

 Early Warning System

ADB-60241-001

Pan-Asia Power Grid Initiative



Quick Facts

Countries	Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Brunei, Cambodia, Cook Islands, Fiji, Georgia, India, Indonesia, Kazakhstan, Kyrgyzstan, Micronesia, Mongolia, Sri Lanka, Tajikistan, Turkiye, Turkmenistan, Tuvalu, Vanuatu, Vietnam
Financial Institutions	Asian Development Bank (ADB)
Status	Proposed
Bank Risk Rating	U
Sectors	Energy, Infrastructure, Technical Cooperation
Investment Type(s)	Advisory Services
Investment Amount (USD)	\$ 10.00 million
Project Cost (USD)	\$ 10.00 million



Project Description

According to the ADB, "Asia and the Pacific have become the center of global electricity demand and emissions, yet it remains constrained by fragmented power systems and limited cross-border energy exchange. Total energy supply in the region has risen by 137% since 2000, reaching 294 EJ in 2023 and accounting for 46% of global supply. Electricity production has expanded even faster from 4,238 TWh in 2000 to 15,490 TWh in 2023, a 266% increase, representing more than half of global generation. However, the electricity production has been powered largely by coal, which still contributes 57% of regional electricity output, while modern renewable energy comprises only about 12% of final energy consumption. The region's emissions reflect this imbalance: CO

from fuel combustion has climbed from 7.1 Gt in 2000 to 17.5 Gt in 2021, undermining efforts to transition to cleaner energy pathways.

"At the same time, 155 million people in developing Asia still lack access to electricity, and hundreds of millions more face unreliable or unaffordable supply. Per-capita electricity consumption remains far below the global average in South Asia (0.9 MWh), Southeast Asia (1.6 MWh), Central and West Asia (1.4 MWh), and the Pacific (0.4 MWh), constraining economic development. Demand will continue to grow sharply through 2050, along with rising requirements for balancing, storage, and system flexibility. Without structural changes, countries will be forced to add more domestic thermal capacity, locking in higher system costs and emissions.

"Yet this challenge coexists with a historic opportunity. Asia-Pacific possesses some of the world's most complementary renewable resource endowments: hydropower in Bhutan, Nepal, and Central Asia; solar in India and West Asia; wind in Mongolia and Southeast Asia; and gas and geothermal resources in specific subregions. Internal analysis for South Asia shows that enhanced regional power trade could reduce system costs by up to \$8 billion by 2032. The barrier is not resource availability, but the lack of interconnected grids, harmonized regulations, and market-ready institutions that would allow countries to pool reserves, balance variability across time zones, and trade surplus clean energy.

"The region has made important but fragmented progress through SASEC, BIMSTEC, the ASEAN Power Grid, GMS, CAREC, and Pacific initiatives. However, these efforts remain subregional, bilateral, or at early stages of implementation. There are also growing vulnerabilities in the supply and value chain for electrical equipment, where price volatility, limited domestic manufacturing, and long delivery cycles are delaying projects and constraining renewable integration. Without a coordinated regional effort to address policy, technical, financing, and supply-chain bottlenecks, Asia-Pacific will miss the window to scale clean energy, deepen regional power trade, and strengthen security. Complementary national and inter-regional efforts are also emerging, including initiatives such as One Sun One World One Grid and proposed connectivity corridors linking South Asia with Southeast Asia, the Middle East, and beyond, signaling growing political momentum for cross-border electricity cooperation.

"ADB, drawing on its long-standing engagement in regional energy cooperation, is well placed to support this next phase. ADB has supported multiple cross-border interconnections and regional power planning programs, which provide a useful foundation to deepen cooperation. The Midterm Review of Strategy 2030 calls for a renewed push on regional cooperation and integration (RCI) to deliver affordable, reliable, and low-carbon clean energy. However, achieving this vision requires dedicated upstream support to (i) prepare a bankable pipeline of cross-border projects, (ii) harmonize regulatory and market frameworks, (iii) establish technical interoperability for interconnected operations, and (iv) mobilize financing while strengthening supply chains and institutional capacity. The proposed technical assistance (TA) will deliver this enabling foundation for the Pan-Asia Power Grid Initiative (PAGI).



Investment Description

- Asian Development Bank (ADB)



Contact Information

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