WTO Fossil Fuel Subsidy Reform

Energy Transition Mechanism (ETM)

David Elzinga, Principal Energy Specialist

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Energy Transition Mechanism (ETM)

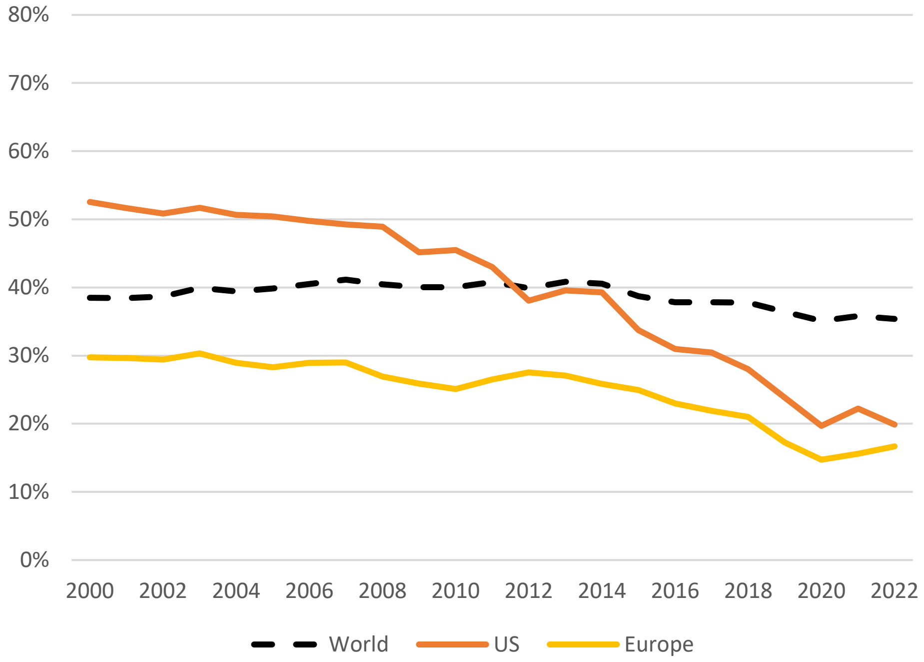
Background

- Legacy coal-fired power plants (CFPPs) constitute one of the **single largest sources of health-harming air pollutants and greenhouse gas (GHG) emissions from human activity**. As large, stationary point sources, they represent a low-hanging fruit in efforts to protect public health and citizens from air pollution.[1]
- Accelerating the retirement of these plants that are dominant in grids in the Asia and Pacific region will not only abate emissions but also unlock significant investments in renewables, storage, hydrogen, electric vehicles, and other clean energy technologies.
- Renewable energy costs are rapidly declining. The cost of operating existing coal plants is expected to be higher than the levelized cost of new renewable energy plants in the next 10–15 years. However, in many developing economies, coal power plants have **secured long-term power offtake agreements**, to **avoid being stranded**. Hence, **an intervention is needed**.
- ADB launched the Energy Transition Mechanism (ETM), based on a concept originally proposed under the World Economic Forum umbrella in 2020[2], as a **replicable and scalable market-based model** to help accelerate the transition from coal and other fossil-based power and heat generation to clean and renewable energy sources.
- ADB's role is to help crowd in **public and private sector partners**, support a **just transition** for affected communities, ensure **credible emission reductions**, and harness **carbon offsets**.

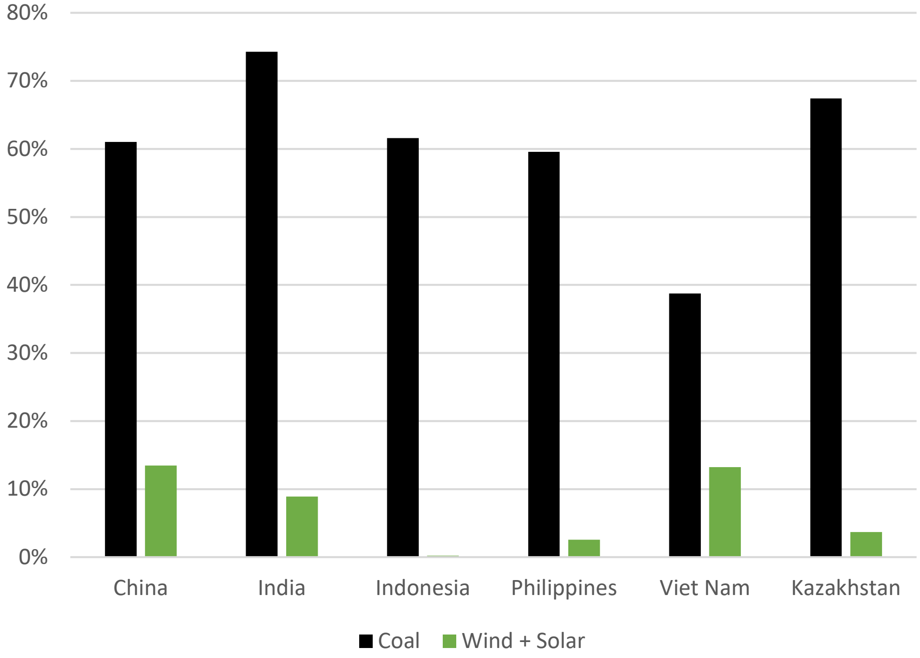
[1] Source: Comparison of coal power plant emissions standards Centre for Research on Energy and Clean Air.
[2] Source: Kanak, Donald Perry (2020). "How to replace coal power with renewables in developing countries". World Economic Forum blog.

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 (2022)

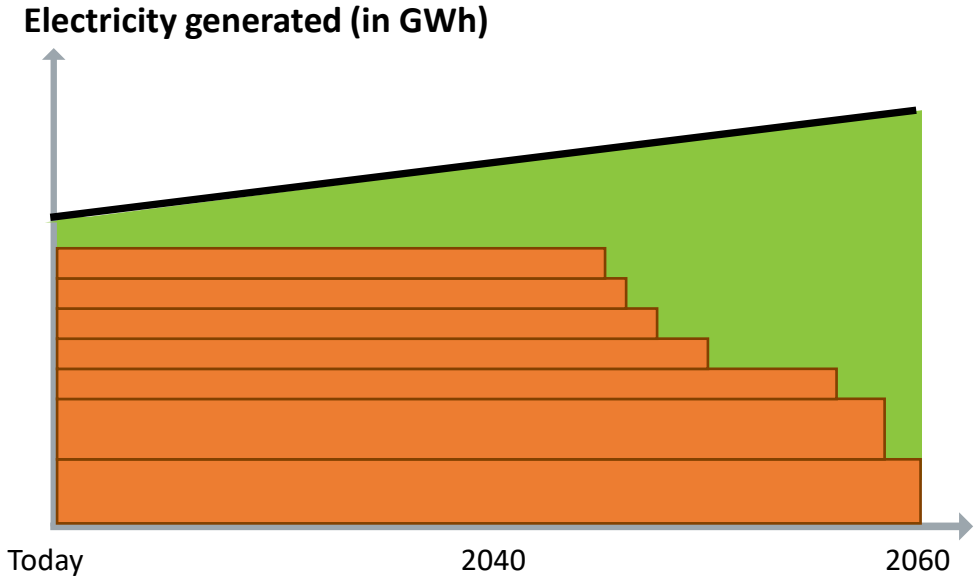


Large-scale solution needed to simultaneously and rapidly decarbonize and build up clean energy in Asian developing countries.

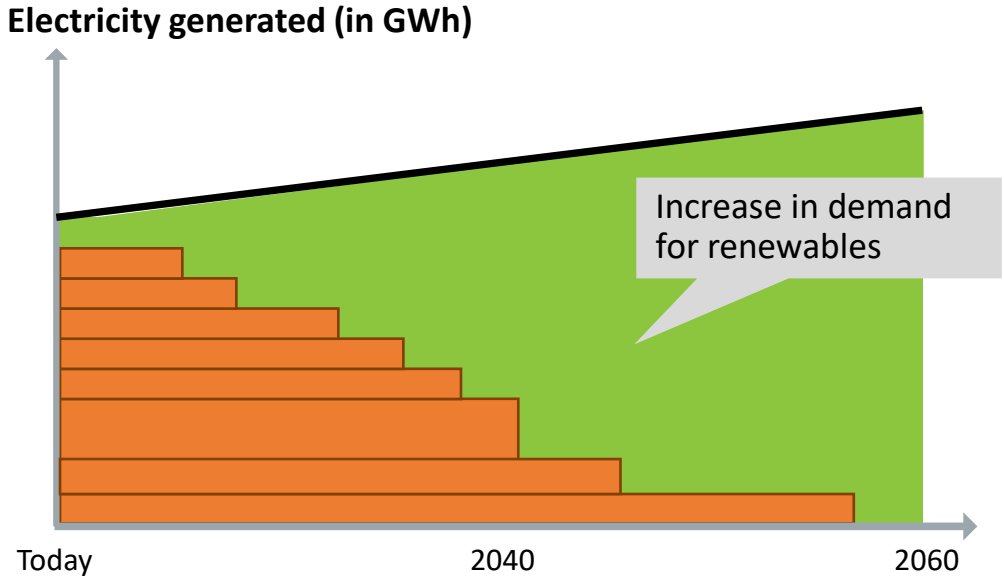
Sources: Calculations based on Energy Institute Statistical Review of World Energy (2023); Department of Energy 2022 Power Statistics (2023).

Why speed up the retirement of coal-fired power plants?

Business-as-Usual



With Energy Transition Mechanism



Total energy demand | Coal-fired generation | Renewable energy generation

Early retirement of existing coal-fired power plants can

- reduce emissions and improve population health,
- create additional demand for clean energy investments, and
- lower overall generation costs in the long-run.

Source: Kanak, Donald (2021). "How to accelerate the energy transition in developing economies", World Economic Forum blog.

The ETM Program Overview

- **Accelerate the retirement or repurposing** of coal-fired power plants using public and private finance through refinancing, acquisition, or sustainability-linked corporate loans
- **Scale up investment** in clean energy and energy storage
- Aim to achieve **just and affordable transition,** addressing impacts of coal retirement on people and communities

Governments and Philanthropies

Grants and highly concessional funding

ETM Partnership Trust Fund (ETMPTF)[1] + Other ADB-administered Concessional Funds (e.g., CIF, GEAPP)

Grant and Concessional finance

IFIs and global climate finance[2]

International and local investors and lenders

Grant, debt, equity, or guarantee

ETM Funding Vehicle (FV)[2]

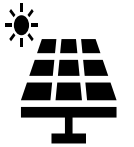
- **Carbon Reduction Facility (CRF)**
- **Clean Energy Facility (CEF)**

Direct ADB Transactions (Sovereign or nonsovereign)

Technical Assistance (through grant):

- Grid, technical, and financial analyses
- Just transition, social and environmental safeguards
- Policy and regulatory support
- Carbon finance (e.g., carbon credit structuring)
- Measurement, reporting, and verification

Coal retirement transactions (asset level)



Clean energy transactions (asset level)

Corporate transactions (portfolio level)

❖ Just transition activities to be supported in line with agreed just transition plan.

[1] ETMPTF has received contributions totaling $81.5 M from the Governments of Japan, Germany, and New Zealand.

[2] Commitments from the Monetary Authority of Singapore and GEAPP under the Transition Finance Platform will form part of the ETM FV.

ADB = Asian Development Bank, CIF = Climate Investment Funds, GEAPP = Global Energy Alliance for People and Planet, ETM = Energy Transition Mechanism, IFI = International Financial Institution.

Transaction models to accelerate retirement/repurposing of coal-fired power plants (CFPPs)

01 Acquisition Model[1] (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 as 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 not to develop any new coal; and**
- **host country commitment to energy transition as a pre-condition for any deal.**

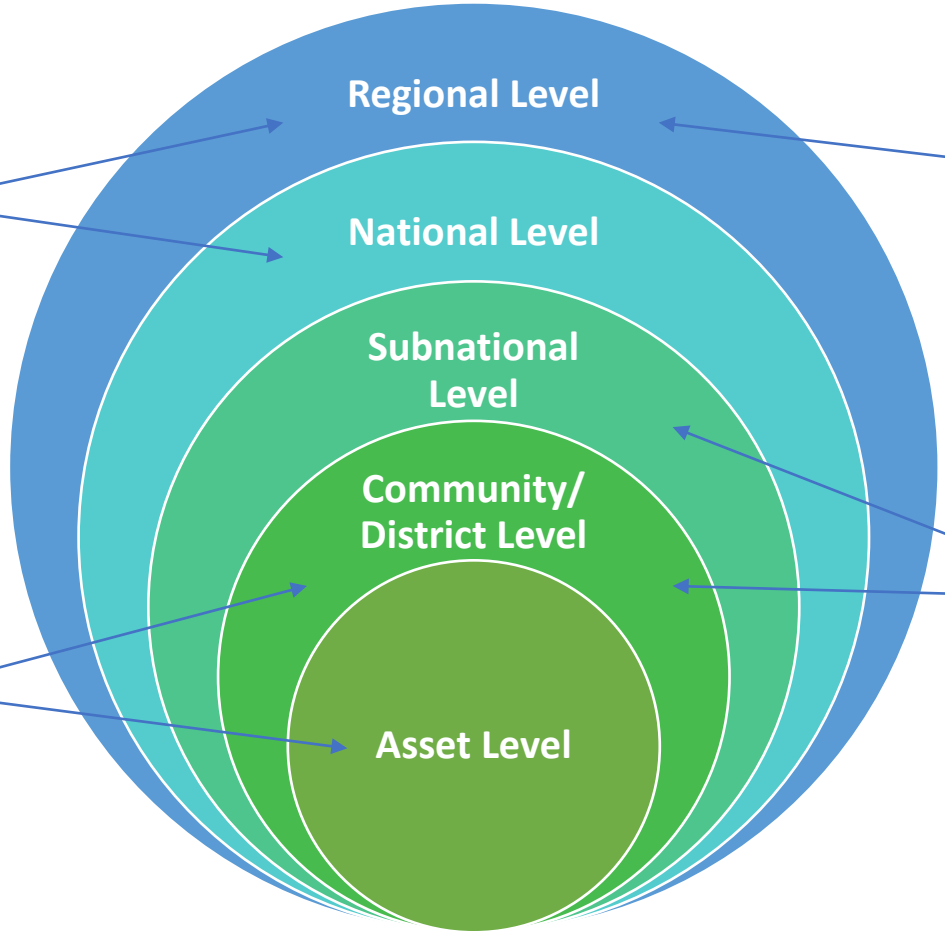
[1] *Acquisition Model to be utilized only in exceptional scenarios.*

Comprehensive Approach to Just Transition under the ETM

Just Transition (JT) activities extend beyond the scope and implementation timeframe of ETM.

JT considers the geopolitical context and enabling environment, including policy frameworks, education systems, and economic structure.

ETM considers the direct, indirect, and induced impacts along the coal value chain and national system-level effects.



JT entails coordination with other development partners, stakeholders, and national or regional platforms, including the JETP.

JT considers the availability of alternative employment, potential for economic diversification, and impacts on local and subnational budget.

It mobilizes investments in social sector projects to strengthen the enabling environment.

JT activities include asset-level impact assessments, social dialogue, and development of JT plans, considering direct and indirect workers, employers, labor unions, and environmental remediation issues as well as communities in general.

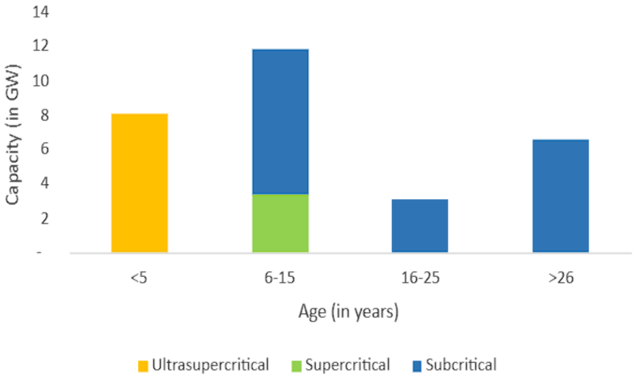
Together with ADB's social and environmental safeguards, Just Transition provides support for workers, communities, and regions impacted by the intervention of the ETM and associated projects, while preserving the environment.

ETM in Indonesia

Background: Market Summary

- Single buyer market under PLN with a mix of utility owned plants and IPPs with CFPP capacity accounting for ~ 50% of total installed capacity
- Archipelagic nation but 87% of CFPP capacity in Java-Bali and Sumatra (largest grids)
- IPPs are contracted under PPA (usually build-own-transfer (BOT) or build-own-operate-transfer (BOOT) scheme) with guaranteed capacity payments
- Java-Bali expected to have a continued oversupply for the coming years
- Engagement with PLN and Indonesia government for ETM concept

CFPP: Installed Capacity by Age



Govt/SOE vs IPP

Source: PT Perusahaan Listrik Negara (PLN). 2021. *Rencana Usaha Penyediaan Tenaga Listrik (RUPTL) 2021–2030*.

Accomplishments:

- Technical support for the **establishment of the Indonesia ETM Country Platform (ETMCP)** as a framework to mobilize financial resources and support from domestic and international partners. MOF Regulation for ETMCP has been approved and MEMR decree for early retirement roadmap being finalized.
- **MOUs and Framework Agreement signed for first ETM transaction** to support early retirement of the first coal power plant (Cirebon 1, 660MW).
- Obtained final approval of **$500 million in concessional funding** from the Climate Investment Funds Accelerating Coal Transition (CIF ACT) program in June 2023.

Next steps:

- Actively support organization of inter-government consultations and facilitate donor coordination
- Ongoing activities in Cirebon 1 ETM Pilot, including environmental and social due diligence, stakeholder consultation, and working group support to GOI.
- Support ETMCP and GOI to identify other candidates for early retirement
- Implementation of CIF ACT Investment Plan activities

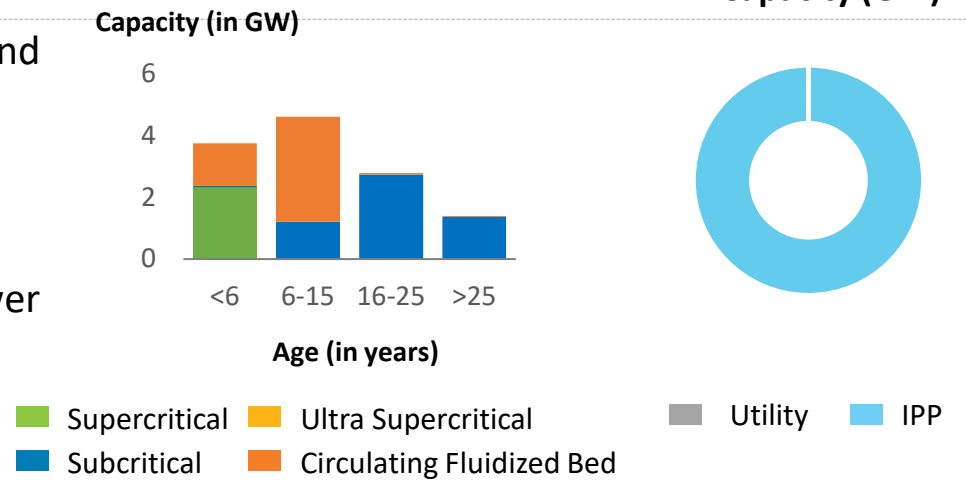
CFPP = coal-fired power plant, CIF-ACT = Climate Investment Funds Accelerating Coal Transition, ETM = Energy Transition Mechanism, GW = gigawatt, IPP = independent power producer

ETM in the Philippines

Background: Market Summary

- More liberalized market with three main power grids: Luzon, Visayas, and Mindanao
- CFPP capacity accounts for about 44% of total installed capacity
- Most CFPPs are concentrated in Luzon and owned by a few conglomerates
- CFPPs can operate under merchant conditions, but many have bilateral power purchase agreements with distribution utilities

CFPP: Installed Capacity by Age



Govt/SOE vs IPP Capacity (GW)

Accomplishments:

- Pre-feasibility study completed in 2021
- Obtained approval for a $500 million Investment Plan under the CIF-ACT program supported by ADB, IFC, and WB
- ETM concept used by one private sector entity to announce accelerated CFPP retirement

Next steps:

- Full feasibility study to be finalized
- Submission of revised CIF-ACT Investment Plan, together with World Bank Group
- Continue discussions with private sector independent power producers on transaction structuring models and financial analysis

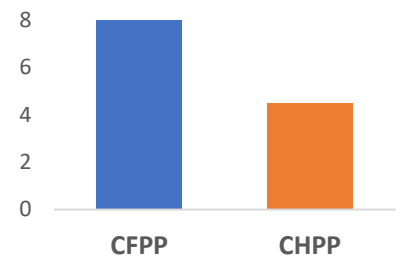
CIF-ACT = Climate Investment Funds Accelerating Coal Transition, CFPP = coal-fired power plant, ETM = Energy Transition Mechanism, GW = gigawatt, IPP = independent power producer, MDB = multilateral development bank.

ETM in Kazakhstan

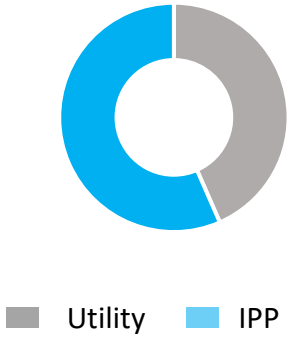
Background: Market Summary

- Coal provides 66.7% of electricity generation, with CFPPs accounting for most of the total coal installed capacity followed by Combined Heat and Power Plants (CHPPs).
- Current coal fleet is old and ageing with highly depreciated assets and infrastructure. 73% of CFPPs/ CHPPs are over 50 years old.
- All electricity is purchased and traded and settled on a centralized electronic platform, entities under MoE of GoK, which intends to address emerging electricity and capacity shortages in the country.
- KAZ adopted the strategy on achieving carbon neutrality by 2060 in 2023, adding to its long-term 2050 development strategy to achieve 50% of alternative energy in power generation mix by 2050.

Installed capacity by plant type (GW), 2022



Utility vs IPP Capacity (GW)



Accomplishments:

- Pre-feasibility study completed in 2023.
- There is broad support from the Government of Kazakhstan (GOK) and plant owners to adopt an ETM approach, including selecting a pilot CFPP/CHPP.
- MOU with GOK to proceed with ETM Feasibility Study

Next steps:

- Engagement ongoing with key stakeholders and ministries on feasibility study in 2025
- Develop pilot ETM Transactions

Sources: KAZENERGY (2021) | KAZENERGY (2023) | Concept for transition of the Republic of Kazakhstan to Green Economy (2013) | IEA (2022) | KEGOC (2023) | EBRD (2019)

Macro, Local and Sector Benefits of ETM

Macro

Advance sustainable infrastructure

- Countries participating in ETM can drive sustainable economic development through infrastructure that supports energy reliability and emissions reduction

Reduce energy costs

- Speeding up the retirement of fossil-based energy will increase the demand for clean energy, lowering overall energy costs in the long run

Reduce dependency on imported energy

- ETM will partner with countries to determine fit-for-purpose clean energy solutions utilizing domestic energy resources to decrease energy imports

Demonstrate phase-out models that work

- ETM has the potential to demonstrate how coal and other fossil plants can be retired early in Asia and the Pacific, and around the world

Local

Improve public health

- Early retirement of fossil-based heat and power plants will help to reduce harmful emissions and pollutants, improving air and water quality, and public health for local communities

Create new jobs and livelihoods

- ETM engages with workers, communities, and businesses who depend on fossil fuel industries to help address their employment, skills, and livelihood needs during the transition process

Energy Industry

Modernize the energy sector

- ETM will utilize advanced digital technologies and improve capacity to optimize energy generation and transmission

Drive investment

- ETM will help to “crowd in” investment in cost-effective clean energy and support technologies like smart grids, hydrogen, ammonia, and electric vehicles

What have we learned through the ETM journey

- **Coal plants rarely retire naturally** – they are operated until there is a clear driving force to shut them down and replace them – this is not DMC or Asia specific – this is demonstrated globally.
- **Genuine engagement** is highly valued by DMCs – “telling them what to do” is not acceptable.
- **Countries do want to transition away from coal** for a range of reasons – but need demonstrable national benefits and support with tools and finance to do so.
- **Energy security and affordability are paramount** for all countries… climate change mitigation is important, but action must be cost-effective and viable.
- **Politics and policy can often change rapidly** - navigating these requires ongoing senior level and staff level engagement to various degrees at different times.
- **Requires complex financial engineering and contractual structures** that not everyone can fully understand, which poses challenges in obtaining support from host country governments and even from private sector owners of CFPPs.

Thank you!

For more information, visit:

https://www.adb.org/what-we-do/energy-transition-mechanism-etm

Appendix

Operationalizing ETM

Updates on thematic workstreams

ETM Funding Vehicle

- MAS and ADB signed an MOU to establish a transition finance platform targeting $2 billion
- Development of Business Plan for the establishment of ETM FV; market engagement for potential Asset Manager

ETM Partnership Trust Fund

- $81.5 million funding from Japan, Germany, and New Zealand; continuous fundraising

Carbon finance and taxonomy

- Draft concept for carbon methodology for submission under Article 6.4; Collaboration with methodology developers for Article 6.2 and voluntary market
- Participation in TRACTION, supporting the development of 2 pilots on carbon crediting for CFPP retirement and the development of carbon market policy/framework in the PHI
- Support to the ASEAN taxonomy revision

Technical feasibility

- Technical, financial and commercial feasibility studies
- Grid impact and captive power analyses conducted in INO
- Ongoing conceptualization for repurposing study scope

Just Transition

- Ongoing JT national framework development—INO and PHI
- Pilot preliminary JT assessment and plan for Cirebon 1 published
- Upstream analytics for JT at Mindanao CFPP initiated
- Ongoing development of the ADB JT ETM framework

Safeguards and stakeholder engagement

- Regional SESA scoping report published; INO SESA wrapping up; Ongoing PHI SESA scoping
- Disclosed draft Cirebon 1 E&S compliance audit report with E&S action plan to communities and on the ADB website
- Development of ETM stakeholder engagement plan and ongoing engagement at national- and asset-levels

Partnerships

- Support for INO JETP Secretariat; Early inputs to VIE JETP
- Support to INO and PHI to access CIF ACT $500M concessional finance
- Support from GEAPP through energy transition trust fund

$ = United States dollar, ADB = Asian Development Bank, ASEAN = Association of Southeast Asian Nations, CFPP = coal-fired power plant, CIF ACT = Climate Investment Funds Accelerating Coal Transition, E&S = environmental and social, ETM = Energy Transition Mechanism, GEAPP = Global Energy Alliance for People and Planet, JETP = Just Energy Transition Partnership, JT = just transition, INO = Indonesia, MOU = memorandum of understanding, PHI = Philippines, SESA = strategic environmental and social assessment, TRACTION = Transition Credits Coalition, VIE = Viet Nam.

Operationalizing ETM

Updates on country workstreams

Indonesia

Phase 2 | PILOT TRANSACTIONS

- Support for the Indonesia ETM Country Platform
- Completed studies (captive power, grid impact)
- MOUs for precedent transaction (Cirebon 1) signed in 2022 G20 and COP28; Legal documentation ongoing
- CIF ACT IP approved in June 2023 ($500M concessional leveraging $4.5B of cofinancing); $1M JT TA approved in Jan. 2024; $100M IPP program approved in March 2024
- Lead the support to the JETP Secretariat which manages the $20B International Partners Group pledge

Philippines

Phase 2 | PILOT TRANSACTIONS

- CIF ACT IP approved in May 2024 ($500M concessional funding to leverage $2.3B of cofinancing)
- Transaction advisory for ETM transaction of Mindanao CFPP under government concession
- Initiating feasibility study on coal and gas plant repurposing with ammonia/hydrogen

Kazakhstan

Phase 1 | FULL FEASIBILITY STUDY

- Completed pre-feasibility study
- Ministry of Energy agreed to proceed with full feasibility on combined heat and power transition (MOU COP29)

Viet Nam

Phase 0 | PRE-FEASIBILITY STUDY

- Completed pre-feasibility study
- Ongoing discussions with government for launching a feasibility study on coal and gas plant repurposing with alternative fuels (biomass, ammonia, hydrogen)
- Technical support for JETP ongoing

Pakistan

Phase 0 | PRE-FEASIBILITY STUDY

- Completed pre-feasibility study with stakeholder consultation
- Awaiting government direction to proceed with full feasibility

Expanding to new DMCs

- Exploring private sector transactions
- Preliminary discussions for combined heat and power efforts

$ = United States dollar, ADB = Asian Development Bank, CIF ACT = Climate Investment Funds Accelerating Coal Transition, CFPP = coal-fired powerplant, COP = Conference of the Parties, DMC = developing member country, ETM = Energy Transition Mechanism, IP = investment plan, JETP = Just Energy Transition Partnership, JT = just transition, M = million, MDB = multilateral development bank, MOU = memorandum of understanding, NOL = no objection letter, SESA = strategic environmental and social assessment, SOE = state-owned entity, TA = technical assistance.