

Developing a market for LNG: Lessons from Japan

A horizontal bar composed of three colored segments: green on the left, orange in the middle, and blue on the right.

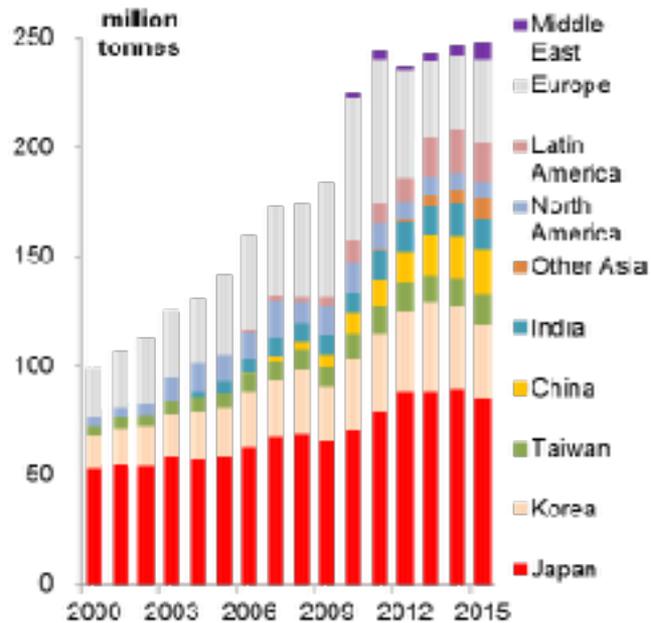
Global Energy Dialogue: India and Natural Gas
The Joining Together of Plentiful Supply with Promising Demand
30 November 2016

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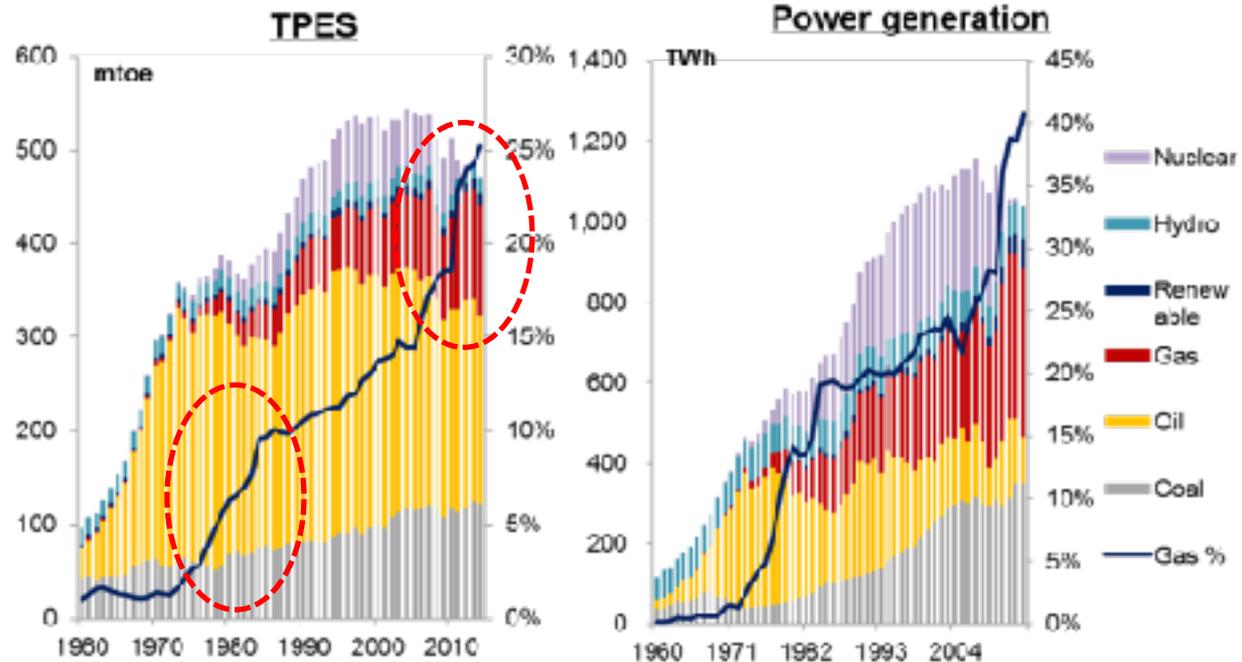
Natural gas / LNG in Japan

- p Japan is the largest LNG importer of the world.
 - 98% of Japan's natural gas supply is imported LNG.
- p Natural gas supplies 25% of TPES and 40% of total electricity generated in Japan.
 - The share has consistently increased with two “jumping-ups” during crisis periods.
 - Two-thirds of natural gas is used in power sector..

World LNG import



TPES and power generation in Japan



Factors that promoted LNG in Japan

- p Pollution control (late 1960s-)
 - Gas had been produced from coal and oil (naphtha) since 1940s.
 - Severe air / water pollution problem in the 1960s and strict SOx and NOx regulations.

- p Energy security (1970s-)
 - Very high dependence on oil (+70% of TPES)
 - Diversification of energy source and geographical import source.

- p Climate change action (1990s-)
 - Industry was encouraged to reduce carbon emissions by adopting lower carbon energy.

- p Economics (mid-2000s-)
 - Oil price rise and “S curve” formula made LNG an economically attractive energy source.

- p Emergency response (2011-)
 - LNG was most utilized fuel for power sector to make up for the loss of nuclear power generation.

Lessons

p Initiative of energy industry

- Tokyo Gas (#1 gas company) and TEPCO (#1 power company) jointly initiated the first LNG imports in Japan.
- Regulated environment in gas and power worked favorably to make long-term investments in infrastructure in Japan.

p Government's support and long-term commitment

- Government can provide an incentive mechanism to adopt more LNG through subsidies, taxation, industrial guidance, etc.
- Government's has to show its long-term commitments to LNG to ensure investments.

p Relative price competitiveness

- Price of LNG must be competitive with other energy's prices.
- Government can play an important role to determine the relative price structure.

p Consumers' preference

- LNG can play an important role to control pollution.
- As average income grows, consumers want to higher living standard with clean and convenient energy such as natural gas.