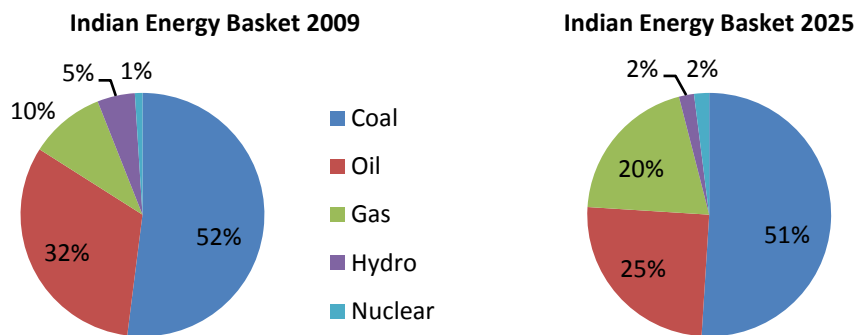


India Opportunities for Oil and Gas Field Machinery Industry

Overview

India has one of the fastest growing economies in the world, and the demand for oil and gas is rising at a corresponding rate. Not only is India's market potential huge, but in recent years India has emerged as one of the most prospective regions in the world with major oil and gas discoveries, both onshore and offshore. The Indian Petroleum industry is one of the oldest in the world, with oil being struck at Assam in 1867, nine years after Col. Drake's discovery in Titusville.

Against a crude oil production of about 37 million tons per annum (MTPA), India's consumption currently exceeds 125 million tons. To provide energy security, the GOI is seeking investments in excess of \$100 billion in both the upstream and the downstream sectors during the next 15 years. India's petroleum product consumption has grown by 4-5 percent over the past 10 years and the oil demand in India is expected to rise to 368 MTPA by 2025.



source: BP statistical review of world energy 2009

With the widening gap between demand and supply, both for oil and gas, the outlook for the upstream sector is extremely positive. While oil and gas will continue to play a substantial role in the total energy mix, the need for harnessing alternate energy sources like Coal Bed Methane (CBM) and gas hydrates will become crucial to balance the demand and supply.

The government of India announced the eighth round of bidding under the New Exploration Licensing Policy (NELP) on April 9, 2009, which includes 70 oil and gas blocks and 10 areas for extraction of coal bed methane (CBM) gas from below the coal fields under CBM-IV. The blocks include 24 deep-sea blocks, 28 shallow water blocks and 18 onland blocks. Of the blocks offered so far, 49 oil and gas discoveries have been made in Cambay onland, North East Coast and Krishna Godavari deep-water areas, asserting over 600 million tons of oil and equivalent gas reserves. Seeking a cut in oil import, India so far has awarded 203 oil and gas blocks in the previous seven rounds of NELP with over \$11 billion committed in exploration. In the first six NELP rounds, 162 areas with an investment commitment of \$ 8.33 billion have been awarded. Out of the \$8.33 billion, \$3.887 billion has already been spent by oil and gas till 2007.

India's sedimentary basins are still relatively under explored in comparison to the U.S., and this translates into greater potential opportunities for investors. In terms of mitigating the inherent risk in such ventures, India has taken steps to make its exploration blocks more attractive to the prospective investor. Based on input from the petroleum industry, India has revised its model production-sharing contract and has streamlined the bidding and review process.

The focus of oil refining companies has shifted to clean fuels as per current environmental standards. Clean fuel technology supplied by companies like UOP, Chevron and Axens is in great demand. Also, with greater liberalization and ensuing competition, oil-marketing companies are wooing the retail customer with more and more value-added services provided at retail outlets. In addition to new outlets, existing retail outlets are being modernized with refreshing signage, and the establishment of mini-malls. U.S. companies engaged in design of gas stations, vending machines and development of concessionaires will find clients among the downstream oil companies.

US\$ millions	2008	2009	2010 est*
Market Size	2480	2520	2900
Local Production	1880	1910	2130
Exports	380	430	580
Imports (Global)	980	1040	1350
Imports from US	350	480	760

Statistical data are unofficial estimates from trade sources and industry
 *2010 figures are estimates

The Indian oil and gas industry has traditionally been more open to imports than other segments of the economy. To procure major equipment, the government oil companies float public tenders. The U.S. is the leader in the import market segment, with close competition from the U.K., Japan and Korea. Traditionally, the Indian oil and gas sector has been dependent on U.S. technology and equipment. Also, since India uses American Petroleum Institute (API) specifications, U.S. manufacturers have an edge over their foreign competitors.

Shale Gas

Shale gas is natural gas produced from shale, which are fine-grained sedimentary rocks formed by compaction of clay and other minerals. The shale formations act as both reservoir as well as source rock. Shale formations have low matrix permeability and to produce gas in commercial quantities it requires fractures to improve the permeability. Similarly, horizontal drilling is often used with shale gas to create maximum surface area in contact with the shale and hence improve gas recovery.

The interest in shale gas really picked up during 2005-06 when the Henry Hub prices were at an all time high . Over the last decade, the costs of drilling and fracturing techniques have come down substantially and now shale gas is able to compete even at prevailing lower gas prices. This has resulted in huge negative impact on imported LNG in the US and severe under utilisation of the LNG regasification terminals.

This whole cycle of developing cost efficient technologies to bring down the cost of monetising unconventional resources in the US has captured the attention of a large number of nations like Canada, Australia, China, Sweden, Hungary, Germany, UK and India.

In the Indian context, although more studies are required to assess the true potential of our geological basins, prospects of large shale deposits exists across the Cambay basin, Assam – Arakan basin, KG basin and Cauvery basin. India's current policy on exploration doesn't cover unconventional resources and hence a new policy especially for shale gas may be required in the future. The fiscal and contractual regime for such exploration is also something the government needs to look at as the option could be between a royalty regime (like in US) and a Production Sharing Contracts (conventional oil and gas resources in India) . The government plans to launch the first round of Shale gas bidding in mid 2011.

In anticipation of the above, some of the major players have taken a keen interest in shale gas. Reliance has already acquired stakes in Marcellus shale and Eagle Ford acreage in US . ONGC is carrying out a pilot project in the Damodar basin, which is the first of its kind in India. In order to truly exploit the potential of shale gas in the country the following needs to be expedited:

- Technical assessment of shale deposits and identification of possible gas producing areas
- Comprehensive policy on shale gas exploration, development and production
- Participation from firms with technology and infrastructure to bring down costs of development and production.

Shale gas definitely is an opportunity in the near future and, if large resource bases are established, it could be a big boost to a country which needs energy security for a fast developing economy.

source:KPMG

Opportunities

India's first Fortune 500 company, Indian Oil Corporation Limited (IOC), India's largest upstream company, Oil and Natural Gas Corporation Limited (ONGC), and India's largest gas company are implementing projects in excess of \$5 billion.

The promising sub-sectors with the estimated market size are:

Sub Sector	Market size estimate in \$ millions
Seismic & drilling equipment and services	480
Refinery and clean fuels equipment	380
Pipelines and gas-field equipment	780

source:US Department of Commerce

ABOUT US

IMaCS Virtus Global Partners, Inc. (“IVG Partners”) is a New York based advisory firm that offers services to North American companies and funds seeking India related growth and investment opportunities. Our mission is to enable our clients to transform their business by adding India as a key part of their global footprint. Our clients benefit from our local presence, strong relationships, knowledge of local business practice, experience, and financial expertise. The firm is part of ICRA Management Consulting Services Limited, which is a fully-owned subsidiary of ICRA Limited, one of India's leading credit rating agencies.

We are headquartered in New York with eight offices in India.

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We have an established track record of over 15 years and 1,000 engagements providing advisory services to a diversified client base across energy, manufacturing, infrastructure, and retail. Our team possesses a deep understanding of the business environment, both in the US and India and is well connected with companies, financial institutions and governmental agencies in both markets. We also work with multilateral and bilateral government agencies such as World Bank and ADB as well as financial institutions and regulators.

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- Sales and Sourcing Strategy
- Customer and Partner Meetings
- India Strategy & Investment Roadmap

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- Solutions to Address Payment and Other Risks
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- Credit Risk Assessment
- Local Regulatory Compliance

Partner / Alliance Search

- Partner Identification and Meetings
- Partner Due Diligence
- Joint Implementation Plans
- Structuring and Negotiating Agreements

Operations Setup and Support

- Location Assessment
- Organization Design
- Business Structure Setup
- Operations Support

Project / Bid Advisory

- Contract Preparation
- Concession Agreements
- Financial Modeling
- Economic Analysis

M&A Advisory

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- Price Negotiations
- Synergy Valuation
- Deal Structuring

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- Financial strategy and roadmap for a rights issue for a global Original Equipment Manufacturer.
- Market analysis and Product pricing strategy for launch of commercial vehicles in India by a global OEM.
- Financial evaluation of vendors for an international automobile company setting up a joint venture in India.
- Formulating an India entry strategy and business plan for a global monoline insurance company.
- Market study and Commercial viability assessment for setting up a 150 MW Lignite Based Power Project in India for an international developer of power projects.
- Formulating an India entry strategy for a leading global bank.
- Assessment and Due diligence of joint venture partner for an international power project investor
- Market Assessment of commercial vehicles gearbox and seatbelts in India for a leading international auto-component manufacturer.
- Financial assessment and valuation of India based utility companies for an international strategic investor seeking acquisition of stake in a State Owned Public Sector Utility
- Evaluation of options for corporate restructuring for a large engineering conglomerate

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