



ESCAP



MOVING FORWARD TOGETHER

Sustainable Connectivity in Asia-Pacific

Challenges and Opportunities in Cross-Border Power System Connectivity

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Why does power system connectivity matter?

- **Economics:**

- Access to low-cost resources
- Potential for export revenues
- Increased economies of scale for investments

- **Security:**

- Lower reserve margin requirements
- Increase resource diversity

- **Sustainability:**

- Access to regions with high RE potential
- Enables integration of variable RE (resource smoothing)

Benefits are widely recognized:

- **EU:** 15% interconnection target for 2030; grants for “Projects of Common Interest”.
- **US:** NREL Interconnections Seam Study¹ found a benefit-to-cost ratio ranging from 1.2 to 2.5, depending on scenario.
- **Africa:** multiple regional power pools; “Continental Power System Master Plan” under development

1. <https://ieeexplore.ieee.org/document/9548789>

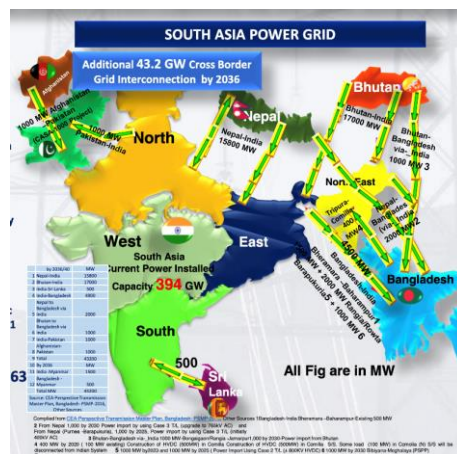
Power system connectivity activities in Asia

South-East Asia



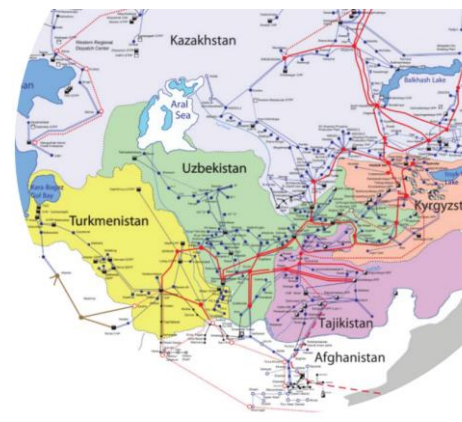
Source: ASEAN Centre for Energy

South Asia



Source: IRADe

Central Asia



Source: USAID

North-East Asia



Source: ADB

While there are many cross-border power system connectivity initiatives across Asia, progress is limited compared to other regions (e.g. mostly bilateral, no power pools)

UN ESCAP's Regional Roadmap on Power System Connectivity in Asia

Vision, principles and **nine strategies** to enable sustainable connectivity

Planning

- Coordinate cross-border transmission planning
- Develop a regional master plan

Financing and development

- Mobilize investment in cross-border infrastructure

Operations

- Move toward multilateral trading and competitive markets
- Co-ordinate cross-border system operations

Cross-cutting

- Build trust and political consensus
- Develop intergovernmental agreements
- Capacity building and sharing of best practices
- Ensure coherence of connectivity with the SDGs

ESCAP support of connectivity initiatives

Capacity building

Trainings for regulators (SE Asia, South Asia) and utilities (SE Asia, Pacific Islands)

Developing cross-border interconnectors in NE Asia (planned 2022)

Analysis

Green Power Corridor Roadmap for North-East Asia (under development)

Convening stakeholders

Expert Working Group on Energy Connectivity

Green Grids Initiative – One Sun, One World, One Grid (GGI-OSOWOG) Asia-Pacific Working Group



