

“Energy connectivity for sustainable development – Enabling renewable energy resource sharing across borders”

Workshop (13 June 2024)

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Overview of ECO-REM project – expected deliverables and timeline

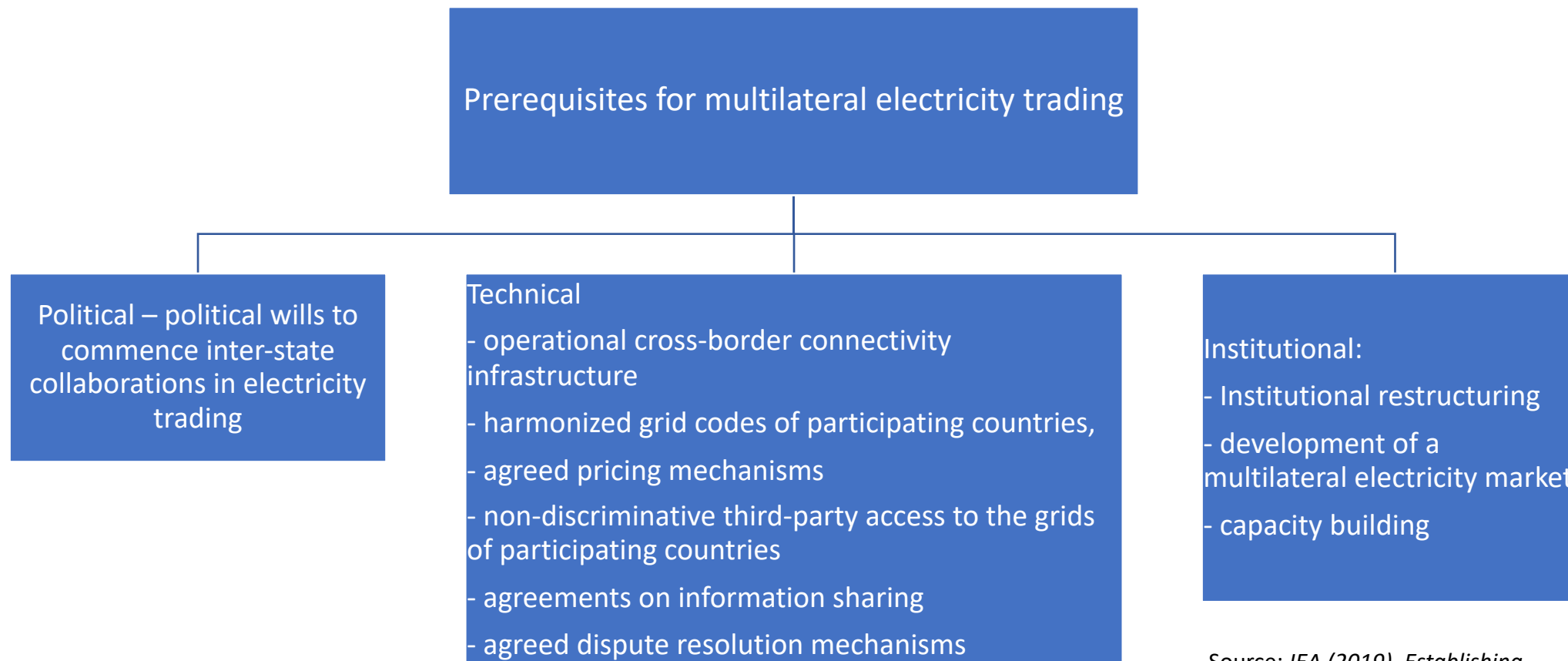
■ Key activity

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 **12-13 June 2024**
- Roadmap for establishing multilateral power trade and developing renewable energy resources **by October 2024**
- Stakeholder workshops to disseminate road map and develop capacity to implement road map recommendations **during COP 29 in November 2024**

Requirements for multilateral electricity trading models



Source: IEA (2019), *Establishing Multilateral Power Trade in ASEAN*, International Energy Agency, Paris

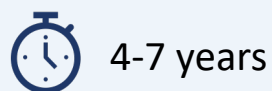
Proposed approach for developing a multilateral market for ECO region

Status of bilateral Power Grid Interconnections of the ECO Member States



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

Western Zone



4-7 years

- Completion of TAP and TUTAP project infrastructures
- Establishment of an Electricity Trading Center in one the countries of this zone to handle technical arrangements and pricing
- Upgrade of power system control equipment to meet technical requirements of trading in two countries
- Capacity building for Afghanistan electric utility company in electricity trading

Central Zone



4-7 years

- Completion of TAP and TUTAP project infrastructures
- Establishment of an Electricity Trading Center in one the countries of this zone to handle technical arrangements and pricing
- 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

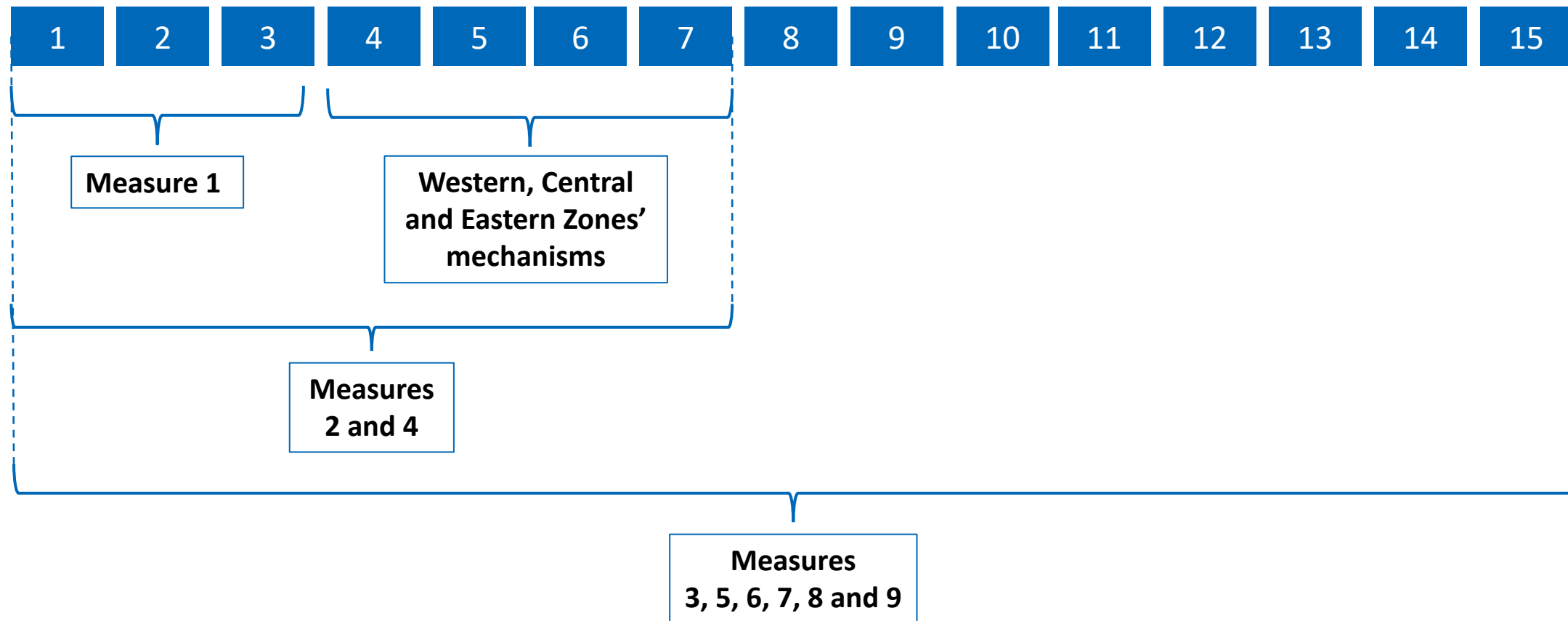
Eastern Zone



4-7 years

- Establishment of an Electricity Trading Center in one the countries of this zone to handle technical arrangements and pricing
- 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

Timeline for the proposed measures as per the approach



Pathway for ECO region (parallel activities)

**Development of a single
electricity trading market for
ECO region (long term
perspective: 7-10 years)**

Preparation and concluding of an agreement by all ECO member countries on political, technical and institutional arrangements for electricity trading of member states within the region and outside the region

As a part of the agreement, establishment of an electronic electricity trading platform jointly by the member states and international donor agencies that would have the following features:

- Integration to power system control centers of ECO member states for technical operations
- Pricing mechanism/clearing rules that would have spot and day-ahead market pricing

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

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 the development of cross-border electricity trade.

Development of **model regulatory acts** for harmonizing the legislation regarding energy cooperation

5. Regional cross-border electricity grid master plan for coordination



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

6. Interaction of organizations (system operators, network 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

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

- Active and continuous **regional dialogue** on cross-border electricity trade and instruments **for interconnection and cooperation**

An information and coordination platform to create a space for exchange of opinions and experiences

- **Interconnection models** and **harmonized institutional frameworks** to minimize transaction costs

Data exchange, payments, dispatching, etc.

- Basis for the **regional electricity trade**

Cross-border trade and transit principles, dispute resolution mechanisms and minimal technical requirements

- Promotion of the most **prospective investment projects**

Contribution to regional infrastructure and electricity trade

- Prioritization of **sustainable development** projects

Positive role of renewable energy resource and creating favorable conditions for their deployment

Next steps and recommendations

Recommendations for further development include:

Foster collaboration among relevant stakeholders (governments, utilities, renewable energy developers, civil society organizations, development banks, local communities) for the following purposes:

- promote renewable energy initiatives
 - achieve coordination among international donor organizations
 - share knowledge
 - harmonize approaches
 - build capacities
- through dedicated forums and associations

Tailor agreements on power system connectivity models to the specific circumstances and needs of the involved countries to ensure inclusivity and sustainability

Learn from the experiences of other regions and adapt best practices from around the world for successful implementation of ECO-REM development

Questions to participants

Block 1

- What are the existing bilateral and multilateral electricity collaboration initiatives?
- How intergovernmental agreements are being developed and implemented in ECO member states?
- What are the potential mutual benefits of increased cross-border power trade linked to renewable energy resources?
- What are the key steps in the creation of market rules for cross-border electricity trade?

Block 2

- What are some of the main regulatory, economic, technical and political barriers/challenges to the potential expansion of existing regional electricity connectivity initiatives/projects?
- How can cross-border power trade effectively balance security, efficiency, and sustainability?

Block 3

- Any feedback on the proposed roadmap for ECO-REM and certain potential options for its implementation?
- What are the potential options for including non-ECO countries in cross-border power trading?

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