

Today, India is the fifth largest energy consumer in the world. While the world consumes 12000 million tonnes of oil equivalent (mtoe) of energy resources, India consumes 4.4% of the world total (524.2 mtoe). Global consumption of primary commercial energy (coal, oil & natural gas, nuclear and major hydro) has grown at a rate of 2.6% over the last decade. In India, the growth rate of demand is around 6.8%, while the supply is expected to increase at a compounded annual growth rate (CAGR) of only 1%.

Of the total primary energy consumption basket, oil and gas constitute 45% share in the total energy basket mix. It is projected that even if we exploit hydropower potential to the fullest, even if there is a 40 fold increase in the contribution of renewable resources and a 20 fold increase in the contribution of nuclear power capacity, by the year 2031-32, fossil fuels will continue to occupy a significant share in the energy basket (74% to 85% of the energy mix).

The size of the oil and gas industry in terms of turnover stands at USD 160 bn. The value of crude oil and LNG imports into India in 2010/11 were around US\$98 billion. About 78 per cent of India's petroleum consumption is met from imports (mostly of crude oil), while about 25% of natural gas (including LNG) consumption comes from imports. It is estimated that in the coming years, the import dependency for crude oil alone would reach above 90% level.

To bridge the rising demand-supply gap, reduce import dependency and make ourselves resilient to the external factors – economic and political disruptions in the sourcing nations, international crude oil prices – the government has initiated several policy and regulatory measures:

- **New Exploration License Policy (NELP):** To increase domestic exploration and production, the government introduced NELP. During the ninth round of bidding under NELP, there was an investment commitment of more than USD 827.44 mn.
- By 2012, the government plans to move towards an Open Acreage Licensing Policy (OALP), wherein oil and gas acreage will be available round the year instead of cyclical bidding rounds launched under NELP.
- **Coal Bed Methane Policy:** To stimulate the exploration and production of coal bed methane in the country, the government introduced the Coal Bed Methane Policy. Till date 33 blocks have been offered in four rounds of bidding.
- **Underground Coal Gasification:** The pilot production of underground coal gasification would commence by the end of 2015. ONGC has signed an agreement with Skochinsky Institute of Mining, Russia, to harness world class technology to tap this energy source.
- **Gas Hydrate** is at the research and development stage (during the year 2008, India signed an agreement with Russia under the Integrated long term programme of cooperation to jointly conduct research and development for technology required to harness gas hydrates).
- **Shale gas:** By the year 2012, the government plans to announce the Shale gas policy.
- The government has been encouraging acquisition of overseas E&P assets.
- 100% FDI is permitted in exploration, refining, pipelines and marketing.

Although the government has initiated several policy and regulatory measures to ensure energy security and enhance domestic production, a large number of issues remain which require significant attention and policy reforms.

Subsidies and Pricing mechanism

- Given the alarming estimates on under-recoveries (OMCs have been incurring daily under-recovery of Rs.235 crores on sale of diesel, PDS kerosene and domestic LPG) in the wake of rising international prices; huge amounts of wastage, leakage, adulteration and inefficiency in distribution on account of artificially lowered prices, it is important to ensure that the subsidies are directed to the intended beneficiaries.
- To improve the financial health of the upstream oil marketing companies and ease the fiscal burden of the government on account of huge subsidies, it is important to decontrol the diesel prices.

Infrastructure

- With the demand for natural gas far exceeding the domestic supply, it will be possible to cater to the additional demand only through LNG or through transnational pipelines. To ensure last mile connectivity, speedy development of domestic pipeline infrastructure and LNG terminals, measures need to be taken to expedite large international pipeline projects, especially Turkmenistan-Afghanistan-Pakistan-India (TAPI). Besides various issues of political instability, security and transit tariff rate need to be addressed.
- Although India has four strategic oil reserves, which are equivalent to 2 week consumption, given the pace of the rising demand, the government needs to urgently increase the existing reserve base.

Other Challenges

- To secure adequate supply of energy resources it is important to **develop bilateral and regional strategic energy partnerships** that promote, diversification of hydrocarbon supply sources, acquisition of foreign hydrocarbon assets, tradability of energy sources through gas contracts, enhancement of the national knowledge-base and acquisition of technologies.
- India needs to strive for self-reliance, for which the government should consider creating a much larger corpus that enables Indian companies in their international pursuits.
- To secure overseas oil and gas assets PSUs need to be granted more autonomy.

Opportunities

- Although India ranks high in terms of energy consumption, the per capita energy consumption (500 kgoe) is significantly lower than the global average (1800 kgoe), indicating significant growth potential of the energy demand in the country.
- According to the International Energy Agency estimates, India will need investments worth nearly US\$600 billion during the years 2011–2030, across various segments of its hydrocarbon chain, to increase its energy supply and improve the infrastructure to enable this. This provides ample opportunities for companies across the hydrocarbon value chain.
- In addition the sector offers huge opportunity for
 - Capacity building, technology transfer for E&P activities and building & maintenance of strategic oil and gas reserves.