

Northeast Asia Gas Security and its Implication to Korea

Choi, Young Chul
Head, Global Energy Cooperation Center



Ministry of Foreign Affairs



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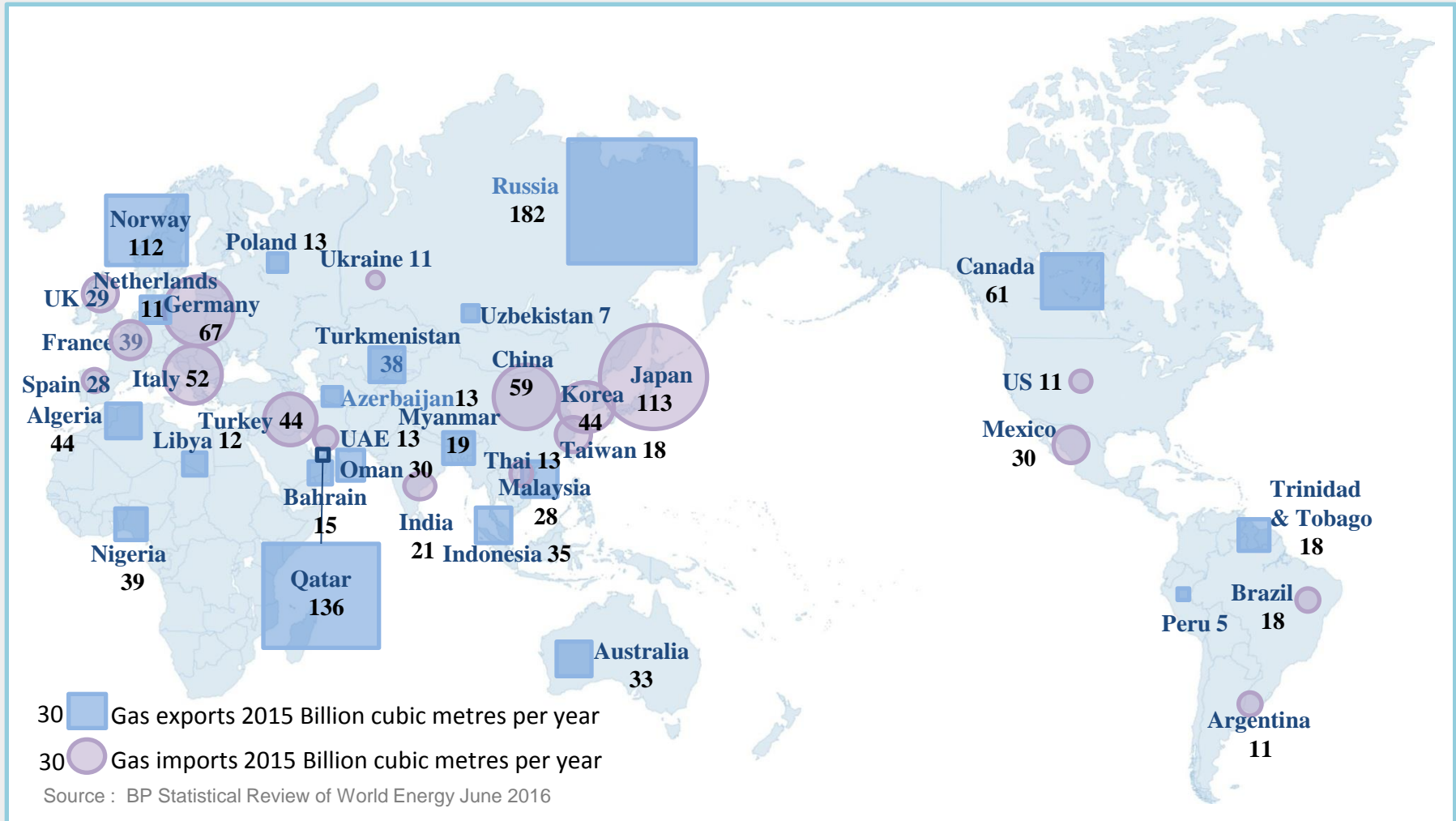
Korea's Natural Gas Diplomacy Policy

Global Natural Gas Market Overview



1 Interregional Gas Trade

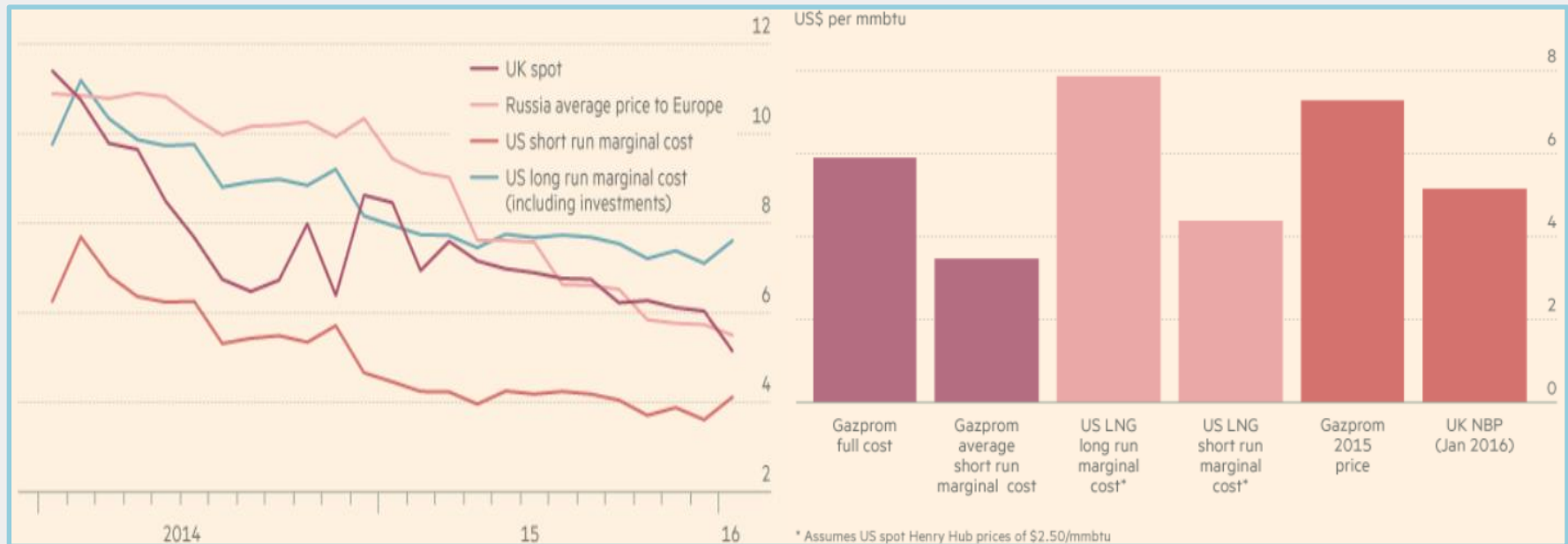
- Net importers : Japan, Germany, China, Italy, Korea
- Net exporters : Russia, Qatar, Norway, Canada, Algeria, Nigeria





2 Global Gas/LNG Pricing and Trend

- Global gas market braced for price war
 - US may become a Net Gas Exporter in 2016
 - Russia push down gas prices to keep US LNG out of the market
- Natural gas : bought & Sold under long-term SPAs at an oil-indexed price
- US bought and sold under gas-to-gas competition using Henry Hub
- EU gas market changed with development of alternative pricing mechanism(MIX)
- LNG needs new pricing, rules to realize its golden age



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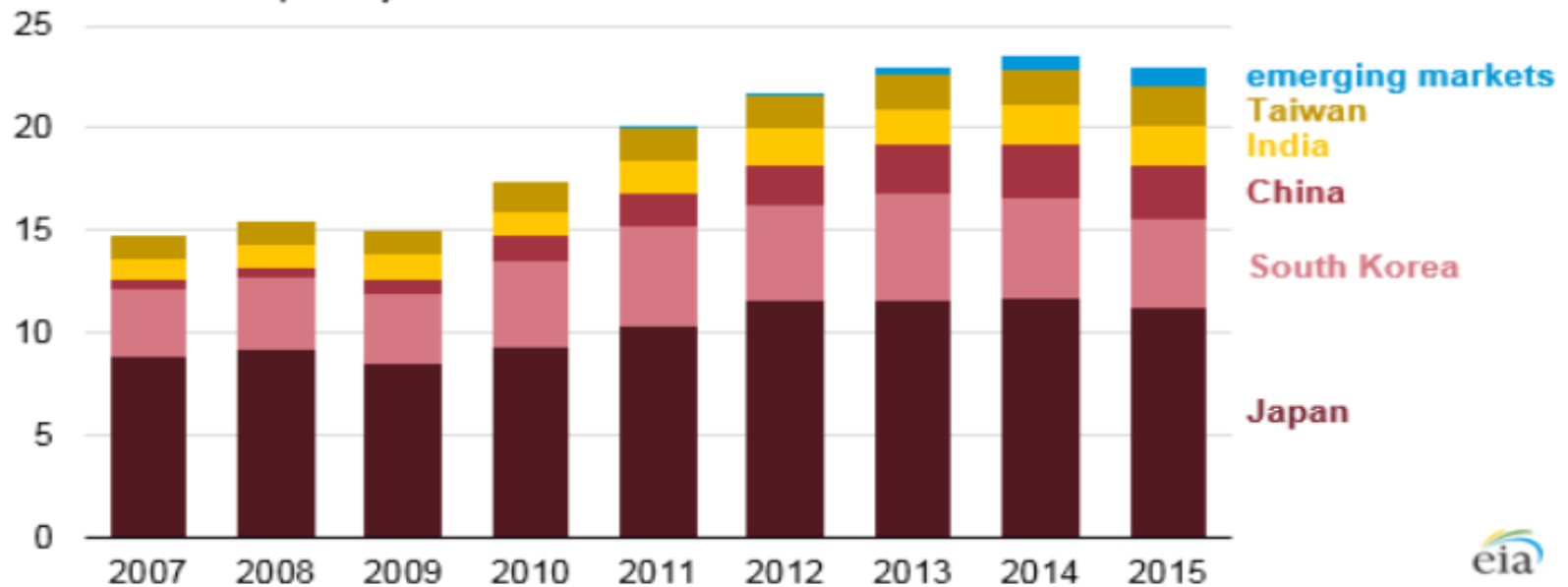
Korea's Natural Gas Diplomacy Policy



1 Northeast Asian Gas Market

- Korea, Japan & China = world's largest importers of LNG
- 2015 Combined LNG import volume in Korea & Japan declined from 2014
 - Japan's total electricity consumption has fallen for 5 consecutive years
 - Korea government policy favors the use of coal and nuclear energy over gas

Imports of liquefied natural gas (LNG) in selected Asian countries (2007-15)
billion cubic feet per day

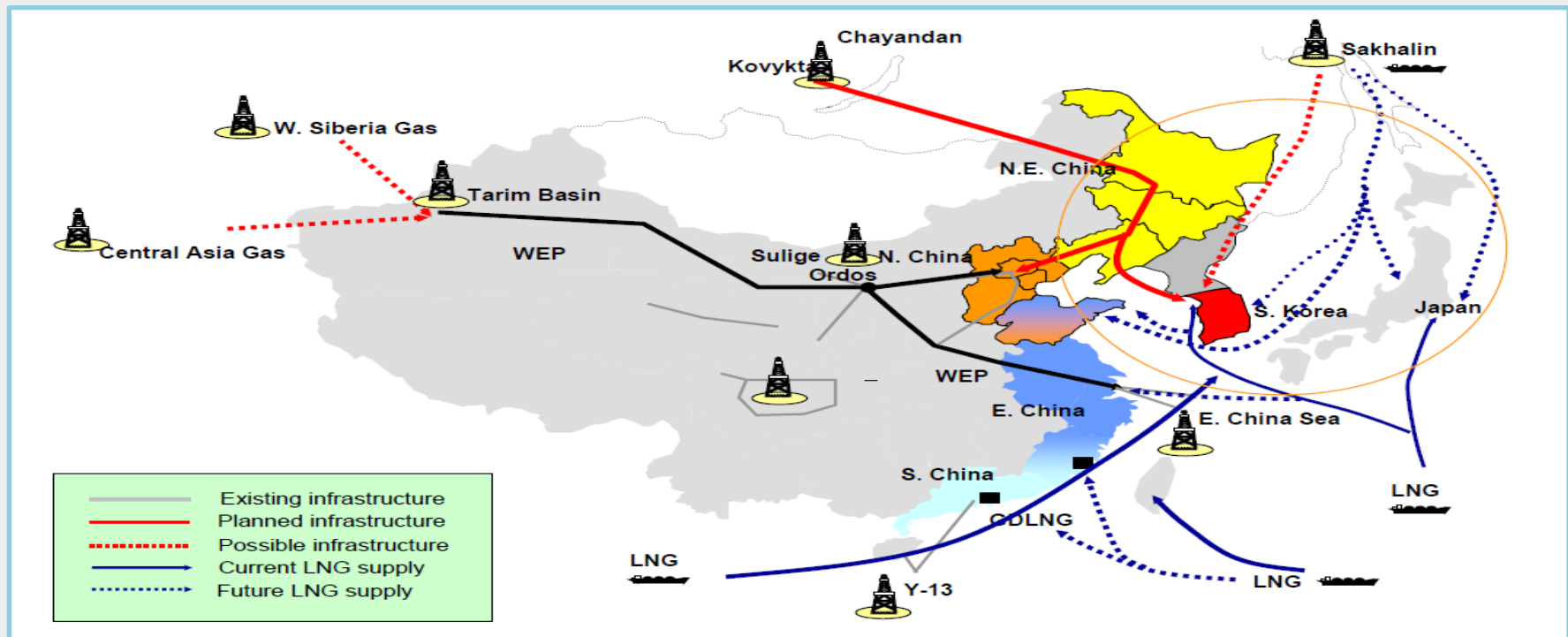


Source: U.S. Energy Information Administration, compiled from several countries' statistical departments



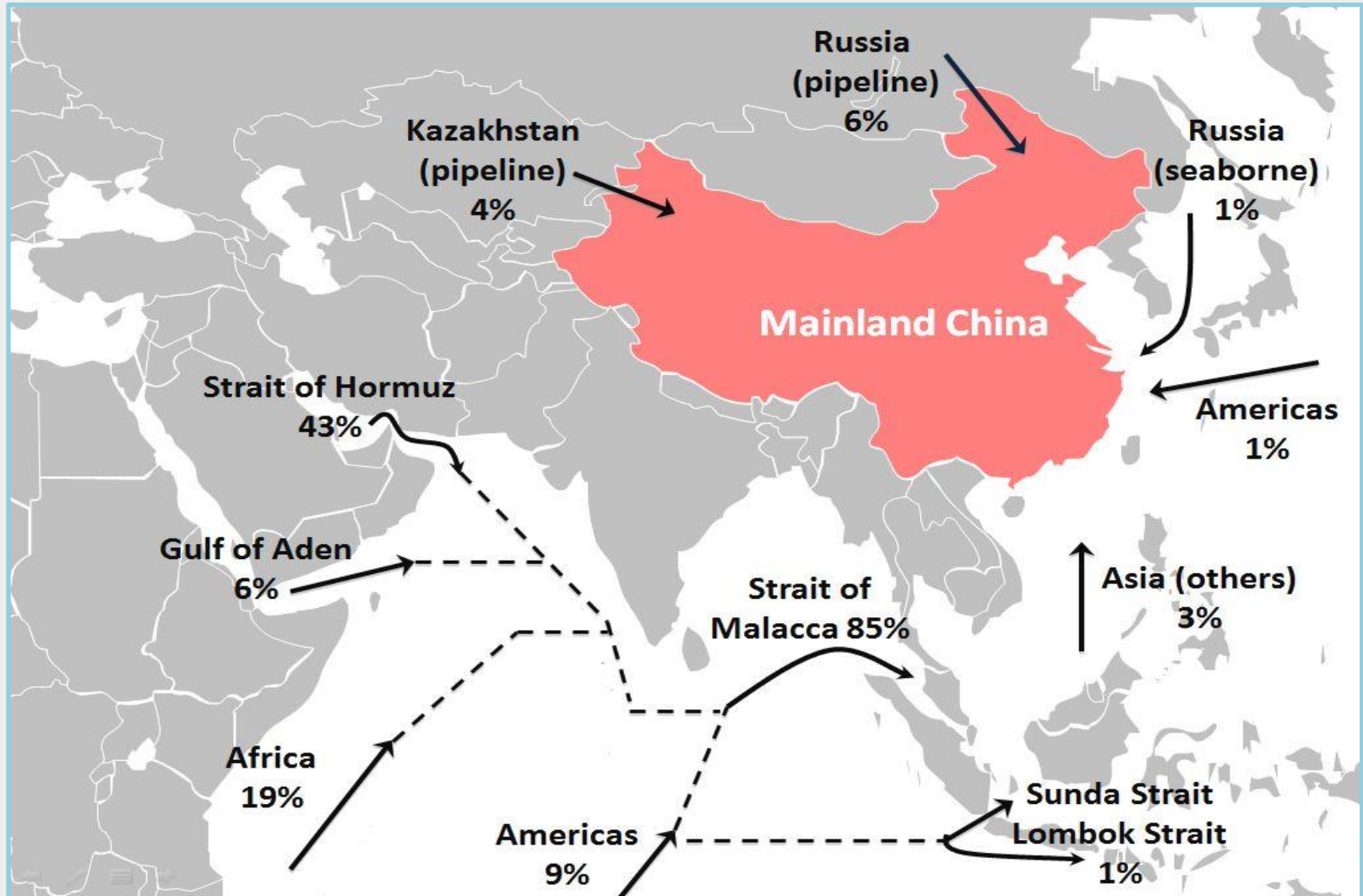
2 Northeast Asia Gas Trading Hub Plan

- Northeast Asia = number one gas importer region in the world
- Emerging as a highly attractive market for international energy supply
- Korea, China & Japan are strengthening gas supply security & diversification
- US Shale Revolution → growing interest in exporting LNG
- Russian pipeline supplies are ultimately developed to serve Chinese demand
- Northeast Asia countries plan to have Gas/LNG trading hub





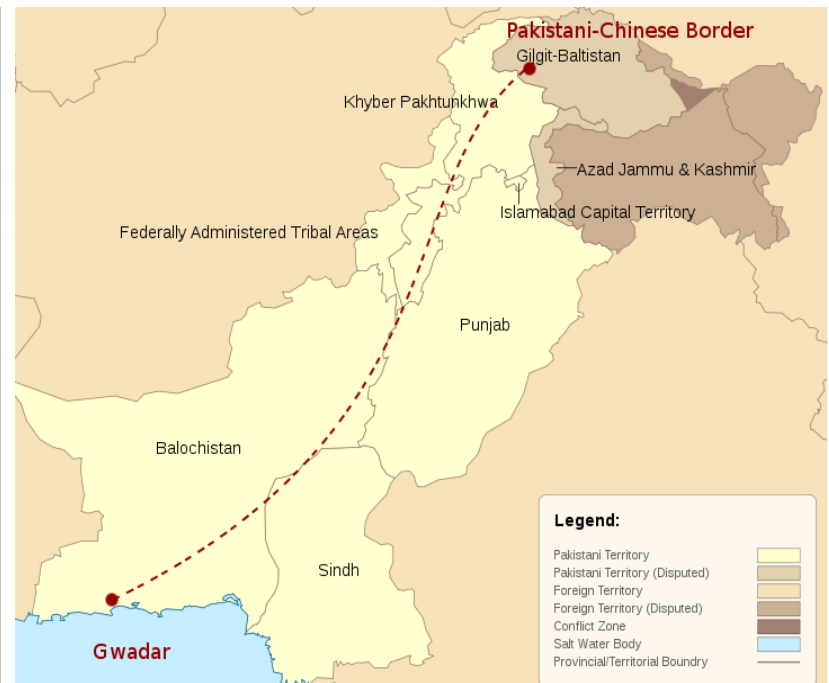
3 Key Policy Driver in China: Energy Security





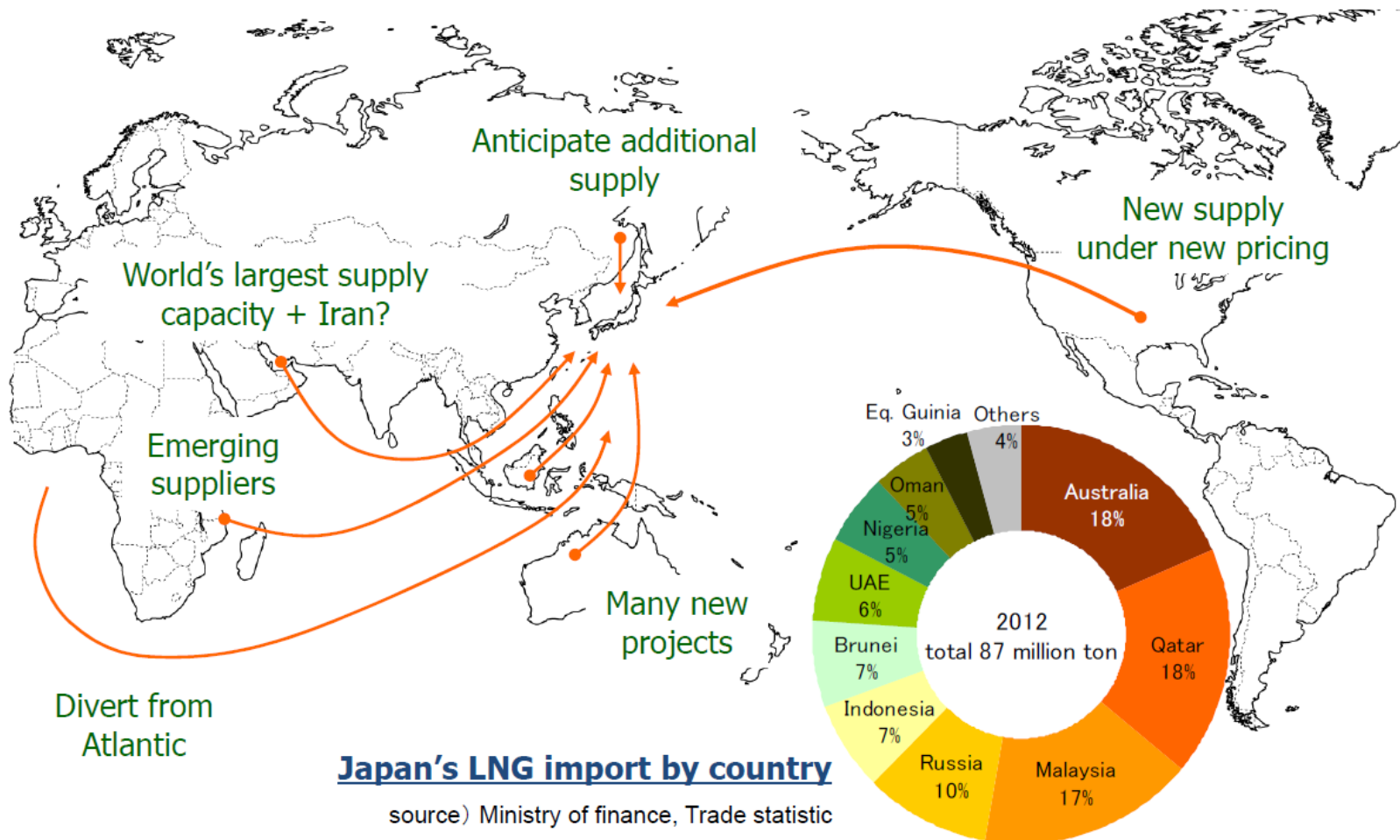
4 China Gas Security Policy

- China : world's number three gas consumer and importer nation
- Strengthening its gas supply security & diversification for gas routes
 - China-Myanmar gas pipeline becomes operational (2013.10)
 - China-Central Asia(Turkmenistan-Kazakhstan-China) pipeline set for operations(2014.6)
 - China and Russia sign 30-year deal worth \$400bn to deliver gas to china(2015.4)
- China Gas/LNG trading hub plans
 - Shanghai pushes ahead with trading hub plans with approval of gas, oil platform(2015)





5 Japan's LNG Import by Country





4 Japan Gas Security Policy

- Japan: world's largest consumer of LNG with imports in 2015
- Strengthening its gas supply security & diversification
- Pursuing gas trading hub to enhance its security
 - More flexibility is required to increase liquidity of LNG trade
 - METI initiated the LNG Producer Consumer Conference
 - Japan OTC Exchange offering non-deliverable forward LNG contracts since last year
 - Ultimately, Japan steps on gas in bid to reshape LNG market



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1 Korean Policy on Natural Gas

- Korea has high gas import dependency
- Strengthening its gas supply security
- Pursuing oil & gas trading hub to enhance its security



동북아 가스트레이딩 허브 심포지엄
International Gas Trading Hub Symposium

| 일시 | 2014. 3. 5(수) 09:30~16:00
| 장소 | 신라호텔 1층 영빈관

해외초빙연사

- 국제가스연맹 (IGU)
Mr. Dirk Van Slooten LNG 부문 위원장
- Bill Kemp, Founding Partner,
Enovation Partners
- King's College, Dr. Frank Umbach 교수
- 에너지경제연구원,
Dr. 박진호 가스정책연구실 부연구위원
- IEA, Mr. Kevin Tu 중국 프로그램 과장
- 일본에너지경제연구원 (RIETI),
Mr. Ichiro KITAHARA 부장
- Convor Group (LNG 비즈니스 개발),
Mr. Luc Spekreijse 아시아 LNG 자문장

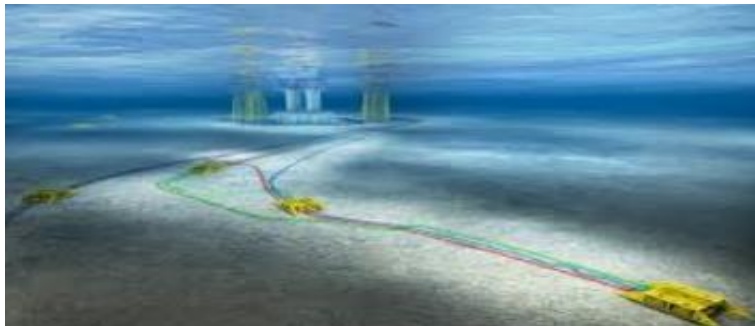
| 주최 | 에너지정책연구원 | 주관 | 대한가스협회 | 후원 | 동양일보

Korea's Natural Gas Diplomacy Policy



2 Korea's Effort on Gas Diversification

- Diversified procurement - coming from 10 LNG exporting countries
- Korea-Russia Gas Pipeline (2006-2013)
 - MOU between governments of Korea and Russia (2006)
 - Stopped negotiations for soured inter-Korean relations (2013)
- Russia-China- Korea(present)
 - Agreement of China-Russia PNG(2014.5) led the necessity for the review of importing Russian PNG



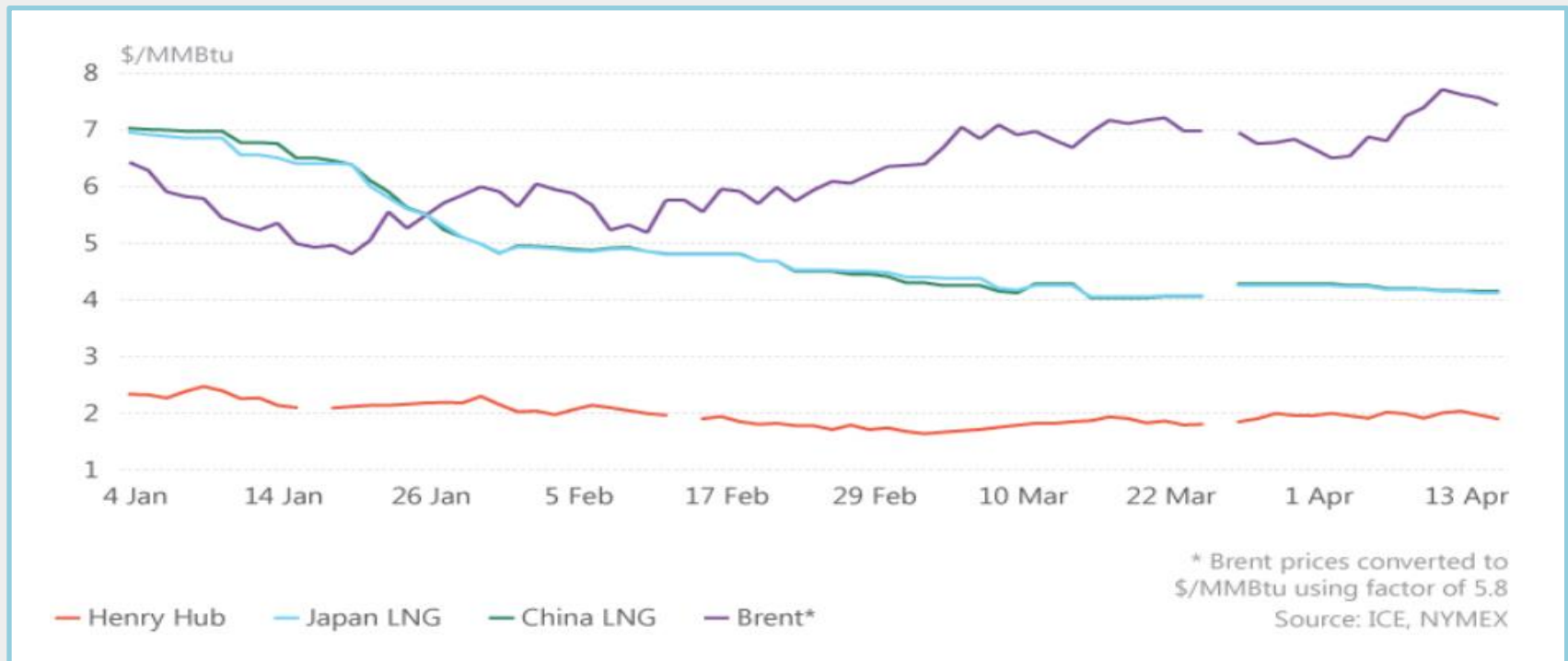
Source: China National Petroleum Corporation



2 Korea's Policy Priorities on Natural Gas

● Korea needs for more flexible gas supply

- High uncertainty in future demand : demand for gas-fired power generation is highly uncertain
- High demand seasonality : gas demand doubles in winter season
- More than 90% of total LNG supply through term-contracts
- Oil-indexation in pricing formula in long-term contracts
- Renegotiate using buyer's gas market



Concluding Remarks



- Northeast Asian importers need to strengthen their gas supply security
- It needs to increase flexibility through easing rigidities in import contracts, diversifying supply sources, developing alternative indexing method in contract etc.
- In the mid-to long-term, developing regional trading hubs helps deriving a price benchmark index based on regional supply-demand fundamentals & establish gas hub pricing
 - Also, Developing trading hubs in Asia seems to be most efficient way in order to resolve flexibility issue in long-term view



Young Chul Choi
Head of Global Energy Cooperation Center
Ph. 82-2-2100-8385
Email : young@mofa.go.kr

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