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EQUITY, DERIVATIVES, CURRENCY, COMMODITY, DEPOSITORY, MUTUAL FUNDS, INSURANCE* & NBFC*

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SECTOR REPORT

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Natural Gas Storage, Distribution & Supply

Government raises natural gas price to highest in two years

Domestic demand for natural gas has outpaced domestic supply, resulting in increased dependency on LNG

The government has raised natural gas price by 6% to its highest level in two years, a move that will result in higher CNG and cooking gas prices. The price paid to most of natural gas produced from domestic fields will be USD 3.06 per million British thermal unit (mmBtu) for six months, beginning April 1, from current USD 2.89. Natural gas prices are set every six months based on average rates in gas-surplus nations like the US, Russia and Canada.

India imports half of its gas which costs more than double the domestic rate. This is the second straight increase that would take the rates to their highest level since April-September 2016 when a similar price was paid to domestic producers.

The increase in price will boost earnings of producers like Oil and Natural Gas Corp (ONGC) and Reliance Industries (RIL), but will also lead to a rise in the prices of CNG and piped cooking gas, which use natural gas as input. It would also lead to higher cost of urea and power production.

Also, the ceiling on price for gas produced from new fields in difficult areas like deep water, ultra deep water, high temperature and high pressure fields has also been raised to USD 6.78 per mmBtu for April to October 2018 period, up from current price ceiling of USD 6.30 per mmBtu.

GAIL has received approval for pipeline to Guwahati

Oil regulator PNGRB has approved extension of state gas utility GAIL India 'Urja Ganga' pipeline up to Guwahati in Assam. GAIL is currently laying a 2,655-km pipeline from Jagdishpur in Uttar Pradesh to Haldia in West Bengal and Bokaro in Jharkhand and Dhamra in Odisha at a cost of Rs 12,940 crore.

Petroleum and Natural Gas Regulatory Board (PNGRB) has accorded the Provisional Acceptance to GAIL on February 2 for the proposal for laying, building, operating or expanding Barauni-Guwahati natural gas pipeline as an integral part of Jagdishpur-Haldia-Bokaro-Dhamra natural gas pipeline.

The pipeline from Barauni in Bihar to Guwahati in Assam would be 672-km long and would be 24-inch in diameter. The pipeline would be executed in 36 months from the first notification of Right of User (RoU) acquisition. The project is likely to be completed by 2021-22. Jagdishpur-Haldia-Bokaro-Dhamra pipeline is being targeted to be completed by 2019-20.

India starts importing LNG from US

After crude oil, India has begun importing natural gas from the US, with the first shipment of LNG under a 20-year deal being flagged off from Louisiana. GAIL India has contracted 3.5 million tonnes per annum of liquefied natural gas (LNG) from Cheniere Energy's Sabine Pass liquefaction facility in Louisiana.

The cargo will discharge LNG at Dabhol terminal of GAIL (in Maharashtra) on or around 28th of this month. Last October, India imported its first shipment of crude oil from the US. The US had stopped oil exports in 1975, a ban lifted by former US President Barack Obama in 2015.

GAIL had signed a sale and purchase agreement (SPA) with the US LNG exporter Cheniere Energy in December 2011. The SPA went into effect March 1.

Under terms of the agreement, Cheniere will sell and make available for delivery to GAIL about 3.5 million tonnes a year of LNG. Cheniere's LNG is based on natural gas sourced from the US market, which provides access to abundant and low-cost gas resources.

OVL & OIL bag gas field project in Mozambique

ONGC Videsh, Oil India and their partners have received the Mozambique government's nod for bringing to production a giant gas field in the prolific Rovuma Area-1, off the coast of the African nation. Partners in the block plan to turn the gas into LNG for exports.

The Area 1 block is estimated to hold recoverable gas resources of about 75 trillion cubic feet, more than the combined resource in all of the gas fields in India. The plan outlines the integrated development of the Golfinho-Atom

field through an initial two-train onshore liquefaction (LNG) plant with a total processing capacity of 12.88 million tonnes per annum which in future may rise up to 50 million tonnes a year. The project will also supply initial volumes of about 100 million cubic feet of natural gas per day for domestic sales in Mozambique.

GAIL to buy entire produce from Essar Oil's Raniganj east CBM block

GAIL India will buy the entire produce for the next 15 years from Essar Oil's coal bed methane (CBM) block of Raniganj East in West Bengal. The state-run gas firm outbid three rivals to win the rights to buy up to 2.3 million metric standard cubic metres per day (mmscmd) of CBM from Essar at a crudelinked price which works out to \$6.492 per million metric British thermal unit (mmBtu) on gross calorific value basis at an oil price of \$60 per barrel. The prices are to be revised every month and are linked to trailing three-month average price of crude oil.

The price discovered in Essar's auction is similar to what Reliance Industries received in its CBM auction last year. Essar's Raniganj block currently produces 1 mmscmd of gas and is expected to raise output to 2.3 mmscmd by 2020-21. Last year, the government had given CBM producers the freedom to sell gas at arm's length price in the domestic market through a transparent and competitive bidding process. This prompted Reliance Industries, another CBM producer, to hold auctions last year.

Essar has spent Rs 4,000 crore in developing the Raniganj East CBM block so far. The company has nearly 350 completed CBM wells and put in place large gas and water handling infrastructure in its block.

Indian Natural Gas Sector

The development of the natural gas industry started in 1960s with the discovery of gas fields in Assam and Gujarat. After the discovery of the South Basin fields by the Oil and Natural Gas Corporation ("ONGC") in 1970s, natural gas assumed importance.

The exploration activities in India were initially carried out only by the National Oil Companies ("NOC") such as ONGC and Oil India Limited ("OIL") and blocks were awarded on nomination basis (the "Nomination Regime"). Later non-state owned companies were allowed to carry out exploration through joint ventures with the NOCs under the Pre-NELP regime. Subsequently, 100% foreign participation in exploration was allowed under the current New Exploration Licensing Policy ("NELP") regime. Discoveries were later made in Gujarat, the KG basin, the Cauvery basin, Tripura and Assam.

Gross production of natural gas for the month of February 2018 was 2484.1 MMSCM which was lower by 1.5% compared with the corresponding month of the previous

year. The cumulative gross production of natural gas of 29866.7 MMSCM for the current financial year till February 2018 was higher by 2.5% compared with the corresponding period of the previous year (29146.4 MMSCM). LNG import for the month of February 2018 was 2110.0 MMSCM which was 1.0% lower than the corresponding month of the previous year.

The cumulative import of 23910.2 MMSCM for the current year till February 2018 was higher by 6.1% compared with the corresponding period of the previous year (22531.4 MMSCM).

Global LNG Demand

Natural gas accounts for roughly a quarter of global energy demand, of which 9.8% is supplied as LNG.

Global LNG trade set a new record in 2016 reaching 258 million tonne (MT). This marks an increase of 13.1 MT (+5%) from 2015, when a previous record of 244.8 MT was set over the 2014 trade volume of 241.1 MT. The growth rate in 2016 was a noticeable increase from the average growth of 0.5% over the last four years, when there were not very many new supply additions.

The continued addition of supply in the Pacific Basin, primarily in Australia, as well as the start of exports from the United States Gulf of Mexico (US GOM) enabled this increase. Demand growth was most pronounced in Asia. China, India, and Pakistan added a combined 13.0 MT in incremental LNG demand.

Global liquefaction capacity grew at a similar rate in 2016 as in 2015, adding 35 MTPA of capacity between end-2015 and January 2017 to reach 339.7 MTPA. This includes new projects such as Gorgon LNG, Australia Pacific LNG and Sabine Pass LNG, as well as additional trains at Gladstone LNG (GLNG), Queensland Curtis LNG (QCLNG), and Malaysia LNG (MLNG).

Liquefaction capacity additions are poised to increase over the next few years as 114.6 MTPA of capacity was underconstruction as of January 2017. Two projects entered the construction phase of development in 2016: a brownfield expansion of Tangguh LNG (3.8 MTPA) as well as an additional US project, Elba Island LNG (2.5 MTPA).

Given abundant gas discoveries globally and the shale revolution in the US, proposed liquefaction capacity reached 890 million tonnes per annum (MTPA) by January 2016.

This figure fell slightly to 879 MTPA at end-January 2017 in an attempt at rationalization with market demand. More of these projects will not go forward as demand remains far below this ambitious target; particularly as ample pipeline supply - by Russia and Norway to Europe, and the US to Mexico - reduce the need for LNG in those markets.

Global regassification capacity increased to 776.8 MTPA by the end of 2016 and 794.6 MTPA by the end of January

2017, primarily supported by additional capacity coming online in established markets such as China, Japan, France, India, Turkey, and South Korea. This stands in contrast with 2015, when capacity was driven by floating regassification projects in emerging markets: Egypt, Jordan, and Pakistan.

Natural Gas Pipelines

GAIL is one of the leading companies in the market and owns approximately 73% of the existing pipeline network. MoPNG is contemplating developing a national gas grid having multiple points of supply and delivery.

The proposed gas grid would connect the natural gas sources to major demand centres in India and the network is expected to expand to approximately 28,000 km of pipelines with a total design capacity of approximately 721 MMSCMD

over the next five to six years.

Outlook

India's natural gas market is characterized by a supply deficit due to low domestic gas production and inadequate gas distribution infrastructure. The domestic demand for natural gas has outpaced domestic supply, resulting in increased dependency on LNG. According to the ministry of petroleum and natural gas (MoPNG), the demand for natural gas is expected to increase from 494 mmscmd in FY18 to 552mmscmd by FY20.

The prospects of LNG demand in India remains good over the medium to long term, due to the limited domestic supply. Although the domestic production is expected to increase over the next five to 10 year, it is expected to stay significantly lower than the demand potential.

