NATURAL GAS IN EAST ASIA’S ENERGY TRANSITION

By

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**NATURAL GAS CONSUMPTION ON RISE**

Primary energy consumption by fuel

**Gas share of primary energy 1990–2040**

IEA, 25%

*Renewables includes wind, solar, geothermal, biomass, and biofuels

Source: BP World Energy Outlook 2018
FOSSIL FUELS IN ENERGY TRANSITION

Carbon emissions in 2040: EFT versus ET scenario

Primary energy consumption by fuel

Source: 2018 BP Energy Outlook
NATURAL GAS AGAINST THE TREND OF COAL AND OIL

Change in world primary energy demand by fuel in the New Policies Scenario

Source: World Energy Outlook 2017
SHIFT OF GLOBAL ENERGY GRAVITY TO EAST ASIA

Change in energy demand, 2016-40 (Mtoe)

-the Middle East is fast becoming a major energy consumer & the United States a major exporter

Source: World Energy Outlook 2017
EAST ASIA AND LNG DOMINATE FUTURE GAS TRADE

Change in gas imports by selected region and mode in the New Policies Scenario, 2016-2040

Asia leads the growth in global gas trade; outside China, new pipeline trade routes find it hard to advance in a market with LNG readily and flexibly available.

Source: World Energy Outlook 2017
RAPID ENERGY TRANSITION IN CHINA

Annual power generation capacity additions by type

Since 2013, the majority of capacity additions to China’s power system have come from wind, solar PV, hydropower and nuclear.

Source: World Energy Outlook 2017

Energy supply investments

Low-carbon electricity supply and networks are driving energy investment in China.
ENERGY TRANSITION: CHINA CASE

China has an immense presence in global energy across a range of fuels and technologies

Source: World Energy Outlook 2017
The difference in 2030 is twice of China’s gas consumption in 2015 and 30% more than the global traded LNG in 2015 (245 Mt, about 300 bcm).

ENERGY TRANSITION POLICY IS NOT SMOOTH: COAL-GAS SWITCH

Domestic LNG Price (Shanxi, NMG), Rmb/Tone

Asian LNG Spot Price (CJK), US$/Mmbtu

Source: CGTT, 2018. 4. 20.
KEY MESSAGES

- Natural gas has an important and undoubted role in the energy mix and the energy transition
  - Fuel switch is a feasible and realistic tool to reduce emissions
  - The role of natural gas has even large role in East Asia, where coal dominates energy mix. The fossil fuel side of energy transition needs more attention

- The fossil fuel side of energy transition needs more attention
  - Energy transition has two sides: clean energy and fossil fuel
  - Energy transition must look after the impact on economic and social development
  - A systematic view is needed
ABOUT THE SPEAKER

ENERGY ECONOMIST, WITH REGIONAL EXPERTISE IN CHINA, ASEAN & EAST ASIA

- Principal Research Fellow, ACRI, UTS, 2016-
- Senior Research Fellow, Energy Study Institute, National University of Singapore, 2014-
- President, Chinese Economic Society Australia (CESA), 2016.7-
- Professor, Hubei University of Economics, 2018-

Career Highlights
- Deputy head of Energy Economics, ESI, NUS. 2015-7-2016.12
- Chief Researcher, Brunei National Energy Research Institute, 2013-2014
- Energy Economics, Economic Research Institute for ASEAN and East Asia, 2009-13
- Various management and professional positions in China’s leading energy institutes, 1997-2005
- Managed East Asian Summit Energy Cooperation Taskforce Energy Market Integration (EMI) study, 2009-2013
- Consultant /Member for ADB, or UN EACAP Expert Group, 2013-2017

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