

## India – Oil and Gas Industry

Year: May 2014

FCS Post/Country: Mumbai/India

### 1. Summary of the Sector:

In India, the oil and gas (O&G) sector has been traditionally dominated by public sector undertakings (PSUs), which account for 80 percent of the domestic oil and gas production and about 70 percent of the refining capacity of the country. In recent years, due to steps taken by the government to deregulate the industry and encourage greater private and foreign participation, private sector activity in the sector has been steadily growing. India is the world's fourth largest energy consumer and one of the few underexplored countries in the world. Of the 26 sedimentary basins identified in India, so far only 20 percent of the total area has been well explored.

Over the last few years, the Indian Government has also played a pivotal role in strengthening this core industrial sector. For example, the introduction of the New Exploration Licensing Policy (NELP) was aimed at intensifying activities in oil and gas exploration, while the government allowed 100 percent foreign direct investment (FDI) in the sector.

India, having the fourth largest proven coal reserves in the world, holds significant prospects for exploration of coal bed methane (CBM). The Ministry of Petroleum and Natural Gas (MOPNG) has implemented four CBM bidding rounds and awarded 33 CBM blocks. At the same time, the government is making efforts to diversify India's fuel basket by increasing the shares of natural gas, hydro and nuclear energy. The Directorate General of Hydrocarbons (DGH) has assisted the government in framing the policy for shale gas and oil.

However, despite great need, the Indian government has not taken necessary measures to minimize obstacles, and the pace of policy reform has been sluggish. Even with these challenges, U.S. energy companies have an incentive to enter the unconventional hydrocarbon business to explore for tight gas, shale gas and CBM. Opportunities for U.S. oilfield service and technology companies to export their expertise should continue to grow as the oil and gas sector expands in India.

### 2. Government Policy:

The Indian government policy in this sector is driven by the Ministry of Petroleum & Natural Gas (MOPNG); however, the national energy sector has no unified lobby, which has resulted in poor policy planning and implementation of a coordinated energy plan for India. To cope with the high demand, the Indian government has adopted policies such as allowing foreign direct investments in many segments of the oil and gas sector such as exploration, refining, pipelines, petroleum products, natural gas and infrastructure related to the marketing of petroleum products. The NELP is another tool created in January 1999 to aid public and private sector companies in bidding for exploration rights. The Government of India has so far completed nine rounds of tenders under the NELP offering 360 exploration blocks and awarding 254 blocks, with the last NELP (IX) concluding in March, 2011.

Details of NELP bidding rounds									
Parameter	NELP I	NELP II	NELP III	NELP IV	NELP V	NELP VI	NELP VII	NELPVIII	NELPIX
No. of Blocks Offered	48	25	27	24	20	55	57	70	34
No. of Blocks Bid for	28	23	24	21	20	52	45	36	33
No. of Bids Received	45	44	52	44	69	165	181	76	74
No. of blocks awarded	25	23	23	21	20	52	44	34	19
No. of PSCs signed	24	23	23	20	20	52	41	32	19
Area Awarded (Sq.km)	2,28,472	2,63,050	2,04,588	1,92,810	1,13,687	3,06,331	1,12,988	52,603	26,428

Source: Directorate General of Hydrocarbons - [www.dghindia.com](http://www.dghindia.com)

The NELP allows 100 percent FDI in small-to-medium sized oil fields. However, the NELP may soon be replaced by the Open Acreage Licensing Policy (OALP), which gives companies a continuous window of exploration opportunities all year round and the flexibility to pitch for oil and gas blocks of their choice. [The Ministry of Petroleum & Natural Gas \(MoPNG\)](http://www.mopng.gov.in) is seeking cabinet approval to launch the OLAP to attract additional investment along with bidders for surrendered or relinquished blocks that were awarded in previous tenders. However, the absence of data on India's hydrocarbon reserves is needed to give potential investors confidence and for the OALP rollout to be successful. To address this, the Director General of Hydrocarbons will work with hydrocarbon experts to establish a national data repository center by June 2015.

The Indian government permits 100 percent of foreign direct investment (FDI) for exploration and production (E&P) of oil and natural gas fields, marketing infrastructure, marketing, pipelines, LNG re-gasification infrastructure and for private sector refining through the automatic route with no need for prior approval of either the Government or the Reserve Bank of India. Foreign investment in state-owned companies undertaking petroleum refining is capped at 49 percent and government approval is required. [http://www.fipbindia.com/FDI\\_Circular\\_01\\_2012.pdf](http://www.fipbindia.com/FDI_Circular_01_2012.pdf).

The Petroleum and Natural Gas Regulatory Board (PNGRB) (<http://www.pngrb.gov.in>) was established in 2006 to regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas to ensure the uninterrupted and adequate supply of these products throughout the country. The PNGRB also authorizes the laying, building, operating, and expanding of any pipeline or city gas distribution project; however, it does not regulate the production of crude oil or natural gas.

The 12th Five Year Plan (2012-2017) [http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp\\_vol2.pdf](http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp_vol2.pdf) projects crude oil production to increase marginally and then decline by around three percent resulting in increased import dependence. Natural gas production is expected to grow from 52 BCM in 2012-13 to 85 BCM in 2016-17. India will, therefore, continue to rely heavily on crude oil and LNG imports. Despite completely de-regulating petrol prices, partially adjusting diesel prices and limiting subsidized LPG based on the 11th Five Year Plan recommendations, Indian refining companies continue to suffer from large under-recoveries, i.e. the difference between cost and price realized for their products. The 12th plan recognizes the need to periodically adjust prices of diesel, kerosene and LPG to further reduce these under-recoveries. Like the 11th Five year plan, the 12th Plan continues to argue in favour of rational energy pricing, and the urgent need for greater energy security. The 12th Five year plan also re-iterates the need to review the structure of NELP contracts for oil and gas blocks to attract more private – and foreign – investment. It also argues in favor of greater government clarity on gas pricing and marketing freedom for gas developers to incentivize private investment in gas exploration.

Gas produced from the NELP blocks is subject to the GoI policy that prioritizes the allocation of gas to fertilizer plants, Liquefied Petroleum Gas (LPG) plants, power plants, City Gas Distribution (CGD) for Compressed Natural Gas (CNG), domestic Piped Natural Gas (PNG), steel, petrochemicals, refinery, proprietary power plants, and city gas distribution for industrial and commercial

consumers. Domestic gas prices are regulated as many of these priority consumers are subsidized and plead an inability to pay actual market prices. Nevertheless, the government planned to double gas prices to \$8.4 per million metric British thermal unit (mmBtu) on April 1, 2014, based on the Rangarajan committee report which recommended fixing gas prices based on the average of the imported LNG price and the international hub price. However, because of the recent elections in India in 2014, the price hike was deferred and it is up to the newly elected government to act on this matter.

### **3. Current Size and Market Trends:**

India's total hydrocarbon reserves are projected to be around 2 billion metric tons of oil equivalent (bmtoe). Also with the current oil production around 815,000 barrels per day (bpd) and estimated reserves of 1.2 billion metric tons (bmt), the reserves-to-production ratio for the country is about 25 years. Analysts foresee a bright future for the gas sector as well where the reserves-to-production ratio is over 30 years with current production around 40 billion cubic meters (bcm) per year and reserves around 1,500 bcm. Thus, there are great opportunities for international and domestic companies to participate in oil and gas growth in India.

India has an estimated sedimentary area of 3.14 million square kilometers, comprising 26 sedimentary basins. Prior to establishing the NELP, 11 percent of Indian sedimentary basin areas were under exploration.

During the Eleventh Five Year Plan period (2007–12), 80 percent of the total sedimentary basin area was supposed to be tendered for exploration; however, to date less than 20 percent has been explored. By [2025](#), the GoI aims to have 100 percent of the Indian sedimentary basin area under exploration.

India has 5.6 billion barrels of proven oil reserves, with an average oil production of 0.8 million barrels per day (mbpd). Oil consumption is estimated to expand at a compounded annual growth rate (CAGR) of 3.4 percent to four mbpd by 2016. India had 1,330 billion cubic meters (bcm) of gas reserves but produced only 47.6 bcm of gas in 2012, so there is plenty of room for growth.

Liquefied natural gas (LNG) imports have increased significantly from 0.25 Million Metric Tons (mmt) in 2003-04 to 10.9 MMT in 2012-13\* offering huge opportunities for LNG terminal operation, engineering, procurement and construction services.

Since April 2000, FDI worth \$5.4 billion has been invested in India's petroleum and natural gas sectors. Investments worth \$75 billion are expected across the oil and gas value chain under the 12th Five year Plan (2012–17).

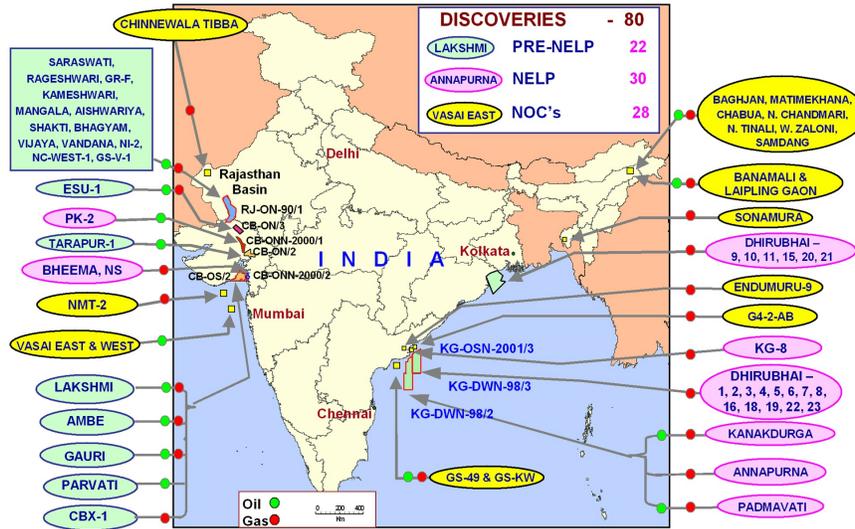
*\*Source: Petroleum Planning and Analysis Cell (PPAC) - [www.ppac.org.in](http://www.ppac.org.in). Data includes Petronet LNG Limited & Hazira LNG Pvt. Ltd., GAIL, GSPC. Reliance LNG import data is not included*

### **4. Market Entry & Market Opportunities:**

India has significant potential to discover new oil and gas reserves since over 78 percent of the country's sedimentary area is yet to be explored. Recent large-scale oil and gas discoveries in the Krishna Godavari and Rajasthan basins (illustrated in the map below) have amply demonstrated this potential.

Exploration and production spending in India has doubled from about \$2.5 billion in 2004–2005 to about \$5 billion in 2007–2008. Overall E&P spending is expected reach \$90 billion–\$110 billion in the next 7–10 years. This will also create a sustained demand for oil field services like drilling rigs, offshore support vessels, tubular goods, and seismic services and equipment for constructing process platforms, pipelines and collecting stations, as well as other surface facilities for transportation of oil and gas from wells to delivery points.

**SIGNIFICANT DISCOVERIES BY  
NOC'S AND PVT./JV COMPANIES (2000-2005)**



Map source: [www.dghindia.org](http://www.dghindia.org)

The country's gas pipeline coverage has increased substantially and has significant potential for further expansion. India has a trunk gas pipeline network of 9,900 km with a transmission capacity of 292 Million Metric Standard Cubic Meter per Day (MMSCMD).

Domestic gas supplies are expected to increase significantly from the new domestic gas fields and LNG capacity. New pipeline projects will provide ample opportunities for gas transmission, engineering, engineering procurement construction (EPC); and pipeline-manufacturing companies.

The power and fertilizer sectors in India also drive demand for gas in the country. Since the demand for gas is set to grow, the natural gas share in the overall energy matrix is projected to rise from 8 percent to 20 percent by 2025.

India increasingly relies on imported LNG. It was the sixth-largest LNG importer in 2011, and accounted for 5.3 percent of global imports. Gail Global (USA) LNG LLC, a U.S. affiliate of the Gas Authority of India Limited (GAIL), has signed a 20-year terminal service agreement with Dominion Resources Inc. to book 2.3 million tons per year liquefaction capacity in the Cove Point LNG project. Dominion plans to start construction on the 5.25-million ton facility in 2014 and put the liquefaction facilities in service in 2017.

Indian refineries have 25-50 percent lower capital costs as compared to other Asian countries. This, coupled with low operating costs due to cheap power and a strategic location between the crude exporting countries of the Middle East and the East Asia/Pacific markets have the country poised to become a major export refining, hub since India's refineries far exceed domestic demand for petroleum products. India is expected to increase its refining capacity by 45 percent by 2017; thereby increasing the incremental global refining capacity by 30 percent through 2017. This augmented capacity should satisfy increasing domestic demand, and cater to the growing energy needs of the Asia Pacific and African markets.

## 5. Market Entry

The oil and gas industry is de-licensed and eligible for automatic approval for Foreign Direct Investment up to 100 percent with the liberty to repatriate profits. The GoI's import policy allows imports under the Open General License (OGL) system. The import procedures have been simplified and the import duties have been reduced. Import liberalization is expected to continue as a part of the GoI's economic policies.

The common method of payment for imported goods is an irrevocable letter of credit (L/C). Indian banks require that Indian customers deposit the entire amount of the transaction into the bank before issuance of the L/C. They are opened for a period of time as specified in their respective contracts.

U.S. companies can arrange comprehensive or project-based business joint ventures or supplier agreements with local firms\*. Partnership with local companies is recommended in the early phase of market entry for small and medium enterprises. U.S. companies may consider opening a local office if they are satisfied with the response from key clients. It is important for U.S. companies to understand the workings of the government system as all government purchases are made through bids, which is a lengthy and cumbersome process.

**\*Note:** The U.S. Commercial Service in India (CS India) offers matchmaking services to U.S. exporters interested in meeting with local agents, representatives of joint venture partners. Through our Gold Key Service, we offer customized agendas with one-on-one appointments to help you find local partners. For more information please visit:

<http://export.gov/india/servicesforu.s.companies/goldkeyservice/index.asp>

Additionally, we can help you perform due diligence checks before you sign or renew any contracts through our International Company Profile (ICP) service:

<http://export.gov/india/servicesforu.s.companies/internationalcompanyprofile/index.asp>

## **6. Barriers:**

The Ministry of Petroleum & Natural Gas (MOP&NG) is the primary agency for regulating the oil and gas industry in India. The Petroleum and Natural Gas Regulatory Board (PNGRB) is entrusted with the responsibility of handling legislation and issues related to exploration and production (E&P) of oil and natural gas such as refining, distribution and marketing, import, export and conservation of petroleum products and liquefied natural gas (LNG). The PNGRB is also the nodal agency for the city and local gas distribution network. It decides on the period of exclusivity for building and operating the network, and lays down technical standards including safety standards for pipelines and other infrastructure projects. Dealing with multiple agencies may be one of the biggest barriers in this sector.

Public sector corporations dominate the Indian exploration and production sector. In terms of the percentage share in total production, the Oil and Natural Gas Corporation (ONGC) accounts for the highest share. The second major player in the sector is also a public sector undertaking Oil India Limited (OIL). Both of these undertakings account for about more than 70 percent of the total market. The remaining share of the pie is cluttered with various private players in the market. Public sector corporations source products and services through a bidding process which can be cumbersome. It is advisable to let the Indian partner manage the bidding process, though many of them may look up their American partners for financial support to participate in these tenders.

The high cost of equipment, high rates of import duties, involvement with multiple government agencies coupled with the risks associated with the oil and gas business are some of the barriers companies need to be aware of before entering the Indian market.

## **7. Competition in the market:**

The Indian market for oil and gas is highly competitive, since most of the major players in the industry are already present in the market.

There are a large number of foreign players in the Indian market; however, the preference for American products is very strong. Indian companies are cost sensitive, therefore price plays a major part in decision making. Many U.S. companies have been successfully providing services and selling products in the Indian market. Major suppliers are oil and gas equipment and services providers, including Schlumberger, Baker Hughes, Smith International and Halliburton. U.S. companies offering new technologies with a competitive edge can meet with success in the Indian market. Partnership with local companies is recommended to understand and manoeuvre the dynamics of the Indian market.

Organizations offering basic commodity products may find it difficult to enter and sustain the market as the cost of imports and other overheads coupled with easy availability of alternative products may make the product expensive for domestic consumption.

## **8. Trade Events/Associations:**

Name of the Event 2014: India Oil & Gas Review Summit & International Exhibition (IORS)

Location: Mumbai, India.

Date: September 10-11, 2014

Contact: [http://www.oilasia.com/iors/about\\_iors.html](http://www.oilasia.com/iors/about_iors.html)

Name of the Event: Petrotech 2016 – Dates to be announced

Petrotech 2014 - <http://www.petrotech.in/html/Default.aspx>

#### **9. Sources of information:**

India Brand Equity Foundation (IBEF) - [www.ibef.org](http://www.ibef.org)

Directorate General of Hydrocarbons (DGH) - [www.dghindia.org](http://www.dghindia.org)

Petroleum Planning and Analysis Cell (PPAC) - [www.ppac.org.in](http://www.ppac.org.in)

#### **10. Useful Web Links:**

Ministry of Petroleum & Natural Gas (MOP&NG) - [www.petroleum.nic.in](http://www.petroleum.nic.in)

Directorate General of Hydrocarbons (DGH) - [www.dghindia.org](http://www.dghindia.org)

Oil Industry Development Board (OIDB) - [www.oidb.gov.in](http://www.oidb.gov.in)

Oil Industry Safety Directorate (OISD) - <http://petroleum.nic.in/oisd.htm>

Petroleum Conservation Research Association (PCRA) - [www.pcr.org](http://www.pcr.org)

Petroleum Planning and Analysis Cell (PPAC) - [www.ppac.org.in](http://www.ppac.org.in)

Petroleum Federation of India (PetroFed) - [www.petrofed.org](http://www.petrofed.org)

Association of Oil and Gas Operators in India – [www.aogo.in](http://www.aogo.in)

Oil & Natural Gas Corporation - [www.ongcindia.com](http://www ONGC India.com)

Oil India Limited - [www.oil-india.com](http://www.oil-india.com)

Gas Authority of India Limited - [www.gailonline.com](http://www.gailonline.com)

Indian Oil Corporation Limited - [www.iocl.com](http://www.iocl.com)

Bharat Petroleum Corporation Limited - [www.bharatpetroleum.com](http://www.bharatpetroleum.com)

Hindustan Petroleum Corporation Ltd - [www.hindustanpetroleum.com](http://www.hindustanpetroleum.com)

Reliance Industries Limited - [www.ril.com](http://www.ril.com)

Essar Oil Limited - [www.essar.com](http://www.essar.com)

Cairn India Limited - [www.cairnindia.com](http://www.cairnindia.com)

Mahangar Gas Limited (MGL) - [www.mahanagargas.com](http://www.mahanagargas.com)

Indraprastha Gas Ltd (IGL) - <http://www.iglonline.net>

Gujarat Gas Company Ltd (GGCL) - [www.gujaratgas.com](http://www.gujaratgas.com)

GSPC Group - [www.gspcgroup.com](http://www.gspcgroup.com)

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