



**ESCAP**



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# Sustainable Connectivity in Asia-Pacific

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## Challenges and Opportunities in Cross-Border Power System Connectivity

Matthew Wittenstein  
Chief of Section, Energy Connectivity  
UN ESCAP

# 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 Study<sup>1</sup> 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>

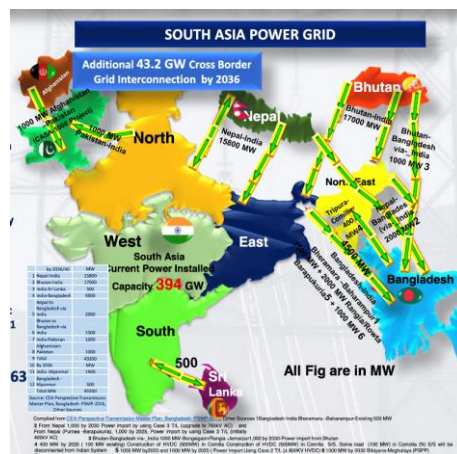
# Power system connectivity activities in Asia

South-East Asia



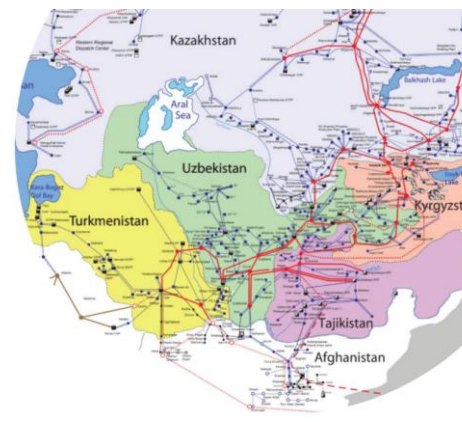
Source: ASEAN Centre for Energy

South Asia



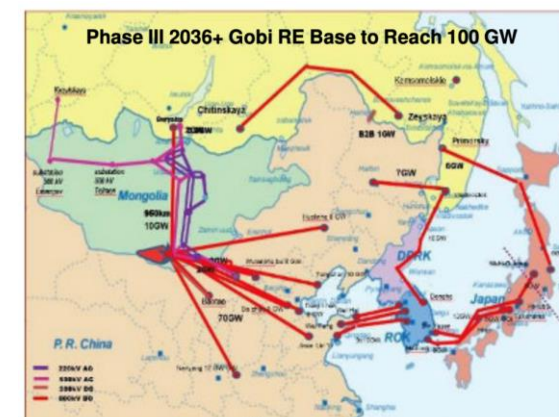
Source: IRADe

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





