



## Palau: Energy Transition Project (formerly Smart Grid Project)

### Project Name

Energy Transition Project (formerly Smart Grid Project)

### Project Number

49450-037

### Country / Economy

- Palau

### Project Status

Proposed

### Project Type / Modality of Assistance

- Grant
- Loan

### Source of Funding / Amount

Loan: Energy Transition Project

#### Source

#### Amount

Concessional ordinary capital resources lending US\$ 10.00 million

### Operational Priorities

- OP1: Addressing remaining poverty and reducing inequalities
- OP2: Accelerating progress in gender equality
- OP3: Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability
- OP4: Making cities more livable
- OP6: Strengthening governance and institutional capacity

### Sector / Subsector

- **Energy** / Energy utility services

### Gender

Some gender elements

### Description

The project will install a total of 15 megawatt hour battery energy storage system (BESS), which will enable the grid to increase the utilization of outputs from the solar photovoltaic power plant and provide grid services to Koror-Babeldaob grid to equip Palau Public Utilities Corporation (PPUC) with tools to optimize the use of renewable energy. Protection systems will also be upgraded to reduce the frequent blackouts of the grid system, especially with the expected increase of outputs from the solar photovoltaic power plant. The project also includes a pilot vehicle-to-grid project, as a future option for further optimization of renewable energy generation.

### Project Rationale and Linkage to Country/Regional Strategy

Although Palau enjoys almost 100% electrification rate, it relies heavily on imported diesel for power generation. Over 97% of power generation is based on fossil fuel (diesel) and 3% on solar. To reduce reliance on fossil fuel and to meet the Nationally Determined Contribution target, Palau plans to integrate renewable energy through (i) two phases of independent power producers (IPPs) engagement, and (ii) solar roof top installations. The first phase of the IPP project (IPP-1) is expected to be complete with a 13.2 megawatt-peak (MWp) solar system and a 15 megawatt-hour (MWh) battery energy storage system (BESS) by early 2024. This IPP-1 solar system will bring the share of renewable energy to 20% of Palau's generation mix if the grid can accommodate its outputs. This will depend on optimizing the intermittent outputs of IPP-1 by minimizing curtailment.

PPUC plans to install a BESS in its grid system to achieve this goal. Reducing curtailment is critical to optimizing PPUC's operational efficiency because of the take-or-pay arrangements in the power purchase agreement. In addition to BESS, the government plans to make better use of IPP-1 generation capacity with an introduction of vehicle-to-grid (V2G) solutions. As a small island nation with limited demand for equipment necessary for V2G, a public sector pilot initiative is needed to test and showcase the effectiveness of V2G solutions.

#### Impact

Greenhouse gas emission from Palau's energy sector is reduced.

#### Outcome

Renewable energy utilization increased.

#### Outputs

Battery energy storage systems and energy management system installed.

Grid protection system upgraded.

Vehicle-to-grid concept piloted.

Capacity building support provided.

#### Geographical Location

### **Safeguard Categories**

Environment

B

Involuntary Resettlement

C

Indigenous Peoples

C

### **Summary of Environmental and Social Aspects**

## Environmental Aspects

The project has been screened and is classified as Category B for environment with an initial environmental examination (IEE) and environmental management plan (EMP) prepared. The IEE and EMP outline all assessed risks and mitigative actions to be undertaken in the management, monitoring, and reporting requirements for environmental compliance of the project.

## Involuntary Resettlement

The project is categorized C for involuntary resettlement and indigenous peoples. Land ownership in Palau is exclusively vested in the state. The due diligence conducted for the project confirms that proposed project investments will be installed on government owned land (public land) and will not require land acquisition nor cause any physical or economic displacement. The project is not expected to impact any distinct and vulnerable group of indigenous peoples as defined under ADB's Safeguard Policy Statement. The project will ensure that the local communities actively participate and receive culturally appropriate benefits.

## Indigenous Peoples

(Same as above)

## **Stakeholder Communication, Participation, and Consultation**

During Project Design

During Project Implementation

## **Business Opportunities**

### Consulting Services

All consulting services under the project component will be undertaken in accordance with ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). Project Supervision and Implementation Consultant will be engaged under the Project.

### Procurement

All procurement activities under the project component will be undertaken in accordance with ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The project will include a BESS (15 MW-15MWh), an Energy Management System, grid improvements for anticipated solar power inputs to the system and a pilot e-mobility solution consisting of electric vehicles and charging infrastructure.

## **Contact**

Responsible ADB Officer

Inoue, Yuki

Responsible ADB Department

Sectors Group

Responsible ADB Division

Energy Sector Office (SG-ENE)

Executing Agencies

*Ministry of Finance*

## Timetable

Concept Clearance

-

Fact Finding

09 Apr 2024 to 12 Apr 2024

MRM

-

Approval

-

Last Review Mission

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Last PDS Update

07 May 2024

## Funding

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Date Generated 22 July 2024

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