

Power market roadmap for Central and West Asia (ECO-REM)

2nd Experts Group Meeting on establishment of ECO Regional Electricity Market
28 November, Dushanbe

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Overview of ECO-REM project – expected deliverables and timeline

■ Key activity

development of a subregional roadmap to inform multilateral power trading linked to sustainable cross border trade of renewable energy resources

■ Timeline

- | | |
|--|--------------------------------|
| ▪ Roundtable discussion to inform the development of subregional road map | April 2024 |
| ▪ Stakeholder workshop to discuss key findings from the roadmap development | June 2024 |
| ▪ Roadmap for establishing multilateral power trade and developing renewable energy resources | November 2024 |
| ▪ Stakeholder workshops to disseminate road map and develop capacity to implement road map recommendations | November, December 2024 |

Key activities

12-13 June, 2024

Regional Stakeholder Consultations to inform roadmap development.
40 in-person and 23 online participants

November 2024

Subregional road map to inform and guide development of multilateral power trading linked to the development and cross-border trade of renewable energy resources was developed

25 November, 2024

27th Session of the SPECA Working Group on Water, Energy and Environment

26-27 November, 2024

SPECA Economic Forum

27-28 November, 2024

2nd Experts Group Meeting on establishment of the ECO Regional Electricity Market

Stakeholder workshops to disseminate road map



Regional Stakeholder Consultation, Kazakhstan, June 2024



27th Session of the Working Group on Water, Energy and Environment SPECA, Tajikistan, November 2024

Current state of power sector connectivity infrastructure in the ECO region

Status of bilateral Power Grid Interconnections of the ECO Member States

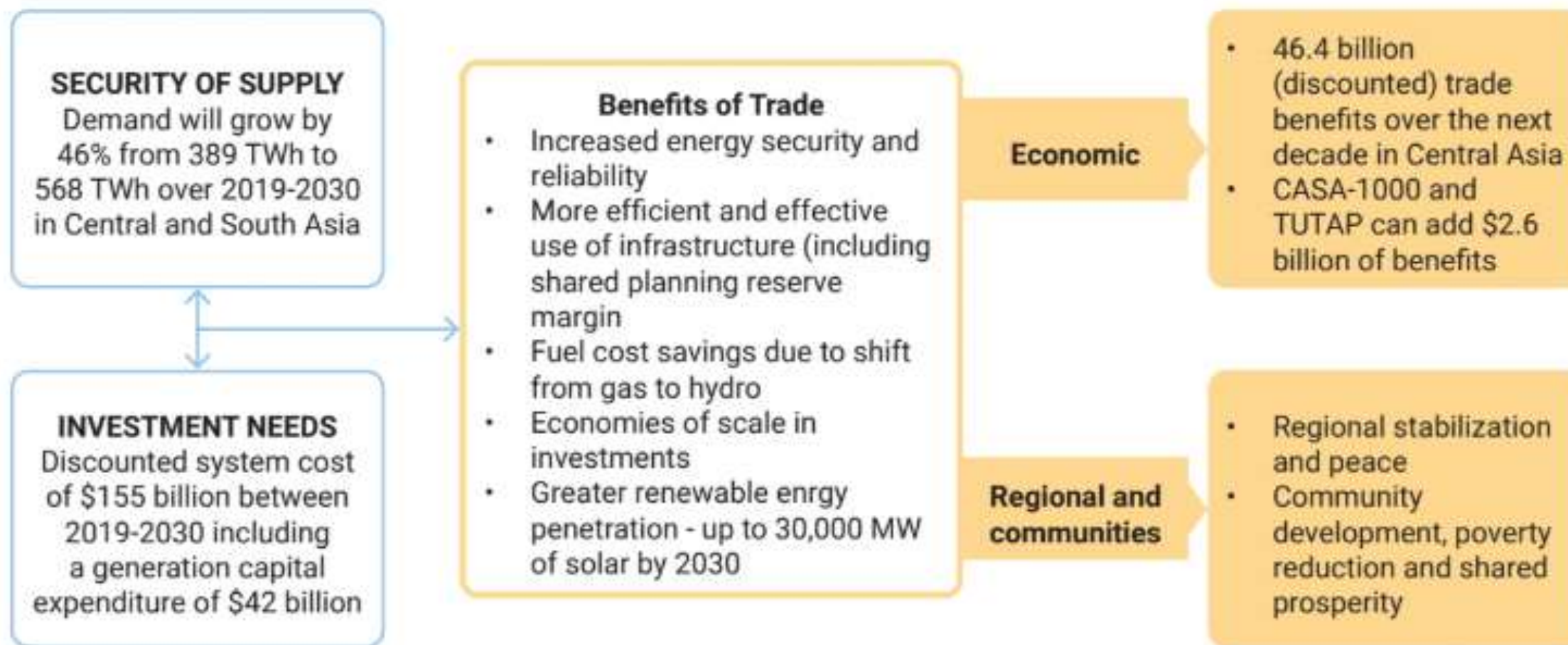


Challenges

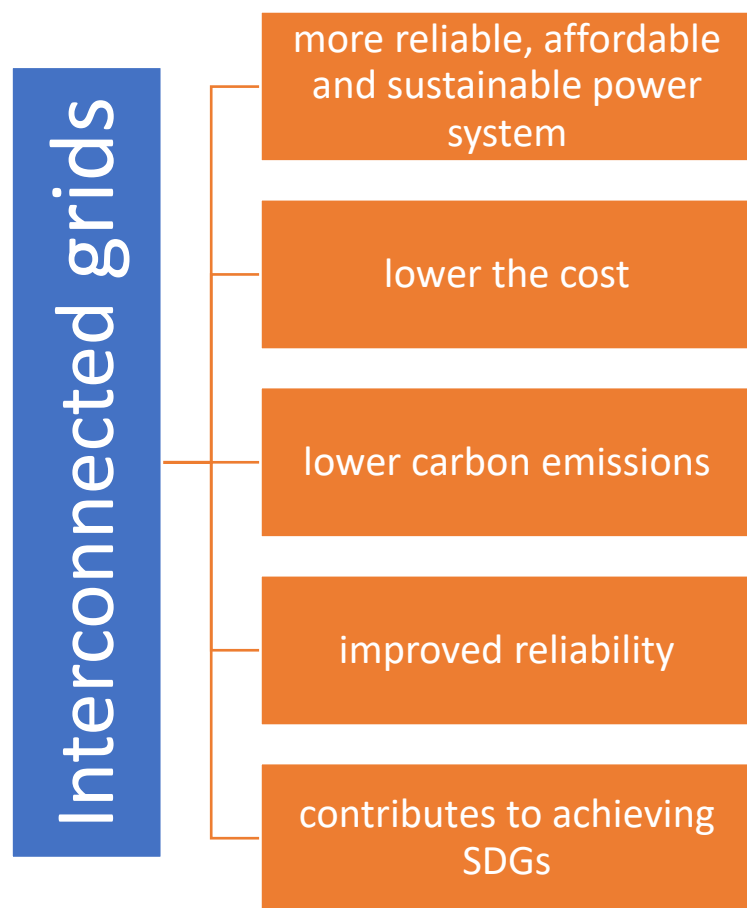
- Diverse regulatory frameworks
- Infrastructure development
- Insufficient development of renewable energy power
- Institutional arrangements
- Market design
- Technical challenges
- Data sharing
- Tariffs
- Capacity building

Source: <https://www.unescap.org/sites/default/d8files/event-documents/Project%20on%20Establishment%20of%20ECO%20Regional%20Electricity%20Market%20by%20Rovshan%20Mirzayev%20Minerals%20and%20Environment%20Economic%20Cooperation%20Organization.pdf>

Estimated benefits of regional electricity trade in Central Asia



Principles and vision of the roadmap



Principles:

- Focus on achieving a set of **targeted, actionable recommendations** for policy and regulatory reforms
- Relevant policies, regulations and business models carefully **consider each country's circumstance.**
- **Decide nationally** whether transnational connectivity is appropriate and according to country context.
- Enhance **cooperation with other intergovernmental and non-governmental organizations.**
- Develop the project **based on previous efforts** in the region by various developing partners

Proposed approach for developing a multilateral market for ECO region

Status of bilateral Power Grid Interconnections of the ECO Member States



Proposed approach for developing a multilateral market for ECO region (parallel activities)

Eastern Zone



4-7 years

- Completion of TAP and TUTAP project infrastructures
- Establishment of an Electricity Trading Center to handle trading transactions between Pakistan and Afghanistan and with other zones
- Upgrade of power system control equipment to meet technical requirements of trading in the related countries
- Capacity building for Afghanistan electric utility company in electricity trading
- Development of a single pricing mechanism

Central Zone



4-7 years

- Completion of TAP and TUTAP project infrastructures
- Establishment of an Electricity Trading Center that would handle pricing mechanisms in addition to existing technical arrangements among the related countries and with other zones
- Upgrade of power system control equipment to meet technical requirements of trading in the related countries and to smoothly integrate variable renewable (i.e., to maintain system stability) given the increasing share of renewable

Western Zone



4-7 years

- Establishment of an Electricity Trading Center to handle trading transactions (technical and economic) among three countries and with other zones
- Upgrade of power system control equipment to meet technical requirements of trading in the related countries and to smoothly integrate variable renewable (i.e., to maintain system stability) given the increasing share of renewable

Measures from the road map (1/3)

1. Organization of Stakeholders' Cooperation for the Development of Cross-border Electricity Trade

Establish a permanent high-level working group



Draw up an agreement on decision-making principles and financing of designated activities.



1-3 years

Dialogue and discussion of cross-border electricity trade needs, potential effects, definition of tools for interaction and cooperation, main participants, their rights and responsibilities. Includes determining the principles for **decision-making and the financing** of activities related to the development of cross-border electricity trade

2. Agreement on the boundaries of energy cooperation

Signing of framework multilateral intergovernmental agreements on energy cooperation



Development of a comprehensive master plan for the advancement of cross-border electricity trade in the region



1-7 years

Definition of the basic principles of cross-border electricity trade and transit in the region and addressing issues of interaction with third countries. It aims to develop a comprehensive **master plan** (detailed roadmap) for the development of cross-border electricity trade in the region

3. Development of rules and mechanisms for mutual trade and interstate electricity transmission

Incorporation of the rules into the national legislation of the ECO member states



1-15 years

Development and **agreement on rules for mutual electricity trade**: long-term agreements, centralized trading, and the settlement of deviations between actual and planned electricity flow balances. The final step is **the implementation** of these **rules into the national legislation** of the states in the region, potentially in phases

Measures from the road map (2/3)

4. Harmonization of legislation on cross-border electricity connectivity



Annual publication of results from comparative analyses of energy policies



1-7 years

Publication of a series of **annual reports and comparative analyses of energy policies in the states of the region**, providing conclusions and recommendations for eliminating barriers to cross-border electricity trade.

Development of **model regulatory acts** for harmonizing the legislation regarding energy cooperation, as well as development of **mechanisms for preliminary notification and/or coordination** of changes in the regulatory framework in the energy policy

5. Regional cross-border electricity grid master plan



Creating coordinated cooperation mechanisms for planning the development of the regional cross-border electricity grid



1-15 years

- Regulation for planning the development of the **regional cross-border electricity grid**, aligning with principles of energy security, supply stability, and economic feasibility for each state
- Development of the master plan (not legally binding) for the regional cross-border electricity grid and a mechanism for its updating

6. Interaction of organizations (system operators, commercial infrastructure operators)



Implementation of cooperation mechanisms for infrastructure organizations in the electricity transmission and trade



1-15 years

- Organizing the interaction of infrastructure organizations
- Agreeing on the principles of dispatch control of the energy systems in the region's states
- **Developing payment mechanisms within centralized trading (security, guarantees, etc.)**
- **Implementing pilot projects** for centralized trading at the subregional level

Measures from the road map (3/3)

7. Fostering investments



Development of regional platforms that bring together interested parties to promote project financing in clean energy production and trading



1-15 years

- Identifying and analyzing best global practices for attracting investments in the electricity sector
- **Conducting a comparative analysis of the investment policies** in the electricity sector of the region's states
- Developing guidelines and organizing the interaction of interested parties to stimulate investments in the electricity sector and enhance transparency

8. Ensuring information exchange



Implementation of rules for information exchange between authorized government bodies and infrastructure organizations in the region



1-15 years

- **Adopting harmonized standards for information disclosure in the electricity sector**
- Organizing and conducting training sessions and seminars on issues related to energy cooperation among the region's states
- Concluding **agreements on information exchange** with other states and international organizations

9. Sustainability of interstate electricity trade



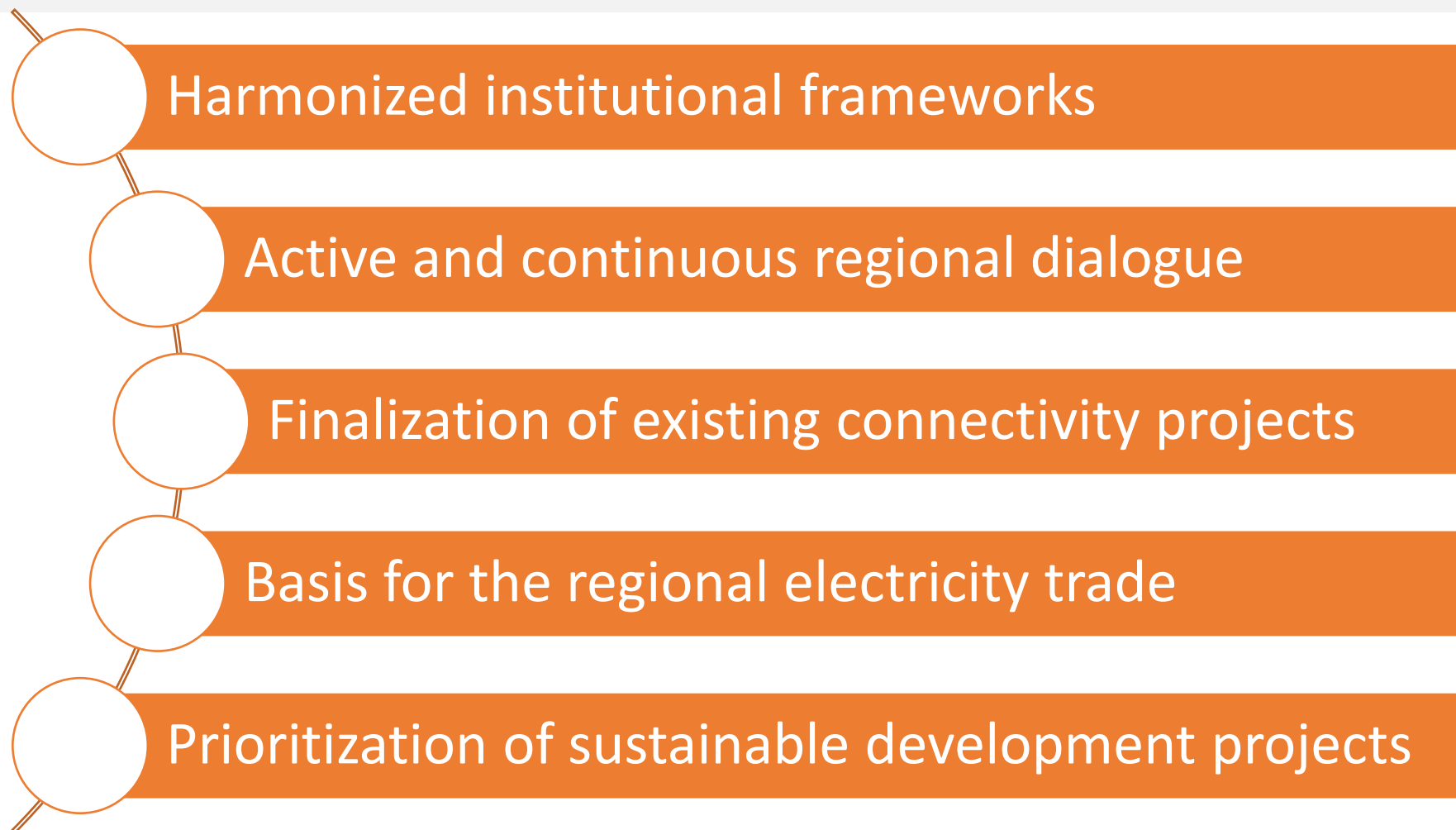
Involvement of sustainable development criteria in the projects, aimed at the development of interstate electricity trade



1-15 years

- Conducting **research and analysis of the interconnections between energy sector and sustainable development** in the states of the region
- Assessing the impact of potential projects for the development of interstate electricity trade on indicators of sustainable development
- **Creating a set of measures for the region's states to enhance resilience and readiness** for emergencies in energy infrastructure

Outcomes



Next steps and recommendations

- Developing a working group
- Identifying financial aspects of implementing the road map
- Fostering regular dialogue
- Tailoring agreements on power system connectivity models to the specific circumstances
- Establishing/using existing forums dedicated to knowledge-sharing, harmonization and capacity-building can facilitate this process.
- Coordinating among international donor organizations



Power market roadmap for Central and West Asia



ESCAP

Economic and Social Commission
for Asia and the Pacific