



Electricity Interconnection in the APEC Region – Korean Perspectives –

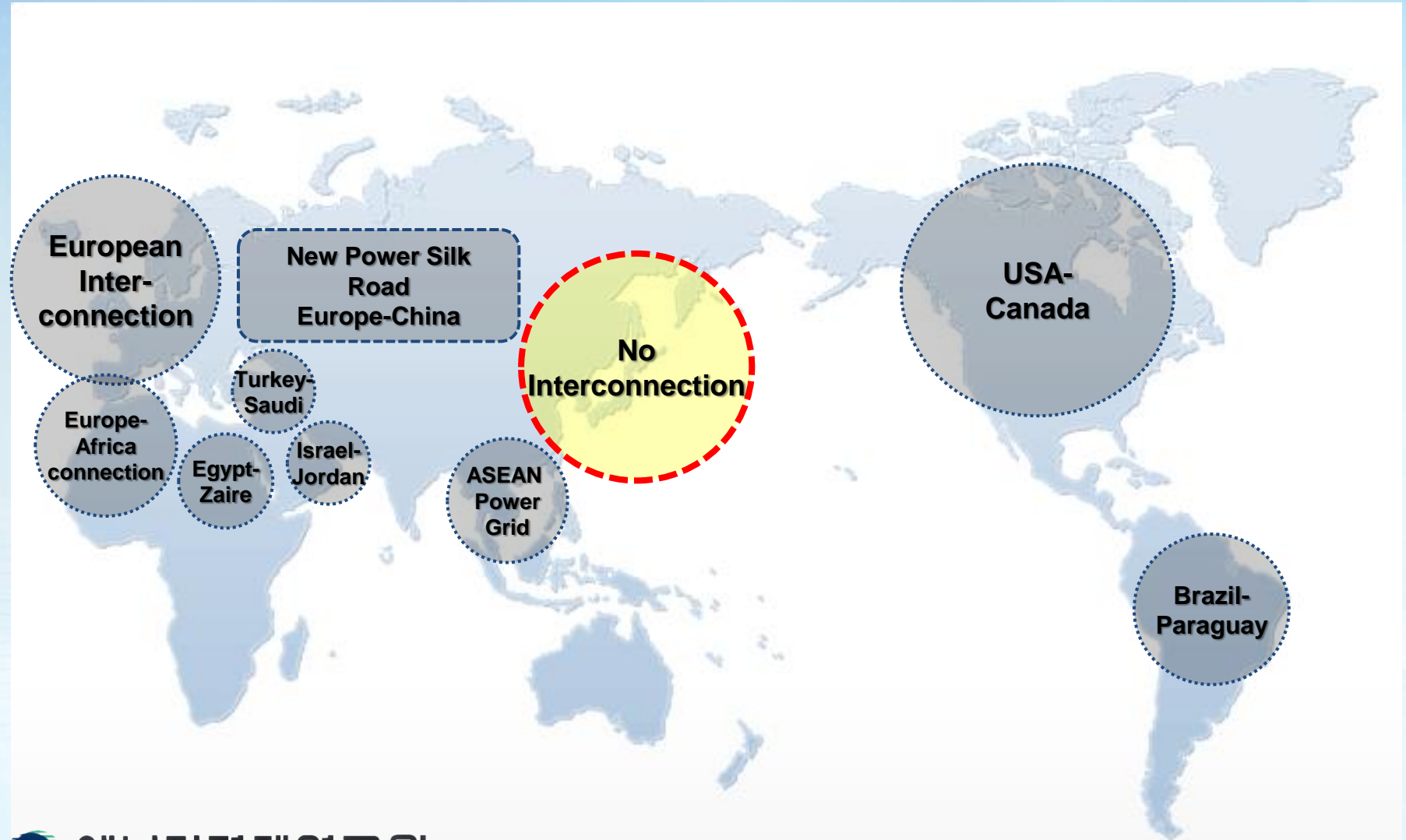
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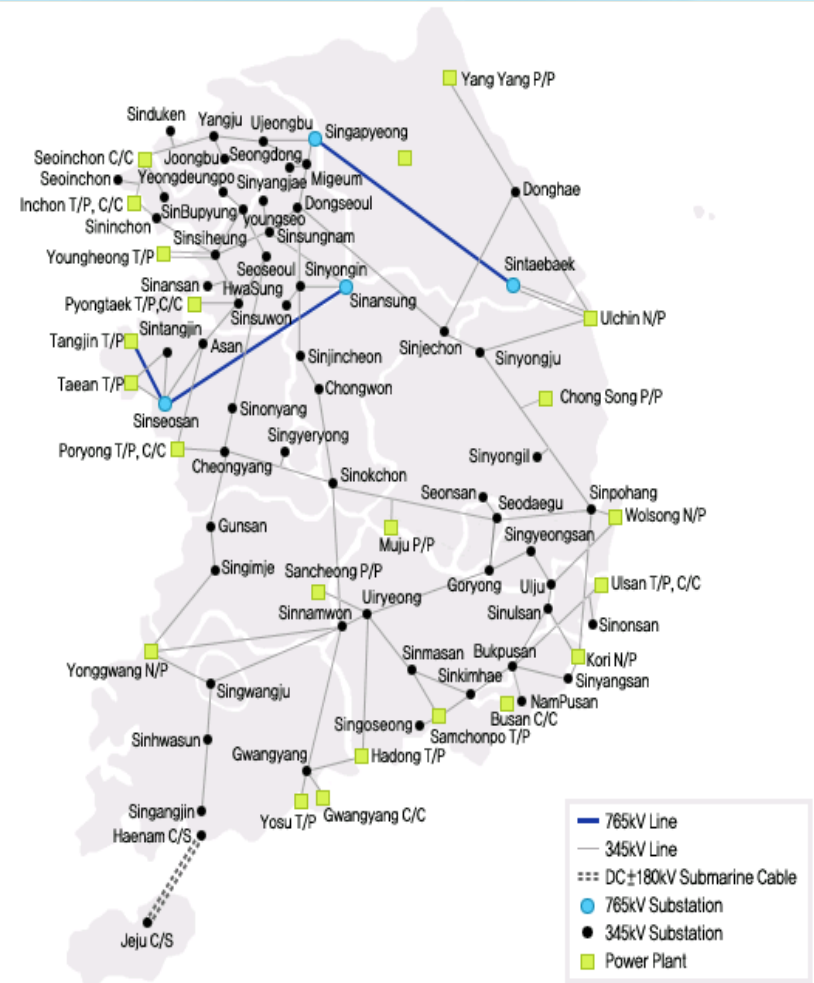
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The NEA Region



Korean Peninsula



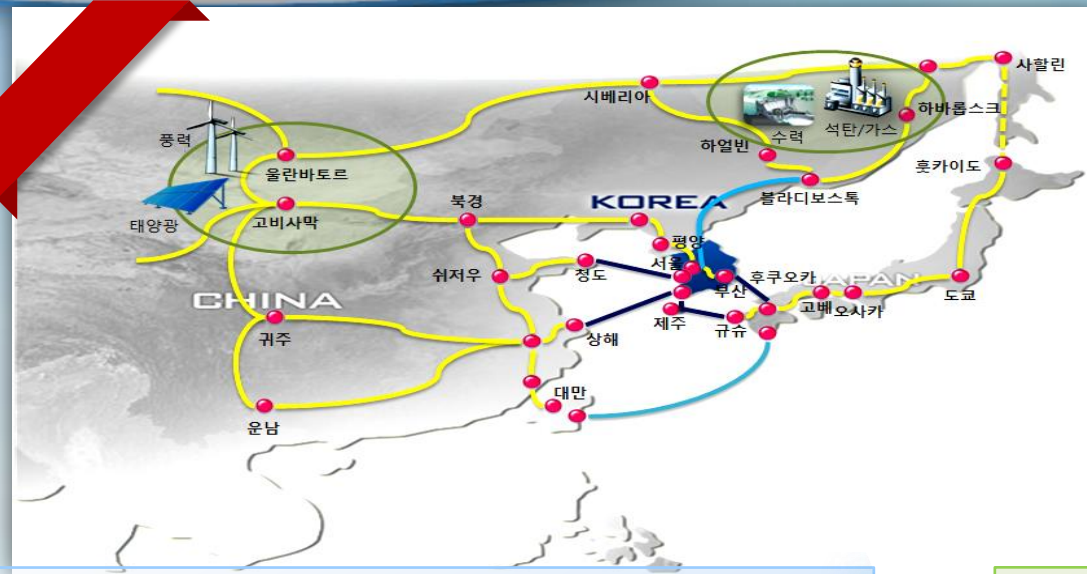
Status of Electric Power Sector in NEA

Nations	Installed Capacity (MW)	Electricity Consumption (TWh)	Transmission Voltage (kV)	Frequency (Hz)	Load Features (Peak)	Energy Resources	Price Index (Korea=100)
						Energy Consumption	
Republic of Korea	83,212 ('12)	522.3 ('12)	765 345 154	60	summer winter	Poor	100
						Large	
Russian Federation	225,508 ('12)	1,066.4 ('12)	1,150 750 500, 330	50	winter	Abundant	50~70
						Small	
Japan	282,315 ('12)	1,101.5 ('12)	500 275 220	50 60	summer winter	Poor	250~300
						Large	
China	1,060,000 ('12)	4,937.8 ('12)	1,000 750 500, 330	50	winter	Abundant	100
						Large	

◆ The NEA region has been matured to make a supergrid.

- ⊙ Emerging as a world best market (20% of area, population, GDP, trade in the world)
- ⊙ The price gap, natural energy resources imbalance between nations
 - Important factor for the valuation of the NEA Supergrid

Why Korea is interested in Supergrid?

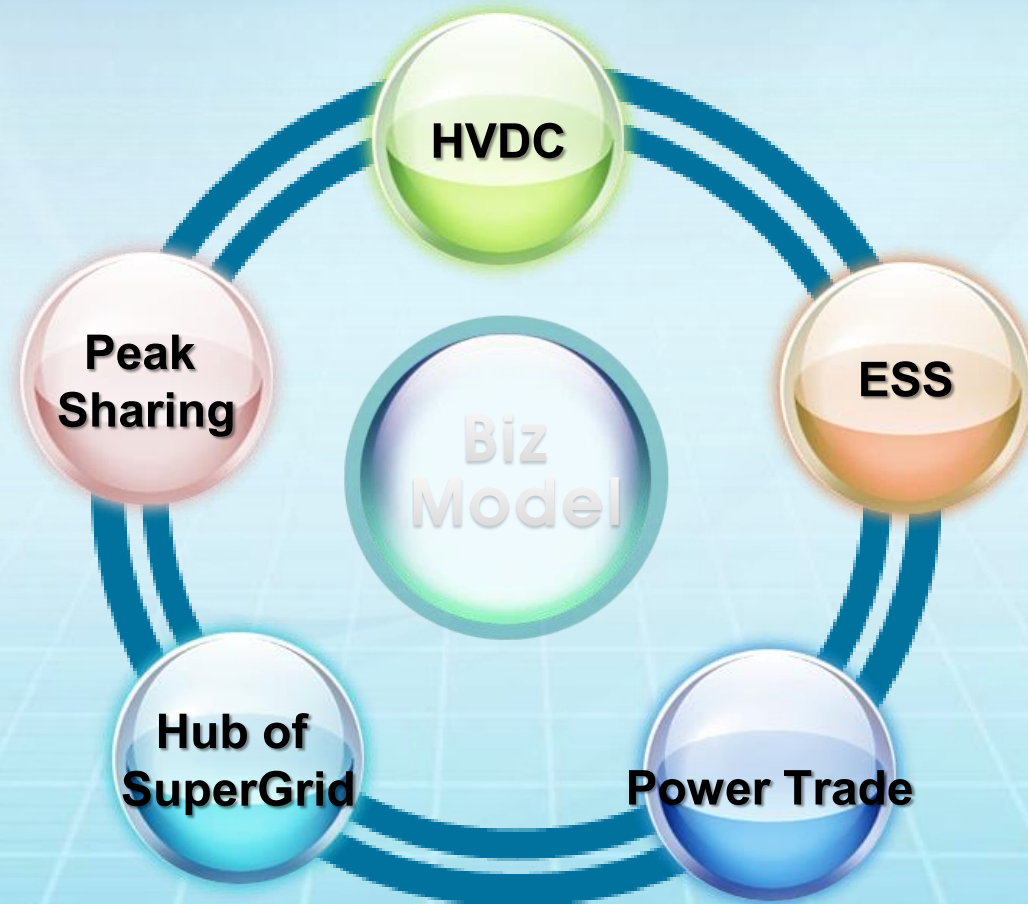


1. Solution to grid problems by peak share
(power supply securing, green energy developing)
⇒ Korea has isolated grid like Japan & Chinese Taipei
2. Fine cooperation model in NEA region
⇒ strengthening economic and political partnership
3. Creating various types of business model

Strong policy cooperation is needed among NEA economies.

Biz Model of Supergrid

Supergrid can Creates Various Biz Models



Korea's Plan for Power Interconnection

Source : KEPCO



1. Korea-Russia Interconnection

- Abundant Resources of Russia

2. Korea-Japan Interconnection

- The Nearest Distance to Connect

3. Korea-China Interconnection

- Various Routes to link

Korea–Russia Interconnection

Project Outline

- Expected Path : Vladivostok ~ North-Gyeonggido (through North Korea)
 - Distance : 1,000km
- Connection System : HVDC 500 ~ 800kV

Progress

- On-Going Feasibility Study for Korea-Russia Grid Interconnection from 2012

Consideration

- Uncertainty of pass through the special territory
- Agreement by 3 parties

Korea–Russia Interconnection

Signing the MOU among KEPCO, EN+, Skoltech

- ◎ Signing Date : Nov 13, 2013
 - The MOU was signed during the visit of the President of Russian Federation.
- ◎ Purpose
 - Cooperation in the power interconnection between Korea and Russian Federation
 - Joint research on technical and economic feasibility of the supergrid in NEA region
 - Supergrid project development in NEA region



Korea–Japan Interconnection

Project Outline

- Expected Path : Southern Korea ~ Fukuoka, Kitakyushu
 - Distance : 250km
- Connection System : HVDC 500kV

Progress

- On-Going pre-feasibility Study for Korea-Japan Grid Interconnection from 2012

Consideration

- Commercial based project propel
- Protection of fishery area of both sides

Korea–China Interconnection

Project Outline

- Expected Path : Qingdao ~ Incheon
 - Distance : 350km
- Connection System : HVDC 500kV



Progress

- Meeting between KEPCO CEO & SGCC Chairman (Liu Zhenya)
 - * WEC 2013 : emphasis on energy cooperation in NEA region
- On-going pre-feasibility study

Consideration

- Detail investigation of fishery area

Risk Analysis Of Supergrid Project



Element	Grade	Risk index(%)
- Policy	1	87.8
- Financial	2	85.6
- Planning & Consenting	3	83.1
- Political	4	76.3
- Infra-structure	5	66.0
- Operational	6	64.3
- Technical	7	50.0

* REF : Friends of Supergrid Report in Europe

Thank you so much!

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