

Northeast Asia Regional Power Interconnection and Cooperation Forum 2018

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ORGANIZED BY: United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), Ministry of Energy of Mongolia, China Electricity Council (CEC), Ministry of Foreign Affairs of Republic of Korea, and Asian Development Bank (ADB)

IN COLLABORATION WITH: Greater Tumen Initiative (GTI), Energy System Institute (ESI) of Russian Federation, Renewable Energy Institute (REI) of Japan, and Global Energy Interconnection Development and Cooperation Organization (GEIDCO)

Background

North-East Asian (NEA) countries have significant potentials for harnessing complementarities in energy resource endowment as well as in energy production and consumption. For instance, China has the largest installed capacity of renewable energy in the world; the Russian Federation and Mongolia have huge solar, wind and hydro power potentials; China, Japan and the Republic of Korea are top-ranked energy consuming and importing countries; and the Democratic People's Republic of Korea has significant challenges in energy access. An interconnected power system across a large geographic region and multiple countries, thus, would provide more reliable and cleaner energy, and help resolve intermittency of power generations from renewable sources, thereby supporting energy transition and energy security in North-East Asia.

In the past few years, the idea of subregional energy connectivity gained momentum, particularly after the 2011 Great East Japan Earthquake and the Asia Super Grid initiative of SoftBank. Since then there has been increasing discussions on the benefits of enhancing power interconnections based on renewables, and some progresses in bi-/multilateral arrangements were made. Such support for power interconnections was reflected in the strong support of the Mongolian Government for the Gobitec and Asia Super Grid Initiative since early 2013, the statement by Chinese President Xi Jinping on establishing a Global Energy Interconnection mechanism in September 2015, and the statement by the Russian President Vladimir Putin on the North-East Asia Super Energy Ring in September 2016. President Moon Jae-in of the Republic of Korea, at the Eastern Economic Forum in September 2017, echoed the idea of power interconnections by proposing to begin discussions among all leaders in North-East Asia to establish a super grid with a greater vision of forming a North-East Asia economic bloc and a multilateral security system. In a nutshell, North-East Asia power interconnection meets government policies such as Belt and Road Initiative (China), Gobitec Project (Mongolia), New Northern Policy (Republic of Korea) and New Eastern Policy (Russian Federation).

Against the backdrop, energy institutes and public/private power companies have conducted several studies on energy connectivity including joint feasibility studies, which showed great potential benefits in terms of capacity, fuel cost saving, investment, and the environment.

Recent progress in feasibility studies and bi-/multilateral arrangements

There has been significant progress in joint feasibility studies and bi-/multilateral arrangements during the last year with political support, favorable outcomes of feasibility studies, and most recently, eased geopolitical tensions.

Feasibility studies: Subsequent to the Memorandum of Understanding of GEIDCO, KEPCO, Rosseti and SoftBank in March 2016 on joint feasibility studies and business evaluation studies, GEIDCO, SGCC (China) and KEPCO (Republic of Korea) in December 2017 signed another memorandum of agreement to develop China-Republic of Korea power grid interconnection project. The agreement also includes (1) establishment of Steering Committee and Joint Working Group; (2) joint study on technical and economic feasibility, power market and national policies; and (3) development of additional agreements such as Joint Development Agreement (JDA). In this connection, the first China-Republic of Korea Energy Council Meeting was held in late May 2018 and agreed to conduct joint research on creating a North-East Asian Super Grid for power, including locations and expenses for installing undersea power cables. The feasibility study is expected to be completed by the end of 2018. Also, KEPCO and Rossetti signed a memorandum of understanding for joint study on power interconnection between two countries and the Democratic People's Republic of Korea during the Republic of Korea-Russia Summit in June 2018.

The 2nd report of the Asia International Grid Connection Study Group by the Renewable Energy Institute, Japan, released in June 2018, examined costs and benefits of possible routes for interconnections between Japan and the Russian Federation, and Japan and the Republic of Korea. It reported that power grid interconnections between these countries are physically and technically possible without any major problems in connection to the onshore domestic networks. Also, it found that construction costs of a 2 GW interconnection range from a little more than JPY 200 billion (Japan-Republic of Korea) to a little less than JPY 600 billion (Japan-the Russian Federation), including the costs to expand the domestic grids, and are well recoverable.

The project on the Strategy for North-East Asia Power System Interconnection by ADB and the Mongolian Government is also being implemented since mid-2017, which focuses on developing master plans on renewable generation, market and power trade, and interconnection grid with the goal of supporting Mongolia on the multilateral interconnection using its abundant renewable energy.

Bilateral arrangements: There has been some notable intergovernmental processes. During the China-Republic of Korea Summit in December 2017, National Energy Administration of China and Ministry of Trade, Industry and Energy (MOTIE) of the Republic of Korea made a memorandum of understanding to establish a cooperation channel in the energy sector. Far East Development Minister of the Russian Federation visited the Republic of Korea in November 2017 and discussed with KEPCO on a "Power Bridge" project which is designed to connect the power systems between the two countries via high-capacity transmission lines. The Russian Federation also reemphasized the need for a "Japan-Russia Power Bridge", which was discussed during the Japan-Russia Summit in April 2017, as well as referred by the Deputy Prime Minister during his visit to Japan in October 2017.

Multistakeholder and regional processes: Given the development of a favorable environment in the market and stronger political will, there is need for a comprehensive multilateral mechanism which would provide the North-East Asian countries with a platform for dialogue and cooperation. In this regard, CEC, GEIDCO and various stakeholders in North-East Asia have initiated the process for launching of the North-East Asia Regional Power Interconnection (NEARPIC) with its first forum in Beijing in 2016. Aiming to coordinate regional power development and operation as well as to promote renewable energy development and integration, the second NEARPIC Forum was successfully held in Irkutsk in 2017 by bringing together about 70 representatives from 27 organizations consisting of government agencies, public/private power companies and research institutes from the subregion. The Forum reviewed the status of power systems, existing initiatives and studies on cross-border projects, bi-/multilateral agreements on power trade and operation, and related challenges and barriers. Sharing progress and outcomes of feasibility studies on power interconnection, participants reiterated the importance of setting an intergovernmental arrangement or multistakeholder mechanism to further promote multilateral power cooperation more effectively, and the need of more holistic approach including not only energy policy agendas but also social and environmental outcomes to capture attention of the policy makers.

At the regional level in Asia and the Pacific, the importance of energy connectivity and the potential contribution of cross-border energy trade to attaining SDG7 was also recognized by the Ministerial Declaration of the Second Asian and Pacific Energy Forum held in April 2018, which was subsequently endorsed at the 74th Commission Session of ESCAP in May 2018 by the resolution 74/9. The Declaration stressed the necessity to facilitate the development and implementation of regional energy connectivity and trade, and established the Expert Working Group on Energy Connectivity to support the regional demand. This regional process is also expected to support power interconnections in North-East Asia, and vice versa.

The Next

While such progress has been made, there is still lack of intergovernmental frameworks on multilateral energy cooperation. Various proposals, initiatives and studies suggested to establish a multistakeholder platform and intergovernmental framework, as emphasized over the past years, to bring all key actors from the North-East Asian countries and contribute to long-term regular dialogues and communication mechanisms. Such platform/framework would facilitate dialogues on legal, technical and economic conditions, support technical studies, align national policies and regulations, avoid any duplication of efforts, and promote renewable energy development and integration. In particular, an intergovernmental arrangement is necessary to facilitate power interconnections through sharing a vision and strategic direction, streamlining contracts, increasing the availability of financing, reducing risk, and accelerating project development.

Against this background, ESCAP, CEC, Ministry of Energy (Mongolia), Ministry of Foreign Affairs (Republic of Korea) and ADB with the support of GTI, ESI, REI and GEIDCO are holding the North-East Asia Regional Power Interconnection and Cooperation Forum 2018 to promote dialogues on creating a framework for multilateral energy cooperation in the subregion.

Organizers

- United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
- China Electricity Council (CEC)
- Ministry of Energy, Mongolia
- Ministry of Foreign Affairs, Republic of Korea
- Asian Development Bank (ADB) - Northeast Asia Power System Interconnection (NAPSI)

Partners

- Greater Tumen Initiative (GTI)
- Energy System Institute (ESI), Russian Federation
- Renewable Energy Institute (REI), Japan
- Global Energy Interconnection Development and Cooperation Organization (GEIDCO)

Objectives

- To review the current state of power systems, existing cross-border projects, rules or bi-/multi-lateral arrangements on power trade and operation, as well as related challenges and barriers
- To discuss recent progress in feasibility studies of North-East Asia power interconnection, and to share international experience on regional power interconnection planning
- To discuss intergovernmental arrangement and multistakeholder platform for subregional power interconnection

Participants

- Government officials in the North-East Asian countries
- National institutes and other public-sector stakeholders in North-East Asia
- Energy companies
- International organizations and financial institutions
- Academia and think tanks

Organization

The Forum will be conducted in English, and all documentation will be in English. Presentations will be delivered by representatives, resource persons and experts upon the session focus, followed by discussions.

Provisional agenda

1. Opening
2. National and bi-/multi-lateral feasibility studies and planning
3. Review of progress on subregional cooperation for power interconnection
4. Intergovernmental/ multilateral arrangement for power interconnection
5. Discussion on NEARPIC Terms of Reference and Activities
6. Closing
7. Steering Committee meeting