



Natural Gas Policy and Energy Security in Northeast Asia: Trends and Opportunities

Yang Yi
Secretary General
China Institute of International Studies

World Ocean Forum 2016
Busan, ROK
October 13, 2016



CIIS in Brief

- Founded in 1956, China Institute of International Studies (CIIS) is the think tank of China's Ministry of Foreign Affairs.
- It conducts research and analysis on a wide range of foreign policy issues.
- Research at CIIS is focused primarily on medium and long-term policy issues of strategic importance, particularly those concerning international politics and world economy. It also includes comments and policy recommendations on the world's major events and hot-spot issues.



CIIS in Brief

- Conduct research, serve China's diplomacy
- Track II activities-promote understanding and cooperation
- Public diplomacy





Contents

1. China's energy strategy

2. Short term changes in China's energy mix

3. Decreasing demand of LNG in NE Asia

4. Strengthen regional energy cooperation



1. China's energy strategy

- China is the world's largest energy producer. It has built up a comprehensive energy supply system comprising coal, electricity, petroleum, natural gas, and new and renewable energy resources.
- The country's energy resource endowment is not high and its per-capita share of coal, petroleum and natural gas is low.
- To curb excessive consumption of energy resources and achieve the comprehensive, balanced and sustainable development of the economy, society and ecology, China keeps strengthening its efforts in energy conservation and emission reduction, and strives to raise the efficiency of energy utilization.



1. China's energy strategy

- The basic contents of China's energy policies are:
 1. giving priority to conservation;
 2. relying on domestic resources;
 3. encouraging diverse development;
 4. protecting the environment;
 5. promoting scientific and technological innovation;
 6. deepening reform;
 7. expanding international cooperation and;
 8. improving the people's livelihood.



1. China's energy strategy

- Oil, coal and other traditional energy resources will continue to be the important basic energy;
- Natural gas is also a realistic choice for China to promote the transformation of its energy structure and to speed up the air pollution control;
- From 2000 to 2013, the growth rate of China's annual natural gas consumption reached 16%;
- Since 2014, China's natural gas market entered a period of adjustment;
- In 2015, the proportion of natural gas in China's primary production is 4.9%, far from the 10% target by 2020.

1. China's energy strategy



中国石油天然气集团公司
CHINA NATIONAL PETROLEUM CORPORATION



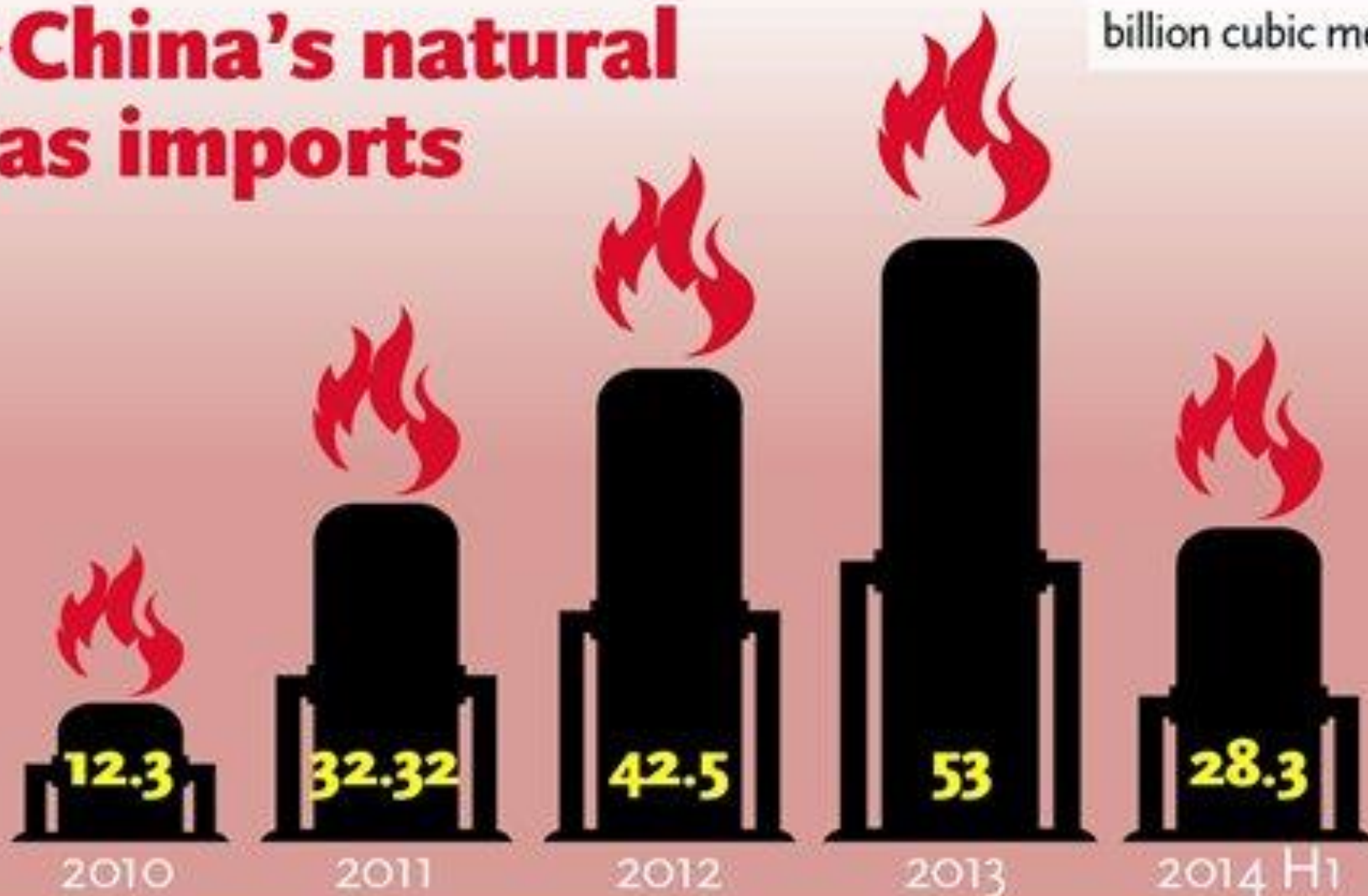
- CNPC, Sinopec, and CNOOC are all active in the upstream gas sector, as well as in LNG import, and in midstream pipelines;
- Branch pipelines and urban networks are run by city gas companies including China Gas Holdings, ENN Energy, Towngas China, Beijing Enterprises Holdings and Kunlun Energy;
- China's Action Plan for the Prevention and Control of Air Pollution in 2013 illustrates government desire to increase the share of natural gas in China's energy mix;
- China is among the Top 10 in natural gas production



China's natural gas market adjustment

► China's natural gas imports

billion cubic meters



Source: NDRC

Graphics: GT

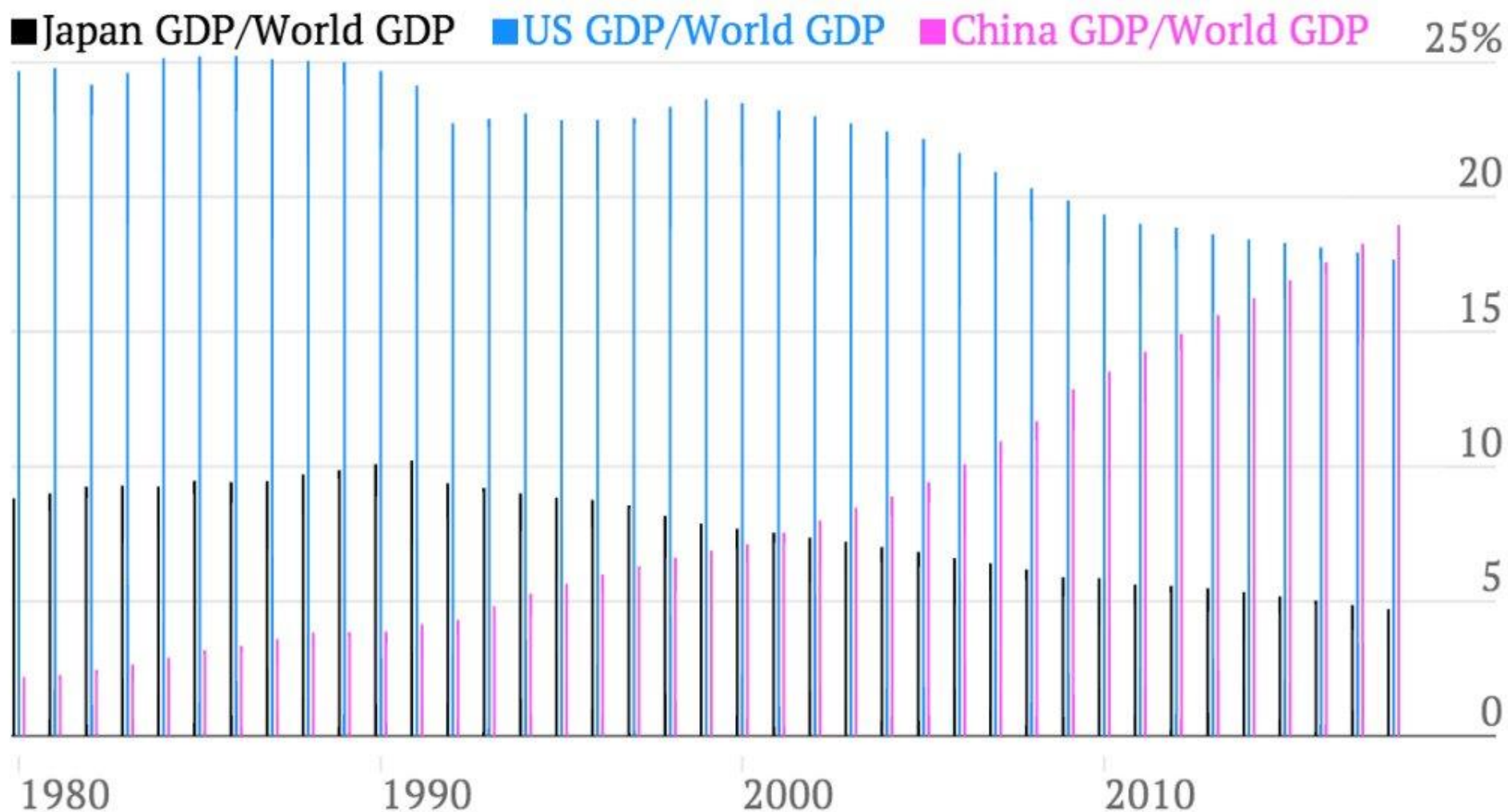


2. Short term changes in Chinese energy mix

- China became the 2nd largest economy in 2010;
- China overtook the US and became the No. 1 energy consumer in 2011;
- The US became the world's largest natural oil producer in 2010;
- The US became the biggest producer of oil & natural gas liquids in June 2014 (IEA);
- India will be the major energy consumer and China will slow down its energy demand in 2020



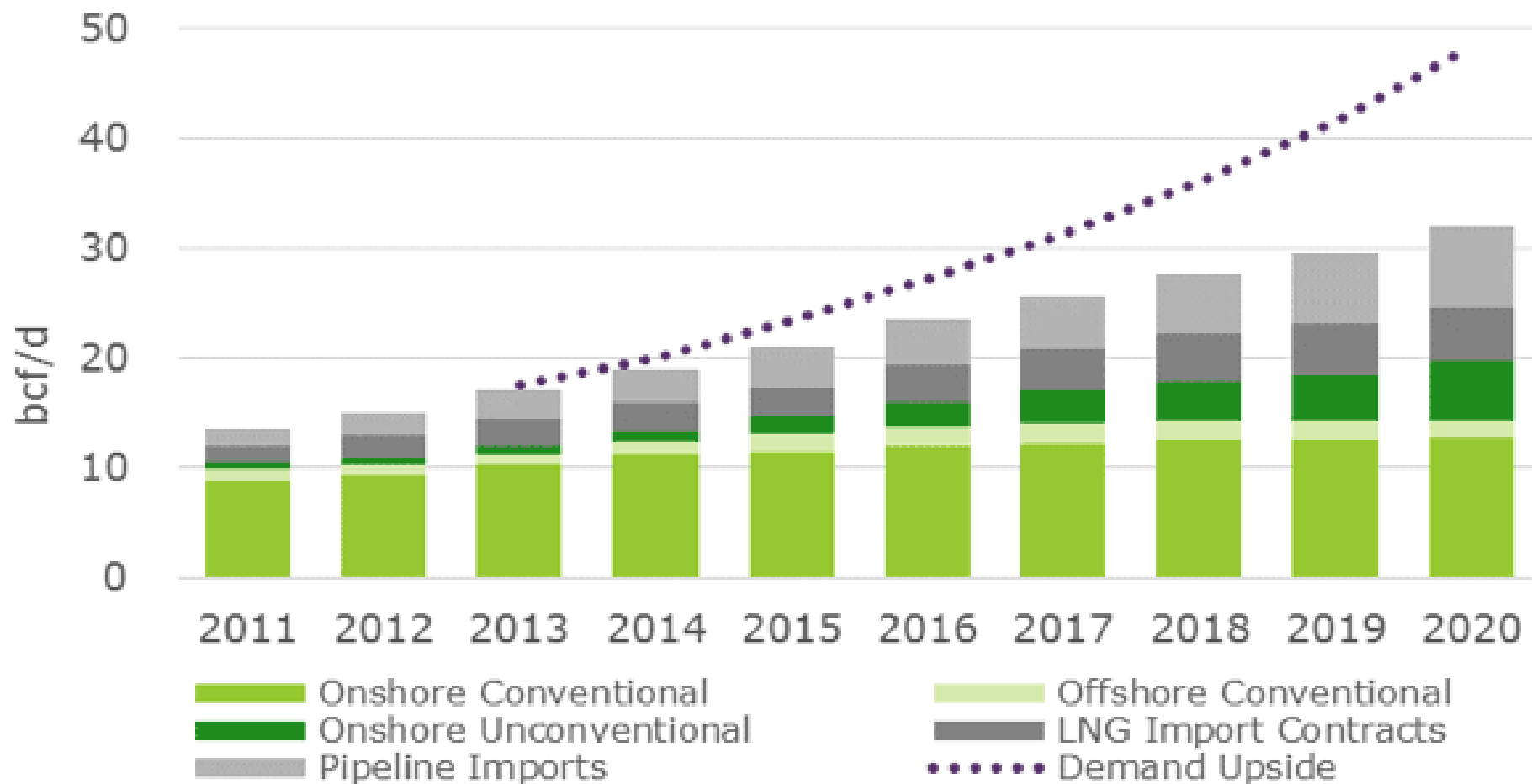
China became the 2nd largest economy in 2010



Quartz | qz.com



China's energy demand



Source: SIA Energy



2. Short term changes in Chinese energy mix

- Asia Pacific region became the most dynamic region
- The rising of emerging market economies and developing countries
- Adjustments in energy supply & demand in the Asian Pacific
- The 2008 financial crisis- global economic transformation and adjustment
- The overall change in global energy demand & energy mix: transform and reform the old export oriented and investment driven development
- Global demand will only increase around 1-2% per year



2. Short term changes in Chinese energy mix

- China economic growth
 - Annual 9.9% over the past 3 decades;
 - Growth rate is decelerating, 7.7% in 2013; 7.5% in 2014; 6.9% in 2015 6.6-6.8% in 2016.
- China energy demand grow slowly
 - 6.7% per year from 2006 to 2011;
 - 4.7% per year from 2011 to 2015.
- China energy intensity is expected to decline
 - 1.03 tons of coal equivalent(tce) per 10,000 Yuan in 2010;
 - 0.87 tce in 2015;
 - Down 16%.
- Oversupplied with coal
 - Production stay at 3.8 billion tons per year
 - Slow grow in global energy demand



2. Short term changes in Chinese energy mix

2013	Coal	Oil	Natural Gas	Hydro/nuclear/wind	Self-sufficiency
Production	75.6%	8.9%	4.6%	10.9%	
Consumption	66%	18.4%	5.8%	9.8%	> 90%
Production in 2020					
Consumption 2020	< 62%	13%(?)	10%	≥ 15%	≈ 85%

1. Energy mix improved with natural gas & other clean energy; and
2. The gap between oil demand & supply will continue widen.



The role of Gas

- 12th Five Year Plan(2011-2015)
- 13th Five Year Plan(2016-2020)
- Air Pollution Prevention and Control Action Plan (October 2013)
- China' energy development strategy action plan (2014-2020)

Making the shift away from coal and towards cleaner sources of energy will not be easy, but it must be done.

An expansion of offshore oil and gas, accelerated development in renewables, and a greater role for market forces.



China' energy development strategy action plan (2014-2020)

- China's energy strategic objective and target: adhere to the “economical, clean and safe” strategy, accelerate the construction of clean, efficient, safe and sustainable modern energy systems:

Conservation priority

By 2020, the total primary energy consumption limited to about 4.8 billion tons of standard coal(3.75 billion tons in 2013)

Coal consumption is 4.2 billion tons

Based on domestic supply

Domestic supply is the main channel to ensure energy security;

By 2020, primary energy production reached 4.2 billion tons of Standard coal, energy self-sufficiency at 85%

Strengthen International cooperation

Green & low carbon

Adjustment of energy structure

By 2020, non-fossil fuels in primary energy consumption reached 15%, natural gas 10%

coal less than 62%

Innovation-driven

By 2020, established a unified, open, competitive and orderly modern energy market system



China' energy development strategy action plan (2014-2020)

Reduce coal
consumption

Increase
natural gas
consumption

Safe
development
of Nuclear
energy

Develop
renewable
energy



Optimizing the energy structure



China' energy development strategy action plan (2014-2020)

• Expand international cooperation

Domestic & international resources, two markets, investment and trade, land/sea channel simultaneously

• Five key energy cooperative areas:

- a Russia
- b Central Asia
- c the Middle East
- d Africa
- e the Americas and Asia-Pacific

--Deepen bilateral & multilateral international energy cooperation;
--Establishment of a regional energy market



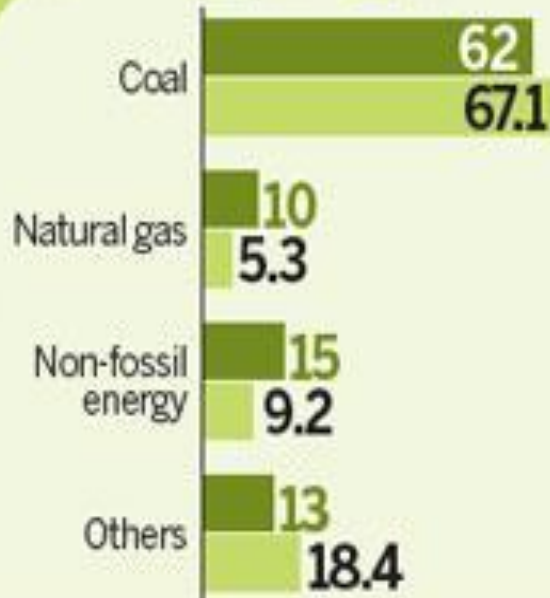
China's energy development strategy action plan (2014-2020)

CHINA'S 2020 ENERGY GOALS

CONSUMPTION MIX

Unit: %

2020 2034



CONSUMPTION TARGET

Primary sources: **4.8 billion** metric tons of standard coal equivalent

Coal: **4.2 billion** metric tons



TARGET OUTPUTS

Conventional natural gas: **185 billion** cubic meters

Shale gas: **30 billion** cubic meters

Coalbed methane: **30 billion** cubic meters

Source: Action Plan for Energy Development (2014-20)

LI YI / CHINA DAILY



3. Decreasing demand of LNG in NE Asia

- The Asia Pacific market's increasing influence in the field of liquefied natural gas(LNG);
- Challenges in self-development in NE Asia;
- Slight increase global trade supply of LNG stood at 2.5 million tons in 2015, decrease import demand in China, Japan and ROK by 1%, 4% and 11% respectively;
- In 2016, the market demand of LNG in NE Asia continued to decrease.

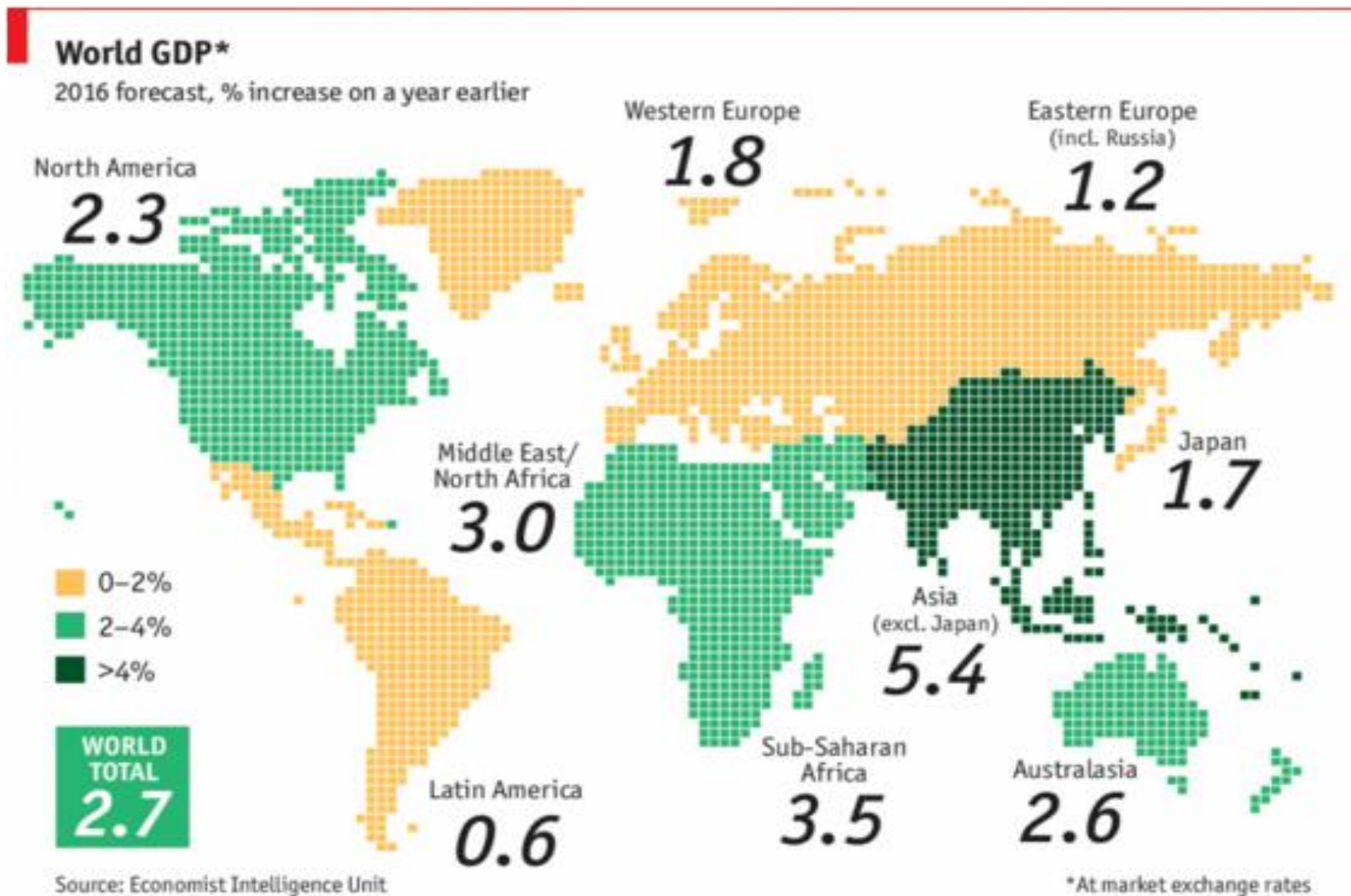


3. Decreasing demand of LNG in NE Asia

The demand for LNG in NE Asia may continue to slump in the next few years, the reason is as follows:

1. Weak recovery of global economy;
2. Low oil prices;
3. Development of nuclear energy both in Northeast Asia

Weak recovery of global economy



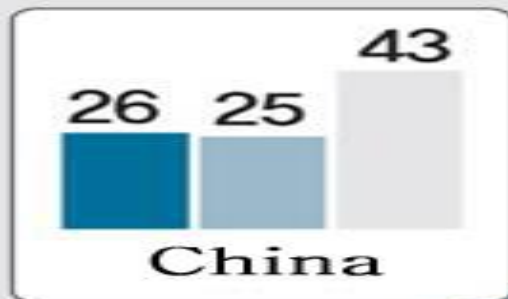


Low oil prices



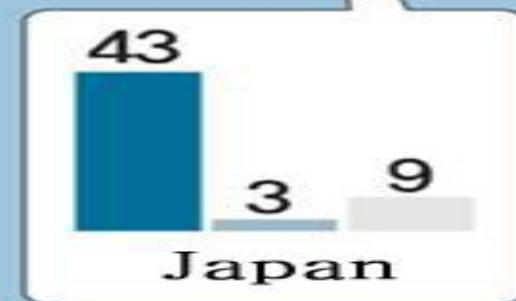
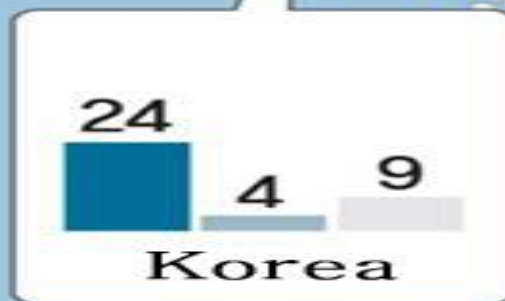
Nuclear Power Plants development in NE Asia

Nuclear Power Plants



■ 운영 ■ 건설 중
 계획  발전소 위치

자료: 세계원자력협회



By Sukjoon Yoon, Korea Institute for Maritime Strategy



2016-2020 Natural Gas and LNG demand

- 2016-2020, 2.7% annual increase demand in natural gas in the world;
- China' yearly demand will be 2,730 billion cubic meters; $\frac{1}{4}$ of the world's demand;
- China will become the 3rd natural gas consumer, after the US and Russia;
- 2014-2018, 4.7% LNG annual increase demand in LNG; however, the supply will increase 7.5% annually.



Conclusion—Strengthen regional energy cooperation

- China will still be in a stage featuring accelerated industrialization and urbanization by 2020;
- China must mainly rely on itself to increase the energy supply steadily to satisfy its demands;
- The gas price will maintain the current low price, for the oil and coal decreasing price effects



Conclusion

- Few countries can secure their energy supply without international cooperation in the NE Asia region;
- The adjustments in energy supply and demand in the NE Asia since 2013, rising output & reducing demand, make the current energy situation better than before;
- Energy is still an increasingly important security concern in the NE Asia in the long run, more regional cooperation is expected.



Conclusion — Regional energy cooperation

China, Japan and South Korea are world's important energy consumers and importers, however, the regional countries' competition is more than cooperation in the energy field, these damages the above countries common interests and energy security.

Priority- NE Asia energy cooperation

- ensure the energy supplies
- new energy industry cooperation
- energy conservation and environment protection
- Asia Gas consumers Alliance and Asian Premium
- Establish the regional trade center



Conclusion — Regional energy cooperation

NE Asia energy cooperation

Oil reserve capability

- Japan- 165 days
- South Korea- 135 days
- China-40 days

Relevant coordinate mechanism need to be established to deal with the emergency, war, natural disaster, supply problem and high prices etc.



Conclusion — Regional energy cooperation

Challenges to build the NE Asia regional oil and gas market:

- Political trust need to be strengthened;
 1. properly handle the historical problems;
 2. increase strategic trust;
 3. relations with OPEC, the US and Russia
- Economic interests need to be coordinated;
- Insufficient domestic energy reforms



Thank You!

Comments and suggestions are welcome!
yangyi@ciis.org.cn