

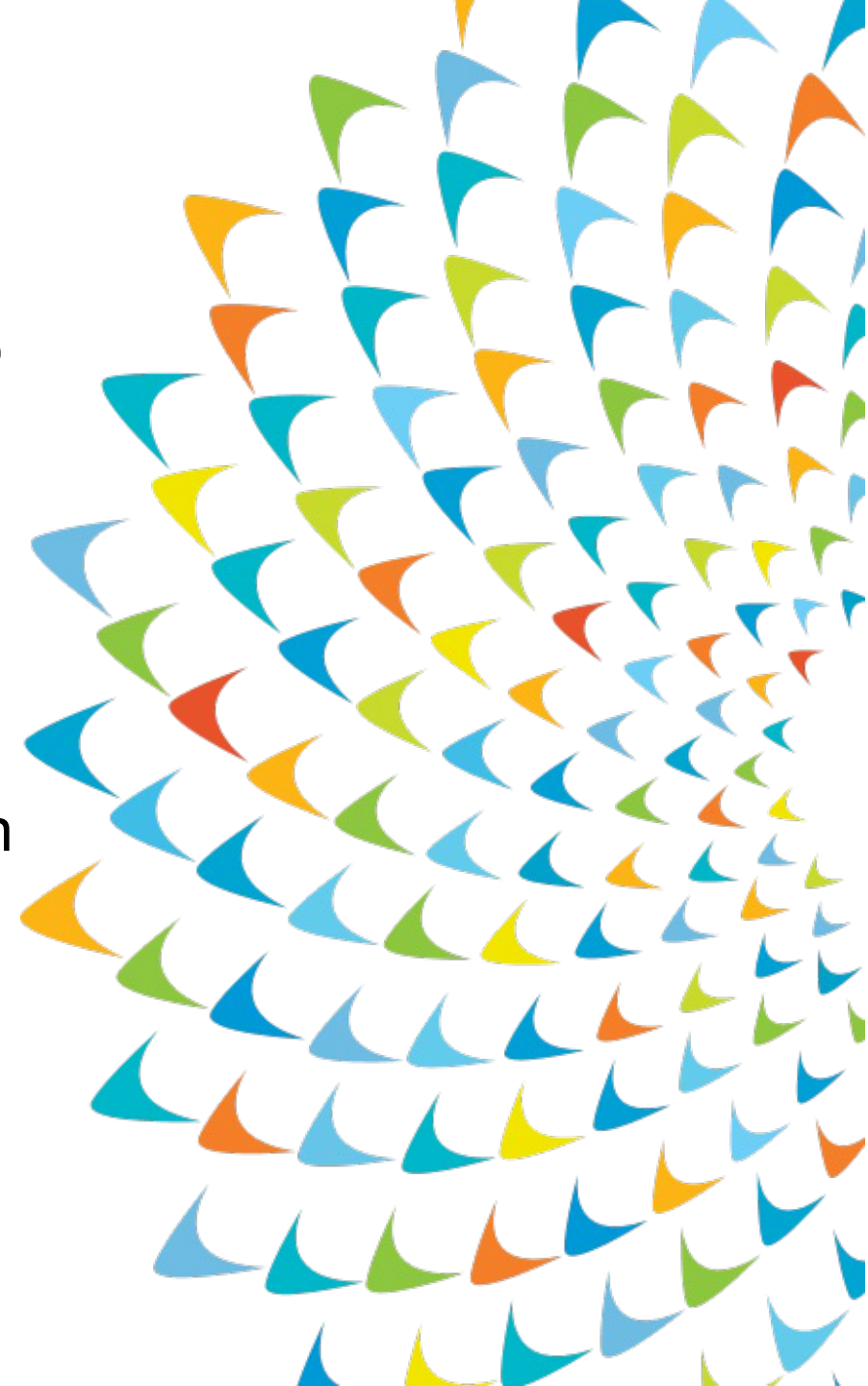


Creating A Utility Scale Solar IPP Project in Timor-Leste

In The Fragile and Conflict-Affected Situations
(FCAS) and Small Island Developing States (SIDS)
Setting and with Carbon Credit Trading Consideration

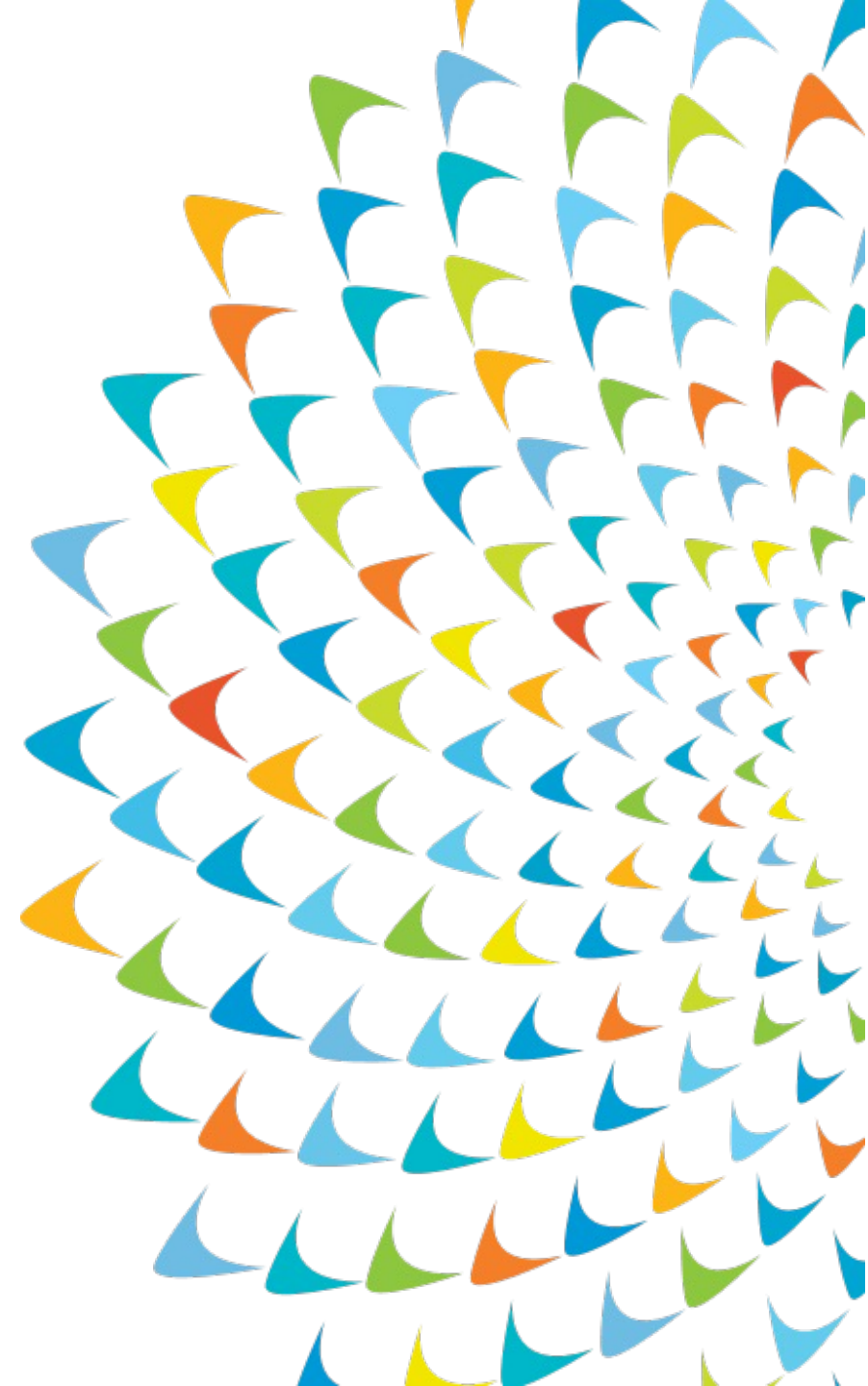
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Country Overview

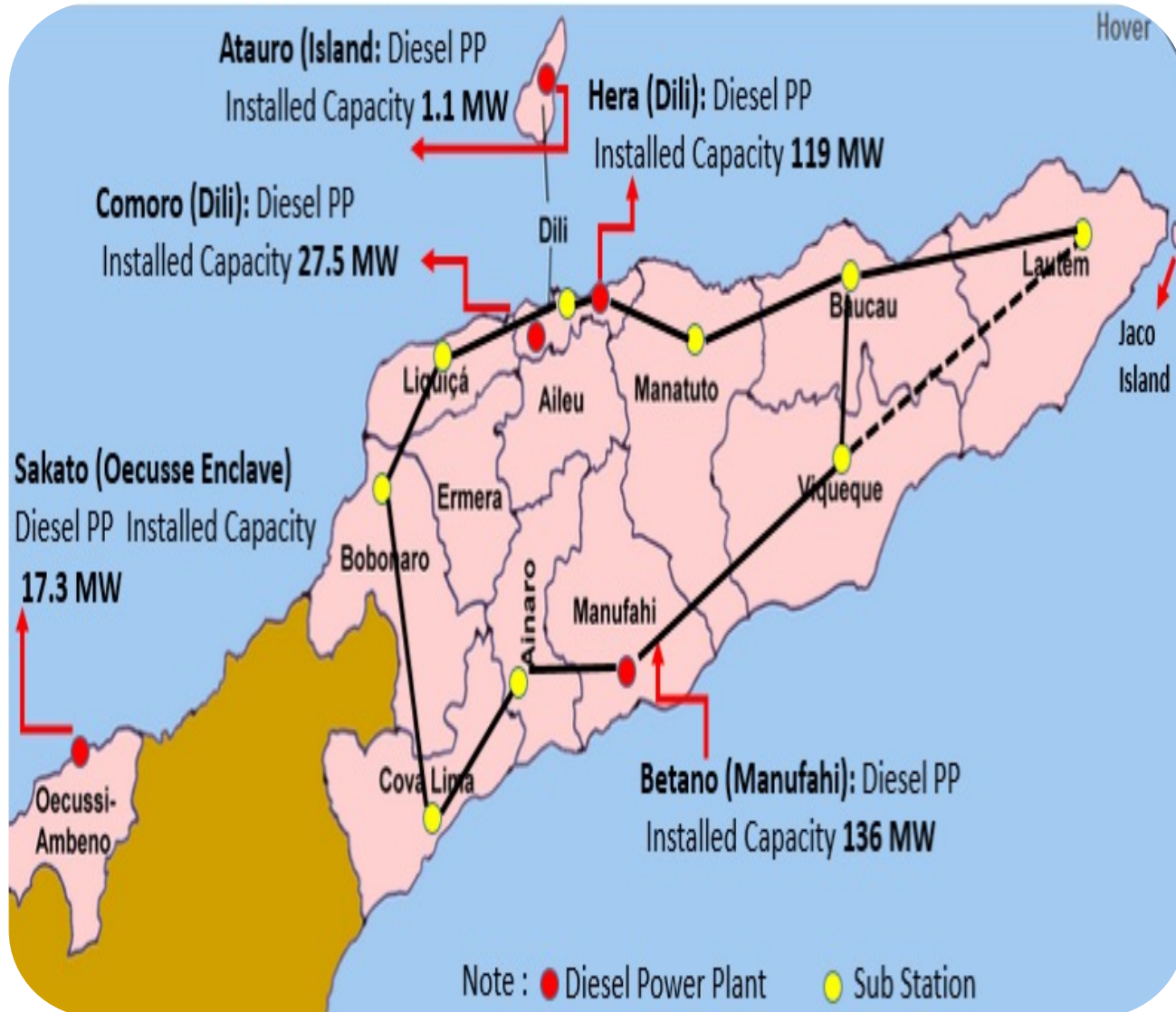


Timor-Leste



- ❑ **Population:** 1.3 million (2022)
- ❑ **GDP per capita:** \$1,651 (2020)
- ❑ **Currency:** USD
- ❑ **Language:** Tetum, Portuguese (official) and English (working language)
- ❑ **Credit rating:** N/A (ADB & OECD 11)
- ❑ **ADB categorization:**
 - Fragile and Conflict-Affected Situations (FCAS)
 - Small Island Developing States (SIDS)
- ❑ **Electrification rate:** 96% (2020)

Timor-Leste Energy Sector



□ Generation capacity

- 3 power plants with almost 300 MW capacity (119 MW Hera plant, 136 MW Betano plant and 27.5 MW Comoro power plant)
- Average Peak Production: 82 MW
- Transmission Line : 150 kV, 603 km
- 9 Sub stations
- In absence of heavy fuel oil handling and storage facilities, actual generation exclusively uses diesel as the feedstock whereas Hera and Betano power plants can run both on diesel or heavy fuel oil

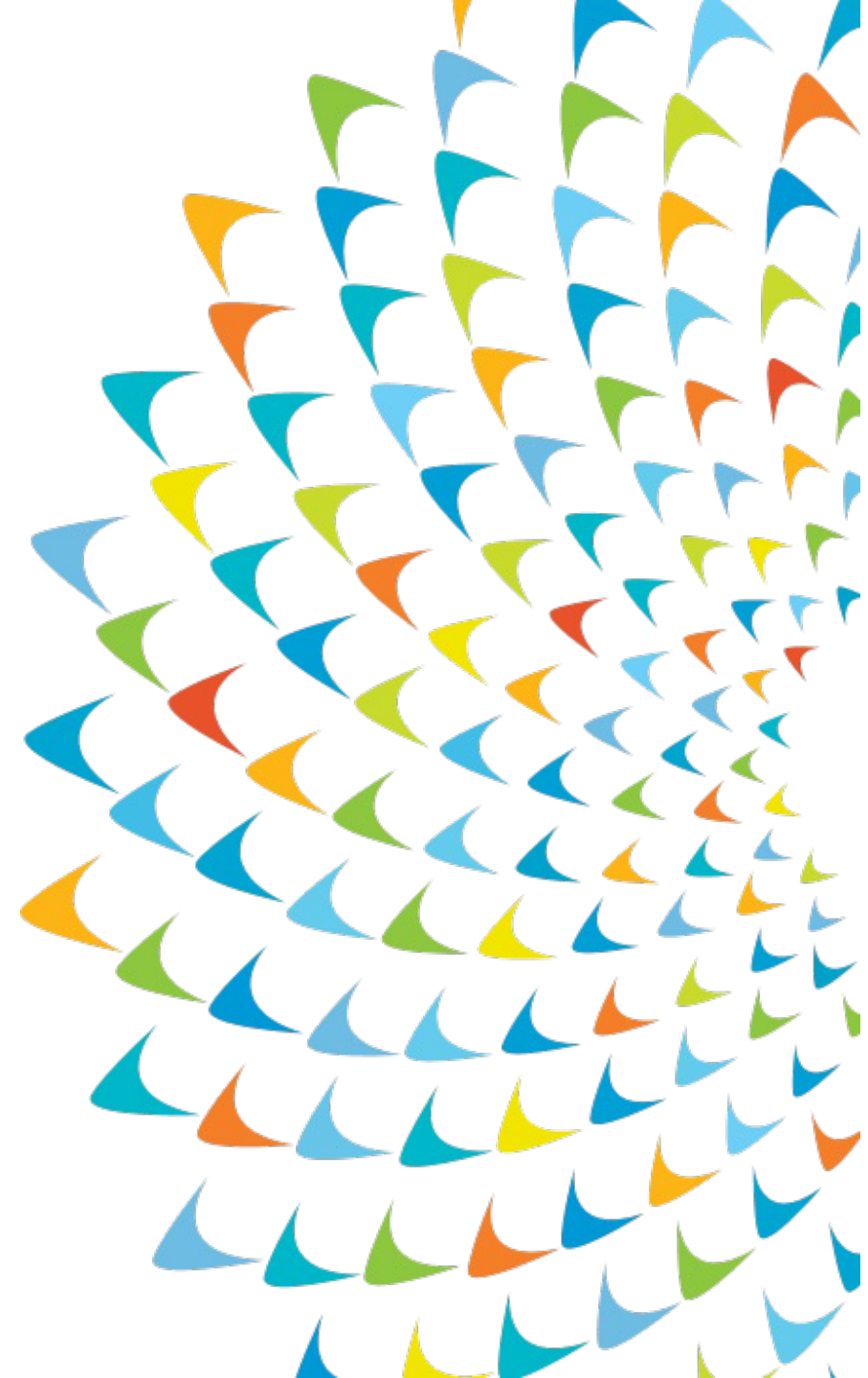
Timor-Leste Energy Sector

□ High generation cost

- More than 75% of oil imports in Timor-Leste are used for electricity production across the country and around 90% of the sector's operating costs are fuel costs associated with power generation
- The state utility company Electricidade de Timor-Leste (EDTL), which became corporatized only in 2020 currently spends over USD 100 million/year as a fuel budget and electricity tariff set below the cost-recovery level is being subsidized using the central government budget allocation.



Project Overview



Proposed Project

❑ **First-utility scale renewable project in Timor-Leste**

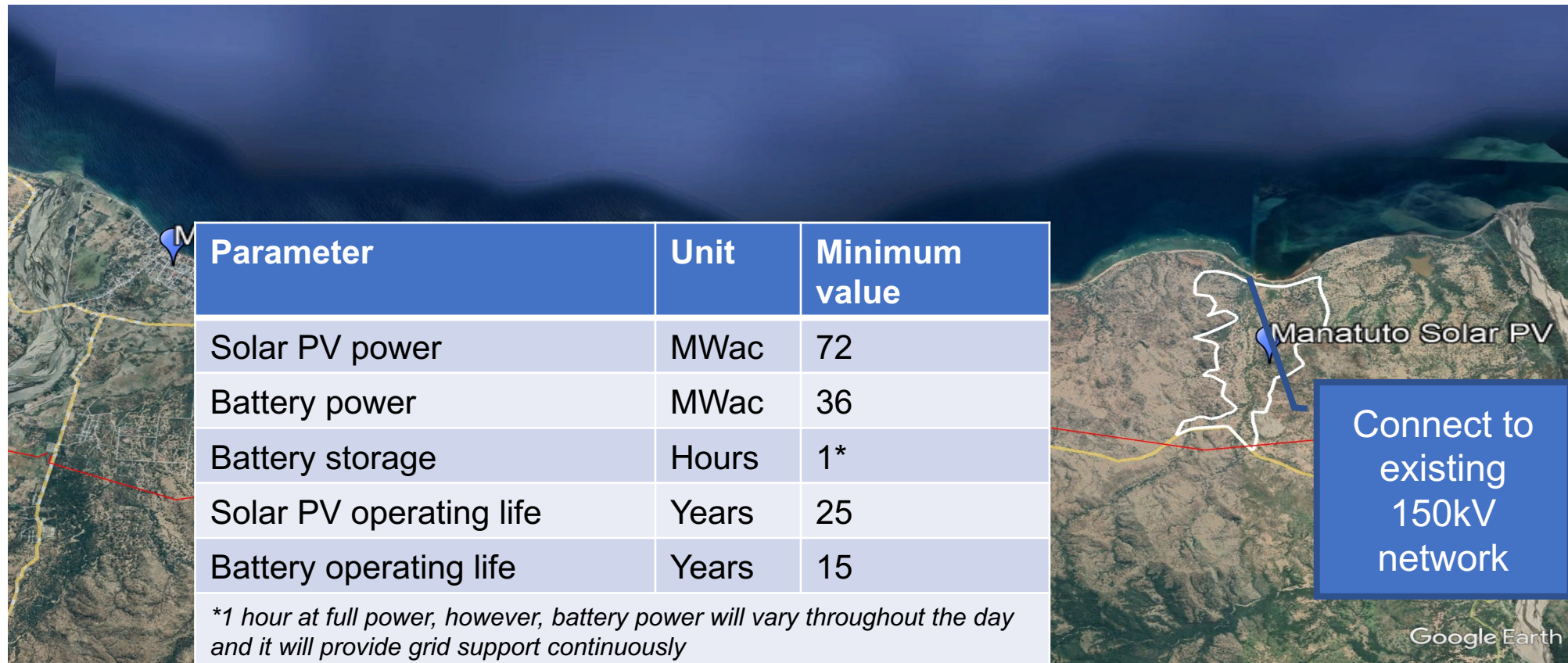
- Design, build, finance, operation and maintenance of a [72-85] MW solar photovoltaic plant (“Solar PV Plant”), a [36-42.5] MW/1 hour battery energy storage system (“BESS”), a substation (“Substation”) (together, the “Facility”), Balance of Plant, integrated communications and control systems and Transmission Infrastructure in the area around Manatuto (the “**Project**”).
- EDTL has invited, through an international public tender, proposals for the development of the Project by independent power producer (“**IPP**”).
- Once selected, the IPP is expected to establish a special purpose vehicle (SPV) to enter into a long-term power purchase agreement (PPA) with EDTL.

❑ **Engagement of ADB Office of Public-Private Partnership (OPPP)**

- Provision of transaction advisory services (TAS) by OPPP including: (i) conduct of pre-feasibility study, (ii) preparation of tender documents (iii) assistance in tender process, (iv) assistance in final negotiation and signing of Project agreements and (v) as needed, support to achieve financial closing.

Project Location and Solar PV and BESS Capacity

- ❑ Public land (Ministry of Justice-owned) and no need for land acquisition
- ❑ Minimal environmental and social impacts
- ❑ Surrounded by hilly areas (possible to accommodate up to 85MW solar PV, BESS sized to be half the solar PV size)

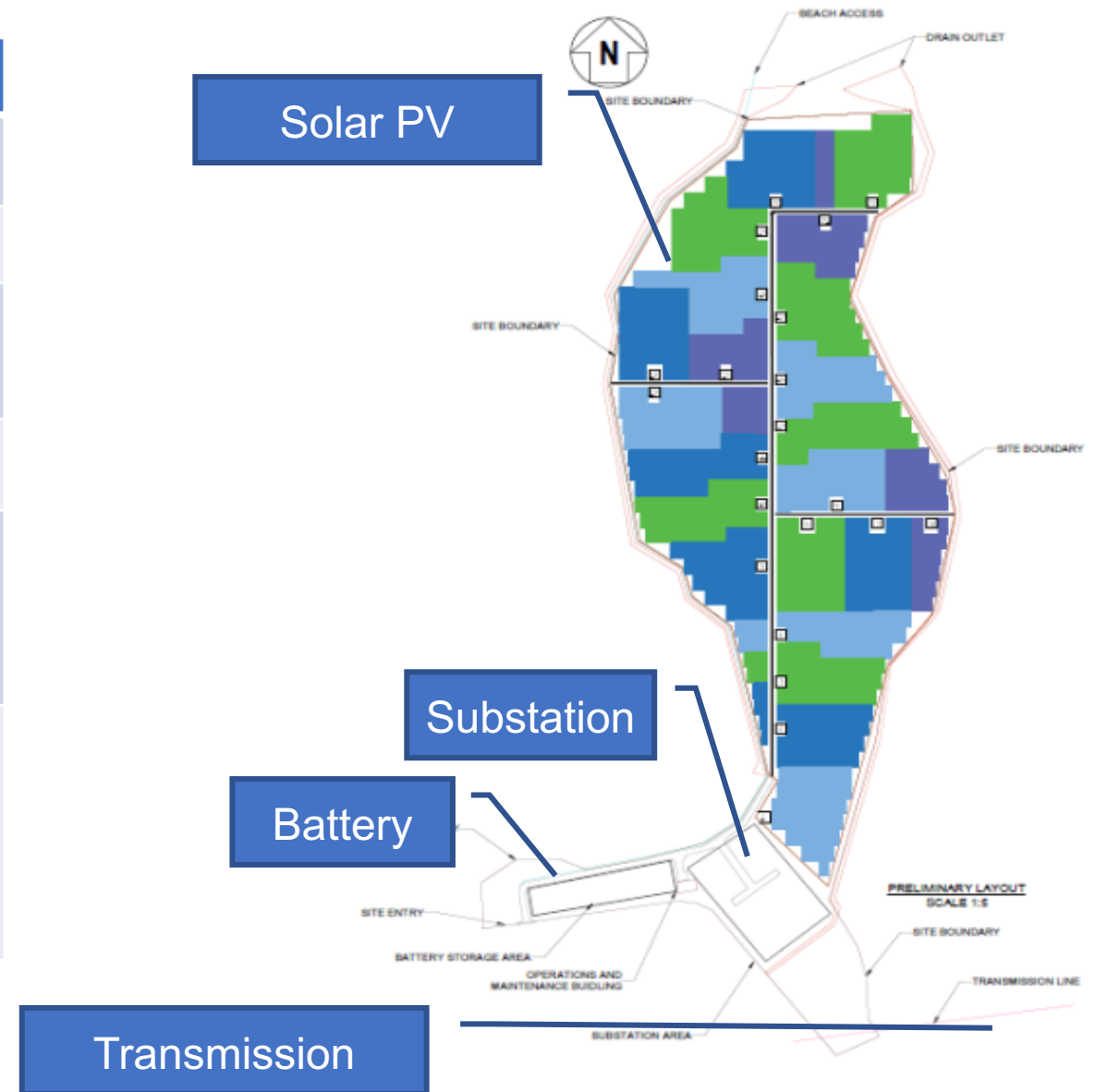


Performance and Physical layout

| Parameter | Unit | Value |
|-----------------------------|--------|------------|
| Annual solar generation | MWh | 152,000 |
| Contribution | % | 19.4% |
| Average annual fuel savings | Litres | 35,000,000 |
| Typical output times | - | 8am – 5pm |

Battery ensures Solar can operate without destabilising the grid by providing voltage and frequency regulations at much lower cost.

Battery also backs-up diesel generators at night, providing spinning reserve and grid support functions reducing fuel consumption and maintenance.



Responsibilities of IPP vs. EDTL

| IPP | EDTL |
|---|---|
| Obtain permits and financing | During construction: <ul style="list-style-type: none">• Perform network switching as required during commissioning• Check revenue metering |
| Design, build, and operate: <ul style="list-style-type: none">• Solar PV plant, battery energy storage system (BESS) and substation Design and build: <ul style="list-style-type: none">• Transmission connection to substation gantry• Hand over transmission asset to EDTL | During Operation: <ul style="list-style-type: none">• Maintain the transmission network and advise of planned and unplanned maintenance• Establish a dispatch and control centre to automatically communicate dispatch requirements to Solar PV plant, BESS and diesel generators |
| Decommission at end of operating life (EDTL may choose to acquire at free of charge) | Commercial <ul style="list-style-type: none">• Purchase all electricity generated or able to be generated by the solar PV Plant• Pay capacity payments for the BESS |

Tariff Structure

Price Bid = NPV (Electricity Payment for 75MW solar PV
+ Capacity Payment for 36MW/1 hour BESS)

PV Solar =
Electricity Payment for
25 years

+

BESS =
Capacity Payment for
15 years

- ❑ Electricity Payment to the IPP based on the amount of Electric Energy generated by the Solar PV Plant measured and metered in kWh

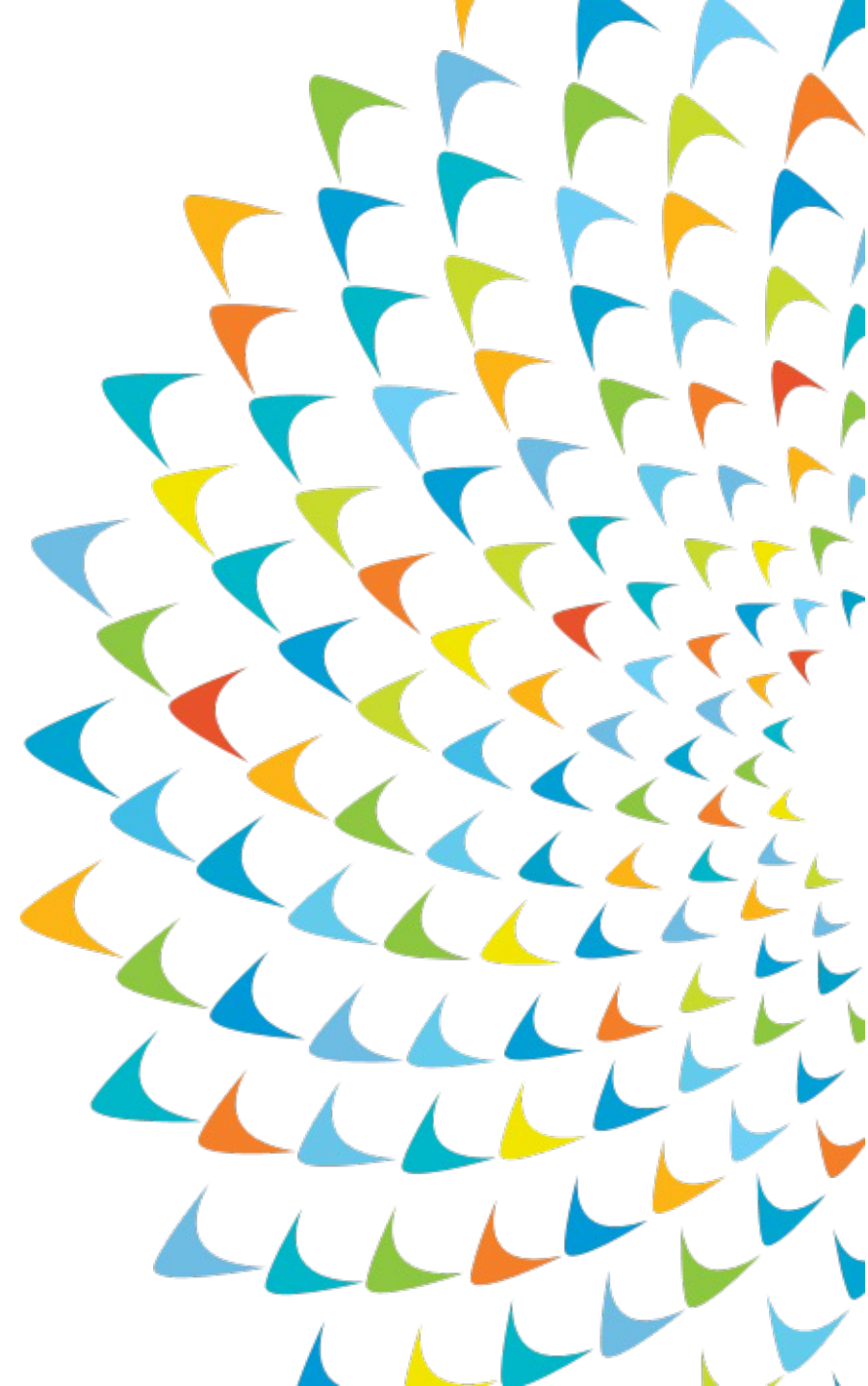
- ❑ Capacity Payments to the IPP reflecting the capacity of the BESS and provision of services including charging, storage and discharge of electricity to and from the BESS.

Timetable

| Tender Process | Date (YR 2023) |
|---------------------------------------|-----------------------|
| Release of Bid Document | Feb 27 |
| Site Visit / Pre-Bid Conference | Mar 22 and 23 |
| Submission of Bids | Jun 5 |
| Eligibility Evaluation & Shortlisting | Jun |
| Evaluation of Tech Bids | Jun/Jul |
| Evaluation of Commercial Bids | Jul |
| Intend to award | Aug |



Operation in FCAS and SIDS Setting with Carbon Credit Trading Consideration



FCAS and SIDS Setting

❑ **Relative unfamiliarity with the country**

- Timor-Leste is not rated by any international credit rating agencies. The country, with its state-owned enterprise and the financials relatively less known to the private developers and lenders, introducing the same level of competition for an international tender as in other larger, more developed countries could be challenging. For Timor-Leste, bidders are typically from legacy countries such as Indonesia, Portugal and People's Republic of China.
- For the Solar IPP project, Government of Timor-Leste represented by the Ministry of Finance has provided backstop guarantee for EDTL obligations under the Implementation Agreement.

❑ **Legal framework**

- It can be difficult to obtain clarity around legal or regulatory frameworks. Whereas many international law firms have expertise in public–private partnerships, only a few local law firms make attractive partners for international firms looking for legal advice, due diligence, and/or opinions. Also, turn around times in seeking legal assistance in SIDS may be longer than expected, with gaps in local laws.

Carbon Credit Trading

□ **Sharing of carbon credits with IPP**

- EDTL has offered to share the benefits of carbon credits from the Project to be split with IPP by 50:50 as reflected in the 25-year power purchase agreement. Current arrangement is that EDTL will facilitate the carbon credits trading on behalf of the IPP
- It is yet to be determined how such carbon credits may be monetized. Options are:
 - Domestic compliance market – unlikely to be created
 - Engage in bilateral negotiations/ utilize MDB facility (with advance payment)
 - International compliance market to be created under the Paris Agreement (Article 6)
 - voluntary market
- ADB has proposed a grant TA on Article 6 Support Facility to identify gaps in carbon credit policy/regulations so that framework to capture the carbon credits from the Project can be ready prior to the Project becoming operational.
- Similar arrangement may be replicated for other IPP projects.

Enabling Environment for Renewable Investment

□ **Government support**

- For the Solar IPP project, Government of Timor-Leste represented by the Ministry of Finance has provided backstop guarantee for EDTL obligations under the Implementation Agreement.
- Special Investment Agreement, if concluded could allow the winning bidder a leasing of the Site at a concessional rate and other benefits.

□ **[Asia-Pacific Climate Finance Fund (ACliFF)]**

- If approved, then additional liquidity facility will be provided to ensure EDTL's timely payment to sponsors and subsequently to lenders.