

Concept note (draft)

2nd Asia-Pacific Regulatory Forum on Power System Connectivity

12:00 – 16:00 hrs. (GMT + 7) 6 and 7 June 2023 – Virtual Meeting

Background

The Asia-Pacific region is at the center of the clean energy transition, with a significant number of countries having announced ambitions to achieve net zero emissions. Cross-border connectivity in the broad sense can be an important facilitator of the clean energy transition, by, for example, enabling the integration of higher shares of renewable energy, reducing energy costs, and increasing energy security. There are numerous efforts in the region to increase cross-border power system connectivity, however to date they remain below the identified potential.

At the 77th Commission Session in 2021, UN ESCAP Member States endorsed the regional road map on power system connectivity.¹ Among the nine strategies contained in this document is one that highlights regulatory harmonization as key to supporting sustainable power system integration across the region. Specifically:

- Strategy 4: coordinate, harmonize and institutionalize policy and regulatory frameworks

This strategy highlights the need to identify existing regulatory gaps, to develop common regulatory frameworks to support cross-border power trade, and to establish forums and associations to support regulatory collaboration in areas like harmonization, capacity building, and knowledge sharing.

While there are many examples of cross-border collaboration among energy regulators in sub-regions of Asia and the Pacific, there have been relatively few opportunities at a regional level. The first Asia-Pacific Regulatory Forum on Power System Connectivity was held on 19 and 10 July 2022² brought together regulators from across the region to share experiences and best practices on power sector connectivity, and build a common understanding of the connectivity challenges that power systems in the region face, in particular in the context of the energy transition.

The second Forum, following the format of the first forum, will again address the topics of regulatory collaboration and energy security, while also introducing two new topics, regulatory collaboration to enable renewables integration, and implications of pricing for power system integration.

¹ https://www.unescap.org/sites/default/d8files/event-documents/CE_2021_4.pdf

² <https://www.unescap.org/events/2022/1st-asia-pacific-regulatory-forum-power-system-connectivity>

Objectives and themes of the Forum

The main objective of the Forum is to facilitate dialogue and knowledge sharing among energy regulators to increase collaboration across the Asia-Pacific region on power sector connectivity and related issues.

Against this background, participants in the 2nd Asia-Pacific Regulatory Forum on Power System Connectivity will discuss four main topics:

(1) The importance of regulatory collaboration across borders

Regulatory collaboration across borders is important for successful power sector connectivity projects and the integration of higher shares of variable renewable energy (VRE). Regulatory collaboration can range from experience sharing, to developing, harmonizing, and enforcing common regulation, there is no one size fits all, and regulatory collaboration can take different forms depending on the jurisdictions involved and the degree of integration aimed for. In the Asia-Pacific there are few examples of multilateral trading arrangements which enable power system connectivity. Additionally, there is a lack of coordinated grid planning processes in the region. In this session we will discuss learnings from existing multilateral trading arrangements as well as key learnings for regulators when collaborating on transmission infrastructure.

(2) Regulatory collaboration to increase renewable integration

Increasing regulatory collaboration is key to accelerating the deployment of VRE. The session will focus on the discussion of current regulatory challenges and barriers which countries face in relation to the deployment of renewable energy; regulatory cooperation opportunities and potential to gradually increase the use of renewable energy, examples from various sub-regions. The participants will also share best regulatory practices to support the deployment of renewable energy. As an example aligning connection codes across border can help reduce cost of VRE deployment by strengthening supply chains within a region, as well as remove barriers for power system connectivity which can increase power system flexibility.

(3) Security implications of cross-border power system integration

Power system integration is likely to have a beneficial impact on the security of supply of the participating jurisdictions, but also poses some challenges. On the beneficial side, a larger interconnected system would be able to provide the same level of continuity of supply with a lower overall resource reserve margin, as long as reserve capacity in one jurisdiction can be used to support imbalances in a different jurisdiction of the interconnected system. Moreover, a synchronous interconnected system would be better

able to withstand disturbances in the frequency and therefore would be more resilient. This is particularly important in the context of the expected expansion of renewable energy-based generation connected to the systems. However, in an interconnected system, especially a synchronous one, disturbances created by events in one jurisdiction propagate to other jurisdictions and could result in wider disruptions of service. In this respect, defense plans and emergency procedures should be developed at the level of the interconnected system. The participants in the Forum will be invited to share their experience on the impact of cross-border electricity connectivity on the security and continuity of supply in their respective jurisdictions.

(4) Implications of pricing for power system integration

The integration of power systems across borders provides the opportunity for commercial exchanges between the different jurisdictions, thus creating a cross-border or regional market. The benefits of such markets for electricity consumers in the region are clear, in terms of reduction in the cost of serving them by dispatching the most efficient set of resources at regional level compatibly with the transmission capacity within and between the different jurisdictions. Therefore, it is essential that the transmission tariffs applicable to cross-border exchanges do not unduly hinder them. The application of national tariff frameworks to cross-border exchanges might result in the so-called 'tariff pancaking', whereby transmission charges applicable to cross-border exchanges reflect the accumulation of the different national tariffs and therefore are higher than those applied to internal transaction. These higher charges, beyond being a barrier to cross-border exchanges, may not be justified if cross-border transactions reduce the loading on the power system. The participants in the Forum will be invited to discuss which transmission tariff approach is best suited to support cross-border exchanges, while conveying the correct signals regarding the cost imposed on the transmission systems in the different jurisdictions.

Expected Outcomes of the Meeting:

Regulators from across Asia-Pacific will be invited to form connections and collaborate with other regulators from across the region, and will gain insights into national regulatory questions through the experiences of regulators in other jurisdictions. The overall goal is to establish a regular Forum for regulators across the region to facilitate continued discussion and collaboration, in particular on topics related to achieving increased power sector connectivity in support of sustainable development³.

³ The Forum is inspired by regulatory forums in other regions, for example in Europe a regulatory forum was established well before the internal European market as a place for regulators to exchange experiences and agree on best practices when relevant.

This Forum is linked to trainings that UN ESCAP is developing for selected Asia-Pacific sub-regions in 2022 and 2023. Topics relevant to the trainings will be discussed during the Forum, and the Forum discussion will in turn inform development of the trainings.

With the identified topics of common interest UN ESCAP will seek to arrange an annual Asia-Pacific Forum for Regulators where relevant topics can be explored, and experiences shared.

Date, time and tentative agenda

The Forum will be held on the 6 and 7 June 2023 from 12:00 hrs to 16:00 hrs (GMT+7) in a virtual format. The Forum is open to regulators, representatives from government agencies, and other relevant stakeholders from all ESCAP member States, as well as selected expert speakers.

Draft Agenda and Programme⁴

Agenda 6 June 2023

Time (GMT+7)	Agenda item
12:00 - 12:15	Opening remarks
12:15 - 12:25	Keynote remarks
12:25 - 13:30	Session 1: Regulatory collaboration on power sector across borders
13:30-14:30	break
14:30 - 15:50	Session 2: Regulatory collaboration to increase renewable integration
15:50 - 16:00	Wrap up

Agenda 7 June 2023

Time (GMT+7)	Agenda item
12:00 - 12:15	Opening remarks and Recap from Day 1
12:15 - 12:25	Keynote remarks

⁴ For more detailed agenda see event website agenda document <https://www.unescap.org/events/2023/2nd-asia-pacific-regulatory-forum-power-system-connectivity>

12:25 - 13:30	Session 3: Security implications of cross-border power sector connectivity
13:30-14:30	break
14:30 - 15:50	Session 4: Implications of pricing for power system integration
15:50 - 16:00	Wrap up