The Evolving Role of Gas in China

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Where it replaces more carbon-intensive fuels or aids the integration of renewables, natural gas can be a good fit for decarbonising energy systems.
Asia at the heart of energy demand growth

Share of primary energy demand, 2040

Asia absorbs an increasing share of global energy commodity trade – 80% of coal, 75% of oil and 60% of gas in 2040
Source: Economist Intelligence Unit.
Global Coal Capacity (2010-15) and Planned Additions (GW)

Source: CoalSwarm. Chart by Carbon Brief.
China’s Future CO2 Emissions
China: a global leader in renewable energy and energy savings

China has the world’s largest wind and solar capacity

China contributed more than half of the global energy savings 1990-2010

Top 5 wind power producing countries in 2014

- **China**: 54.9%
- **United States**: 15.4%
- **Germany**: 4.8%
- **India**: 2.9%
- **Russian Federation**: 1.9%
- **United Kingdom**: 2.0%

Source: Global Wind Energy Council

Source: WB Global Tracking Framework
Gas and LNG Prices (1995-2018)

Source: Platts, Heren, IPE, Petroleum Association of Japan and Bloomberg (Jan 2016)

Note: Asia long-term proxy = 14.85% JCC(-3) + 0.50; Oil parity = JCC = Japanese average crude price; JCC actuals to Oct 2015 and based on Brent thereafter
U.S. Example of Decarbonization

U.S. net electricity generation by fuel (1990-2040)
Billion kilowatthours

History

AEO2016 Reference case
(includes Clean Power Plan)

- Natural gas
- Renewables
- Coal
- Nuclear
- Other

Policy intervention to improve air quality in urban areas and manage carbon dioxide emissions is driving gas demand in power generation:

- Coal-fired generation down 3% in 2014-2015
- Gas-fired generation increased 40% 2014-2015
- Gas' share in power generation mix increased from 2.1% to 3.0% in 2015 driven mostly from gas-fired combined heat and power plants to replace inefficient coal-fired units (90% of capacity additions)

Policy measures driving gas demand:
- Gas price reform
- Feed-in-tariffs for gas-fired power
- Policy support for CHPs / CCHPs
- Stricter emission controls
- A cap on new coal generation in coastal regions

China Gas Fired Power Generation

Source: IHS Energy, China Electricity Council