



CNPC ETRI

Challenges for Imported LNG in China

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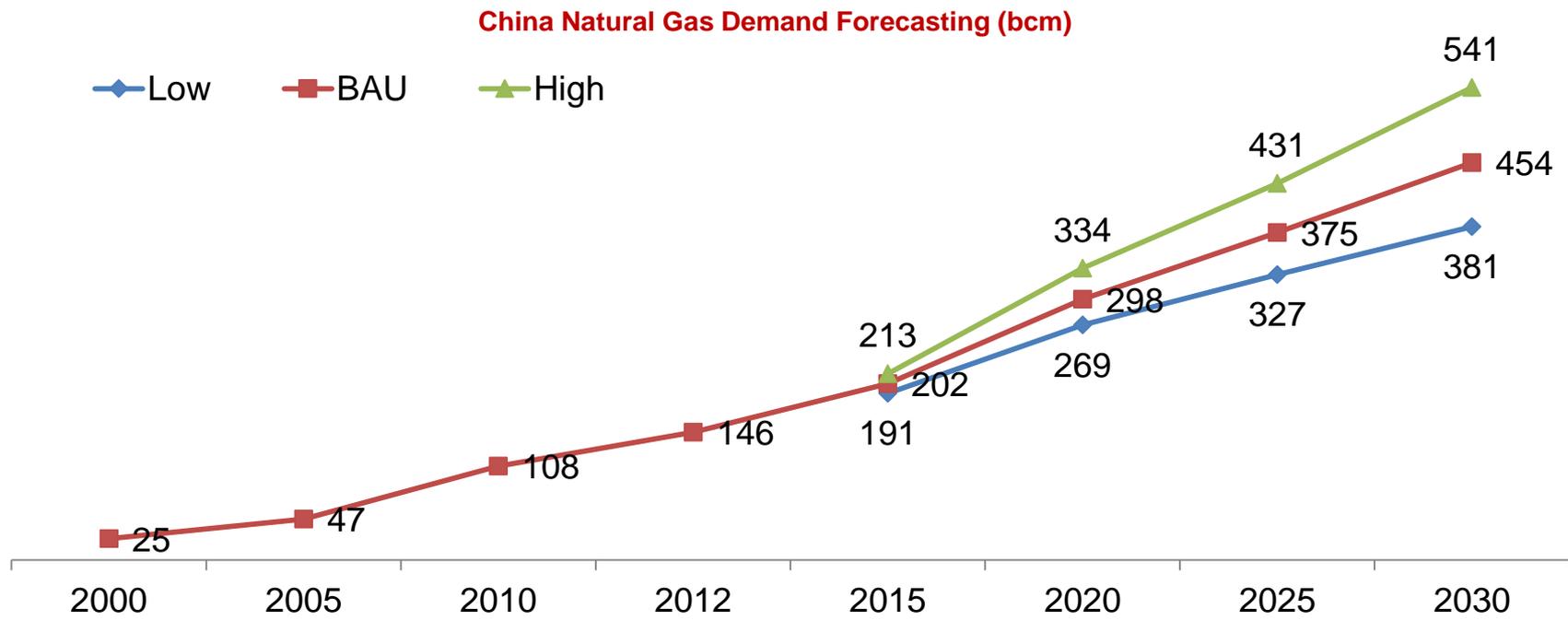
LNG Producer-Consumer Conference
Tokyo, Japan
November 6, 2014





1. China Natural Gas Demand Growth Will Slow Down

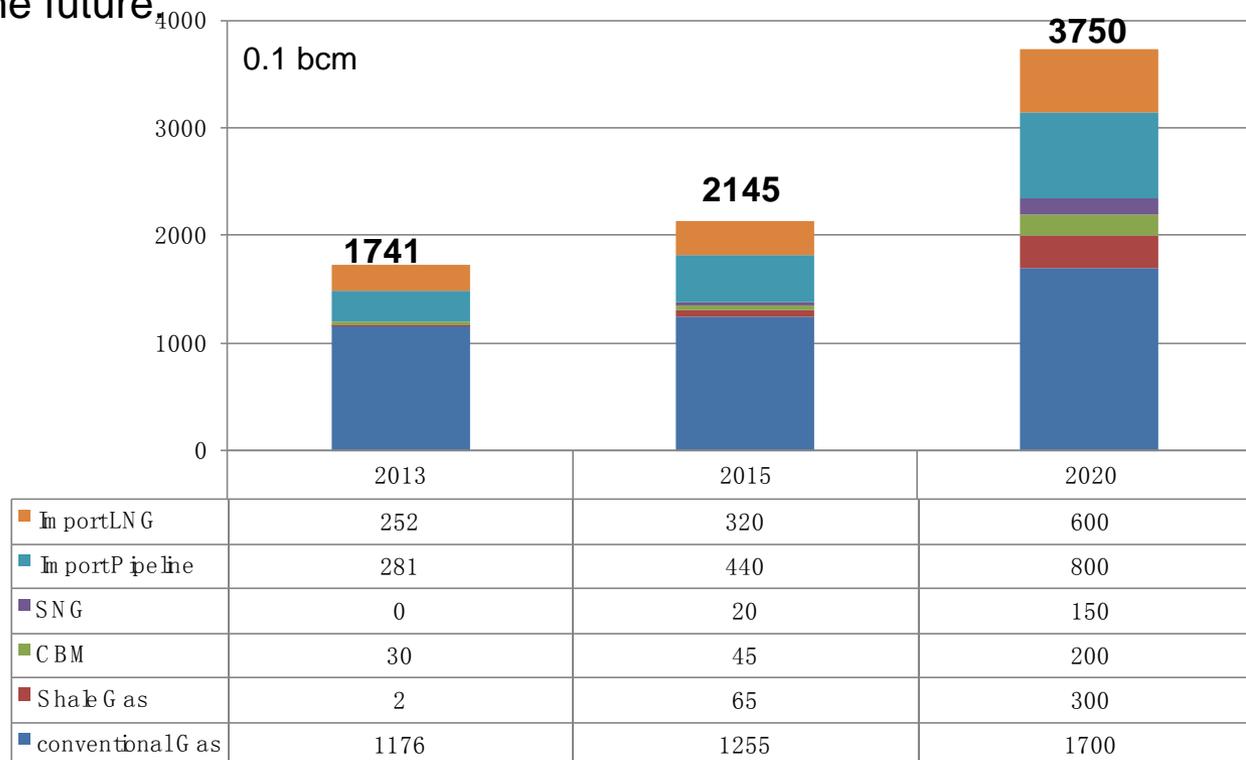
- From 2000 to 2013, China natural gas consumption increased from 24.5 bcm to 168 bcm, the average annual growth rate was 16%.
- Under the BAU scenario, China natural gas demand are projected to grow to 202 bcm by 2015, 298 bcm by 2020 and 454 bcm by 2030. The average annual increase rate will be 8.1% for 2015-2020, 4.6% for 2020-2025, and 3.9% for 2025-2030.



2. The Supply Will Likely Exceed the Demand in the Future



- The China domestic gas production increased from 27.2 bcm to 117.6 bcm for 2000-2013.
- According to the China government planning, the natural gas supply capacity will reach to 250 bcm by 2015 in China, and 400 bcm by 2020.
- According to CNPC ETRI projection, the China natural gas supply is expected to reach 214.5 bcm by 2015, and 375 bcm by 2020. Even though the supply seems over the demand in the future.





3. Imported LNG has No Price Advantages

- In 2013, the price of imported LNG was significantly higher than city-gate prices in Liaoning, Hebei, Jiangsu, and Zhejiang province.
- Comparing to imported pipeline gas, the price of imported LNG was also higher.
- Considering the city-gate price is the ceiling price, the sale price of the imported LNG is below that. Most of the LNG importers in China lose money now.

The Import Price and the Gate Price of Natural Gas in China in 2013

	Site	Import (10,000 tons)	After-tax Import Price (RMB/m ³)	City-Gate Price Ceiling (RMB/m ³)	
				Existing Gas	Increment Gas
LNG	Liaoning	186.4	4.67	2.24	3.12
	Hebei	40.6	4.58	2.24	3.12
	Shanghai	259.0	2.09	2.44	3.32
	Jiangsu	291.9	4.56	2.42	3.30
	Zhejiang	101.36	4.62	2.43	3.31
	Fujian	323.0	1.92	—	—
	Guangdong	592.9	2.27	2.74	3.32
	Subtotal	1801	2.99	—	—
Pipeline	Xinjiang	1991.97	2.49	1.41	2.29
	Yunnan	15.46	3.12		

Note: The city-gate price ceiling above does not apply for residential sector and fertilizer sector in which the sales prices are still very low.



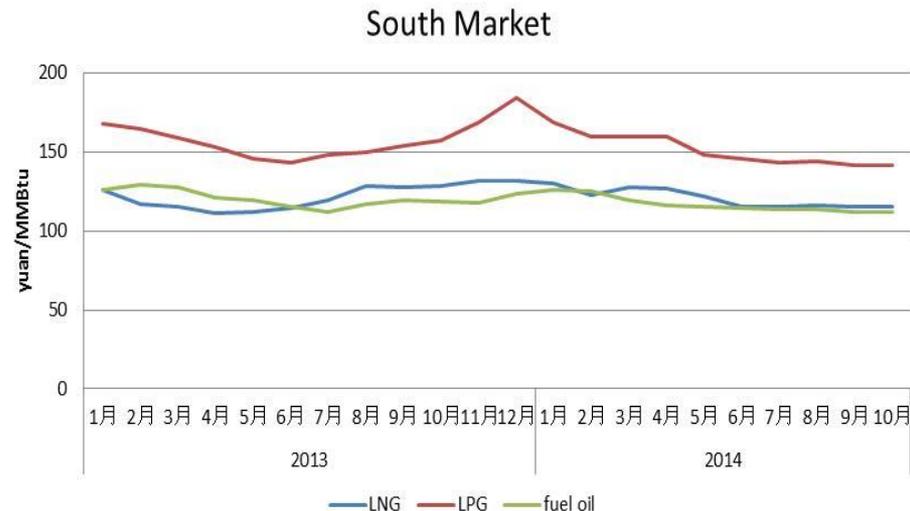
4. Declining price advantages over the alternative energy

- The price advantages of LNG for vehicles over refined oil are narrowing gradually. In 2014, its parity rate to diesel in Guangdong province reached to 92.5%.
- In the South China, the LNG price is only 33 yuan /MMBtu lower than that of LPG in 2014, but 3 yuan/MMBtu higher than that of fuel oil.
- LNG has poor economics in power generation. Based on the average price of imported LNG in 2013, the fuel cost of coal-fired power generation was about 0.15yuan/kwh, and the cost of LNG power generation was 4 times as high as that of coal-fired power generation.

Comparison between LNG Price and Diesel Price in China in 2014

Comparison between LNG Price and LPG Price in China since 2013

	Inner Mongolia		Shandong		Jiangsu		Guangdong	
	March	September	March	September	March	September	March	September
LNG retail price (yuan/ton)	5616	5350	6522	6075	6270	6300	7418	6950
Maximum diesel retail price (yuan/ton)	8830	8012	8825	8007	8855	7536	8885	7634
Parity between LNG and diesel (%)	64.9%	68.3%	75.4%	77.3%	72.2%	85%	85.2%	92.5%



Note: the calorific value of diesel is 42652KJ/kg, while the calorific value of natural gas is 35544MJ/cubic meter; in calorific value comparison, the diesel price is 95% of the maximum retail price established by the State, its gas engine efficiency is 10% lower than that of diesel.

Conclusions



- Due to the poor competitiveness of imported LNG, the utilization of the import LNG facilities in China was just 52% in 2013, and is expected to fall to 41% by 2015, LNG will be mainly used for gas storage and peak shaving in the future.

- With deregulation of natural gas price and increasingly fiercer competition from the alternative energy, the market share for the imported LNG will depend on its own competitiveness.

- China gas demand will grow continuously in the future, but the supply will increase more quickly. The imported LNG faces double pressures from the demand and supply. Therefore, it is extremely urgent to enhance its competitiveness .