

**The 15th International Conference on
Northeast Asian Natural Gas and Pipeline**

**Framing Trans–Pipeline Natural Gas Security in the
Korean Peninsula?: Opportunities and Obstacles**

Se Hyun Ahn, Ph. D

Vice President for International Affairs &

Professor

Department of International Relations &

Director

**The Center for Energy Security Strategic
Studies**

University of Seoul

4–5 October, 2018

St. Petersburg, Russia

Contents

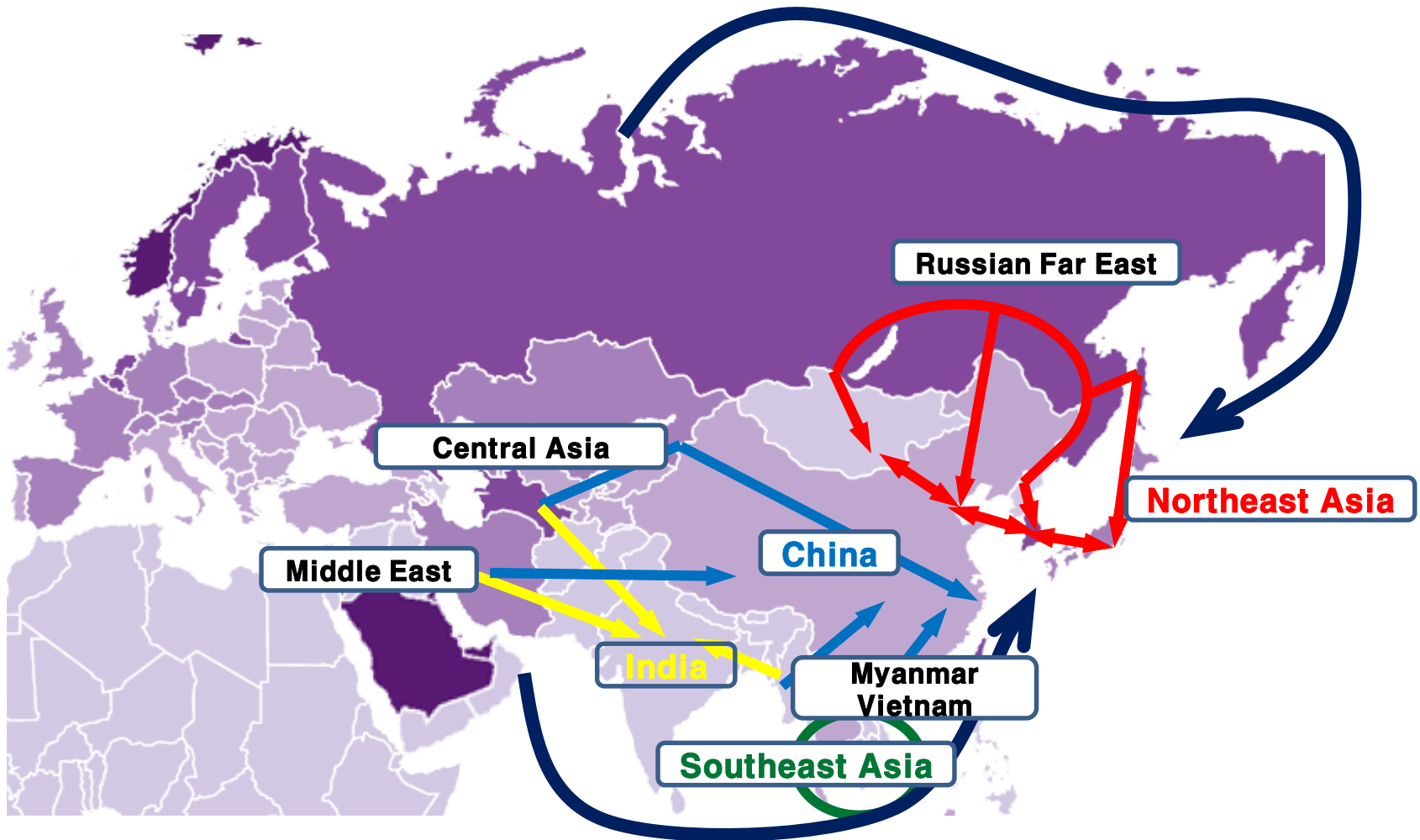
- ◆ **Russia Energy Policy: Pivot to Asia**
- ◆ **Natural Gas Cooperation between Korea and Russia**
- ◆ **Background & Progress of PNG Cooperation**
- ◆ **Policy Implications & Bullet Points**

◆ **Russia Energy Policy: Pivot to Asia**

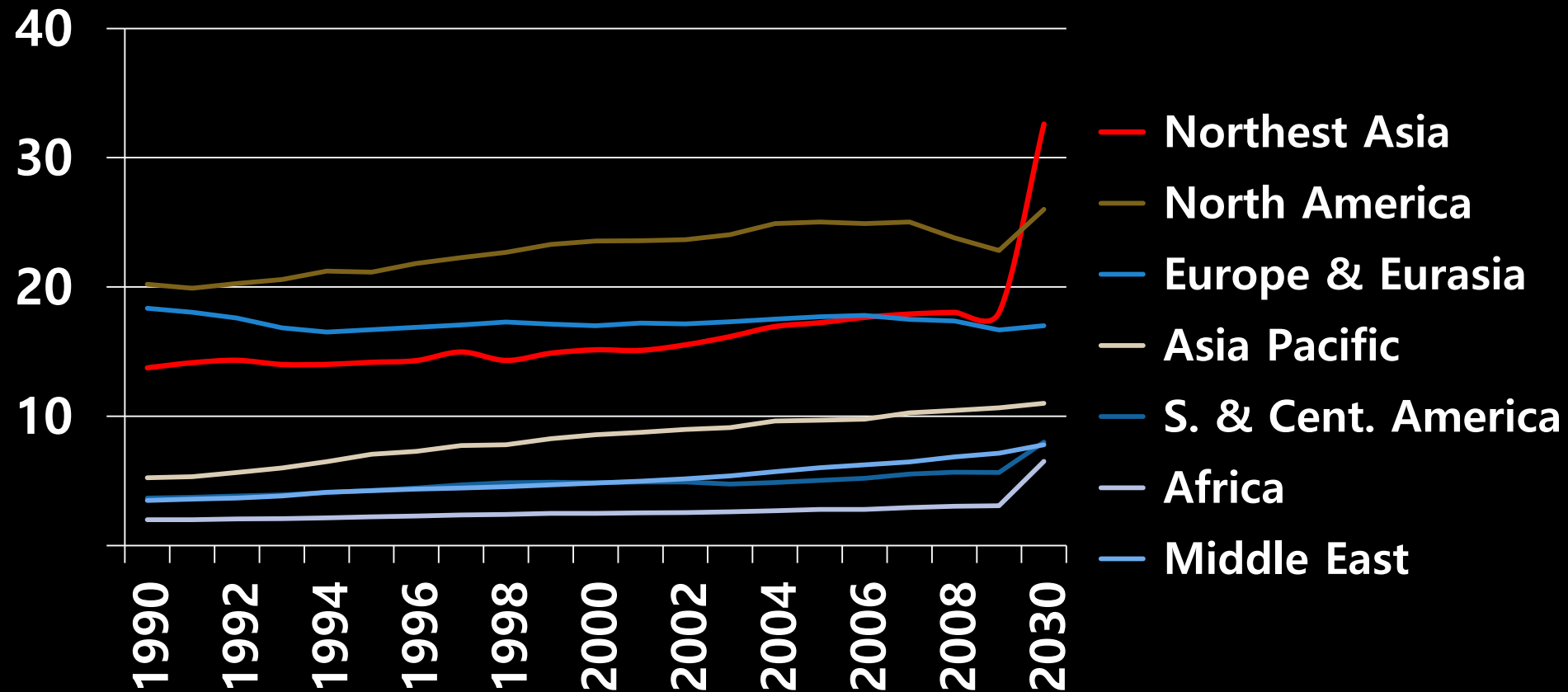
Asian Oil and Gas Premium

- ◆ Asian consumers have paid higher prices for Middle Eastern crude oil and gas compared to their counterparts in the West: 'Asian Oil and Gas Premium'
- ◆ But, the emergence of new oil and gas suppliers including Russia, Central Asia, Africa, and Latin America have gradually crumbled the 'Asian Oil and Gas Premium'.
- ◆ Asia natural gas market grows rapidly.

Energy Flow in Asian Region



Northeast Asia Energy Demand (BP 2017)



Russia Energy Policy: Pivot to Asia

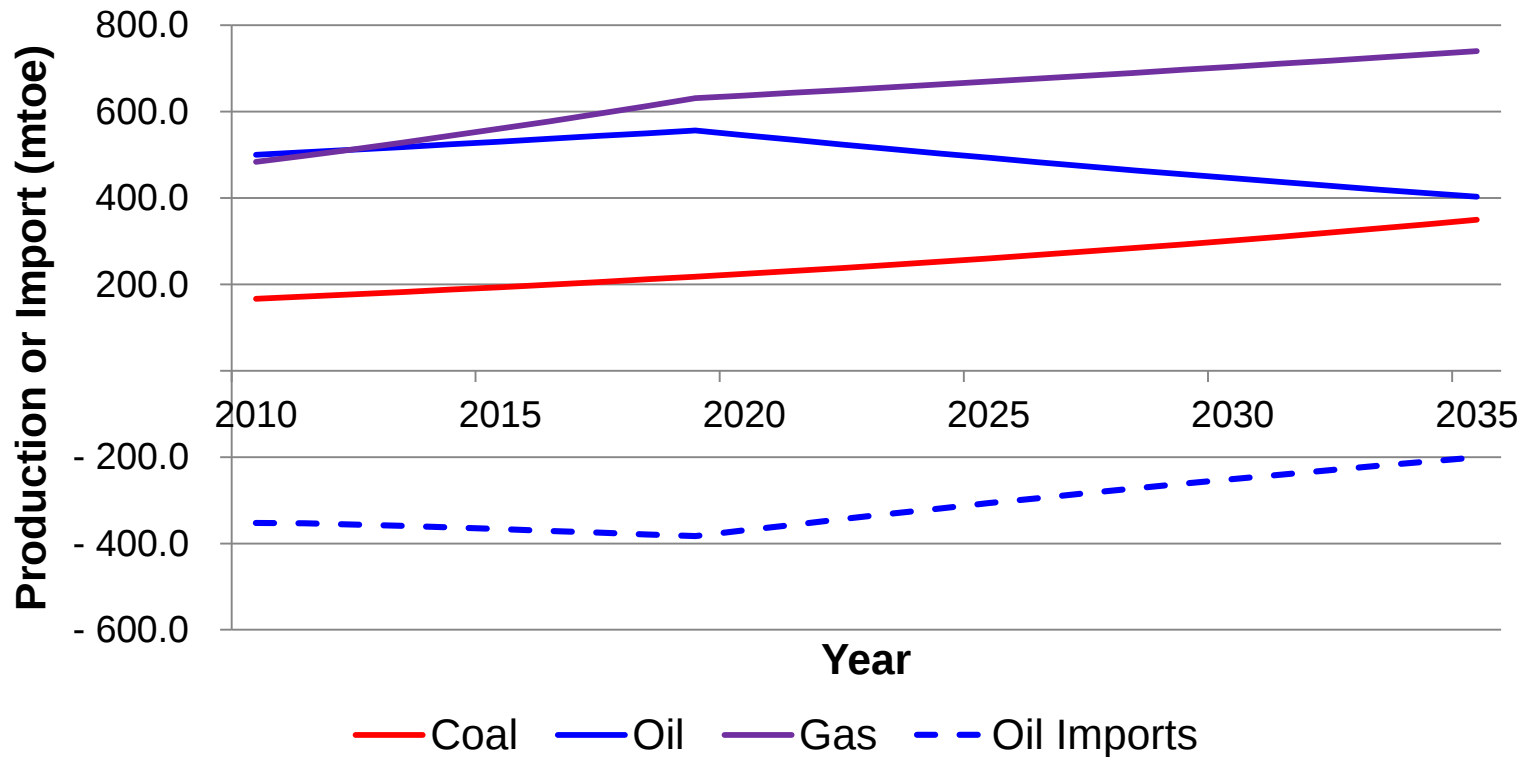
- ◆ Russia will emerge as a great power in the Asia-Pacific energy markets
 - China remains Russia's key partner in the region, especially after May 21st 2014 gas contract
 - Russia will enhance energy cooperation with other Asian countries
- ◆ Needed for a close look at what potential possibilities for energy cooperation
- ◆ Elaborate a portfolio of specific energy projects considered specific aspects of Asian countries and Eastern Siberia and the Far East of Russia
- ◆ Engage all possible partners and investors in energy cooperation for these projects with full diversification

Russia Energy Policy: Pivot to Asia

- ◆ Russia exports 76% (natural gas) & 84% (oil) to Western Europe.
- ◆ Russia has turned to East Asia, where energy-starving economies like China, Japan and South Korea offer large markets.
- ◆ Diversification of exports to Asia
 - ◆ 2014. January: by 2035 total energy exports will increase up to 28%
 - ◆ Crude oil and petroleum products, current 12% up to 23%
 - ◆ Natural gas, current 6% up to 31%
- ◆ By 2025, expected to export 100 bcm to Asian market

Russia as a Major Energy Producer

- ◆ Peak in oil production around 2020
- ◆ Natural Gas production is increasing all the period
- ◆ Coal production increase 10-20 mil. t/year (3%)



Source: Gostats, Russia

Possible Export of Energy Resources from Russia

Indices	2010 fact.	Forecast		
		2015	2020	2030
Export, min. tce., total	826	916-928	952-1027	969-993
Oil, mil. t	247	229-239	236-251	213-243
Eastern direction	38	39-40	59-60	68-73
Gas, bil. M ³	200	266-287	252-293	257-313
Eastern direction	13	20-25	50-70	78-80
Coal, mil. T	116	120-125	125-130	140-150
Eastern direction	28	30-35	35-40	50-60
Electricity, bil. kWh	20	21-25	30-85	48-105
Eastern direction	1.1	4-8	10-60	25-85

Source: Substantiating materials to “The Energy Strategy of Russia until 2030”, ESI SB RAS

Russian natural gas export to East Asia



◆ Natural Gas Cooperation Between Korea and Russia

Gas Project Options in the Korean Peninsula

◆ Russian Gas Project Options for the Korean Peninsula

- Russian LPG to North Korea: now in the progress
- Pipeline from Russia: North Korea as a transit country? + North Korea in need of complete natural gas infrastructure
- LNG from Russia:
 - * possible and most realistic at the moment for South Korea
 - * economically in doubt for North Korea
 - * Options vary: Sakhalin I, II, III, Vladivostok LNG & Yamal (Novatec) LNG

Energy Transport Network in Northeast Asian Region



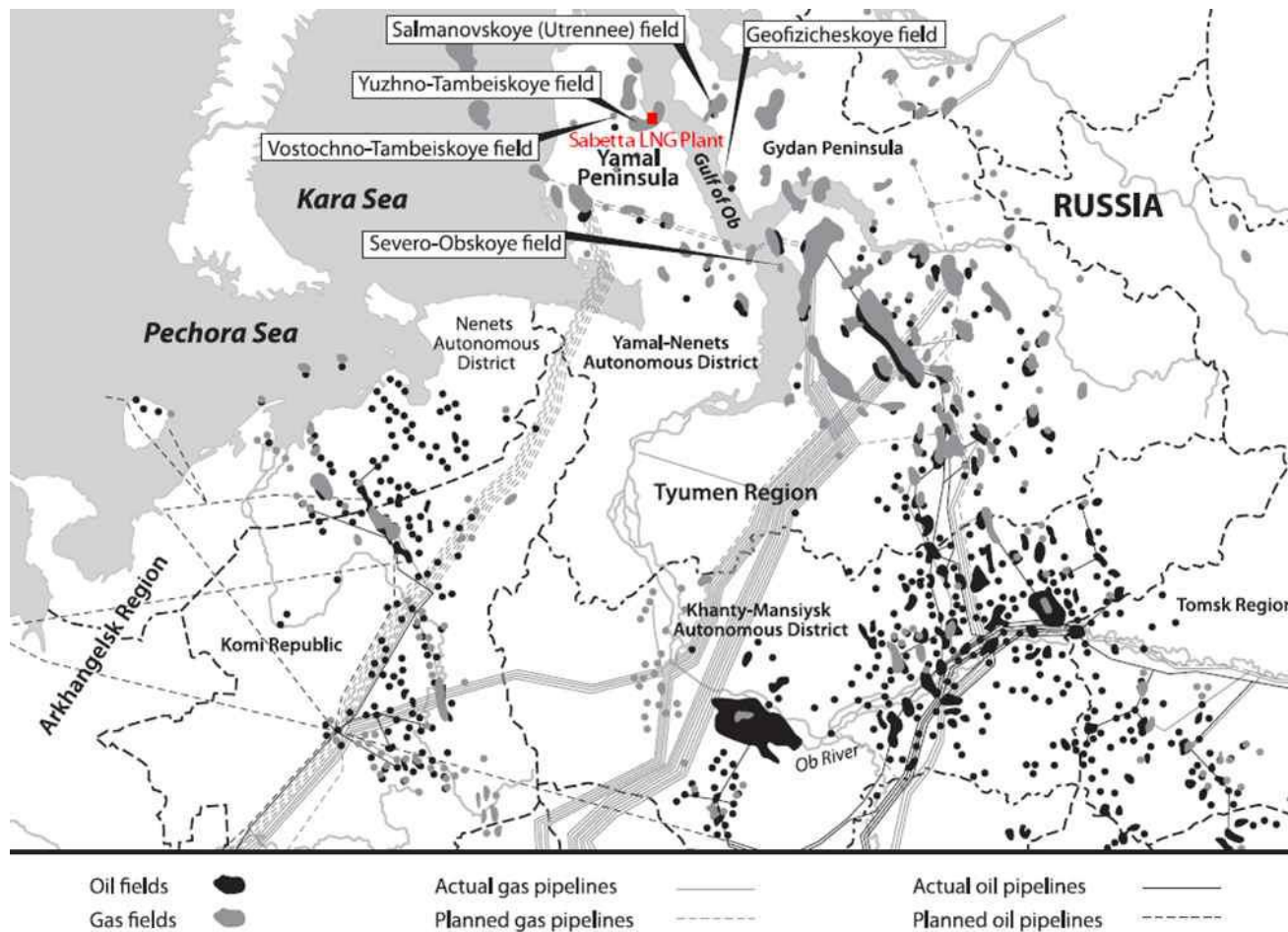
LEGEND

- 유전
- 가스전
- 원유 매장량 (단위: 백만톤)
- 가스 매장량 (단위: bcm)
- 원유 Pipeline
- 가스 Pipeline
- 원유 Pipeline (공사중/계획/제언)
- 동시베리야 (공사중/계획/제언)
- 가스 Pipeline (공사중/계획/제언)
- 철도
- Irkutsk Line
- UGSS계획
- Eastern Line
- Central Line
- Western Line
- Oil Export Terminal
- LNG Export Terminal
- 정유공장 (50,000 ~ 174,999 b/d)
- 정유공장 (175,000 ~ 299,999 b/d)
- 정유공장 (300,000 ~ 1,000,000 b/d)

- 유전 보기
- 가스전 보기
- 정유공장 보기
- » 전체 보기

창닫기

Yamal LNG



◆ Background and Progress of PNG Cooperation

PNG Background

- 1960s Hyundai CEO, Chung Ju- yung suggested: Sakha Gas field to South Korea through North Korea
- 2000s Kovykta: Hanbo group, TNK-BP
- 2007 Eastern Gas Program (Sila Sibiri) launched
- 2014 Russia-China Gas deal reached, perhaps branch line?
- 2017 Russia-Trans PNG reappears under South Korean President Moon administration

Previous Kovykta PNG Direction



RUSSIAN PIPELINE NETWORK



- | | |
|--------------------------------------|--|
| 1. Northern European Gas Pipeline | 2. Baltic Pipeline System (oil) |
| 3. Yamal-Europe Natural Gas Pipeline | 4. Baku-Tbilisi-Ceyhan Oil Pipeline and South Caucasus Nat. Gas Pipeline |
| 5. Kazakhstan-China Oil Pipeline | 6. Turkmenistan-China Nat. Gas Pipeline |
| 7. Kovykta-China Nat. Gas Pipeline | 8. Siberia-Pacific Oil Pipeline |

1' Kovykta-China Nat. Gas Pipeline
2' Kazakhstan-China Oil Pipeline
3' Turkmenistan-China Nat. Gas Pipeline
4' Siberia-Pacific Oil Pipeline



**Proposed natural gas
pipeline route from Kovykta
to China and Korea**



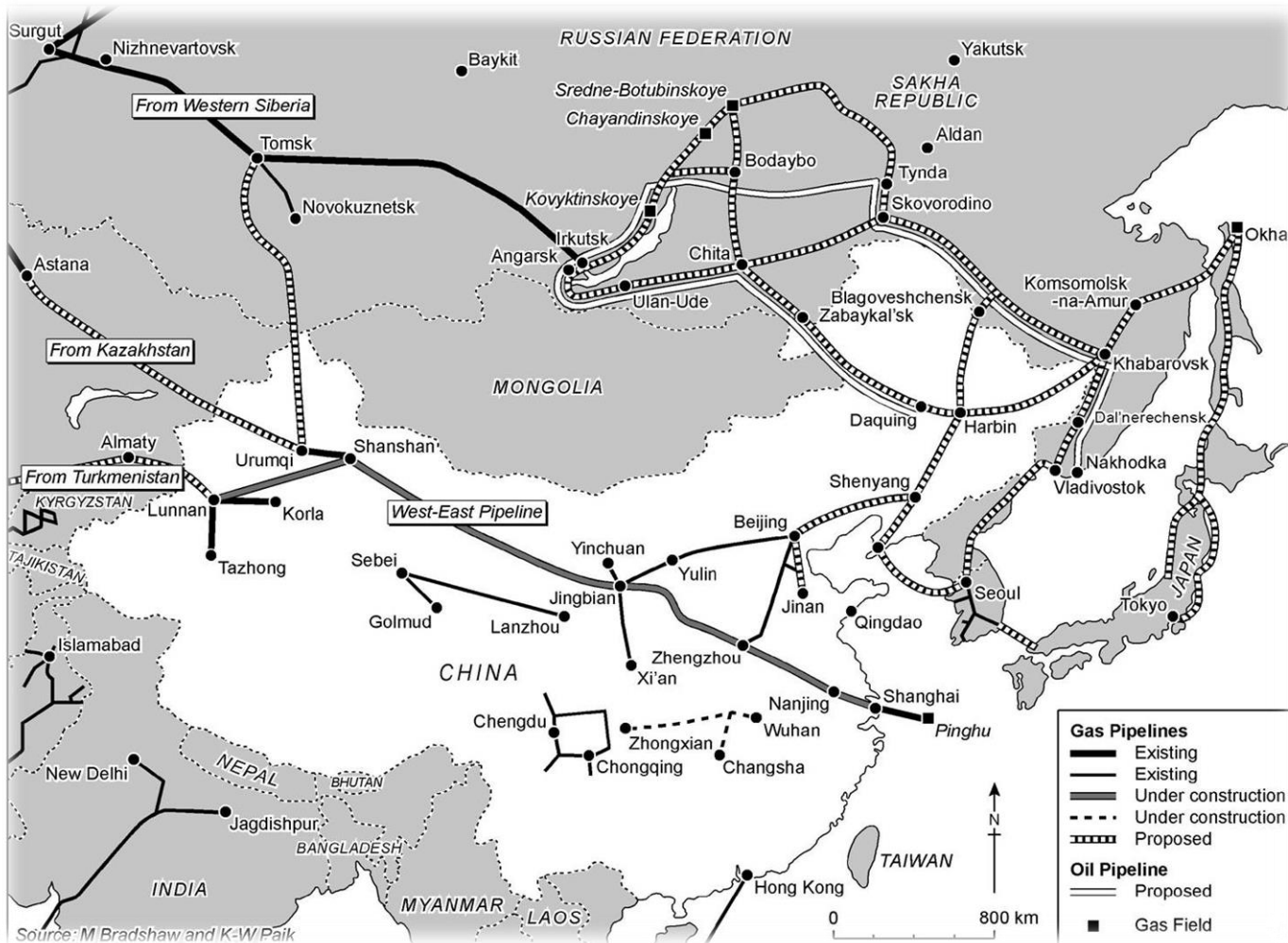








Up to the beginning of 2008



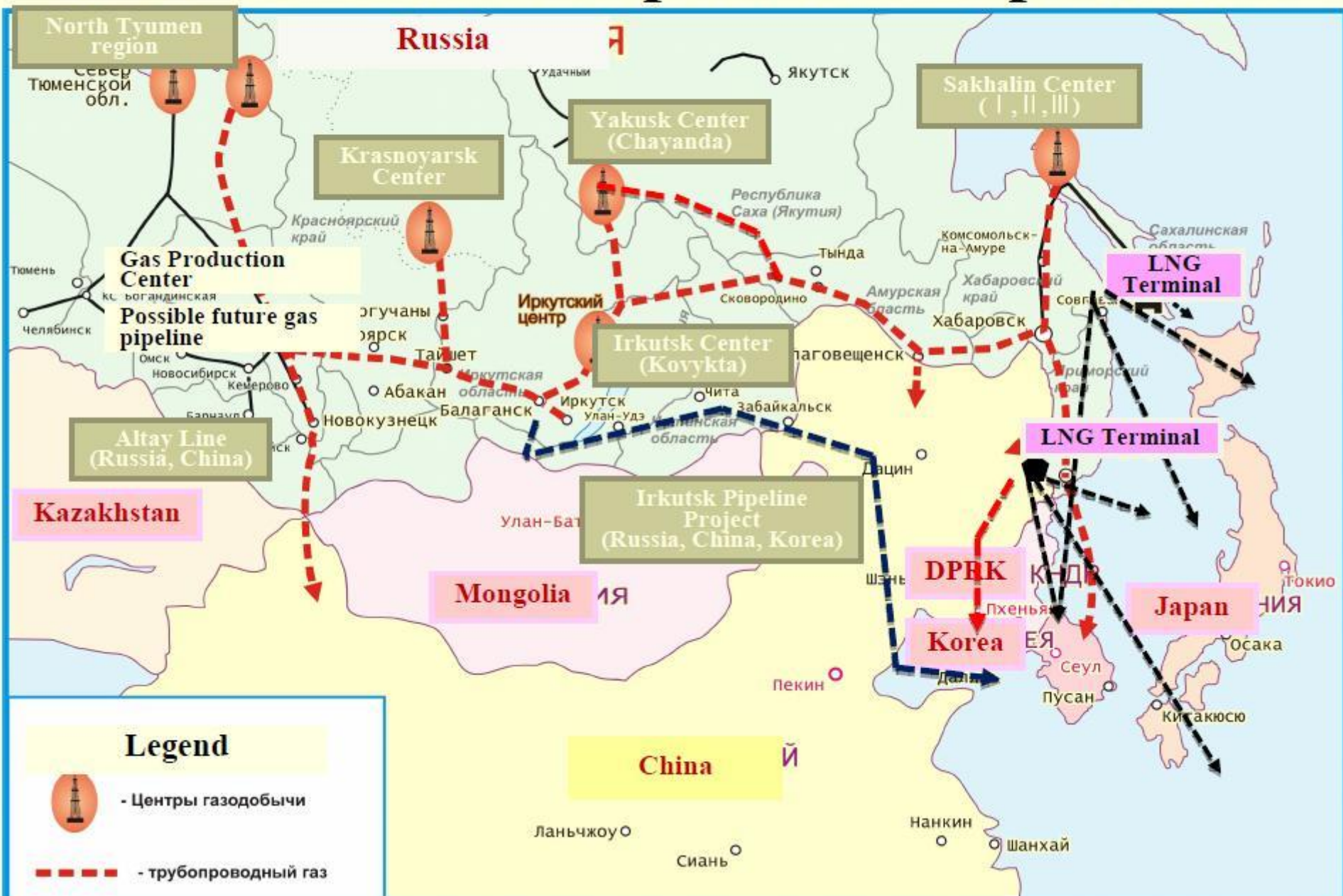
Eastern Gas Program of Gazprom

- ◆ **Gas Supply Center**
 - Krasnoyarsk center, Yakutsk center, Irkutsk center, Sakhalin center
- ◆ **Gas Pipeline Network**
 - Sila Sibiri pipeline, Sakhalin-Vladivostok pipeline, Sakhalin pipeline
 - Russia-China (Eastern, Western) pipeline, Russia-N.Korea-S.Korea pipeline, Russia-Japan pipeline
- ◆ **LNG: Sakhalin LNG Plant(Gazprom), Sakhalin LNG Plant(Rosneft), Vladivostok Plant**



Source: Gazprom

Russia's Gas Development & Export Plan



◆ Implications & Questions

Policy Implication & questions

- ◆ **North Korea: important position for the future regional energy cooperation in Northeast Asia: transit country or gas consumer nation?**
- ◆ **Russian gas & oil pipeline project & power grid project: imminent “it is судьба ”**
- ◆ **Who will construct the gas pipeline? & Which gas field? After Reunification issue?**

- ◆ **What kind of natural gas pipeline strategy will Russia apply to trans-Korean-Russian gas pipeline?**
- ◆ **Competition with the United States shale gas flow is unavoidable!**
- ◆ **Rational Choice needed: Reliability vs Distance**
- ◆ **Package program with the Russian Far East area development very promising**



С п а с и б о з а
в н и м а н и е