



Ulaanbaatar Energy Charter Forum: Developing Renewable Energy across Gobitec and Asian Super Grid in Northeast Asia



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Common legal framework for cooperation in the energy sector



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Outline

- Introduction & key messages – regional study Gobitec and ASG
- Legal framework – Energy Charter Treaty
- Broad Actions & Recommendations – long term vision
- Proposed next steps and activities to support Gobitec and ASG

Joint regional study Gobitec and Asian Super Grid for renewable energies in Northeast Asia

Energy Charter Secretariat

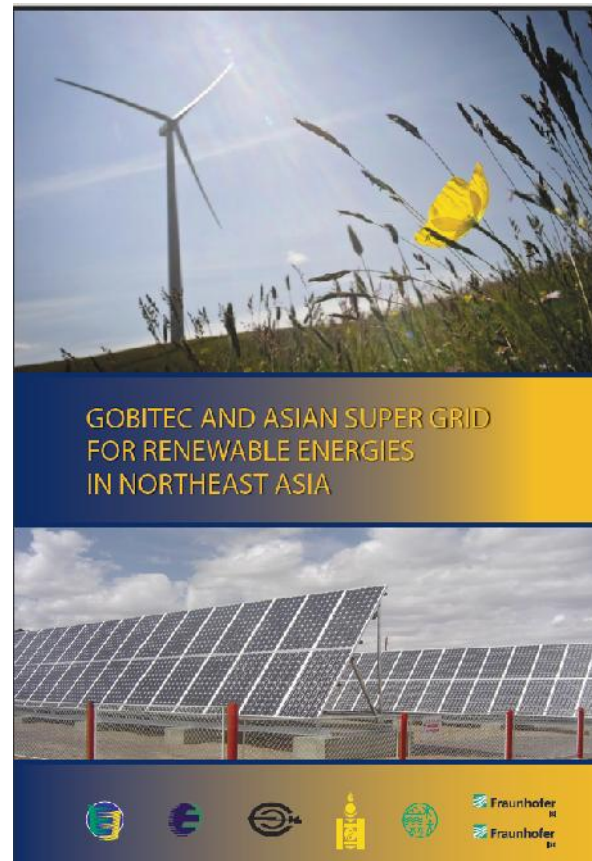
Ministry of Energy of Mongolia

Korean Energy Economics Institute

Energy Systems Institute of the
Russian Federation

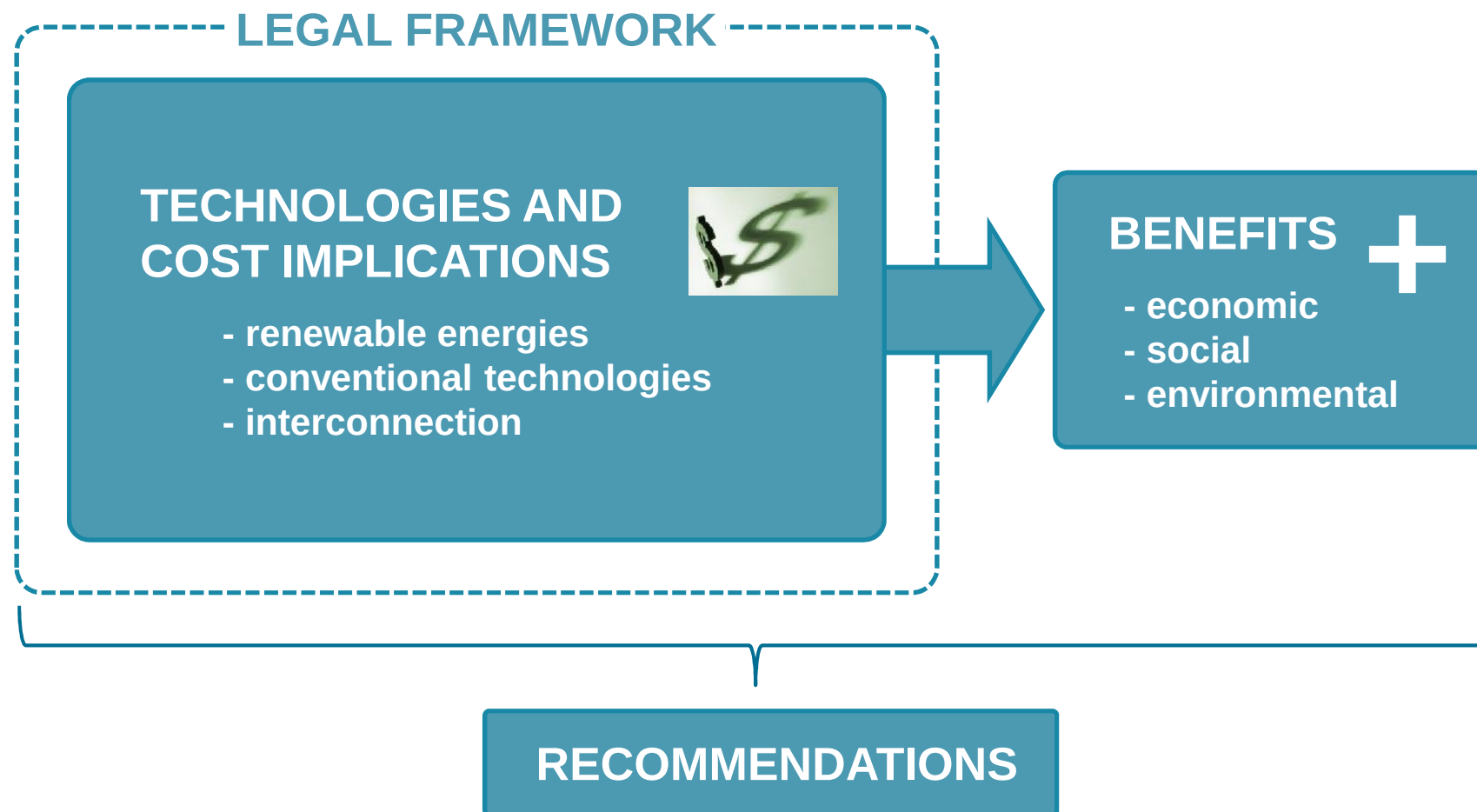
Japan Renewable Energy Foundation

Fraunhofer ISI and Fraunhofer ISE



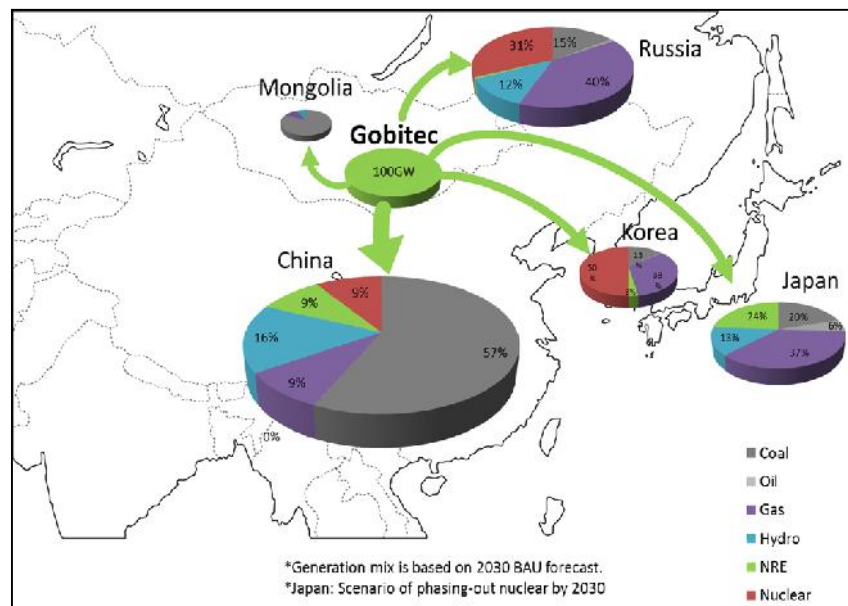
Available at www.encharter.org

Scope of the regional study Gobitec and Asian Super Grid (ASG)

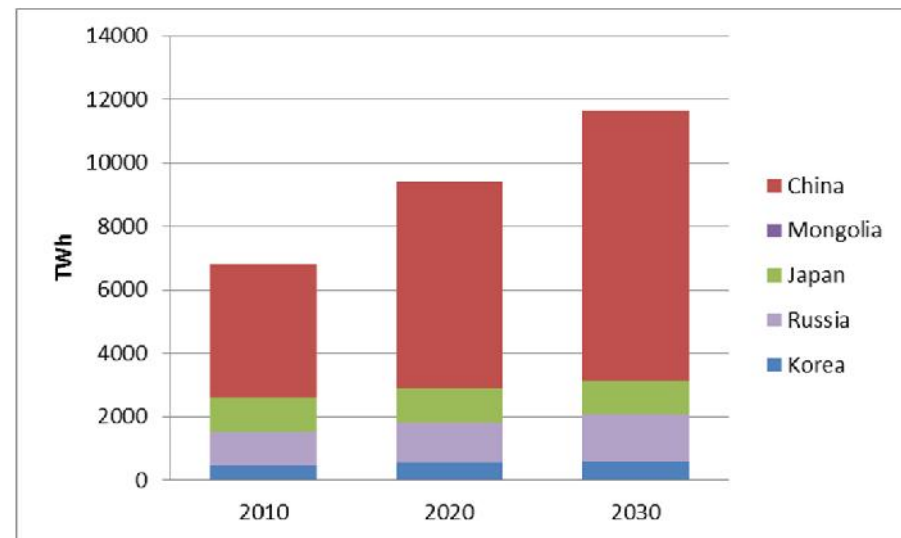


Gobitec potential versus electricity demand in NEA

Generation Mix of 2030 and importing RE from Gobitec



Electricity demand of NEA (BAU scenario).



Electricity exports of Gobitec and transmission via ASG

100 GW RE capacity



Import:
maximum 10%
of electricity
demand



Gobitec and ASG - SWOT Analysis

Strengths - Huge RES potential in the desert Gobi but also in South Korea and Japan - Reduction of emissions - Provide energy in an integrated system - Increase renewable energy rates - Increase energy security and safety due to a larger energy system - Facilitate energy and political cooperation	Weaknesses - No legal framework existent among all countries  - Huge capital costs - Difficult geopolitical constellation - Technical issues on High Voltage Direct Current transmission and solar energy system (CSP/cooling system) - Land availability especially for transmission lines and partly for the plant deployment
Opportunities - Improve energy security - Cut down CO₂ emissions (187 Gt CO₂) - Activate further policy cooperation - Larger economic and political integration - Attract foreign and private investors toward Northeast Asia - Economic benefits through local manufacturing - Reduce air pollution - Ameliorate the effects of Asian Dust - Stepwise build-up securing local demand first - Participation of the local population	Threats - Lack of political cooperation  - High capital risks - Necessity of political cooperation and rivalry between the countries (already several failed initiatives) - Induce water shortage through some RE technologies (solar thermal) - Threaten the lifestyle of nomadic tribes in Mongolia

Key messages

ASG interconnection target system

The ASG aims to interconnect strategic countries in Northeast Asia.

Renewable energy potential

The overall potential of solar and wind energy in the Gobi Desert is about 2,600 TWh.

Technologies

Connection via HVDC transmission lines. Wind and solar photovoltaic systems are the dominating technologies deployed.

Perspective of integrating RES

PV and wind will be grid-connected and combined with dispatchable technologies to balance supply and demand.

Legal frameworks

Energy Charter Treaty is necessary to ensure positive investment climate, reliable trade, transit regime & protection of property rights.

Sustainability & security of supply

Gobitec & ASG have the potential to meet the challenges of the energy supply in Northeast Asia.

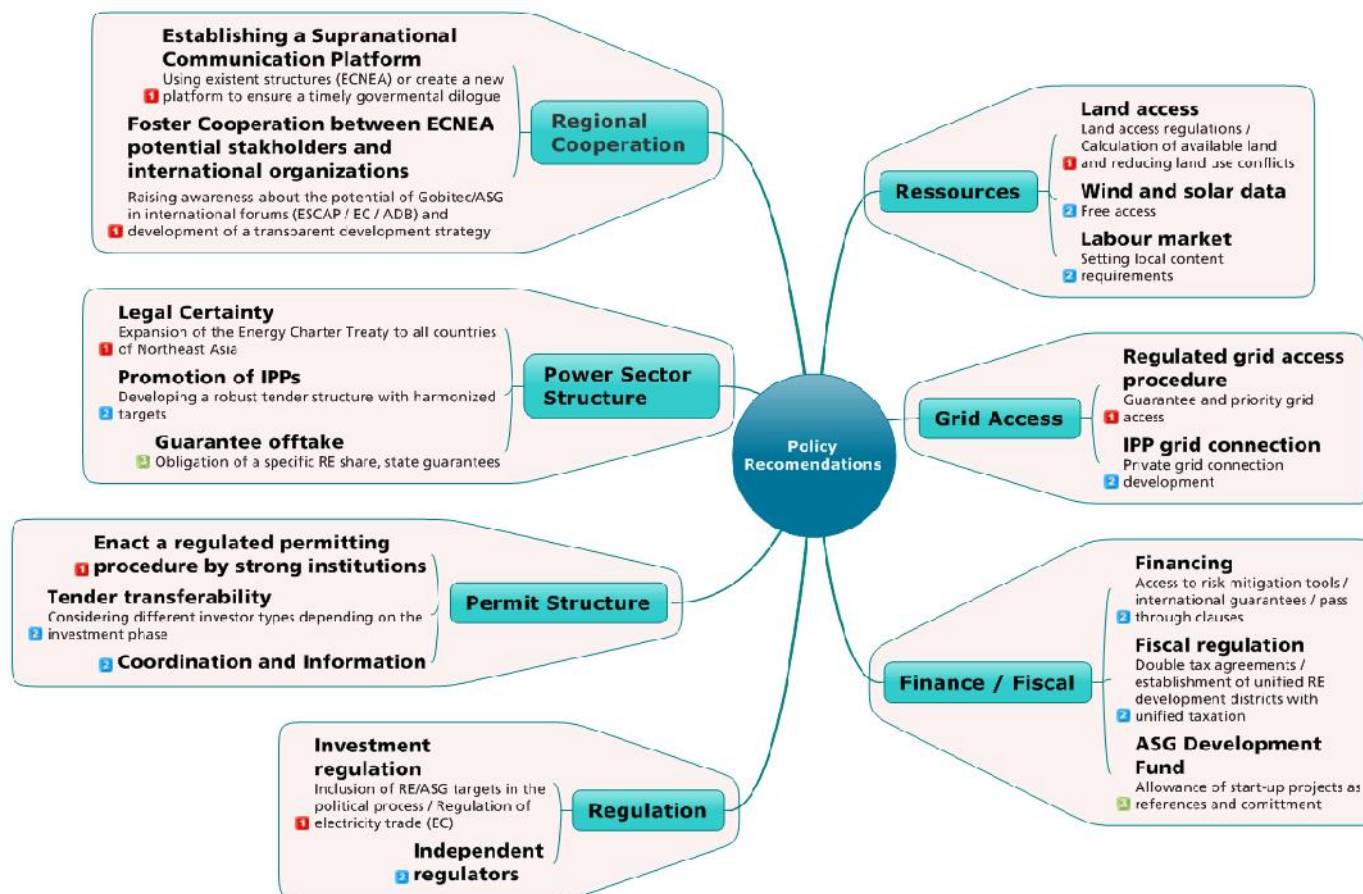
Benefits of regional integration

The Gobitec and ASG will deliver economic, social and environmental benefits.

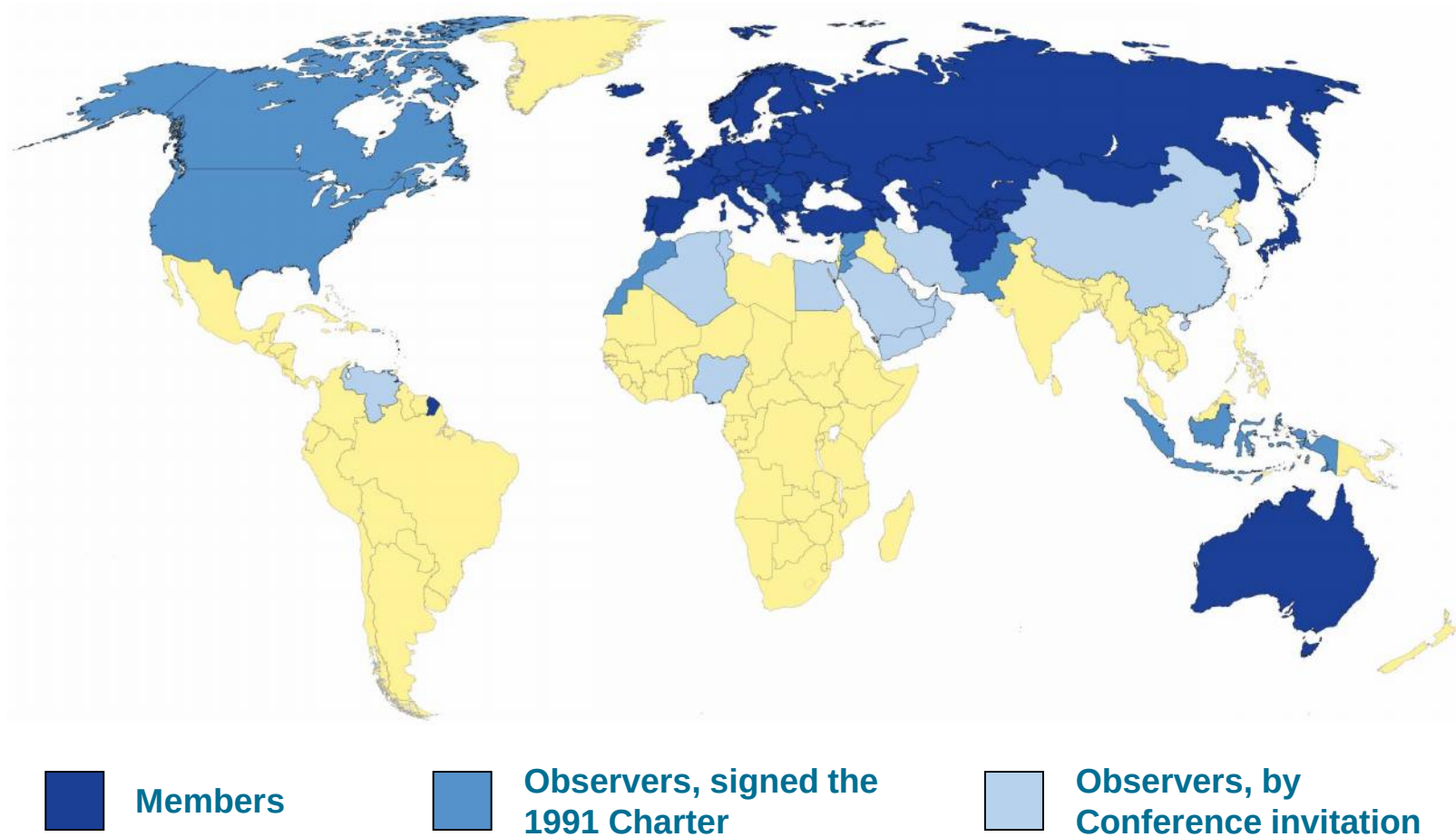
Enhancing regional cooperation

Regional cooperation can play a key role in establishing Gobitec & ASG.

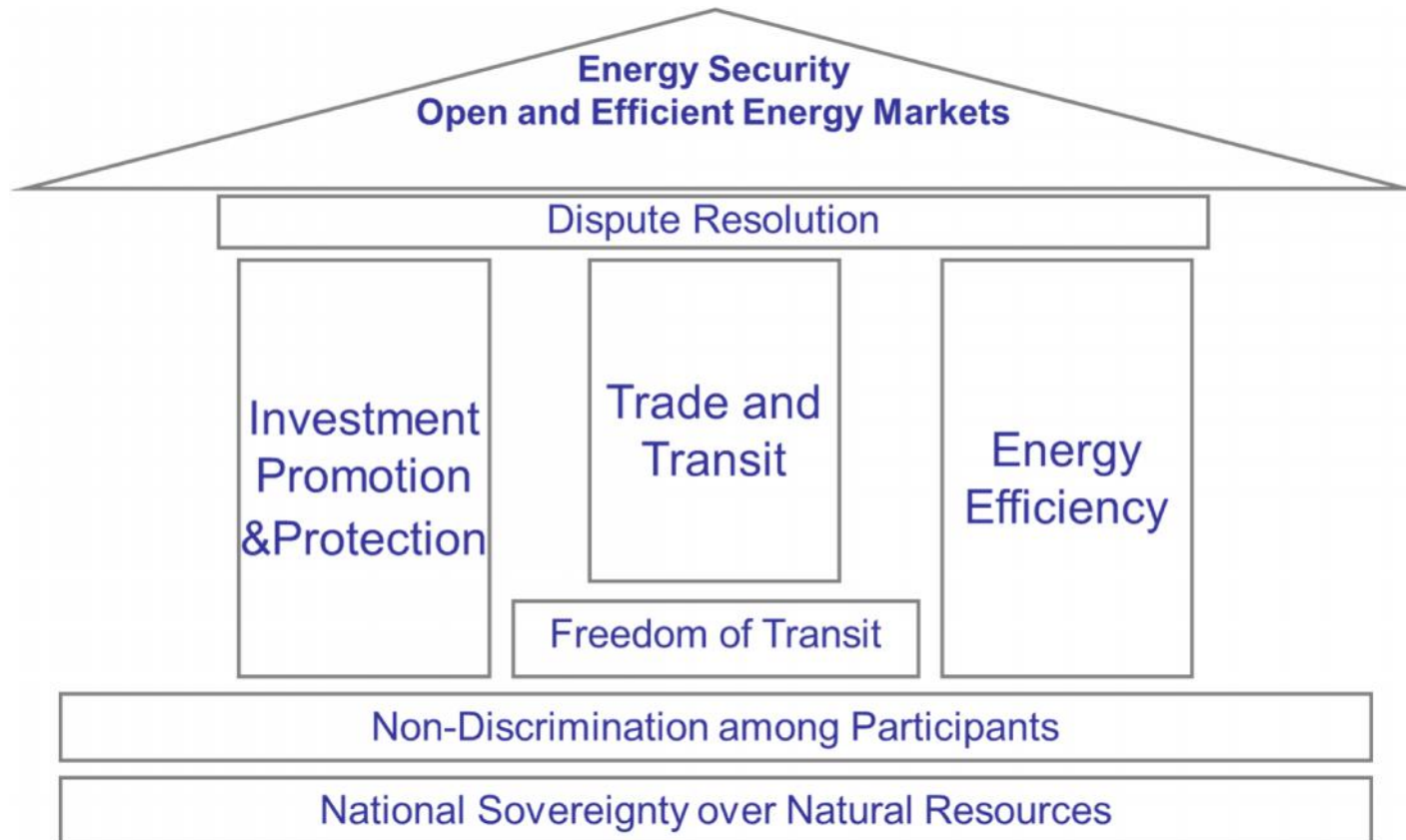
Actions & Recommendations to support Gobitec and ASG



Legal Framework – Members of the Energy Charter

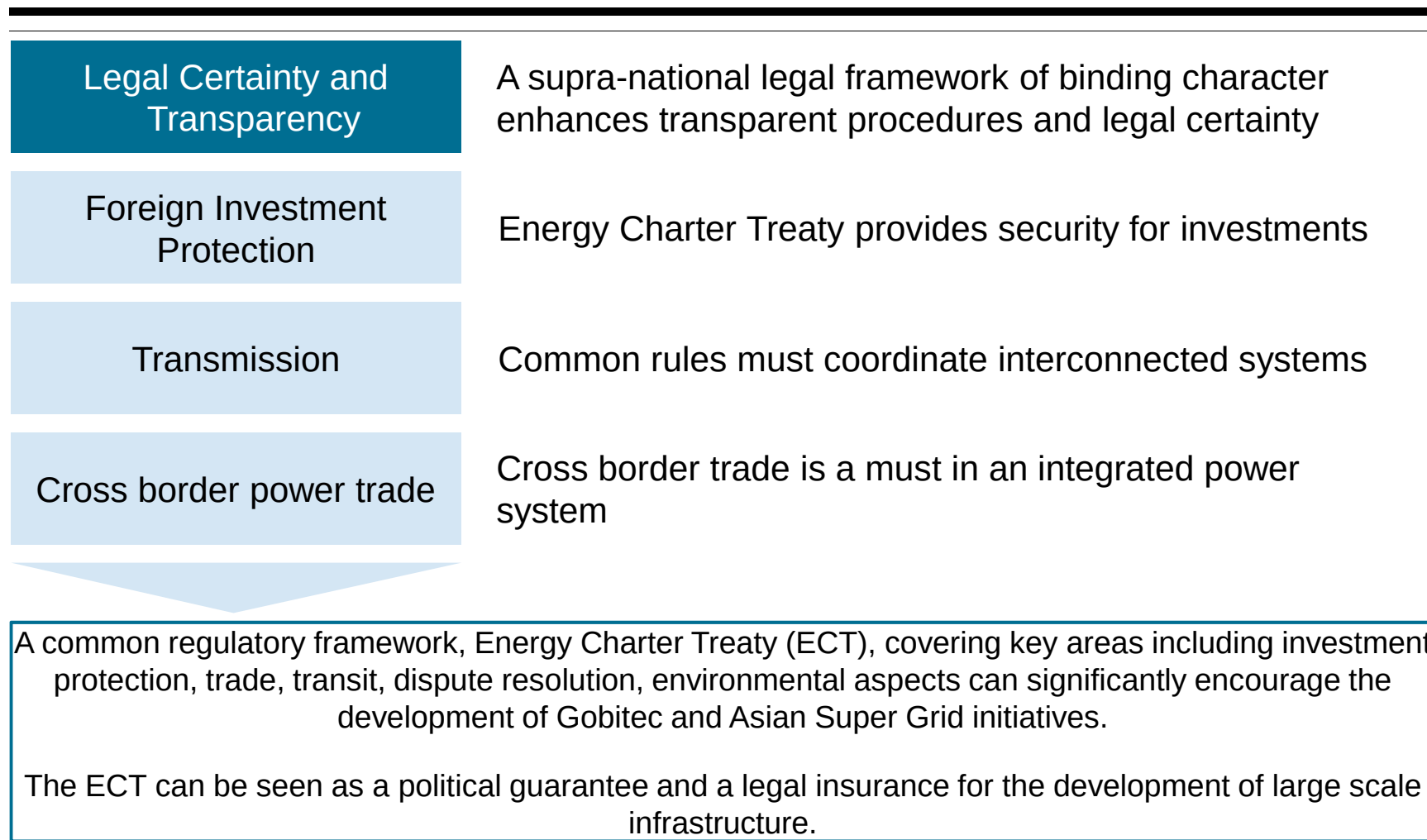


Legal Framework – Energy Charter Treaty



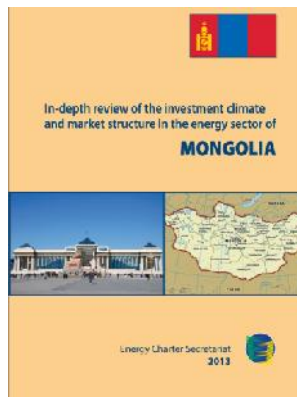
Note: The text of the Energy Charter Treaty can be downloaded at <http://www.encharter.org/publications>

Legal Framework – Potential of the Energy Charter

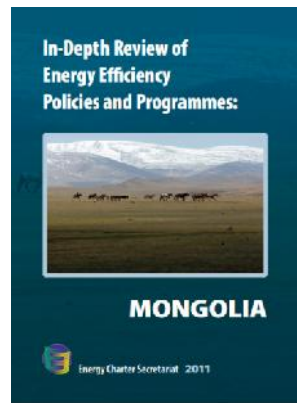


Energy Charter and Mongolia

Two In-Depth Reviews on Investment and Energy Efficiency of Mongolia Key Policy Conclusions and Recommendations:

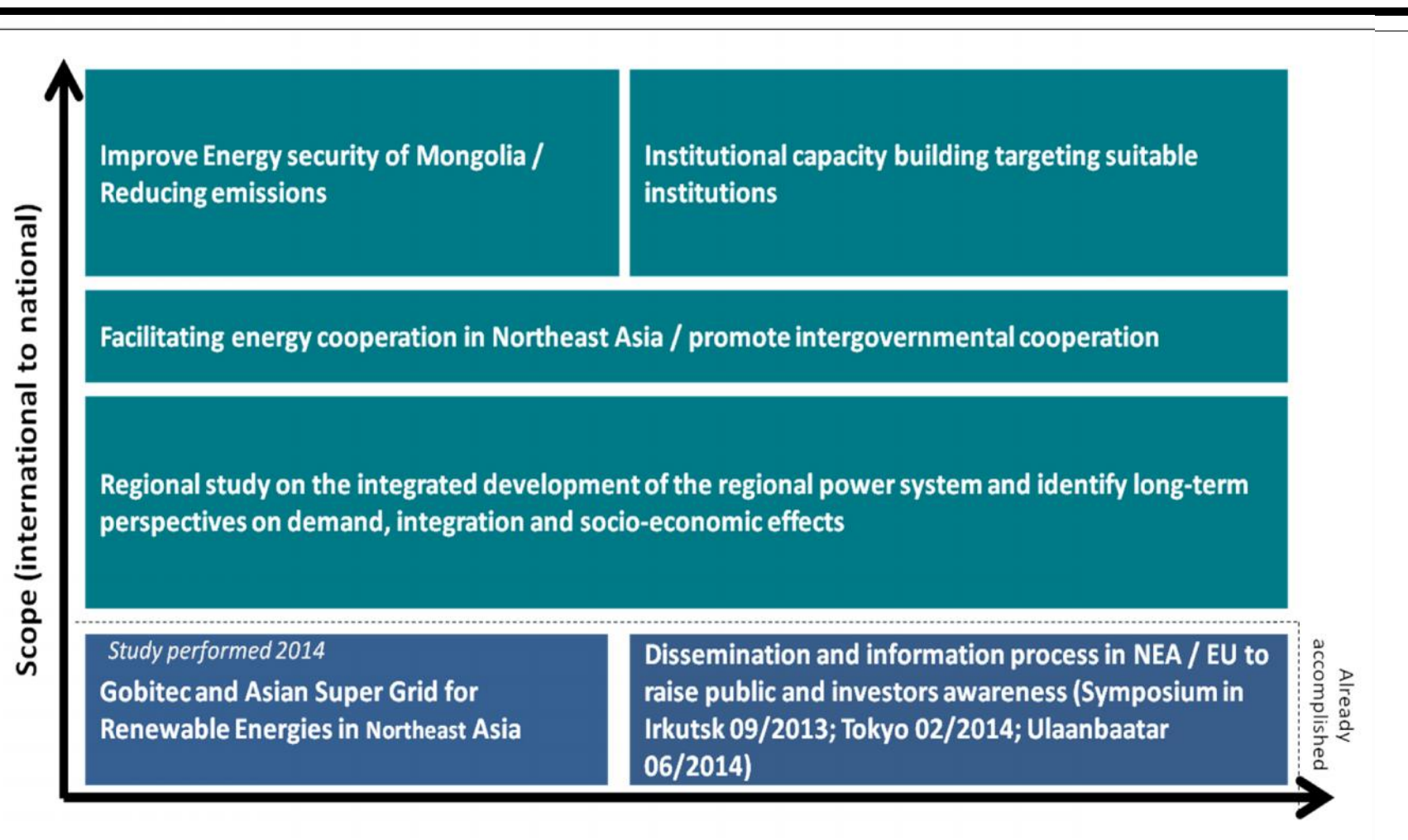


- *Improved investment climate resulted in increased FDIs;*
- *Further strengthen market oriented energy policies, predictable and transparent framework;*
- *Give priority access to the grid for electricity from RES; and*
- *Support establishment of a regional electricity market.*

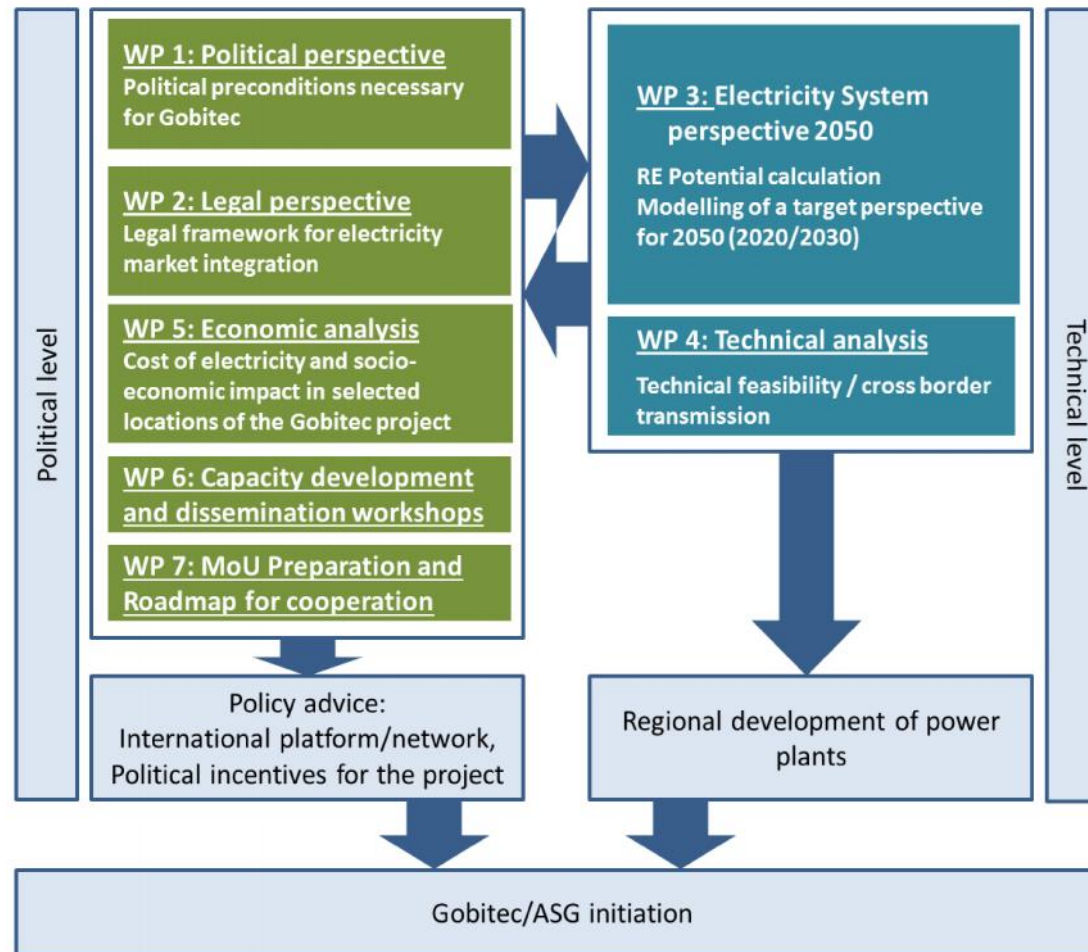


- *Implement Energy Conservation Law and secondary legislation;*
- *Implement energy efficiency measures in buildings (heating system, building envelope, and lighting), district heating and further reduce energy losses; and*
- *Promote energy efficiency awareness of wider public at local, regional and national level.*

Next steps to promote Gobitec and ASG



Activities at political and technical level to promote Gobitec and ASG



Thank you very much for your attention



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