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# CAPACITY BUILDING NEEDS ASSESSMENT FOR ENERGY TRANSITION PROGRESS IN VIET NAM

June 2023



## ABBREVIATION

<b>CASE</b>	Clean, Affordable, and Secured Energy for Southeast Asia
<b>CMSC</b>	Committee for the Management of State Capital at Enterprises
<b>CNA</b>	Capacity Needs Assessment
<b>CSTE of NA</b>	Committee on Science, Technology and Environment - National Assembly
<b>DCC of MONRE</b>	Department of Climate Change - Ministry of Natural Resources and Environment
<b>DGP of MARD</b>	Department of Crop Production, Ministry of Agriculture and Rural Development
<b>DEESD of MOIT</b>	Department of Energy Efficiency and Sustainable Development - Ministry of Industry and Trade
<b>DISA of MPI</b>	Department of Investment Supervision and Appraisal - Ministry of Planning and Investment
<b>DLH of MARD</b>	Department of Livestock Husbandry, Ministry of Agriculture and Rural Development
<b>DPM - MOF</b>	Department of Price Management - Ministry of Finance
<b>DSENRE of MPI</b>	Department of Science, Education, Natural Resources and Environment - Ministry of Planning & Investment
<b>DST of MONRE</b>	Department of Science and Technology - Ministry of Natural Resources and Environment
<b>DUT</b>	Da Nang University of Science and Technology
<b>ECA</b>	Economica Vietnam
<b>EGAT</b>	Electricity Generating Authority of Thailand
<b>EPU</b>	Electric Power University
<b>ERAV of MOIT</b>	Electricity Regulatory Authority - Ministry of Industry and Trade
<b>EREA of MOIT</b>	Electricity and Renewable Energy Authority - Ministry of Industry and Trade
<b>ESI</b>	Electricity Supply Industry
<b>ET</b>	Energy transition
<b>EVN</b>	Viet Nam Electricity Corporation
<b>FIT</b>	Feed-in Tariffs
<b>GDT - MOF</b>	General Department of Taxation - Ministry of Finance
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>HUNRE</b>	Hanoi University of Natural Resources and Environment - Ministry of Natural Resources and Environment
<b>HUST</b>	Hanoi University of Science and Technology
<b>IEC</b>	Information – Education - Communication



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<b>IEVN-MOIT</b>	Institute of Energy - Ministry of Industry and Trade
<b>IRENA</b>	International Renewable Energy Agency
<b>ISPNI of MONRE</b>	Institute of Strategy and Policy on Natural Resources and Environment - Ministry of Natural Resources and Environment
<b>MARD</b>	Ministry of Agricultural and Rural Development
<b>MEA</b>	Metropolitan Electricity Authority
<b>MOC</b>	Ministry of Civil Construction
<b>MOET</b>	Ministry of Education and Training
<b>MOF</b>	Ministry of Finance
<b>MOF</b>	Ministry of Finance
<b>MOIT</b>	Ministry of Industry and Trade
<b>MONRE</b>	Ministry of Natural Resources and Environment
<b>MONRE</b>	Ministry of Natural Resources and Environment
<b>MOST</b>	Ministry of Science & Technology
<b>MOT</b>	Ministry of Transportation
<b>MPI</b>	Ministry of Planning and Investment
<b>NGO</b>	Non-Government Organization
<b>PDP 8</b>	Power Development Plan VIII
<b>PEA</b>	Provincial Electricity Authority

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## About CASE

Southeast Asia (SEA) is the fastest developing region in the world with **Indonesia, the Philippines, Thailand, and Vietnam** representing around 80% of the region's total energy share and population. The four countries also have the highest projected GHG emissions and energy demand in the region. SEA is a key region to drive global climate action and to achieve the Paris Agreement objective.

The Project “Clean, Affordable and Secure Energy for Southeast Asia” (CASE) aims to support **a narrative change** in the power sector towards an evidence-based energy transition that robustly supports the region's development strategies as it pursues the Paris Agreement goals. The project harnesses available research initiatives to generate new evidence grounded in local realities that can persuade economic advisors, power sector decision makers, industry leaders and consumers to support rapid and responsive strategic reforms in the power sector.

To reach this objective, the project applies a joint fact-finding approach involving expert analysis and dialogue to work towards consensus by converging areas of disagreement. The creation of this evidence is expected to equip stakeholders with the knowledge and capacities to manage the power sector transition in a socially just way. CASE also supports **exchange and coordination** in the SEA power sector, provides **technical and policy support** and **facilitates discourse** around a new energy vision. By implementing these activities, CASE will directly contribute to the transition of the power sector towards clean, affordable and secure energy for Southeast Asia.

## EXECUTIVE SUMMARY

The regional project “Clean, Affordable and Secure Energy for Southeast Asia (CASE) has been commissioned by the The Federal Ministry for Economic Affairs and Climate Action (BMWK) to implement in 04 countries: Thailand, Indonesia, Philippines, and Viet Nam. The project overall aims to drive change in the power sector in Southeast Asia (SEA) towards an evidence-based energy transition, aiming to increase political ambition to comply with the Paris Agreement.

This study on Assessment of Capacity Building Needs has overall objective of identifying the needs from the key stakeholders and then providing suggestions on feasible measures to better support the main actors involving into energy transition (ET) progress in Viet Nam. To achieve this objective, gaps in terms of legal frameworks, institutional capacities of actors involved into state governance, implementation and supporting the process of energy transition (including but not limited to RE development and energy efficiency measures) will be analyzed. Consequently, capacity building measures will be provided to support the related parties in better performing their mandates, enhancing their voices and participation in energy transition progress.

According to the findings, the current state and government management structure in the energy transition process has both advantages and disadvantages. On the one hand, the hierarchical framework allocates specific responsibilities to different entities, such as the Ministry of Industry and Trade (MOIT), the Ministry of Planning and Investment (MPI), and the Ministry of Natural Resources and Environment (MONRE). These divisions are reinforced by their historical involvement in energy-related matters. On the other hand, this model's complexity results in delays due to the need for consultation across various units before policy implementation. Another limitation arises from potential overlap among national energy initiatives and strategies. Multiple programs addressing energy transition and sustainable development, aligned with COP26 commitments, may intersect. This convergence can lead to conflicting policies, demanding enhanced coordination among ministries.

Limited enforcement personnel capacity in respective units is a constraint, hindering smooth implementation. There's a demand for immersive training on novel energy paradigms, especially among senior leadership and technical experts. Moreover, comprehensive training frameworks for junior professionals need careful formulation.

Universities and research institutes don't adequately focus on emerging energy sectors, leading to a scarcity of skilled personnel for contemporary energy domains. This gap impacts strategy execution and may lead to higher costs due to the reliance on foreign labor.

Entities outside the state sector possess financial resources, but investment hinges on conducive legal frameworks. Expedited policymaking and legally binding plans are essential to encourage capital mobilization.

Transitioning from coal-powered energy to renewable energy industries risks job displacement for coal industry workers. This requires systematic vocational training, with precise job-role allocation within target groups. This approach ensures a methodical transition, aligning with broader energy transition goals.

The evaluation of energy transition policies in Vietnam sheds light on a complex landscape that combines strengths and limitations across various sectors. The examination of these policies provides insights into the current state of renewable energy (RE) development, research and development for new technology, and other related fields. It reveals critical areas where adjustments and improvements are needed to facilitate a more effective transition towards sustainable energy sources.



### *Renewable Energy Development Policies:*

The initial assessment underscores the importance of Vietnam's existing State and Government management structure during the energy transition process. This hierarchical framework, characterized by distinct tiers of authority and allocated responsibilities, is pivotal for efficient management. Key roles are assigned to specific ministries, notably the Ministry of Industry and Trade, the Ministry of Planning and Investment, and the Ministry of Natural Resources and Environment. However, this structure also comes with challenges. The intricate web of reporting and procedural steps necessitates consultation across various units and organizations before policy implementation can proceed. This complexity is further exacerbated in Vietnam, where investment domains may intersect with the purview of multiple agencies, leading to delays in project execution.

Furthermore, the convergence of national energy initiatives and strategies poses potential overlaps, potentially undermining effectiveness. Numerous programs geared towards energy transition and sustainable development align with COP26 commitments, focusing on reducing carbon emissions. The responsibilities are distributed across ministries, ranging from electricity and renewable energy to green growth and environmental pollution reduction. However, this alignment also brings the risk of conflicting policies and strategies, necessitating an intricate coordination mechanism among ministries to ensure coherence.

### *Research and Development Policies for New Technology:*

In the realm of research and development, discrepancies arise from outdated regulations that fail to keep pace with evolving realities. The existing framework for high-tech parks under Decree No. 99/2003/ND-CP no longer aligns with current regulations, resulting in planning, investment, construction, land, and tax issues. This misalignment hampers investment attraction and challenges both localities and state management agencies.

Moreover, the licensing process for high-tech and renewable energy projects remains intricate and time-consuming, primarily concerning land-related procedures. These hurdles impact the competitive landscape for investments in Vietnam, urging a need for streamlined processes to enhance the country's attractiveness to investors.

### *Other Fields:*

The evaluation highlights several issues in diverse areas. It reveals that entities allocated marine areas for wind energy exploitation lack the right to mortgage their assigned sea areas. This oversight limits their financial flexibility and undermines potential investments in wind energy projects. Additionally, a significant gap emerges in regulations pertaining to the development of training and human resources in the RE sector. This gap could hinder the sector's growth potential in the near future.

In conclusion, the evaluation of energy transition policies in Vietnam presents a multifaceted picture. While the State management structure demonstrates strengths in organization and delineation of responsibilities, it also grapples with complexities that lead to procedural delays. The alignment of national energy initiatives with COP26 commitments is both promising and challenging, requiring meticulous coordination to avoid conflicting policies. In research and development, outdated regulations hinder progress and require an overhaul to reflect current realities. Furthermore, the obstacles in licensing and marine area allocation call for more inclusive policies. The future of Vietnam's energy transition lies in addressing these shortcomings to foster a smoother journey towards renewable energy and sustainable development.

The results of Capacity Need Assessment points out following findings:

#### *Variability in Energy Transition Readiness Among Actors*

The readiness of different actors for the energy transition (ET) varies significantly based on their roles, mandates, and engagement in the process. This divergence is shaped by the institutional framework, regulations, and their individual capacities. Some actors have dedicated extensive time to prepare for climate change and ET, while others are still in the initial stages of devising response strategies.

At the central level, government agencies exhibit varying levels of preparedness for ET. Agencies like the Ministry of Industry and Trade (MOIT) and the Ministry of Natural Resources and Environment (MONRE), which play a prominent role in ET, display readiness and experience in policy formulation and collaborative efforts with international partners. However, other government bodies are less prepared due to a lack of expertise and knowledge.

#### *Levels of Readiness Across Agencies:*

Disparities in readiness persist across different levels of government agencies. Ministries show a greater capability to handle ET-related tasks compared to provincial actors. MOIT and MONRE express confidence in their ability to offer training and capacity-building support to other actors. In contrast, provincial actors, particularly those outside the Department of Industry and Trade (DOIT) and the Department of Natural Resources and Environment (DONRE), have minimal exposure to ET training, often relying on external consultants for guidance.

Differences in readiness are also evident among commercial actors. Petro Vietnam (PVN) has proactively established a plan, designated departments, and allocated resources for comprehensive study, capacity-building, and integration of ET into its operations since 2020. Conversely, the Electricity of Vietnam (EVN), while acknowledging ET's importance in its strategic structure, primarily manages it through its Strategy Division. EVN is currently formulating an ET roadmap aligned with government policies.

#### *Manpower Shortage: A Significant Challenge*

A critical challenge facing ET initiatives is the severe shortage of manpower among actors. Many stakeholders expressed that their overwhelming workloads leave them with little time for meetings, discussions, and capacity-building activities. This issue is reflected in interrupted interviews, truncated discussions, and a general inability to allocate staff for training and workshops. This shortage of manpower is anticipated to pose substantial challenges for the capacity-building program proposed by CASE.

#### *Priority Capacity Building Topics:*

Despite the challenges, there is a notable demand for the capacity-building program proposed by CASE. Participants were asked to rank the importance of different capacity-building topics based on their needs and organizational requirements. Most respondents, ranging from 70% to 90%, ranked nine out of the ten proposed topics as necessary to highly prioritized. Notably, the only topic that received lower prioritization was Topic 8, focusing on coordination among stakeholders in energy transition.

Despite these hurdles, there is strong support from organizations and agencies for the capacity building activities, emphasizing the importance of addressing these readiness gaps to facilitate a smoother transition to green, affordable and secure energy.

# CAPACITY NEEDS ASSESSMENT TARGETING KEY GOVERNANCE ACTORS AND FRAMEWORK FOR SUPPORTING THE ENERGY TRANSITION PROGRESS IN VIET NAM

## 1 INTRODUCTION

### 1.1 The context

Within the framework of the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26) taking place in Glasgow, Scotland (UK) from October 31 to November 12, Viet Nam continued makes a strong commitment to achieve net emissions of "zero" by 2050. Accordingly, the energy transition seems to be the key relevant strategy. The Prime Minister has signed the Decision 888/QĐ-TTg dated July 25, 2022 approval for scheme setting out tasks and solutions for implementation of outcomes of COP26. This Decision highlighted the role of national, sectoral, and local strategies in revising master plans and plans/schemes to achieve Net-zero by 2050. Also, the energy sector plays a vital contribution to reduce the emission due to it shares more than 60% of total national greenhouse gas emission.

It is therefore important to have active participation into the energy transition process from various stakeholders, including actors in charges of implementing energy transition, governance institutions and authorities at national and provincial levels. Participation will be only efficient if the actors are equipped with required and relevant capacities for their mandates.

The regional project "Clean, Affordable and Secure Energy for Southeast Asia (CASE) has been commissioned by the The Federal Ministry for Economic Affairs and Climate Action (BMWK), and are being implemented in 04 countries: Thailand, Indonesia, Philippines, and Viet Nam. The project overall aims to drive substantial change in the power sector in Southeast Asia (SEA) towards an evidence-based energy transition, aiming to increase political ambition to comply with the Paris Agreement. The project's outcomes will directly contribute to the transition of the power sector towards an innovative, cost-efficient and environmentally friendly model for SEA. The project's components in Viet Nam are provision technical support to 04 major areas:

- Energy transition processes are in line with socio-economic development.
- Stable and efficient power system with a high share of Renewable energy.
- Dialogue and enhancing knowledge about energy transition processes.
- Capacity building for relevant stakeholders.

For better support the main actors involving into ET progress in Viet Nam, the CASE project has assigned Economica Viet Nam, a local consultancy firm, to conduct Capacity Need Assessment to identify the needs and develop suitable measures to satisfy those needs. The overall objectives of this assignment are to identify the gaps in terms of legal frameworks, institutional capacities of actors involved into state governance, implementation and supporting the process of energy transition (including but not limited to RE development and energy efficiency measures) will be analyzed. Consequently, capacity building

measures will be provided to support the related parties in better performing their mandates, enhancing their voices and participations in energy transition progress.

To reach these objectives, following outputs created:

**Output 1:** Targeted model of State governance structure and governance mechanisms applied in energy transition towards RE development in Viet Nam is recommended.

**Output 2:** Capacity Needs Assessment (CNA) targeting key actors involving in state management structure and management mechanism in energy transition towards RE development while reducing the use of coal for power generation in Viet Nam are conducted.

**Output 3:** Technical workshop to disseminate the results is conducted.

This assignment will mainly focus on energy transition progress in terms of promoting Renewable Energy development and reducing the use of coal for power generation.

## 1.2 The analysis framework

To achieve the specific outputs of this assignment, following framework is applied to conduct the assignment:

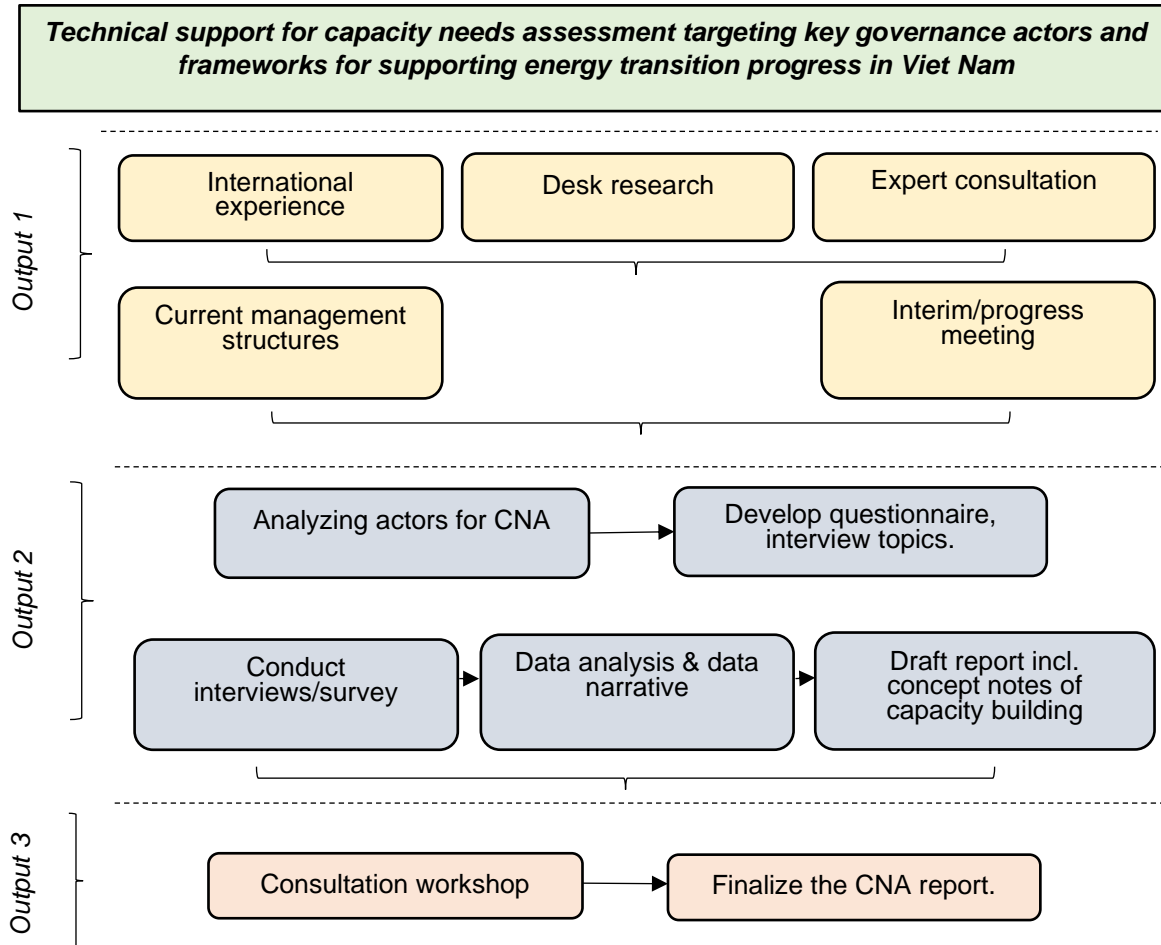


Figure 1 - The research process

Source: Developed by the authors

Due to the differences in methodologies applying for each work package, the details of analysis methods will be presented at the beginning of the next chapters.

The report will be divided into 5 parts. In the second part, the report will overview and analyze quo-status of the state management of energy transition in Vietnam. The third part will map and rank the actors based on their potential influences on energy transition progress. Which results are used to identify actors for approaching and deploying capacity need assessment, as presented in part four. The last part will be recommendations for capacity building programs both in short-term and long-term.

## 2 STATE MANAGEMENT IN ENERGY TRANSITION.

### 2.1 Analysis methods

Literature review and desk research was applied to collect information and analyze the roles, responsibilities and institutional capacities of the organizations, agencies, units etc. (hereafter called the actors) involved in the State management of the energy transition in Viet Nam. Following contents are selected for the analysis:

- a) State governance structures in the energy transition process: Describe actor's roles, responsibilities, capacities to perform their mandate in managing the energy transition progress and integration between actors as well as between governance levels (national, subnational)
- b) Strategy, timeframe, policy priorities: This section will assess the overall objectives and timelines of energy transition policies, as to address their priority in both the short term and long term.
- c) Regulatory instruments and their adequacy: Analyze the legal framework needed to coordinate, implement, monitor, and enforce the energy transition.
- d) Financial instruments and their adequacy: Analyze the financial endowment of the energy transition process.
- e) Social and technological innovation: How the state promotes governance practices, which accelerate socio-technical innovation, encourage experimentation, orient inventiveness, and speed up the processes of diffusing beneficial societal advances from a sustainability perspective
- f) Social involvement and engagement: Achieving far-reaching changes requires strong and consistent public support and understanding, multi-stakeholder processes and collaboration among diverse economic and social actors. This section will measure how societal engagement is encouraged and structured and how the public debate is raising awareness.
- g) Assess the appropriateness of the current Governmental management structure, and the coordination among the stakeholders/ actors in implementing the energy transition process towards renewable energy development in Viet Nam.
- h) Practical experiences for energy transition from Germany, Philippines and Thailand are reviewed for applicable lesson-learnt.

### 2.2 Actors involve in energy transition process in Viet Nam

#### 2.2.1 Actor's roles, strategic priorities, and their task in energy transition

Actors responsible for managing, implementing, and monitoring the energy transition process in Vietnam is reflected in many policies and resolutions. The model of the main responsible actors involved in organizing the implementation of the energy transition process in Vietnam could be classified in 03 main groups as shown in Figure 2:

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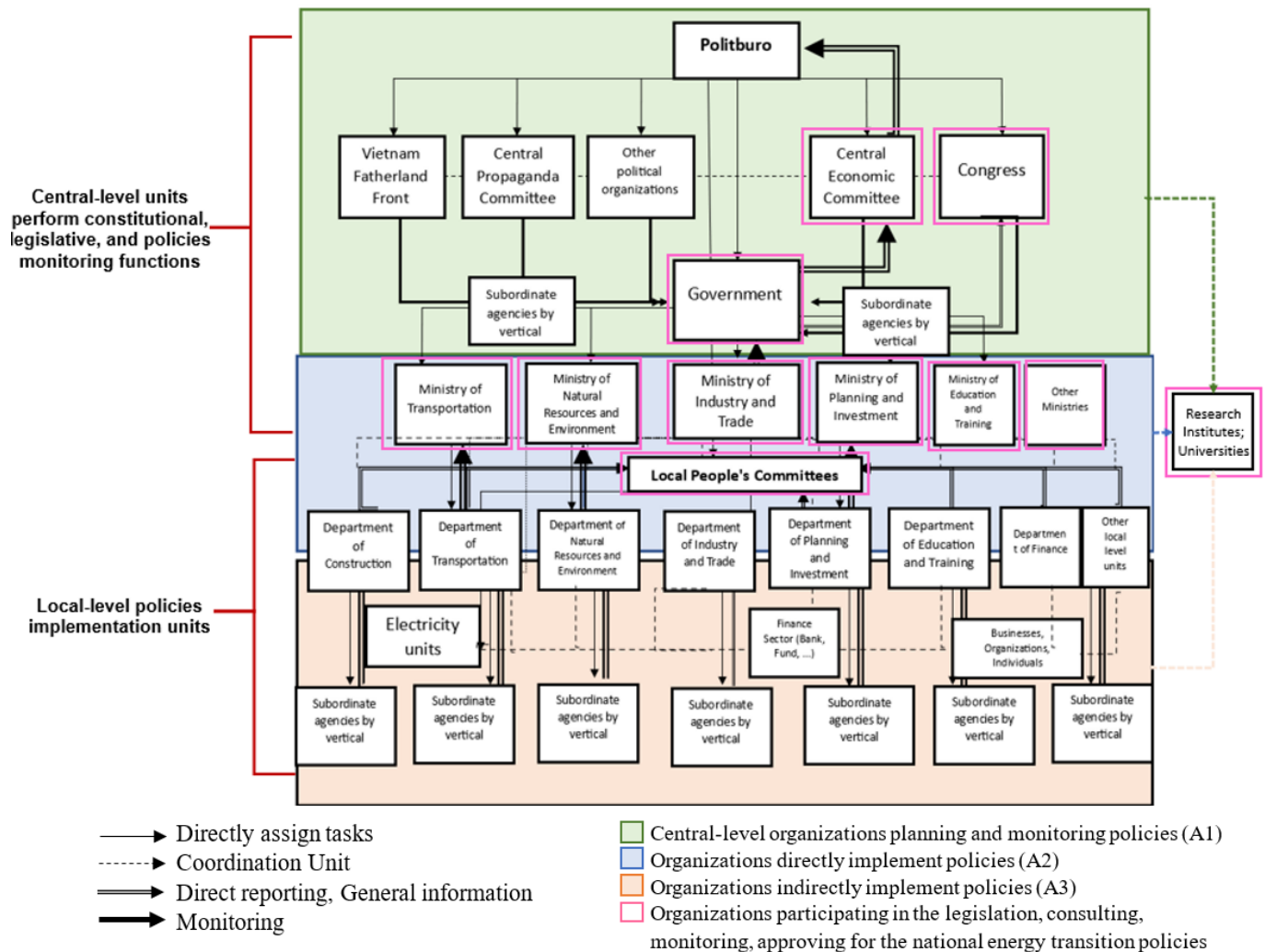


Figure 2 - Organizational model for the implementation of the National Energy Transition Strategy

Source: The authors analysis in related resolutions and policies<sup>1</sup>

<sup>1</sup>

- Resolution No. 55-NQ/TW dated February 11, 2020 of the Politburo on orientations of Vietnam's National Energy Development Strategy to 2030, with a vision to 2045.
- National Green Growth Strategy for 2021 - 2030, vision towards 2050
- National Strategy on Climate Change until 2050.
- Decision No. 896/QĐ-TTg dated July 26, 2022 approving the "National strategy on climate change for the period to 2050".
- Decision 4206/QĐ-BGTVT 2016 Action plan to reduce CO2 emissions.
- Decision No. 1658/QĐ-TTg dated October 1, 2021 approval for National Green Growth Strategy for 2021 - 2030 period, with a vision by 2050
- Decision No. 882/QĐ-TTg dated July 22, 2022 on the National Green Growth Strategy for the 2021-2030 period
- Decision No. 2068/QĐ-TTg in 2015 approving the Development Strategy of Renewable Energy of Vietnam by 2030 with a vision to 2050.
- Decision 2233/QĐ-TTg in 2020 approving the proposal to develop Competitive Energy Market by 2030 with vision towards 2045
- Decision No. 280/QĐ-TTg in 2019 on approval of the National Energy Efficiency Programme (VNEEP) for the period of 2019-2030
- Decision No. 876/QĐ-TTg on approving the Action Program for Transition to Green Energy and Mitigation of Carbon Dioxide and Methane Emissions from Transportation.



**1. Groups 1:** Organizations at Central level, include Politburo, Vietnam Fatherland Front, Central Propaganda Committee, Central Economic Committee, and related Committees of National Assembly with the main functions are to plan, modify, monitor, and represent central views on the implementation of policies after receiving consultations from group 2's organizations. Other functions of these organizations are to propagandize and supervise the implementation of group 2's organizations in the localities for the set-out tasks.

At the central level, these units will directly monitor and urge Government's agencies to implement resolutions and supervise the policy implementation through inspection and direct reports from Government agencies. At the same time, participate in monitoring in localities and specific programs. The objective of this group is also to advise on amending laws and policies based on the reported results and to carry out propaganda tasks for vertical subordinate units. For example, the Central Propaganda Department conducts propaganda for the Propaganda Departments in central and local areas to thoroughly grasp the spirit of the Resolution. The National Assembly has also requested the Government to urge the completion of strategies, master plans and plans related to energy development, such as: (i) National Energy Development Strategy; (ii) the Development Strategy of Vietnam's Coal industry; (iii) National Environmental Protection Strategy; (iv) National Energy Master Plan; (v) Power Development Plan; (vi) The infrastructure planning for National Petroleum and Gas Reserves ; (vii) Master plan for geological baseline survey of minerals.

The task functions in the energy transition of Group 1's organization is shown in:

- *Legislative:* In 2020, the National Assembly passed the Law on Environmental Protection (amended); in 2022 the National Assembly passed the Petroleum Law (amended), the Law amending and supplementing a number of laws, in which the Law on Electricity was amended and supplemented. It also study, evaluate the situation, and review the legal system to support for the comprehensive amendment of the Law on Electricity, the Law on Economical and Efficient Use of Energy, the Law on Atomic Energy, and the Law on Minerals.
- *Monitoring:* in 2022, the National Assembly Standing Committee has issued a resolution on thematic supervision "Implementation of policies and laws on energy development in the period 2016 - 2021", this supervision will be completed in in 2023, with the purposes of: (1) Objectively, honestly, fully and comprehensively the implementation of policies and laws on energy development in the 2016-2021 period; (2) Detect the shortcomings, limitations and causes; clarify the responsibilities of relevant agencies, organizations and individuals, especially the responsibilities of the head; (3) Promptly handle or propose a plan to immediately deal with difficulties, problems and inadequacies. Proposing and proposing solutions to improve the system of policies and laws and improve the efficiency of organizing the implementation of policies and laws on energy development; (4) Drawing lessons from experience in formulating, perfecting and implementing policies and laws for energy development in the next period.

**2. Group 2:** Ministries and ministerial-level organizations implement the strategies from top-down, which include: The Government; Ministry of Industry and Trade (MOIT) (to be assigned major responsibilities to perform the main tasks); Ministry of Construction (MOC); Ministry of Science & Technology (MOST); Ministry of Agriculture and Rural Development (MARD); Ministry of Natural Resources and Environment (MONRE); Ministry of Transportation (MOT); Ministry of Finance (MOF); Ministry of Planning and Investment (MPI); Ministry of Education and Training (MOET), and Local People's Committees. These organizations hold functions of implementing policies, providing solutions, and performing tasks set out by the Government in general strategies, and managing and receiving reports from the units of group 3.

In general, the objective, focus and strategic priorities of organizations this group are to carry out the tasks mastered in the strategies set forth by the Prime Minister. In addition to basic functions and tasks, these



organizations will receive functions and tasks to coordinate the implementation of Government's decisions related to energy transition.

For example, to implement Decision No. 2068/QĐ-TTg, tasks are assigned to specific organizations. The Ministry of Industry and Trade is assigned to be the host for the implementation. MoIT, then has assigned the Electricity and Renewable Energy Authority (EREA) to respond to several key tasks. Related organizations that coordinate with the MoIT include the Ministry of Construction, Ministry of Science and Technology, Ministry of Agriculture and Rural Development, Ministry of Transportation, Ministry of Finance, Ministry of Planning and Investment, Ministry of Education and Training, electricity-related units, other ministries, branches, localities, organizations and individuals concerned according to their functions and organizational tasks.

Holding the major role to implement energy development strategies, MOIT also has functions of providing advices to the Government to issue appropriate decisions, e.g., the Decision No. 2233/QĐ- TTg approving the proposal to develop competitive energy market by 2030 with vision towards 2045 was issued by the Prime Minister based on the request from the MOIT Minister.

**3. Group 3:** Organizations participate directly or indirectly in the implementation of the policies by doing it own tasks and functions. These organizations include Ministerial Vertical Departments, Institutes, Universities; State enterprises, which under the vertical management from group 2, and Organizations/Agencies in private sector.

- From MOIT: Institute of Energy; Department of Energy Saving and Sustainable Development; Department of Electricity and Renewable Energy; Electricity Regulatory Authority; Local departments.
- From MONRE: Institute of Strategy and Policy on Natural Resources and Environment; General Department of Environment; Agencies under the management of the governing ministry.
- From MPI: Department of Science, Education, Natural Resources and Environment; Investment Supervision and Appraisal Department; Agencies under the management of the governing ministry.
- Departments and agencies under the management of the governing ministries: MOC, MOST, MARD, MOT, MOF, State owned enterprises (Vietnam Oil and Gas Group and enterprises operating in the gas industry; Vietnam Coal - Mineral Industry Group, Northeast Corporation and coal mining and trading enterprises; Vietnam Electricity Corporation)
- Non-Governmental Organizations (NGO), private enterprises and individuals working in energy and power sectors.

The strategic objectives and priorities are to perform the work proposed by the units in group 2, so their works have indirect or direct impacts on the energy transition process. The work of consulting and training human resources such as universities and research institutes will have a more long-term and indirect impact than the units directly involved in the development of strategic projects.

State owned companies, enterprise from private sector participate in the role of deploying business models, investing in infrastructure construction, deeply participating in all stages of supply, presiding over the study of exploitation and use plans for various industries sectors prioritized for investment according to the national renewable energy development strategy.

From the aspect of policy and law making, actors participating in energy transition are:

- Politburo responsible for making overall resolutions to issue the National Strategies.

- National Assembly responsible for legislating, formulating Laws and amending Laws from actual implementation reports from implementing units. The National Assembly will run internal departments to promulgate and amend Laws such as the Law on Environmental Protection, Electrical Law etc.
- Government: (including the Prime Minister's office and ministries) After having the resolutions and policies from the Politburo, the Government and responsible ministries will develop and approve action plans in complying with the policies and law <sup>2</sup>.

*From the aspect of policy implementation, units participating in energy transition are:*

- Responsible ministries and sectors will develop and issue implementation plans. Implementation plans will be implemented by the affiliated agencies along the vertical lines and develop specific decisions for each locality and in cooperation with related ministries.
- After having the implementation plan from vertical ministries, local affiliated agencies will issue local decisions and carry out tasks. Ministries that do not directly host the implementation will participate in coordination according to each proposed task. During the implementation, information on progress and process will be reported back and forth vertically and horizontally between the coordinating ministries.
- Regarding implementation at localities, for agencies under the central authority, national-scale energy transition strategies and programs will be directed to implement from program-hosting units (For example, the Ministry of Industry and Trade presides over the renewable energy development program; the Ministry of Planning and Investment presides over the sustainable development program).

*From the aspect of monitoring, units participating in energy transition are:*

- Units from the Central Government assigned to supervise include Vietnam Fatherland Front; Central Propaganda Committee; and other political organizations. These units will carry out joint supervision on the implementation of the Program from the highest level, which is the Government, to the lower-level departments and agencies in the locality. Simultaneously, the process of monitoring and reporting will be carried out directly along the vertical lines at ministries and branches. In addition, supervision is also reflected in the involvement of non-public sector entities such as associations, the private sector, and the people.

## 2.2.2 The coordination between organizations involved in managing and implementing the energy transition.

The coordination among those organizations could be drawn through two main trends:

- (1) Coordination through the Program Steering Committee: these units will join the Program Steering Committee (established by the Government under the proposal of the governing body) with the participation of relevant units' leaders. Thereby, there are proposals and implementation of tasks in the most comprehensive and timely manner.
- (2) Coordination through the mechanism of consultants from organizations: when the units are assigned to perform several specific tasks, the units can coordinate with each other through the form of consultants, participating in cross-consulting for each field which individuals are specialized in.

<sup>2</sup> For energy sector, there are main groups of programs:

(1) National Strategy on Green Growth for the period of 2021 - 2030, with a vision to 2050, chaired by the Ministry of Planning and Investment;  
 (2) National Energy Efficiency Program for the period of 2019-2030 chaired by the Ministry of Industry and Trade;  
 (3) The national strategy on climate change for the period to 2050, chaired by the Ministry of Natural Resources and Investment;  
 (4) National Sustainable Development Strategy by region; (5) National energy strategy chaired by the Ministry of Industry and Trade.

### 2.2.3 Actors' capacities to perform their mandate related to energy transition: Financial and human resources.

*The Organizations in group 1* are central-level units, so the main resource to make contributions to the Energy transition mostly is the State budget capital. These organizations have the function of proposing programs, approving strategies and plans from the central point of view, and thus could allocate resources belonging to the State budget to subordinate units through projects, plans and approved budget by the Ministry of Finance.

Regarding the human resources performing the functions, these organizations at the central level have human resources to assist the head in performing the tasks. In addition, at the lower levels along the vertical lines, these agencies have the function of managing the organization and mobilizing financial and human resources from subordinate units in the locality to perform tasks. The financial capacity of agencies in this group is not too great because they only perform tasks related to formulating and promulgating strategies. However, the influence of this group is quite large due to its ability to intervene in the policy-making process and mobilize resources for agencies in the remaining group.

*The organizations in group 2* operate on the self-balancing budgets of their units from the State Budget, the units in this group are also capable of mobilizing resources from the State budget when performing specific tasks that may be approved by the first group. They use the regularly allocated budget, so their financial capacity is dependent on the Budget Laws and usage limits, however, in terms of capacity, these agencies have the authority to administer the state and license projects, so they have good financial mobilization.

Regarding human resources, the survey shows that the organizational structure has many problems. As for the number of human resources in the agencies performing the state management function, due to the regulations on downsizing policies, along with strict money control policies, the number of officers in specialized units is reflected as insufficient and often overloaded at work. As for the quality of human resources in these agencies, most of the staff have high expertise in their assigned fields, however, for new energy fields, it is necessary to have additional knowledge in depth. One of the reasons for the overload of the human resources system is they have to handle many overlapping programs of many different leading ministries when the number of human resources is not enough. In the case of interviews with some agencies under the Ministry of Industry and Trade, the Ministry of Natural Resources and Environment, the units only have about 20 employees, of which 15 are in charge of expertise and are often overloaded.

*The organizations in group 3* are mainly under the vertical management of Group 2's organizations based on the functions and tasks set out to be able to implement the Strategy. Units operating with the foreign state budget using their own resources may be allocated additional funds for each activity in which these units participate in projects and plans classified by group 1 or group 2. In addition, for the private sector or units operating in the form of financial autonomy, the ability to mobilize depends on the potential of each unit in each specific form and needs to be further investigated to supplement information. Regarding human resources, these units in this group located in the state sector also presented the same problems as group 2 in terms of work overload due to many overlapping policies.

However, for financial resources, the system of enterprises outside the state sector has more abundant resources, often mobilized to implement local-level projects. Even though the resources are, in some cases, very available, they only mobilize resources if legal mechanisms, policies and specific plans allowed them to implement projects and tasks. For example, in many interview sessions for this assignment, which conducted in April 2023, the responders mentioned that they are still waiting for the approval and guidance to implement the Power Development Plan VIII to inject investment for RE projects.

## 2.3 Policies and laws related to energy transition.

### 2.3.1. Overview of laws related to energy transition.

- Law on Electricity promulgated by the National Assembly. The Electricity Law is a legal document that directly regulates the electricity sector. The RE-related development policies in the Electricity Law focus on the following aspects:

- Promote exploitation and use of renewable energy sources for power generation: The formulation of electricity development planning (as a basis for investment and development activities) should ensure the principle of "consistent with development orientations". develop primary energy sources for electricity generation, including new energy sources, renewable energy". The Electricity Law also stipulates to encourage investment in building electricity grids or generating stations using local energy, new energy, and renewable energy to supply electricity to rural, mountainous, border and island areas.
- Preferential policies for investment projects to develop power plants using renewable energy sources: Investment and development projects of power plants using renewable energy sources are entitled to investment incentives, electricity prices and tax incentives (e.g., income tax, import tax, tax on using non-agricultural land).
- Regarding the electricity price policy, the Electricity Law also stipulates to create conditions for economic sectors to invest in electricity development using various forms of renewable energy, contributing to promoting socio-economic development.

- The Law on Environmental Protection 2020 has now recognized that one of Viet Nam's policies on environmental protection is the development of clean energy and renewable energy.

- In addition, the Law on High Technology, the Law on Technology Transfer 2017 also stipulates the priority policy of transferring high technology, advanced technology, new technology, clean technology, technology for national product development key, including production and use of new energy, renewable energy

- According to the Investment Law 2020 and Decree 31/2021/ND-CP of 2021 guiding the Investment Law, related industries, and trades on the List of industries and professions eligible for investment incentives are entitled to investment incentives related to investment incentives. taxes, land, depreciation and expenses are deductible when calculating taxable income.

### 2.3.2 Overview of policies on energy transition

The energy transition in Vietnam is affected by many policies:

- Resolution No. 55-NQ/TW of the Politburo on orientations of Viet Nam's national energy development strategy to 2030, with a vision to 2025. Here, the main objectives are proposed, firmly ensuring national energy security; sufficiently supply stable, high-quality energy at reasonable prices for fast and sustainable socio-economic development, ensure national defense and security, improve people's living standards, and contribute to the preservation of energy.
- Resolution 31/2021/QH15 on the Economic Restructuring Plan for the 2021-2025 period, the key task is set to continue to develop a number of fundamental industries, including the energy industry, giving priority to the development of a number of high-tech industries and supporting industries <sup>3</sup>.

<sup>3</sup> Resolution 31/2021/QH15 in 2021 on the economic restructuring plan for the 2021-2025 period, Article 4, Clause 5, Point b

- Decision 2068/QD-TTg in 2015 approving Viet Nam's renewable energy development strategy to 2030, with a vision to 2050 setting strategic goals on "developing and using renewable energy sources".
- The project of developing a competitive energy market to 2030, with a vision to 2050, approved by Decision 2233/QD-TTg in 2020, one of the organizational and management solutions for the energy industry is perfecting policies to promote RE development.
- Decision 681/QD- TTg in 2019 on the Roadmap for the implementation of Viet Nam's Sustainable Development Goals to 2030.
- Decision 569/QD-TTg in 2022 on the Strategy for Science, Technology and Innovation Development to 2030
- Strategy for Energy Development Viet Nam's renewable energy to 2030, vision to 2050, National Strategy for the Fourth Industrial Revolution to 2030.
- Development strategy of Electricity of Viet Nam (EVN) to 2023, vision to 2045 (issued under Decision 538/QD-TTg in 2021)
- Decision No. 1658/QD-TTg approving the "National strategy on green growth for the period of 2021-2030, with a vision to 2050" assigned by the Government to the Ministry of Planning and Investment, which proposes strategies new energy to implement the green growth trend in the new period.
- National Strategy on Climate Change for the period to 2050 No.896/QD-TTg.
- Decision No: 280/QD-TTg in Hanoi, March 13, 2019 approving the national program on economical and efficient use of energy for the period of 2019 - 2030.
- Decision 888/QD-TTg dated July 25, 2022 approval for scheme setting out tasks and solutions for implementation of outcomes of the 26th conference of the parties to the United Nations framework convention on climate change
- Decision 896/QD-TTg dated July 26, 2022 approving the National Strategy for Climate Change until 2050
- The National Power Development Plan for the period 2021-2030, with a vision to 2045 (PDP VIII), major orientations of the power source development program in the 2021-2030 period, with a vision to 2045 focusing on RE-related contents.

The Government and the Ministry of Industry and Trade have issued many documents to promote for the development of renewable energy, which resources having great potential in Viet Nam<sup>4</sup>, such as small

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<sup>4</sup> - Circular 32/2014/TT-BCT on the order of construction, application of the Avoidable Cost Tariff and issuance of the Model Power Purchase Agreement for small hydropower plants, as amended and supplemented by Circular 29 /2019/TT-BCT (Circular 32/2014/TT-BCT); Decision 131/QD-BCT year 2022 on Avoidable Cost Tariff of 2022

- Decision 37/2011/QD- TTg 2011 on the mechanism to support the development of wind power projects in Viet Nam, amended and supplemented by Decision 39/2018/QD-TTg in 2018 (Decision 37/ 2011/QD- TTg ); Circular 02/2019/TT-BCT stipulating the implementation of wind power project development and the Model Power Purchase Agreement for wind power projects, as amended and supplemented by Circular 42/2019/TT-BCT amending Circular No. change regulations on periodical reporting in Circulars issued or jointly issued by the Minister of Industry and Trade (Circular 02/2019/TT-BCT)

- Decision 24/2014/QD- TTg 2014 on the mechanism to support the development of biomass power projects in Viet Nam, amended and supplemented by Decision 08/2020/QD- TTg in 2020 (Decision No. 24/2014/QD- TTg ); Circular 44/2015/TT-BCT stipulating project development, Avoided Cost Tariff and Model Power Purchase Agreement applicable to biomass power projects, as amended and supplemented by Circular 16 2020/TT-BCT (Circular 44/2015/TT-BCT)

- Decision 31/2014/QD- TTg 2014 on mechanisms to support the development of power generation projects using solid waste in Viet Nam; Circular 32/2015/TT-BCT stipulating project development and Model Power Purchase Agreement applicable to power generation projects using solid waste

- Decision 13/2020/QD- TTg in 2020 on the mechanism to encourage the development of solar power in Viet Nam; Circular 18/2020/TT-BCT stipulating project development and sample power purchase agreement applicable to solar power projects

- Decision 31/2014/QD- TTg 2014, Article 3, Article 5; Circular 32/2015/TT-BCT, Article 3, Article 4; Circular 02/2019/TT-BCT, Article 3, Article 4



hydropower (small hydro power). <30MW)<sup>5</sup>, solar power, wind power, biomass power, solid waste. These documents focus on guiding the following main contents:

*Regarding the development of RE projects:*

- Planning on development of RE power projects in connection with power development planning in general, supplementing potential RE power projects into power development planning; funds for the elaboration of electricity development plannings using renewable energy etc.
- Conditions for investment and construction of renewable energy projects (compliance with planning/approved by competent authorities, compliance with regulations on construction safety and environmental protection etc.)
- Responsibility for installation and connection of renewable energy projects; requirements when starting project construction, terminating the project; reporting mode...
- PDP VIII proposes new research demand and new resources mobilizing demand (human; finance; technologies etc.) for new kinds of renewable energy. Additionally, the PDP VIII draws a strategic pathway to phasing out the use of coal for power generation purposes, which means that new issues will commence related to the labour changing, new technologies implying, and new investing methods.

*Regarding PPA applied for all renewable energy sources*, the application of PPA is a mandatory condition in case individuals, organizations producing, operating, and selling electricity to the Power Buyer, which is EVN or authorized units of EVN. The Buyers are responsible for purchasing all electricity produced from plants, grid-connected solar power plants, biomass power plants, and small hydroelectricity plants, and power plants using solid waste<sup>6</sup>. Particularly for rooftop solar power projects, the Seller is allowed to sell part or all of the electricity to the Buyer (which is EVN or other organizations and individuals). The term of the PPA is 20 years from the date of commercial operation of the power projects and it is possible to renew the contract or sign a new contract after this term expires.

*Regarding the electricity selling price*, the Government decided to apply Feed-In-Tariff mechanisms for each type of RE projects in specific period (e.g. FIT for solar power projects applied until December, 2020, FIT for wind power projects applied until end of October 2021). According to regulations, the electricity price for RE projects is determined according to the tax-exclusive price per 1 kWh, in which the price is adjusted according to the exchange rate between Vietnamese dong and US dollar <sup>7</sup>.

- Decision 31/2014/QD- TTg 2014, Article 6; Circular 32/2015/TT-BCT, Article 5, Article 6; Decision 37/2011/QD- TTg, Article 6; Decision 24/2014/QD- TTg, Article 6, Circular 44/2015/TT-BCT, Article 5; Decision 13/2020/QD- TTg 2020, Article 6, Clause 2

- Circular 32/2014/TT-BCT, Article 6; Decision 37/2011/QD- TTg, Article 7, Article 8, Article 10;

- Circular 02/2019/TT-BCT, Articles 7 to 10; Decision 31/2014/QD- TTg 2014, Articles 7 to 10; Decision 24/2014/QD- TTg, Article 7; Decision 13/2020/QD- TTg 2020, Article 7, Article 9, Circular 06/VBHN-BCT

- Decision No. 37/2011/QD- TTg, Article 11, Clauses 1 and 2; Decision 13/2020/QD- TTg 2020, Article 4, Clauses 1 and 2; Decision 24/2014/QD- TTg, Article 11, Clauses 1 and 2; Circular 32/2014/TT-BCT, Article 8, Article 12, Clause 2; Decision 31/2014/QD- TTg, Article 11, Clauses 1

<sup>5</sup> Decision No. 37/2011/QD- TTg, Article 11, Clauses 1 and 2; Decision 13/2020/QD- TTg 2020, Article 4, Clauses 1 and 2; Decision 24/2014/QD- TTg, Article 11, Clauses 1 and 2; Circular 32/2014/TT-BCT, Article 8, Article 12, Clause 2; Decision 31/2014/QD- TTg, Article 11, Clauses 1, 2

<sup>6</sup> Clause 1, Article 3, Clause 1, Clause 3, Article 8, Decision 13/2020/QD- TTg in 2020 stipulates that the Buyer of electricity in a solar power project may be another organization or individual that purchases electricity from the Seller. or the organization that receives the rights and obligations of the above organizations in accordance with the law in case the electricity grid of EVN is not used. In this case, the electricity purchase contract shall be agreed upon by the parties in accordance with current law provisions.

<sup>7</sup> - For wind power projects, the electricity purchase price is applied to part or all of the grid-connected wind power plants with commercial operation date before November 1, 2021.

- For rooftop solar plants, the electricity purchase price is applied to projects whose investment policy has been decided by the competent authority before November 23, 2019, and has a commercial operation date of the project or part of a project in the period from July 1, 2019 to the end of December 31, 2020.

For small hydropower projects, the electricity purchase price is applied according to the avoidable cost tariff. According to Circular 32/2014/TT-BCT and Circular 29/2019/TT-BCT, small hydroelectric power plants meet the prescribed conditions “The electricity seller may apply the Avoidable Cost Tariff when the capacity installation of hydroelectric plants is less than or equal to 30 MW” will be entitled to avoidable cost of electricity.

*Regarding tax incentives*, tax incentives to encourage RE development are often specified in tax legal documents. For the import tax, according to the provisions of Clause 11 and Clause 13 of Article 16 of the Law on Export and Import Duties, Import and Export Tax Law No. 107/2019/QH13, projects listed in the special investment incentive sector under the provisions of investment laws will be exempt from import tax on imported goods used for the creation of fixed assets. They will also be exempt from import tax for a period of 5 years from the start of production for domestically unproduced raw materials, supplies, and components imported for the project.

For the corporate income tax (CIT): As stipulated in Clause 7 and Clause 8 of Article 1 of Law No. 32/2013/QH13 amending and supplementing certain provisions of the Corporate Income Tax Law, the income of enterprises from implementing new investment projects, including the production of renewable energy and clean energy, is subject to a tax rate of 10% for a period of 15 years. This includes tax exemption for 4 years and a 50% reduction in the amount of tax payable for the subsequent 9 years.

## 2.4 Social creativity and resources & mobilizing the participation of society and people.

In terms of mobilizing the participation of society and people to Vietnam's energy transition, Vietnam approaches the participation of society and people according to each policy process, from building policy to implementation and monitoring of policy evaluation. Some of the areas that have been introduced by the public sector include:

### *Contributing to the draft policy:*

Regarding comments on the draft policy, The State has taken steps to call for people's input into the policy making process. After the main line ministries (e.g., the Ministry of Industry and Trade; the Ministry of Planning & Investment) issue the Draft Plans; Resolution; Policies (Draft Power Planning VIII; Draft Resolution 55; ...), these drafts are all solicited comments from the society through the official website of the Ministry, at the same time also communication through a number of media types. The drafts are also widely publicized for comments from various sections of society such as scientists, the public, and the private sector. E.g.:

- <https://moit.gov.vn/tin-tuc/thong-bao/bo-cong-thuong-xin-y-kien-doi-voi-du-thao-quy-hoach-tong-the-ve-nang-luong-quoc-gia-thoi-ky-2021-2030-tam-nhin-den-nam-2.html>
- <https://moit.gov.vn/tin-tuc/phat-trien-nang-luong/lay-y-kien-gop-y-du-thao-phat-trien-nang-luong-va-du-thao-bao-cao-danh-gia-tac-dong-moi-truong-chien-luoc.html>

At the same time, in the process of developing draft Laws, Planning, Policies, and Resolutions, line ministries also participate in collecting opinions from research institutes/universities - private sector - units. public sector cooperation through direct reports, seminars and workshops.

### *Mobilization of social capital:*

According to the commitment in the 26th United Nations Climate Change Summit (COP26), Vietnam will aim to be carbon neutral by 2050. To achieve this goal, the World Bank (WB) Vietnam is expected to need a large amount of investment equivalent to 6.8% of GDP per year by 2040 while the outstanding balance of private loans for green credit in 2020 will only account for about 0.2% of GDP. In addition, Vietnam is

assessed by the World Bank as a country with the largest potential for clean energy development in Southeast Asia. According to FiinResearch, the fact that up to now, private loans for green credit only account for about 3.5% of the total credit balance of the banking system in Vietnam, only about 0.2% of GDP in 2020. Bank Group, 2022). Resolution No. 55-NQ/TW on the orientation of Vietnam's national energy development strategy to 2030, with a vision to 2045, setting the goal of developing renewable energy (renewable energy) in the total supply. primary energy will reach about 15 - 20% by 2030 and 25 - 30% by 2045. A number of incentive mechanisms for the development of wind power, biomass power, solid waste generation and solar power have been promulgated. onion. According to the National Report on Climate and Development, under the net carbon emission roadmap to “zero” by 2030, Vietnam may need an investment equivalent to 6.8% of GDP/year, or 368 billion USD. to 2040. To meet this financing source, it is estimated that the main mobilization channels from the private sector are about \$184 billion, the public sector about \$140 billion and external capital about \$54 billion (World Bank Group, 2022). Capital from the private sector will be the core, equivalent to about 3.4% of GDP per year. The saving capacity of the private sector in Vietnam averages about 20% of GDP among the highest in the world. Resources from the public sector are expected to be 2.4% of GDP per year from now to 2040. This resource needs to be implemented based on revenue through carbon tax (about 80 billion USD in the period 2022-2040, equivalent to 1.5% GDP/year) and/or borrowing in the domestic or foreign market (about 1.0-1.3%/GDP/year) but attention should be paid to ensuring the safety of the national public debt (World Bank, 2018, 2022; IMF, 2021).

By the end of 2021, in terms of wind power, Vietnam has 70 projects with a total capacity of 3,987 MW that have been put into commercial operation, generating electricity output of 3.34 billion kWh in 2021, equivalent to 1 3% of total system output. Regarding solar power, electricity generated from solar energy will account for about 10.8% of the total electricity output of the whole system in 2021. In recent years, renewable energy projects in Vietnam have attracted a lot of attention. In 2021, FDI and ODA (cooperate with Vietnam organization) attracting many new and large-scale projects with USD 5.7 billion, accounting for 18.3% of total registered investment capital, has helped the power generation and distribution industry to rank 2nd among attracting industries.

In the first 10 months of 2022, the amount of newly registered capital in the electricity production and distribution industry reached more than 2.2 billion USD, ranked 3rd in the amount of registered FDI (after the manufacturing and processing industry and real estate business). Vietnam is currently the destination of investment capital for the energy sector, as shown by M&A data, renewable energy projects still doubled compared to the previous year, despite difficulties with M&A declines in all fields (according to M&A data).

Besides projects in the fields of electricity and energy, green FDI projects in other fields also contribute to promoting the development of renewable energy in Vietnam. For example, the LEGO Group started construction of a new \$1 billion factory equipped with rooftop solar panels and a solar farm on neighboring land in Binh Duong in early November. 2022; or Pandora Group, Denmark has also decided to invest in a \$100 million project that is expected to use 100% renewable energy. These FDI projects not only contribute much economic value, but also promote the development of RE, thereby helping Vietnam develop more sustainably and “greener”... (Can Van Luc, 2022). Resources and participation of stakeholders in society are made from State budget resources; Resources from ODA loans for energy conversion; Resources from commercial and joint-stock banks; Resources from the private sector through public-private partnerships; Self-community initiative... According to Power Plan VIII, the capital demand for power source and grid development by 2030 averaged 10-11.5 billion USD/year, this number increased to 12-15 billion USD ten years later, most of which will be allocated to renewable energy. Data from the Mekong Infrastructure Tracker shows that 58% of renewable energy projects in Vietnam are developed entirely by Vietnamese companies. Another 27% of projects are developed based on cooperation between a Vietnamese company and an international partner. Only 12% (corresponding to 13 projects) of projects are developed entirely by foreign companies.



In the period 2017-2021, the State Bank of Vietnam has also mobilized resources from international financial institutions, provided bilateral and multilateral grants to improve the financial capacity of credit institutions to implement green credit and source funds. efforts to realize sustainable development, including:

(i) Completing the effective conditions for the Energy Saving Project for Vietnam Industry (loan capital of 101.7 million USD). Preferential loans will be provided to industrial enterprises in order to reduce the capacity of the system's power generation sources at the lowest cost, reduce greenhouse gas emissions by reducing power consumption from thermal power plants, reduce fossil fuel burning, reduce environmental pollution.

(ii) Coordinate with the World Bank to develop a project to replicate energy efficiency in Vietnam, calling for support from the Green Climate Fund (total technical assistance and guarantee fund from the Fund is 86.3 million VND) to encourage banks to increase the proportion of loans for energy-saving projects.

(iii) Receive technical support: coordinate with the World Bank to successfully negotiate technical support Vietnam's HCFC phase 2 management plans; technical assistance to the Southeast Asian Energy Sector Construction and Development Planning Fund worth 0.2 million USD funded by ADB; project technical assistance on green finance initiatives and innovations for infrastructure development in Southeast Asia.

(iv) Continuing to implement the Small and Medium Enterprises Financing Project for green projects implemented by the ODA International Credit Project Management Board. The green sectors that are the most funded through this project are renewable energy, green industry, energy saving and efficiency.

In addition, the SBV has issued guidance on environmental and social risk assessment for the energy industry, including renewable energy in the Manual of environmental and social risk assessment for a number of sectors. production and business. This guide is an important reference for credit institutions to assess environmental and social risks in production and business activities of enterprises applying for credit in the renewable energy sector.

According to the Credit Department of Economic Sectors - SBV, by the end of 2021, credit balance for green projects reached more than VND 441,000 billion (accounting for 4.2% of total outstanding loans of the whole economy), an increase of 32 billion VND (5% compared to 2020). In particular, outstanding credit for renewable energy projects reached more than 212,000 billion VND, accounting for about 47% of the green credit balance of the whole system. Outstanding loans mainly focus on solar power and hydropower projects, accounting for 87% of total credit balance for renewable energy.

It can be seen that for mobilizing social participation in the field of finance and investment capital, the two most powerful sources of social mobilization for the energy conversion process are: (i) Capital from the private sector; (ii) Capital from the foreign sector (FDI and ODA with the cooperation with Vietnam organizations).

*Strengthen the level of monitoring and supervision of the society for the energy transition process:*

In addition, the social monitoring of the energy transition is also reflected in many measures:

- Monitoring, supervision, participation is constituted in some official documents. In which, for the energy sector, there are main groups of programs: (1) National strategy on green growth for the period of 2021 - 2030, with a vision to 2050, chaired by the Ministry of Planning and Investment; (2) National program on economical and efficient use of energy in the period of 2019 - 2030 chaired by the Ministry of Industry and Trade; (3) The national strategy on climate change for the period to 2050, chaired by the Ministry of Natural Resources and Investment; (4) National sustainable development strategy by region; (5) National energy strategy chaired by the Ministry of Industry and Trade; ... Units from the Central Government assigned to supervise include: Vietnam Fatherland Front; Central Propaganda Committee; and other political

organizations. These units will carry out joint supervision on the implementation of the Program from the highest level, which is the Government, to the lower-level departments and agencies in the locality. Simultaneously, the process of monitoring and reporting will be carried out directly along the vertical lines at ministries and branches. In addition, supervision is also reflected in the involvement of non-public sector entities such as associations, the private sector, and the people.

- Mobilize the supervision and monitoring from the society for the research facility/university areas. Opinions and monitoring and evaluation are expressed in seminars, workshops, and reports directly related to the energy transition process of the whole society to public sector agencies. In Resolution No. 55/NQ/TW of the Politburo on Strategic Orientation for National Energy Development of Vietnam to 2030, with a Vision to 2045, a number of viewpoints were proposed: *“National energy development countries must conform to the socialist-oriented market economic institution and the trend of international integration; quickly build a synchronous, competitive, transparent energy market, diversify forms of ownership and business methods; apply market prices to all types of energy. To encourage and create all favorable conditions for all economic sectors, especially the private sector, to participate in energy development; resolutely eliminate all manifestations of subsidies, monopolies, unequal competition and lack of transparency in the energy industry”; “Focusing on researching and applying the achievements of the Fourth Industrial Revolution in the development of all sub-sectors and fields of energy; promote digital transformation in the energy industry; step by step mastering modern technology, towards self-manufacturing of most energy equipment.”; “Developing science and technology, training high-quality human resources for the energy industry: Forming a link mechanism between scientific and technological research and development forces, innovation and enterprises. and training institutions in the energy sector through science and technology programs; to integrate research and development activities in energy development strategies, master plans and plans. Create a mechanism to encourage energy enterprises to increase investment in research and development; establish innovation centers in the energy sector. Continue to implement the national key science and technology program on research, application, and development of energy technology in the period of 2021 - 2030, focusing on research and manufacture of energy equipment and application of various forms of energy. new energy, renewable energy, smart energy, energy saving.”*

Thereby, it is possible to identify some points about the social and resource creativity directed at the highest level in the system for the country:

**First**, promote the cooperation between the three parties Public - Academia - Private sectors. From the point of view to the solution, directed by the Politburo, the focus has been on the areas of basic and applied science research from which to translate into pilotable results. The proposed cooperation between these three regions is one of the forms representing innovation, upholding the role of knowledge in strategic operations. It also enhances the position of the private sector in the implementation of the strategy. The encouragement of sectors in the economy to participate is shown through preferential policies, support with market mechanisms, and at the same time amending legal documents to create policy corridors for regions. can participate in a variety of ways in the Strategy.

**Second**, promote the process of human resource development. In the resolution, a solution was set out specifically for the development of human resources, considering this as an important long-term resource for the national development strategy.

**Third**, creativity is reflected in updating outstanding trends in the world into the national strategy and vision. Two new economic trends, that are the development of the 4.0 technology era and the role of the circular economy are also set out in this Strategy. With the solution of forming an energy system, applying new and modern technology, and applying cyclic models.

**Fourth**, creativity in society and resources are also placed in the role of international cooperation, resources are mobilized through international cooperation in the fields of flexible, efficient and equal energy. mutual benefit of countries.

**Fifth**, it can be seen that the policy of attracting and mobilizing social participation is very clear. The first is in solutions to restructure inefficient units in the foreign investment group to redirect resources to domestic investment sectors. The second is in the process of restructuring state-owned enterprises, creating conditions for the participation of the private sector to operate effectively. Thirdly, the mobilization of people and society to participate also lies in the formation of an energy market with a market mechanism, and at the same time, it is proposed to develop preferential policies to attract the private sector to participate. enter the market with the view that the private sector is a major and key resource for the energy transition.

## 2.5 Assess the current state management and the coordination in implementing energy transition in Viet Nam.

### 2.5.1 Preliminary assessment of State management structure

**Firstly**, the strengths of the existing State and Government management structure during the energy transition process revolve around its stringent hierarchical framework. This setup comprises distinct layers of authority, each endowed with specific responsibilities that effectively delineate tasks for individual entities. This allocation is particularly evident in the distribution of roles. Essential roles have been assigned to the Ministry of Industry and Trade, the Ministry of Planning and Investment, and the Ministry of Natural Resources and Environment. This decision is reinforced by their historical involvement in matters related to energy and market activities. However, inherent within this model are certain limitations. Chiefly, the intricate network of reporting and procedural steps necessitates engagement with multiple levels, indicating that policy proposals require consultation across a range of units and organizations before implementation can proceed. This complexity is further magnified in Vietnam, where a singular investment domain may fall under the jurisdiction of numerous distinct agencies. Consequently, executing projects mandates endorsement and approval from a multitude of entities across various sectors. This intricate review process culminates in an elongated sequence of stages, inevitably causing work delays.

**Secondly**, another limitation arises from the potential overlap of various national energy initiatives and strategies. Within Vietnam's current landscape, numerous programs targeting energy transition and sustainable development have been initiated in alignment with commitments made at COP26. These initiatives aim to curtail carbon emissions. Inevitably, there is a propensity for these programs to intersect in certain areas. For instance, the Ministry of Industry and Trade leads the charge in national strategies pertaining to electricity and renewable energy. Concurrently, the Ministry of Planning and Investment shoulders the responsibility for strategies focusing on green growth and sustainable development. Simultaneously, the Ministry of Natural Resources and Environment oversees strategies aimed at reducing environmental pollution.

As implementation extends to aspects like energy market pricing, the involvement becomes multifaceted, encompassing entities such as the Ministry of Finance and the Ministry of Industry and Trade. Additionally, pricing decisions are influenced by other factors, with indirect repercussions that reverberate through frameworks and policies originating from the Ministry of Planning and Investment, in conjunction with the Ministry of Natural Resources and Environment. While these strategies and policies are well-intentioned, their convergence holds the potential for conflicting interests. This calls for a remarkably adaptive operational and coordination mechanism among ministries, transcending simple collaboration to encompass intricate orchestration, ensuring coherence and efficacy amidst the interplay of policies and strategies.

**Thirdly**, a constraint emerges from limited enforcement personnel capacity within respective units, potentially hindering smooth implementation. For entities in the policymaking domain, keeping pace with new technologies and emerging global trends is of paramount significance. This sentiment reverberates across multiple agencies as revealed in the research team's survey. Within this context, a significant demand for immersive training on novel energy paradigms is evident, especially among senior leadership and technical experts. Simultaneously, a methodical framework for comprehensive training aimed at junior professionals needs meticulous formulation.

The intricate nature of the energy transition journey is compounded by the nascent status of global research and development concerning energy conversion models. Consequently, identifying an optimal model tailored to the Vietnamese context assumes immense importance. This endeavor comes with considerable challenges and warrants increased resource allocation to bolster effective research and implementation processes.

Another resource-based challenge prevalent within the state agency framework pertains to balancing time constraints with content delivery. The need for a highly integrated and time-efficient curriculum design is prominent. This arises from the reality that intended participants, predominantly senior officials and experts, grapple with limited availability. Consequently, the evolution of training methodologies should pivot towards precise alignment with the diverse needs of each distinct audience segment. A nuanced approach that caters to the unique requirements of each group is imperative for cultivating a skilled and well-prepared.

**Fourthly**, the deficiency lies in the inadequate emphasis universities and research institutes place on emerging energy sectors globally. Training endeavors for domestic energy industry professionals have yet to reach their full potential, and the scarcity of skilled personnel for contemporary energy domains such as wind energy, solar energy, and hydrogen energy remains pervasive. This dearth will inevitably impact the sustained execution of strategies, potentially elevating the costs associated with employing foreign labor work force within the energy transition domain.

**Fifthly**, when considering entities beyond the state sector, one encounters a group endowed with ample financial resources. However, the inclination of this demographic to invest and mobilize capital hinges on the availability of conducive legal frameworks. Hence, to expedite the energy transition, policymaking bodies must swiftly devise plans, strategies, and promulgate them through legally binding documents. This concerted action would provide the necessary foundation for the subjects to initiate implementation without undue delay.

**Lastly**, the shift from coal-powered energy to renewable energy industries carries an inherent risk of job displacement for coal industry workers. In alignment with the state's policy of curtailing coal power generation, the imperative is to reduce the number of coal power plants. Consequently, the imperative of providing vocational training for this subset of the workforce emerges. However, effecting this transformation necessitates a systematic and meticulous approach, entailing precise job-role allocation within the specified target groups. This ensures that the transition proceeds methodically, mitigating the potential adverse impacts on workers and aligning with the broader energy transition goals.

## 2.5.2. Evaluation of policies related to energy transition.

### RE development

*Firstly*, about mechanisms and policies to develop renewable energy projects: One of Viet Nam's major potential wind power fields is offshore wind power. However, the current legal regulations of Viet Nam do not have specific mechanisms, policies and guidelines in the implementation of planning, investment and construction of the offshore power projects. Specifically, the regulations related to the mechanism to support the development of offshore wind power projects are being included in the regulations on wind power

projects (including inland wind power) and are not really complete<sup>8</sup>. This both wastes marine space and marine resources as well as limits potential investors with real investment needs. In addition, the policy of selling electricity to private parties in power projects is not really clear, leading to the fact that investors have not been able to develop specific plans to sell electricity to private partners.

*Second*, about the preferential electricity purchase price applied to renewable energy projects:

In the last few years, the FIT mechanisms were applied for solar and wind powers, regardless of size and regions of the country, leading to the phenomenon of the rapid concentration of the RE power plants in certain areas, especially in rural or remoted areas the Central-South and in the South provinces of Viet Nam, where having high RE potential in terms of solar radiation or wind speed. In addition, the grid lines is not invested in harmonizing with the construction of the RE power plants, which leads to the power grid is overloaded in some areas. Besides, due to the higher investment for grid connections, large-scale projects will have bigger benefits than smaller scales projects if there are similar natural conditions<sup>9</sup>.

Selling price of solar and wind power to EVN according to Decision 13/2020/QD- TTg, Decision 37/2011/QD-TTg amended and supplemented by Decision 39/2018/QD-TTg has expired from December 31, 2020 and November 1, 2021 respectively. However, up to now, there has not been a new mechanism or regulation to guide electricity purchase price. This creates a legal vacuum and can greatly affect investor sentiment. Currently, the Ministry of Industry and Trade is coordinating with ministries and sectors to develop draft regulations on the development of wind and solar power projects, including considering the bidding mechanism to purchase electricity to select investors. However, details on this mechanism and when the document was issued are yet to be published. This situation is creating certain financial risks for a number of power projects deployed at the time of applying the preferential electricity purchase tariff as well as may affect investment decisions with new power projects.

*Third*, about tax incentives: The review process has shown some inconsistencies between the provisions of tax documents and specialized documents, mainly that the tax documents do not have guidelines corresponding to preferential policies in Viet Nam. Some examples include the following:

- Regarding corporate income tax incentives:

The Law on Economical and Efficient Use of Energy stipulates that organizations and individuals invest in production lines and expand their production scale by using energy-saving technologies. enjoy corporate income tax incentives; However, the law on corporate income tax does not provide preferential treatment for this object. Similarly, the Investment Law 2020 provides incentives for "fast depreciation, increasing deductible expenses when calculating taxable income", but the law on corporate income tax does not have specific provisions on this issue.

In addition, with corporate income tax incentives, it is not appropriate to determine the time to enjoy incentives calculated from the time when enterprises have revenue from new investment projects. Because, as long as the business generates revenue, the business will begin to calculate the time to enjoy tax incentives in this form, regardless of whether the business is profitable or not. Meanwhile, renewable energy production projects take a lot of time to complete, as well as time to pay back capital. If only based on revenue, the enterprise has generated revenue but has not yet generated profit after the incentive period has expired.

- Regarding import tax incentives:

<sup>8</sup> Decision 37/2011/QD- TTg amended and supplemented by Decision 39/2018/QD- TTg , Circular 02/2019/TT-BCT amended and supplemented by Circular 42/2019/TT- BCT, and in Circular 06/VBHN-BCT dated 21/02/2023

<sup>9</sup> Nguyen Van Vy , Problems for RE development and solutions, Electronic Journal of Financial Investment, 11/07/2021. See more at: <https://VietNamfinance.vn/vuong-mac-doi-voi-phat-trien-nang-luong-tai-tao-va-giai-phap-khac-phuc-20180504224254639.htm>



Article 25 of Decree 134/2016/ND-CP stipulates tax exemption for imported and exported goods to protect the environment and stipulates the basis for determining goods. Imported goods on the list of specialized machinery, equipment, means, tools and supplies imported for renewable energy production must comply with regulations of the Ministry of Natural Resources and Environment. However, up to now, the Ministry of Natural Resources and Environment has not yet issued any criteria or list to determine who is exempt from import tax in this case. This problem can make it difficult for businesses to carry out tax-free procedures for related goods. In addition, the Law on Economical and Efficient Use of Energy stipulates that organizations and individuals investing in production lines and expanding their production scale with energy-saving technologies are entitled to export tax incentives. import tax; However, the law on import and export tax does not have any preferential provisions for this object.

- Regarding value-added tax incentives:

Although the Law on High Technology stipulates that organizations and individuals that research and develop high technologies and high-tech applications are entitled to the highest incentives according to the provisions of law. provisions of the law on value-added tax, but the result of reviewing the regulations on value-added tax shows that there is no specific regulation related to *this content*.

*Fourth*, for capital mobilization, the most common problem is lending conditions.. These regulations are often commented as making it difficult for borrowers. At Viet Nam Development Bank to fully access the State's investment credit capital to complete and operate development investment projects. One of the problems of Decree 32/2017/ND-CP is related to the regulation "*Customers do not have bad debts at credit institutions at the time when Viet Nam Development Bank considers lending and disbursing loans*". In fact, loans at Viet Nam Development Bank are usually large-scale investment projects with a long construction period. The construction time is also the disbursement process for the project, so with the above regulation, it is possible for customers to fall into temporary financial difficulties or temporarily incur bad debts at credit institutions, leading to the Viet Nam Development Bank unable to continue disbursing. As a result, Viet Nam Development Bank breached the credit contract (did not disburse as committed), the project stopped construction, and Viet Nam Development Bank could not recover the disbursed capital for the project.

Borrowing according to the size of the project also narrows the ability of projects to access investment credit, especially projects of small and medium enterprises. In addition, The PPA of RE projects was argued that nonbankable, which create many difficulties for the local investors.

## Research and Development for new technology

Firstly, currently the Regulation on hi-tech parks under Decree No.99/2003/ND-CP is no longer consistent with relevant current regulations, not keeping up with the reality of developing hi-tech parks, however, there is no alternative text. Some provisions in Decree 99/2003/ND-CP are not recognized or are invalidated due to new regulations of specialized law such as planning, investment, construction, land, tax have changed; investment attraction activities face certain limitations due to the lack of adequate attraction criteria for each type of project permitted to invest in hi-tech parks; lack of specific regulations on conditions, order and procedures for the establishment and expansion of hi-tech parks, causing difficulties for localities in proposing as well as state management agencies in handling dossiers<sup>10</sup>.

Secondly , on the process of licensing investment, development, construction and operation of the project, for projects High technology, renewable energy: The process of implementing investment projects related to high technology is still relatively complicated and time consuming, especially procedures for land, site clearance, etc. These are some issues that are assessed to directly affect the competitiveness of the investment environment in Viet Nam (Doan Hong Nhung and Nguyen Thanh Hai, 2019).

<sup>10</sup> Report on assessment of the current situation of issues related to the policy requesting the formulation of a decree regulating hi-tech parks, Part I. Refer to the Draft Dossier of the Decree regulating hi-tech parks at: <https://www.most.gov.vn/vn/Pages/chitietduthao.aspx?iDuThao=845>

## Other fields

Firstly, organizations and individuals assigned the marine area to exploit and use wind energy currently do not have the right to mortgage the value of the rights to use the assigned sea area within the time limit assigned to the lending organizations. project funding. Article 16, Decree 21/2021/ND-CP guiding the Civil Code on security for the performance of existing obligations stipulates that allowing the holder to use the right to exploit natural resources valued in money (including financial sea water and other resources) to secure the performance of obligations. However, the specialized document on allocating marine areas for exploitation and use of marine resources, Decree 11/2021/ND-CP, recorded only one case of being mortgaged the marine area, which was the case of organizations and individuals exploiting marine areas for aquaculture<sup>11</sup> but have not extended this right to entities exploiting marine areas for other purposes (including wind energy exploitation).

Secondly, the review process shows that the current legal system of Viet Nam does not have specific regulations in a number of areas such as the development of training in the renewable energy sector and the attraction of human resources in this industry. The absence of regulations on RE in these areas may lead to limiting the development of the RE industry in the near future.

Box 1. Lessons learned from Philippines for the energy transition.

**The Philippines promotes the participation of the private sector to generate electricity. Therefore, creating a favourable environment for investors and developers is very important for the country's energy supply. The feed-in-tariff introduced in 2012 is an attraction for the private sector. Private companies mostly responded to feed-in-tariff supported wind and solar power projects, to the point of oversubscribing. In addition, the Renewable Energy Portfolio Standards (RPS) were subsequently implemented in 2020 to mandate that electricity suppliers, particularly distribution companies, source part of their electricity supply from qualified renewable energy sources.**

**To further boost renewable energy investments, the Department of Energy (DOE) has recently removed the restrictions on Filipino ownership of renewable energy projects and allowed 100 per cent foreign ownerships. Renewable energy expansion received a stronger justification from global coal price hike brought about by the war in Ukraine given that 80 per cent of coal use in the Philippines came from imports. Not only are renewable energy sources becoming more cost competitive in comparison, but they are also increasingly seen as an indigenous solution to reduce reliance on imported energy sources.**

**While the Philippines places significant emphasis on facilitating the private sector's role in electricity generation, it is equally mindful of the interests of consumers. The Green Energy Option Programme (GEOP), mandated by the 2008 RE Act and launched in late 2021 by the Independent Electricity Market Operator of the Philippines, give consumers the choice to source their electricity from licensed renewable energy suppliers. This is in contrast with having to consume whatever distribution utilities sell them.**

**There is a growing recognition of the need for consumer-centric energy transition strategies. In which, electricity price for end-users is also considered. Given the existence price transfer mechanisms, typically embedded within Power Purchase Agreements, allow coal power producers automatically pass on any additional fees resulting from fluctuations in global coal prices to end-users, a call has been made to reconsider and potentially eliminate these pass-through mechanisms to shield consumers from high electricity prices during periods of low**

<sup>11</sup>Decree 11/2021/ND-CP, Article 7, Clause 3; Law on Fisheries 2017, Article 46, Clause 4, Point a

**demand and price volatility. Therefore, the lesson for Vietnam in the energy transition process is that there must be strong participation from the private network and actions from consumers.**

## Box 2. Thailand Energy Transition Progress

The energy transition in Thailand has progressed slowly since the enactment of the Energy Conservation Promotion Law in 1992 and the establishment of the Ministry of Energy Education in 2002. Despite the policy promotion of energy conservation and its measures and programs have been designed and incorporated into various energy plans to align with national development plans, Thailand's achievements still lag comparing with energy targets. Some of the barriers and limitations pointed out as follows:

### (i) Fragmented authority and limited capacity

In Thailand, the National Energy Policy Council of Thailand (NEPC) and the Ministry of Energy (MOE) together with the Energy Policy and Planning Office (EPPO) are policy makers, launching the Thailand Integrated Energy Blueprint (TIEB) in 2015, in where the Energy Regulatory Commission of Thailand (ERC) is the regulator and the three SOEs are the operators in the power supply industry. According to the NEPC resolution, the ERC, together with the MOE, is responsible for determining tariffs and financial incentives for energy conservation projects, in particular determining FiT prices. In addition, other ministries also participate in energy-saving programs directly related to their jurisdiction.

Under the enhanced single-buyer model, energy SOEs play a dominant role in ESI. At the beginning of the adoption and implementation of energy conservation programs, three SOEs are assigned to lead, implement, and evaluate pilot projects that are aligned with their specific locations, resources, and goals of Thailand government. However, some of the mechanisms that encourage SOEs to promote energy efficiency are at odds with their main roles and responsibilities. As operators, they are genuinely interested in maximizing electricity sales, while the successful implementation of energy conservation programs coupled with the promotion of renewable energy can reduce their revenue.

Only solar has been successfully promoted through initiatives and partnerships from private operators. Responsibility for energy policy, planning and implementation is fragmented and conflicting. It requires a strong government agency to act as the focal point to coordinate all relevant agencies and conduct comprehensive policy analysis and performance reviews.

### (ii) Lack of coordination between the public and private sectors

To pursue the energy transition, the government alone cannot provide endless financial support, especially in energy-saving projects, from which the private sector, such as the manufacturing sector, production, can benefit financially in the form of energy cost savings. Coordination between the public and private sectors are required to develop projects both technically and financially. Furthermore, financial institutions need to be involved in the project implementation process to ensure the ability to borrow and finance the project in the long term. During 1992-1997, energy efficiency finance (EEF) in Thailand was initially supported by the public sector, such as projects by the Energy Conservation Fund and the Industrial Finance Corporation of Thailand (IFCT). Since 1997, public-private partnerships in energy-saving projects have been initiated and implemented, mainly in the form of joint investment programs, ESCO funds, BOI incentives for energy-saving projects and energy efficiency revolving fund (EERF) until 2012. Then in 2012, the government attempted to move away from public financing mechanisms to support direct incentives and move to market



measures and rely on private financing through the private sector and energy service companies (ESCOs). However, state efforts have, to date, failed to shift energy efficiency financing measures to the private finance sector, because energy efficiency projects are large in size, small investment and the stream of intangible and intangible benefits that come from saving resources. The behavior of banks in Thailand is considered conservative and risk averse. In addition, in order to realize benefits from energy efficient investments and projects, a number of supporting parties such as project developers, equipment suppliers, ESCO, technology experts and the insurance company must work together effectively.

The energy transition involves all stakeholders in society. However, in Thailand, energy policy and planning has been centralized for government agencies, regulators and state-owned enterprises for decades (Puree S., Praipol K., 2017). Thailand's governance in the energy sector is weak, especially in terms of independence, transparency, public participation and accountability. The lack of transparency and accountability in the electricity planning and development process creates suspicion among the public, leading to a persistent lack of trust in the decisions made by the government. An example is the process of developing PDPs and planning the construction of coal-fired power plants. Although a participatory process by the PDP is underway, only a limited number of stakeholders participate in public meetings and consultations.

Box 3. Lessons learned from Germany for the energy transition.

The German transition of the energy supply system (Energiewende) is incorporated in a system of multiple levels.

- Germany is a European Union's member and its energy policy is closely linked to the targets and directives developed at the European level (Vogelpohl et al. 2016). This will create many overarching mechanisms that regulate energy plans as a whole, rather than individual plans from different countries, creating synchronization in the whole region.
- Germany has a significant national strategy and regulatory framework for climate protection and renewable energy promotion in place. The dynamic development of renewables is, to a large extent, driven by financial incentives set at the federal level, and goes along with the influence of market actors. This has been crucial in the dynamic development of renewables in Germany in the past 20 years of innovation (Bruns et al. 2011).
- The transition process is accompanied by a shift to more decentralization, which leads to an increasing importance of sub-national authorities. The German Laender have a strong influence on policymaking and function as important laboratories for experimentation: The Laender's motivation for pushing renewables forward has been crucial for the dynamic start-up phase of the transition process. They compete among each other with respect to co-benefits like private investments, trade tax revenue, distribution of returns, and regional added value by developing renewable electricity generation. Some Laender explicitly strive to be forerunners in renewable energy policy.
- The decentralization regime in Germany gives local management more power in the energy transition process, such as having more functions of policy advice, law-making, and creating a mechanism to invite investors. Investment, local planning, creating programs to attract knowledge, have a higher ability to influence central policies.

### 3 ANALYZING POTENTIAL INFLUENCES OF ACTORS ON ENERGY TRANSITION

This section will focus on analyzing the potential influence of the actor on the energy transition of Viet Nam. The results will be the input for implementing Capacity Needs Assessment of those actors, which are present in the Section 4.

#### 3.1 Analysis methods

To analyze the potential influences of the actors based on their roles on energy transition progress in Viet Nam, The Research and Assessment Framework (RAF) initially developed by CASE project is adapt and used to analyze the actors as defined in Section 2.

The following contents and indicators were used to analyze the actors:

- Power: What is the level of influence with regards to the energy transition?
  - What are the actor's roles with regards to the energy transition?
  - What are the area of influence with regards to the energy transition?
- Engagement: What is the willingness and capacity to support progressive energy transition policies?
  - What are the core interests of the actors with regards to the energy transition?
- Direction: Is the actors considered rather an opponent of or a supporter for progressive energy transition policies?
  - In which way is the actors (formally or informally) connected or bound to other stakeholders?

The consultants review and propose to analyze following actors based on their involvement and potential influence in energy transition progress.

Table 1 - The proposed actors for analysis

	Institution / Organization	Short name
	Central Organizations:	
1	Committee on Science, Technology and Environment - National Assembly	CSTE of NA
	Governmental Stakeholders	
2	Electricity and Renewable Energy Authority - Ministry of Industry and Trade	EREA of MOIT
3	Electricity Regulatory Authority - Ministry of Industry and Trade	ERAV of MOIT
4	Department of Energy Efficiency and Sustainable Development - Ministry of Industry and Trade	DEESD of MOIT
5	Department of Science, Education, Natural Resources and Environment - Ministry of Planning & Investment	DSENRE of MPI
6	Department of Climate Change - Ministry of Natural Resources and Environment	DCC of MONRE
7	Viet Nam Environment Administration - Ministry of Natural Resources and Environment	VEA of MONRE

7	Department of Science and Technology - Ministry of Natural Resources and Environment	DST of MONRE
9	Department of Investment Supervision and Appraisal- Ministry of Planning and Investment	DISA of MPI
10	Department of Crop Production, Ministry of Agriculture and Rural Development	DCP of MARD
11	Department of Livestock Husbandry, Ministry of Agriculture and Rural Development	DLH of MARD
12	Department of Price Management - Ministry of Finance	DPM - MOF
13	General Department of Taxation - Ministry of Finance	GDT - MOF
14	Committee for Management of State Capital at Enterprises	CMSC
	<b>Academia or think-tank</b>	
15	Institute of Strategy and Policy on Natural Resources and Environment - Ministry of Natural Resources and Environment	ISPNRE of MONRE
16	Hanoi University of Natural Resources and Environment - Ministry of Natural Resources and Environment	HUNRE
17	Institute of Energy - Ministry of Industry and Trade	IEVN-MOIT
18	Electric Power University	EPU
19	Hanoi University of Science and Technology	HUST
20	Ho Chi Minh University of Science and Technology	VNUHCM-US
21	Da Nang University of Science and Technology	DUT
	<b>NGO</b>	
22	Viet Nam Energy Association	VEA
	<b>Others</b>	
23	Viet Nam National Coal - Mineral Industries Holding Corporation Ltd.	VINACOMIN
24	PETROVIET NAM (Viet Nam Oil and Gas Group)	PVN
25	Viet Nam Electricity Corporation	EVN
26	Vietcombank	VCB

Source: Collected by the authors

### 3.2 Analysis results

According to the information collected by the desk research and comparing with the three indicators (Power, Engagement, Direction), the analysis has marked the level of influence of the actors in energy transition. Besides governmental agencies and institutes selected by analyzing, other actors such as three SOEs and one NGO which is Viet Nam Energy Association have been nominated due to the limit of quantity participated in the analysis. The results are presented by using the pivot tools and are shown in Figure 3 and Figure 4 (detailed information are in Appendix 1).

on the basis of a decision  
by the German Bundestag

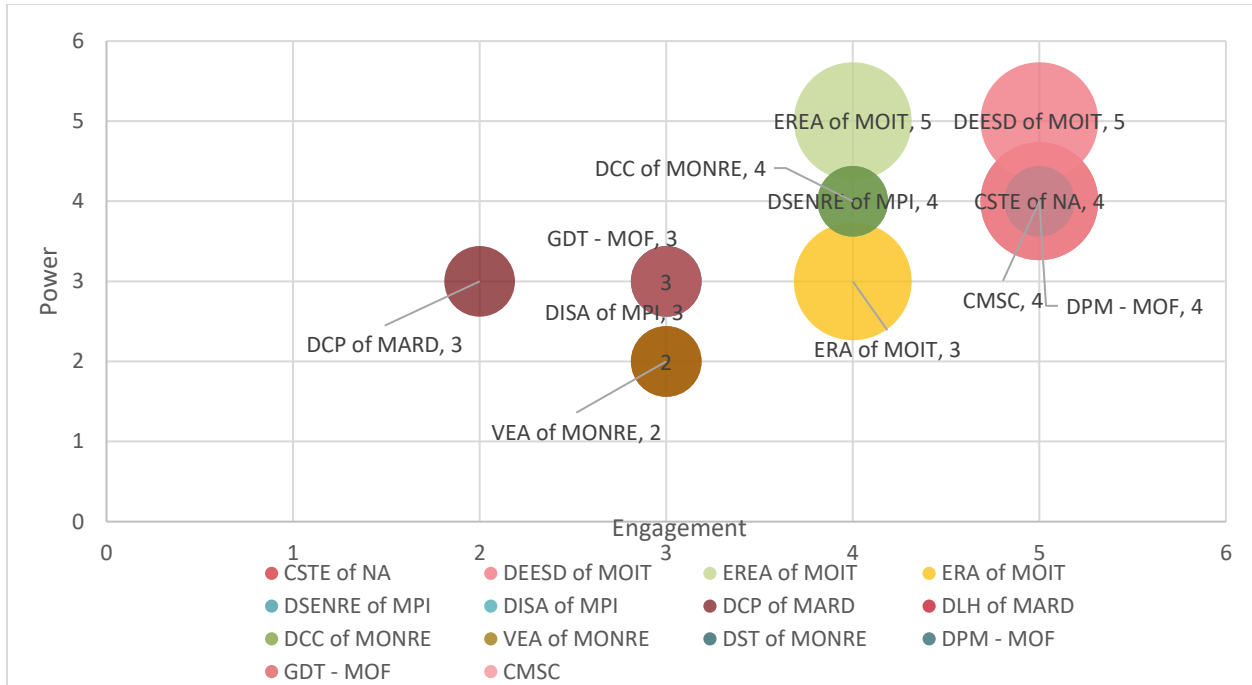


Figure 3 - Analyzing the governmental agencies with pivot tool of RFA

Source: Analyzed by the authors

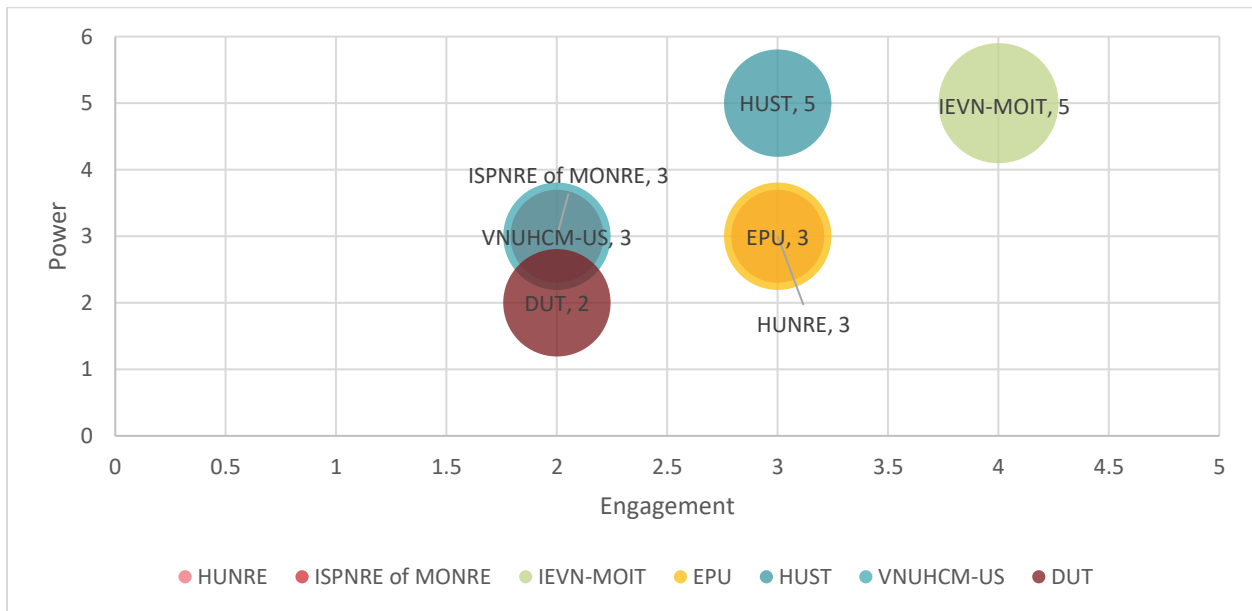


Figure 4 - Analyzing the institutes (academia and think tank) with pivot tool of RFA

Source: Analyzed by the authors

## 4 CAPACITY NEEDS ASSESSMENT (CNA)

### 4.1 Analysis methods

**Method for collecting information:** The assessment used in-depth interviews, group interviews/ focus group discussion and studying secondary data to collect the information regarding the current performance of the actors, the capacity gaps, and the needs of capacity building as well as the suggestion to organize and implement capacity building program for the actors.

#### **Analysis framework**

The collected information for the topics including roles and mandate of the organization in term of ET; structure, organization, and staff; self-assessment of performance against role and mandate; and gaps of performance... are also used to enrich the results of desk research as in the PART I. In this part of the report, the consultant team focused on analyzing the gaps of performance of the actors/ stakeholders in ET to define the needs of capacity building in the area.

In analyzing the collected information, the team used a hybrid method including qualitative analysis for the topics from 1 – 6 and from 8-10 while all the details of the topic No.7 were numerically analyzed. The analyzing was done based on the approved methodology in which the team analyzed the current roles and mandates of the actors/ stakeholders and compared to the collected information about their own current performance to define the gaps of capacity then made the recommendations for the capacity building program which is proposed in the PART IV.

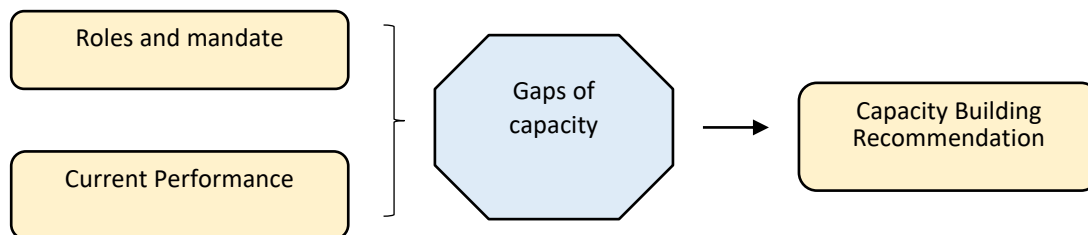


Figure 4 - The Analysis Framework of Capacity Building Needs

Source: Developed by the authors

#### **The considered capacity building topics**

The capacity topics by International Energy Agency (IEA)'s Energy Training Capacity-building Program<sup>12</sup> will be considered to ask the interviewees to verify their needs, however, it is open for the interviewees to make their own recommendations.

- Energy policy development
- Emergency response capability
- Energy statistics
- Energy efficient technologies
- Renewable energy and other low carbon technologies

#### **The interview topics**

- 1) General introduction about the organization?
- 2) Roles and mandate of the organization in term of ET?
- 3) Structure, organization and staff?

<sup>12</sup> International Energy Agency (IEA)'s Energy Training Capacity-building Program, [https://iea.blob.core.windows.net/assets/9c386287-779f-451c-bd79-bcef4d34481/Energy\\_Training\\_Brochure.pdf](https://iea.blob.core.windows.net/assets/9c386287-779f-451c-bd79-bcef4d34481/Energy_Training_Brochure.pdf)

- 4) Self-assessment of performance against role and mandate?
- 5) Gaps of performance? Reason, especially the human resource, financial resource, technology and etc.?
- 6) The need for assistance in capacity building?
- 7) Capacity building topic rating?

Each topic was rated by the interviewees on a scale of 5 levels including 1) Not at all Necessary; 2) Not necessary; 3) Necessary but not prioritized; 4) Prioritized; 5) Highly prioritized. The rated topics include:

Table 2 - The list of capacity building topics to be verified with the actors/ stakeholders.

Topic No.	Topic content	Short name
1	Policies and regulations affecting the energy transition (e.g., good policy and regulation practices, policy and regulatory gap analysis, etc.);	Policies and regulations affecting ET
2	Energy conversion: Implications for the legal framework and improvement of the policy and legal framework.	Implications to Legal framework
3	Statistics and data analysis on energy transition and use of statistics in evidence-based policy making.	Statistics and data
4	Assess the impact of the energy transition.	Assessment of ET impact
5	Available technology options for energy conversion.	Available technology options
6	Financing options available for energy transition.	Financing options for ET
7	Managing the energy transition and building energy conversion scenarios	Managing transition from CFPP to RE
8	Coordination among stakeholders in energy transition	Coordination among stakeholders
9	Emergency response ability	Emergency response ability
10	General knowledge of early transition in coal-fired power	General knowledge on CFPP transition

Source: Prepared by the authors

- 8) Other topics recommended for capacity building?
- 9) How should the capacity building program be implemented: The methods? Time? Location? And etc.
- 10) Other recommendations for improvement of the capacity of the organization for a better performance regarding ET promotion?
- 11) What kind of training on ET your organizations can provide or support (for institutes and universities)?

**Actor selection for interview:** Among the actors identified and analyzed in PART 3, the consultant has requested interviewing the key staff, the personnel staff and the managerial level staff who are in charge of personnel matter of the actors/ stakeholders. The consultant team was able to set up and made the

discussions for CNA with 12 actors, which are less than what defined in PART 3 due to the availability of time and the interest of the actors.

- 1) Electricity and Renewable Energy Authority - Ministry of Industry and Trade
- 2) Electricity Regulatory Authority - Ministry of Industry and Trade
- 3) Department of Climate Change - Ministry of Natural Resources and Environment
- 4) Department of Price Management - Ministry of Finance
- 5) Institute of Energy - Ministry of Industry and Trade
- 6) Department of Natural Resources and Environment of Quang Ninh Province
- 7) Department of Science and Technology of Quang Ninh Province
- 8) Hanoi University of Science and Technology
- 9) Hanoi University of Natural Resources and Environment - Ministry of Natural Resources and Environment
- 10) PETROVIET NAM (Viet Nam Oil and Gas Group)
- 11) Viet Nam Electricity Corporation
- 12) Viet Nam Energy Association.

## 4.2 The results

### **The readiness for energy transition of the actors is various.**

The interview results show that the actors have different levels of readiness for ET, depending on their mandates and involvement in energy transition progress. Their readiness is influenced by the institutional system and regulation, as well as their capacity. Some of them have been preparing for a long time to deal with climate change and ET, while others are still preparing for their responding plan.

The difference is between the governmental agencies while the actors from MOIT and MONRE at the central levels seem ready and experienced with the development of policies and interventions in ET, especially cooperate with the international partners while the other agencies claimed that they are not yet ready for ET due to lack of the knowledge.

The level of readiness among agencies at different levels persists. The agencies from ministry level seem capable in doing the jobs regarding ET rather than the provincial actors. While the actors from MOIT and MONRE states that their capacity are enough to provide training and capacity building assistance to other actors, the provincial actors, especially the ones outside of DOIT, DONRE claimed that they have not been trained on ET at all and almost the knowledge they got for the jobs of ET is from searching internet. Others may totally rely on outsourcing by calling for consultancy providers.

*“My department is in charge of the administration of the price of petroleum products. Within the last two years, various changes have been made requiring us to respond correctly including responding to the requirements of ET. In order to persuade the decision makers about our price proposal it would be good if the proposals is made based on international experience. However, this kind of information cannot be found only from internet while due to the shortage of manpower we have not been able to assign our staff to join the delegation to come other countries for learning experiences.”*

*By one of the key informants from DPM - MOF*



The difference appeared between the commercial actors such as PVN and EVN. PVN has already set up a plan, allocate overseeing department and resources for studying, capacity building and integration the issues into the activities of the corporate from 2020. While for EVN though ET is considered as part of the strategic structure of EVN, so the Strategy Division is the focal point of ET in the corporate. EVN is studying to build an ET roadmap according to government policies. It is expected to be completed this year, followed by capacity building workshops. Currently, EVN is implementing ET in a top-down fashion, based on the Program of the Ministry of Industry and Trade and has not yet planned to assign specific tasks to the units to do.

*“PVN takes the lead in this field. The reaction was started very early and they have the awareness even before the releasing of Resolution 55. In July 2020, the corporate established a Steering Committee for energy transition. Head of Electricity Division acts as secretary of the committee. The assisting team will be responsible for coordinating the implementation of the tasks while the vice directors of the other divisions of the corporation are members. The Department of Renewable Energy of the Electricity Division is the focal point for internal coordination and coordination with external partner including: the Party’s Central Economics Board, CMSC, the Ministry of Industry and Trade, other ministries, and departments.*

*+ Energy management: Quarterly Board of Directors meeting to update international and Vietnamese trends; Assess the impact on each unit and the work to be done; Supervising the CDNL activities of the units and international cooperation.*

*+ Emission management: Focusing on emissions, assessing the current state of emissions of corporations and units, adding the last; PP to checklist; Guidelines for calculating the carbon footprint.*

*+ Saving energy, investing in improving the efficiency of energy use: As a top priority; including standard statistics on quantity of each unit and the whole group; calculate and build solution.*

*+ Greening power plants: co-firing (technology, economic efficiency, value chain...); coordinate with international organizations on the conditions for early retirement... try to include the overall solution”.*

*By one of the key informants from PVN*

The difference between the areas of studying and researching of the institutes: While HUST’ specialists are leading on mega-projects of electricity production then the scientist of HUNRE is experienced with ET in smaller scale at small enterprises, households and in rural areas.

### **Man-power shortage of the actors – A big challenge for ET**

Almost the actors contacted and discussed with the consultant team claimed that they have too much work to do while having just too little manpower. This issue appeared on the observation of the consultant team right from beginning while many of the actors/ stakeholders had to refuse to meet with the team because they have no time available though they want very much to share the view with us. We witnessed many





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interviews were interrupted because of phone calls and people approached the interviewees for urgent things. Many of the interviews/ discussions have been shortened down because of the interviewees having an important work ahead. Many interviewees claimed that they are just not available to send the staff to attend training, workshop or oversee delegation on the issues of ET. Man-power shortage of the actors/ stakeholders could be a huge challenge for the capacity building program for CASE later.

#### **Priority of the capacity building topics on ET:**

Though facing the huge challenges as described above, the capacity building program of CASE could be warmly welcome by the actors/ stakeholders basing on the calculation on their answered about the necessity of the capacity building topics though the differences do exist.

During the discussions the interviewees/ participants were asked to rank the capacity building topics proposed by the team according to their own needs, their organization's needs and their sharing about the organization, the performance, and the gaps of capacity. The list of the topics is an "open-ended" one allowing the interviewees to add more topics according to their needs.

The interviewees/ participants were asked to rank the capacity building topics by a scale of five levels of Not necessary at all; Not necessary; Necessary but not prioritized; Prioritized; Highly prioritized. Besides the other recommendations and despite the different angles of the actors the topics gain priority from the participant is an outstanding trend.

From 70% to 90% of the participants agreed that 9 out of 10 proposed topics (see Table 2) are necessary to highly prioritized. Only Topic 8 - Coordination among stakeholders in energy transition is considered less prioritized than the others. See the below Figure 5 and 6 .

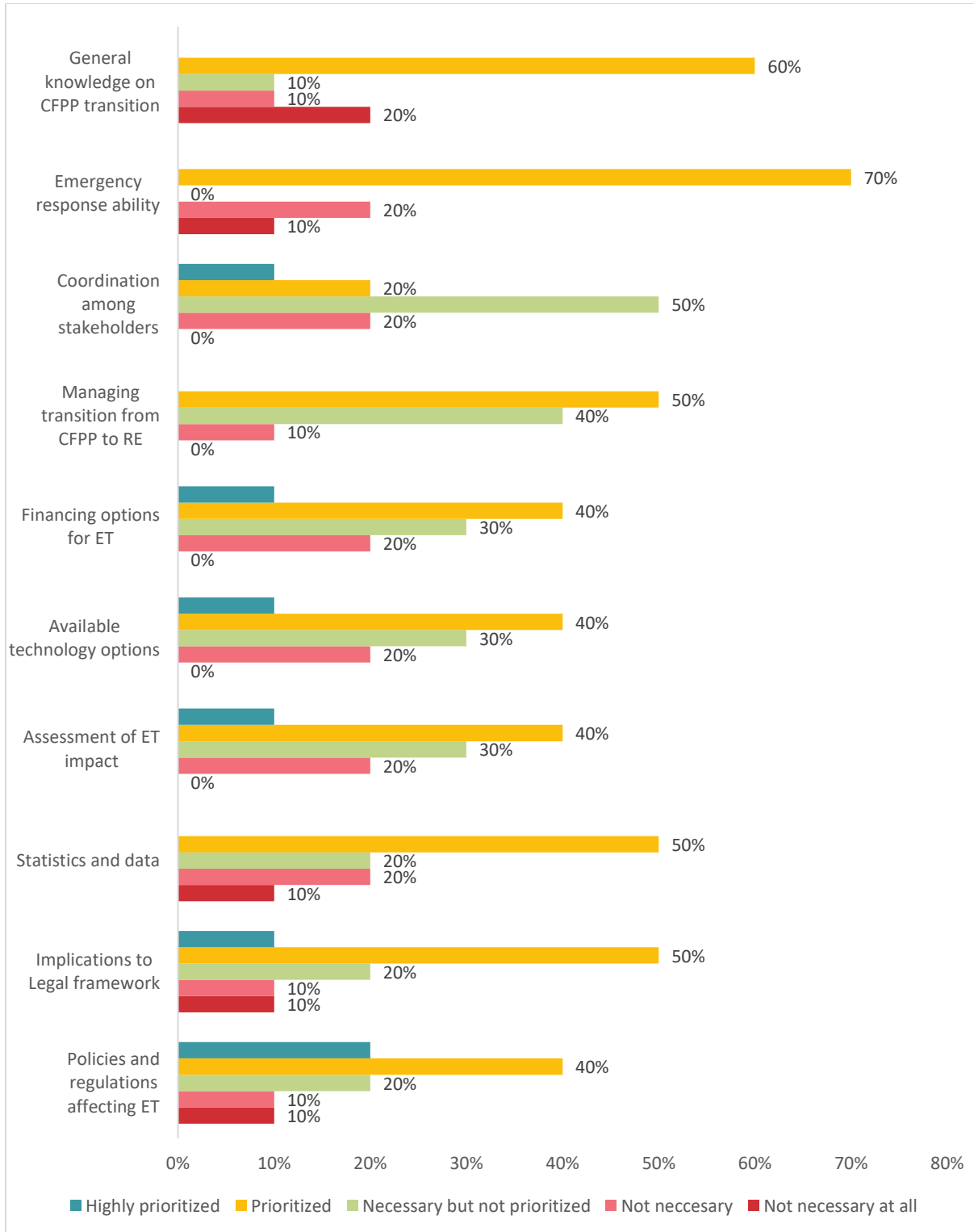


Figure 5 - General analysis on the topics of capacity building in ET

Source: Calculated and developed by the authors

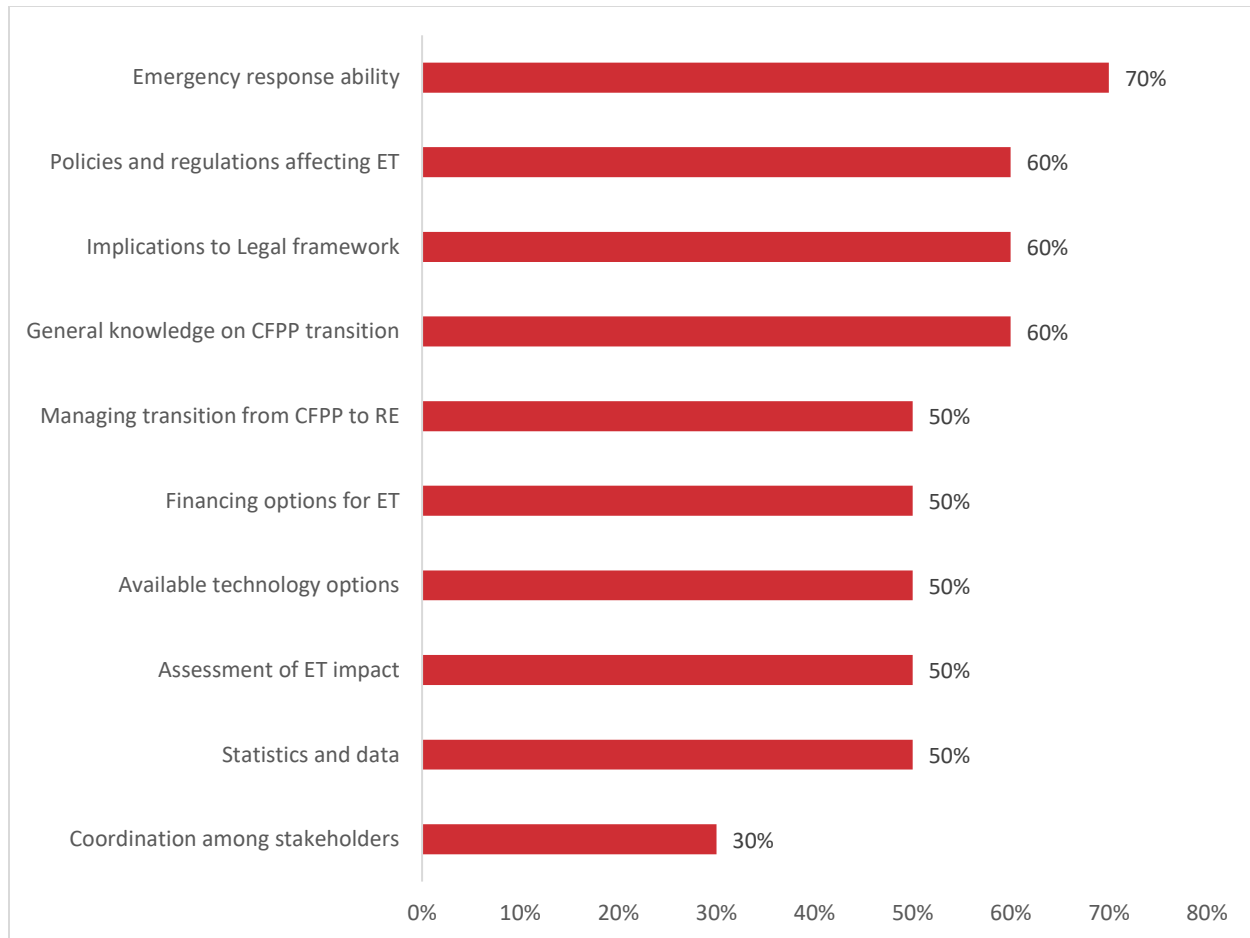


Figure 6 - Rank the topics at priority and high priority levels.

Source: Calculated and developed by the authors

In addition, the interviewees suggest including 02 topics needed for the capacity building, named: “*Storage technology and policy for Storage development*” and “*Behavior changing communication skills in ET*”. Therefore, the 11 agreed topics for capacity building are presented in Table 3:

Table 3 – The agreed topics for capacity building activities

No.	Topic categories	Topic short name	Content
1	Policy & Governance	Policies and regulations affecting ET	Policies and regulations affecting the energy transition (e.g., good policy and regulation practices, policy and regulatory gap analysis, etc.);
2	Policy & Governance	Implications to Legal framework	Energy conversion: Implications for the legal framework and improvement of the policy and legal framework;

3	Policy & Governance	Statistics and data	Statistics and data analysis on energy transition and use of statistics in evidence-based policy making;
4	Policy & Governance	Assessment of ET impact	Assess the impact of the energy transition;
5	Technology	Available technology options	Available technology options for energy conversion;
6	Financing	Financing options for ET	Financing options available for energy transition;
7	Policy & Governance	Managing transition from CFPP to RE	Managing the energy transition and building energy conversion scenarios;
8	Policy & Governance	Emergency response ability	Emergency response ability;
9	Technology	General knowledge on CFPP transition	General knowledge of early transition in coal-fired power;
10	Technology, Policy & Governance	Storage development	Storage technology and policy development;
11	Policy & Governance	BCC for ET	Behavior changing communication skills should be equipped for spreading knowledge and best practices in ET to community.

Source: Developed by the authors from survey results

### The different need-levels for capacity building:

Though think that the topics are necessary, prioritized or highly prioritized, the participants also express their specific requirements according to their readiness for ET. For those who have been involved in, worked with, studied in ET for a rather long time such as the institutes and some central level agencies of MOIT and MONRE including IEVN-MOIT, HUST, HUNRE, PVN etc. the level of needs is different. Their needs for capacity building in the topics are at an advanced level.

For those who hardly involved with training or capacity building activities in ET or just started to respond with ET such as the agencies at provincial level and the corporate like EVN should be provided with capacity building assistance at the level of beginners.

Special requirements also exist. International experience or international pattern is the needs of capacity building for the staff of DPM – MOF, for example.

- Storage technology and policy development should be one of the topics for building capacity regarding ET. However, the specific target group should be focused on the policy makers from MOIT and the corporations only due to their role and mandate
- Developing a competitive electricity market should be another topic for capacity building for the personnel of MOIT as well as the other central agencies
- Some other specific topics requested by the participants include: New knowledge/ technology about new energy sources including hydrogen, ammonia co-firing, waste to energy... (capacity building for staff in research, testing, management and operation of hydrogen, ammonia, CC waste, new energy technologies from potential and developed countries around the world); Experiences from previous countries in developing mechanisms and policies; New technologies and investments in

energy management; Forecast of pricing of new technologies such as hydrogen, ammonia and the development of coal price in the context of ET, and etc.

- Pilot capacity building for coal industry: Note on metal recovery of coal industry (requires experts) this is typical of Vinacomin Viet Nam; The issue of career change for coal industry workers
- Behavior changing communication skills should be equipped for spreading knowledge and best practices in ET to community; Encourage/promote enterprises/communities to participate in the energy transition; Carbon credit issue; Correct common knowledge about net emissions to no longer be misunderstood and etc.
- Beside some of the central agencies and institutes whose staff are able to communicate in English, other participants request that in order to access better to the world's knowledge on ET many participants request for assistance in building their capacity of using English.

### Types of Capacity building measures

Workshops/ seminars are the way mentioned by the discussion participants mostly. Short training courses are the second choice mentioned by many participants. Other ways of capacity building including:

*Reference documents:* It is recommended that the documents should be prepared under the forms of manuals which should be short (15 minutes of reading only), concise and easy to understand; The documents could be delivered in hard copy, but internet provision could be a more efficient way to issue;

*Study tour:* Both of domestic and international study tour assistance are strongly requested by the participants due to the novelty of ET matters;

*Training of Trainers (TOT):* TOT should be the choice for building capacity for large organizations like EVN, PVN because they have a huge number of employees need improving capacity regarding ET while they have their own capacity building staff who just need to be trained by TOT. Besides, staff of training centers of the central agencies could be involved in TOT.

It should be creative in the form of training, for example: Open contests to achieve the criteria of energy conversion (co-firing efficiency) in coal-fired power enterprises;

For the institutions: the capacity building assistance can be done under the form of assist the scientists carry out the research;

For local agencies and enterprises at provincial level: Should organize local seminars, it is easy to participate, invite relevant local agencies to participate; Governmental agencies need intensive training, for local enterprises, communication to raise awareness of benefits is the main thing;

From their own experience, human resource staff of EVN shared that e-learning system is not really efficient because it just suitable to provide very basic information to people;

It is necessary to clearly identify the audience and their specific needs, time, location in advance so that trainers/ facilitators are able to prepare to meet with requirement of the audience;

### **The needs for assistance in capacity building for ET – The case of EVN**

EVN divides its personnel into three levels: 1) Senior staff already aware of ET; 2) Central level officials are interested in technology and cost but have no training resources; 3) Practitioners need to have a more specific survey of needs. The amount of training previously supported by GIZ is very small, not enough for EVN's member units.

#### ***The agency's capacity building priorities in EVN's ET topics:***

- Priority 1 - Training for senior leaders and staff in charge of energy efficiency with the following contents: Modern change management model oriented towards energy efficiency; Solving problems and challenges in ET; Learn about the models and technologies being applied in the world; Existing tools and software;
- Priority 2 - Training and developing and implementing the unit's energy efficiency strategy with the target audience being leaders and experts of relevant units: Methodology, how to set targets, monitor - evaluate, tracking tools...

#### ***Requirements for EVN's capacity building on ET:***

- Training according to the capacity profile: Job position (desire to train all relevant employees);
- It is necessary to coordinate with HR Division to assess the capacity gaps and provide training based on those skills; ToT should be provided to core personnel; the remaining can be trained in the direction of raising awareness;
- Training to transform awareness, mobilizing the support of employees in the units to be transformed... Designing a program for senior leaders in leadership of change management;

#### ***The forms of assistance for capacity building on ET appropriate for EVN:***

- Workshop: Basic Awareness
- Training course: Intensive training for subjects at all levels; Professionals working directly...
- International seminars and fairs: Focusing on level 1 and level 2; EVN can share the cost; Content must be practical and useful;
- Pilot training at each level of staff, then EVN will deploy mass capacity building ... transferring training materials to member units to replicate the activities;
- E-learning is only suitable for basic training.

#### ***Organizing the appropriate ET capacity building activities for EVN:***

- Level 1: A half to two days is the maximum, so in Hanoi or the workplace town, should not be too far; Avoid the beginning of the year, the end of the year, the end of the quarter; Content: New, practical; Trainers should be senior expert can share about professional content, ready to assist in solving the problem; An interpreter is required though most of them can listen to English;
- Level 2: Two - three days is maximum; Avoid the beginning of the year, the end of the year, the end of the quarter; Especially in need of an in-depth interpreter...
- Level 3: Try with 2-3 days, maybe longer; should focus on studying... avoid the beginning of the year, the end of the year, the end of the quarter.

### **How the actors/ participants can help in providing capacity building activities:**

Beside of needs for advanced capacity building, DCC of MONRE can provide the assistance in the way of a series of seminars with provinces, businesses, the Department will share and propagate for the contents



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regarding regulations and policies; emissions, greenhouse gas inventory, technology conversion (MAV-Emission reduction assessment); The departments is also willing to consult about the training program when CASE project has drafted.

HUST is the national leader in research and training in energy, ET; participated in many activities with GIZ; Therefore, it is possible to participate in training related topics for units in needs.

The Electricity Market Research and Development Research and Training Center of the Department is capable and experienced in implementing training programs including ET training, can join the capacity activities;

HUNRE can assist in Developing teaching materials: for people, businesses; Training on economic efficiency; environmental audit; Training in monitoring and analysis; Training on risk assessment; Training on co-firing technology, especially waste treatment; Communication training...

## 5 PROPOSED CAPACITY BUILDING PROGRAM

### 5.1 Aims of the capacity building (CB) program

The capacity building program of CASE project, within the project's available resources, aims to provide technical assistance to key actors/stakeholders in order to support them having better performance of their mandates, enhancing their voices and participations in energy transition progress in Viet Nam.

### 5.2 Target actors for CB program

Because the interview could not cover all the actors identified in PART 2 and PART 3, the consultants propose to select the target actors for CB program by consolidating the primary data from interview results, analysis results on the actors' mandates, responsibilities, involvements (see PART 2) and potential influence in ET (see PART 3), and from other secondary sources. Thus, target actors for CB program should be covered:

#### Central level's organizations:

- Committee on Science, Technology and Environment of National Assembly and other relevant bodies.

#### Ministries and ministerial-level organizations and their subordinates

- **Energy actors:** whose organizations are the host ministries for implementation of ET related strategies including:
  - o MOIT, MONRE and their departments, agencies including EREA, ERAV, DEESD, DOIT (under MOIT) and DCC, VEA, DST, DONRE (under MONRE);
  - o State Enterprise: EVN, PVN, VINACOMIN
- **Non-Energy actors:** Ministries are assigned for coordination and implementing the specific tasks related to ET and their departments, agencies including MOF, MPI, MOC, MOT, MOST, and local PPCs.

**Universities and research institutes:** HUST, HUNRE and IEVN...

**Finance Representative:** State Bank, Commercial banks, Investment Funds etc.

**Private sectors:** Enterprises working in RE industry.

### 5.3 The type of capacity building activities

- **Workshops/ seminars (WS):** WS is the method to deliver the CB mentioned mostly by the informants.
- **Trainings (T):** Short training courses are the second choice mentioned by many participants. The training course should be in creative ways, for example: Open contests to achieve the criteria of energy conversion (co-firing efficiency) in coal-fired power enterprises...; Also, the length of the training course should not exceed 02 days (maximum)
- **Reference documents (REF).** It is recommended that the documents should be prepared under the forms of manuals or IEC materials which should be short (15 minutes of reading only), concise and easy to understand; The documents could be delivered in hard copy, but internet provision could be a more efficient way to issue;
- **Study tour (ST):** Both of domestic and international study tour assistance are strongly requested by the participants due to the novelty of ET matters.

- **Training of Trainers (TOT)** courses should be the choice for building capacity for large organizations like EVN, PVN because they have a huge number of employees need improving capacity regarding ET while they have their own capacity building staff who just need to be trained by TOT. Besides, staff of training centers of the central agencies could be involved in TOT.
- **Fundings for research (FR) or Assisting Initiative (AI):** These options could be applied for the research projects or initiatives from universities, research institutes and enterprises.

## 5.4 Methods to implement the capacity building activities

- It is necessary to thoroughly apply the capacity building method “Students-centered” capacity building according to learners' requirements. Therefore, it is required to assess the needs of learners before the course, the lecturers / coaches shall redesign the lectures and student materials according to the objectives of each module and the needs of the learners have been assessed and recognized;
- It is necessary to thoroughly apply the "Participation Method" in capacity building, with emphasis on the application of case studies, group discussions, group exercises, etc. to create conditions for students to share and experience;
- Strongly encourage self-study and self-capacity building by facilitating resources, time and learning materials;
- Promote internal capacity building and combine with capacity building activities for local civil servants;
- Requires assessment during and after the course to ensure quality.
- Capacity building process.

The following steps could be applied for each capacity-building activity.

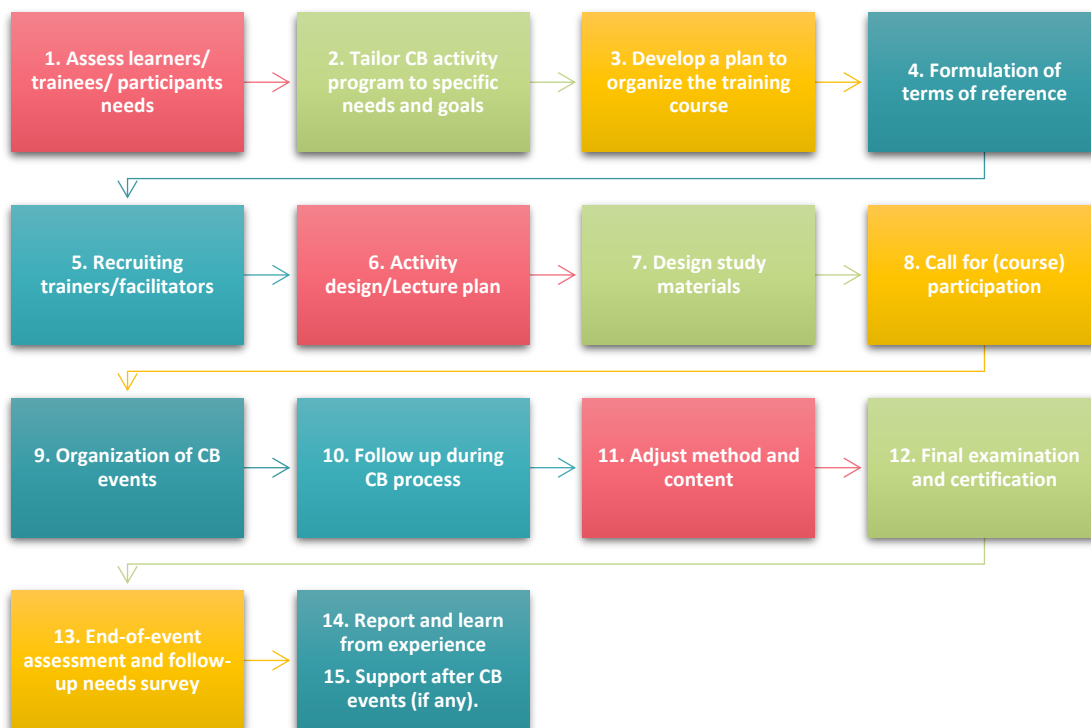


Figure 7 - The process of capacity building activities

Source: Developed by the authors

## 5.5 Key risks and mitigation

*The CNA shows that there are some risks which could affect the performance of the CASE's capacity building program.*

- The various needs of actors/ stakeholders for capacity building which may cause difficulties in organizing activities of the project. In this case, strictly following the capacity building process in which assess the needs of participants prior to each CB event and then design the specific activities accordingly should be the solution for manage the affects of this risk;
- Time limit: The CNA clearly shows that almost of the actors/ stakeholders are facing with the difficulty of shortage of manpower which will create the difficulty for the project to mobilize the participants for the capacity building activities. Well planning for capacity building and keep close contact with stakeholders should be the solution to limit the affects of this risk.

## 5.6 The prioritized activities of capacity building program

Based on the survey results, the consultants proposed potential capacity building activities should be delivered to the stakeholders. The type of activities also defined in table 4. It is also note that the CASE project should consider providing CB activities should be provided in both short-term and long-term.

Table 4: The prioritized activities of capacity building program

No.	Topics short name	CB Format	Proposed details	Central Level Org	Energy actors	Non-Energy actors	Uni, Institute	Finance Org	Private sector	Note
1	Policies and regulations affecting ET	Training	State governance of ET			✓				Basic level with focus on vertical departments
		Workshop	ET management, policy and international experiences	✓	✓					
			Policy and regulatory gaps analysis	✓	✓	✓				
		Workshop	Management issue of career change for coal industry workers;	✓	✓	✓				
2	Implications to Legal framework	Workshop	Developing a competitive electricity market		✓					
		Reference Docs	Briefing paper on current status of ET in Vietnam and application of policies	✓						
		Workshop	Management of off grid RE projects;		✓					
		Workshop	Bidding mechanism for renewable energy projects		✓					
3	Statistics and data	Workshop; training	Energy transition indicators	✓	✓	✓				
		Training	Use of indicators in evidence based policy making	✓	✓	✓	✓			The training for Central Org should focus on related department and standing members.
4	Assessment of ET impact	Workshop	Improve capacity to guide credit policies, resources, processes and procedures for credit granting to enhance coordination in environmental and social protection and effective and quality credit management		✓	✓		✓		

No.	Topics short name	CB Format	Proposed details	Central Level Org	Energy actors	Non-Energy actors	Uni, Institute	Finance Org	Private sector	Note
5	Available technology options	Workshop	New knowledge/ technology about new energy sources including hydrogen, ammonia, co-firing, CC waste...	✓	✓	✓	✓			
		Workshop; International Study tour	New technologies and energy sources;	✓	✓		✓			
		Training	Training on technical standards applicable to solar power projects for power companies and investors, consultants;					✓		
6	Financing options for ET	Training	Improve project evaluation capacity, especially prioritized projects such as projects using effective natural resources, using advanced scientific and technological achievements; economical and efficient use of energy; clean energy development; recycled energy; using environmentally friendly technology and equipment, producing environmentally friendly products					✓		
		Training	Improve the capacity to exploit capital from programs for green growth to support preferential capital for green credit portfolios of domestic and international organizations.					✓		
		Training	Training to improve research and development capacity to create new services/products capable of encouraging and prioritizing customers to implement environmentally friendly projects and business plans					✓		



No.	Topics short name	CB Format	Proposed details	Central Level Org	Energy actors	Non-Energy actors	Uni, Institute	Finance Org	Private sector	Note
		Workshop	Credit arrangement for renewable project					✓	✓	
7	Managing transition from CFPP to RE	Workshop, Training	Change Management: - Consider conducting trainings on Change Management for high and middle level managers of EVN, - For technical, consider conducting training on request of EVNNLDC.	✓	✓					Also consider other request from EVN for trainings, workshops with tailor-made topics proposed by EVN in the future.
8	Emergency response ability	Workshop	Off-grid power project operation techniques;		✓					
		Workshop	Harmonious integration of renewable energy into the power system;		✓					
9	General knowledge on CFPP transition	Workshop				✓				
10	Storage development	Study tour	International Study tour in Europe or America countries	✓	✓					
11	BCC for ET	Reference Docs			✓	✓				Basic level with focus on vertical departments
12	Other topics	Funding	Funding for research of institutes				✓			
		Assist Initiative	Assist initiatives in ET of corporates						✓	
		Assist Initiative	Assist initiatives in ET of corporates						✓	

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## Appendix 1 - The details of actors analysis during the CNA

No	Actors	Influencing Power	Engagement	Direction
		What is the level of influence with regard to the energy transition? - Please rate (1 - very low influence, 5 - very high influence)	What is the willingness and capacity to support progressive energy transition policies? - Please rate (1 - very low, 5 - very high)	Is the actor considered rather an opponent of or a supporter for progressive energy transition policies? - Please rate (1 - strong blocker, 5 - strong ally)
1	CSTE of NA	5 CSTE is a committee of NA which is one of the most power bodies of the State structure of Vietnam	4 The body has the highest willingness to support the energy transition policies. However, improving its capacity would be better for future	5 The body gives direction to almost other part of the State structure
2	EREA of MOIT	4 Directly distribute with the agency in charge of implementing tasks in the national energy strategy	5 Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; directly coordinate with the lead unit in the governing ministry	5 This subject is considered to be a strong supporter for energy transition. Because this is the focal agency, responsible for the implementation of renewable energy tasks under the Ministry of Industry and Trade (the main agency in charge of the National Energy Conversion Strategy). And is closely related to the energy sector due to the functions and tasks of this unit.
3	ERAV of MOIT	4 Directly distribute with the agency in charge of implementing the tasks in the National Energy Strategy, within the same	3 Units in the public sector, directly implementing the direction and viewpoints of the Party and State	5 This subject is considered to be a strong supporter for energy transition. Because this is the focal agency, responsible for the implementation of renewable energy tasks under the Ministry of Industry and Trade (the main agency in charge of the National Energy Conversion Strategy). And is

Ministry of Industry and Trade

closely related to the energy sector due to the functions and tasks of this unit.

4	DEESD of MOIT	5	Directly participate in tasks, preside over tasks in the national energy strategy	5	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; directly use resources to perform, preside over tasks	5	This subject is considered to be a strong supporter for energy transition. Because this is the focal agency, responsible for the implementation of renewable energy tasks under the Ministry of Industry and Trade (the main agency in charge of the National Energy Conversion Strategy). And is closely related to the energy sector due to the functions and tasks of this unit.
5	DSENRE of MPI	4	Directly coordinating with the agency in charge of implementing the tasks in the national energy strategy, however, the participating areas focus on administrative issues, management of scientific activities	4	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by the host unit to coordinate, cooperate,	3	This unit is rated 4/5 points at the level of good support for energy transition because this unit has the function of evaluating and consulting scientific projects for renewable energy projects and is directly under the Ministry of Industry and Trade. assigned the task of coordinating with the Ministry of Industry and Trade. The impacts are therefore indirect; however, this unit has the ability to limit the renewable energy process through the scientific project control function of the national renewable energy strategy.
6	DCC of MONRE	4	Coordinating with the agency in charge of implementing tasks in the national energy strategy through specific activities	4	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector

					of specific functions for tasks invited by the host unit to coordinate, cooperate,		
<b>7</b>	VEA of MONRE	3	Coordinating with the agency in charge of implementing tasks in the national energy strategy through specific activities	2	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by the host unit to coordinate, cooperate,	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
<b>8</b>	DST of MONRE	3	Coordinating with the agency in charge of implementing tasks in the national energy strategy through specific activities	3	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by the host unit to coordinate, cooperate,	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
<b>9</b>	DISA of MPI	3	indirectly distribute with the agency in charge of implementing tasks in the	3	Units in the public sector, directly implementing the direction, viewpoints	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) the ability to support or

national energy strategy through projects

and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by the host unit to coordinate, cooperate,

oppose projects in the energy sector due to the balancing of the state budget, or appraisal; (3) the effects are indirect

10	DCP of MARD	2	Coordinating with the agency in charge of implementing tasks in the national energy strategy through specific activities	3	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by the host unit to coordinate, cooperate,	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
11	DLH of MARD	3	Coordinating with the agency in charge of implementing tasks in the national energy strategy through specific activities	2	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector



the host unit to coordinate, cooperate,

12	DPM - MOF	5	Directly participating in tasks, presiding over tasks in the national energy strategy through each specific task.	4	Units in the public sector, directly implementing the direction and viewpoints of the Party and State	3	This unit is rated 3/5 points due to the following reasons: (1) under the line ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) the ability to support or oppose projects in the energy sector is equal due to large tradeoffs in energy pricing, high or low energy pricing will drive the process convert energy directly; (3) the impacts are direct on the energy sector; (4) The unit has been directed by the Government to build an energy price market in the direction of promoting renewable energy, however, the high or low energy price must depend on many factors in the market.
13	GDT - MOF	3	Directly participating in tasks, presiding over tasks in the national energy strategy through each specific task.	3	Units in the public sector, directly implementing the direction and viewpoints of the Party and State	3	This unit is rated 3/5 points due to the following reasons: (1) under the line ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) the ability to support or oppose projects in the energy sector is similar due to the large balances that support energy pricing through the tax structure in energy prices; (3) the impacts are direct on the energy sector; (4) The unit has been directed by the Government to build an energy price market in the direction of promoting renewable energy, but the energy price still depends on many factors related to the market.
14	CMSC	5	Ministry in charge of SOEs including major energy companies	4	Compose and propose strategies/policies	5	This unit is rated 5/5 points due to the following reasons: (1) The unit has been directed by the Government to operate in the direction of promoting renewable energy; (2) The entity is a state-owned enterprise and must therefore operate for both profit and political purposes; (3) The impacts of this unit are directly on the promotion of renewable energy.

15	ISP NRE of MONRE	2	Coordinating with the agency in charge of implementing tasks in the national energy strategy through specific activities	3	Units in the public sector, directly implementing the direction, viewpoints and lines of the Party and State; however, the resource only performs a number of specific functions for tasks invited by the host unit to coordinate, cooperate,	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) have the ability to support or oppose projects in the energy sector through policy advice, resource training in the process of coordination with line ministries; (3) impacts are indirect on the energy sector
16	HUNRE	3	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	3	Resources are used indirectly for strategies	3	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
17	IEVN-MOIT	4	Directly participate in tasks, preside over tasks in the national energy strategy	5	Units in the public sector, directly implementing the direction and viewpoints of the Party and State	5	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) have the ability to support or oppose projects in the energy sector through policy advice, resource training in the process of coordination with line ministries; (3) impacts are indirect on the energy sector
18	EPU	3	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	3	Resources are used indirectly for strategies	4	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector

19	HUST	3	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	5	Resources are used indirectly for strategies	4	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
20	VNUHCM-US	2	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	3	Resources are used indirectly for strategies	4	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
21	DUT	2	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	2	Resources are used indirectly for strategies	4	This unit is rated 3/5 points (neutral level) due to the following reasons: (1) under the line of the Ministry, only has the task of coordinating with the Ministry of Industry and Trade; (2) has the ability to support or oppose projects in the energy sector through policy advice during coordination with line ministries; (3) impacts are indirect on the energy sector
22	VEA	4	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	4		4	The unit is rated 5/5 due to the following reasons: (1) The impact from this unit is directly through investment, construction, mechanical manufacturing, trading in energy equipment and materials. quantity; search, exploration, exploitation, processing, storage, import and export of energy and other production industries serving the development of the energy industry in Viet Nam; (2) The unit operates under renewable energy policies; (3) The unit is capable of mobilizing resources outside the state budget;
23	VINACOMIN	3	indirectly distribute to the agency in charge of	5	Resources are used indirectly for strategies	5	This unit is rated 5/5 points due to the following reasons: (1) The unit has been directed by the Government to operate in the direction of promoting

performing tasks in the national energy strategy

renewable energy; (2) The entity is a state-owned enterprise and must therefore operate for both profit and political purposes; (3) The impacts of this unit are directly on the promotion of renewable energy.

24	PVN	4	indirectly distribute to the agency in charge of performing tasks in the national energy strategy	4	Resources are used indirectly for strategies	5	This unit is rated 5/5 points due to the following reasons: (1) The unit has been directed by the Government to operate in the direction of promoting renewable energy; (2) The entity is a state-owned enterprise and must therefore operate for both profit and political purposes; (3) The impacts of this unit are directly on the promotion of renewable energy.
25	EVN	5	Occupies about 72% of electricity power generation with many CFPs	5	Managing most of the CFPs in Viet Nam	5	This unit is rated 5/5 points due to the following reasons: (1) The unit has been directed by the Government to operate in the direction of promoting renewable energy; (2) The entity is a state-owned enterprise and must therefore operate for both profit and political purposes; (3) The impacts of this unit are directly on the promotion of renewable energy.
26	VCB	3	As a financial institution which provide credit to the businesses including those investing in ET, VCB has a relative influencing power over the ET of the country.	3	VCB provides banking services to individuals and businesses at various industries. Its has been engaged in ET at a relative level.	2	VCB cannot give the direction to the businesses in terms of ET. However, with the position of credit provider it is potential and somehow can influence the direction of ET among its clients.

Source: Analyzed and scored by the author

### About CASE

The project “Clean, Affordable and Secure Energy for Southeast Asia” (CASE) is jointly implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and international and local expert organisations in the area of sustainable energy transformation and climate change: Agora Energiewende and NewClimate Institute (regional level), the Institute for Essential Services Reform (IESR) in Indonesia, the Institute for Climate and Sustainable Cities (ICSC) in the Philippines, the Energy Research Institute (ERI) and Thailand Development Research Institute (TDRI) in Thailand.

Funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK), CASE aims to support a narrative change in the region’s power sector towards an evidence-based energy transition, in the pursuit of the Paris Agreement goals. The project makes use of available research initiatives while generating new evidence grounded in local realities that can influence economic managers, power sector decision makers, industry leaders and electricity consumers to support early, speedy, and responsive strategic reforms in the power sector. To reach this objective, the project applies a joint fact-finding approach involving expert analysis and dialogue to work towards consensus by converging areas of disagreement.

Furthermore, CASE is an aligned project of the Energy Transition Partnership (ETP), an alliance of international donors, philanthropies, and partner governments established to accelerate energy transition and to support sustainable development goals in Southeast Asia.

### About GIZ

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is owned by the German government and has operations around the globe. GIZ provides services in the field of international cooperation for sustainable development. GIZ also works on behalf of other public and private sector clients both in Germany and overseas. These include the governments of other countries, the European Commission, the United Nations, and other donor organisations. GIZ operates in more than 120 countries and employs approximately 22,000 staff worldwide.



**CASE**  
for Southeast Asia

**Clean, Affordable and Secure Energy for Southeast Asia**

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