

Japan-Russia Energy and Environment Dialogue in Niigata

Korea's Energy Strategy in Northeast Asia

November 17-18, 2008

Niigata, Japan

Sung-Kyu, Lee, Ph.D.

Korea Energy Economics Institute (KEEI)

Center for Energy Research – International Studies (CERIS)

Contents

- I. Northeast Asia in World Energy**
- II. Cooperation Opportunity in Northeast Asia**
- III. Korea's Energy Cooperation Strategy**



I. Northeast Asia in World Energy

Energy Consumption in NEA

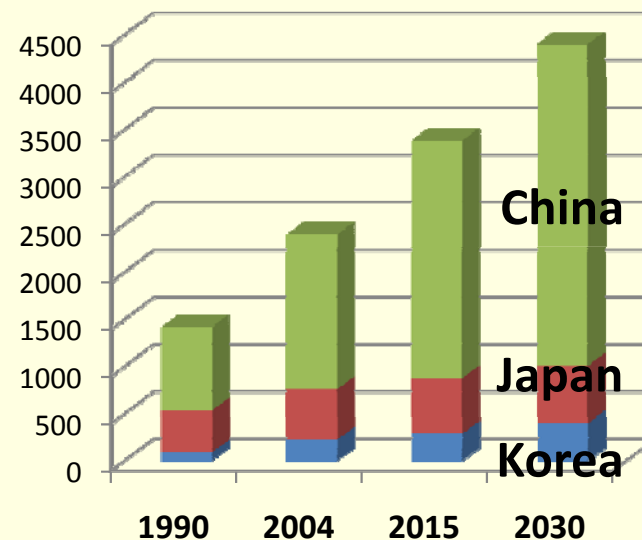
Total Primary Energy Consumption(2007)

	TPED (MTOE)	% of World Total
China	1,863	16.9%
Japan	518	4.7%
Korea	234	2.1%
DPRK	22	0%
Mongolia	3	0%
Total	2,640	23.8%
World	11,099	100%

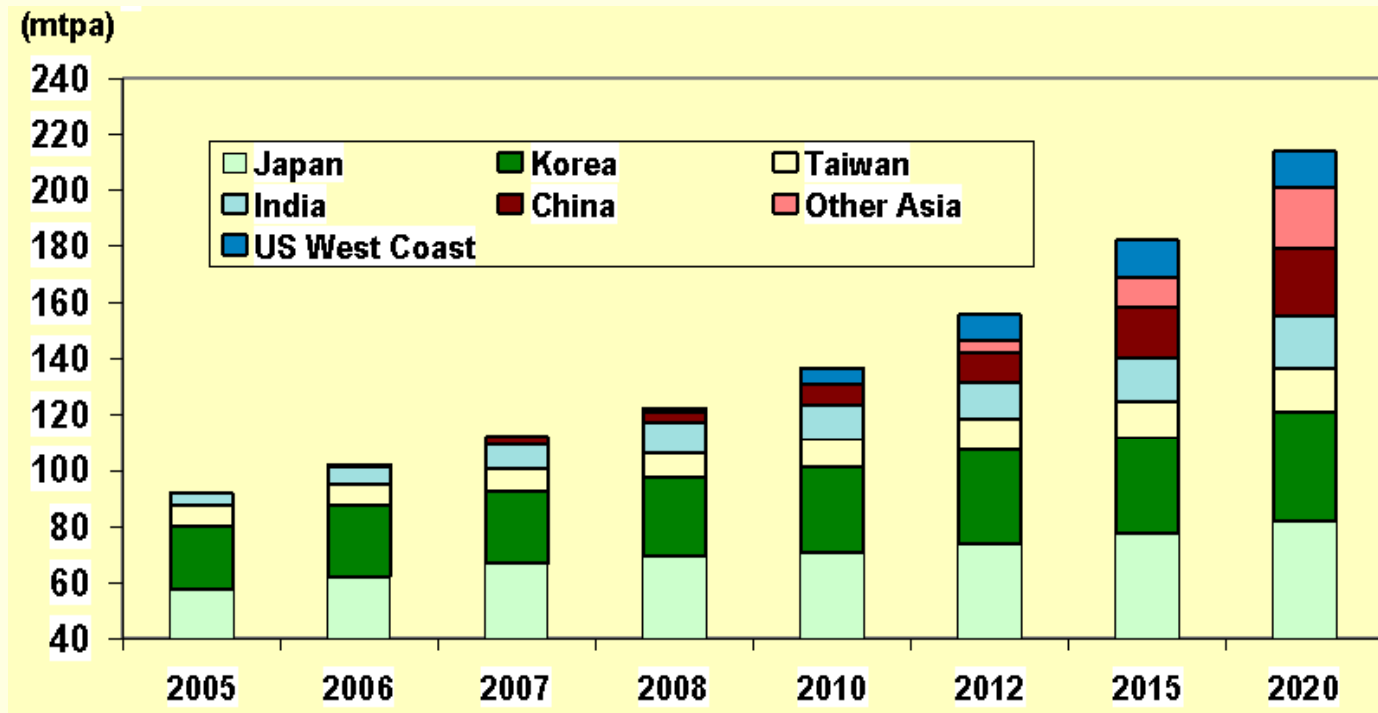
Sources : BP(2008)

- **Energy imports of NEA**
 - **Oil: Japan(2), China (3), Korea(4)**
 - **Natural Gas: Japan (2), Korea (9)**
 - **Coal: Japan(1), Korea (2), China (6)**

Rapid increase of TPED In Korea, Japan, China

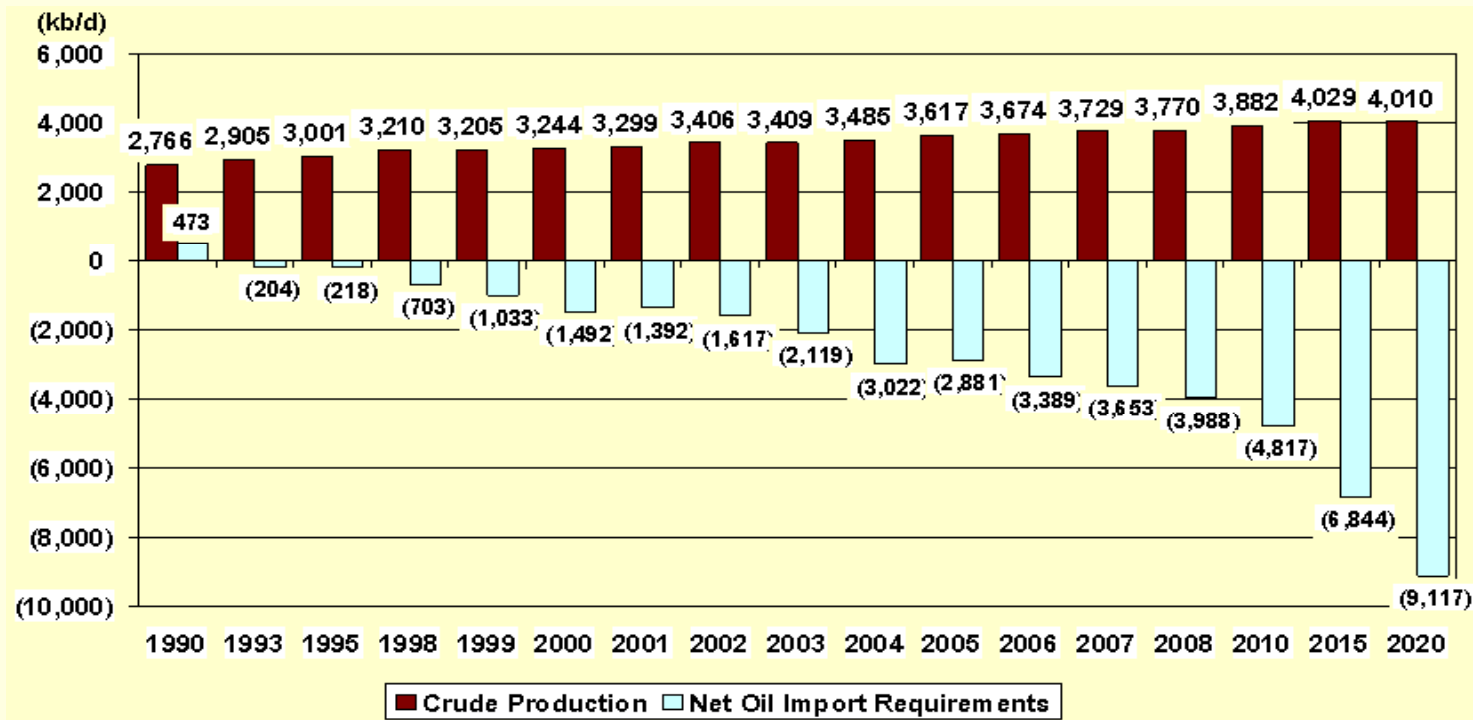


Outlook for Asia-Pacific LNG Demand



Source: FACTS Global Energy(2008)

China Crude Production and Net Oil Import Requirement



Source: FACTS Global Energy(2008)

Korea at a Glance (2007)

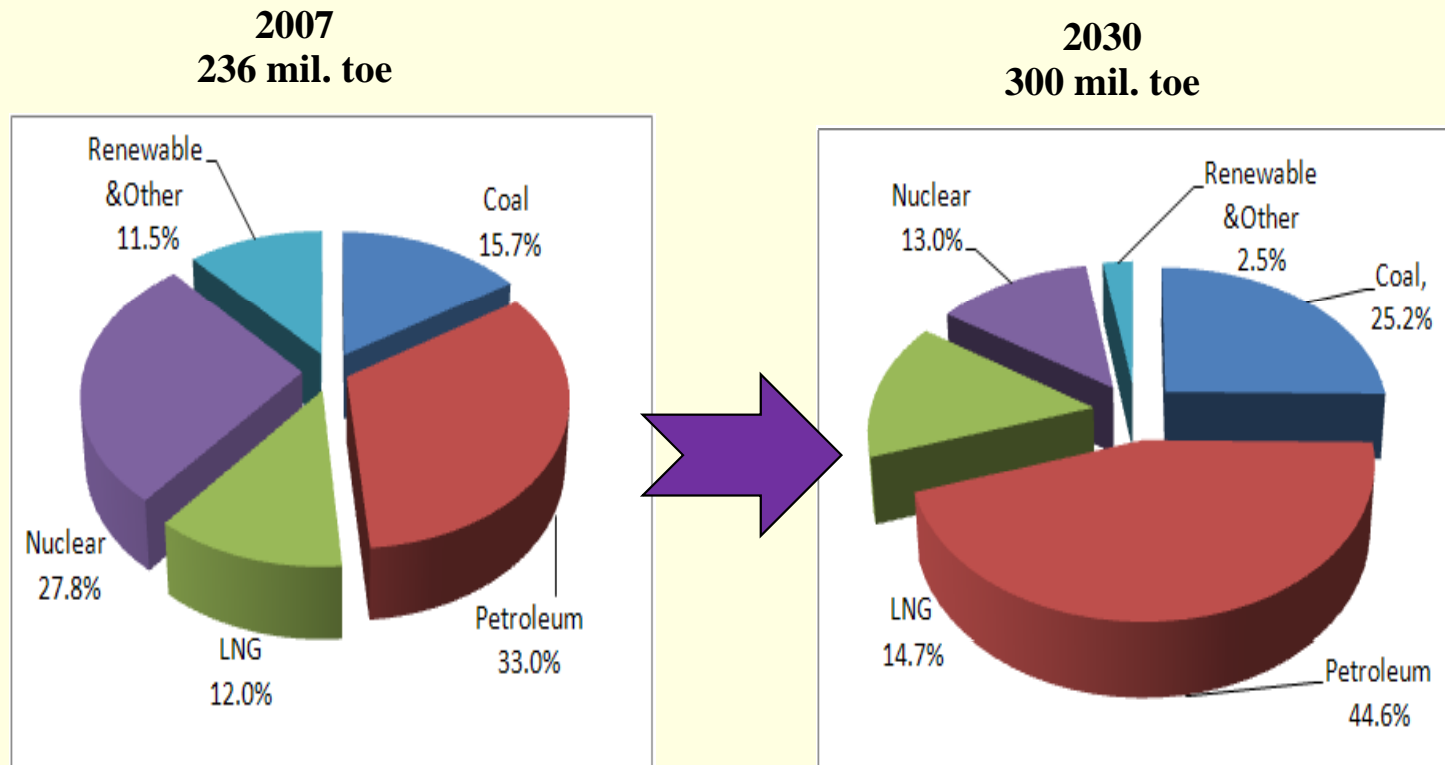
□ Energy Import (2007)

- Import Dependency: 96.7%
- ME Dependency of Crude Oil: 80.7%
- Energy Imports: \$ 95.0 billion
 - Crude oil imports: \$ 60.3 billion
 - LNG imports: \$ 12.7 billion
 - Coal imports: \$ 6.4 billion
 - Uranium imports: \$ 0.5 billion
- Energy Import/Total Import: 26.6%

□ Korea's energy imports from Russia (2006)

	Crude Oil (million bbl)	Coal (million ton)
<i>Russia</i>	14.0	5.03
<i>Share</i>	1.6%	6.3 %

Primary Energy Demand by Fuel : Korea



Source: KEEI(2008)

II. Cooperation Opportunity in Northeast Asia

Main Necessities of NEA Energy Cooperation

- **Improve Energy Security**
 - **Diversification of energy resources and import sources**
 - **Emergency preparedness : less vulnerable to external shocks**

- **Energy efficiency and environment protection**
 - **Maximize the efficiency of energy supply and use**
 - **Minimize the environmental impacts and satisfy investment-friendly environment**

- **Reduction of political tension and enhancement of regional stability**
 - **Improve the situation by doing business, energy projects firstly**

Main Necessities of NEA Energy Cooperation

- **Expand scale of energy industry**
 - **Effective development of resources throughout technology transfer**
 - **Create and specialize business activity in energy projects**

- **To establish new oil & gas market**
 - **Secure a stable oil and gas demand**
 - **Exploit and export oil/gas resources from East Siberia and the Far East**
 - **Spill-over effects and expanded energy markets**

- **To build up energy infrastructure**
 - **Set-up energy distribution and infrastructure system in Siberia and the Far East**

Issues for Energy Cooperation in NEA

■ Project cooperation

- **Development of energy resource & establishment of cross-border transportation network**
 - ✦ Oil and oil pipeline (ESPO)
 - ✦ Natural gas and pipeline (UGSS)
 - ✦ Coal and coal transportation infra
 - ✦ Power grid interconnection

■ Policy cooperation

- **Establishment of bilateral & multilateral energy cooperation bases**
 - ✦ Reducing investment barriers
 - ✦ Cross-border energy transportation network

■ Collective action for climate change

■ Political conflicts

- **Territorial disputes**
- **Energy poverty problem in DPRK: Nuclear problem**

Potential Energy Cooperation Projects

- **Resource and transportation route development projects**
 - **Construction of expanded crude oil pipeline in East Siberia**
 - **Development of natural gas field in Russian Far East and China: Irkutsk, Yakutiya, Sakhalin**
 - **Construction of cross-border pipeline networks: < Russia - China - Korea > and < Russia - DPR Korea - Korea >**
 - **Cross-border power interconnection grids with hydro power in Russia**

- **Down-stream cooperation projects**
 - **Joint strategic oil stockpiling**
 - **Sharing refinery/upgrading facilities**

Cooperation Opportunity

Russia

- **High reserves for oil and gas to develop for exports**
 - Oil, Natural Gas, Coal and Hydro
- **High economic growth**
 - ⇒ **Needs for improvement of social & economic infrastructures**
 - ◻ **Diversification of industry from energy: Petrochemicals, Ship building,**
 - **Other SOC's: New city, telecom, road, pipelines**
- **Diversification of energy export markets**
 - **Growing energy demand in the Asia-Pacific region**

Korea

- **Need for overseas oil and gas development**
 - ◻ **Energy Diversification/ Security**
- **Experiences for down-stream industry**
 - ◻ **Refinery & Petrochemicals**
- **Hi-tech & SOC industry know-how**
 - ◻ **Advanced technology application**
- **Well-established government/ business partnership for international relations**
 - ◻ **Policy supports for overseas development**

Korea's Need to Cooperate with Russia

■ Energy Security

- Diversification of energy sources
 - from nuclear & coal: **Siting + Environment issues for a small country**
- **Import source diversification from the Middle East**
 - Is Russia more reliable and attractive supplier?

■ LNG Demand & Supply Gap

- **Tightened international LNG market** ⇒ **Russia can be an option for gas import source for Korea in future.**

Korea-Russia Energy Projects

■ Oil & Natural Gas Projects

- **West Kamchatka Offshore Oil Development Project**
- **LNG of 1.5 million tonnes from Sakhalin-II from 2009**

■ Power Interconnection

■ Coal Development & Trade

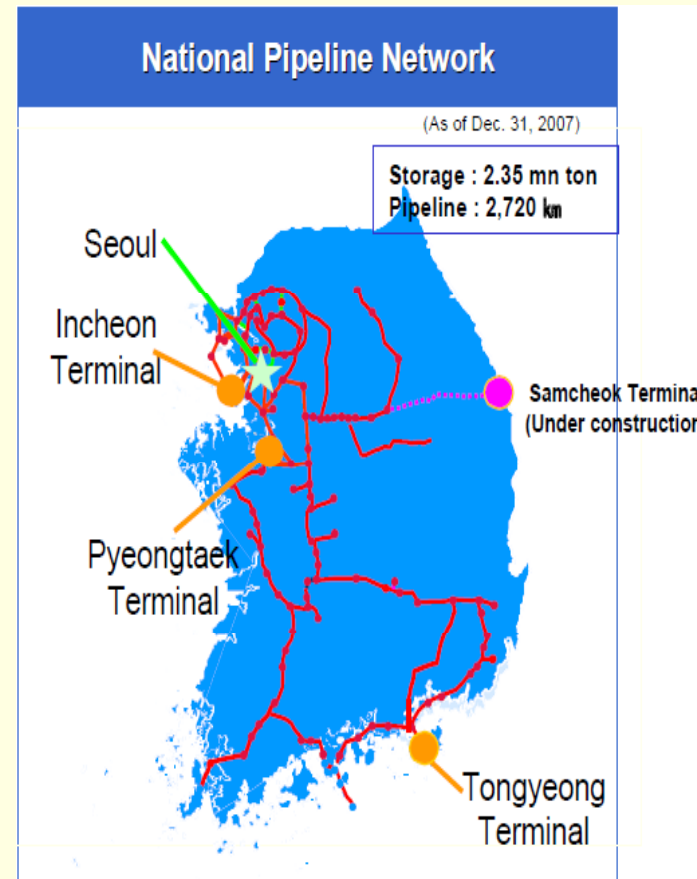
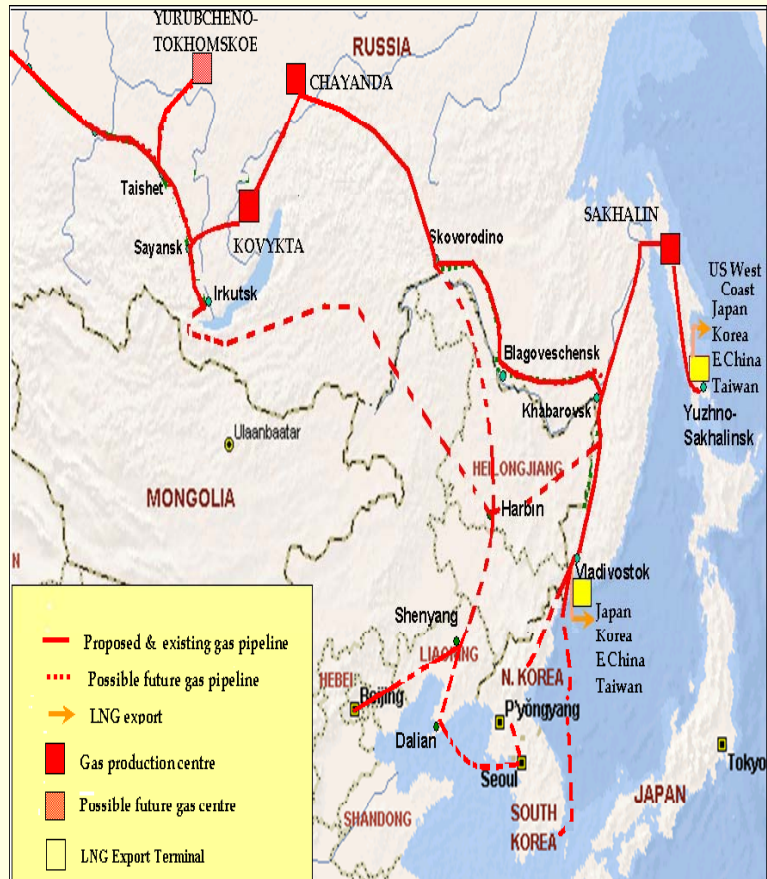
How to Match the Dreams: To Realized before 2015

- **<Sakhalin–III> + <Sakhalin–I> + <Chayanda> through pipelines**
 - Subject to **<Khabarovsk – Vladivostok> pipeline construction before 2012 & North Korean involvement**
 - **In 2015-17, supply to South Korea through North Korea**

 - **<Sakhalin–III> + <Sakhalin–II> for LNG**
 - **Most likely scenario for the short-term interest, not long-term**

 - **<Chayanda> + <Kovykta> through pipelines**
 - **Maximizing the economics and export markets**
 - **Timing of construction of LNG export terminal in Vladivostok**
 - **In the long term, larger scaled project included for LNG export project even to the US West Coast**
- ⇒ Similar to the Shtokman Project for Asia**

Gas Pipeline Network in Northeast Asia



III. Korea's Energy Cooperation Strategy

Economic Environment Change

- **Contamination of financial crisis from US and resulted world economic depression**
 - **Reduced demand for goods including energy**
 - **Collapse of oil prices and other energy prices**
 - **Collapse of raw materials prices**
 - **Collapse of values of energy enterprises in NEA in stock markets**

- **Implication for energy cooperation**
 - **Mixed effects on energy development and transportation projects**
 - **Reduced demand + collapse of energy prices = reduced economics**
 - **Collapse of raw materials prices = reduced construction costs**
 - **Mixed effects on international participation**
 - **Collapse of enterprises' stock value in host countries = joint invest**
 - **Reduced demand + collapse of energy prices = less attractive**
 - **Time to get together to face it**

Political Environment Change

■ DPR Korea issue

- US removing DPRK from list of State Sponsors of Terrorism
- Better chance for resolution of DPRK nuclear issue within 6-Party Talks framework

■ Presidential election in US

- The election of Barack Obama may have some influence on Korean Peninsula tension and NEA energy cooperation, in turn
- New President is pro-DPRK?

■ Implication for energy cooperation

- DPRK may get access to international communities and financial organization
- Increased chance for DPRK joining NEA energy cooperation

Basic Framework of Korean Approach

■ Main Principles of Korean Approach

- Development of free and fair trade
- Investment promotion/protection and environmental protection
- Addressing special needs and collaboration in emergencies

■ Voluntary and Non-binding Participation

- Induce all six NEA countries' participation
- Develop incentive mechanism for all NEA countries

■ Open Regionalism to Non-NEA

- Induce interests from US, EU, Energy Organizations
- Cope with international rules and regulation

Cooperation for Energy Supply Security

- **Two-Level approach**
 - **Korean government pursues bilateral & multilateral cooperation simultaneously by case**
- **Bilateral cooperation**
 - **Project level cooperation**
 - **Summit & Energy and Mineral Resources Cooperation Committee**
- **Multilateral cooperation**
 - **Cross-border transportation network, investment environment**
 - **6-Party Talks, 5-Countries Energy Ministerial Meeting, APEC, ASEAN+3, IEA, GTI, and so on**
- **Promotion of consumer and producer energy cooperation mechanism**
 - **SOC/UNESCAP**

Example for Bilateral Cooperation

■ Korea-Russia Summit in Sep. 2008

- **Russian PNG to Korea passing through DPR Korea: 7.5 MT/y ('15~'17)**
 - Joint feasibility study ('08~'10)
 - Signing natural gas supply contract b/w KOGAS & Gazprom ('10)
- **Joint construction and operation of gas/petrochemical industrial complex in Russian Far East**
 - Joint establishment of model for LNG liquefaction plants and petrochemical industrial complex construction and operation
- **Mega-scale Korea-Russia economic cooperation projects**
 - Total scale of projects: more than USD100billion

■ Implication

- **Encouraging DPRK participation + mitigation of Korean Peninsula tension**
- **Stimulating other energy development projects in Russia**
- **Better energy security in Europe and Asia-Pacific region**

Example of Multilateral Cooperation

- **Establishment of Inter-governmental Collaborative Mechanism (ICM) on Energy Cooperation in Northeast Asia**
 - **Membership: DPR Korea, Mongolia, the Republic of Korea, and the Russian Federation (4 countries), China (observer)**
 - **Created in November, 2005 at the first session of the Senior Officials Committee (SOC)**
 - **Working Group Activity (Working Group for Energy Planning and Policy – WG-EPP)**
 - ✦ **Members' Country Report for Energy Policy and Statistics ('06), Energy Demand Forecasts ('07), Energy Production Potentials ('08)**
- **Issues**
 - **China's and Japan's participation**
 - **DPR Korea's nuclear weapon program (6 Party Talks)**
- **Future plan**
 - **To upgrade to the Energy Ministerial Meeting in NEA**
 - **To expand activities of WG-EPP or create more working groups**

Korea's Approach to Energy Cooperation with Russia

- **Energy Partnership**
 - Korea will provide Russia with stable energy demand market
 - Russia needs to guarantee the long-term stable supply of oil and natural gas to Korea
 - **Enhancing Direct Bilateral Cooperation with Russia**
 - Inter-governmental as well as industrial levels
 - **Energy projects to be linked with other economic/industrial development projects in Russia**
 - Vladivostok development plan, ect
 - Promotion of technology and capital investment cooperation
 - **Cooperation of the Regional Energy Common Market with Other Countries in Northeast Asia**
 - Regional market for natural gas/electricity with Russia and China
- ⇒ **Cooperation can provide a win-win opportunity for both countries, Russia and Korea**

Thank you very much