Can India Deliver on its Promise of LNG Demand Growth?

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Gas has a low share in India’s energy mix

Gas demand, population and GDP per capita in Asia, 2017

Natural gas’ share in primary energy 2017, selected countries

Source: World Bank, BP 2018 Statistical review

April 2, 2019
India’s gas market - a huge opportunity for industry?

India to see USD 300-bn investment in energy in coming decade: Pradhan

(PTI) -- India will see an investment of about USD 300 billion over the next decade in setting up of refineries, oil and gas pipelines and expansion of city gas distribution network as it builds infrastructure to cope with the massive demand surge, Oil Minister Dharmendra Pradhan said Tuesday.

Speaking at KPMG’s ENRich 2018 energy conference here, he said India is the third largest energy consumer in the world after the US and China and its energy demand will grow three-fold by 2040.

According to BP Energy Outlook, India will be the key driver of global energy demand in the next 25 years.

To meet the massive demand, it is building world’s largest oil refinery in Maharashtra at a cost of USD 40 billion, he said adding about USD 3 billion is being spent on laying gas pipelines to connect the eastern part of the country to the gas grid.

Also, liquefied natural gas (LNG) receipt terminals at Ennore in Tamil Nadu and Dhamra in Odisha are being set up at a cost of Rs 19,000 crore for supplying imported gas to eastern and southern states, he said.

City gas distribution network to supply CNG to automobiles and piped natural gas to households is being expanded to cover 70 per cent of the population in the

Source: PTI, Bloomberg
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India’s gas demand is supply constrained

**Gas demand in India**

**Gas supply in India**

Source: Petroleum Planning and Analysis Cell

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Gas is no longer cost competitive in bulk generation

LCOE of new solar and wind vs cost of new fossil plants in India

LCOE of new solar and wind vs cost of running existing fossil plants in India

Source: BloombergNEF

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But gas could be competitive in flexible generation

Levelized cost of electricity (LCOE) for India – 2H 2018

Source: BloombergNEF. Note: The LCOE range represents a range of costs and capacity factors. Battery storage systems (co-located and stand-alone) presented here have four-hour storage. In the case of solar- and wind-plus-battery systems, the range is a combination of capacity factors and size of the battery relative to the power generating asset (25% to 100% of total installed capacity). All LCOE calculations are unsubsidized. Categorization of technologies is based on their primary use case.

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Gas will provide ‘value’ but not ‘volume’ in power sector

Installed capacity in India

Flexible capacity in India

Source: BloombergNEF
Gas is facing competition from electric vehicle in transport sector

CNG consumption by vehicle type in India, 2017

- Three-wheeler: 31%
- Passenger car: 25%
- Bus: 24%
- Taxi: 20%
- Others: 20%

3.1Bcm

Timeline of EV cost parity versus CNG in India

Year when EV reaches total cost of ownership parity with CNG

- Three-wheeler is currently cheaper

Year when EV reaches purchase price parity with CNG

- Three-wheeler
- Bus
- Taxi
- Passenger car

Source: Petroleum Planning and Analysis Cell, India
Source: BloombergNEF

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Falling battery costs to make EV cheaper by late 2020s

Total cost of ownership (TCO) – Taxi

Purchase price – taxis

Source: BloombergNEF

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CNG vehicle sales under pressure as electric vehicles grow

India’s gas demand from CNG vehicles (Low, base, high scenarios)

Source: BloombergNEF
Industries consume most gas and LNG in India

Gas demand in India

LNG demand by sector, FY2018

Source: Petroleum Planning and Analysis Cell. Note: 'Industry' includes fertilizer.

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Industry gas demand to increase 60% by 2030

Gas demand in industry in India

Source: BloombergNEF

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Refineries to lead gas demand in industry sector

Gas infrastructure and refinery map of India

Source: BloombergNEF, Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas

Source: The Hindu

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Gas is needed to reduce air pollution in Indian cities

Source: Bloomberg
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Gas use for industrial heating needs policy push

Gas demand for industrial heating and delivered fuel prices

Source: BloombergNEF, Petroleum Planning and Analysis Cell

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India LNG demand outlook

India’s LNG demand, contracts and import terminals

Source: BloombergNEF