Deep Dive Workshop on Enabling Frameworks for Renewable Energy Multilateral Power Trade

Governance Frameworks to Further RE-MPT

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Drivers of multilateral power trade in Asia Pacific

- Supply security and cost reduction
- Investment attraction
- Renewable penetration to achieve national net zero targets
Challenges of multilateral power trade in Asia Pacific

- Political commitment and trust
- Institutions to support development and operation of markets
- Diverse regulatory frameworks
- Investment and financing for infrastructure development
- Technical challenges
- Institutional and technical capacity
Governance Frameworks Enabling Multilateral Power Trade

- The Green Power Corridor Framework sets out principles of governance frameworks to support multilateral power trade enabling greater renewable energy deployment.
Currently, a number of initiatives in A-P subregions are at the emergent stage of MPT (none are multilateral).

Existing initiatives in A-P (LTMS-PIP, GMS, BBIN) building momentum towards MPT.

Many different market models are possible.

All models benefit from strong institutional frameworks.
Mandate and scope of institutional and regulatory frameworks depend on national preferences of MPT market models

**Countries often avoid:**
- Full common trading market
- Full open access
- Complex trading instruments
- Unbundling in the domestic market

**In favour of:**
- Own market design and rules
- Common guidelines for technical/ physical interconnection of power grids
- Data sharing on cross-border transmission capacities
- Centralized institutions to support and coordinate trade
- A special financing fund

Source: CEET 2023, Best practices for regional grid interconnection and variable renewable energy integration
In the ASEAN context...

**AMS endorsed the following six principles to guide MPT:**

1. Efforts to establish multilateral power trading should be stepwise and voluntary.

2. Power trade should focus on gaps and excesses and not require the full participation of all domestic generation in a regional power market. In particular, multi-lateral power trading should not interfere with the operation of national power systems.

3. National regulations should be complemented by regional coordination. While some regulatory alignment may be necessary to support trade, multilateral power trading should not require complete regulatory harmonisation among the participating countries.

4. Multilateral power trading should be supported by the expansion of regional (cross-border) power system infrastructure. A master regional infrastructure plan should be developed with multilateral power trading in mind.

5. True multilateral power trading will require the development of a regional wheeling price model.

6. Multilateral power trade should support the development of sustainable power systems. For example, it should help to increase the deployment of variable renewables like wind and solar PV, and should help enable increased electricity access.
Categories of power trading systems and the ASEAN Model (medium horizon)

- Under the ASEAN principles for MPT, the MPT model for the ASEAN Power Grid combine harmonized bilateral trade (with wheeling) and optional multilateral trade for excess supply/demand in the medium horizon.
Stages of Institutional Architecture Development

Early stage
- Bilateral agreements are popular, with no strong supranational entity involved
- GMS, LTMS-PIP

Shallow
- Regional regulatory bodies and/or steering committees are in place but face enforcement challenges
- SAPP, WAPP, EAPP, MER

Deep
- Enforceability of regional regulatory bodies and/or steering committees is at an extended level
- EU Internal Market, WEIM

Proposed role of an interim regional coordinator for APG implementation

• Central coordinating entity for MPT development
• Regional cross-border energy planning
• Coordination of infrastructure planning and financing
• Regulatory guidance (alignment with national regulations, dispute resolutions)
• Other technical matters (wheeling charges methodology, ATC calculations, grid code harmonization, market operation)

Require adequate executive power
Regional Electricity Master Planning is a Governance Framework

Regional master planning requires:
- Integrated RE and transmission planning
- Cooperation and data sharing across involved countries
- Pooling of financial and other resources
Regional Electricity Master Planning in ASEAN: ASEAN Interconnection Master Plan Study

AIMS I (2003)
- Proposed regional electrical power transmission network (APG)
- Identified potential savings in new investment and operating costs on interconnection

AIMS II (2010)
- Updated APG (changes in economic situation, electricity demand, energy requirements)
- Plan APG through interconnection and to promote efficient, economical and secure power systems

AIMS III (2020, 2022)
- Update AIMS II with focus on increasing RE integration through greater interconnections
- Time horizon up to 2040

Source: ACE
Financing Framework

• Financing for interconnector projects should assess (i) financial viability of the project itself; and (ii) impact on renewable resource integration

• Financial viability should be decided based on a commonly agreed approach to feasibility studies and modelling

• Access to a common pool of financial resources can expedite project implementation (e.g. SAPP Regional Transmission Infrastructure Finance Facility)
Leading governance practice: Projects of Common Interest

**ENTSO-e Project of Common Interest**

- **Projects of Common Interest selection**
  - Criteria: contribution to energy security, market integration, sustainability, innovation etc.

- **Inclusion in master plan (TYNDP)**

- **Formal designation as PCI, project planning and permitting**

- **Financing and funding**
  - Connecting Europe Facility, member state contributions, private sector investment, MDB
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