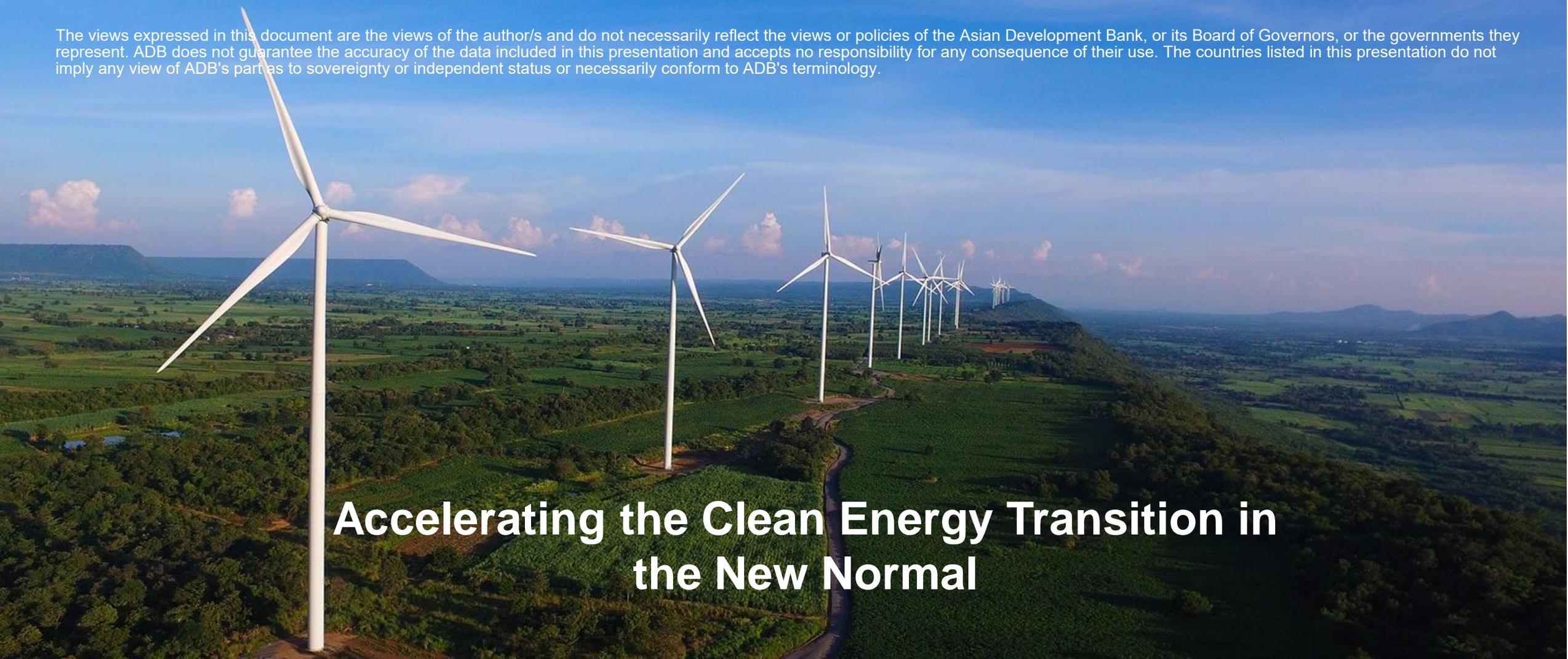


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Accelerating the Clean Energy Transition in the New Normal

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THIS TIME FEELS DIFFERENT

WE'VE SEEN NEGATIVE CRUDE PRICES



THE DEVELOPING WORLD will need a LOT more POWER!

WE NEED A CARBON PRICE \$\$\$

THE MARKET will LEAD the WAY

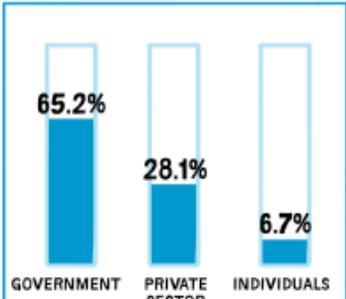
INFRASTRUCTURE FUNDS HAVE AN APPETITE for RENEWABLES

STAKEHOLDERS GOVT

REGULATORS



O&G POWER FINANCIERS



WHO DO YOU THINK HAS PRIMARY RESPONSIBILITY FOR IMPLEMENTING THE ENERGY TRANSITION?

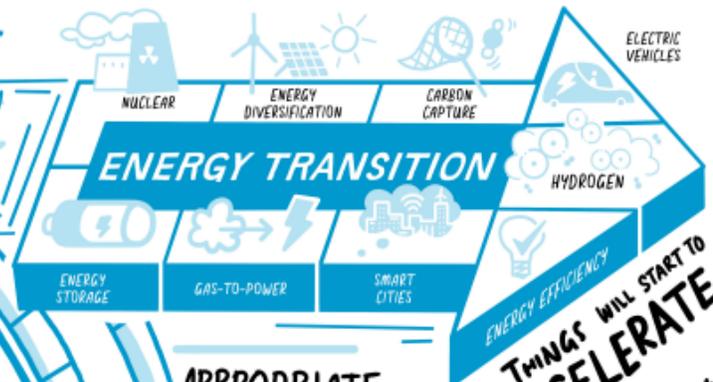
WHITE & CASE

ENERGY TRANSITION: FUNDING NET-ZERO

GAS ENABLES TRANSITION

IT'S GREAT! (IF YOU STAY ON TOP OF THE LEAKS)

AREAS for TRANSITION



APPROPRIATE RISK & REWARD

ALL SOURCES OF FINANCE MUST BE AVAILABLE

£12bn more for the SECTOR

NATIONAL INFRASTRUCTURE BANK

EACH TECHNOLOGY NEEDS A MAP



THERE ARE OTHER TECHNOLOGIES to GET us to NET ZERO

LOOK AT the SPECTRUM of TECHNOLOGY + PARTICIPANTS



WE NEED CONTINUOUS POLITICAL SUPPORT



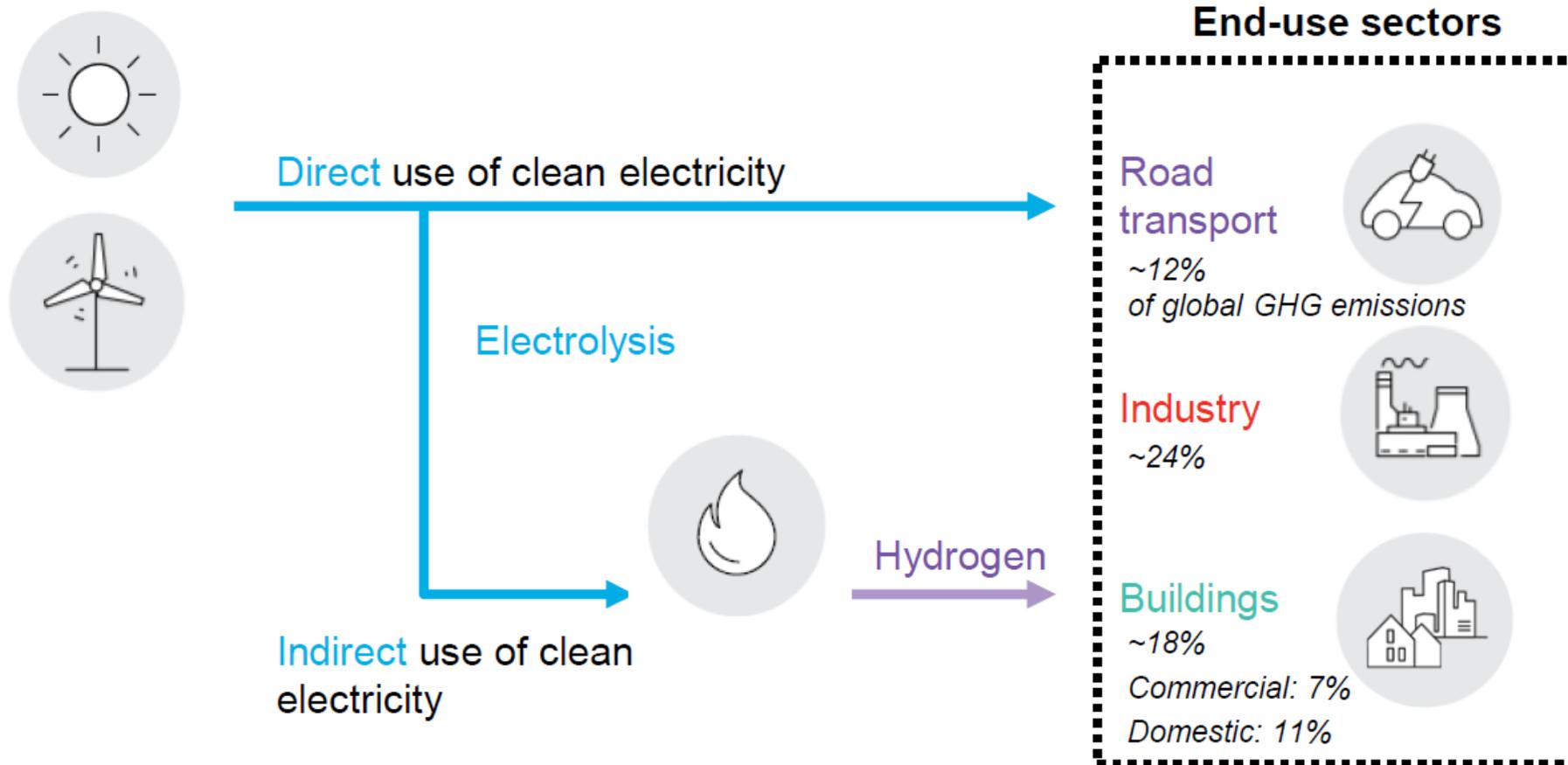
OIL + GAS MAJORS CAN HELP NURTURE NEW TECHNOLOGIES

GOVERNMENT CAN GET BANG FOR BUCK



BY INVESTING IN LESS MATURE INDUSTRIES

The transition needs to start with the power sector...



... which should drive decarbonization of other sectors with the view of achieving net-zero emission by mid-century



Drivers of the Energy Transition

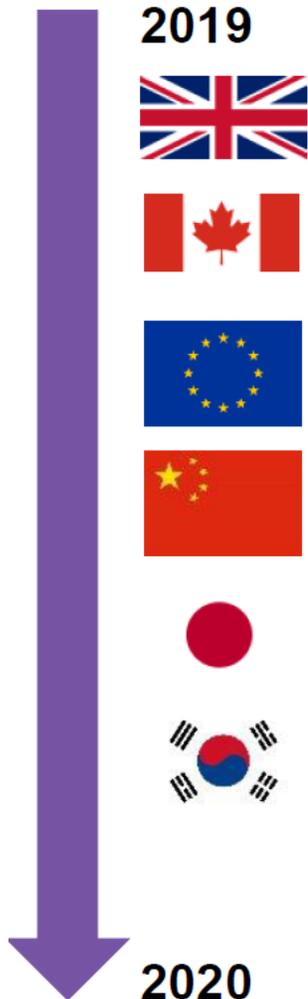
Countries are Committing to Long-term Decarbonization Targets

The Paris Agreement (2015)



- Hold the increase in the global average temperature to well below 2 degree Celsius above pre-industrial levels
- Pursue efforts to limit the temperature increase to 1.5 degree Celsius above pre-industrial levels

Major Economies Adopt Net-Zero Targets (2019-2020)



ASEAN Economies Adopt Net-Zero Targets (2021-2022)



Net-Zero Emissions by 2050

Brunei Darussalam



Net-Zero Emissions by 2050

Malaysia



Net-Zero Emissions by 2050 (LTS)

Cambodia



Net-zero target by or around mid-century

Singapore



Net-Zero Emissions by 2060

Indonesia



Carbon neutrality by 2050 and net zero by or before 2065

Thailand



Net-Zero Emissions by 2050

Lao PDR

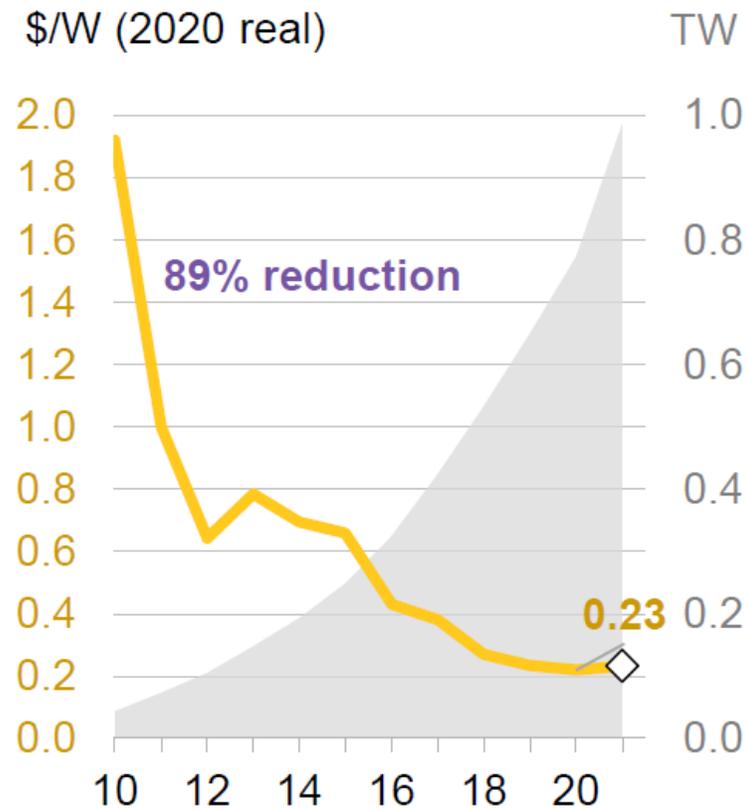


Net-Zero Emissions by 2050 (COP-26)

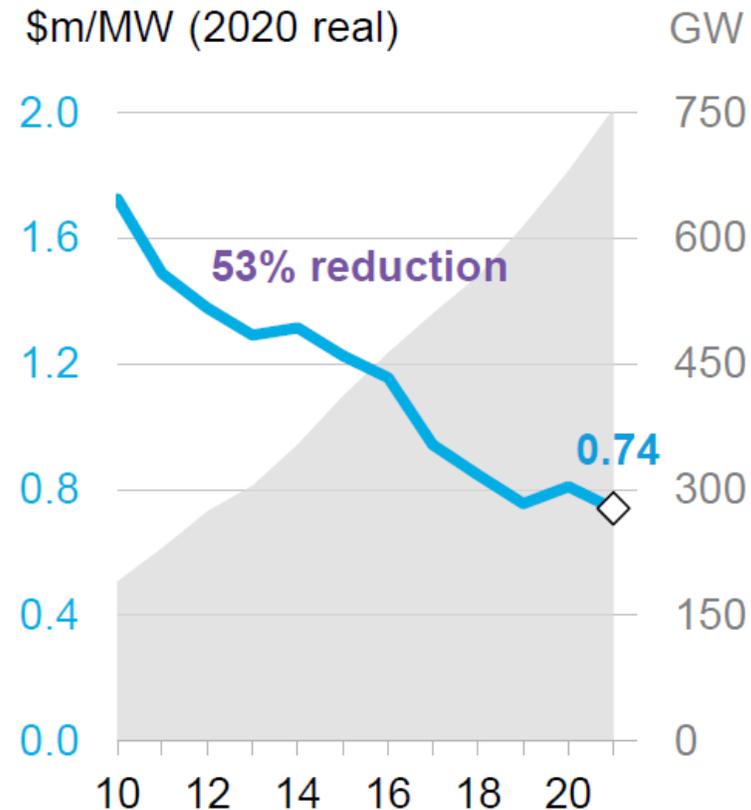
Viet Nam

Declining Costs of Renewable Energy Technology and Storage

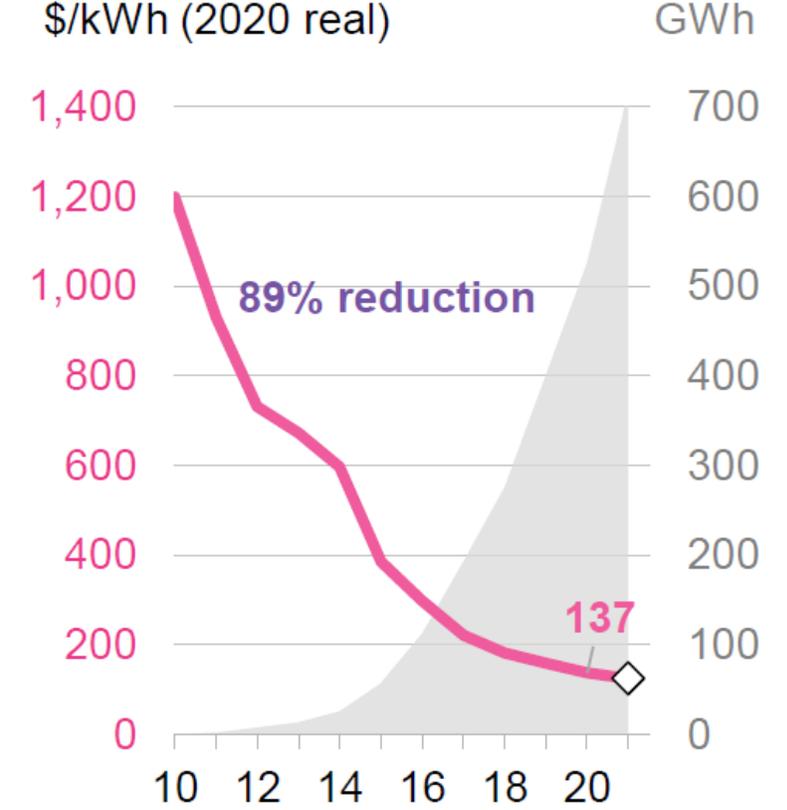
Solar module price and cumulative installed capacity



Onshore wind turbine price and cumulative installed capacity

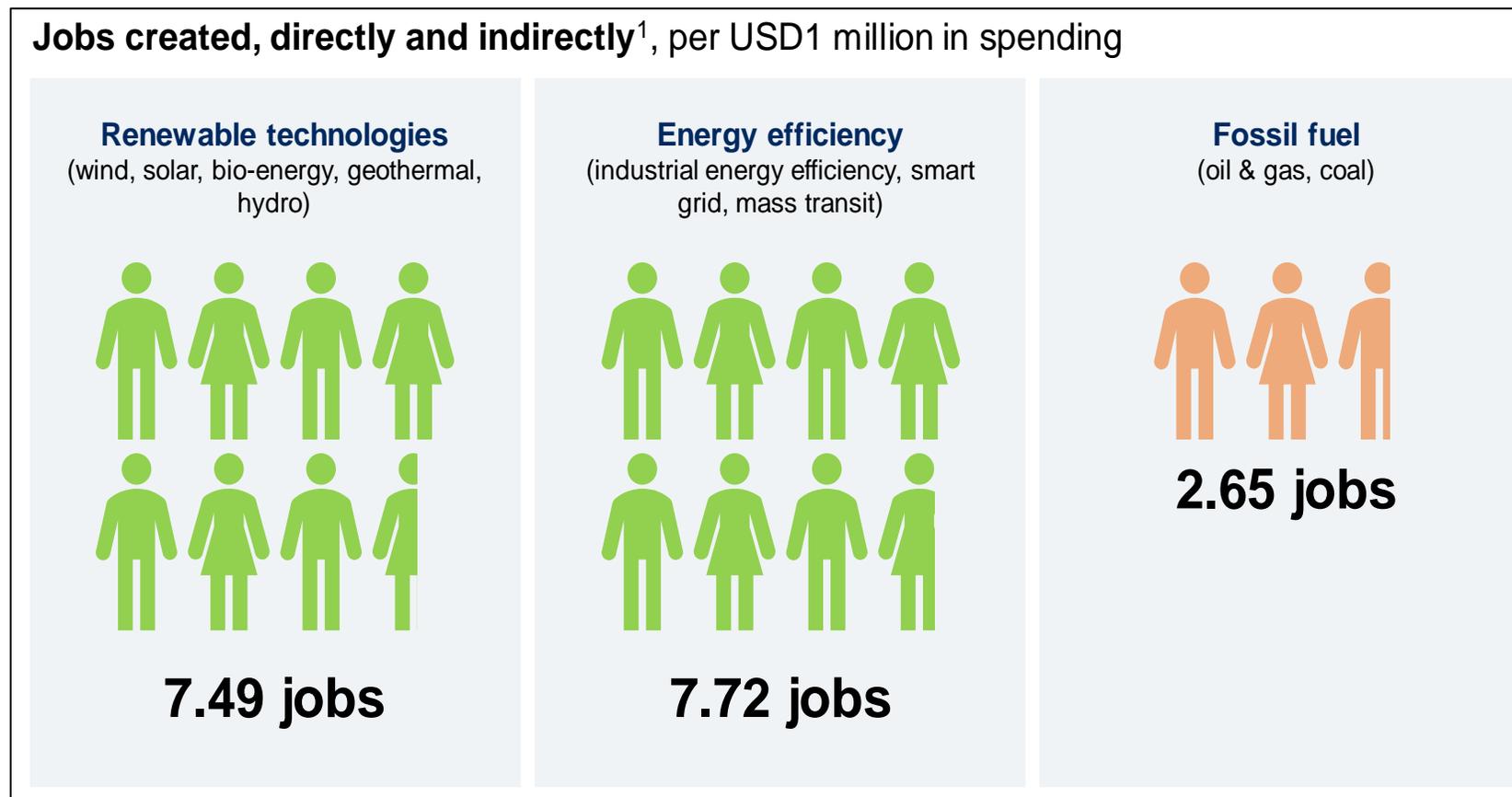


Lithium-ion battery pack price and demand



The Energy Transition Supports Green Recovery Programs

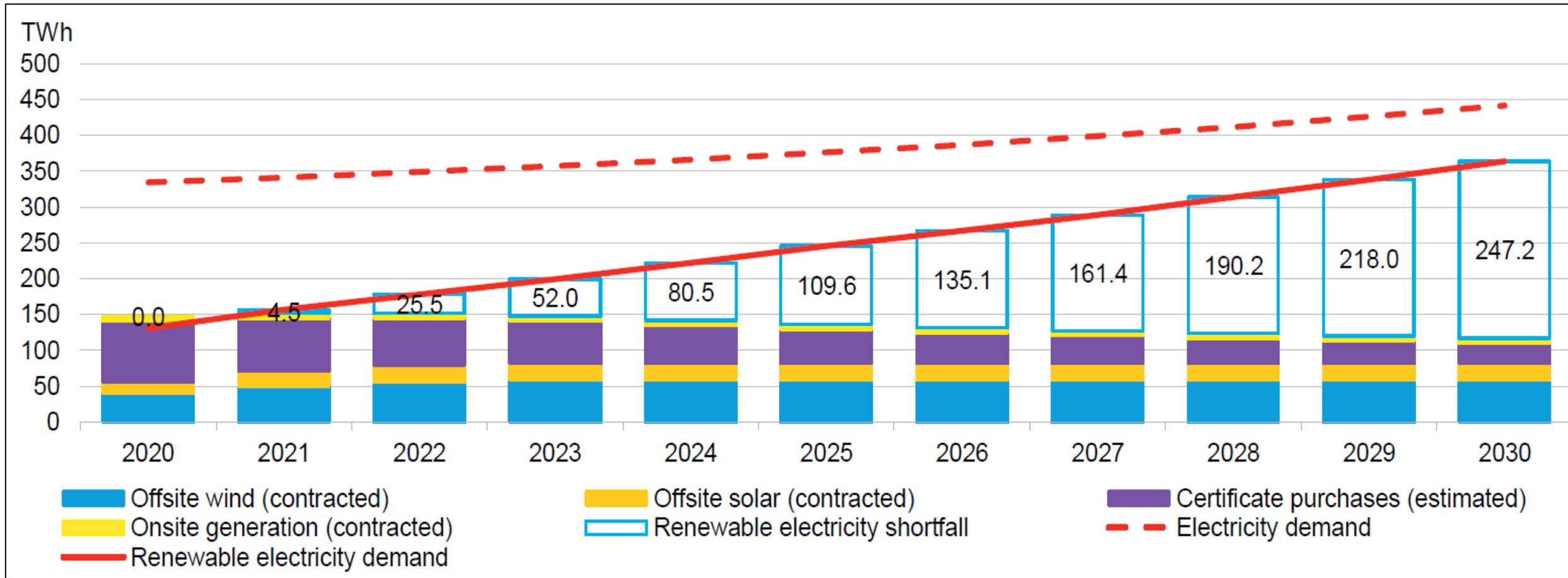
Green recovery programs implemented by governments in response to the COVID-19 crisis could support accelerating the energy transition, leading to the creation of green jobs including for women



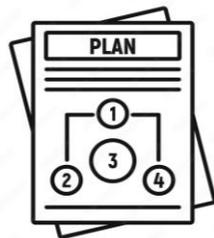
- Government spending on renewable energy and energy efficiency can create more jobs than spending on fossil fuels
- A study found that women represent 32% of the renewable energy workforce, compared with only 22% in the oil and gas industry (IRENA)

The Corporate Sector is Demanding More Renewable Energy

Projected Renewable Energy Shortfall for RE100 Members



How Do We Enable the Energy Transition?



PLANS

Sound power development plans, long-term decarbonization strategies (NDCs and LTS) and resource assessments and road maps for renewable energy development



POLICIES

Market liberalization policies, support for new business models, support competitive procurement, corporate PPAs, openness to easing local content rules, etc.



PROJECTS

Pioneering key-stone projects that set the standards, price benchmarks and create markets. Governments may need to lead the way initially with public funding and well-structured PPPs



PARTNERSHIPS

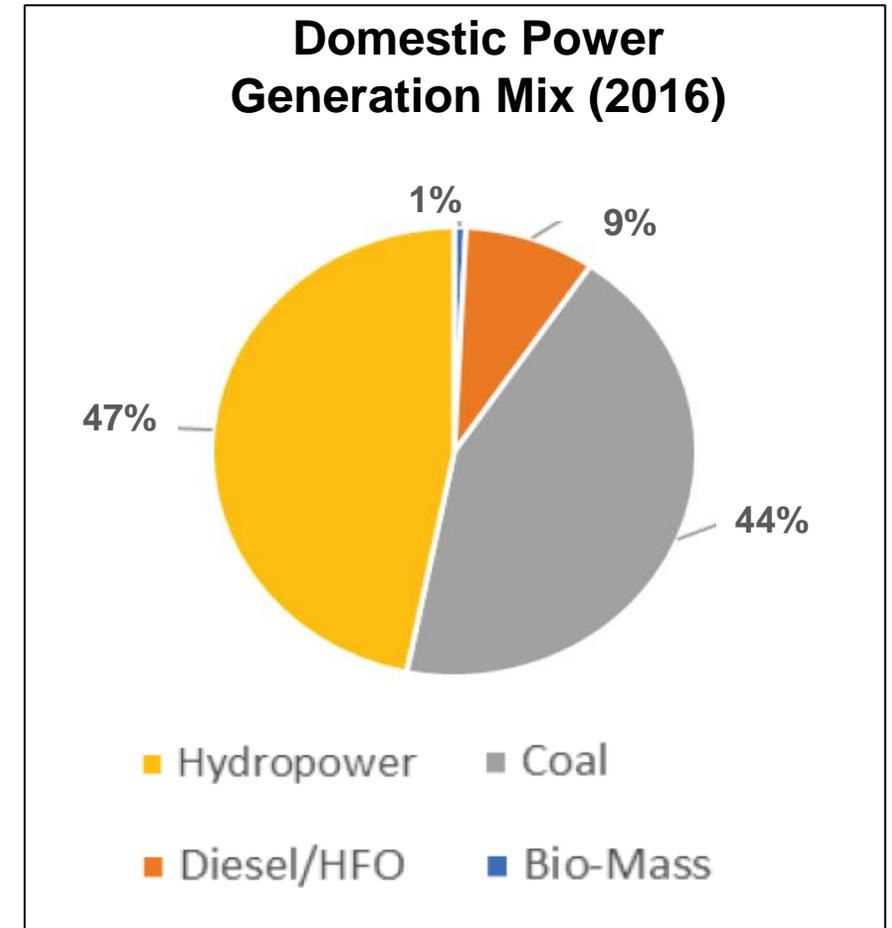
Between ministries, local and central governments to ensure speedy project design and implementation; between governments and global sources of climate finance to access low-cost funding; and between corporations and governments



Cambodia Case-Study

Cambodia – Overview of the Power Sector in 2016

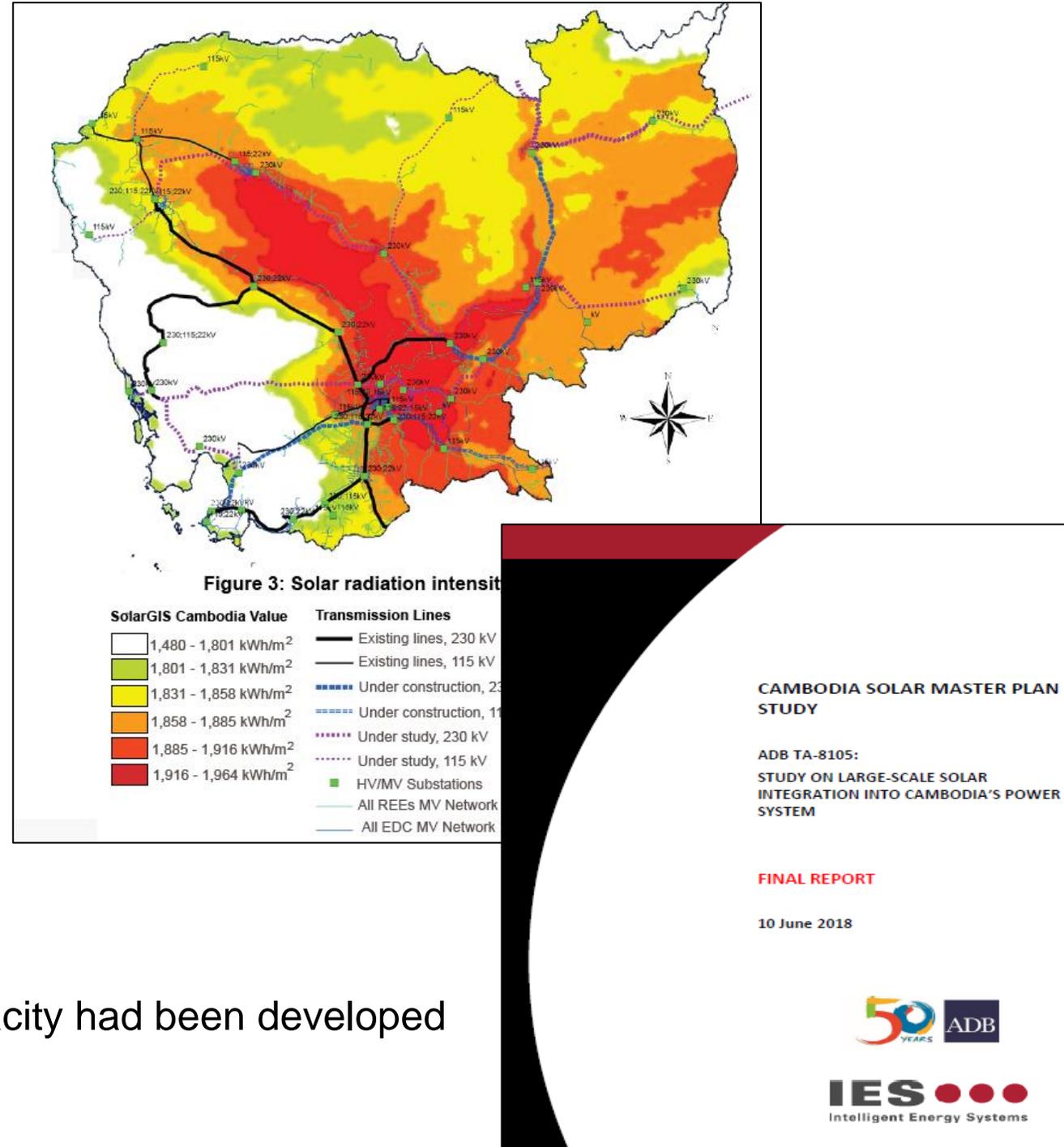
- Electricity demand increasing almost 3-fold over the previous 6 years, from 2,515 GWh in 2010 to 7,175 GWh in 2016
- Major drivers of power demand: economic development, urbanization and the expansion of electrification
- Increasing electrification and quality of service as major priorities of the government: in 2016, only 58% of households were connected to the grid
- Power supply dominated by hydropower, coal and imports. No variable renewable energy sources (e.g. solar) had been deployed
- Electricity prices amongst the highest in the region
- Significant untapped potential for energy efficiency



Source: EAC (2017)

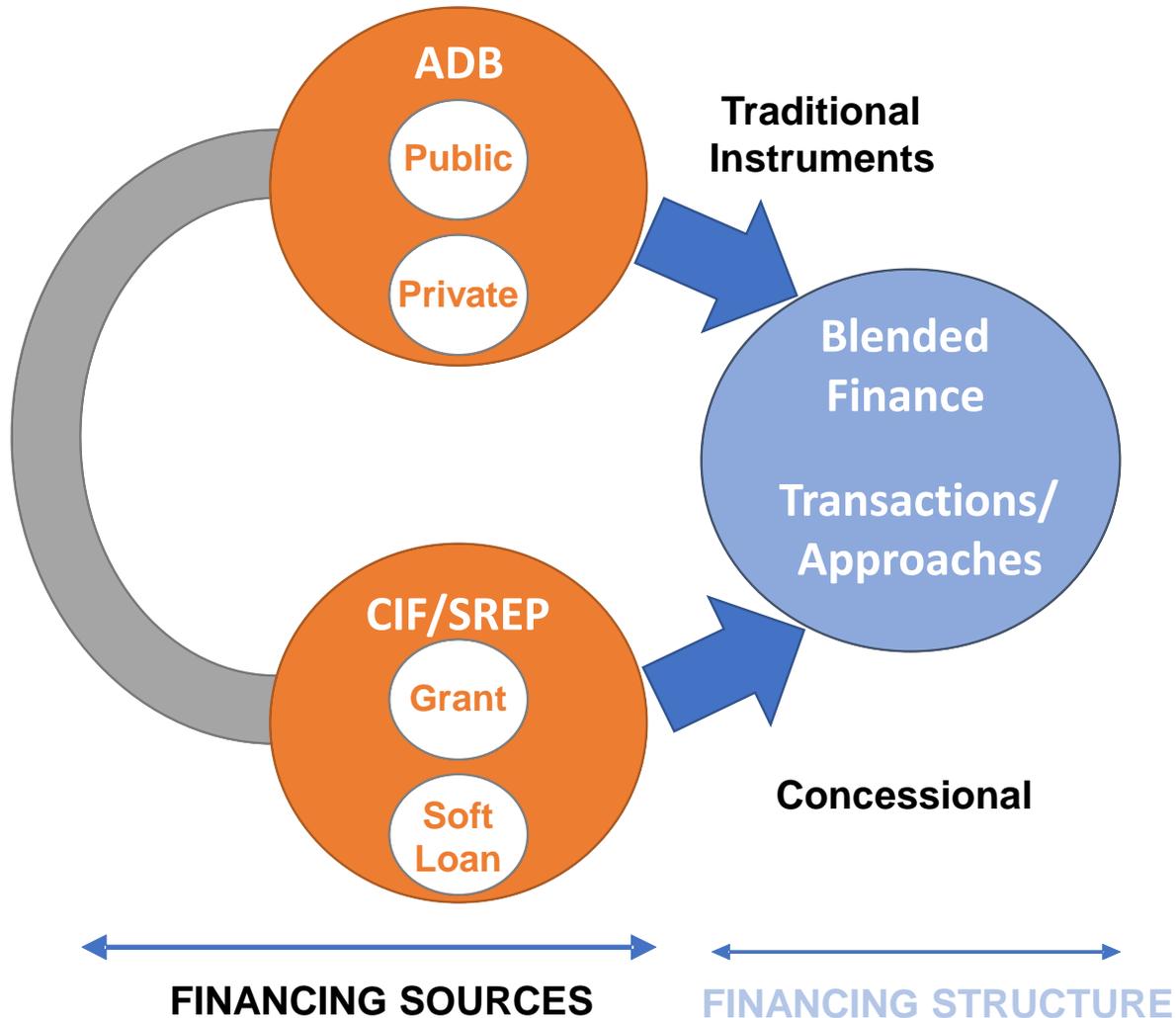
Cambodia's Solar Opportunity

- Solar PV is an important option for power generation in Cambodia:
 - Abundant solar resources well-matched with demand centers
 - Introduces flexibility in the energy mix by reducing dependency on other sources of power such as fossil fuels and it reduces greenhouse gas emissions
 - Helps cover peak demand at day-time as well as hybrid operation with other renewable sources (especially hydro)
 - Fast and modular implementation
- However, as recently as 2016 no solar PV capacity had been developed

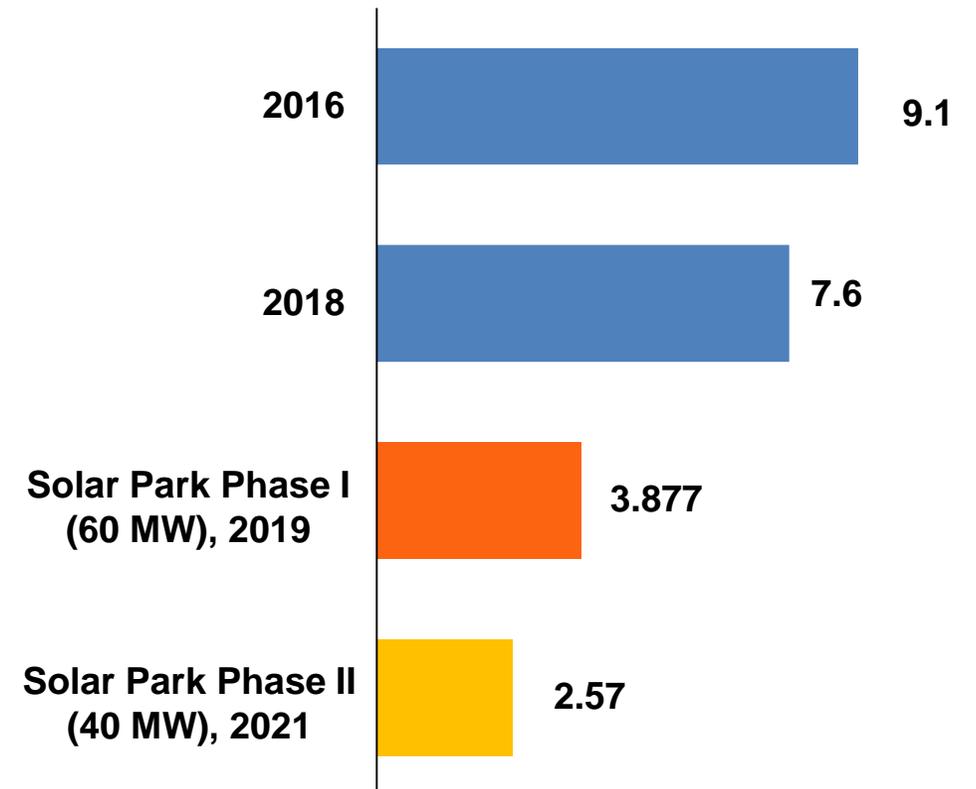


Cambodia's National Solar Park Project

Cambodia's first national solar park was developed with the technical and financial assistance of ADB and has the capacity to accommodate 100 MW of solar PV generation



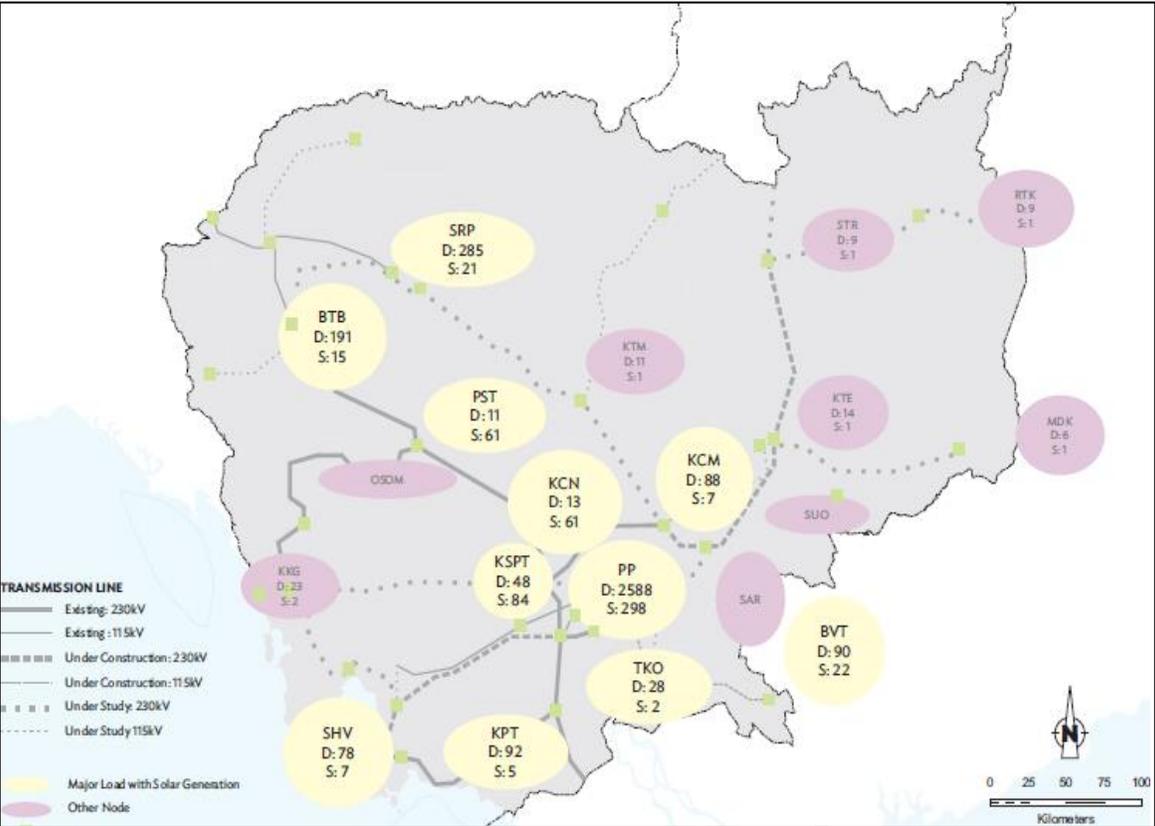
Evolution of Electricity Price for Solar Projects (US cents/kWh)



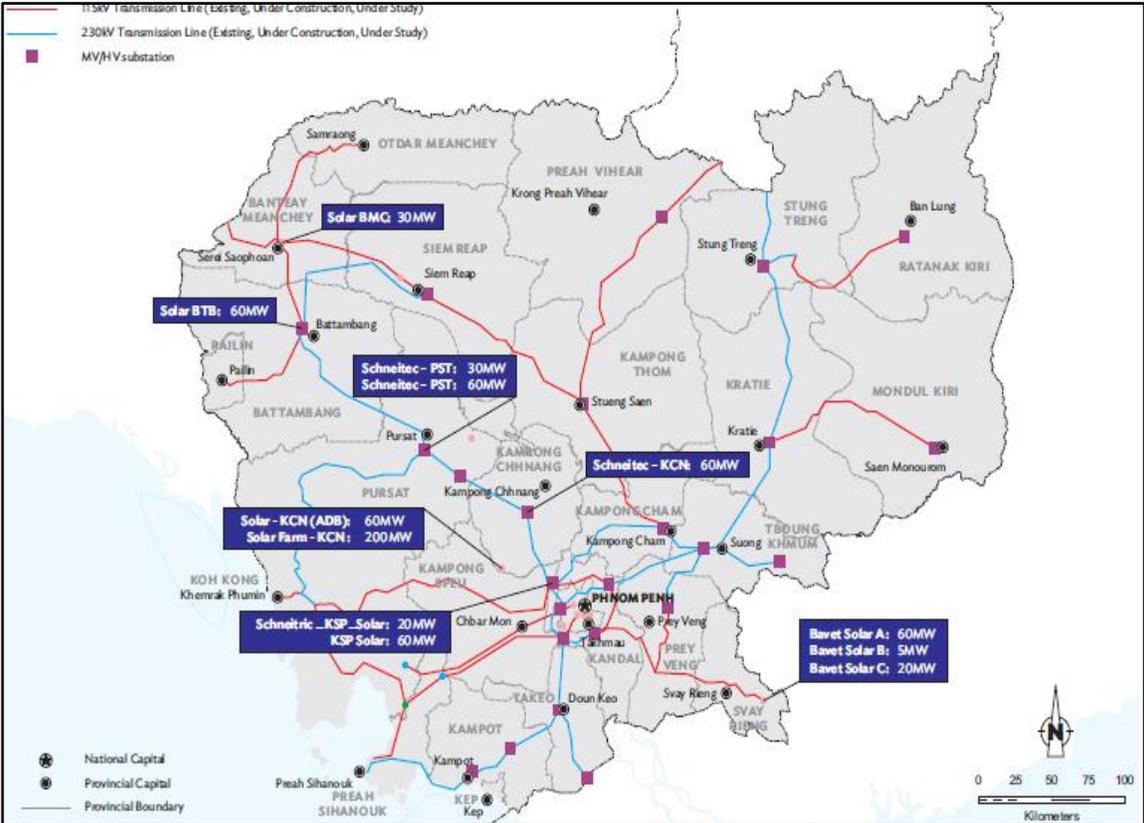
The Catalytic Effect of the National Solar Park Project

The Solar PV Roadmap and the national solar park tender catalyzed the rollout of additional solar PV projects. At the end of 2021, solar PV accounted for 12% of the total capacity installed domestically (377 MW)

Solar PV Roadmap (2018)



Planned and Realized Solar Developments



Realizing the Potential for Energy Efficiency in Cambodia

Summary of Findings from ADB Pre-Feasibility Study (2020-2021)

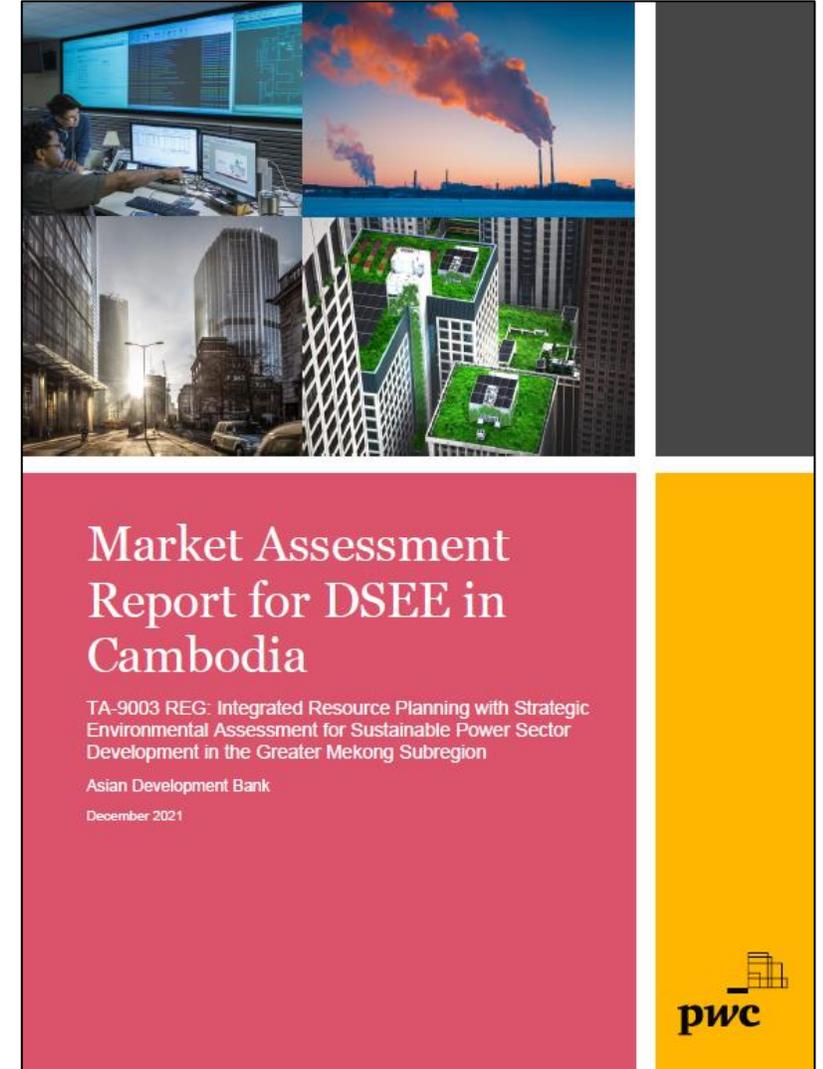


EE Potential (2021-2030)

- ❖ 12.50 TWh (1.07 Mtoe)
- ❖ 3.0 Bn USD of Investments
- ❖ 6.67 MtCO₂ in GHG Emission Reduction

- The study assessed the potential in Cambodia for demand-side energy efficiency
- Assessment based on primary and secondary sources, including data from field surveys
- Industry and building identified as the sectors with the largest potential for investments on energy efficiency

How to realize this energy efficiency potential?

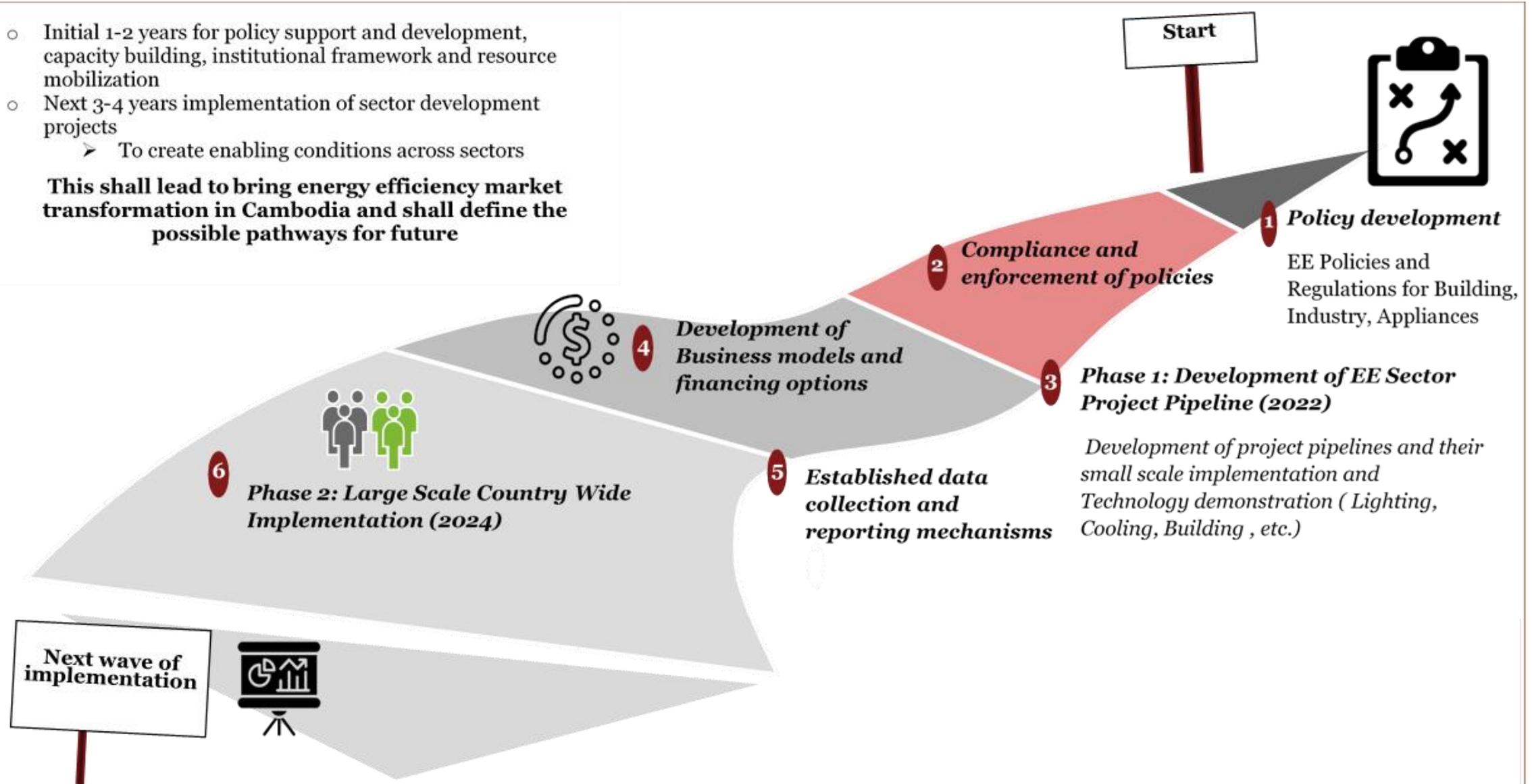


A Programmatic Approach for Energy Efficiency in Cambodia

- Initial 1-2 years for policy support and development, capacity building, institutional framework and resource mobilization
- Next 3-4 years implementation of sector development projects

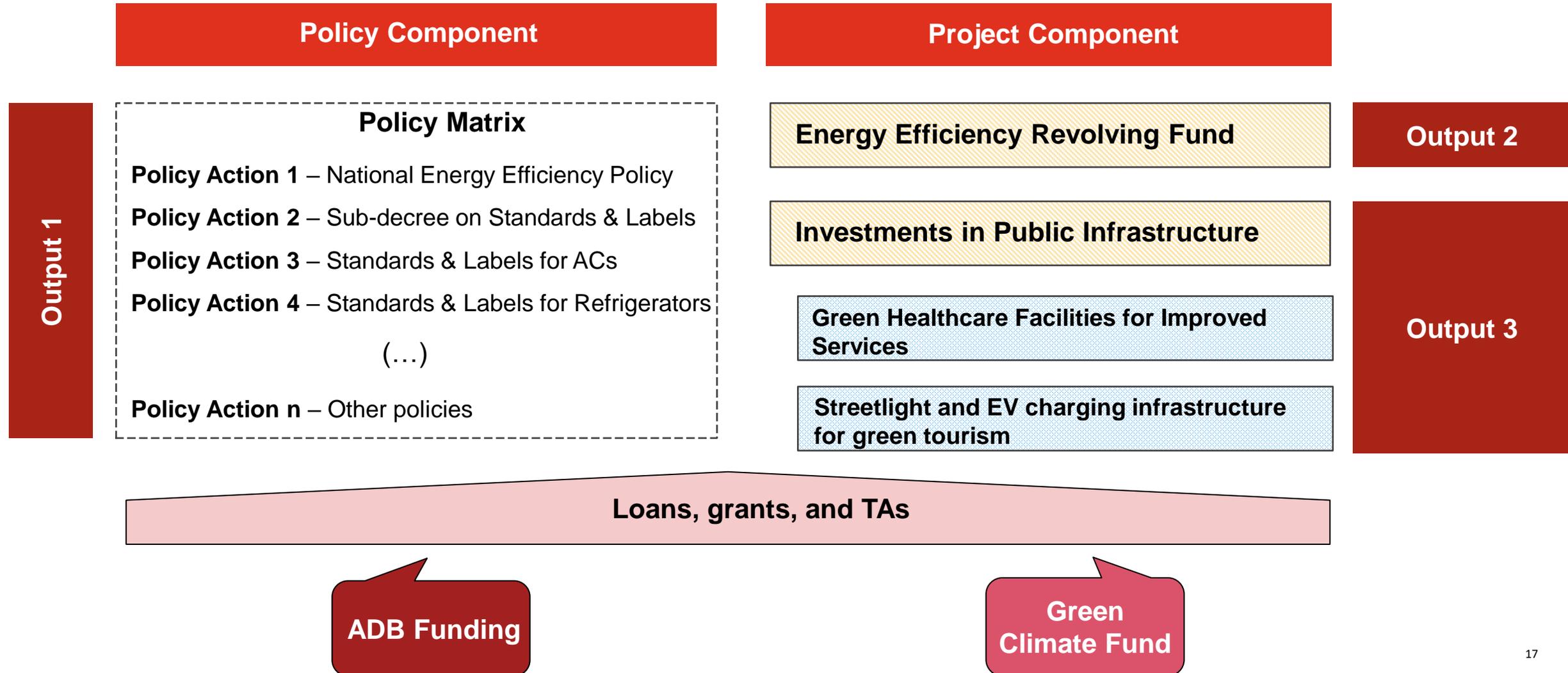
➤ To create enabling conditions across sectors

This shall lead to bring energy efficiency market transformation in Cambodia and shall define the possible pathways for future



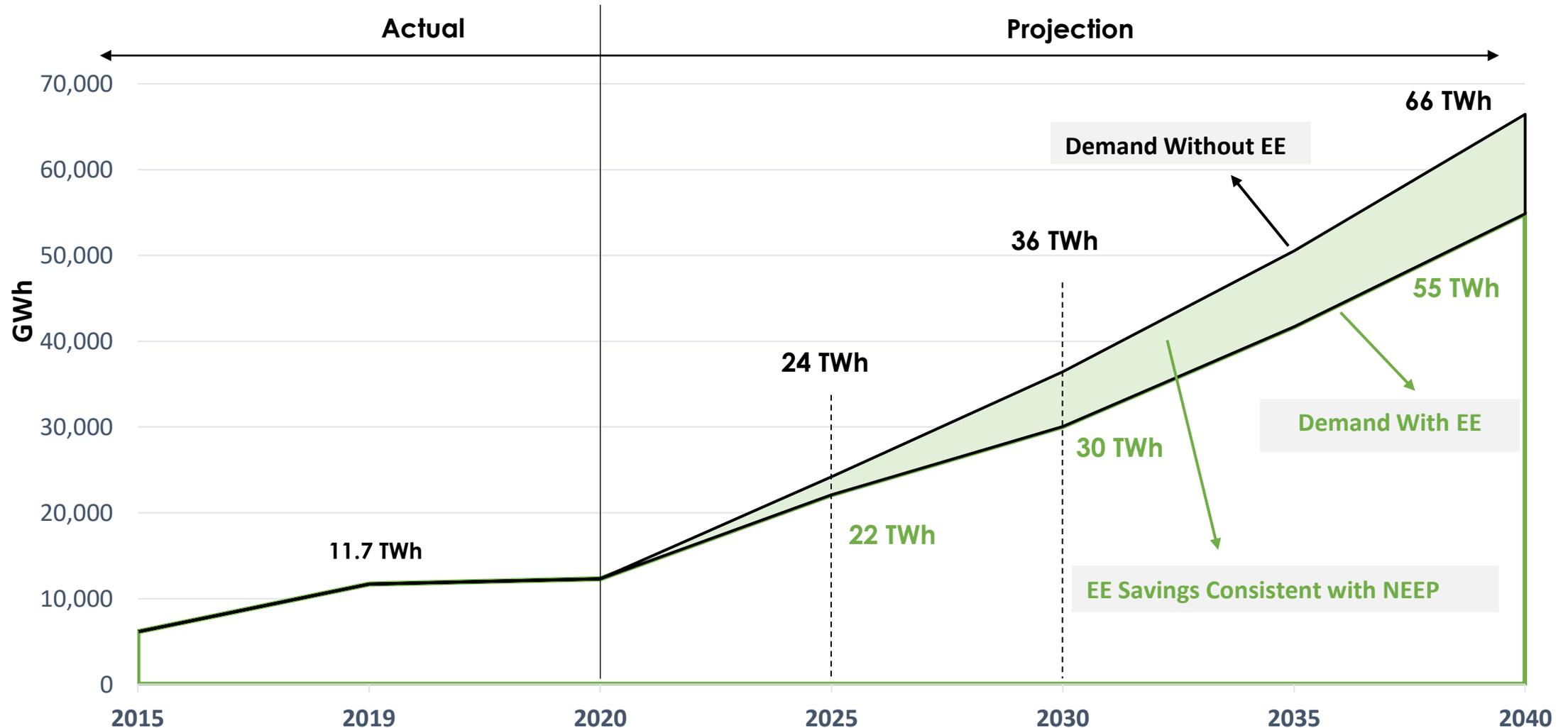
Energy Transition Sector Development Program (SDP)

To support the roll-out of energy efficiency opportunities, ADB and the Ministry of Mines and Energy are currently developing an Energy Transition Sector Development Program for approval in 2022



Effects of Energy Efficiency in the Power Sector

Cambodia is in the final stages of approval of the National Energy Efficiency Policy (NEEP), with the target of reducing energy consumption by 19% through energy efficiency in 2030





Phasing out Coal-fired Power with ADB's Energy Transition Mechanism (ETM)

ETM Southeast Asia Partnership Launch at COP26, Glasgow UK

- Joined by Indonesia and Philippines as key partners to launch the pilot study for ETM.
- \$25 million grant announcement by Japan's Ministry of Finance, the first seed financing for the mechanism.
- The partnership was endorsed by senior cabinet-level officials from Denmark, the United Kingdom, and the United States, as well as leading global financial institutions and philanthropies.
- MOU signed with Rockefeller Foundation, with a % of support towards the ETM



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 3rd Nov, 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



The ETM will explore various funding/transaction models to achieve earlier retirement

01 Acquisition Model (SPV Level)	02 Synthetic Model (SPV Level)	03 Portfolio Model (Corporate Level)
ETM acquires share capital in CFPP	ETM invests senior/junior debt and/or other mezzanine capital to the CFPP	ETM provides funding to the corporate sponsor with CFPPs and greenfield clean energy projects
ETM to take role as owner and operator of the coal plant	Equity ownership and operational responsibility kept with the current asset owner	Sponsor guarantees greenfield clean energy projects will be built and coal plants retired ahead of schedule
ETM agrees an early termination date with the utility and operates the plant until that date and then closes it or repurposes	Investment conditional on early termination being contractually agreed with owner and utility and appropriate security being provided	Incentives (such a penalty interest) can be used to ensure that the transition occurs
Most suitable for IPP plants with international bankable PPA	Most suitable for IPP plants with international bankable PPA	Most suitable for Utilities with a portfolio of plants

While multiple transaction options exist, ETM will seek commitments from current project investors to not develop any new coal and host country commitment to energy transition as a pre-condition for any deal

ETM Partnership: evolving and practical to accelerate coal retirement

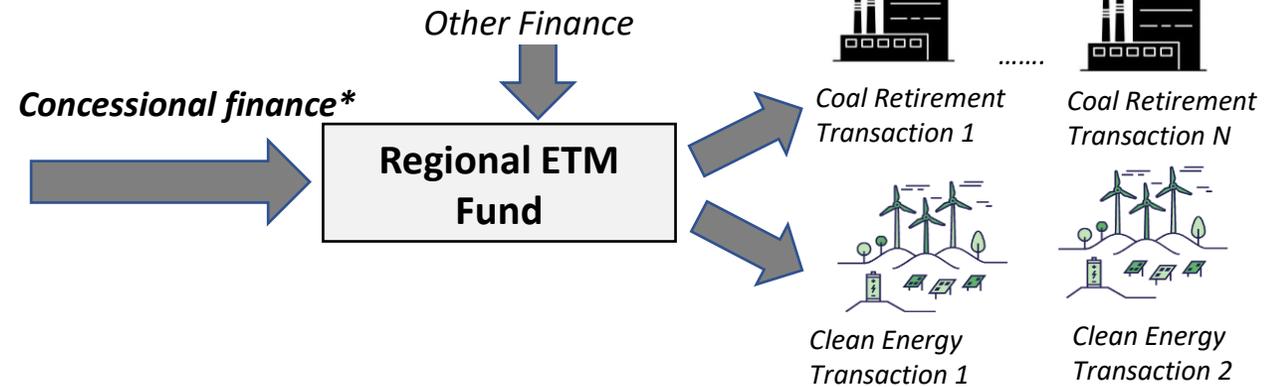
ETM Partnership Trust Fund
(ADB managed)

- *Steering committee with donors and developing countries*
- *Oversight to ensure climate credentials*
- *Just Transition specific activities and coordinated with ADB Just Transition Facility*

↑ **Grants / Highly Concessional Funds**

Governments / Philanthropies

ETM transaction modalities



Concessional Finance*



Technical Assistance (e.g.):

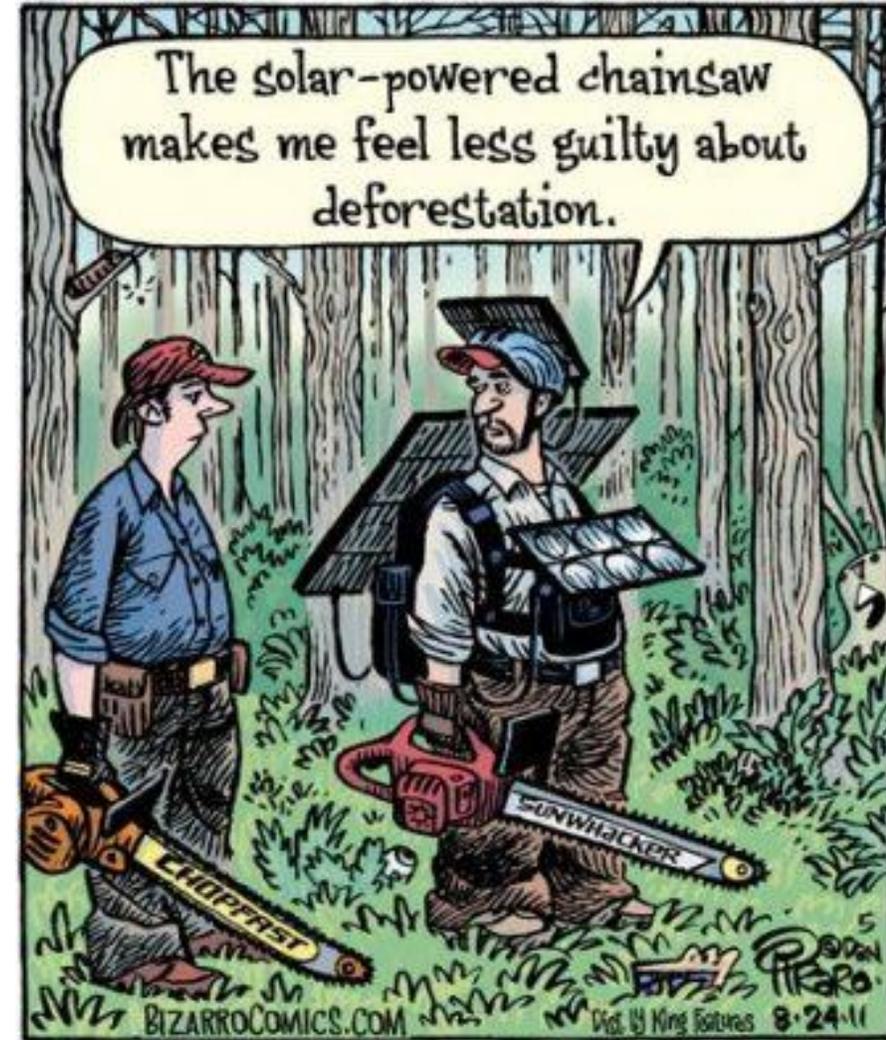


- *Grid analysis/Technical, financial analyses*
- *Skills and livelihood development*
- *Policy and regulatory support*
- *Carbon finance, e.g. carbon credit structuring*
- *Measurement, reporting and verification (MRV)*

* *Concessional products could include evergreen debt, junior equity, and guarantees.*

Concluding Remarks

- The transition towards clean energy is underway in ASEAN, but it needs to be quicker and more ambitious
- The Covid-19 pandemic has caused a momentary slowdown in demand growth, but it is an opportunity for countries of the region to accelerate the energy transition
- Governments play a key role in creating the enabling conditions to support this transition while reducing risks to investors
 - by setting ambitious but realistic targets,
 - through the enactment of supportive policies and regulations
 - Supporting keystone projects and increasing access to financing
- Just transition impacts need to be carefully assessed and managed so as to ensure that the most vulnerable are not left behind





Thank you

Pradeep Tharakan

20 April 2022

