

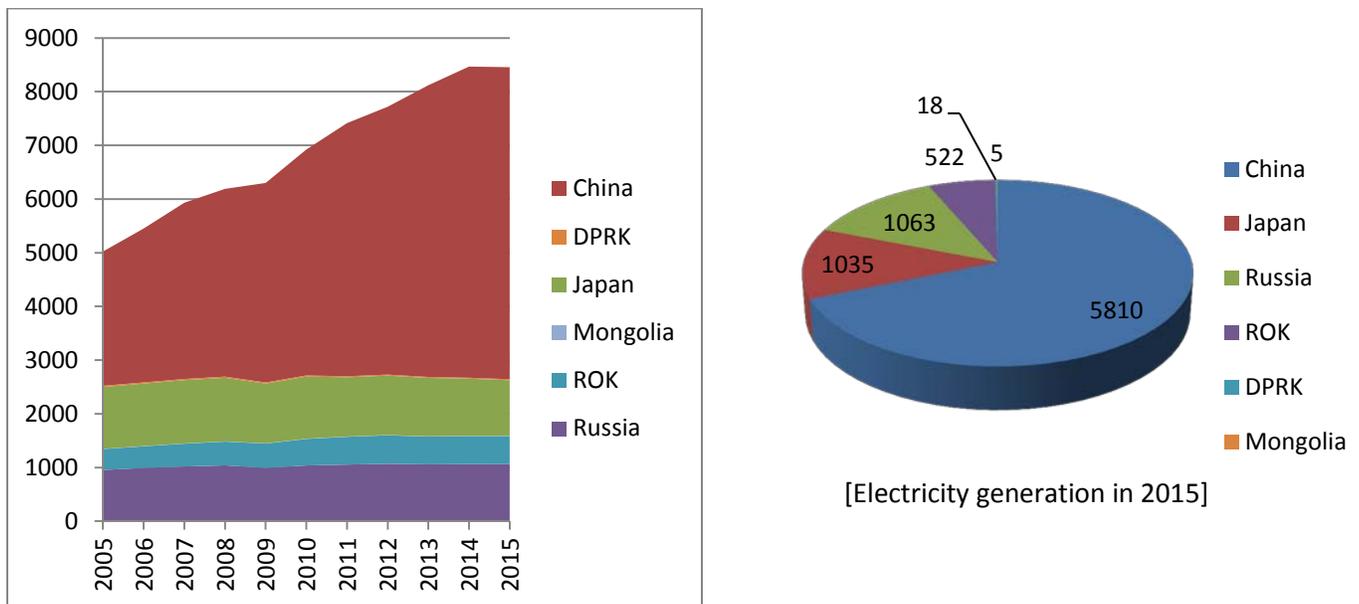
# The 4th Northeast Asia Energy Security Forum

Intercontinental COEX Hotel, Seoul, 15 December 2016

## Concept Note

Electricity production in North-East Asia during the last 10 years has increased by almost 70 percent with major increases in China (132%) and the Republic of Korea (34%) (See Figure). The utilization of solar and wind energy has also rapidly increased, notably, in China (112 times) and Japan (11 times), as well as electricity production from renewables, which accounted for 3.86% and 3.5% in China and Japan, respectively, in 2015.

Electricity Generation in North-East Asia (TWh)



However, North-East Asia still faces major challenges in scaling up renewable energy to levels sufficient to mitigate impacts of both climate change and domestic air pollution, and to meet the energy demand in more cost-efficient ways. In this regard, electricity trade through power interconnections across countries offers a practical solution for meeting these needs. For example, in Europe, the cross-border electricity flow among 35 countries in 2015 accounted for 13.5% of the total generation through seven interconnected electricity markets and 24 power exchanges. Furthermore, 12 countries exported more than 10% of their annual national generation to neighboring countries. ASEAN has also been active in promoting power grid interconnections with

the current nine cross-border connections and six on-going projects, which in total have the capacity of 8,500 MW. Such power interconnections continue to expand as they exploit the potential complementary of different energy resource endowment and demand among neighboring countries.

Grid interconnections for power trade in North-East Asia are still at an early stage and, compared with its high potential, the level of grid interconnection and power trade is relatively low. In 2014, China imported 3.38 billion kWh from the Russian Federation, equivalent to 0.06% of China's total electricity generation. Meanwhile, Mongolia relied on imports from China and the Russian Federation for almost 20% of electricity consumption in 2014. Since the 1990s, there have been a number of initiatives proposed by North-East Asian countries, notably, Republic of Korea and the Russian Federation to build power grid interconnections involving multiple countries. However, such initiatives have mostly stayed at the level of unilateral proposal due to different interests of countries, low demand from domestic energy systems and the lack of multilateral platforms.

In recent years, there have been new initiatives for grid interconnections and multilateral processes to realize the idea of furthering energy connectivity. Mongolia has become an active promoter of "Asia Super Grid", with the goal of harnessing its vast potentials of renewable energy and becoming a major electricity exporting country in North-East Asia. In connection with mitigating greenhouse gases emissions and the Belt and Road Initiative (BRI), China has proposed a global energy interconnection based on renewables, starting with grid interconnections in North-East Asia. Japan and the Russian Federation have also begun discussions on building a power interconnection between Sakhalin and Hokkaido. In addition to these domestic and bilateral processes, the following multilateral processes have been initiated in 2016.

- Global Energy Interconnection Development and Cooperation Organization (GEIDCO), Korea Electric Power Corporation, ROSSETI of Russia and SoftBank Group of Japan signed a MOU in March 2016 to start feasibility studies on multinational power grid interconnection in North-East Asia and business evaluation studies.
- China, Mongolia and Russian Federation created a programme for tripartite economic corridor during the 16th summit of the State Heads of Shanghai Cooperation Organization (SCO) in June 2016 in Tashkent, Uzbekistan. This programme is likely to create favorable legal basis for taking forward joint energy initiatives.
- The President of Russian Federation during the Eastern Economic Forum in September 2016 called for creating "East Asia Super Energy Ring" connecting all North-East Asian countries and an Intergovernmental Working Group to discuss the proposal.

While various proposals on grid interconnections have recently gained political support, there is lack of intergovernmental frameworks on multilateral energy cooperation. Realizing these proposals require an intergovernmental platform that would bring all countries together and

contribute to establishing long-term regular dialogues and communication mechanisms for Northeast Asia power cooperation. Such a platform would facilitate dialogues on legal, technical and economic conditions, support technical studies, align national policies and regulations and promote renewable energy development and integration.

Since 2013, the Ministry of Foreign Affairs of Republic of Korea and ESCAP have jointly held a series of annual discussions on subregional energy cooperation including power interconnections. The 4th North-East Asia Energy Security Forum will have the following objectives to further elaborate intergovernmental arrangements in support of the recent progress.

### Objectives of the Forum

- Review the existing proposals of grid interconnections and discuss their technical, financial, legal, environmental and political dimensions
- Discuss the need and arrangement of an intergovernmental platform/mechanism in support of power interconnections
- Formulate a long-term plan for supporting and facilitating multilateral dialogue and joint studies on power interconnections.

### Provisional Programme

08:30 – 09:00	Registration
09:00 – 09:30	<b>Opening Session</b> <i>Opening remarks and Welcoming remarks</i> <ul style="list-style-type: none"><li>• <b>Tae-ho Lee</b>, Deputy Minister for Economic Affairs, Ministry of Foreign Affairs, ROK</li><li>• <b>Kilaparti Ramakrishna</b>, Director, ESCAP East and North-East Asia Office</li></ul> <i>Overview of NEAESF: multilateral dialogue and cooperation for power interconnection, UNESCAP</i>
09:30 – 10:40	<b>Session 1: Cooperation and progress for power interconnection</b>  <i>The first session will have an overview of the current status and new proposals of power interconnection in North-East Asia.</i>  <i>Chair: <b>Beom-Shik Shin</b>, Seoul National University</i>  <i>Panelists:</i>  <i><b>Vladimir Sofyin</b>, Rosseti</i> <i><b>Yeren-Ulzii Batmunkh</b>, Ministry of Energy, Mongolia</i> <i><b>Liu Lin</b>, Energy Research Institute of the State Grid Corporation of China</i>
10:40 – 11:00	Break

11:00 – 12:30	<b>Session 2: Technical, financial and political dimensions of power interconnection</b>
	<i>This session will review various aspects which need to be considered for power interconnection and discuss approaches to resolve potential barriers.</i>
	<i>Chair: <b>Sergey Tulinov</b>, UNESCAP</i>
	<i>Panelists:</i>
	<i><b>Jae-Young Yoon</b>, Korea Electrotechnology Research Institute</i>
	<i><b>Takashi Otsuki</b>, Asia Pacific Energy Research Centre</i>
	<i><b>John A. Mathews</b>, Macquarie University</i>
12:30 – 14:00	Lunch
14:00 – 15:30	<b>Session 3: National plans, rules and regulations for power interconnection</b>
	<i>This session will discuss national plans for power interconnection and regulatory conditions related to the interconnection.</i>
	<i>Chair: <b>Jichul Ryu</b>, Future Energy Strategy Research Cooperative</i>
	<i>Panelists:</i>
	<i><b>Enkhtuvshin Ganbaatar</b>, Ministry of Energy, Mongolia/ Korea University</i>
	<i><b>Junghwan Yoon</b>, Korea Electric Power Corporation</i>
	<i><b>Tatiana Shchenkova</b>, En+ Group</i>
15:30 – 15:50	Break
15:50 – 17:30	<b>Session 4: Intergovernmental/ multilateral arrangement for power interconnection</b>
	<i>This session will review recent progress in dialogue and cooperation for power interconnection, and seek possible options of intergovernmental/multilateral arrangement.</i>
	<i>Chair: <b>Sangmin Nam</b>, UNESCAP</i>
	<i>Panelists:</i>
	<i><b>Bambang Hermawanto</b>, ASEAN Power Grid Consultative Committee</i>
	<i><b>Sergei Podkovalnikov</b>, Energy Systems Institute of Russian Academy of Sciences</i>
	<i><b>Yeren-Ulzii Batmunkh</b>, Ministry of Energy, Mongolia</i>
	<i><b>Jichul Ryu</b>, Future Energy Strategy Research Cooperative</i>
	<i><b>Xiaomeng Lei</b>, China Electricity Council</i>
17:30 – 18:00	Closing Session