RES in JAPAN and electricity interconnection in Northeast Asia

20 November 2014, Tokyo, Japan

Gobitec and Asian Super Grid for Renewable Energies in Northeast Asia
Outline

- Regional study Gobitec and Asian Super Grid (ASG)
- Energy Charter Treaty
- Recommendations for a long term vision
- Next steps to support Gobitec and Asian Super Grid
Gobitec and ASG for RES in Northeast Asia

Available at www.encharter.org
Scope of the study

**LEGAL FRAMEWORK**

**TECHNOLOGIES AND COST IMPLICATIONS**
- renewable energies
- conventional technologies
- interconnection

**BENEFITS**
- economic
- social
- environmental

**RECOMMENDATIONS**
Gobitec – integrating solar, wind and hydro power
Gobitec potential – supply and demand

2030 mix and imports from Gobitec

Source: Gobitec and Asian Super Grid for renewable energies in Northeast Asia, 2014
Export and transmission via Asian Super Grid (ASG)

Source: Gobitec and Asian Super Grid for renewable energies in Northeast Asia, 2014
Possible route of ASG

Source: Gobitec and Asian Super Grid for renewable energies in Northeast Asia, 2014
ASG as a result of many interconnections

Source: Presentation by KEPCO in Ulaanbaatar, June 2014

Source: Presentation by Governor of Sakhalin oblast in Tokyo, January 2014
## Potential of the Energy Charter Treaty

<table>
<thead>
<tr>
<th>Legal Certainty and Transparency</th>
<th>Intergovernmental common legal framework</th>
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<tbody>
<tr>
<td>Investments</td>
<td>Protection of foreign investments</td>
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<tr>
<td>Transmission</td>
<td>Rules to coordinate interconnected systems</td>
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<tr>
<td>Cross-border trade</td>
<td>Cross-border trade to integrate power markets</td>
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The ECT, a political and legal guarantee for large scale projects
Key messages

Interconnection
strategic countries in Northeast Asia.

Technologies
HVDC transmission. Wind and solar

ECT
investment, trade & transit

RES potential
solar and wind in the Gobi

RES integration
technologies to balance the system

Objectives
sustainability and energy security.

Benefits
economic, social & environmental

Regional cooperation
to establish Gobitec & ASG.
**SWOT Analysis**

<table>
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<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>- Huge RES potential in Gobi, South Korea and Japan</td>
<td>- Absence of common legal framework</td>
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<td>- Huge capital costs</td>
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<table>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>- Improve energy security</td>
<td>- Lack of political cooperation</td>
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<tr>
<td>- Cut down CO₂ emissions</td>
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Next steps

- Improve Energy security of Mongolia / Reducing emissions
- Institutional capacity building targeting suitable institutions
- Facilitating energy cooperation in Northeast Asia / promote intergovernmental cooperation
- Regional study on the integrated development of the regional power system and identify long-term perspectives on demand, integration and socio-economic effects

Study performed 2014
- Gobitec and Asian Super Grid for Renewable Energies in Northeast Asia

Dissemination and information process in NEA / EU to raise public and investors awareness (Symposium in Irkutsk 09/2013; Tokyo 02/2014; Ulaanbaatar 06/2014)
Future activities

**WP 1: Political perspective**
Political preconditions necessary for Gobitec

**WP 2: Legal perspective**
Legal framework for electricity market integration

**WP 3: Electricity System perspective 2050**
RE Potential calculation
Modelling of a target perspective for 2050 (2020/2030)

**WP 4: Technical analysis**
Technical feasibility / cross border transmission

**WP 5: Economic analysis**
Cost of electricity and socio-economic impact in selected locations of the Gobitec project

**WP 6: Capacity development and dissemination workshops**

**WP 7: MoU Preparation and Roadmap for cooperation**

Policy advice:
International platform/network, Political incentives for the project

Regional development of power plants

Gobitec/ASG initiation
Ulaanbaatar Energy Charter Forum
26 June 2014

The Ulaanbaatar Energy Charter Forum addressed important regional initiatives on developing renewable energy across Gobi-tec and Asian Super Grid in Northeast Asia.

Mongolia, 26 June 2014

Forum Report

President of Mongolia Ebedor Tolksis stated, in his opening remarks, that Mongolia has huge potential of solar and wind and strategic location, which implies that Gobi desert will become an energy hub in the region, producing a quarter of its energy from renewable sources and potentially exporting electricity generated by wind and solar. He stressed that further progress requires active engagement and cooperation of the countries in Northeast Asia.

Gobi-tec and the Asian Supergrid are ideas to use the vast renewable energy potential of wind and solar energy of the Gobi desert on the one hand and on the other hand to connect North East Asia with a transmission line allowing exchanging electricity between the participating countries.

Publication is available at www.encharter.org
The Energy Charter: a bridge between regions

Lessons learned from EU experience

- National hesitations to agree and apply common rules
- National reluctance to cross-border electricity trade
- Challenges concerning investment protection
- The importance of pragmatic solutions
Thank you very much for your attention

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