



Economic Cooperation Organization (ECO)

**Project on Establishment of
ECO Regional Electricity Market
(ECO-REM)**

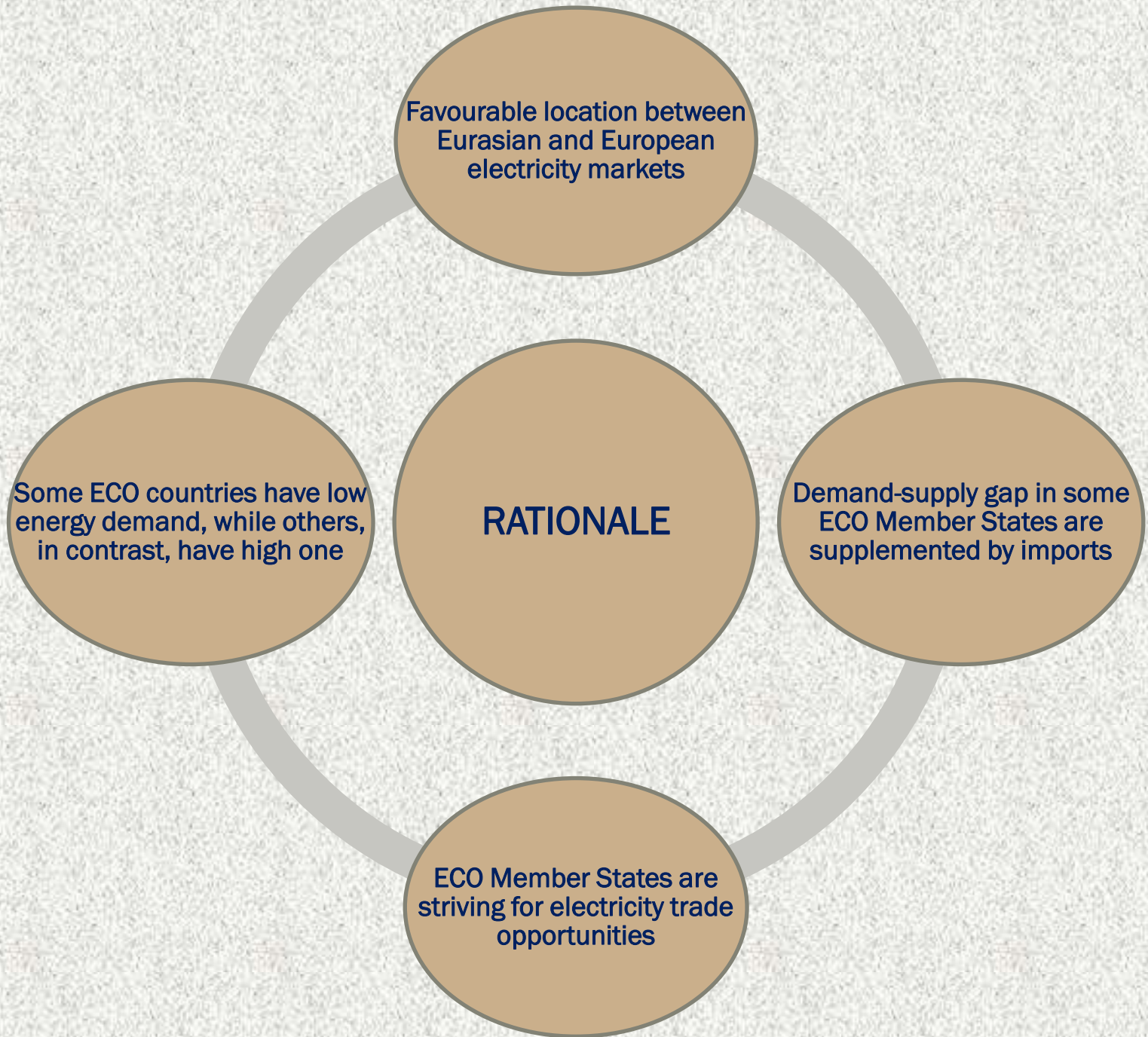
Directorate for Energy, Minerals and Environment
Secretariat of the Economic Cooperation Organization

November 2024

Snapshot of ECO



- The Economic Cooperation Organization is a regional intergovernmental organisation
- Population count almost half a billion inhabitants
- Geography span over eight million square kilometres
- Member States: Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Türkiye, Turkmenistan and Uzbekistan



To enhance energy security and sustainability in the Region through wider intra-regional energy trade and connectivity



Harmonization and alignment towards regional electricity market for harnessing benefits of larger integrated systems

ECO Vision
2025

Strategic
objective of
ECO

RATIONALE (Cont'd)

EXISTING INTERCONNECTIONS OF POWER SYSTEMS AMONG ECO MEMBER STATES (by 2023)

Afghanistan imports electricity from Iran (by 132&20 kV), from Tajikistan (by 220, 110&10 kV), Turkmenistan (by 220, 110&10 kV) and Uzbekistan (by 220&10 kV) lines.

Azerbaijan is interconnected with Iran (by 330, 230&132 kV) lines for exchange & transit, with Türkiye (by 154&34,5 kV) lines for exchange of electricity.

Iran is interconnected with Afghanistan (by 132&20 kV) and Pakistan (by 132&20 kV) lines for export, with Türkiye (by 400&154 kV) lines for export, with Turkmenistan (by two 230kV) lines for import of electricity.

Kazakhstan is interconnected with Kyrgyzstan (by 500&220kV) and Uzbekistan (by 500&220kV) lines for exchange & transit of electricity.

Kyrgyzstan is interconnected with Kazakhstan (by 500&220kV), Uzbekistan (by 500kV) and Tajikistan (by 110&35kV) lines for exchange & transit of electricity.

Pakistan imports electricity from Iran (by 132&20 kV) lines.

Tajikistan exports electricity to Afghanistan (by 220, 110&10 kV) lines and also interconnected with Kyrgyzstan (by 110&35kV) lines for exchange & transit of electricity.

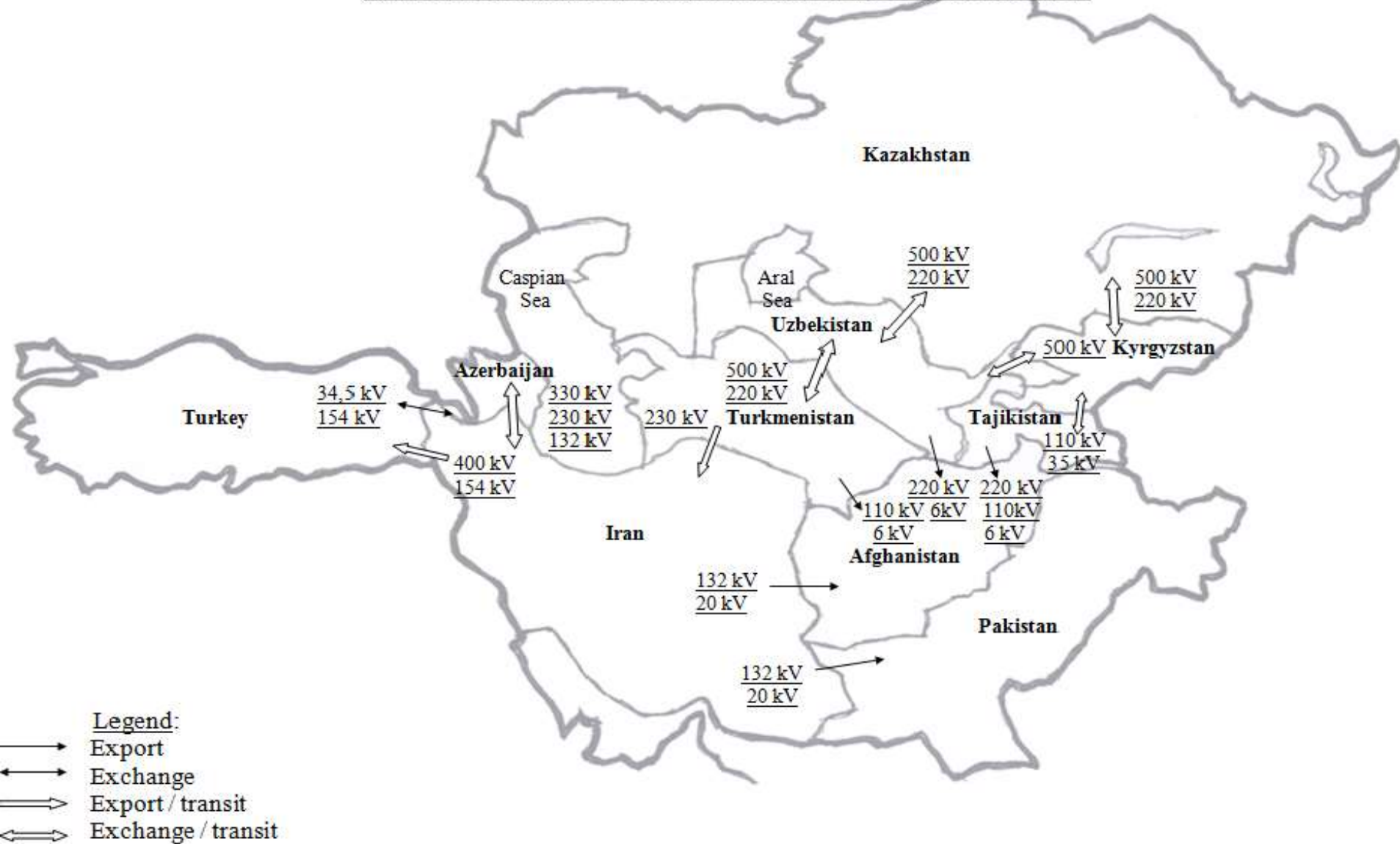
Türkiye is interconnected with Azerbaijan (by 154&34,5kV) lines for exchange and with Iran (by 400&154kV) lines for import of electricity.

Turkmenistan is interconnected with Afghanistan (by 220, 110&10kV) lines for export, with Iran (by two 230kV) lines for export and with Uzbekistan (by 500 & two 110kV) lines for export & transit.

Uzbekistan exports electricity to Afghanistan (by 220&10kV) lines and interconnected with Kazakhstan (by 500&220kV), Kyrgyzstan (by 500kV), Tajikistan (by 500, 220 kV) and Turkmenistan (by 500& 220kV) lines for exchange & transit of electricity

ECO REGION POWER GRID INTERCONNECTIONS

Status of bilateral Power Grid Interconnections of the ECO Member States

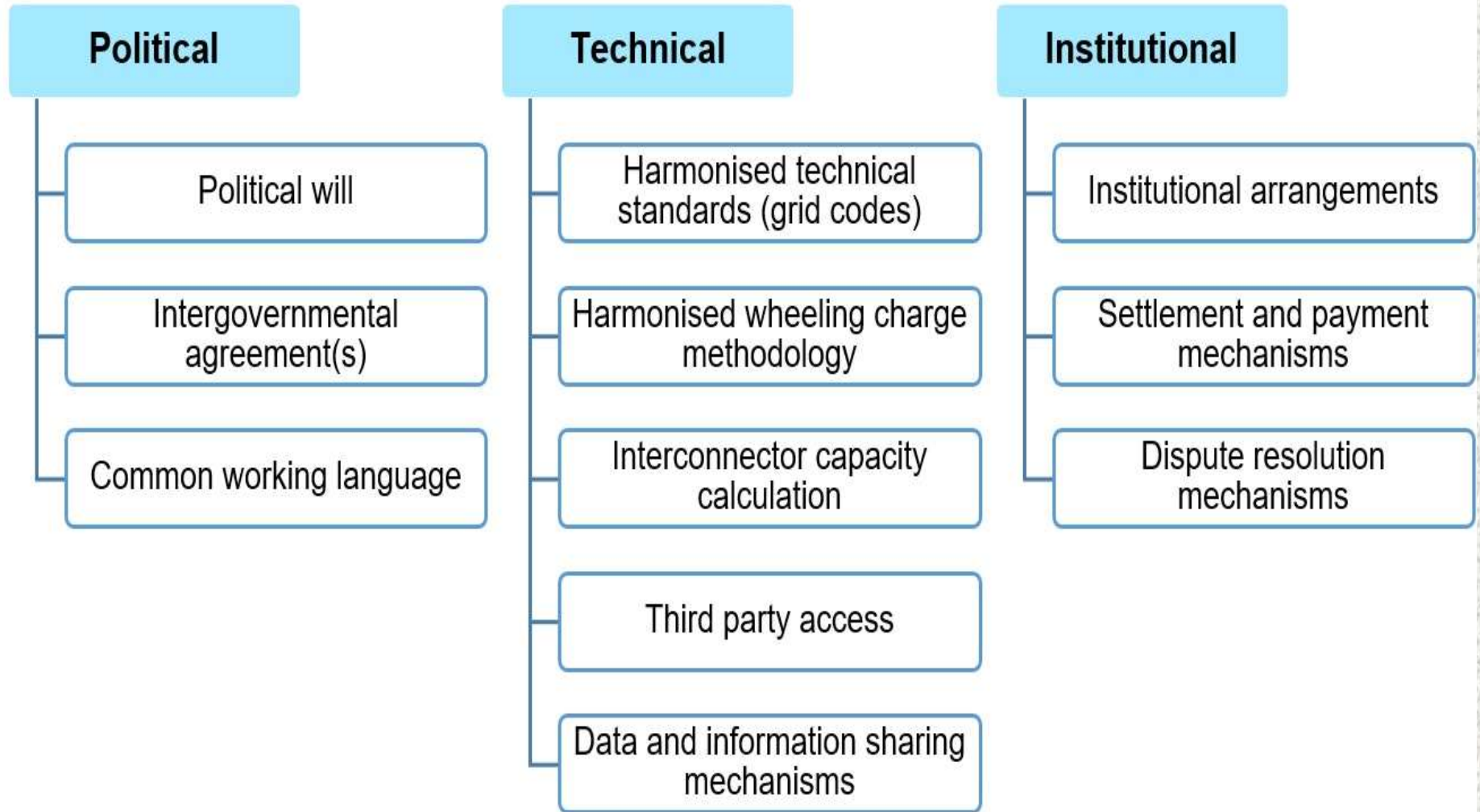


POWER SECTOR STRUCTURE SOME ECO MEMBER STATES

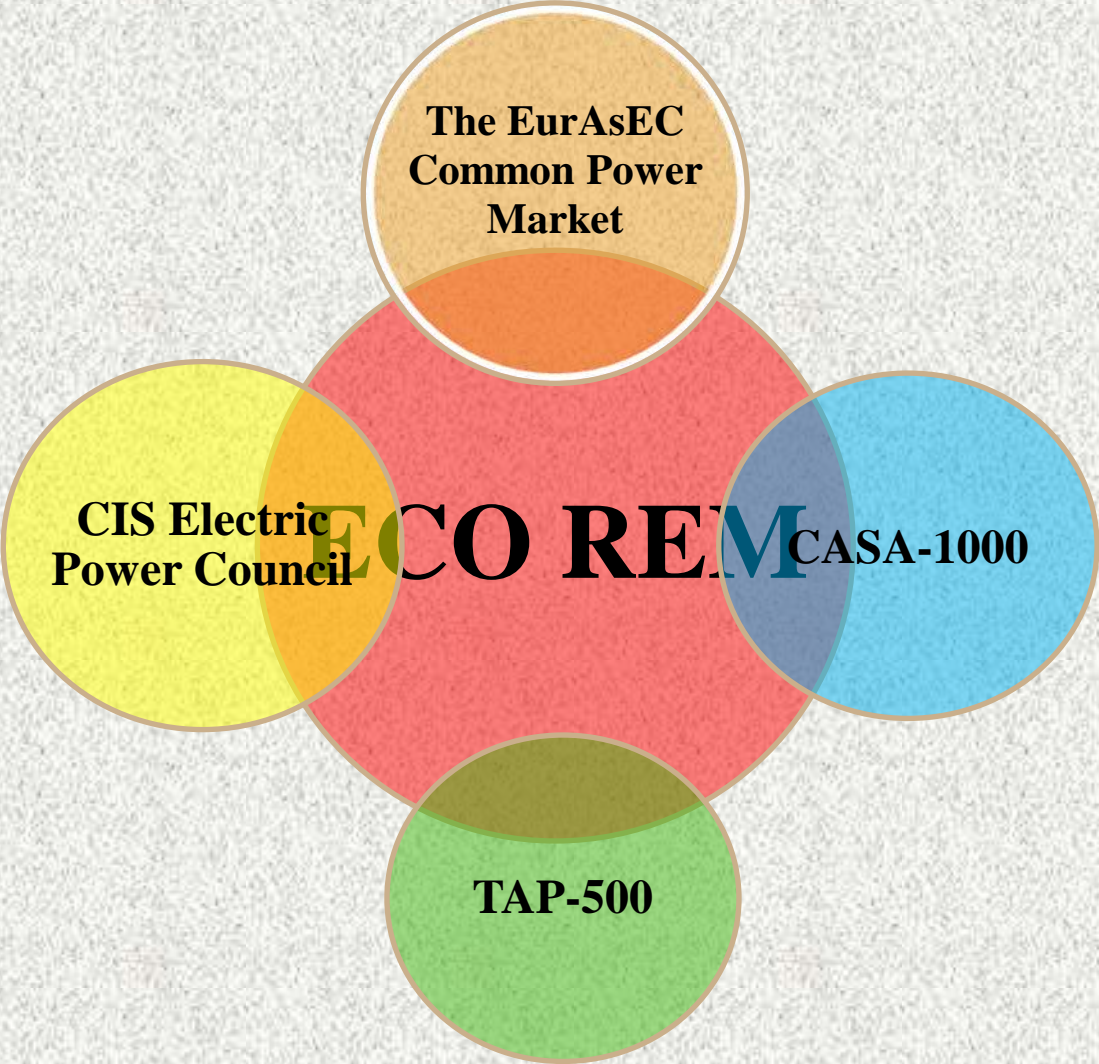
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Country	Structure	Domestic Market	Third-party participation
Tajikistan	Legally unbundled, with Barki Tojik as the holding company for all activities	Monopoly	Limited
Kazakhstan	Full legal and functional unbundling	Wholesale and retail markets	Yes. Currently about 45 privately owned enterprises
Kyrgyzstan	Legally unbundled	Monopoly	Limited
Turkmenistan	Vertically integrated	Monopoly	None
Uzbekistan	Legally unbundled	“Energo Sotish” as single buyer and seller	Limited
Afghanistan	Vertically integrated (fragmented)	Monopoly	Limited
Pakistan	Functionally unbundled with private sector participation	Central Power Purchasing Authority as single buyer and seller	Yes. Currently several independent power producers

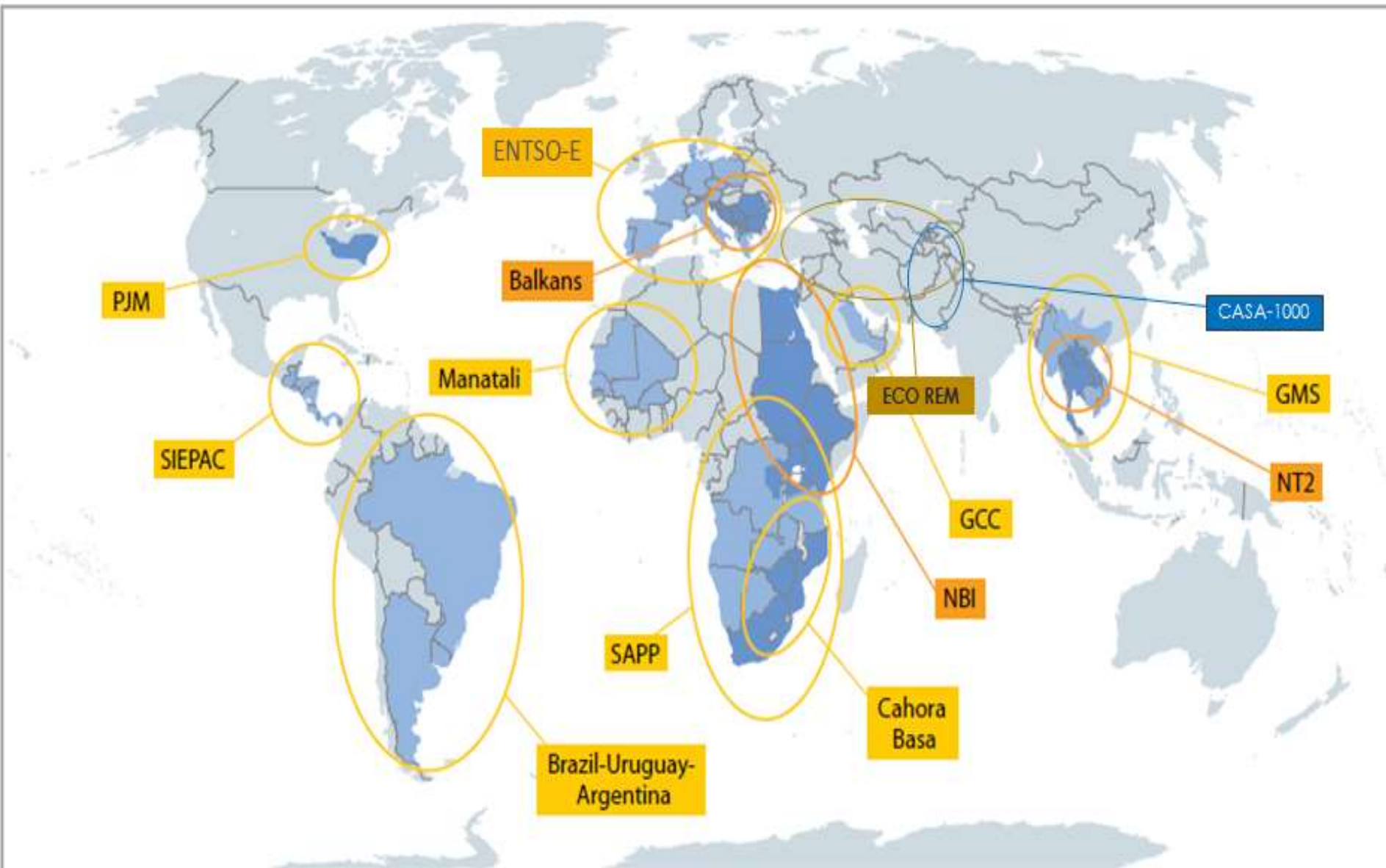
MINIMUM REQUIREMENTS TO ESTABLISH MULTILATERAL POWER TRADING



MULTILATERAL FRAMEWORKS IN ECO REGION (EXISTING AND PLANNED)



INTERNATIONAL TRENDS OF REGIONAL ELECTRICITY MARKETS



BACKGROUND

- ❖ The establishment of the ECO Regional Electricity Market (ECO-REM) was initiated at the 2nd ECO High Level Experts Group Meeting on Energy (September 2012, Ankara)
- ❖ 1st Experts Group Meeting on establishment of the ECO Regional Electricity Market (November 2013, Tehran) recommended to establish an Electricity Market in the ECO Region as a pilot project between Iran and Türkiye with its possible extension to other interested Member States for the maximum benefit of ECO Region
- ❖ 4th ECO Energy Ministerial Meeting (24 June 2021) adopted the Roadmap on realization of the ECO-REM project

CURRENT STATUS

- ❖ **ECO Secretariat started a dialogue with UNESCAP to align ECO-REM with ESCAP's Regional Roadmap on Power System Connectivity. The ESCAP's Project on "Energy Connectivity for Sustainable Development" could pave the way for launching and implementation of the ECO-REM Project**
- ❖ **The Secretariat circulated among Member States the draft "Regional Roadmap on Power System Connectivity – ECO Regional Electricity Market: promoting cross-border electricity connectivity for sustainable development", developed by the consultants of the UNESCAP Project "Energy connectivity for sustainable development".**
- ❖ **It is expected that as a result of the 2nd Experts Group Meeting on establishment of the ECO Regional Electricity Market in Dushanbe, active steps will be taken by the ECO Member States to coordinate actions for the implementation of the Roadmap.**

MODUS OPERANDI

- Play a catalyst role in better energy supplies, boost economic growth and have a multiplier effects in other sectors. These trade opportunities could be realized through progressive exploitation of solutions, including bilateral trade between neighbours and a transit countries, as well as dedicated trade arrangements between synchronized systems and sub-regions, facilitating the establishment of an ultimate regional electricity pool.
- Enhancement of regional electricity trade can initially be realized via strengthening intra-trade at sub-regional levels. Furthermore, the green electricity interconnections in the ECO Region and beyond can be an important pillar of cooperation in a long-term perspective. Other ECO Member States may harness benefits from such endeavours for larger integrated connectivity systems by unlocking enormous electricity potential in the ECO Region. Such projects will redefine regional energy map and accelerate green transition.

FEASIBILITY STUDY OBJECTIVES

- To study prerequisites and existing conditions in the ECO Region for establishment of the Regional Electricity Market through harmonizing and merging the electricity markets of the Member States, assessment of risks, consideration of legal arrangements and supportive documents
- To advise the ECO Member States on the optimal approaches to increase electricity trade via undertaking relevant trade arrangements; possibilities for capacity building and enabling framework; institutional enhancements; improving policy and regulatory environment

EXPECTED OUTCOMES OF ECO-REM PROJECT

- Electricity trade between the interested ECO Member States would have the multilateral character
- ECO Region will unfold its regional electricity power potential, generation and trade capacities
- The long-term regional power exchange and region-wide cooperation will be enhanced
- Establishment of ECO-REM towards the integrated multi-country markets
- Establishment of ECO-REM will have a multiplier/ spillover effects to the socio-economic development across the Region (economic growth, employment, etc)

THANK YOU

