# Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 21-Mar-2024 | Report No: PIDA37346

## BASIC INFORMATION

### A. Basic Project Data

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

Proposed Development Objective(s)

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

Components

## PROJECT FINANCING DATA (US$, Millions)

### SUMMARY

| | |
|---|---|
| **Total Project Cost** | 4,150.00 |
| **Total Financing** | 4,150.00 |
| **of which IBRD/IDA** | 4,000.00 |
| **Financing Gap** | 0.00 |

### DETAILS

**World Bank Group Financing**

| | |
|---|---|
| International Bank for Reconstruction and Development (IBRD) | 3,550.00 |
| International Development Association (IDA) | 450.00 |
| IDA Credit | 440.00 |

| | |
|---|---|
| IDA Grant | 10.00 |
| **Non-World Bank Group Financing** | |
| Other Sources | 150.00 |
| Bilateral Agencies (unidentified) | 150.00 |

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

## B. Introduction and Context

Regional Context

1. **Economic growth in the East Asia and Pacific (EAP) region has led to increased energy consumption and reliance on fossil fuels, with the region accounting for a significant portion of global energy demand and coal consumption.** The rapid expansion of energy production, driven by industrialization and urbanization, has been fueled by coal, contributing to local and national economic growth. With electricity demand projected to rise by 50 percent by 2030, the region's ability to meet this demand through renewable energy (RE) is crucial for decoupling emissions from economic growth and pursuing low-carbon development.

2. **The transition to low-carbon energy in EAP is critical for achieving climate mitigation and adaptation goals.** The region contributes substantially to global greenhouse gas (GHG) emissions, with emissions tripling between 2000 and 2020. The vulnerability of EAP to climate change, underscored by significant economic losses from natural disasters and the unique challenges faced by Pacific Island Countries (PICs), necessitates investments in energy systems that are not only lower in carbon but also resilient. Amidst global energy shifts, several EAP countries have set ambitious carbon neutrality targets, with their success hinging on near-term actions to scale up RE deployment and reduce dependence on coal and diesel for power generation.

3. **The Accelerating Sustainable Energy Transition (ASET) Program follows a Multiphase Programmatic Approach (MPA) to support EAP's decarbonization goals.** The proposed program integrates key elements of the new vision expressed in the World Bank's Evolution Roadmap, to deliver solutions and impact at scale. It is also an early application of the Global Challenge Program for Energy Access and Transition (GCP-E) and responds to the urgency of implementing climate mitigation and adaptation efforts by increasing the World Bank's ambition while scaling-up its knowledge and financing support. With a proposed US$4 billion financing envelop from IDA and IBRD, the program will promote proven strategies to address policy barriers, support the development of infrastructure, and encourage private sector investment, emphasizing regional cooperation and capital mobilization.

Sectoral Context and Constraints

4. **Decarbonizing the power sector is essential for EAP countries to achieve carbon neutrality, as reliance on fossil fuels remains high and electrification of other sectors through RE is necessary.** Despite rapid demand growth and a significant stock of coal-fired plants, transitioning to RE and energy storage is key for affordable, reliable electricity. Progress varies across the region, with some countries advancing rapidly in RE deployment, while others fall short. Ambitious targets and strategies are set, with China likely to exceed its solar and wind capacity goals ahead of schedule, and Indonesia, Vietnam, and the Philippines aiming to increase RE's share in their power mix by 2030. A significant increase in RE capacity is required for decarbonization, underscoring the urgency of accelerated RE deployment.

5. **Increased regional power trade would also allow to enhance the affordability, flexibility, and carbon efficiency of electricity in EAP.** Despite progress with bilateral power exchanges, these trades represent a mere 2 percent of the region's total energy consumption. Expanding multilateral power trade could bring economic gains, lessen the demand for domestic power generation investments, and provide cleaner energy options to countries that might otherwise depend on fossil fuel power plants.

6. **In the EAP region, the challenges to large scale RE deployment are multifaceted, with each country facing unique conditions, functions of energy resource endowments and the state of national electricity infrastructure.** Across the region, inadequate policy frameworks hinder the scaling up of RE while underdeveloped network infrastructure poses challenges to integrating variable renewable energy (VRE) resources. Limited access to commercial financing for low-carbon technologies further complicates the transition. Workforce skill development also remains a priority to support the shift towards a low-carbon power sector. In East Asia, countries must give priority to evolving policy and institutional frameworks and implementing competitive RE procurement and pricing policies. Among Pacific Island Countries (PICs), transitioning to RE also offers the opportunity to reduce reliance on expensive fossil fuels, improve electricity access, and enhance resilience to climate change. High electricity tariffs – often below cost recovery – make it difficult to justify investments in RE. Addressing these financing barriers, including with risk mitigation instruments and concessional financing, is critical for PICs to attract investments, manage debt risks, and strengthen their economies while advancing towards sustainable energy systems.

## C. Program Development Objective

### Program Development Objective (PrDO)

7. **To accelerate the scale-up and grid integration of renewable energy in participating countries across the East Asia and Pacific region.**

### Key Results

8. **To monitor the achievement of results, the proposed PrDO indicators include:** (i) RE generation capacity enabled with direct support, indirect support, and/or enabling policy support, with a target target of 9 GW; and (ii) projected lifetime net GHG emissions from results achieved, with a target of 130 million tons of $CO_2$eq.

## D. Project Description

9. **The MPA will serve as a comprehensive financing and knowledge platform mechanism to expedite the large-scale adoption of RE, demonstrating the World Bank's long-term commitment to assisting countries in their low-carbon transition.** The MPA approach aims to enhance the scalability of World Bank support impacts, align with the GCP-E to reduce GHG emissions, and ensure coordinated, long-term engagement across EAP countries. The MPA will focus on

deploying proven RE technologies, blending finance for RE scale-up, and designing grid infrastructure to support intermittent clean generation, while also addressing the transition from fossil fuels in 'hard to abate' sectors (especially in colder climates like China or Mongolia). By standardizing processes and documentation, the MPA intends to reduce transaction costs and facilitate harmonization, with allowances for country-specific customization. Furthermore, it will leverage regional institutions such as the ASEAN Centre for Energy (ACE) and the Pacific Community (SPC) to foster a coordinated regional effort, deepen the knowledge agenda, and support capacity development, thereby creating a platform for implementing key MPA activities.

10. **Pillar One: Enabling policies and strengthened institutions.** The first pillar of the MPA aims to scale up investment and dispatch of low-cost, clean energy, overcoming barriers like thermal generation dominance and policy distortions. Key initiatives include helping countries develop RE policies, market frameworks, competitive procurement standards, and decarbonization strategies that leverage regional integration. The pillar also supports the financial and regulatory reform of utilities to ensure their viability as RE offtakers, promotes regional power trade through harmonization of technical operations, and fosters knowledge sharing with a centralized database for GIS and environmental data. Gender mainstreaming and social protection mechanisms will also be integral to support the energy transition and advance gender equality in the energy sector. Planned activities also include technical assistance to enhance procurement efficiency and safeguard management.

11. **Pillar Two: Expanded and more flexible energy systems.** This pillar addresses the critical need for growth and modernization of energy systems to support the energy transition, with a focus on securing funding for economically viable clean energy projects. This includes investments through Investment Project Financing (IPF) and Project for Results (PforR) operations to develop capable and flexible transmission systems. Key activities include expanding and upgrading transmission grids in Indonesia, Viet Nam, or the Philippines to overcome RE scaling constraints, and supporting regional interconnection projects to facilitate cross-border power flows. Activities will also support rehabilitation and enhancement of distribution networks and mini grids, particularly in metropolitan areas and PICs, to improve access to reliable and clean electricity. Investments in grid flexibility, such as battery energy storage systems and SCADA systems, will also be supported to enhance the integration of VREs (solar and wind energy resources). Finally, the MPA will support investments to develop RE and other clean heating sources and investments to reduce losses and make heating systems more flexible and affordable.

12. **Pillar three: De-risking clean energy investments.** The ASET MPA will strategically utilize concessional financing to leverage commercial funds and lower transition costs, focusing on enabling RE policies and interventions to reduce capital costs, including blended finance. It will explore carbon market opportunities, assessing gaps for carbon market readiness and tapping into facilities such as Transformative Carbon Asset Facility and Scaling Climate Action by Lowering Emissions, to generate additional revenue streams and mobilize private sector finance. De-risking through IPFs, guarantees, and PforRs will support public and private projects, offering various guarantees and credit lines to stimulate RE investments and support decarbonization efforts aligned with RE targets.

13. **Participating countries.** Eligibility will be flexible to cover all the EAP region, but potential client countries would need to have fundamental sector conditions and demonstrated commitment to embark on the energy transition and RE scale-up. Criteria could include: (i) commitments expressed through policies, plans and/or strategies to meet the country's NDC commitments, particularly in the power sector; (ii) basic regulatory and policy frameworks and implementation capacity for the needed measures/activities; and (iii) stated commitment to mobilize private sector financing for the energy transition overtime.

14. **Phase One of the proposed MPA is expected to support the following projects**:

- **ASEAN Centre for Energy Technical Assistance Project (regional IDA grant):** The proposed US$5 million grant aims to assist ASEAN countries in expanding RE and regional power trade. It includes four main activities: (i) regional RE policy support and climate finance for policy analysis and capacity building; (ii) technical and analytical support for transboundary power trade, with a focus on RE and climate resilience; (iii) knowledge sharing, consultations, and capacity building through ACE's regional network; and (iv) promoting gender equality in the energy sector by developing a framework for advancing women's participation and establishing internship programs.

- **Pacific Community Technical Assistance Project (regional IDA grant):** The proposed US$5 million grant will provide technical assistance to help scale-up the deployment of RE in PICs by enhancing their access to and management of critical data and information for informed energy planning and policymaking, including climate resilience aspects. The primary activities include establishing a Pacific Regional Data Repository (PRDR) to serve as a regional energy database, preserving and disseminating microdata sets for cross-sectoral policy formation.

- **China: Shaanxi Energy Transition and Innovation Demonstration in the Heating Sector (P177841):** The proposed $250 million IBRD IPF aims to increase heat supply capacity from RE and low-carbon energy sources and pilot heating pricing reform in selected areas of Shaanxi province. The project would finance heating infrastructure from RE and low-carbon energy sources such as waste heat recovery and heat pumps, and pilots of heating pricing reform that aims to shift to consumption-based billing to improve energy efficiency. It will also provide technical assistance to the heating price reform pilots, and support capacity building and institutional strengthening.

- **Mongolia: Third Energy Sector Project (P178190).** The proposed US$ 47.81 million IBRD/IDA IPF aims to increase the capacity of transmission to provide enhanced access for RE integration and to improve the institutional capacity of Mongolia's power sector. The project would finance the development of a 220kV transmission line and associated substations to extend the national backbone to enable the integration of large-scale variable RE generators in the southeastern part of the country, which has abundant wind and solar resources. The transmission development would also allow the connection of large industrial loads which otherwise would use captive fossil fuel generation. 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 a share of RE generation.

- **Papua New Guinea National Energy Access Transformation Project (P173194).** The proposed US$200[1] million IDA IPF aims to increase access to energy (including through RE microgrids) and enhance the reliability of the electric supply. The proposed project comprises four main components: (**i**) rehabilitation, reliability enhancement of power infrastructure at the Port Moresby and Ramu systems; (**ii**) development of RE micro-grids and rural energy market development to expand energy access in remote communities that are not served by the grid; (**iii**) energy sector and institutional development support to strengthen the national utility and the National Energy Authority capabilities to implement national energy access and RE targets; and (**iv**) support management of the project.

[1] Financing amount subject to confirmation based on IDA allocation.

Legal Operational Policies

| | Triggered? |
|---|---|
| Projects on International Waterways OP 7.50 | No |
| Projects in Disputed Areas OP 7.60 | No |

Summary of Assessment of Environmental and Social Risks and Impacts

15. **The Environmental and Social Risk Classification (ESRC) for the proposed ASET MPA is rated as Substantial, given the typical E&S risks associated with the program typologies.** These include: (i) regional technical assistance to strengthen regional cooperation and increase planning and execution capacity of priority projects; and (ii) country specific physical investments and technical assistance to strengthen the electricity grid, increase the capacity of transmission lines, increase electricity access, and scale up renewable energy generation. The ESRC for projects under the first phase of the ASET MPA are all Substantial.

16. **Implementation of the three ASET MPA phases is expected to have significant environmental and social (E&S) benefits.** These include the potential facilitation of RE, reduction of GHG emissions, improvements to air quality, improving access to affordable energy, and providing opportunities for a just and equitable transition from reliance on fossil fuels. Key environmental risks and impacts relate to the implementation of technical assistance such as what may be financed under Pillar one, hazardous waste disposal, land clearance resulting in may result in habitat loss, disturbance of terrestrial biodiversity, degradation, and fragmentation of natural habitat, as well as introduction of invasive species, land and groundwater as well as those more generally associated with civil works. Potential social risks and issues include, gender issues, engagement and protection of vulnerable people including indigenous and ethnic minority communities, community local economic impacts created in coal-producing communities as energy generation transitions to renewable energy, land, and community impacts in RE areas of having new investments requiring large areas of land, community safety, equity, and benefit-sharing arrangements. Each country in EAP has very different land tenure arrangements which will likely have significant influence on technical designs, costing, project structuring and other aspects as well as creating potential social risks which will need to be proactively managed. Community engagement will underpin project risk and benefit analysis and will therefore form a fundamental part of technical project identification, design, and delivery. Future phases will be assessed based on the risks associated with each operation. E&S instruments will be prepared for each project in accordance with the Environmental and Social Framework (ESF) considering direct, indirect, cumulative, and downstream impacts as well as any risks and impacts from associated facilities. Where appropriate, borrower frameworks will be used to manage E&S risks associated with Low and Moderate risk projects. For PforR operations included in future phases of the MPA, Environmental and Social System Assessments (ESSAs) will be developed.

## E. Implementation

Institutional and Implementation Arrangements

17. **Country-level institutional and implementation arrangements will follow those established in each respective country project for RE scale-up.** Typically, they will involve ministries, utilities, transmission and distribution system operators, regulators, and financial intermediaries. When financial intermediary (FI) operations are included, relevant assessments will be conducted as required (including for E&S aspects), and FI risks included in the risk assessment. Each operation will be implemented independently.

18. **The proposed MPA provides an opportunity to strengthen regional networks to foster learning and capacity building, as well as generating knowledge on regional power trade to be implemented through investment operations in the future.** The World Bank will partner with two regional entities – ACE and SPC – to build on and strengthen regional networks. Both entities have a long-standing and credible record to facilitate and coordinate initiatives, projects, and activities that are aligned with their mandate.

19. **All operations under the ASET MPA will have sustainability at the core.** The projects will undertake investments that can be sustained or scaled-up over time, even after individual project implementation periods. This would include transitioning from early public financing to revolving schemes and other sustainable financing mechanisms, and eventually to fully commercial financing. The projects supported by the MPA are designed to build capacity and cover existing gaps in the implementing entities, with an emphasis on environmental sustainability of the infrastructure.

## CONTACT POINT

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## APPROVAL

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**Approved By**

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|---|---|---|
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