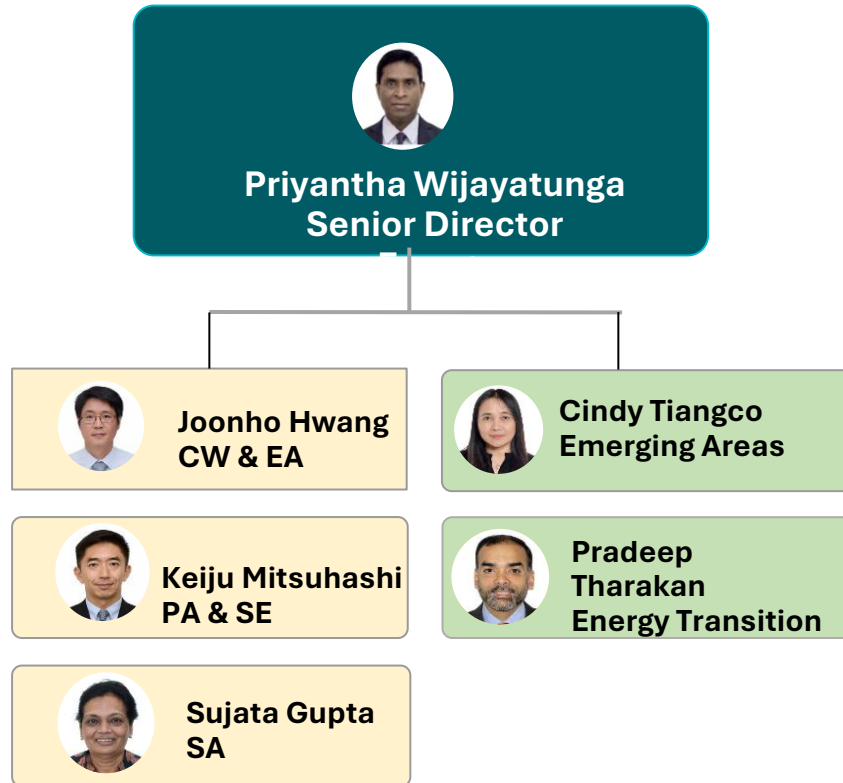


Adnan Tareen
Principal Energy Specialist

Energy Sector
Sectors Department 1
ADB



Energy Sector Organogram



❖ **3 regional teams:**

- East, Central and West Asia (13 DMCs)
- Southeast Asia and Pacific Area (8+ 14 DMCs)
- South Asia (6 DMCs)

❖ **2 practice teams:**

- Emerging Areas (EA)
- Energy Transition (ET)



Energy Sector

- **VISION**

- An inclusive, just, and affordable low-carbon energy transition in Asia and the Pacific

- **MISSION**

- Endeavor for optimizing **energy security** of ADB DMCs that is sustainable and resilient, with greater **private sector participation** and good **governance** along with emphasis on **regional energy cooperation and integration**, and integrated **cross-sector operation** to maximize development impact



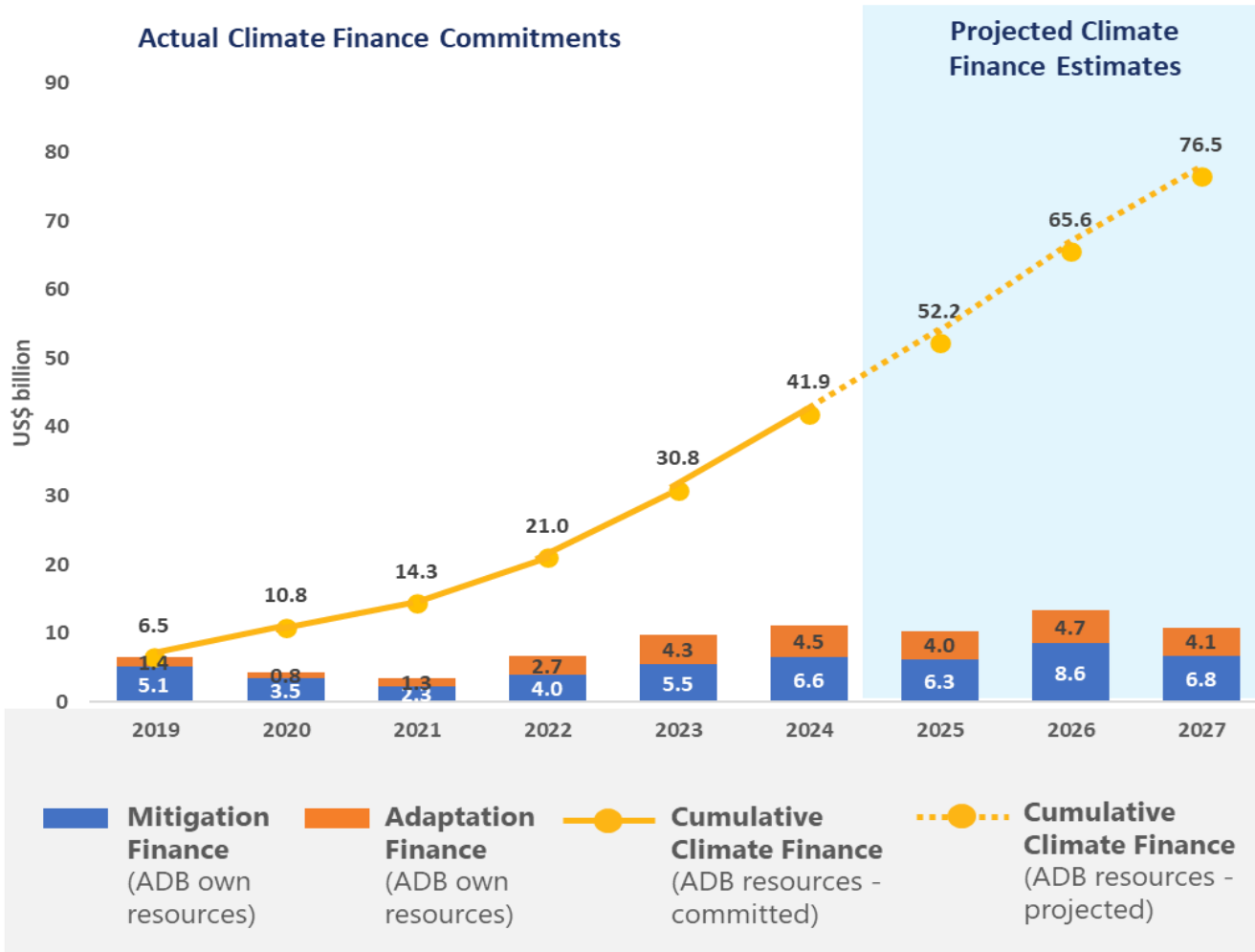
ADB Energy Policy 2021

Energy Landscape	Global Commitments	ADB's Commitment
<p>Profound changes in Asia and the Pacific:</p> <ul style="list-style-type: none"> • Falling cost of renewable energy vs. conventional energy • Emerging new and innovative low-carbon energy technologies 	<p>Global commitments to universal access and climate action:</p> <ul style="list-style-type: none"> • Sustainable Development Goal 7: Universal Energy Access by 2030 • Paris Agreement: Nationally Determined Contributions (NDCs) 	<ul style="list-style-type: none"> • \$100 billion of cumulative climate finance from 2019 to 2030 • 100% Paris Agreement alignment on sovereign operations from July 2023
<ul style="list-style-type: none"> • Optimizing energy security of ADB DMCs that is sustainable and resilient • Prioritizing decarbonization of energy supply and demand through EE and RE via digitalization, intelligentization, and innovation • Emphasizing energy governance, regional cooperation and integration, and private sector participation • Promoting integrated cross-sector operations to maximize development impact • Supporting critical minerals to manufacturing value chains for clean energy technologies • Nuclear power 		



ADB Climate Finance Commitments (2017–2024) & Projections (2025-2027)

Overall, ADB is on track to reach \$100 billion by 2030



\$41.9

cumulative finance for
 climate action
 (2019-2024)

Note: Amount for 2025 to 2027 are from WPBF 2025-2027.

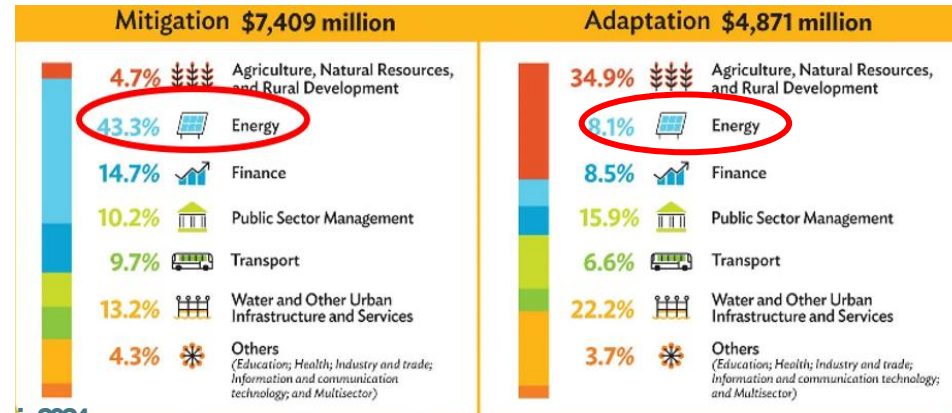
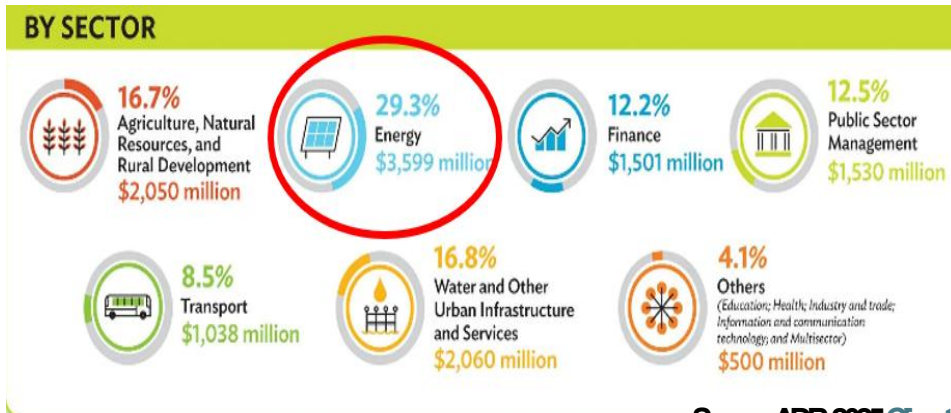


ADB's Energy Sector Commitment and Climate Finance in 2024

Commitments by Sector, 2020–2024 (\$ million)

Sector	2020	2021	2022	2023	2024
Agriculture, Natural Resources, and Rural Development	1,281	1,490	2,218	3,228	2,637
Education	1,066	975	799	1,389	543
Energy	4,292	1,837	1,446	2,227	3,829
Finance	4,601	4,116	5,686	3,611	5,886
Health	3,512	5,882	823	2,275	1,145
Industry and Trade	2,215	716	238	661	98
Information and Communication Technology	32	55	86	94	71
Multisector	12	10	11	6	21
Public Sector Management	9,561	2,294	3,725	3,354	3,220
Transport	3,147	3,396	4,344	4,779	3,906
Water and Other Urban Infrastructure and Services	1,862	1,989	1,098	1,919	3,348
TOTAL	31,581	22,759	20,473	23,542¹	24,304

Including private sector operations. Source: 2024 ADB Annual Report



Source: ADB 2025 Climate Finance 2024



Energy Sector Operational Priorities

Decarbonize energy supply system

- Promotion of affordable and reliable RE (energy storage)
- Digitalization of TD system
- Decentralized power systems

Decarbonize Energy Consumption

- Air quality improvement
- RE++ agriculture, ecological rehabilitation and environmental protection, Critical Minerals to Manufacturing Value Chains
- Building- Grid ecosystem; Vehicle- Grid ecosystem; CCUS/green hydrogen for hard to abate sectors

Enabling Private Sector Participation

- Sovereign loan or Partial Credit Guarantee to create enabling environment for private investments in clean energy supply

Regional cooperation and integration

- ASEAN Power Grid
- Caspian Sea Green Energy Corridor

Strengthening Sector Governance and Regulatory Framework

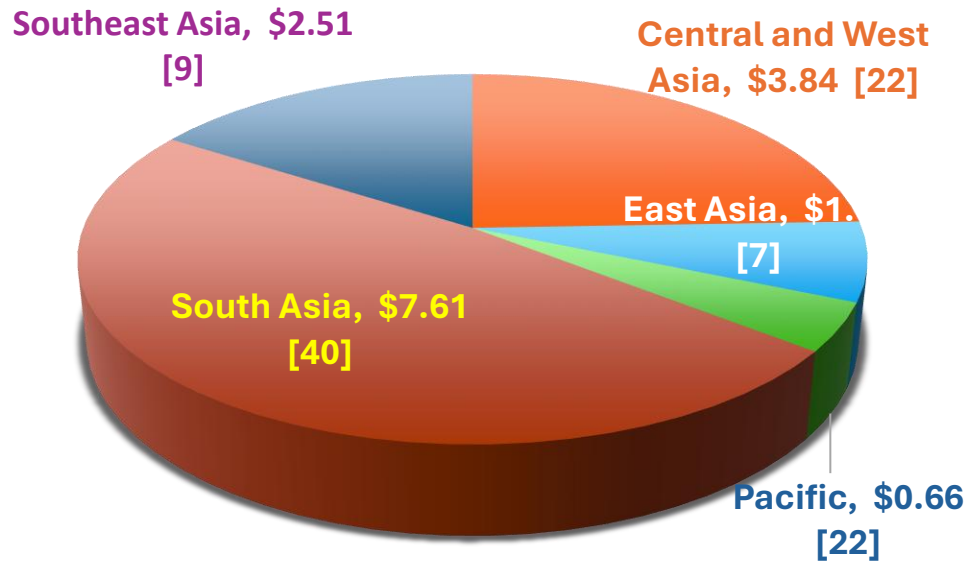
- PBLs: power market reform & regulations for RE integration and energy transition



Overview – Energy Sector Lending Portfolio and Pipeline

Active Lending Portfolio by Region

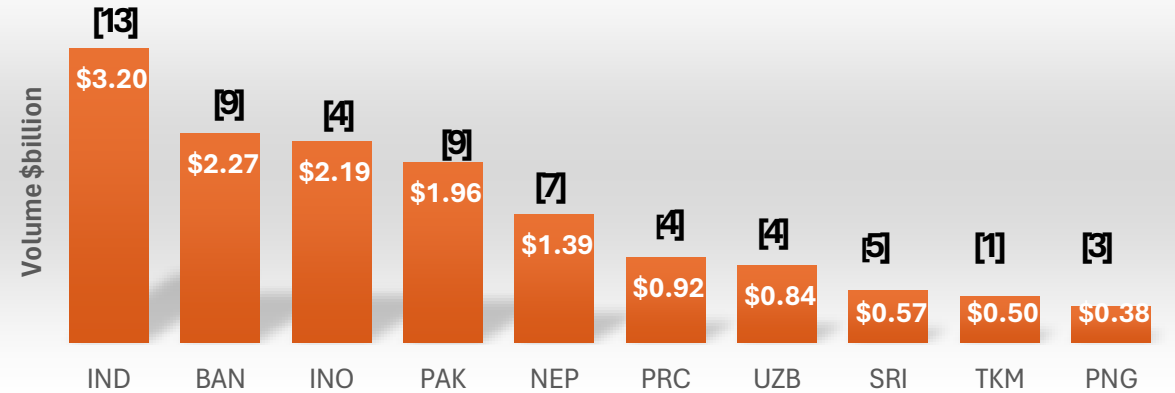
Volume: \$15.71 billion



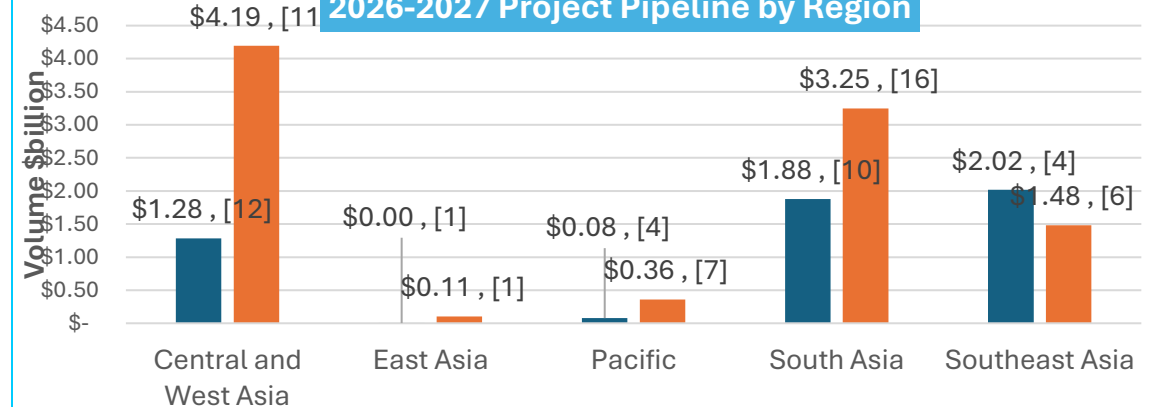
Notes:

1. The numbers enclosed in parentheses refer to the total number of projects for each region and DMC.
2. AFG and MYA projects are excluded.

Top 10 DMCs for Active Lending Portfolio



2026-2027 Project Pipeline by Region



Year	Volume
2026	\$ 5.26
2027	\$ 9.39

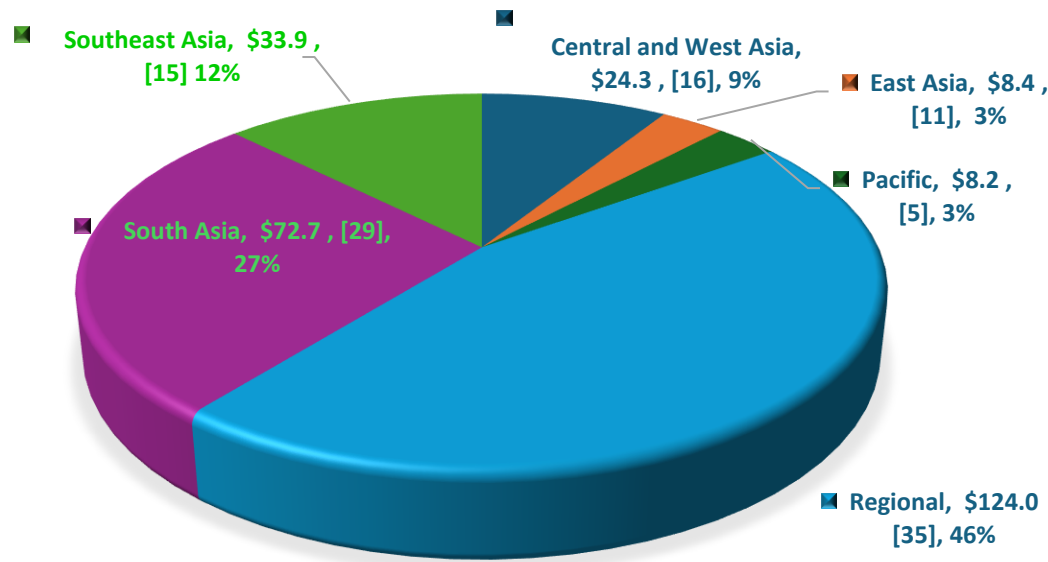
Region
 ■ 2026 ■ 2027



Overview – Energy Sector Non-Lending Portfolio and Pipeline

ACTIVE NON-LENDING PORTFOLIO

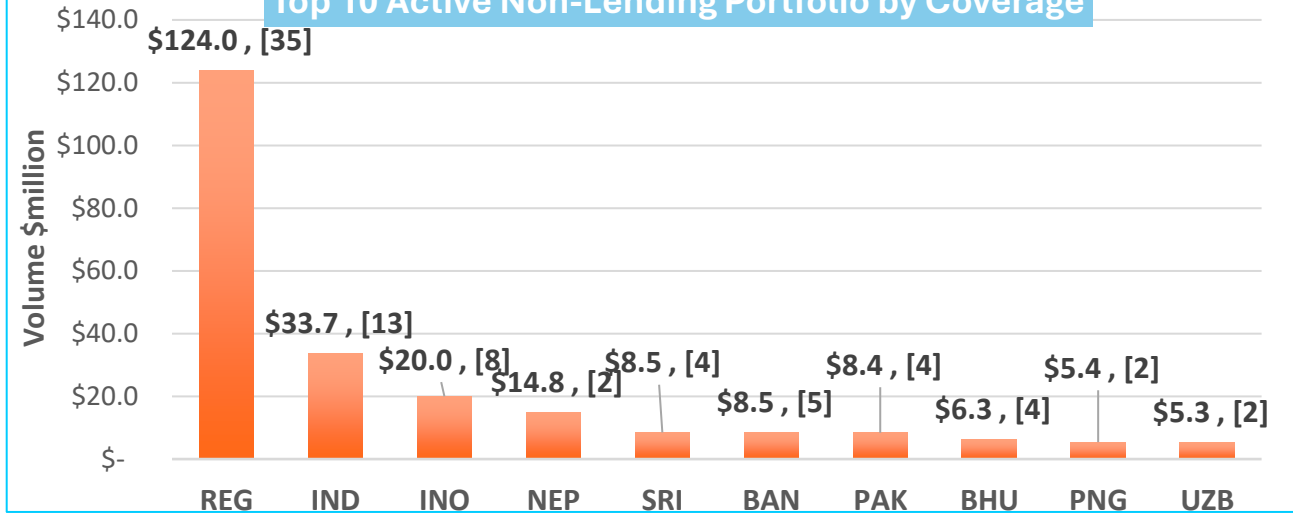
Volume: \$217 million



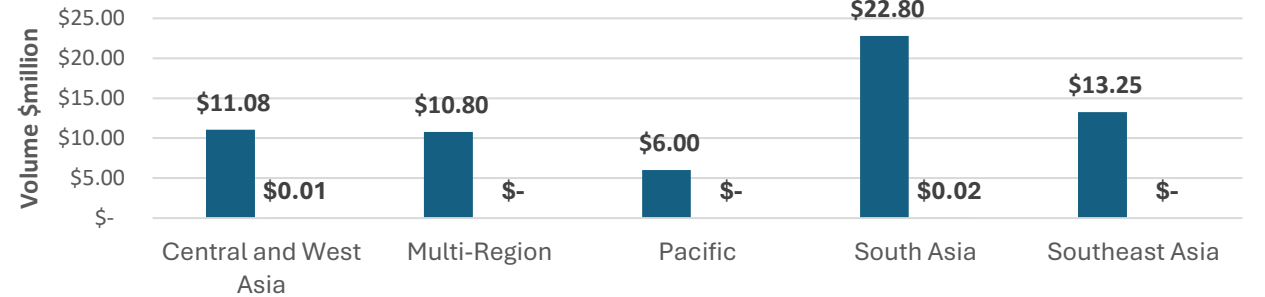
Notes:

- The numbers enclosed in parentheses refer to the total number of TAs for each region.
- MYA TAs excluded.

Top 10 Active Non-Lending Portfolio by Coverage



2026-2027 Non-lending Pipeline by Region



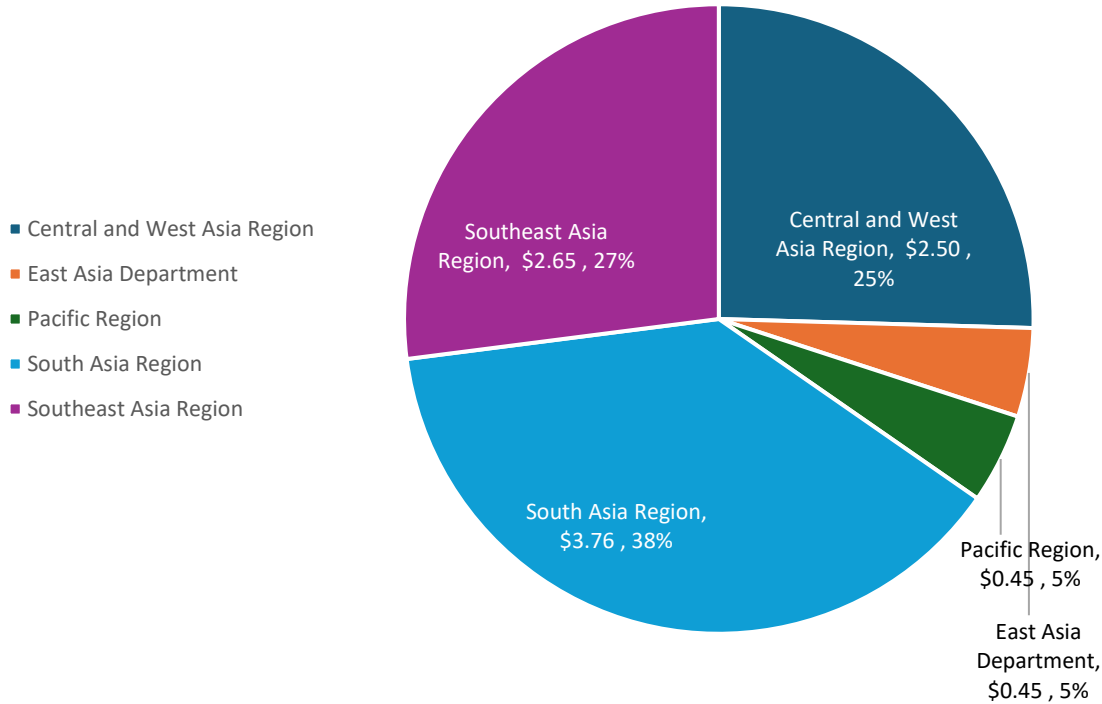
Year	Volume \$million
2026	\$ 63.93
2027	\$ 0.02

■ 2026 ■ 2027

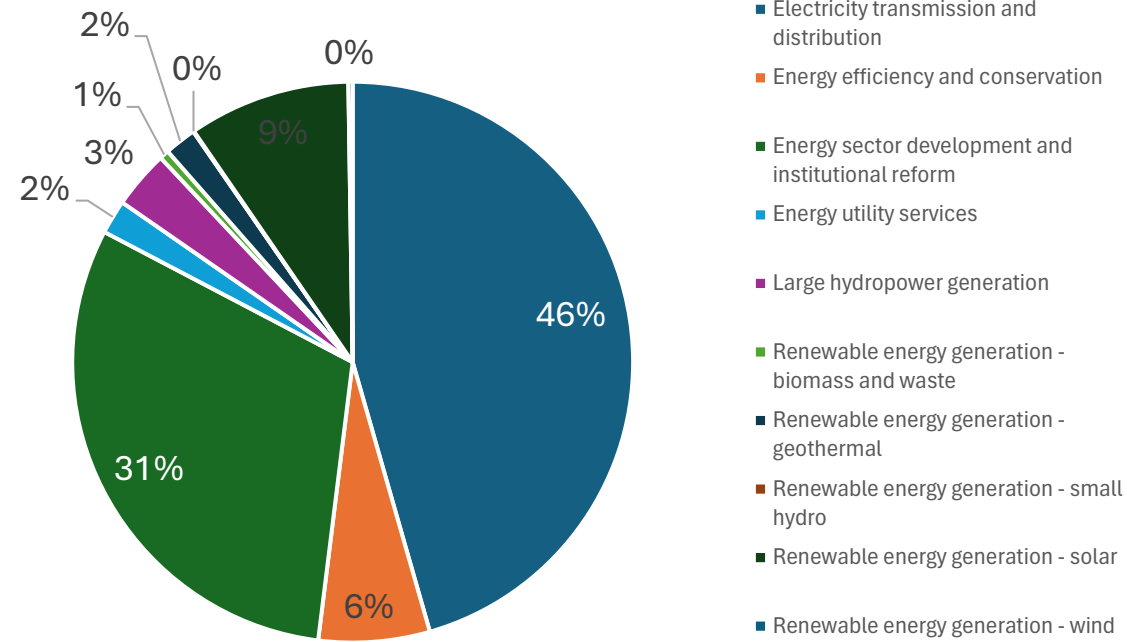


Subsector Distribution, 2021-2025

Subsector Distribution for the Past 5 Years, by Region
 Volume: \$ 9.8 billion



Subsector Distribution for the Past 5 Years

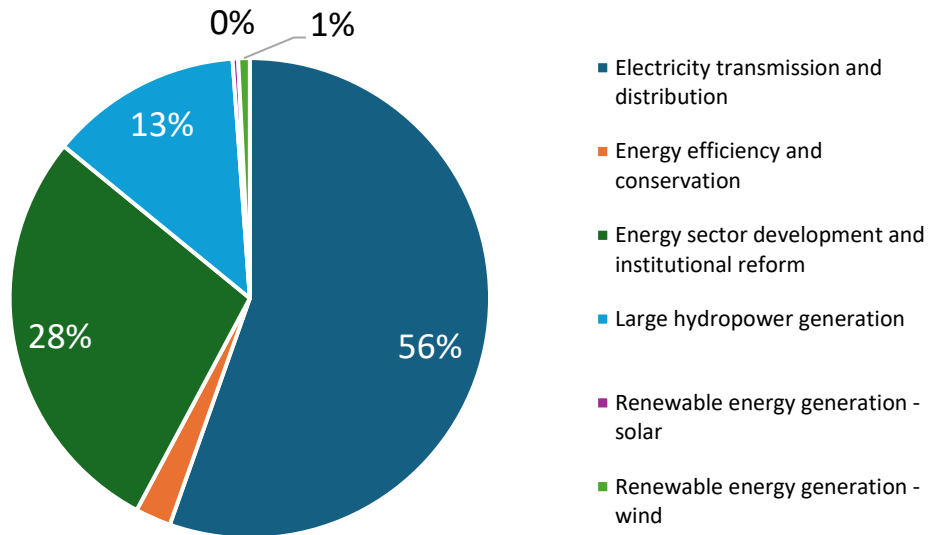


Subsector	2021-2025
Electricity transmission and distribution	4,472.68
Energy efficiency and conservation	628.68
Energy sector development and institutional reform	3,015.48
Energy utility services	192.73
Large hydropower generation	328.33
Renewable energy generation - biomass and waste	53.55
Renewable energy generation - geothermal	180.00
Renewable energy generation - small hydro	4.30
Renewable energy generation - solar	916.48
Renewable energy generation - wind	24.36
Total	9,816.59

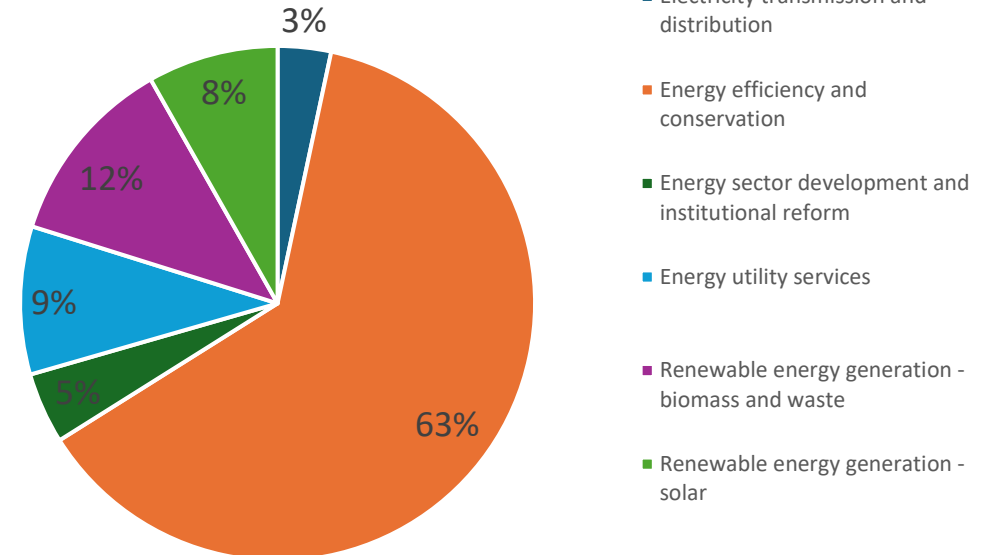


Subsector Distribution by Region, 2021-2025

Central and West Asia Region



East Asia Region



Central and West Asia Region		
Subsector	Amount	%
Electricity transmission and distribution	1,384.70	55%
Energy efficiency and conservation	60.00	2%
Energy sector development and institutional reform	702.23	28%
Large hydropower generation	323.33	13%
Renewable energy generation - solar	9.37	0%
Renewable energy generation - wind	19.46	1%

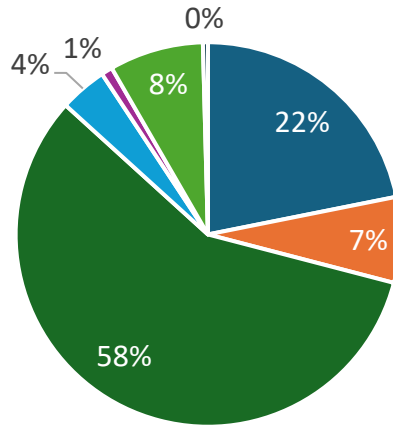
East Asia Department		
Subsector	Amount	%
Electricity transmission and distribution	15.00	3%
Energy efficiency and conservation	280.94	63%
Energy sector development and institutional reform	20.00	4%
Energy utility services	41.63	9%
Renewable energy generation - biomass and waste	53.55	12%
Renewable energy generation - solar	36.74	8%



Subsector Distribution by Region

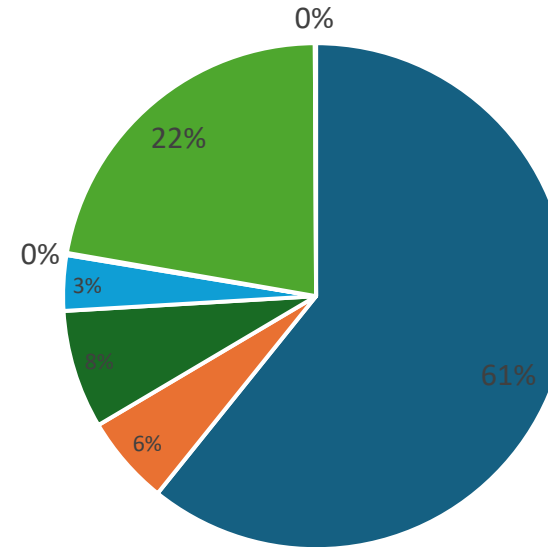
- Electricity transmission and distribution
- Energy efficiency and conservation
- Energy sector development and institutional reform
- Energy utility services
- Renewable energy generation - small hydro
- Renewable energy generation - solar
- Renewable energy generation - wind

Pacific



Pacific Region		454.99
Subsector	Amount	%
Electricity transmission and distribution	99.46	22%
Energy efficiency and conservation	32.74	7%
Energy sector development and institutional reform	262.44	58%
Energy utility services	18.10	4%
Renewable energy generation - small hydro	4.30	1%
Renewable energy generation - solar	36.05	8%
Renewable energy generation - wind	1.90	0.4%

South Asia



- Electricity transmission and distribution
- Energy efficiency and conservation
- Energy sector development and institutional reform
- Energy utility services
- Large hydropower generation
- Renewable energy generation - solar
- Renewable energy generation - wind

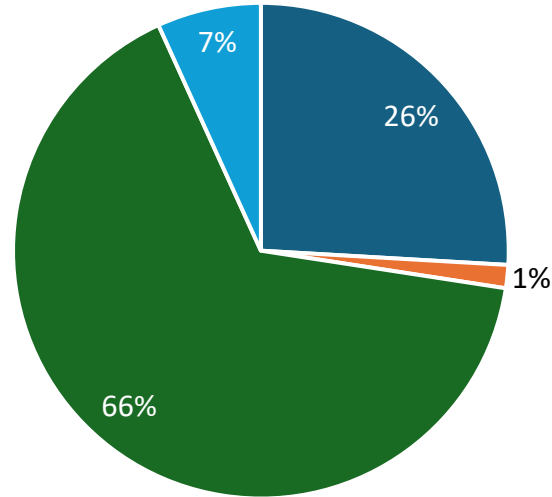
South Asia Region		3,761.12
Subsector	Amount	%
Electricity transmission and distribution	2,285.80	61%
Energy efficiency and conservation	215.00	6%
Energy sector development and institutional reform	285.00	8%
Energy utility services	133.00	4%
Large hydropower generation	5.00	0%
Renewable energy generation - solar	834.32	22%
Renewable energy generation - wind	3.00	0%



Subsector Distribution by Region

Southeast Asia

- Electricity transmission and distribution
- Energy efficiency and conservation
- Energy sector development and institutional reform
- Renewable energy generation - geothermal



Southeast Asia Region		
Subsector	Amount	%
Electricity transmission and distribution	687.72	26%
Energy efficiency and conservation	40.00	2%
Energy sector development and institutional reform	1,745.81	66%
Renewable energy generation - geothermal	180.00	7%



Subsector Distribution by DMC

DMC/Subsector	Amount	DMC/Subsector	Amount
MON	36.00	FSM	20.50
Electricity transmission and distribution	15.00	Electricity transmission and distribution	5.25
Energy sector development and institutional reform	20.00	Energy sector development and institutional reform	0.75
Energy utility services	1.00	Energy utility services	9.10
BAN	651.00	Renewable energy generation - small hydro	1.40
Electricity transmission and distribution	451.00	Renewable energy generation - solar	4.00
Energy efficiency and conservation	100.00	GEO	212.66
Energy utility services	100.00	Electricity transmission and distribution	110.70
BHU	53.26	Energy sector development and institutional reform	101.97
Large hydropower generation	5.00	IND	2,175.86
Renewable energy generation - solar	48.26	Electricity transmission and distribution	1,213.80
CAM	142.72	Energy efficiency and conservation	100.00
Electricity transmission and distribution	52.72	Energy sector development and institutional reform	81.00
Energy efficiency and conservation	40.00	Renewable energy generation - solar	781.06
Energy sector development and institutional reform	50.00	INO	2,246.19
COO	0.50	Electricity transmission and distribution	600.00
Energy efficiency and conservation	0.50	Energy sector development and institutional reform	1,466.19
		Renewable energy generation - geothermal	180.00

DMC/Subsector	Amount
KGZ	25.53
Energy efficiency and conservation	25.00
Energy sector development and institutional reform	0.27
Renewable energy generation - solar	0.27
KIR	23.23
Electricity transmission and distribution	10.91
Energy sector development and institutional reform	2.59
Renewable energy generation - solar	9.73
MLD	45.00
Energy sector development and institutional reform	4.00
Energy utility services	33.00
Renewable energy generation - solar	5.00
Renewable energy generation - wind	3.00
NEP	421.00
Electricity transmission and distribution	421.00
PAK	#####
Electricity transmission and distribution	934.00
Energy efficiency and conservation	35.00
Energy sector development and institutional reform	300.00
Large hydropower generation	302.33

DMC/Subsector	Amount
PAL	1.00
Energy utility services	1.00
PHI	229.62
Energy sector development and i	229.62
PNG	308.60
Electricity transmission and distri	50.00
Energy sector development and i	258.60
PRC	411.86
Energy efficiency and conservati	280.94
Energy utility services	40.63
Renewable energy generation - b	53.55
Renewable energy generation - si	36.74
RMI	26.32
Electricity transmission and distri	17.10
Energy utility services	7.00
Renewable energy generation - si	0.32
Renewable energy generation - w	1.90
SAM	35.14
Energy efficiency and conservati	32.24
Renewable energy generation - si	2.90

DMC/Subsector	Amount
SOL	15.00
Renewable energy generati	15.00
SRI	415.00
Electricity transmission and c	200.00
Energy efficiency and conser	15.00
Energy sector development a	200.00
TAJ	36.00
Electricity transmission and c	15.00
Large hydropower generation	21.00
TIM	35.00
Electricity transmission and c	35.00
TON	8.20
Electricity transmission and c	8.20
TUV	10.50
Electricity transmission and c	2.00
Energy sector development a	0.50
Energy utility services	1.00
Renewable energy generati	7.00
UZB	653.57
Electricity transmission and c	325.00
Energy sector development a	300.00
Renewable energy generati	9.11
Renewable energy generati	19.46
VAN	6.00
Electricity transmission and c	6.00



Sample Projects under Implementation



UZB: Distribution Network Digital Transformation & Resiliency

- 26 distribution substations upgraded to digital substations
- Digital protection installed and climate proofing design implemented to improve reliability and resilience of substations
- Increased integration of renewables



IND: Maharashtra Power Distribution Enhancement Program for Agriculture Solarization

- 75 MWh pilot project for **BESS for integrating renewable energy** into the grid and skill development interventions to support innovative sustainable irrigation practices and **agriculture-linked solar energy-based** livelihoods options



TUV: Increasing Access to Renewable Energy – Additional Financing

- ADB's first engagement in the country's energy sector
- Installation of a total of 224 kWp solar PV capacity to increase share of renewable energy in the generation mix
- 17,800 tons of carbon dioxide equivalent of greenhouse gas emissions to be reduced



MLD: Accelerating Sustainable System Development Using Renewable Energy

- **Install grid-scale battery energy storage (44MWh) to attract private sector RE investments** in generation
- Integrates effective gender mainstreaming elements
- **One-ADB collaboration- SG-ENE and OMDP**
- **Water- Energy- Food Nexus support through cross sectoral approach.**
- **Flow battery , Ocean Energy technologies** and small wind introduced.



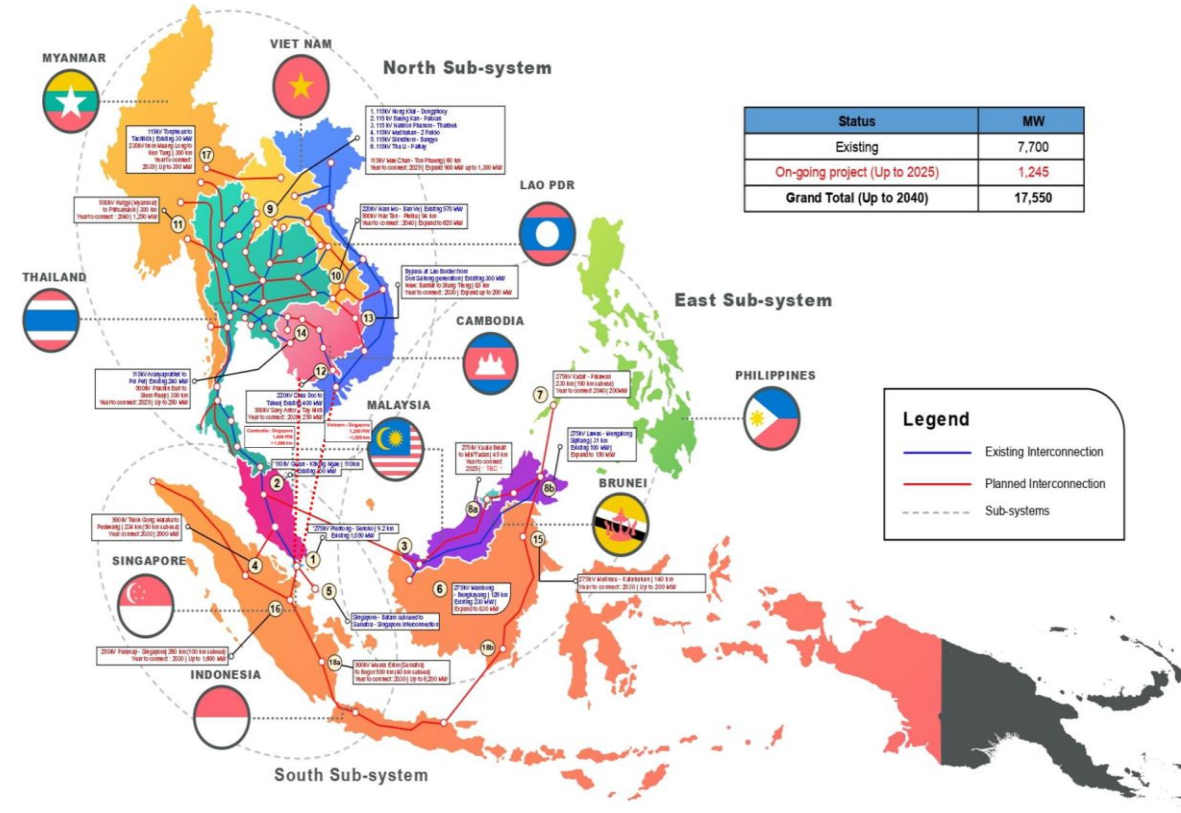
LAO: Monsoon Wind Power

- **First cross border wind project in Asia**
- First wind power plant in Laos PDR
- **Largest wind power project in ASEAN with ADB** as the sole mandated arranger and bookrunner
- The project is estimated to contribute to the reduction of at least 748,867 tons of carbon dioxide equivalent of greenhouse gas emissions annually



ASEAN Power Grid (APG): A power grid for 700 million people in Southeast Asia

- The APG initiative aims to **fully integrate grid operations of ASEAN Member States by 2045**. Realizing the APG will require **over \$100 billion** of investments **over the next 20 years** – from both public and private sources.
- ADB has launched the **APG Financing (APFG)** with ASEAN and the World Bank to convene partners, mobilize capital, and develop financing solutions.
- ADB has pledged to commit up to **\$10 billion of financing for the APG** over the next decade, which includes subsea and overland interconnectors and domestic grid upgrades.
- In the next five years, **business opportunities** are
 - Power system studies, pre-FS and FS, HVDC subsea route selection and geo-tech surveys, grid integration studies, commercial structuring
 - Regional policy and regulatory harmonization for subsea cable development and market design for multilateral power trade
 - High-voltage transmission and substation EPC and other key grid technologies supply (including smart grid equipment)
- **European experience, technology and knowledge** on power grid connectivity are highly relevant.



Source based: Updated Power Development Plan (PDP) scenario under AIMS III, 2022

Source: ASEAN Centre for Energy

Note: Boundaries, colors, denominations or any other information shown on the maps do not imply, on the part of ADB, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries, colors, denominations or information.

Industrial Decarbonization and Hard-to-Abate Sectors

OUTCOME: Achieving energy transition by accelerating decarbonization, energy efficiency, and green tech in hard-to-abate industries¹, ports, and industrial parks.

Challenges



High-intensity emissions

Steel, cement, and chemicals industries contribute ~30% of ASEAN energy-related CO₂ and are still coal-centric



Technology maturity and cost

Green H₂, CCUS and electrified heat add 15-40 % to product costs without carbon pricing.



Capital-market friction

Paybacks > 7 yrs; limited green-capex lending windows and no established off-take contracts for low-carbon materials.



Policy and price signals

Carbon prices hover at US\$ 0-5 / tCO₂ and sector-specific performance standards or tax incentives are minimal.

Solutions

Carbon capture and storage

Support for regulations, standards, and regional hubs

Green industries and alternative fuels

Standards and regional hubs development for green steel transition, green hydrogen, and alternative fuels

Methane reduction in oil and gas

Technical assistance for methane mitigation

Maritime decarbonization

Port and logistics emissions reduction; Collaboration with ADB SD1-TRA

Institutional coordination

Regional dialogue and collaboration platform; OneADB Industrial Decarbonization Working Group

Focus Countries

India Turkmenistan
Philippines Uzbekistan

Key Partners

Bilateral donors
Private sector
Asia Zero Emission Community (AZEC)

Achievements

Project pipeline development

- IND: FI loan for Green Fuels Development (USD400M, 2025)
- IND: Green Ammonia Project
- PHI: Asia Green Steel Project
- INO: Policy-based loan

CIF Industry Decarbonization Program

- IND and TUR: Development of IPs for each to access \$60-80M of CIF concessional loans to be blended with ADB OCR
- INO and PHI: Introduction of CIF Transition Investment Plan (TIP) framework to include Industry Decarbonization under the CIF Accelerated Coal Transition IPs

Knowledge support

- Through publications such as "Report on Transition Finance in Southeast Asia"

¹ Target sectors: cement and concrete; iron and steel; zero-emission shipping (excluding international shipping); chemicals; eco-industrial parks; pulp and paper; glass, ceramics, and construction materials; non-ferrous metals (i.e., aluminum, copper); textiles; clean technology supply chains, etc.



Opportunities to work on industrial decarbonization (green H₂, CCUS, industrial parks, etc.):

- **TA 10700-India**: Accelerating India's transition from hydrocarbon to **green hydrogen economy** through novel technologies (\$2M).
- **TA 10167-India**: Supporting India's energy transition through **carbon capture, utilization, and storage (CCUS)** and low-carbon technologies (\$2M). Will conduct a feasibility study with detailed assessment of underground storage of carbon in locations like depleted oil wells and will include technical and financial feasibility.
- **TA 10359-Regional**: Focused on the **decarbonization of hard-to-abate industrial and maritime sectors** for countries including Turkmenistan, Philippines, India, Uzbekistan, Indonesia, and Azerbaijan (\$2.35M).
 - **India**: assessment studies to identify decarbonization pathways for the Ministry of Steel.
 - **Uzbekistan**: feasibility study on pursuing a sector development program for an industrial park.
- **Climate Investment Funds Industrial Decarbonization Program**: ADB is supporting the investment plan preparation of Uzbekistan and Türkiye in close partnership with EBRD, WB, IFC, among other MDBs.



Opportunities to work on industrial decarbonization (green H₂, CCUS, industrial parks, etc.):

- **Georgia:** A US\$104 million financing for the first grid-scale battery energy storage system (BESS) includes \$400,000 TA for green hydrogen development
- **Knowledge:**
 - **Knowledge platform:** In partnership with International Solar Alliance, ADB supported the development of [Green Hydrogen Innovation Center](#)
 - **ADB Data Room:** [ADB Green Hydrogen Economy](#) (Knowledge Series 2024-2025)
 - **Key publications:** Accelerating the Net Zero Transition in Asia and the Pacific: Low-Carbon Hydrogen for Industrial Decarbonization (2024), Hydrogen in Decarbonization strategies in Asia and the Pacific (2023), Role and Development Pathways of Green Hydrogen Energy (2023), etc.

Critical Minerals-to-Manufacturing Value Chains

OUTCOME: Achieving energy transition by boosting energy security, jobs, sustainable and inclusive regional growth through diverse, responsible, and resilient value chains

Challenges



Limited value addition and industrialization



Weak value chain linkages



Low level of geo-prospective



Supply chain vulnerabilities



Unsustainable practices

Solutions



Regional cooperation and integration



Government capacity building



Environmental, social, and governance practices



Private sector investments



Innovative technologies and digital solutions



Greater recycling and circularity

Focus Countries

India	Papua New Guinea
Indonesia	Philippines
Kazakhstan	Sri Lanka
Lao PDR	Uzbekistan
Mongolia	Viet Nam
Pakistan	

Key Partners

Government (line ministries, mineral authorities, regulatory agencies, trade and investment ministries)
 Industry and trade associations
 Knowledge institutions
 International organizations
 Investors and financial institutions

Achievements

- Approval of **Board Direction** and Operational Approach Paper in July 2025
- Knowledge support through publications
- Internal ADB brown bags and webinars





Opportunities to work on CMM:

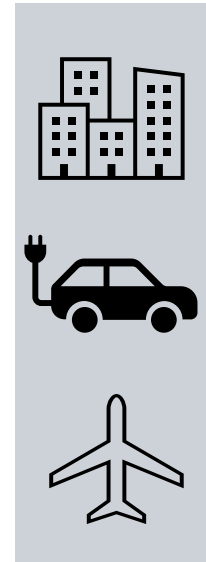
- **TA 10312-Regional Advance Sustainable Clean Energy Network for Development (\$1.65M)** focused on supporting critical minerals for countries including India, Indonesia, Kazakhstan, Mongolia, the Philippines, Tajikistan, Uzbekistan and Viet Nam.
- **New TA 10767-Regional Responsible Critical Minerals Value Chains for a Clean Energy Future (\$1M)** focused on supporting private sector critical minerals development in Lao PDR, Sri Lanka, and Papua New Guinea.
- ADB is working with peer institutions to build an **investment pipeline across mining, manufacturing, and recycling**. A dedicated Financing Partnership Facility is being designed to mobilize sovereign and non-sovereign financing, and is expected to be launched in 2026.



Way Forward- Climate Actions



Supply: Decarbonize energy supply and develop new pattern energy system.



End-use: B-G ecosystem; V-G ecosystem; Biofuels, SAF; Integrated cross-sectoral interventions: RE++ agriculture, water, ecological rehabilitation, environmental protection



Hard to abate sectors: CCUS

Integrated solutions: Zero-carbon emission industrial parks





Way Forward- Private sector development shift

- Policy dialogue with the governments
- Joint Sovereign & non-sovereign interventions
- Develop PPP opportunities with OMDP

Upstream

- Policy Reform
 - ✓ Cost-reflective tariff
 - ✓ State-owned enterprises commercialization
 - ✓ Improve investment climate
- Policy Dialogue
 - ✓ RE generation
 - ✓ Specific transmission and distribution investments
 - ✓ Green mining principles and clean energy manufacturing

Midstream

- Develop bankable contractual framework for RE projects
- Screening, preparation, and tendering of RE projects
- Innovative financial products, and market development

Downstream

- Sovereign financing: credit enhancement for RE development
- NSO financing: mobilize co-financing for solar, wind, and hydropower



Way Forward- Solutions shift

Digitalization and intelligentization for RE integration and energy efficiency

- Grid management
- Smart meters

Decarbonized technologies

- Advanced biofuels
- Geothermal systems
- Ocean and marine renewable energy
- Carbon capture, use, and storage

Integrated cross-sector approach

- Agri-photovoltaic systems
- Energy efficient disease resilient air-conditioning systems



Way Forward- Special initiatives and knowledge activities

New Energy Sources

- Hydrogen, Methanol, Biofuels etc
- Marine RE, floating PV



Hard-to-abate sectors

- Cement, Steel
- Long distance transport



Energy Efficiency

- Buildings, industries



Clean technology manufacturing

- Critical Minerals



Asia Clean Energy Forum (ACEF)

Singapore International Energy Week

Transpacific Sustainability Dialogue

Clean Energy Ministerial Meeting

World Energy Congress



Opportunities (under Ongoing Projects)

- <https://www.adb.org/projects/tenders>
- <https://www.adb.org/projects/documents/ind-51308-008-pp>

ADB ASIAN DEVELOPMENT BANK

WHO WE ARE WHAT WE DO WHERE WE WORK

Projects & Tenders

Projects Documents Tenders

Filter results CLEAR ALL

Country/Economy (2) [CLEAR] ▾

- Azerbaijan
- Bangladesh
- Bhutan
- Cambodia
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- Cook Islands
- India

Sectors (1) [CLEAR] ▾

- Agriculture, natural resources and rural development
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- Energy

Procurement of goods, works, and consulting services

Search tenders

Results 1-20 of 90 RSS Sort by ▾

Pakistan X Uzbekistan X Energy X Invitation for Bids X

4271-PAK: Second Power Transmission Enhancement Investment Program - Tranche 4	Status: Active	Deadline: 28 Oct 2024
48078-006; Pakistan; Energy; Posting date: 11 Sep 2024		
Notice Type: Invitation for Bids		
Approval Number: 4271		

4271-PAK: Second Power Transmission Enhancement Investment Program - Tranche 4	Status: Active	Deadline: 30 Oct 2024
48078-006; Pakistan; Energy; Posting date: 11 Sep 2024		
Notice Type: Invitation for Bids		
Approval Number: 4271		

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Uttarakhand Climate Resilient Power System Development Project: Procurement Plan

Procurement Plans | March 2023

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Procurement plans describe and update the procurement of major goods, works and consulting services either ongoing or expected to take place related to a project or program.

This document dated 20 March 2023 is provided for the ADB project 51308-008 in India.

THANK YOU

