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Demand -Supply Scenario of Natural Gas in India

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Abstract: **This article discusses the demand and supply scenario of Natural Gas in India. There is huge scope for development of Natural Gas industry in India as demand is much more than its supply. A large portion of Natural Gas used in India is imported.**

Keywords: **Demand -Supply Scenario of Natural Gas, industry in India.**

1. INTRODUCTION

Natural gas is a fuel formed when layers of buried plants, and animals are exposed to intense heat and pressure over thousands of years. The energy that the plants originally obtained from the sun is stored in the form of chemical bonds in natural gas. Natural gas is a nonrenewable resource because it cannot be replenished on a human time frame. Natural gas is one of the major fossil fuels and enjoys a reputation as a clean fuel in comparison with other fossil fuels such as gasoline or diesel. It is a combustible mixture of hydrocarbon gases. Natural gas is a mixture of methane (C1) & ethane (C2), with small quantities of higher alkanes, i.e. propane and butane. Methane constitutes 70 to 90 per cent of natural gas. It is acquired either as an associated gas along with crude oil or as free gas from independent gas fields, unlike naphtha which is obtained by refining crude oil. It is used as a fuel and feedstock in different industrial sectors like fertilisers, petrochemicals and polymers etc. Naphtha which can also be used as a fuel and feedstock is closest substitute to natural gas. Coal Bed Methane (CBM), which primarily comprises of methane (>95%), is natural gas trapped in coal seams held in place by water pressure.

2. INDIAN NATURAL GAS DEMAND - SUPPLY SCENARIO

It was only in the late 1980s that gas found a meaningful place in the domestic primary energy consumption stack of fuels. Ever since natural gas has been able to garner nearly 8.0 % share in the total primary energy consumption mix. It is expected that natural gas will play an increasingly important role in fulfilling India's energy security needs. Currently, natural gas is primarily consumed in the power sector (38 % of the total consumption) as fuel and in the fertilizer sector (26 %) as feedstock. The shortfall in the Indian gas market has forced many industries and power generators to take recourse to more expensive alternative fuels.

India's total proven reserves of natural gas, as on April 2012, was estimated at 1,355 bcm, with two-thirds located in offshore gas fields. Gas reserves have been increasing at a CAGR of 4.5 per cent over the last 5 years. Considering the production level of 35.4 bcm in 2013-14, India's reserves are likely to last approximately 38 years, compared to 17.5 years in the case of oil reserves.

Natural Gas Reserves:

Earlier, majority of domestic natural gas reserves were concentrated in the offshore gas fields at MumbaiHigh. However, large finds have been made by RIL, ONGC and Gujarat State Petroleum Corporation Ltd(GSPC) in the offshore KG basin area of Andhra Pradesh. Onshore reserves are primarily located in Rajasthan and the north-eastern states of Assam, Nagaland, Arunachal Pradesh and Tripura.

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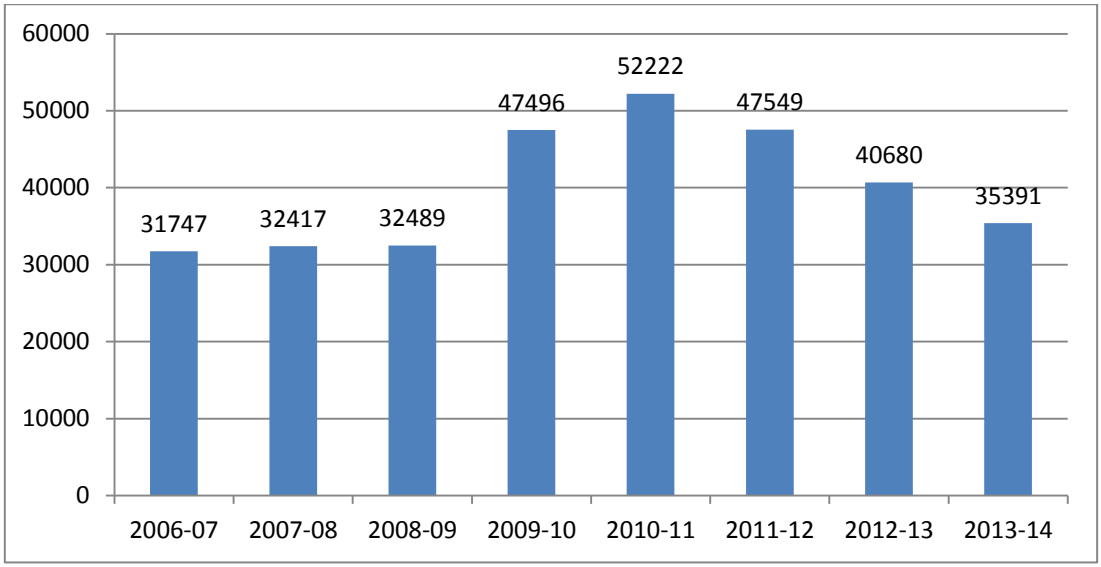
3. SUPPLY SIDE SCENARIO

Post the commencement of RIL's KG Basin in April 2009, the domestic natural gas production had seen a boost. However, closure of wells due to sand and water ingress led to production from the basin declining to 5.1 bcm in 2013-14 as against 9.5 bcm in the previous year (and 20 bcm in 2010-11). Consequently, domestic natural gas production declined by 13 per cent y-o-y to 35.4 bcm in 2013-14.

Natural Gas production in India:

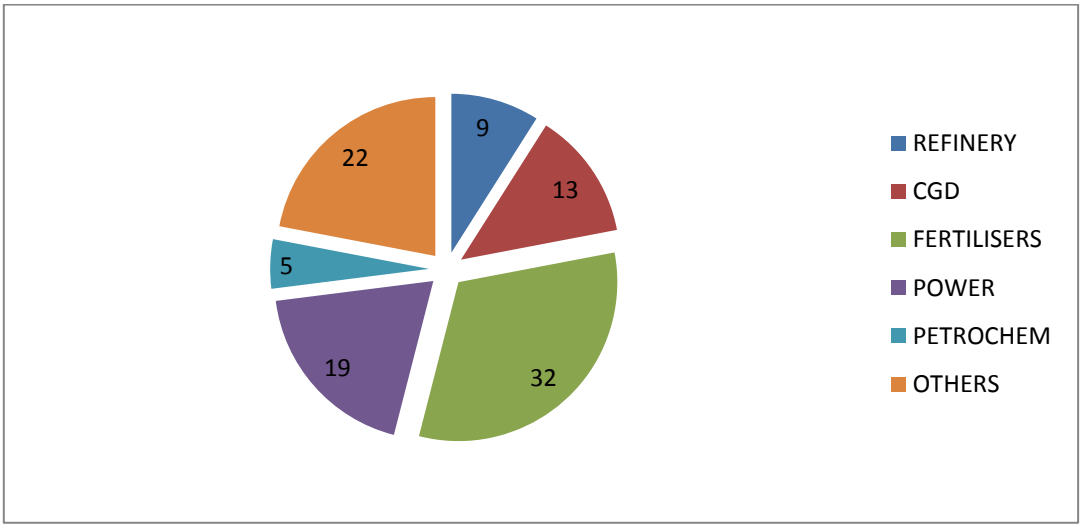


Source: crisil research

4. DEMAND SIDE SCENARIO

Natural gas consumption in India increased at a CAGR of 4 per cent over the last 5 years, rising to 53 bcm in 2013-14 from 44 bcm in 2008-09. Gas demand is driven by the fertilisers and power sectors, which together accounted for just over half of India's natural gas consumption in 2013-14. Other major end-use sectors are city gas distribution (CGD) and refineries with 13 per cent and 9 per cent respectively for the same period. Given fall in domestic gas output in 2013-14, the share of LNG imports increased to 33 per cent in 2013-14. With domestic gas availability expected to remain constrained, India will continue to rely on imported LNG.

Segment Wise Break-up of Natural Gas consumption in India (144mmscmd)



Source: Ministry of petroleum and Natural Gas

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5. OUTLOOK ON DEMAND AND SUPPLY

As we can see from the following table, demand generated by various segments for natural gas is unlikely to be filled by domestic natural gas and hence import of natural gas is inevitable. **What it also tells is there is a huge scope for development of natural gas industry in India with demand always expected to exceed supply**

Year	Segment Wise Demand							Supply		
	fertilizer	cgd	power	refinery	petrchem	others	Total demand	production	Lpg imports	Total supply
2011	39	18	64	14	7	38	178	143	35	178
2012	39	22	62	14	4	39	179	130	48	179
2013	40	21	45	14	7	33	159	111	47	159
2014E	46	19	28	13	7	31	144	97	47	144
2015P	48	19	34	14	9	28	151	100	51	151
2016P	50	20	45	16	10	31	173	104	70	173
2017P	55	21	46	17	11	32	181	112	69	181
2018P	55	23	46	16	11	32	183	127	56	183
2019P	63	25	55	18	12	36	209	141	68	209

REFERENCES

[1] INFORMATION MEMORANDUM prepared by Great Eastern Energy Corporation Ltd.

[2] Details given by Infrastructure Leasing and Financial Services.

[3] Ministry of petroleum and natural Gas.

[4] Crisil Research.