

Strengthening energy connectivity to facilitate the transition to clean, sustainable and renewable energy in North and Central Asia

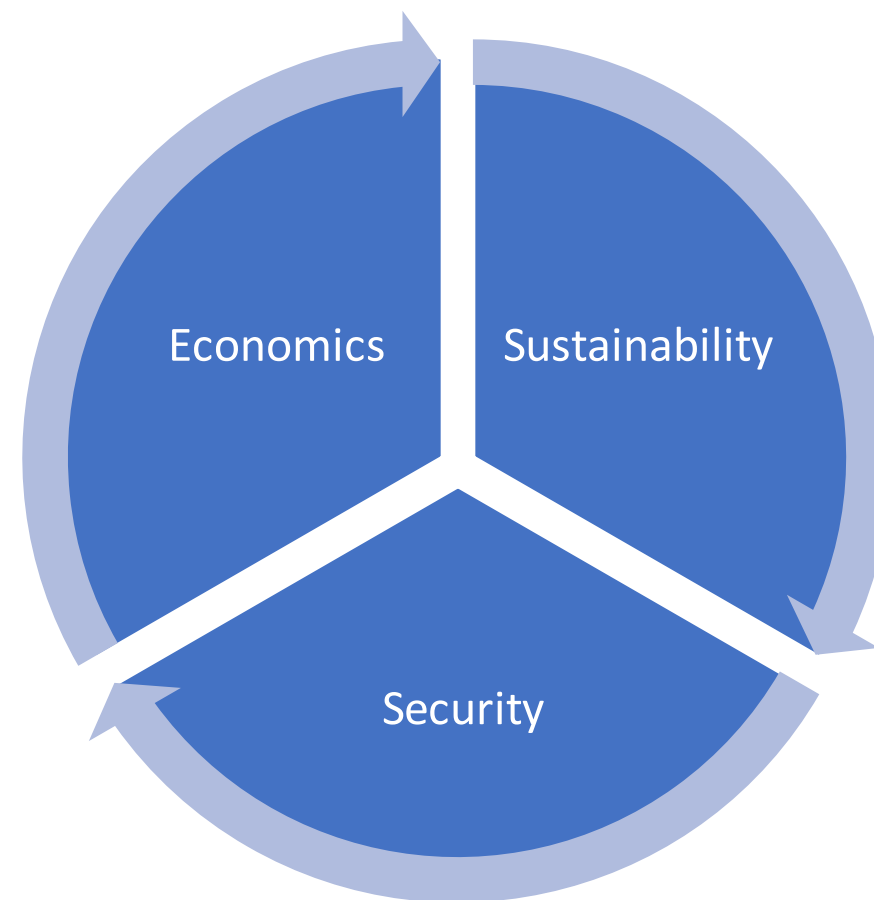
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Why power system connectivity matters

The Opportunity

- **Economics:**
 - Access to lower-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)



ESCAP Regional Road Map on Power System Connectivity

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

Planning

- Develop a regional master plan (Strategy 2)
- Coordinate cross-border transmission planning (Strategy 6)

Financing and development

- Mobilize investment in cross-border infrastructure (Strategy 7)

Operations

- Move toward multilateral trading and competitive markets (Strategy 5)
- Co-ordinate cross-border system operations (Strategy 6)

Cross-cutting

- Build trust and political consensus (Strategy 1)
- Develop intergovernmental agreements (Strategy 3)
- Coordinate, harmonize, and institutionalize policy and reg frameworks (Strategy 4)
- Build capacity and share information, data, best practices (strategy 8)
- Ensure coherence of connectivity with the SDGs (Strategy 9)

Connectivity activities in North and Central Asia

Central Asia Regional Economic Cooperation (CAREC - ADB)

- Fostering Expanded Regional Electricity and Gas Interconnection and Trade under the CAREC Energy Strategy 2030
- Modernization of Coordinating Dispatch Center Energiya
- Regional Infrastructure Projects Enabling Facility

Central Asia Regional Energy Market (CAREM - USAID)

- Technical assistance and capacity building to develop a regional power market

CASA-1000 (World Bank, others)

- Links Central and South Asia

Key takeaways:

- Previously integrated grids now fragmented and suffering from underinvestment in cross-border infrastructure (focus on self-sufficiency)
- **Most power trading is bilateral; technical harmonisation but limited market integration**
- Regional institutions present but require increased technical capacity and stronger mandates
- Need for increased inter-sectoral coordination, in particular power and water
- **Need to better align connectivity efforts with the sustainable development goals**

Role of regional regulatory collaboration

Overcome obstacles and enable effective power system connectivity

Coordinated planning

Sharing information on grid planning and setting standards to guide grid planning efforts can help identify opportunities for grid deployment and enable cross-border integration.

Knowledge exchange and capacity building

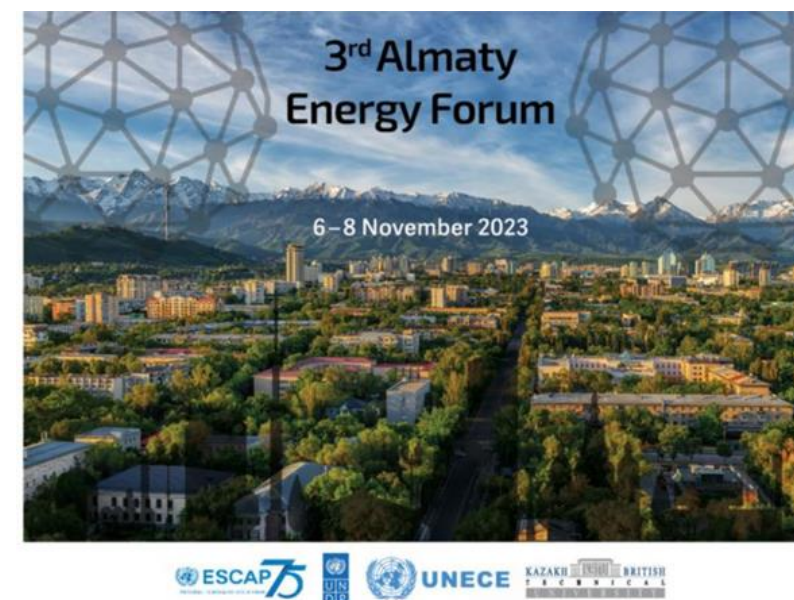
Sharing best practices / lessons learned can enable more efficient and effective grid develop and RE integration in countries with less experience

Dispute resolution

Regional regulatory bodies can act as objective arbiters of cross-border disputes or settle questions that are otherwise difficult to resolve, e.g. cost sharing arrangements.

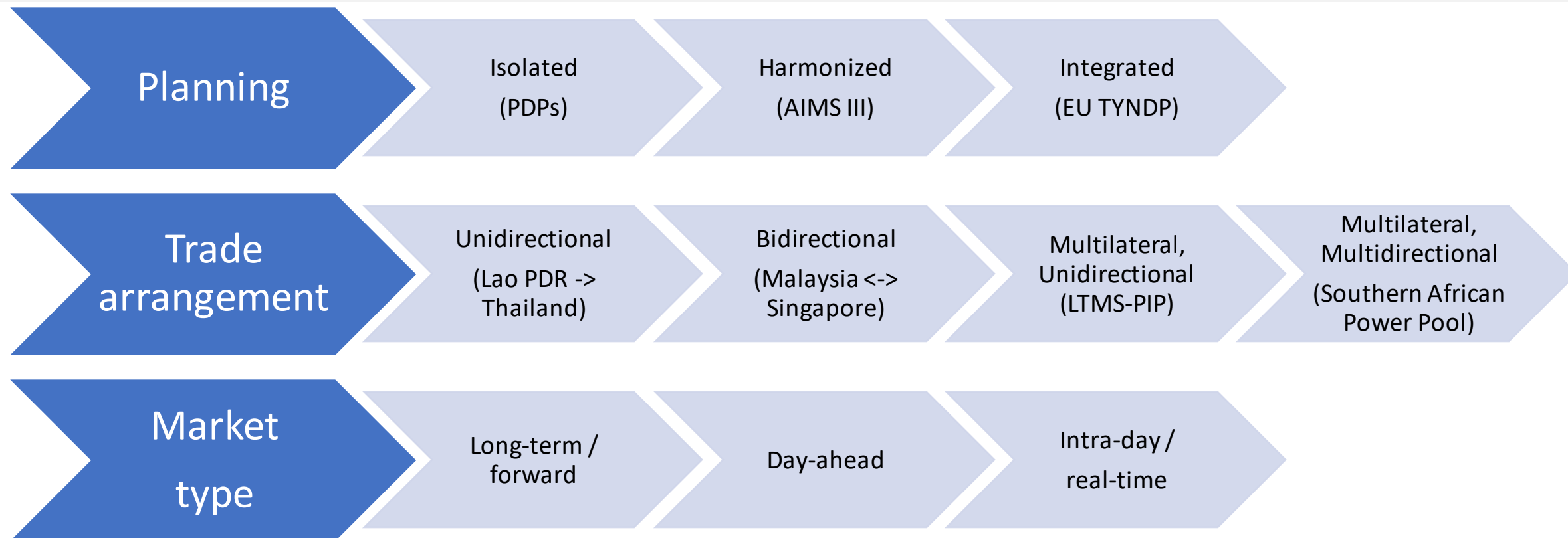
Harmonized grid codes and market design

Grid code and market design details can be context specific, but regulators can play a critical role in harmonizing or addressing incompatibilities across borders



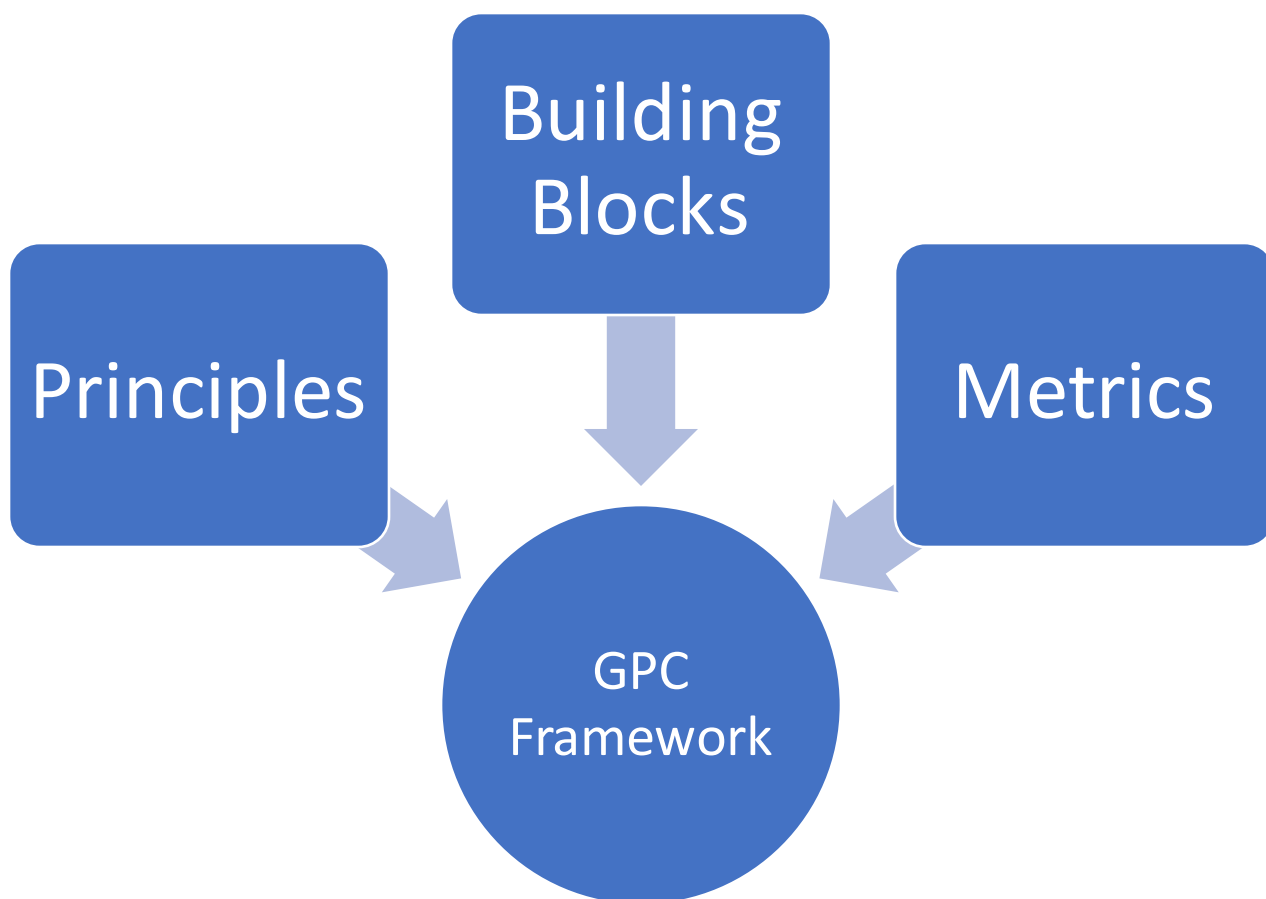
Regulatory roundtable on energy connectivity and renewable integration and training for energy regulators planned for 3rd Almaty Forum, Nov 2023

The evolution of regional electricity markets



ESCAP is initiating a new project looking at how to develop a common regional electricity market among the Economic Cooperation Organization (ECO) countries

Green Power Corridor Framework: Guiding sustainable power system connectivity



Road Map Strategy 9 focuses on the need to align connectivity with sustainable development

The GPC Framework aims to provide

- Practical and relevant principles to guide the development of connectivity initiatives
- Building blocks to structure and orient connectivity initiatives
- A set of metrics to enable the measurement of connectivity projects against relevant criteria



ESCAP

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