Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 19-Dec-2023 | Report No: PIDC37065

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
East Asia and Pacific	P181555		Accelerating Sustainable Energy Transition Multi-Phase Programmatic Approach (P181555)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EAST ASIA AND PACIFIC	Mar 29, 2024	May 01, 2024	Energy & Extractives
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance	ASEAN Center for Energy, Pacific Community	

Proposed Development Objective(s)

To accelerate renewable energy scale-up and grid integration in participating countries across the EAP region.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	5,000.00
Total Financing	5,000.00
of which IBRD/IDA	3,500.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	3,100.00
International Development Association (IDA)	400.00
IDA Credit	385.00
IDA Grant	15.00

Non-World Bank Group Financing

Counterpart Funding	1,500.00
Borrower/Recipient	1,500.00

Environmental and Social Risk Classification	Concept Review Decision
Substantial	Track II-The review did authorize the preparation to continue

B. Introduction and context

Regional and sector context

1. Economic growth in developing countries in East Asia and the Pacific (EAP)[1] has been strong over the past fifteen years, driving energy demand and the region's carbon footprint. Over the past decades, economic growth in developing East Asia and the Pacific (EAP) has driven a large expansion in energy demand. Around 70 percent of electricity generation in EAP countries is from fossil fuels and as a result, CO_2 emissions in EAP have tripled between 2000 and 2020. At the same time, smaller EAP countries face vulnerability to climate change, experiencing over half of the world's annual losses from natural disasters, amounting to approximately US$ 50 billion in 2021.

2. A pivotal challenge is how to meet the region's projected growth in energy demand while reaching its net zero targets. Several developing EAP countries (including Vietnam, Indonesia, and the Philippines) have committed to carbon neutrality by 2050 or 2060 and to reduce emissions significantly under revised nationally determined contributions (NDCs). Yet, electricity generation is projected to increase from 8.4 million GWh in 2020 to 12.6 million GWh in 2030, driven by economic growth and rising living standards. Therefore, a key challenge will be how to meet the region's growing energy demand while transitioning to low-carbon sources.

3. Renewable energy (RE) is already the lowest cost power supply option in many countries around the world. The first step towards net zero for the EAP region is to decarbonize the power sector and electrify the end user sectors. With RE becoming cost-competitive with fossil fuels, there is a global momentum to scale up RE and ambitious targets have been set by EAP countries. However, progress on RE development varies across the region, with China and Vietnam leading in solar and wind capacity installations, while other EAP countries have fallen below expectations. Regional trade initiatives also offer opportunities to exploit lower-carbon resources, providing economic benefits and alternative clean energy sources. However, only about 2 percent of total energy consumption in the region traded through bilateral contracts.

4. EAP faces various challenges in rapidly scaling up RE deployment. Policy and regulatory frameworks to support RE scale-up vary, with China and Vietnam having relatively favorable conditions (according to the World Bank's Regulatory Indicators for Sustainable Energy), while others like Lao PDR and Mongolia are still lagging. Improvements are needed in areas such as incentives, procurement, RE integration, and carbon pricing. Cross-border transmission and distribution infrastructure inadequacies hinder the connection of load centers to RE power generation capacity, while private capital investment faces barriers like increasing costs, lack of competitive procurement frameworks, and high perceived risks in grid connection and off-taker reliability. Addressing these challenges is crucial to achieving the region's ambitious RE targets and facilitating the transition to a lower-carbon energy trajectory.

[1] The developing East Asia and the Pacific region is defined by the World Bank's operational presence.

Relationship to CPF and World Bank strategies

5. The multiple benefits of accelerating the energy transition in EAP contribute to the World Bank's vision to create a world free of poverty on a livable planet. Scaling-up RE at affordable costs and in a way that supports security of supply holds the key to decoupling the regions' growth aspirations from energy use and emissions. The transition represents a unique opportunity for EAP countries to capture the full value of regional green value chains, and unlock manufacturing and export potential, thereby creating new and better jobs. For countries in the Pacific region, the development of resilient low-carbon infrastructure would also help decrease their vulnerability to climate change and disasters.

6. The proposed MPA will implement key pillars of the World Bank's Global Challenge Program on Energy Transition (GCP-E). GCP-E aims to increase access to affordable, reliable, sustainable, and modern energy, by scaling up clean energy, phasing down fossil fuel use, and supporting just transition. GCP-E support relates to SDG 7 and to realize energy transition, in line with the Paris Agreement through the following pillars: (**i**) scaling up energy efficiency; (**ii**) expanding and improving access; (**iii**) increasing renewable energy integration; (**iv**) phasing down fossil fuels; and (**v**) decarbonizing hard-to-abate sectors, including transport. The proposed MPA is an early application of the GCP-E approach and focuses on the objectives most relevant to EAP region, that is increasing renewable energy integration to enable the phasing down fossil fuels and supporting the decarbonization of end-user sectors.

7. RE development and the need to scale up investments is a high priority in the EAP region, as illustrated in many Country Partnership Frameworks (CPFs). All the latest CPFs for EAP countries that would participate are aligned with the objectives of the proposed MPA: all mention the critical role of RE and the importance of scaling up investments to achieve one or more CPF development objectives. The proposed MPA would also implement key recommendations from recently completed CCDRs for Indonesia, Cambodia, Viet Nam, and Philippines, which highlight the need for policy and regulatory reforms, capacity building, and targeted risk-reducing investments. For the smaller economies, such as Papua New Guinea or the Solomon Islands, where increasing access to electricity remains an important development objective, CCDRs identify scaling up low-cost and reliable RE sources as a crucial element of both the electrification and economic recovery agendas.

C. Proposed development objective(s)

8. The proposed MPA program development objective (PrDO) is to accelerate renewable energy scale-up and grid integration in participating countries across the EAP region.

Key results

9. To monitor the achievement of results, the proposed PrDO indicators could include: (**i**) RE capacity [GW] enabled by the interventions; (**ii**) private capital enabled [US$ million], and (**iii**) net greenhouse gas (GHG) emissions [percentage decrease][2]. **Intermediate indicators** could include RE generation capacity contracted [MW], clean heating supply enabled [MMBTU], RE-enabling national or regional network infrastructure created or upgraded [circuit-kilometers and MVA], VRE projects with reduced curtailment [percentage decrease], and standard templates/documentation for project development adopted [number].

D. Program description

Program pillars

10. Pillar one: enabling policies. Pillar one of the MPA will focus on policies on market and regulatory frameworks, focusing on measures such as introducing auctions for renewables, tariff design, and cost allocation methodologies. The

[2] Net GHG emissions would be calculated as an annual average of the difference between emissions from RE projects (absolute) aggregated over the economic lifetime of said projects and the emissions of a baseline (counterfactual) scenario aggregated over the same time period. In other words, the indicator would measure the emissions "displaced" by RE projects vis a vis the emissions that would have been generated under the baseline generation mix.

pillar will also include work on decarbonization strategies, involving the development of sector-specific roadmaps and clear targets for RE development. Power system planning and capacity development will be integral, too, supporting the identification of lowest-cost investments aligned with low-carbon roadmaps. Ensuring the financial health of utilities and regulatory governance will be critical for mobilizing commercial financing for RE scaling, and the MPA will help assess options to improve the financial viability of utilities.

11. Pillar two: capacity and flexibility of electricity networks. The successful implementation of the energy transition in EAP hinges on upgrading existing and constructing new power network infrastructure. Addressing the massive funding challenge, the proposed program outlines key activities to support capacity and flexibility of electricity networks including expansion and upgrades of the existing transmission grid, development of cross-border interconnection projects; rehabilitation and enhancement of distribution networks and mini-grids, with a focus on addressing challenges in Pacific Islands states. Lastly, investments in grid flexibility, including battery energy storage systems, supervisory control, and data acquisition (SCADA) systems, and the modernization of power dispatch centers.

12. Pillar three: de-risking clean energy investments. The proposed MPA aims to strategically deploy concessional financing to catalyze commercial funding and reduce the overall cost of transitioning to sustainable energy. To address project risks and attract private investment, the MPA emphasizes de-risking activities through IPFs, guarantees, and PforRs. Examples of support include public financing for pilot or public-private partnership projects, payment and termination guarantees to facilitate private investment, credits, or guarantee lines with financial intermediaries for distributed energy resources.

MPA phases

13. The World Bank will partner with the ASEAN Center for Energy (ACE) and the Pacific Community (SPC) for the implementation of selected activities under the MPA. It is proposed to make available grants of up to US$ [15 million] for both regional entities for the implementation of key technical assistance activities which may include, but not limited to: (**i**) project preparation and transaction support, including developing guidelines and best practices and development of frameworks and templates for procurement, including sector wide procurement strategies, environmental and social documentation and targeted support to identify project/transaction specific policy and regulatory updates; (**ii**) demand-driven technical assistance and capacity building for client countries accessing the ASET MPA to develop detailed strategies, actions plans, formulation of policies and regulations; and (**iii**) knowledge and data exchange, including the creation or enhancement of data repositories to enhance data collection and access, and (**iv**) market sounding and market research including analysis of value chain supply analysis. Discussions SPC are advanced to set up a Pacific Regional Data Repository (PRDR) project that aims to support Pacific governments and their development partners working in the energy sector by facilitating access to up-to-date, reliable energy data and project information for evidence-based decision-making.

14. The MPA includes three operations in the first phase: Viet Nam, Mongolia, and Papua New Guinea in addition to the interventions with ASEAN and SPC. The World Bank team will engage in dialog with several countries to identify their interest and assess their potential to join the regional MPA in second or third phases. Projects included in the first phase exemplify challenges facing EAP countries to scale RE deployment: power network constraints and lack of system capacity to manage variable RE power generation (Viet Nam and Mongolia) and lack of viable business models to provide private-led clean and affordable power supplies to serve vulnerable population (Papua New Guinea). A summary of each project is included below:

i. ***Viet Nam: Renewable Energy Accelerating Change (P174460).*** The proposed project's US$ 160 million IBRD IPF aims to improve variable RE integration by alleviating grid constraints and enhancing dispatch management. The proposed project focuses on the most urgent transmission system investments to avoid

curtailment existing privately-owned VRE projects and unlock additional privately-owned RE generation totaling about 2.6 GW.

ii. ***Mongolia: Third Energy Sector Project (P178190).*** The proposed US$ 26 million IBRD IPF aims to increase the capacity of the transmission line in selected areas to provide enhanced access for renewable energy integration and to improve the institutional capacity of Mongolia's power sector. The project will finance the development of a 220 kV transmission line and associated substations to extend the national backbone to enable the integration of large-scale variable renewable energy generators. Further, the project would support capacity building for key sector agencies to enhance their knowledge on variable RE planning, RE procurement, and power system operation with high share of RE generation.

iii. ***Papua New Guinea National Energy Access Transformation Project (P173194).*** The proposed US$[200] million IDA IPF aims to increase access to energy and enhance the reliability of the electric supply. The proposed project comprises four main components: (**i**) rehabilitation, reliability enhancement of power infrastructure; (**ii**) development of renewable energy micro-grids and rural energy market development to expand access in remote communities; (**iii**) energy sector and institutional development support to strengthen the national utility and the Government's capabilities to implement energy targets; and (**iv**) support project the management of the project.

E. Implementation

Institutional and implementation arrangements

15. For projects in the first phase, implementation arrangement will primarily make use of respective countries' agencies and technical assistance activities will be implemented by regional entities. For all MPA phases, regional technical assistance activities are expected to be implemented by the ASEAN Center for Energy (ACE) and the Pacific Community (SPC) with IDA grants. The *Renewable Energy Accelerating Change (Viet Nam)* will be implemented by the Southern Project Management board (PMB) of the National Power Transmission Corporation (NPT) and the PMB at the National Local Dispatch Center. For the *Third Energy Sector Project (Mongolia)*, a project steering committee (PSC) will be established together with a project management office Ministry of Energy. The *National Energy Access Transformation Project (Papua New Guinea)* will be implemented by the Papua New Guinea Power Limited (PPL) electricity utility and the National Energy Authority (NEA).

F. Risks and mitigation

16. The overall risk rating of the proposed ASET MPA is Substantial. The Program consists of multiple phases with both regional and country projects with different implementing partners accordingly. The ASET MPA will support countries to scale-up renewable energy technologies, the development of RE-enabling grid infrastructure that are proven in accelerating renewables expansion in the region and worldwide. Each phase is designed to build on the experience of past operations, scaling up successful approaches and improving designs by integrating lessons. Risks will, however, vary by country, considering different country conditions and different capacities of implementing agencies. Considering varied risks in different countries, including institutional and implementation capacity challenges, the overall Program risk rating is proposed as Substantial. Macroeconomic, Institutional Capacity for Implementation and Sustainability, Fiduciary as well as Environmental and Social (E&S) risks are rated Substantial.

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Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

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APPROVAL

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