, SOEs, and other key decision-makers to expedite the implementation of the roadmap.</li> </ol>	ETP's support will facilitate CMSC and the government of Vietnam to achieve net-zero emission by building confidence in the creation of a coal retirement plan and channeling finance for investment in energy transition at the energy SOEs. This would be a significant step towards achieving the global goal of reducing greenhouse gas emissions, as it helps facilitate the adoption of cleaner energy sources and contribute to the reduction of greenhouse gas emissions.
<ol style="list-style-type: none"> <li>1. Ongoing: Net-zero study for the energy sector in Vietnam</li> <li>2. Evaluation of energy transition impacts on coal industry and recommended long-term policies</li> <li>3. Assessment of energy transition</li> </ol>	Vietnam committed to net-zero emission in 2050, which requires an acceleration of energy transition of fossil fuel industries and their supply chains.	<ol style="list-style-type: none"> <li>1. Explore mechanisms, focusing particularly on conditional climate financing, technology, and policy measures to support the transition of the oil, gas, and coal sectors</li> <li>2. Identify suitable transition pathways for phasing out coal and transitioning to renewables in the sector, while mitigating any negative impacts on vulnerable groups with a focus</li> <li>3. Propose recommendations to the relevant stakeholders</li> </ol>	This intervention aims to support the implementation of the National Energy Master Plan through identifying and developing net-zero strategies for the oil, gas, and coal sectors. Particularly, it will expedite the implementation of appropriate and local-sensitive instruments, such as a competitive energy market. ETP's study on net-zero scenarios for the energy sector of Vietnam can promote the restructuring of the sectors, adoption of renewable energy sources and energy efficiency measures, while also ensuring energy security and affordability for

<p>impacts on the oil and gas industry and long-term policy recommendations</p> <p>4. Development of the Competitive Energy Market in Vietnam in the context of net-zero and JETP</p> <p><i>Local counterpart: The Department of Oil, Gas and Coal, MOI</i></p>			<p>consumers. It will support the government in devising strategies that can ensure a just transition for workers and communities affected by the shift away from fossil fuels.</p>
<p>1. Ongoing: Assessment of the impacts of EU border carbon tax on energy-intensive export products of Vietnam and legal/institutional implications on the design of carbon tax in Vietnam (2022)</p> <p>2. Ongoing: Pilot of modeling and simulation for emission trading system (ETS) with the</p>	<p>In January 2022, the Vietnamese Government released Decree 06/2022/ND-CP to address greenhouse gas (GHG) emissions mitigation and ozone layer protection, aligning with the country's commitment to achieving net-zero emissions. One of the key requirements outlined in the decree is the development of a carbon market.</p>	<p>1. Intervention 1:</p> <ul style="list-style-type: none"> <li>a. Analyse the legal and institutional implications of carbon tax for Vietnam</li> <li>b. Provide recommendations for the implementations of a carbon tax based on international best practices</li> <li>c. Equip the Department of Climate Change and other key players with essential competencies and knowledge to operate and effectively participate in the carbon market</li> </ul> <p>2. Intervention 2:</p>	<p>The interventions will provide technical support and recommendations to the beneficiaries, enabling the development of a carbon market that effectively incentivises the adoption of energy efficiency and renewable energy measures. Additionally, the interventions will suggest measures that facilitate the integration of Vietnam's domestic carbon market with the international market, reducing the negative effects of interactions between national carbon reduction programs on carbon prices. The interventions can increase transparency, improve market efficiency, and expand the market size,</p>



<p>participation of key energy-intensive entities (thermal power plants) (2022, early 2023)</p> <p>3. Assessment of the opportunities to link to international/ regional ETS's and technical/legal implications on the design of domestic ETS and the impacts on energy transition in Vietnam (2023)</p> <p>4. Pilot of voluntary labelling program for carbon emission disclosure and emission reduction outcomes Developing Vietnam Smart Grid roadmap in the period 2023-2030, with a vision for 2050</p> <p>5. Policy recommendations for Decree on carbon credit management</p>	<p>The carbon tax and carbon market can be powerful tools in reducing greenhouse gas (GHG) emissions in the electricity sector, which is responsible for 60% of GHG emissions. These measures incorporate the price of carbon into the energy, transport, and industrial sectors, thereby promoting the adoption of renewable energy (RE), energy efficiency (EE), and other innovative methods to reduce GHG emissions.</p>	<ul style="list-style-type: none"> <li>a. Pilot an ETS model for both public and private sectors to gain experience prepare for linkage with international carbon markets</li> </ul> <p>3. Intervention 3:</p> <ul style="list-style-type: none"> <li>a. Analyse the possibilities and suggest measures for Vietnam to connect with international/regional ETSs, which would expand its carbon market and offer more economical alternatives to decrease GHG emissions.</li> <li>b. Prepare the Vietnamese government's readiness to connect its emission trading platform with international markets</li> </ul> <p>4. Intervention 4:</p> <ul style="list-style-type: none"> <li>a. Recognise good practices in reporting and disclosing greenhouse gas (GHG) emissions and reduction outcomes by manufacturers</li> </ul> <p>5. Intervention 5:</p> <ul style="list-style-type: none"> <li>a. Provide inputs for draft decree on carbon credit management.</li> </ul>	<p>providing more opportunities to trade carbon credits.</p> <p>Moreover, these interventions include capacity building activities to enhance the knowledge and skills of relevant stakeholders, enabling them to effectively participate and operate in the carbon market.</p>
--	--	---	---

<p><i>Local counterpart: The Department of Finance</i></p>			
<p>Regulatory framework on Carbon trade exchange</p>	<p>In Vietnam, a carbon trade exchange (CTX) has not been established yet.</p>	<ol style="list-style-type: none"> <li>1. Analyse gaps in infrastructure, capacity, and legal, institutional, and governance frameworks</li> <li>2. Develop and implement technical assistance activities to establish an ecosystem for the carbon market and carbon trade exchange operation in Vietnam</li> </ol>	<p>With the assistance of ETP, the government can establish a functional and local-sensitive carbon market exchange ecosystem in Vietnam by 2027. This ecosystem will be designed to ensure the effectiveness of the carbon trade exchange, facilitate the trading of carbon credits, and support the scaling of emission reduction projects to meet national climate targets.</p>

<p>Ongoing: Diagnostic of Competitive Arrangements for Energy Transition (DCAT) - Regional</p>	<p>Energy transition calls for significant investments into RE. These investments, in turn, require policy adjustments in the national frameworks to ensure a level playing field exists for the region to capitalize the globally tested market mechanisms for RE integration. However, the region has not fully capitalized on these global concepts yet which could help to address the region's static nature of the conditions created by the long term Power Purchase Agreements (PPA) and the consequent lack of flexibility of consumers to price developments through current lack of competition.</p>	<p>To diagnose the legal, economic, financial and political conditions to integrate competitive and transparent market mechanisms in place of the conventional and stagnant power purchasing systems, and develop action agendas to facilitate interest and adoption of market mechanisms to integrate RE.  It is also expected to develop PPA templates for application and expediting RE procurement process.</p>	<p>An in-depth assessment of the use of market mechanisms and market conditions in RE integration, and with a prudent agenda of actions for market mechanisms will provide the pathways and encourage the integration of competitive and market-based mechanisms to increase RE in energy supply mix.</p>
--	---	---	---

## Strategic Outcome Area 2: De-risking of Energy Efficiency and Renewable Energy Investments

22. **Outcome Area 2: De-risking of Energy Efficiency and Renewable Energy Investments:** ETP is actively collaborating with various departments of MONRE, MOIT and MOST to identify the legal and technical barriers preventing investments in renewable energy and energy efficiency solutions. So far, several interventions have been identified and developed as below.

**Table 2. Outcome Area 2. De-Risking Energy Efficiency and Renewable Energy Investment**

Title of Program	Current Situation	Objective	Outcome
Completed: Establishing offshore wind development survey licensing criteria  <i>Local counterpart: Vietnam Administration of Sea and Islands</i>	The finance for investment in offshore wind in Vietnam is pending due to the lack of legal framework for sea area survey licensing.	Provide international experience of offshore wind licensing and policy recommendations for Vietnam.	Recommended offshore wind development survey licensing criteria were integrated in revised Decree 11 on Marine Spatial Planning and Exploitation.
Ongoing: Legal Support to Development of Power Generation Projects in Vietnam  <i>Local counterpart: Electricity and Renewable Energy, MOIT</i>	The FIT mechanism for renewable energy development expired in November 2021 and there has not been any new mechanism for renewable power sources development.	<ol style="list-style-type: none"> <li>1. Provide an analysis of existing legal framework relevant to power sources development in Vietnam</li> <li>2. Recommend policy changes to enable auction mechanism for the power sources development projects.</li> </ol>	Policy recommendations for revision of Electricity Law with focus on the article on auction.
<i>Local counterpart: Directorate of Standards, Metrology and Quality (STAMEQ), the Ministry of Science and Technology (MOST)</i>			

Title of Program	Current Situation	Objective	Outcome
<p>Development of National Standards for Offshore wind technical products and the battery energy storage</p> <p><i>Local counterpart: Directorate of Standards, Metrology and Quality (STAMEQ), the Ministry of Science and Technology (MOST)</i></p>	<p>MOST is assigned by the Government to study and develop national standards for the renewable and energy efficiency products, which facilitate the production and import of the products to Vietnam.</p>	<ol style="list-style-type: none"> <li>1. Identify and analyse the gaps and challenges in the relevant standards and regulations and propose solutions to solve these</li> <li>2. Develop new national standards and guidelines to ensure the safety, reliability, and sustainability of offshore wind technical products and battery energy storage systems.</li> <li>3. Provide technical guidance on the design, construction, operation, and maintenance of offshore wind technical products and battery energy storage systems.</li> </ol>	<p>National standards for offshore wind technical products and battery energy storage are in place to regulate the technical specifications of products, equipment, and design, which prevents low quality products and designs in the market and construction works. This will also facilitate the deployment of renewable energy.</p>
<p>Ongoing: National Green Cooling Program</p> <p><i>Local counterpart: The Department of Natural Resources and Environment</i></p>	<p>Vietnam has ratified the Paris Agreement under the UNFCCC and aims to reduce GHG emissions by 9% by 2030 compared to the BAU scenario, with domestic resources, and by 27% with international support. The updated NDC submitted by MONRE in 2020 (and updated in 2022) identified two mitigation options in refrigeration and ACs in the energy sector. The NDC 2020 technical report states that during the</p>	<ol style="list-style-type: none"> <li>1. Conduct in-depth study and survey to develop the National Green Cooling Activities.</li> <li>2. Develop an action plan for phasing down high GHG refrigerants in various fields</li> <li>3. Increase EE standards in ACs and refrigeration</li> <li>4. Facilitate the transition to low/non GHG refrigerants (MONRE, MOIT): by removing economic, technological, institutional and regulatory barriers</li> </ol>	<p>Establishing a National Green Cooling program with relevant legal, financial, and technical solutions in place can lead to a reduction in energy consumption and greenhouse gas emissions by promoting energy-efficient cooling technologies and practices. Moreover, the resulting cost savings for consumers and businesses can be significant. Additionally, a well-designed cooling program can improve indoor air quality, which in turn enhances their health and well-being.</p>

Title of Program	Current Situation	Objective	Outcome
	<p>2021-2030 period, high efficiency residential ACs and refrigerators will reduce 30.5 mtCO<sub>2</sub>e and 12.9 mtCO<sub>2</sub>e respectively, compared to the BAU scenario.</p>	<ol style="list-style-type: none"> <li>5. Develop new and innovative financial mechanisms to increase the adoption of efficient cooling technologies</li> <li>6. Establish and implement the National Green Cooling Program to reduce energy consumption and GHG emission in the cooling sector.</li> </ol>	<p>A national cooling program can also create new jobs and stimulate economic growth by investing in the cooling sector and related industries. Furthermore, the use of more efficient cooling technologies can reduce carbon emissions.</p>

## Strategic Outcome Area 3: Extending Smart Grids

23. **Outcome Area 3. Extending Smart Grids:** one of the key Impediments to integrating renewable energy into the transmission and distribution networks of Vietnam is the limited development of smart grid systems, which prevent effective management and distribution of renewable energy sources and the connection of a variety of distributed energy resource assets to the power grid. ETP and the Electricity Regulatory Authority of Vietnam (MOIT) defined the following interventions to extend smart grid infrastructure in Vietnam.

**Table 3. Outcome Area 3: Extending Smart Grids**

Title of Program	Current Situation	Objective	Outcome
Developing Vietnam Smart Grid roadmap in the period 2023 - 2030, with a vision for 2050  <i>Local counterpart: ERAV/MOIT</i>	<p>The national transmission infrastructure is struggling to keep pace with the rapid capacity growth, which presents a risk of bottlenecks to growth. This is mainly because of the surge in renewables, which typically takes a much shorter time to build as compared to a transmission line.</p> <p>Although the Smart Grid Development Roadmap of Vietnam has been implemented since 2012 under Decision 1670/QD-TTg-2012, there are still shortcomings preventing the smart grid development and constraining the greater penetration of renewable energy in the national grid.</p>	<ol style="list-style-type: none"> <li>1. Review and assess Vietnam’s Smart Grid development status and policy/legal frameworks in light of international smart grid deployment experiences and standards, in order to identify both challenges and opportunities for improvement</li> <li>2. Provide inputs on the draft roadmap for developing Vietnam’s Smart Grid Development Plan from 2023 to 2030, with a vision for 2045</li> </ol>	<p>Outcomes of this intervention include legal and technical gaps analysis and recommendations for smart grid development in Vietnam.</p> <p>In addition, it aims to provide recommendations for the design of Vietnam’s Smart Grid Development Plan until 2030, with a vision to 2045</p>

<p>Research regulations and mechanisms on the ratio of renewable energy (Renewable Portfolio Standard - RPS) <i>Local counterpart: ERAV/MOIT</i></p>	<p>The policies for the renewable portfolio standard have not been analysed and developed in Vietnam.</p>	<ol style="list-style-type: none"> <li>1. Review and assess the current legal framework for RPS</li> <li>2. Review and analyse the international experiences in regulations, policies, and mechanisms to promote RPS implementation</li> <li>3. Propose scenarios, roadmaps, and regulations for RPS implementation in Vietnam</li> </ol>	<p>RPS policies are in place to increase the use of renewable energy sources for electricity generation. The application of RPS policies will encourage electricity suppliers to provide their customers with a stated minimum share of electricity from eligible renewable resources.</p>
<p>ASEAN Power Grid Program (APGP): Output 2 - ASEAN Power Grid (APG) Roadmap  Beneficiary: ASEAN Center for Energy, MEMR</p>	<p>The implementation of APG has been challenged by the limited coordination and stop-and-go-progress despite its significant potential to generate demand for and supply of renewable energy through a multilateral power trading mechanism.</p>	<p>Development of a staged roadmap to implement APG multilateral power trading by identifying the pending diagnostic and analytics to develop arrangements for APG, the current ASEAN interconnection status and existing interphases for expansion and integration into APG, and ASEAN decision making steps for an unobstructed progressing of APGP among other work to move the APG from the current study stage to implementation.</p>	<p>A roadmap with a financing framework to implement the APG initiative.</p>



## Strategic Outcome Area 4: Building Knowledge and Awareness

24. **Outcome Area 4 - Building Knowledge and Awareness:** Various support for different stakeholders from the high-level government agencies (policy makers), research institute (researchers) to grassroot level of enterprises (the energy consumers) will remove barriers for investments and implementation of RE and EE projects and contribute to the achievement of the national target. ETP has consulted with CEC and MOST to identify relevant knowledge building and awareness raising activities. Below are two major training and communication programs designed to target both the general public and policy makers in Vietnam.

**Table 4. Outcome Area 4. Building Knowledge and Awareness**

Title of Program	Current Situation	Objective	Outcome
<i>Local counterpart: Central Economic Commission</i>			
Energy Transition Training for Provincial Leaders	Vietnam has committed to achieving net zero emissions by 2050, making it imperative to strengthen the knowledge and capacity of relevant provincial leaders and officials to develop strategic responses to tackle energy-associated challenges.	<ol style="list-style-type: none"> <li>1. Provide relevant provincial leaders and officials with a comprehensive understanding of the numerous aspects of energy transition</li> <li>2. Equip them with the necessary skills to design and implement effective policies and strategies for managing the transition; and</li> <li>3. Assist them in creating a long-term vision of energy transition, both locally in Vietnam and globally.</li> </ol>	All the relevant provincial leaders and officials are equipped with the right skills and knowledge to make better-informed decisions about policies and strategies that can effectively promote the energy transition in Vietnam, contributing to the achievement of the SDGs and net-zero target by 2050.
<i>Local counterpart: Directorate of Standards, Metrology and Quality, MOST</i>			
Public Awareness Campaign on	Informing and engaging the public are equally crucial for the transition	Create and disseminate multimedia content across	The general public, regardless of their socio-economic backgrounds

<p>Energy Transition on Multimedia Channels in Vietnam</p>	<p>to a cleaner, more sustainable energy future, as they help build political will, encourage sustainable behaviors, and foster innovation to solve challenging energy issues. However, in Vietnam, there are still gaps in knowledge and capacity regarding energy transition, and no comprehensive training program has been organized to address these concerns.</p>	<p>different media channels to improve the public’s knowledge on energy transition and motivate them to actively participate in Vietnam's energy revolution.</p>	<p>and demographics, is provided with fundamental knowledge on energy transition and Vietnam’s efforts in transitioning to a cleaner energy future.</p>
<p><b>Just Coal Transition Forum</b></p>	<p>A forum mechanism is needed to generate coordination among the many transition programs that will support the communities standing to be affected by energy transition, particularly those that are negatively affected by coal phase down and early retirement of coal-fired power plants.</p>	<p>A convening Forum bringing together community and donor representatives together to create learning and enhance capacities, provide coordination service for transition programs and access to finance, and build institutional governance and implementation capacities through facilitation of dialogue among stakeholders in Southeast Asia.</p> <p>ETP will host the first three years of the Forum and a sustainability plan will be formulated that will identify its long term future and its hosting arrangements among other criterias.</p>	<p>An independent coordinating and convening Forum that will support just transition programs to participate in the activities of the Forum and fund the ensuing activities.</p>

## E. Lessons Learned after the second year of ETP operation in Vietnam

### 25. Based on the ETP's on-site operations in Vietnam, there are three key lessons learnt from negotiating and engaging with local partners in Vietnam:

- a. **Government Decision Making on External Assistance:** A flexible approach should be applied for negotiation and engaging in projects with local Government agencies: In Vietnam, [Decree 114](#) (earlier Decree 56) on ODA management is the main legal framework which regulates the cooperation between the Vietnam government agencies and the donors. Depending on the size of the project, the project appraisal and approval process shall be short or lengthy due to the internal consultation process of Vietnam. However, it should be noted that government agencies of Vietnam can cooperate with development partners by signing international agreements according to [Decree 64](#), in which, departments of the ministries and provinces are the beneficiaries of the project results and not involved in budget management. In many cases, ETP responded to the urgent needs of the local counterparts based on their written requests. As long as the beneficiaries do not receive funds to their accounts for project implementation and management, the project development and implementation process is very much shorter while ETP's support impacts remain high. This practice also ensures transparency as all the procurement procedures are managed under UNOP's rules.
- b. **Coordination with the local partners and donor community:** Since energy transition topics are attracting great attention from the donors, particularly after the Vietnam Prime Minister's commitment of net-zero emission by 2050 at COP26, ETP's planned interventions are exposed to the risk of overlapping with on-going activities financed by other donors. Therefore, ETP only responded to written requests from the local government agencies and worked together to sort out potential overlaps. The local government agencies are responsible for coordinating different support from development partners to avoid duplication. ETP, by all means, has been trying to encourage collaboration and coordination among the development partners to avoid duplication and waste of limited resources.
- c. **Support to Private Sector:** Support to government agencies to help develop policies and regulations. However, it is critical to concurrently bring the private sector, particularly small and medium-sized enterprises, up to comparable level of understanding of the opportunities and risks in energy transition, as these do lack of information of new policies, are challenged to

access funding for their investment, and can advise on the formulation of the new policies and regulations to remove implementation risks or adverse implications. ETP's multi-partner approach is an advantage and the engagement of various stakeholders develops these voices in the efforts to accelerate sustainable energy transition.

# Annex 1: Vietnam Context and Energy Sector Background

## A. Energy Sector Overview

26. Solar and wind power expanded by 21% and 5%, respectively between 2019 and 2021. However, the expiry of the FIT scheme in November 2021, coupled with limited grid capacity, has resulted in curtailment of solar power. Although MOIT proposed an interim FIT mechanism for transitional wind and solar projects, which was approved by the government, the sector needs a consistent, predictable and reliable legal framework to attract and secure long-term investments in renewable energy.
27. Since the Prime Minister's commitment to net-zero emissions (NZE) by 2050 at COP26, all ministries have been requested to prepare NZE roadmaps and their strategies to realize the target. So far, key ministries of MONRE, MPI and MOT have issued their strategies toward net-zero emission and green development. Outstanding strategies can be named include [National Climate Change Strategy](#) (MONRE), [National Green Growth Action Plan](#) (MPI) and [Action plan toward green energy and GHG mitigation in transport sector](#) (MOT).
28. An ongoing debate on the role RE in the context of drafting of the Power Development Plan VIII to 2045. The draft PDP VIII has been revised and submitted 8 times by the MOIT to the Government but has not been approved. The recent investigation of PDP VII and PDP VIII development conducted by the Central Government Investigator is foreseen to further delay the approval process. According to the [draft PDP VIII \(version November 2022\)](#), the share of renewable energy capacity (other than hydropower) will increase from 27% by 2030 to 58.9% by 2050. The share of power from these sources will increase from 19.8% by 2030 to 59.1% by 2050. CO<sub>2</sub> emissions will peak at 239 million tons by 2035, 115 million tons by 2045 and decline to 30 million tons by 2050, ensuring Vietnam's commitments at COP26.
29. The JETP Declaration in December 2022 is expected to create a substantial acceleration for the energy transition in Vietnam. The Government of Vietnam and the International Partner Group (IPG) set an ambitious target of accelerating the decarbonisation of its electricity system from the current net-zero planning peak of 240 MtCO<sub>2</sub>e by 2035 with international support (down from 280 MtCO<sub>2</sub>e before COP26) towards reaching a peak of no more than 170 MtCO<sub>2</sub>e emissions from electricity generation by 2030. The committed financial support under JETP is US\$ 15.5 billion; however, the target may become out of reach if the current legal framework is not improved to unlock both public and private finance for the transition.

## B. Overview of NDC Target

30. To implement the Paris Agreement under the United Nations Convention on Climate Change in Vietnam, Vietnam submitted the first Nationally Determined Contribution (NDC) in September 2015. In 2022, the Government updated its [NDC](#). In the updated version, the emission reduction targets in the energy, agriculture, LULUCF, waste and industrial processes by 2030 compared to BAU in NDC 2022 are higher than NDC 2020, Unconditional contribution increased from 9% to 15.8% and Conditional contribution increased from 27% to 43.5%.
31. The implementation of NDC 2022 is in line with the net zero target indicated in the National Climate Change Strategy to 2050 and the measures to implement the methane emission reduction action plan. CO<sub>2</sub> emission reduction is made by two tiers as below:
- a. Energy usage: Use of high-efficiency air conditioning and refrigeration equipment in commercial and residential services; use of energy-saving lighting; use of solar water heaters; use of biogas and cleaner fuel instead of coal for household cooking in rural areas; use of measures to improve energy efficiency in industries; use of high-performance electrical equipment, high efficiency refrigeration equipment in services, commerce and trade; improvement, development and application of technology in the production of building materials; efficient use of energy in transportation; limitation of fuel consumption for motor vehicles; conversion of modes of transportation of passengers and goods; increase of the load factor of cars; use of CNG and biofuels; use of electric motorbikes, cars, and buses.
  - b. Energy supply: Development of renewable energy such as small hydroelectricity, wind energy, solar energy; development of biomass thermal power, incineration and landfill waste power, and biogas power; use of combined gas turbine technology using LNG; development of supercritical thermoelectric technologies.
32. The Unconditional contribution in NDC 2022 has increased significantly compared to that in NDC 2020 in terms of both amount and ratio of emission reduction compared to BAU. Accordingly, the amount of emission reduction in NDC 2022 is 146.3 Mt CO<sub>2</sub>eq compared to 83.9 Mt CO<sub>2</sub>eq in NDC 2020 (that of additional reduction is 62.4 Mt CO<sub>2</sub>eq). The ratio of emission reduction compared to BAU in NDC 2022 is 15.8% compared to 9% in NDC 2020 (that of additional reduction is 6.8% compared to BAU).
33. The Conditional contribution in NDC 2022 has significantly increased compared to that in NDC 2020. Accordingly, the amount of emission reduction in NDC 2022 is 403.7 Mt CO<sub>2</sub>eq compared to 250.7 Mt CO<sub>2</sub>eq in NDC 2020 (that of additional reduction is 153.0Mt CO<sub>2</sub>eq). The ratio of emission reduction compared to BAU in NDC 2022 is 43.5% vs 27.0% in NDC 2020 (that of additional reduction is 16.5% compared to BAU).

34. Vietnam also agreed to support a number of important statements and initiatives on protecting forests, shifting to clean energy, supporting adaptation for local communities, and methane reduction. The commitment of net-zero emissions and joining the methane commitment sent a strong signal to the international community, opening the door for global finance for low-emission development, which is also an opportunity for Vietnam's development.

## C. Management of Energy Transition

35. The Ministry of Natural Resources and Environment (MONRE) is centrally involved in the development of Vietnam's climate strategy and policy. Its tasks include the formulation of national climate change policies and the implementation of these efforts across sectors and in coordination with subnational governments. For the time being, MONRE is taking the lead to realize the Government's commitment of net-zero emission by 2050 and JETP Declaration implementation. The Decree 06/2022/ND-CP issued recently in January 2022, the Government of Vietnam assigned MONRE also to take the lead in development of the carbon exchange and carbon quotas, which will have great influence on the energy transition in Vietnam given the fact that the energy sector is generating around 60% of the GHG of the country.

36. The MONRE, and its Department of Climate Change, serves as a Standing Office of the National Committee for Climate Change (NCCC). This body is the highest-level institutional organ responsible for climate change policy. It is an inter-ministerial committee, which was established in 2012 through the National Climate Change Strategy (NCCS). The NCCC coordinates the development and implementation of climate change policies and laws and has the authority to issue directions to relevant ministries and to the local governments of all 63 provinces.

37. MOIT is responsible for the energy sector as a whole. It formulates policy and national plans, subject to the Prime Minister's approval, and issues circulars and guidelines implementing the Prime Minister and National Assembly's laws, resolutions and decrees. Moreover, by leading on planning and implementation of energy sector mitigation activities, MOIT plays an important role in achieving Vietnam's NDC targets. Under the former PDP VII, renewable energy projects under 50 MW are approved by MOIT and anything over that by the Prime Minister. This process is yet to be determined under the draft PDP VIII, which moves from a system of pre-approved pipelines of projects to competitive bidding.

38. Under MOIT, the Electricity and Renewable Energy Authority (EREA), advises on electricity and renewable energy and designs renewable energy support mechanisms including feed-in tariffs. Also under MOIT, the Energy Efficiency and Sustainable Development Department (EESD) advises on energy efficiency and conservation and the Electricity Regulatory Authority of Vietnam (ERAV) regulates the power sector. As fully funded departments and subsidiaries, all three bodies remain closely bound to MOIT's

decision-making authority. Mandates and functions of the key energy-related agencies and departments of the MOIT are described below:

- a. Electricity & Renewable Energy Authority (EREA): Responsible for the management of electricity, new and renewable energy (including thermal power, hydro power, nuclear power, power transmission, power distribution, rural power or renewable energy);
  - b. Electricity Regulatory Authority of Vietnam (ERAV): Develops regulations and directions to implement and regulate competitive power markets, technical codes and performance standards for power distribution and transmission, and monitors/certifies compliance, monitoring electricity tariff review and tariff setting, issues reliability criteria for power supply, guiding and monitoring compliance, reviews power demand forecast, conducts system studies, and recommends measures to achieve supply-demand balance, and monitoring implementation of power projects;
  - c. Department of Oil, Gas and Coal: Responsible for formulation of National Energy Master Plan, Just Transition strategy for oil, gas and coal industries and development of the competitive energy market.
  - d. Energy Efficiency and Sustainable Development (EESD): Responsible for the state management of energy efficiency and sustainable development in the energy sector; and
  - e. Institute of Energy (IOE): An energy research and planning institute set up to conduct research on national strategies, policies, and development technologies to improve energy efficiency and supply, in charge of developing PDP VI, PDP VII and New PDP VIII Proposal.
39. MOF and MPI hold important positions in not only clean energy finance and investment but in Vietnam's governance structure generally. Private Public Partnership and investment laws are formulated by MPI, who is also responsible for administrating investment and enterprise registration, leading the implementation of the green growth strategy and investment promotion activities. MOF has authority over taxation and exemptions, approves changes to electricity tariffs over given thresholds, and through SBV regulates financial market policy and leads the promotion of green banking.
40. The Commission for State Capital Management (CMSC) plays an important role in managing the Vietnam government's capital in back-bone state-owned enterprises (SOEs). With relation to the energy sector, the three SOEs of Electricity Corporation of Vietnam (EVN), Petroleum Corporation of Vietnam (PVN) and Vietnam Coal and Mining Corporation (VINACONMIN) are dominant players that produce some 60% of the electricity of the country. EVN not only runs its own power plants, but also exclusively controls the distribution and transmission systems.
41. The three energy SOEs are managed directly by the CMSC's Department of Energy. Accordingly, the Department supervises the SOEs' operations and investments as the representatives of the state shareholders, develops and recommends policies and legal



mechanisms for the SOEs governance and investments to the government of Vietnam, and designs long-term and short-term investment and development plans of the SOEs in line with the government's long and medium term socio-economic development objectives.

42. The Government is currently the largest investor in the electricity market.
- a. By the end of 2022, the 3 main state-owned energy enterprises of Vietnam Electricity (EVN), PetroVietNam, and Vinacomin held nearly 89% of the installed source capacity.
  - b. EVN, accounting for 36.98% of the generation<sup>8</sup>, is the main actor with 3 wholly owned subsidiary power generation corporations (GENCOs). Under EVN, the National Power Transmission Corporation (NPT) is responsible for transmission, with 5 power corporations, the National Load Dispatch Center, which serves as the system and market operator (SMO), strategic power plants, and the Electric Power Trading Company (EPTC).
  - c. The Government is a major shareholder of partially privatized power plants in the Vietnam Competitive Generation Market (VCGM).
  - d. The Committee for Management of State Capital at Enterprises (CMSC) oversees the finance of EVN, while EVN reports on its operations to MOIT.
29. The Ministry of Science and Technology (MOST) is a governmental agencies which performs functions of State management on science and technology, including scientific research, technology development and innovation activities; development of science and technology potentials; intellectual property; standards, metrology and quality control; atomic energy, radiation and nuclear safety. MOST plays an important role in promoting energy efficiency and renewable energy development through developing and issuing national technical standards for energy consumption, renewable energy products and design standards. The Ministry is also providing training on energy efficiency and energy audit through its technical centers and institutes.
30. The Central Economic Commission (CEC) plays an important role in the political structure of Vietnam. CEC supports the politburo and the Communist Party of Vietnam to develop key orientations and regulatory framework for socio-economic development of the country. CEC drafted the Resolution 55 on Strategic Orientation for Energy Development in Vietnam in 2020.

---

<sup>8</sup> EVN's January 2023 report.