

# Perspectives from South Korea

## 2008 Energy Security Conference

**Opportunities and Constraints:  
Prospects for Russian Oil and Gas Supply to Asia**

**April 29 – 30, 2008**

**Washington DC, the United States**

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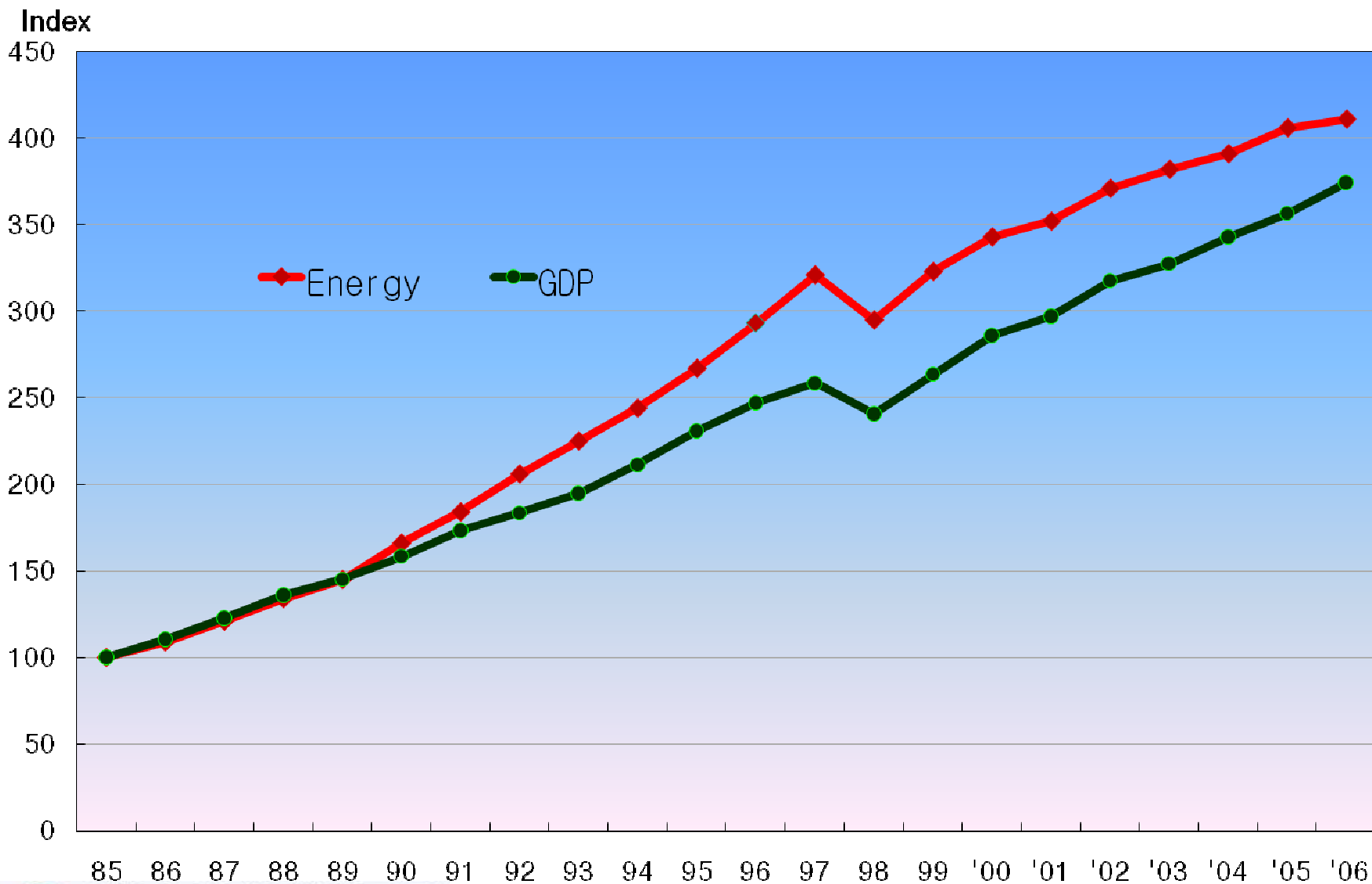
**Korea Energy Economics Institute (KEEI)**

**Center for Energy Research – International Studies (CERIS)**

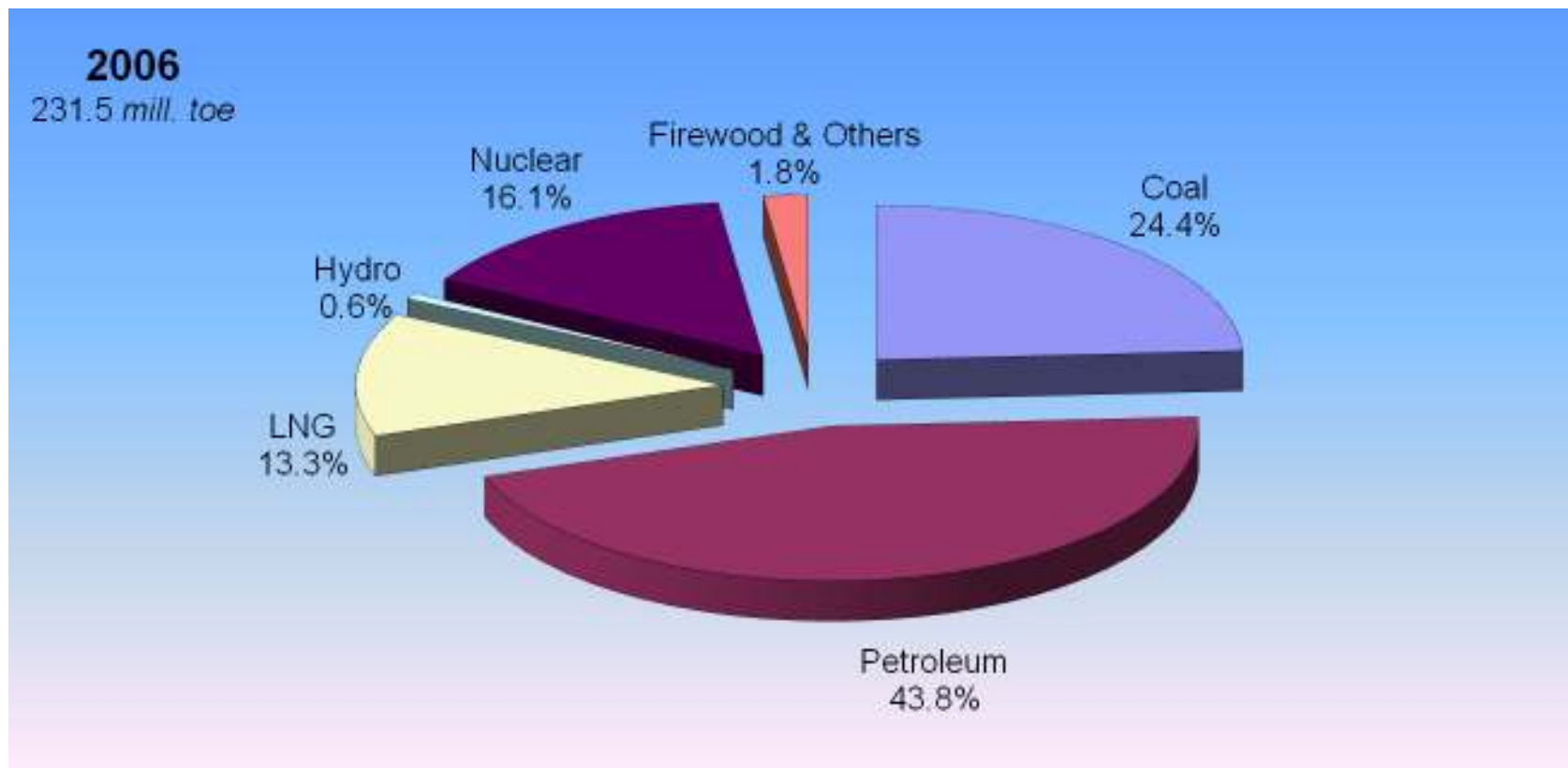
# South Korea in Northeast Asia



# Energy Demand & Economic Growth in Korea



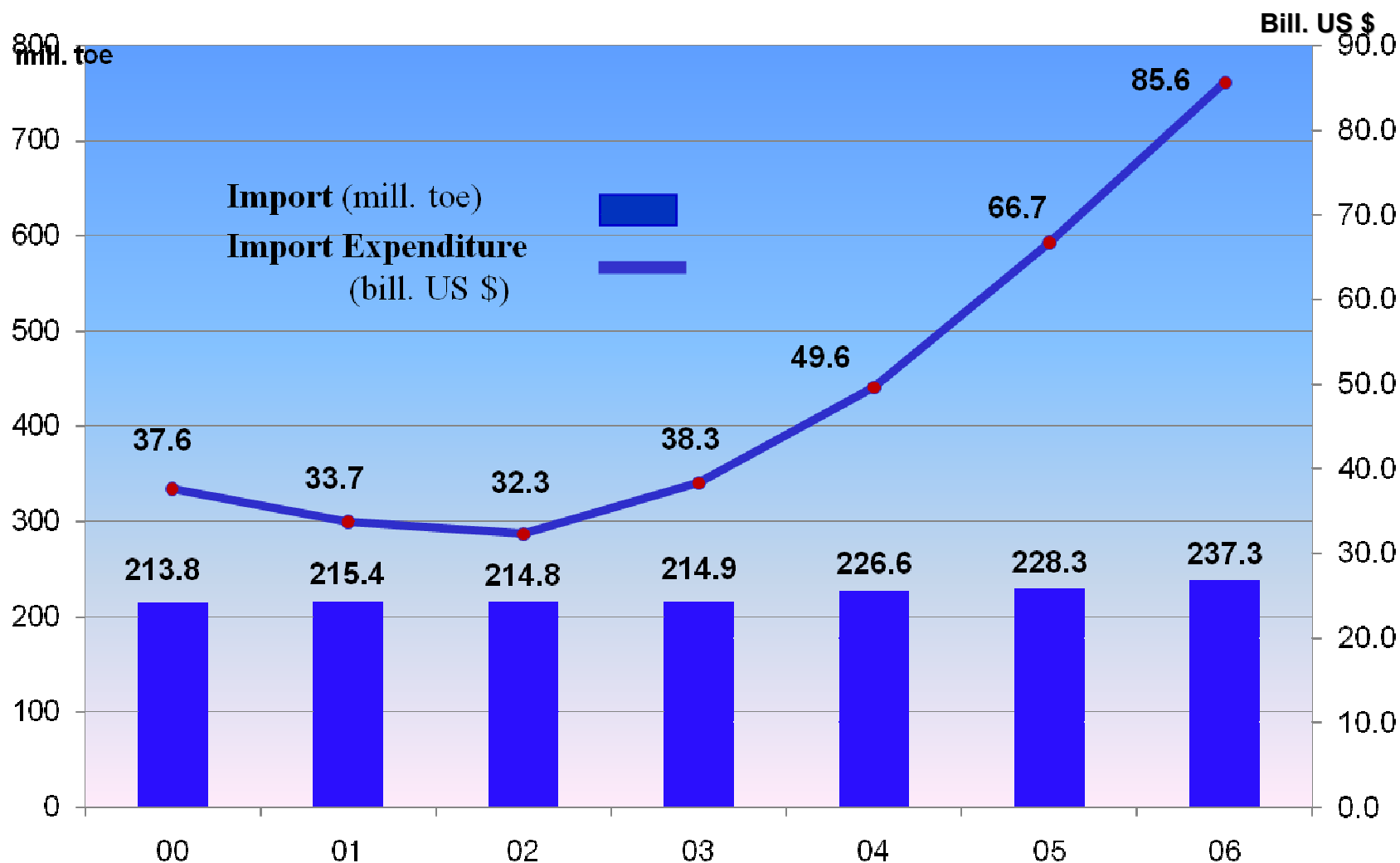
# Primary Energy Consumption by Source



## □ Trend in Consumption Shares (1981→1990→2006, %)

- Oil ↓: 58.1 → 53.8 → 43.8
- Coal ↓: 33.3 → 26.2 → 24.4
- LNG ↑: 0 → 3.2 → 13.3
- Nuclear ↑: 1.6 → 14.2 → 16.1

# Energy Imports in Korea



# Energy Imports in Korea

## □ Major Feature (2006)

- **Import Dependency: 96.8%** • **Energy Imports: US \$ 85.6 billion**
- **Petroleum Dependence: 43.8%** • **ME Oil Dependency: 82.2%**

## □ Imports (2006)

- **Crude Oil : US \$ 55.9 billion (888.4 million barrels)**
  - Saudi Arabia, UAE, Kuwait, Iran, Qatar, ...
- **LNG : US \$ 11.9 billion (24.3 million tons)**
  - Indonesia, Qatar, Oman, Malaysia, Brunei, ...
- **Coal : US \$ 5.3 billion (76.0 million tons)**
  - Australia, China, Indonesia, Russia, Canada, ...

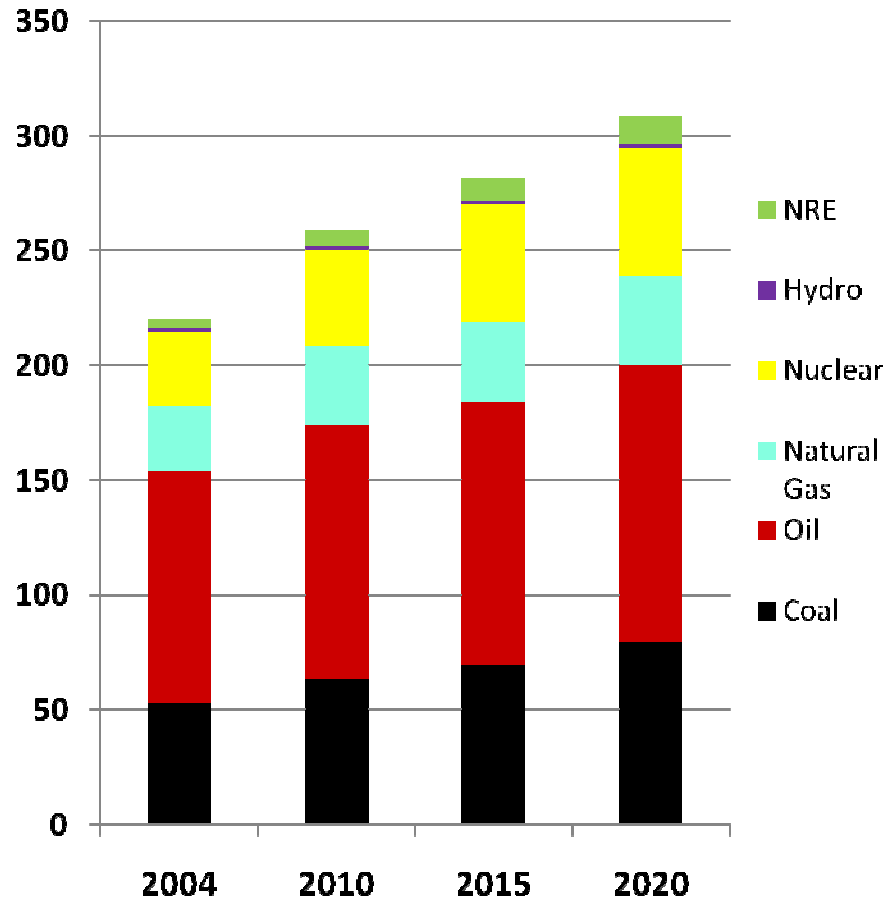
## □ Korea's energy imports from Russia (2006)

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

# Primary Energy Demand by Fuel

## Republic of Korea (Reference Case)

Million TOE

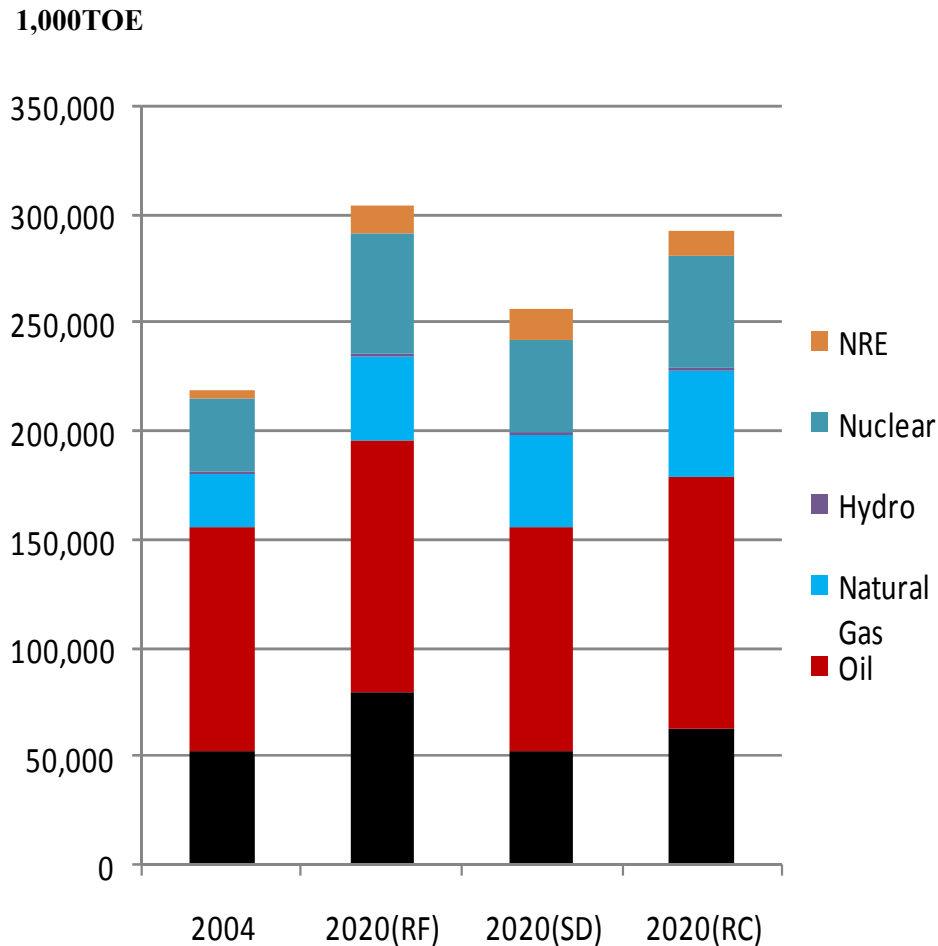


	2004	2010	2015	2020
Coal	53.1	63.4	69.5	79.7
Oil	100.6	110.7	114.5	120.4
N. Gas	28.4	34.6	35	38.9
Nuclear	32.7	41.7	51.1	55.9
Hydro	1.47	1.4	1.4	1.4
NRE	3.99	7.4	9.7	12.4
<b>Total</b>	<b>220.3</b>	<b>259.2</b>	<b>281.2</b>	<b>308.7</b>

# Scenario Analysis Energy Demand Outlook

**SD = Sustainable Development**

**RC = Regional Cooperation in NE Asia**



	2004	2020(BaU)	2020(SD)	2020(RC)
Coal	53,127	79,670	52,810	63,921
Oil	100,638	116,123	103,963	116,197
N. Gas	28,351	38,912	42,565	48,228
Hydro	1,465	1,445	1,391	1,445
Nuclear	32,679	55,881	41,871	51,130
NRE	3,977	12,391	15,011	12,391
<b>Total</b>	<b>220,237</b>	<b>304,421</b>	<b>257,611</b>	<b>293,311</b>



# Why does Korea need Russian gas ?

- **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**

*Long-term Natural Gas Demand/Supply in Korea*

*(unit: million LNG ton)*

	<u>2011</u>	<u>2015</u>	<u>2020</u>
Demand	31.73	32.38	39.34
Contracted Supply	25.20	20.23	17.59
Expected Shortage	6.53	12.15	21.75

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

# Slow progress for Korea-Russia gas project: Why?

- **Big power's game**

- **Russia vs Western majors: Operation + Equity**
  - Sakhalin II + Kovykta, then Sakhalin I?
- **Russia vs China: Price issues**
- **Russia vs Japan: Territorial issues + ?**
- **Gazprom vs Rosneft: Oil & gas in East Siberia and Sakhalin**
  - Gazprom's role in gas development in East Siberia & Sakhalin

⇒ Russia was not ready because of the power games

- **Korean side issues**

- **Financial crisis in the late 1990's**
- **Energy sector restructuring issues: public (*Kogas*) vs private**
- **No policy for Russian energy**
- **North Korean nuclear issues**

⇒ Korea is too small and weak to drive the project alone

# Korea-Russia Gas Projects

- **Kovykta Project of the TNK-BP, CNPC & Kogas**
    - Not approved by Moscow
  - **Korea's LNG Imports Sakhalin-II**
    - LNG of 1.5 million tonnes from Sakhalin-II from 2008
  - **Korea-Russia Intergovernmental Agreement for Gas Industry**
    - Signed in October 2006
    - More detailed implementation plan for natural gas supply from Russia to Korea to be settled between Kogas and Gazprom in 2007 ~2008.
- ⇒ No fruitful outcome yet

# Two Different Dreams between Korea & Russia

- **Korea's Dream**

- **Imports of 15 bcm Russian gas from 2012 ~ 15**
  - Which source, Kovykta or Sakhalin?
- **Imports of 20 bcm Russian gas in the long-term, after 2020**
  - 1/3 of Korea's total natural gas imports

- **Russia's Dream**

- **Sakhalin-III alone for Korea: 12 bcm from 2012**
  - Question: Will Sakhalin-III be feasible given expected difficulty?
- **Chayanda after 2015**
  - In the UGSS Eastern Program

# Feasible Solutions to Match the Dreams

## To Realize before 2015

- **<Sakhalin-III> + <Sakhalin-I> through pipelines**
  - **Subject to <Khabarovsk – Vladivostok> pipeline construction before 2012 & North Korean involvement**
    - **Project with China excluded**
  - **Operator & Asset Evaluation Problems with the Exxon/Mobile**
- **<Sakhalin-III> + <Sakhalin-II> for LNG**
  - **Most likely scenario for the short-term interest, not long-term**
- **<Sakhalin-I> + <Kovykta> through pipelines**
  - **Maximizing the economics and export markets**
    - **Timing of construction of LNG export terminal in Vladivostok**
  - **In the long term, it will be developed to a larger scaled project with the Chayanda included for LNG export project even to the US West Coast**

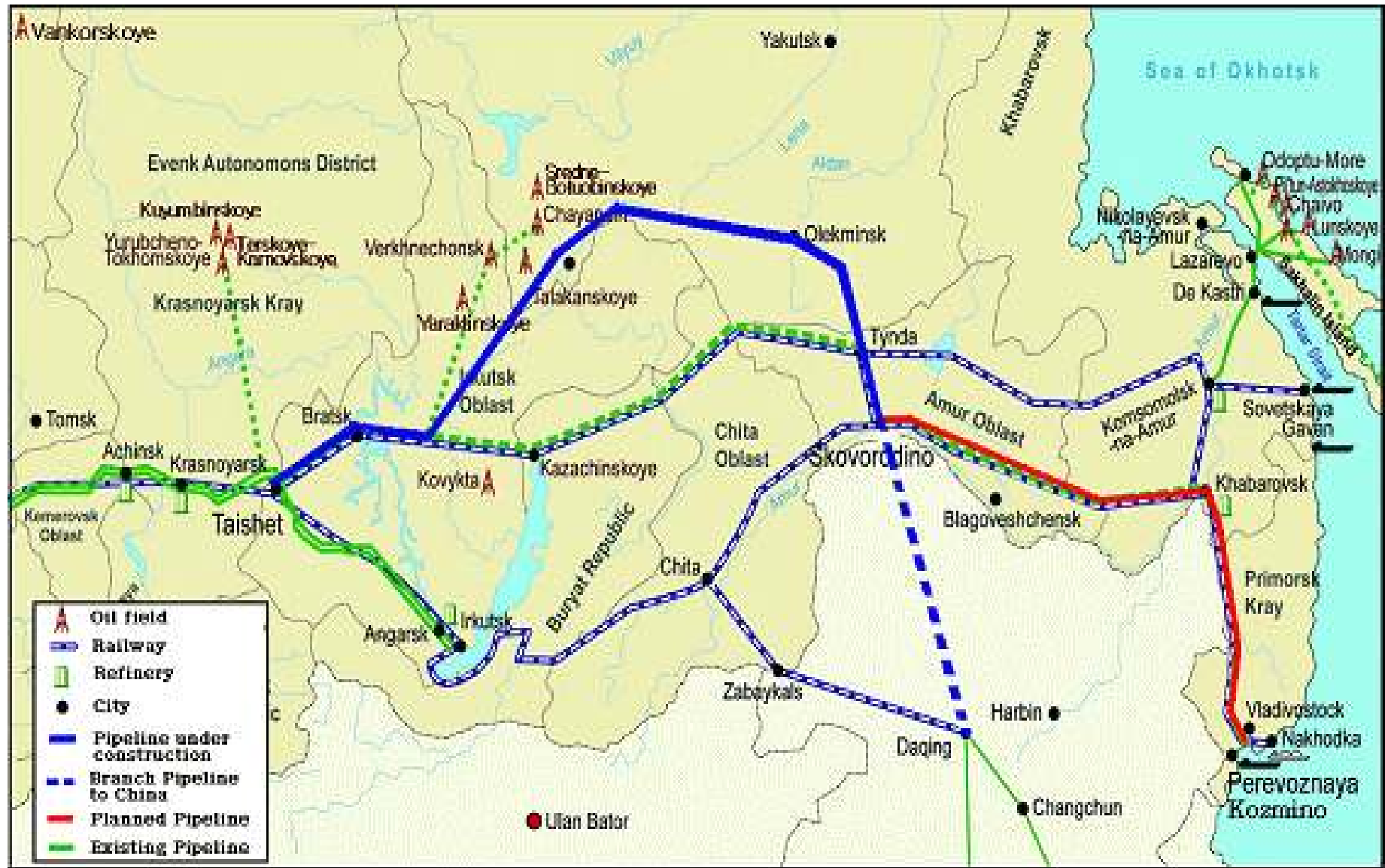
# Gas Pipeline Network in Northeast Asia



# Oil Development Project

- **West Kamchatka Offshore Oil Development Project**
  - **Korean consortium + Rosneft Joint Project**
- **Korea's participation in oil development project**
  - **Availability of additional projects in Kamchatka, Sakhalin and Republic of Sakha regions**
- **East Siberia-Pacific Ocean (ESPO) Oil Pipeline Project**
  - **Timing and plan for the construction of the 2<sup>nd</sup> stage plan**
    - Volume of crude oil to transport by railway Kozmino oil export terminal after the completion of the first stage of the ESPO oil pipeline
- **Integrated Oil and Gas Supply Infrastructure**
  - **Creation of crude oil market in Vladivostok (Kozmino oil export terminal) ?**
    - Korean companies will have an opportunity to invest in the construction of oil complex.

# New Route of the ESPO Oil Pipeline





# 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, Mega-Policy development plan, ect**
  - **Promotion of technology and capital investment cooperation**

**Thank you very much**  
*Gamsa'hamnida*

**- End -**