

ADB Assists Cambodia to Obtain the Lowest Price for Solar PV in the ASEAN : How Did We Do It?

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Electricity Generation in ASEAN - Historical Growth

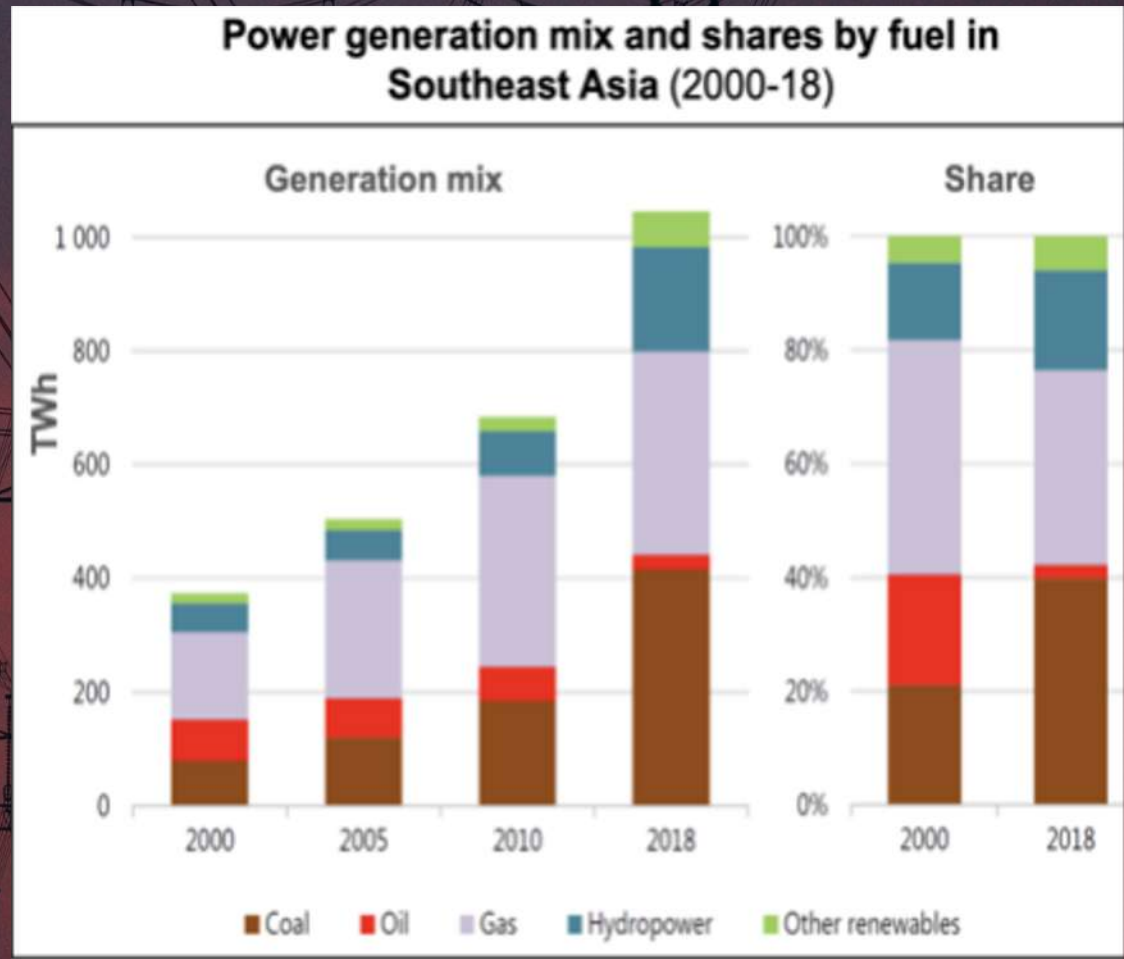
Electricity demand growing at 6% per year, among the fastest in the world

Increase in electricity demand met mostly from coal, gas, and hydropower

Hydro accounts for approx. 77% of renewable power capacity

Coal has grown rapidly because of its relatively low cost and indigenous supply

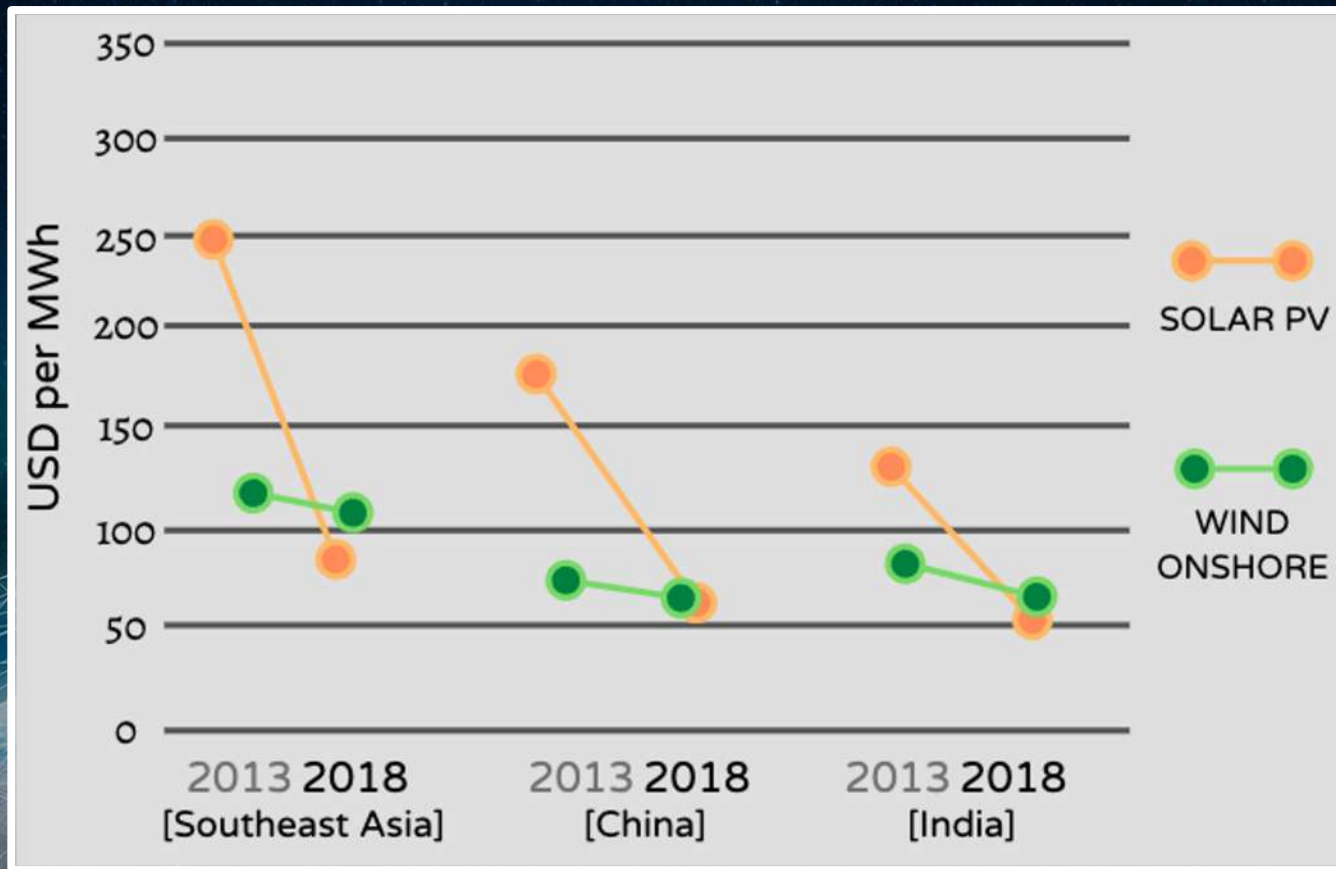
Renewable sources of energy represent a small portion of the generation mix



SOURCE : IEA 2019

Source: IEA, 2019

South East Asia Has High Procurement Costs for Renewable Energy



[Source: IEA, 2019]

This has hampered the development of renewables in the region

ADB's End-to-End Support for Renewables in Southeast Asia

Lack of well-structured and efficiently procured projects

Transaction advisory services (Office of PPPs, OPPP)

Need to enhance credit worthiness of off-takers

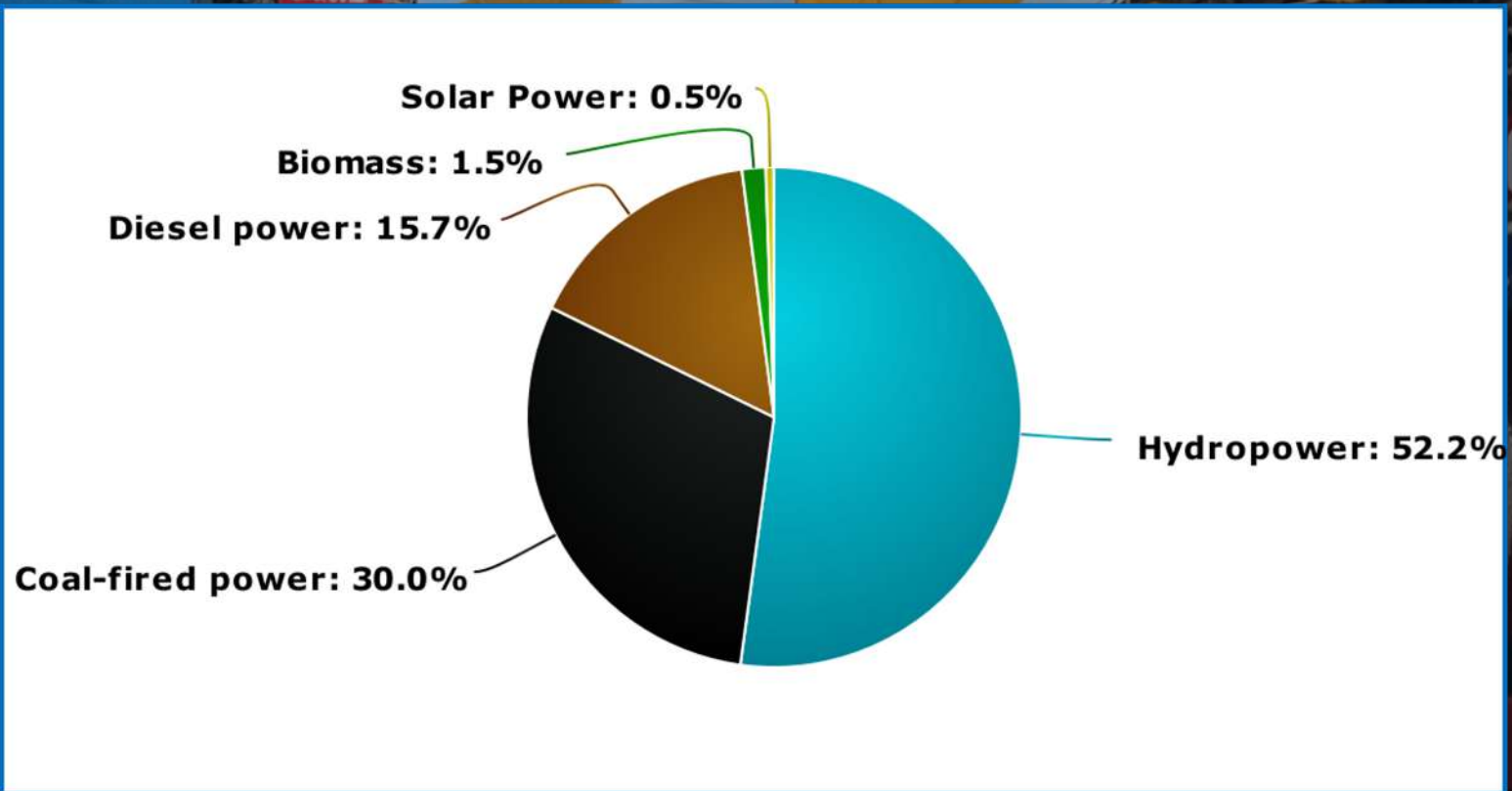
Strengthen SOE financial management through policy dialogue and results-based loans (Southeast Asia Regional Dept, SERD)

Need for competitive funding mechanism

Private Sector Funding from ADB (Private Sector Dept, PSOD) and Access to Climate Financing for Sovereign and Private Investments

Case Study: National Solar Park (Cambodia)

Sources of Electricity in 2017 (generation capacity, MW)



SOURCE : GOVERNMENT OF CAMBODIA, 2017

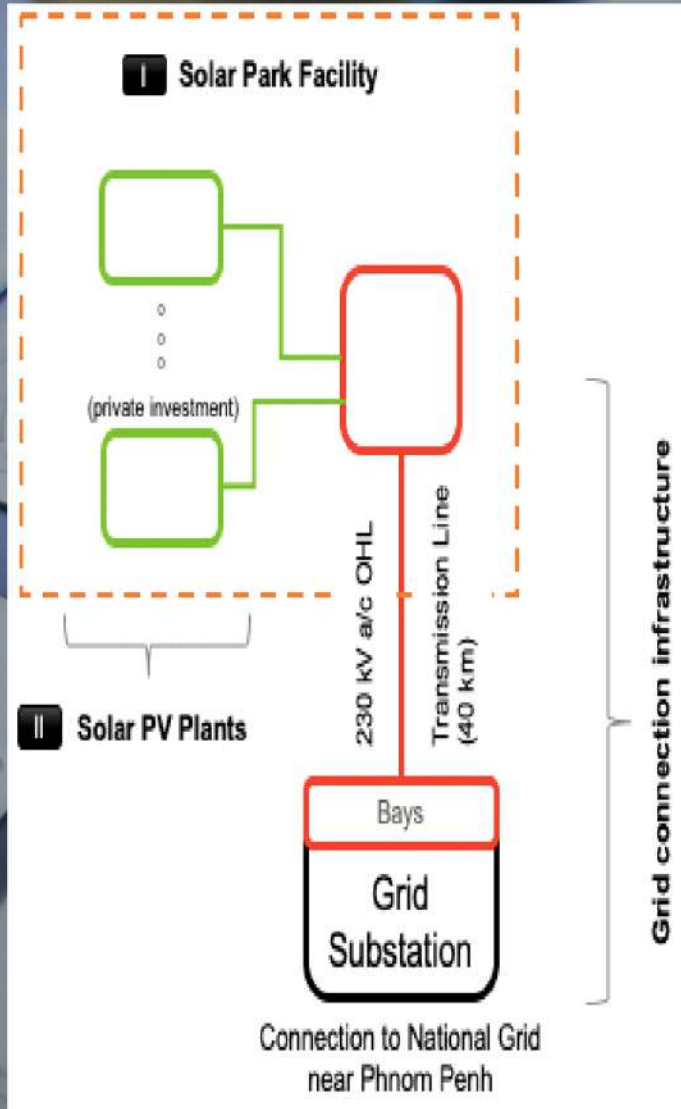
The Government's Power Development Plan (2015) aimed at adding more coal and hydropower capacity



ADB

**Helping Cambodia Transition to
Clean Energy**

Project at a Glance (2018-2019)



Solar Park Facility

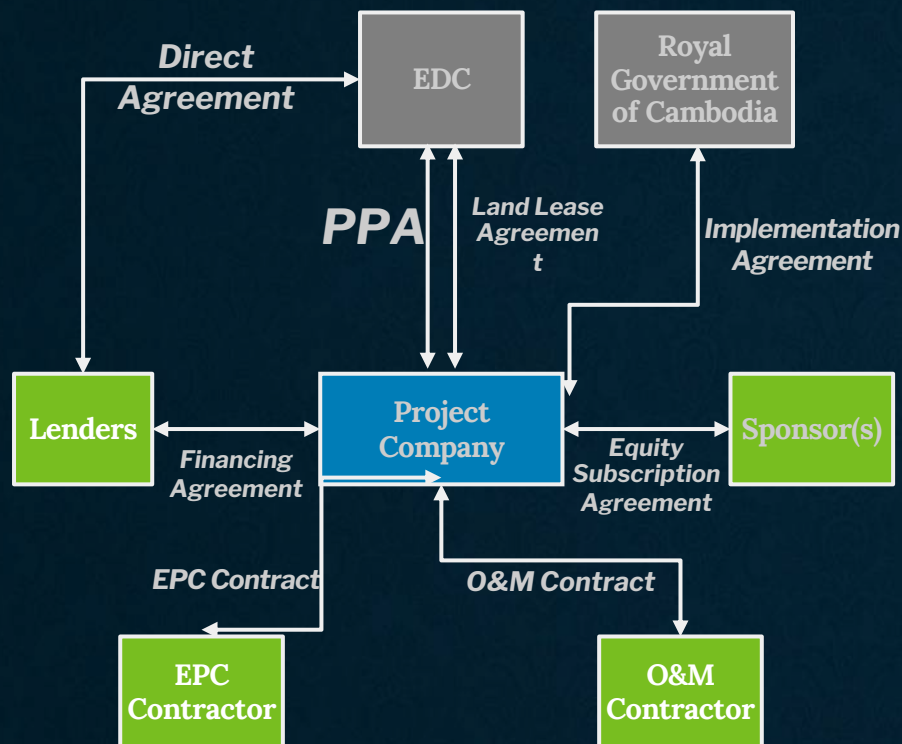
- ☒ Land, substation and transmission line to connect to the grid
- ☒ Facility to be constructed by Electricite Du Cambodge (EDC) using public sector financing (ADB loan) to accommodate up to 100 MW of solar PV power generation
- ☒ Land for the park to be acquired by EDC

Solar PV Generation Plants

- ☒ Solar PV power plants will be developed, financed, constructed, operated and maintained by the private sector
- ☒ Power to be purchased by EDC under a PPA, the tariff for which was to be determined through a competitive process
- ☒ Tender conducted for first phase of 60 MW. Additional solar power plants supplying the remaining capacity are expected to be tendered in 2020.

Bankable Contractual Structure and Risk Allocation

Contract Structure



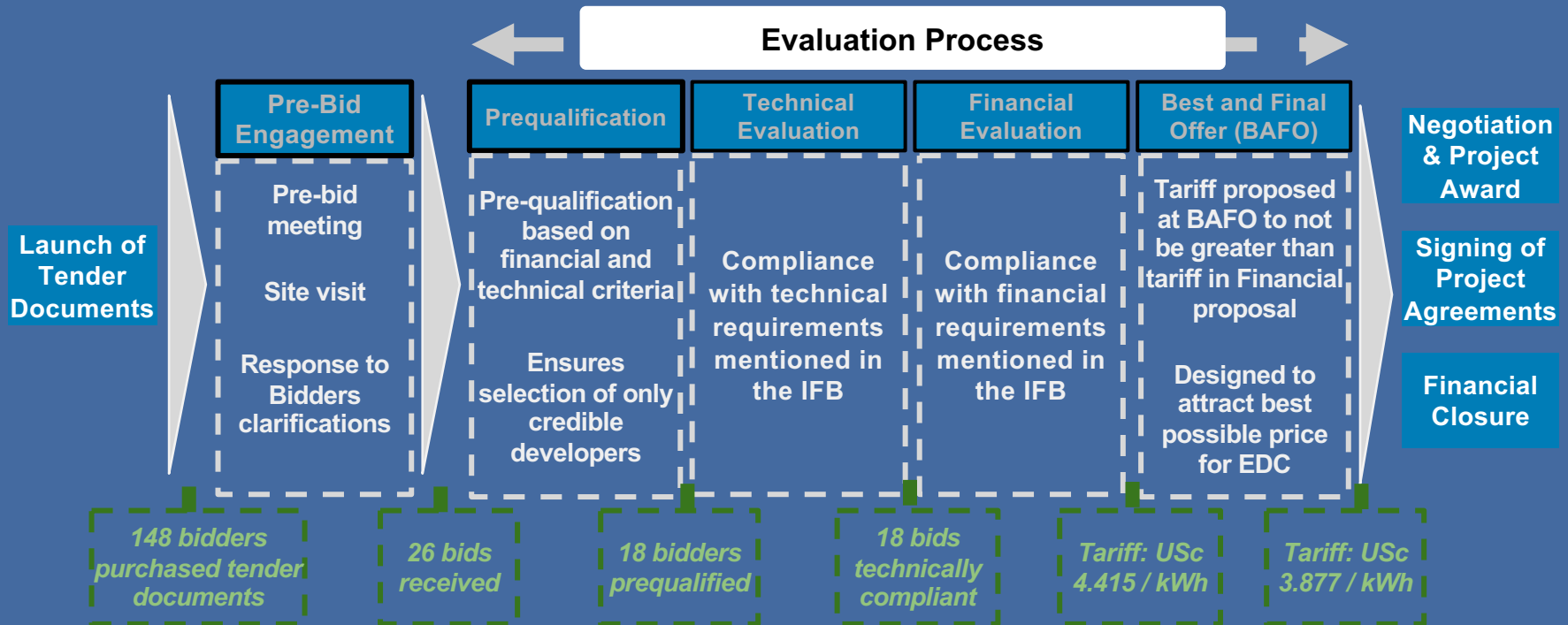
The risk of providing the grid connectivity, land and other ancillary services is borne by EDC; thereby reducing the execution risk allocated to the developer for the solar PV power plant.

Risk Allocation Framework

Key Risks	Primary Risk Allocation	
	Project Company	EDC
Delay in Financial Closure		x
Design Risk		x
Construction Risk		x
Project Cost Overrun		x
Operation Risk		x
Change in Law / Political Risk	x	
Off-taker Risk Event	x	
Solar Irradiation Risk		x
Obtaining & Maintaining Permits		x
Access to Grid	x	
Provision of Land	x	

Risks allocated appropriately to party best suited to manage that risk which ensures bankability of project

Solar PV Plant Tender Process: Based on International Best Practices



Pre-bid Meeting



Site Visit



Public Opening of Financial Proposal



Public Opening of BAFO

A photograph of several wind turbines in a field at sunset. The sky is a mix of dark blue and orange, with wispy clouds. The foreground is a dark, grassy field. The text "Where do we go from here?" is centered in white.

Where do we go from here?

Scaling Up Renewables + Storage In ASEAN (*ASSURE*)

ADB has initiated a new regional program called the ASEAN Scaling UP Renewables + Storage initiative (*ASSURE*). ADB will work with ASEAN countries to deploy renewables on a large scale by supporting project development and facilitating private sector participation.

Detailed Feasibility Analysis

End-to-end Tender Process Management

Financing (Sovereign, Private Sector and Climate Finance)



Where are We Going from Here: 2020-2021

Cambodia – Second phase of the national solar park, Waste to energy project

Viet Nam – 300 MW floating solar auction

Indonesia – Early discussions on ground-mounted solar auction

Timor-Leste – Early discussions on ground-mounted solar auction

Myanmar - Support for a large wind auction

Thailand – pre-FS for offshore-wind completed, in discussions with the government on next steps