IIMA Seminar

Accelerating the Clean Energy Transition in Southeast Asia

Toru Kubo
Director, Southeast Asia Energy Division
Asian Development Bank
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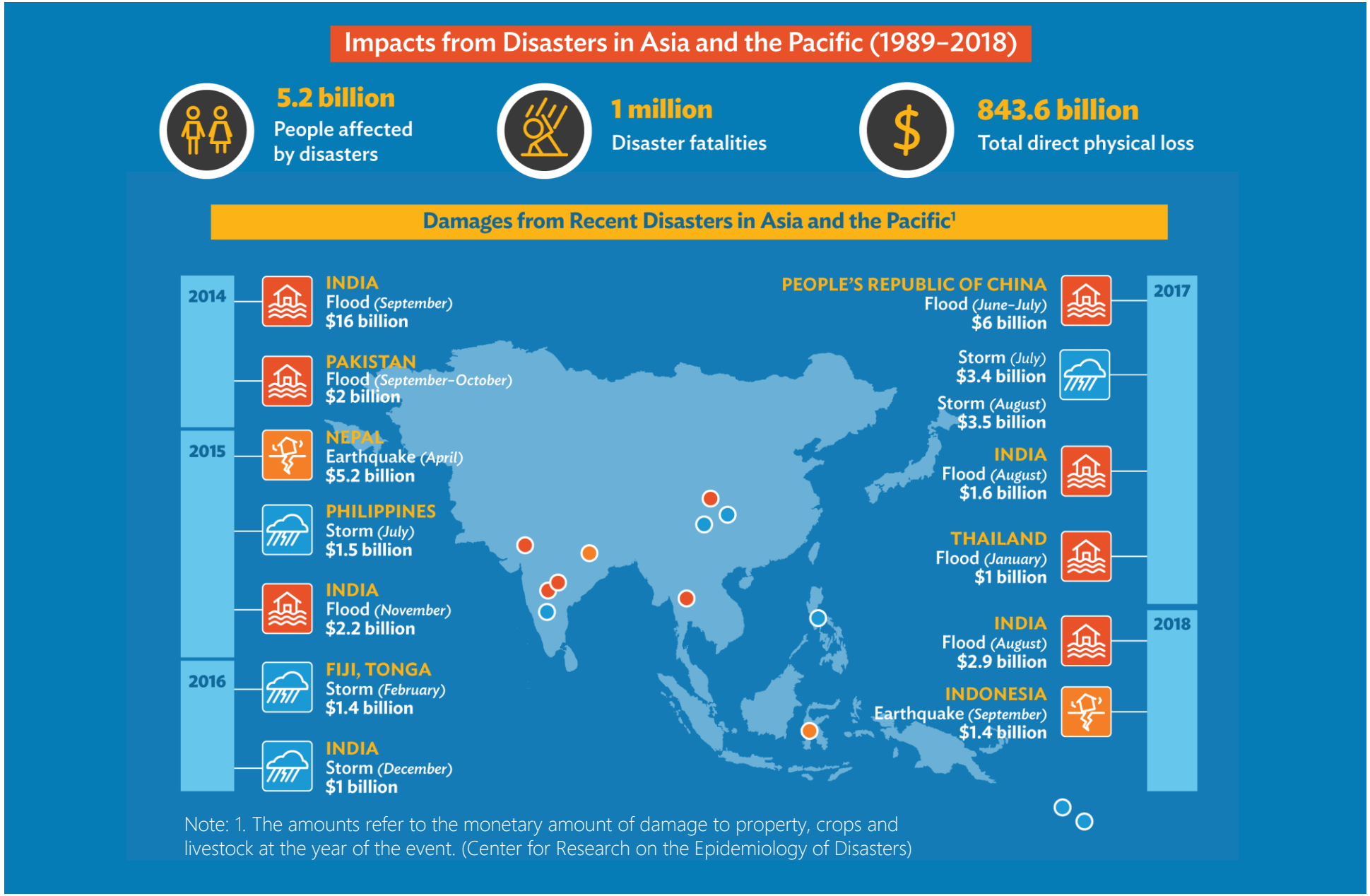
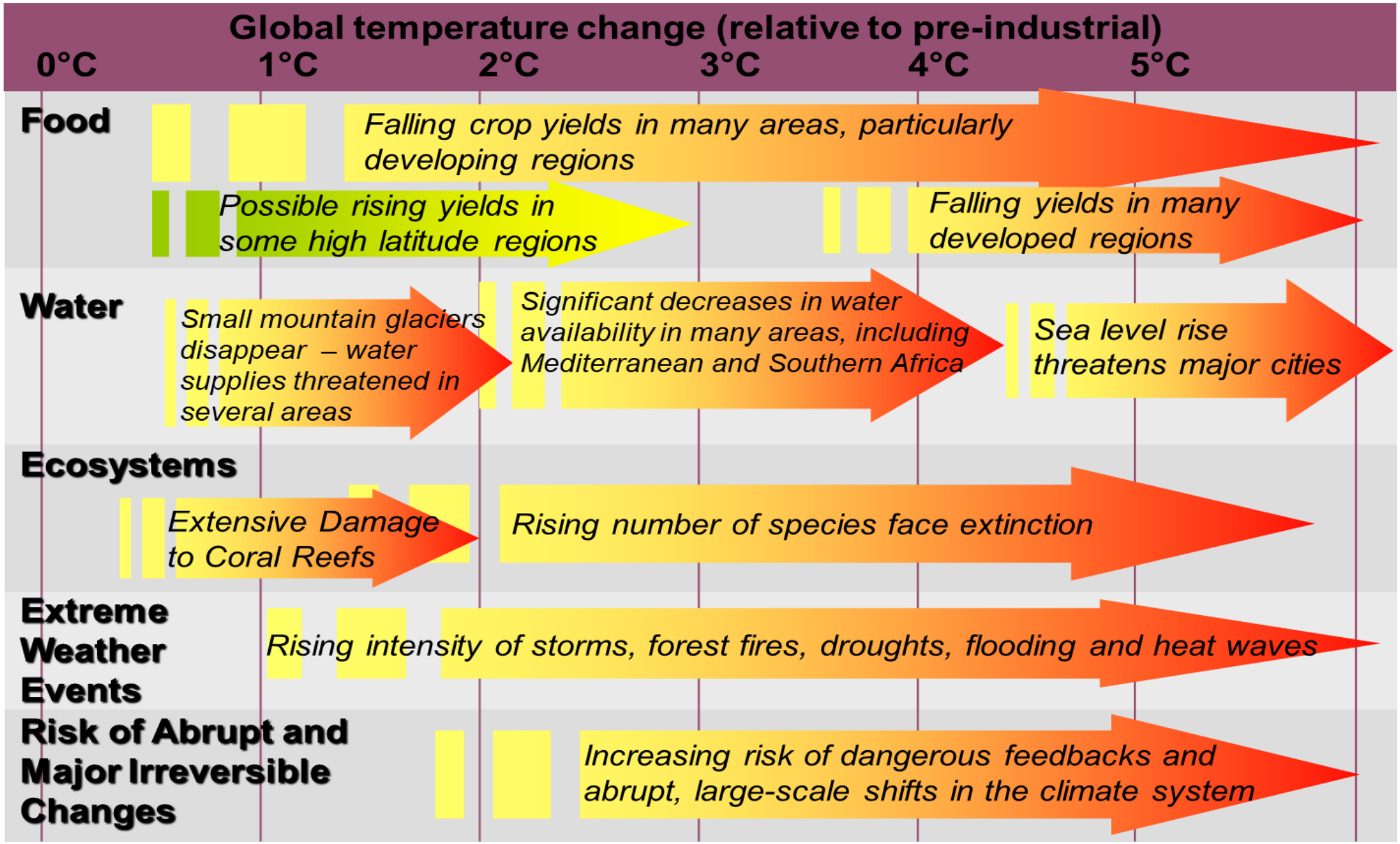
Climate Change and Disasters in Asia and the Pacific



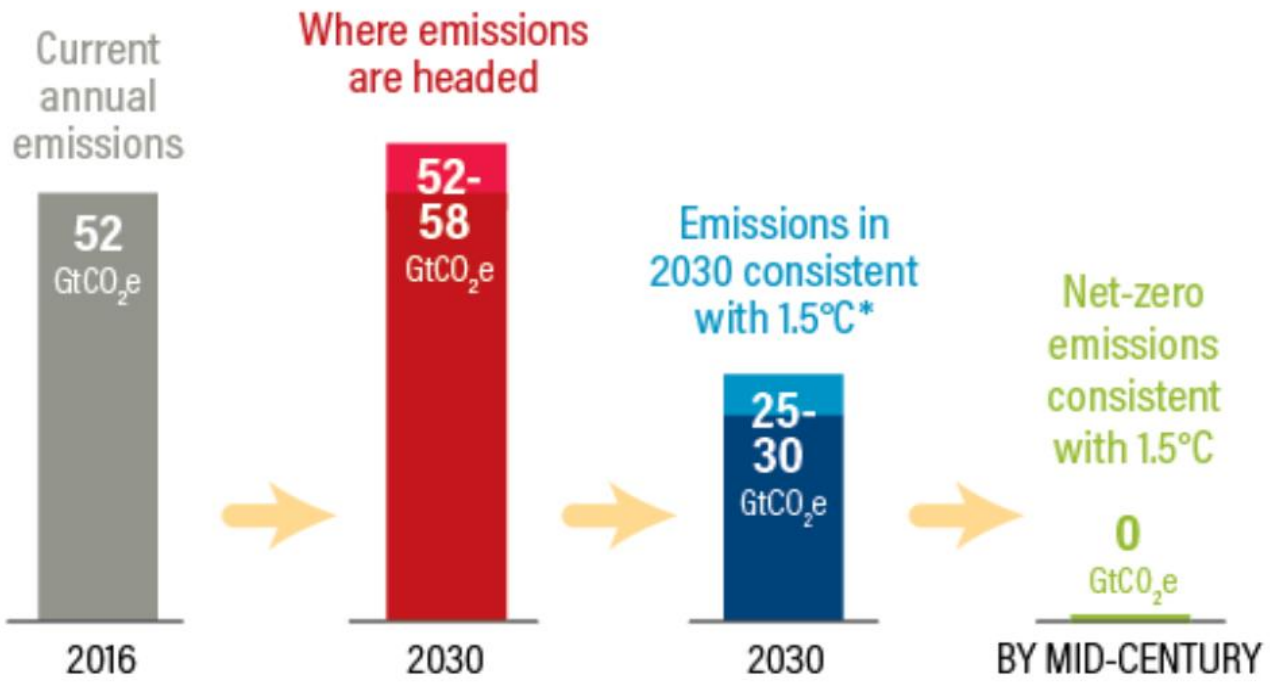
Projected impacts of climate change



UN Climate Change Conference

The Alarming Gap

The World is NOT on Track to Limit Temperature Rise to 1.5˚C

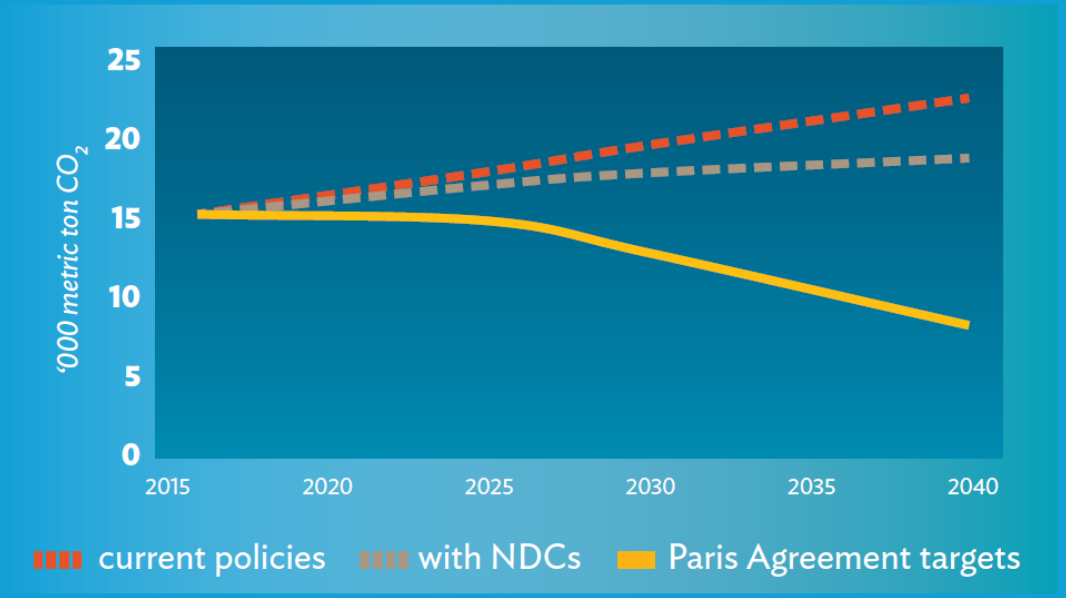


Source: World Resources Institute

The battle against climate change will be won or lost in Asia and the Pacific

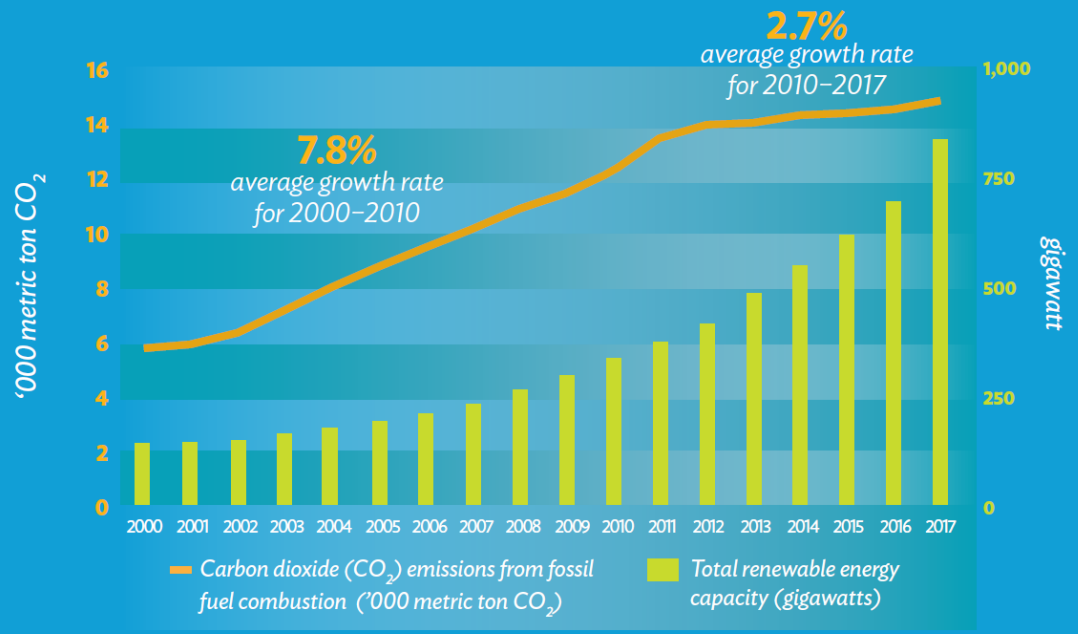
THE EMISSIONS GAP IN ASIA AND THE PACIFIC*

Outlook vs Paris Agreement Target



* CO_2 emissions from fossil fuel combustion for Asia Pacific[3] for scenarios (Current Policies, New Policies, and Sustainable Development) in World Energy Outlook 2018

Carbon dioxide emissions from fossil fuel combustion and total renewable energy capacities in ADB DMCs

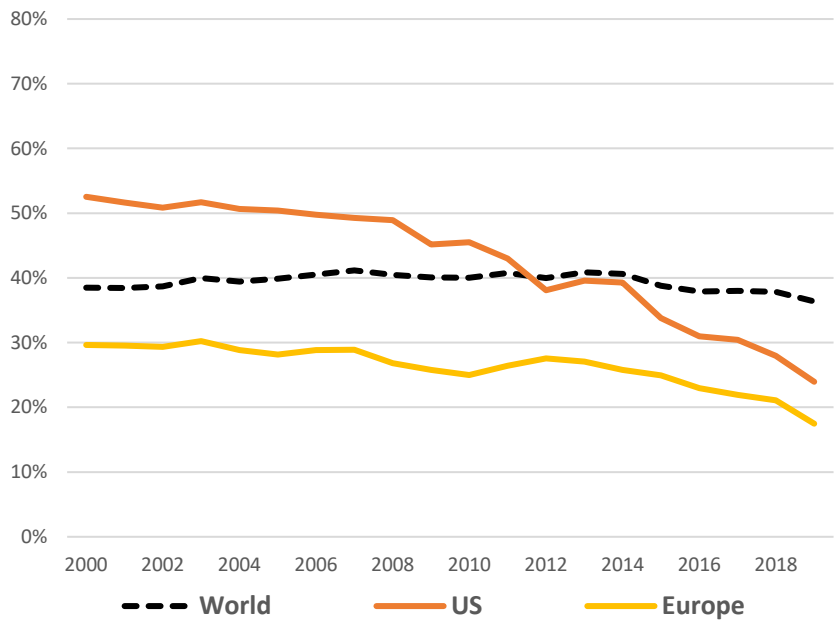


In 2017, the PRC's renewable energy capacity reached **696 gigawatts**, ranking first among all countries.

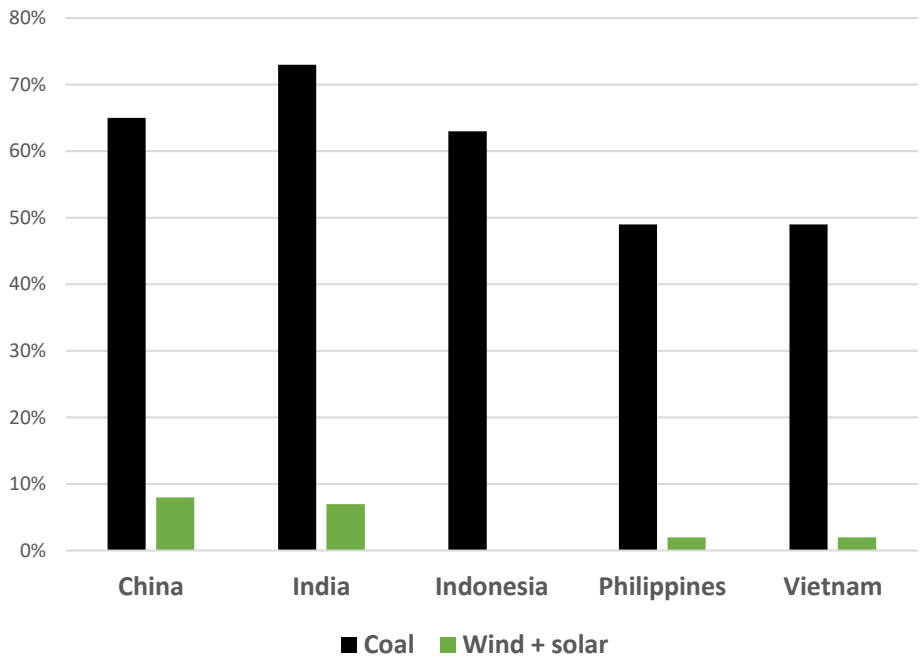
Example 1: Energy Transition Mechanism (ETM)

Coal-fired electricity must drop, but remains significant in developing Asia

Share of coal-fired power generation dropped in Europe and the US…



…but remains very high in Asia (2019)



Large-scale solution needed to simultaneously rapidly decarbonize and build-up clean energy in Asian developing countries.

Source (left): Carbon Action Tracker 2020 and calculations based on IEA Data
Source (right) : BP "Statistical Review 2020"; IPCC "Special Report on Global Warming of 1.5°C"
Author: Donald Kanak (WEF blog "How to accelerate the energy transition in developing economies" https://www.weforum.org/agenda/2021/01/how-to-accelerate-the-energy-transition-in-developing-economies)

Southeast Asia ETM Partnership: Launched at COP26, Glasgow

- Indonesia and Philippines joined as key partners to launch the pilot study for ETM
- The Government of Japan announced a $25 million seed funding contribution to start the ETM program
- The partnership was endorsed by senior cabinet-level officials from Denmark, the UK, and the US, as well as leading global financial institutions and philanthropies
- MOU signed with Rockefeller Foundation, including to accelerate the transition to clean energy

Philippine Finance Secretary Carlos G. Dominguez, Indonesian Finance Minister Sri Mulyani Indrawati and ADB President Masatsugu Asakawa during the ETM Launch at COP26, Glasgow on 3 November 2021

"I am pleased by the Asian Development Bank's work to accelerate the decommissioning of coal facilities. The world needs forward-thinking creative approaches to financing, especially from the multilateral development banks. And we need to find creative solutions so that our public funds crowd in additional private investment, as the bank is aiming to do here."

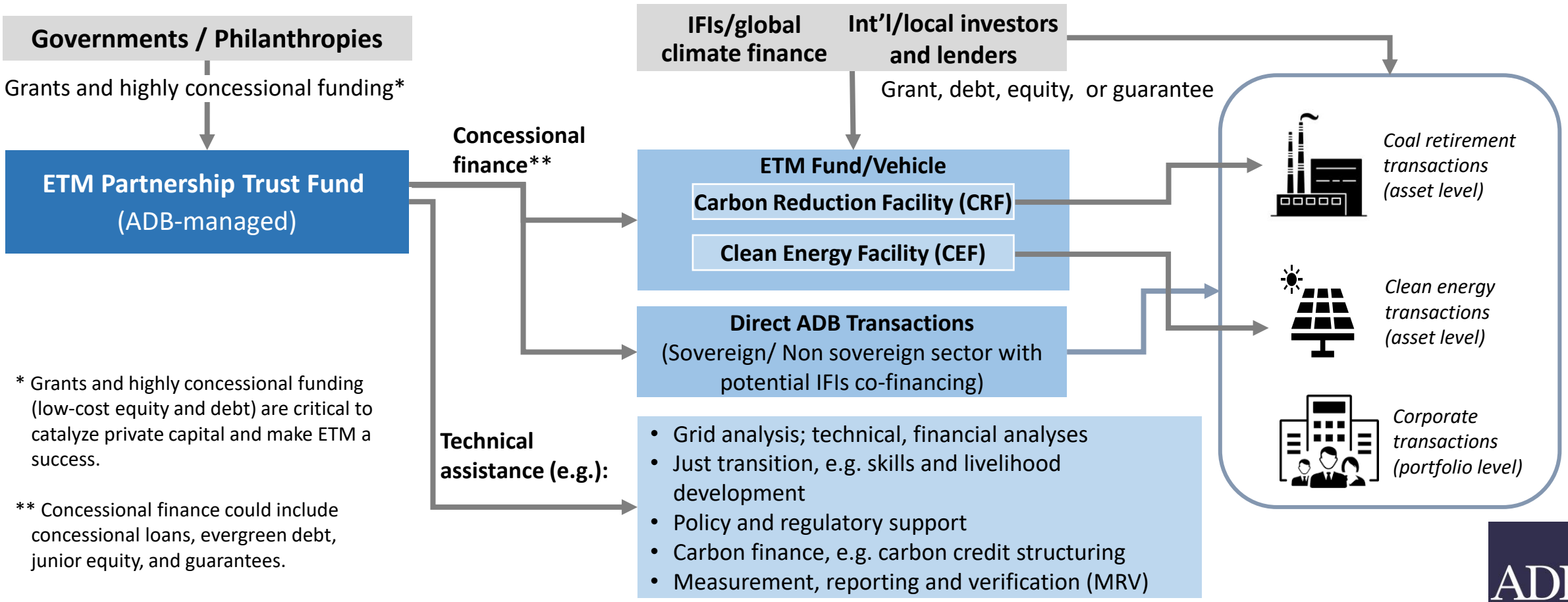
- Janet Yellen, Secretary, US Department of the Treasury

"I want to thank the Asian Development Bank for its work, which will help bring many benefits. Cutting coal use doesn't just reduce the risks we face from climate change, it also reduces air pollution that kills so many people, including in Asia. Today's announcement will help to jumpstart more climate finance that helps to retire coal plants faster and improve many lives.“

- Michael Bloomberg, UN Secretary General’s Special Envoy on Climate Ambitions and Solutions

ETM program overview

- (i) **Accelerates the retirement or repurposing** of coal-fired plants using public and private finance through refinancing, acquisition or sustainability linked corporate loans; and (ii) **scales up investment** in clean energy and energy storage.
- Aims to achieve **just and affordable transition** addressing impacts to people and communities from coal retirement.



* Grants and highly concessional funding (low-cost equity and debt) are critical to catalyze private capital and make ETM a success.

** Concessional finance could include concessional loans, evergreen debt, junior equity, and guarantees.

ETM feasibility study ongoing in Indonesia and the Philippines

01 Project Selection

- Critical factors to focus on when selecting power plants
  - Grid stability
  - Utilization
  - Plant Age
  - Renewable replacement potential
  - Transactional appetite

02 Transaction Structuring and Financial Analysis

- Commercial and legal structure to efficiently retire the assets
- Valuation approach
- Role of existing stakeholders
- Cost of capital needed to achieve a significant lifetime reduction
- Potential additional revenue sources/costs (e.g. carbon, decommissioning)

03 Fund/Vehicle Structuring

- Legal structure of ETM entity
- Capital structure and sources of funding
- Management structure
- Incentive structure
- Return expectations
- Major risks
- Safeguard policy
- Governance requirements

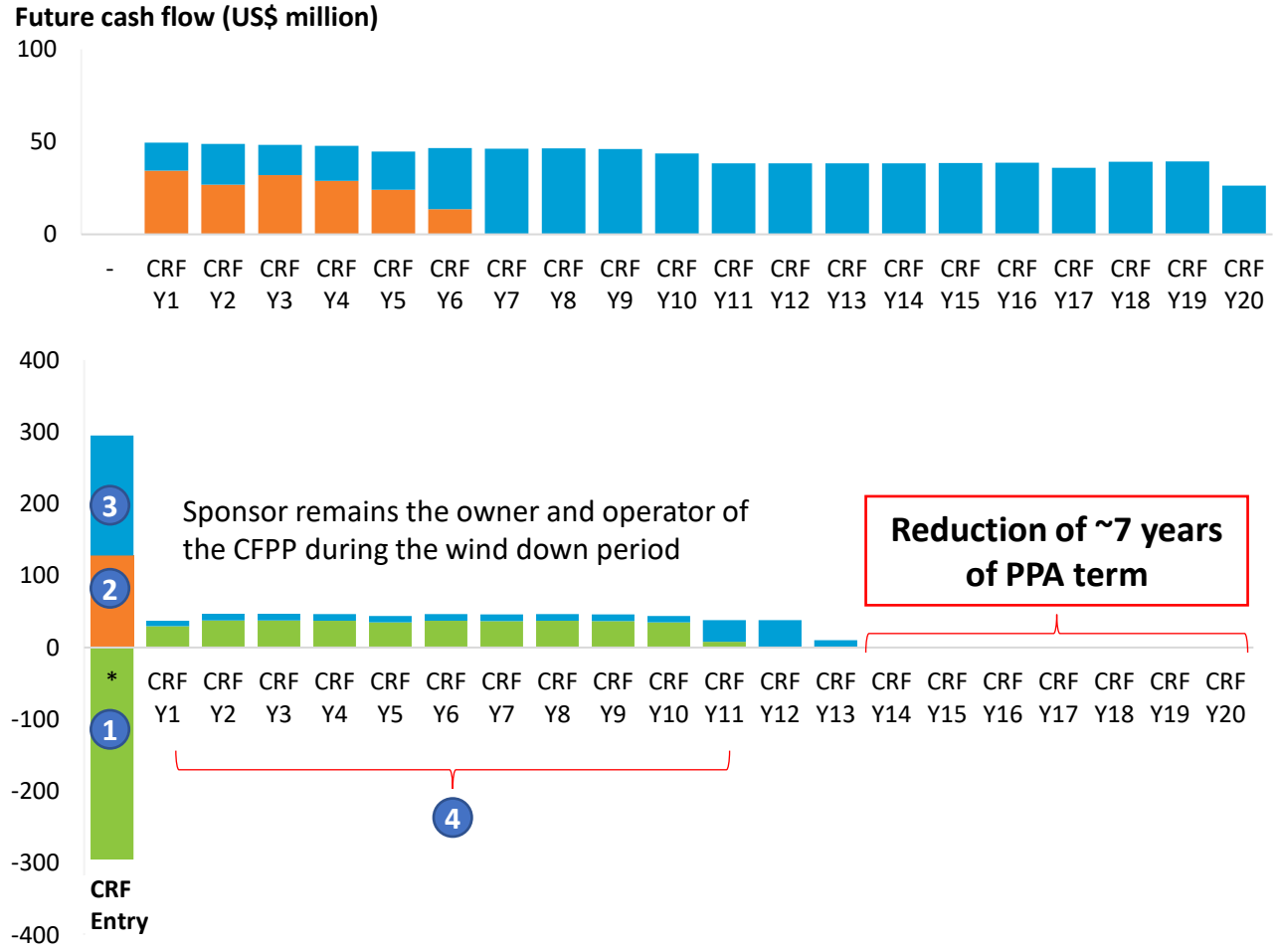
04 Environmental, Social, and Governance

- Replacement plan for retired capacity to ensure the ETM has positive climate impacts
- Assessment of Employee, Community and Supply Chain (including informal sector) related concerns
- Assessment of Just Transition activities over short- and long-term
- Funding source for Just Transaction activities to be enacted by the ETM

Case study (without carbon credits)

Business as Usual (without CRF entry refinancing)

After CRF Investment



1 $300m ETM 10Y loan (funded by ~25% concessional capital) is provided to the project.

2 ETM loan proceeds are used to repay existing lenders.

3 Remaining ETM loan proceeds are used to pay a special dividend to sponsors, to compensate them for the economic loss due to the shortened operation period (same IRR as BAU scenario).

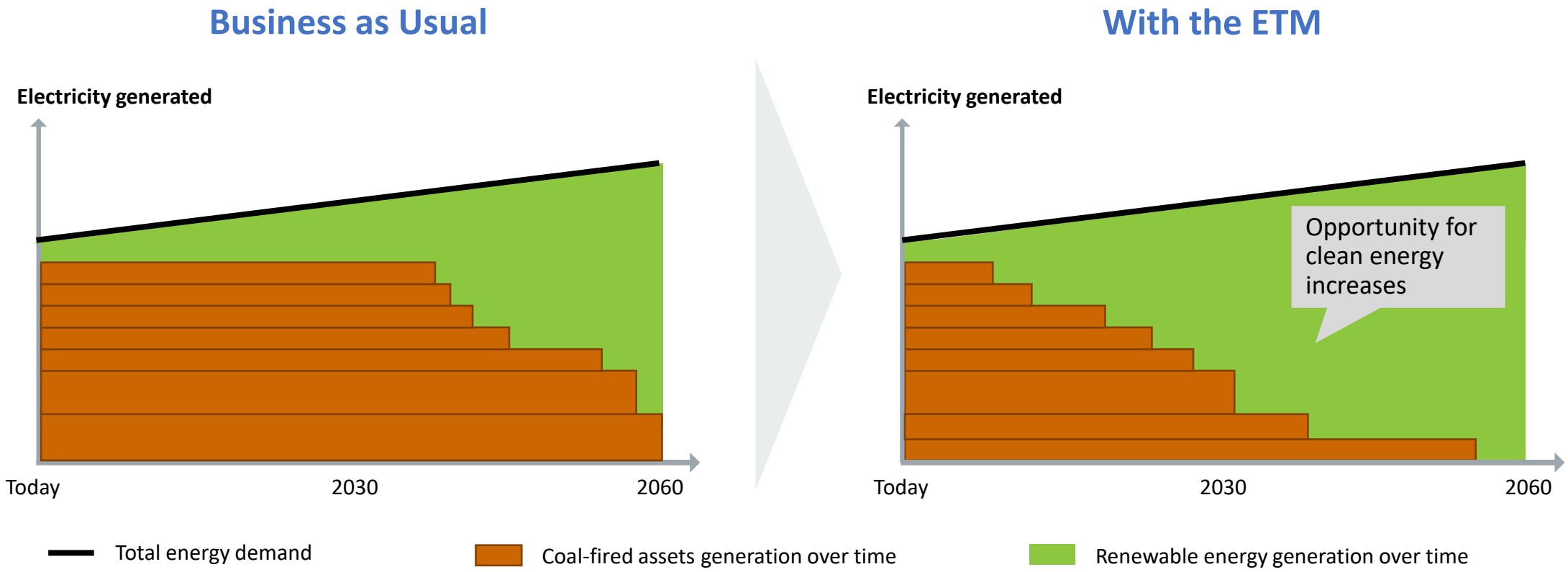
4 Project cash flows are used to repay ETM loan.

Legend

- Net equity cashflow
- Net debt cashflow
- Net CRF cashflow

ETM's market-based approach will significantly reduce coal plant life by re-leveraging with lower-cost capital from governments, multilateral banks, philanthropies, and private sector investors.

Accelerating the shift from coal to clean energy



Retiring/repurposing existing coal-fired power assets early can:

- **reduce emissions**
- **create additional demand for clean energy investments**
- **lower overall generation costs in the long run**

Example 2: Scaling up affordable renewable energy

Wind and Solar: Record Deals

Solar PV

Country: Mexico
Bidder: Enel
Signed: Nov 2017
Construction: 2018

US$ 1.97 c/kWh

Onshore wind

Country: Mexico
Bidder: Neoen
Signed: Nov 2017
Construction: 2019

US$ 1.77 c/kWh

Offshore wind

Country: Germany
Bidder: Dong/ENBW
Signed: 2016
Construction: 2024

US$ 4.9 c/kWh

Source: Liebreich Associates

<u>Deals announced in past 3 years</u>

- Latin America: Brazil solar 1.695 c/kWh
- Europe: Portugal 1.654 c/kWh
- Middle East: Qatar 1.567 c/kWh
- Southeast Asia: Cambodia solar 3.877 c/kWh (2019); 2.57 c/kWh (2022)

Cambodia Solar: Project Overview

Background

- ADB worked with Electricite Du Cambodge (EDC), to develop the National Solar Park ("the Project") to procure up to 100 MW of solar PV power generation from the private sector through competitive tendering.
- The Project demonstrated the ability of large-scale solar to improve the electricity supply and stability of the national grid, substitute power imports, reduce reliance on fossil-fuel and complement hydropower generation.

Phase I

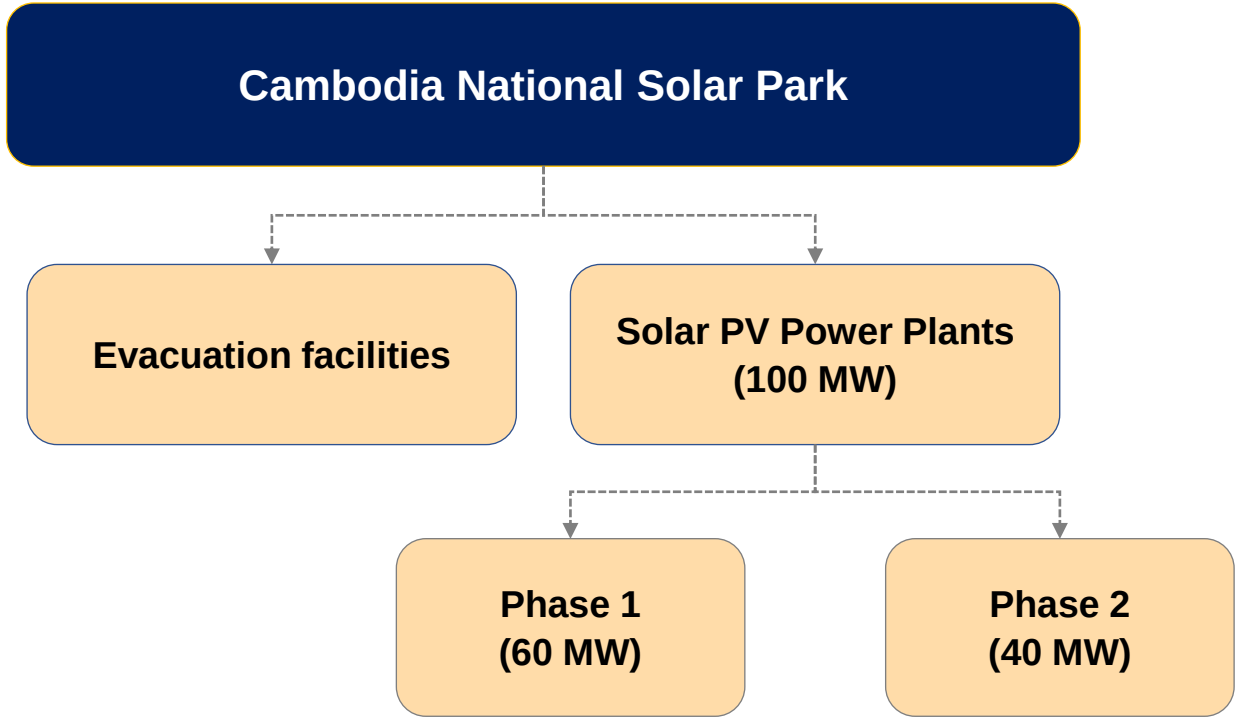
- The Project scope included design, finance, construction, operation and maintenance of **60MW** solar PV power plants for 20 years and the site is within the national solar park located 60-70km from Phnom Penh
- EDC provided land, substation, transmission lines to connect to grid and battery storage and grant 20-year PPA through competitive bidding

Phase II

- The Project scope included design, finance, construction, operation and maintenance of **40MW** solar PV power plants for 20 years and the site is adjacent to the site for phase I

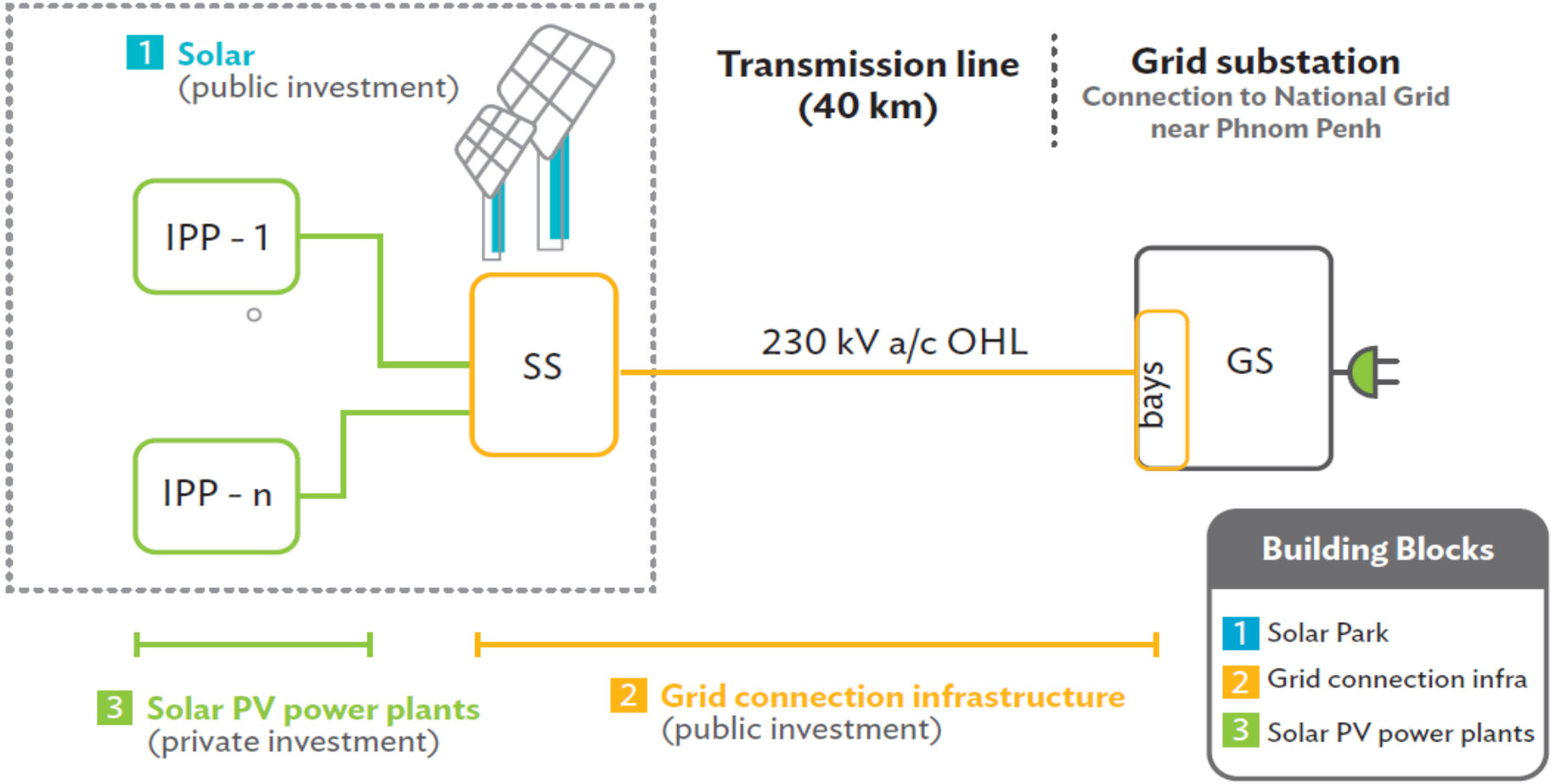
Project Background and Description: The Cambodia National Solar Park has a total capacity of 100 MW and it aims to incentivize the development of solar energy in Cambodia.

Project Components



Cambodia Solar: Project Overview (cont'd)

The park was structured with a clear demarcation between the public and private sector investment components.



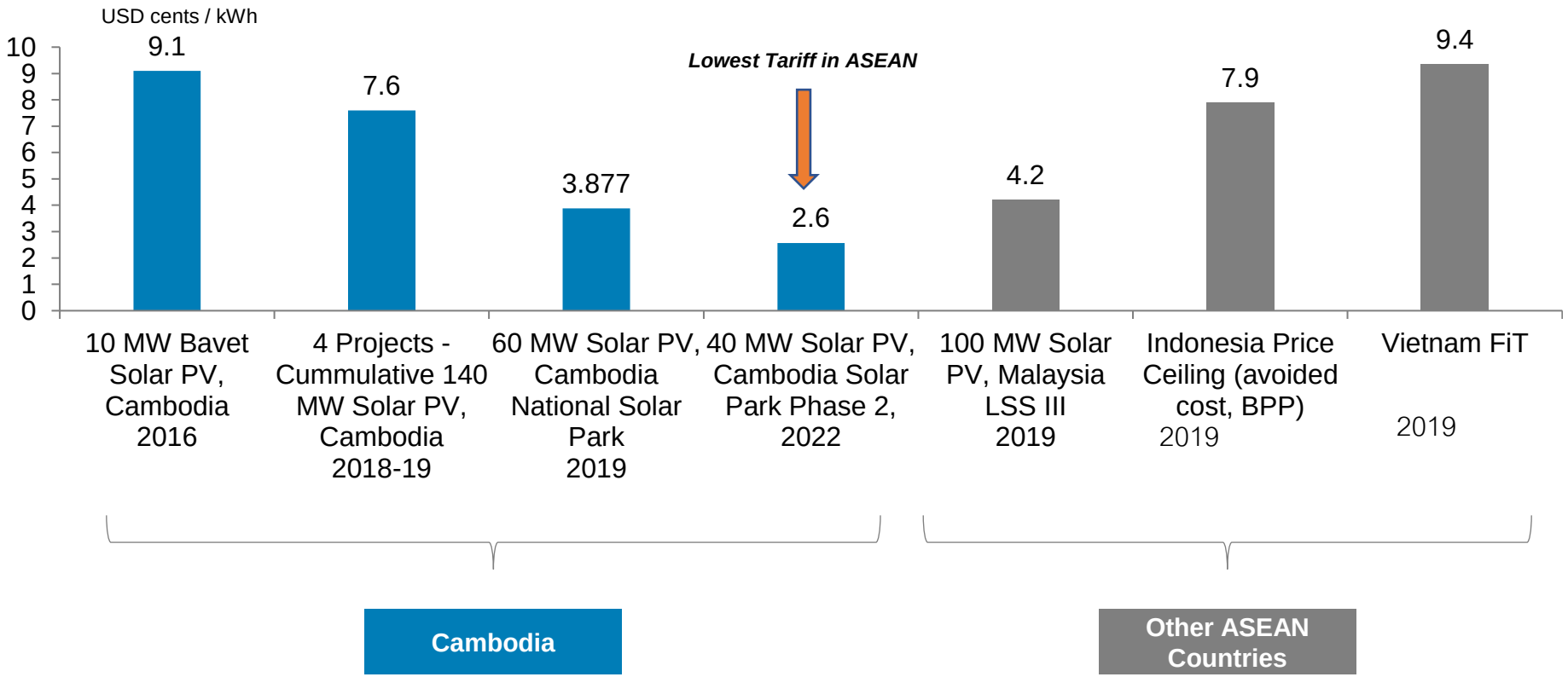
GS – Grid Substation

IPP – Independent Power Producer

SS – Substation

PV – Photovoltaic

Tariff for Cambodia National Solar Park: Lowest in the ASEAN region



Source: Suruhanjaya Tenaga (Malaysia), Press Articles.

Holistic approach on People, Policy, and Power, in Partnership with Stakeholders

People

Supports just transition protecting livelihoods and affordable electricity

- Just transition assessments and technical assistance
- Environmental and social safeguards

Policy

Supports policies and regulations to accelerate energy transition

- Climate change policy program
- Energy sector reform program
- Sector analyses and advisory

Power

Scalable, market-based model for reducing emissions from power plants

- Coal retirement and repurposing
- Clean energy/storage/grid investments

Partnership

Based on solid partnership with national and international stakeholders

- Governments
- IFIs / Global climate finance
- Commercial lenders / Investors
- Private sector
- NGOs/CSOs
- Philanthropies

Thank you!