

THE GREAT ENERGY HUNT

India's energy needs are among the fastest growing in the world. And foreign majors are active in the exploration business. **Yeshi Seli** reports on these companies and their endeavours.

Since India is dependent on imports for nearly 70 per cent of its petroleum requirements, energy security has become a prime government concern. In recent years this has taken the form of trying to get a stake in oil and gas fields from Myanmar to central Asia to Africa. However the major thrust still lies in searching for hydrocarbons in onshore and offshore blocks in India. While India may not be as hot a destination as central Asia or southeast Asia, recent gas finds are making oil majors take notice of the potential in the prospective basins.

Until the mid-1990s Indian companies were given preference in the exploration of potential hydrocarbon blocks. This changed with the landmark New Exploration Licensing Policy (NELP) in 1998 which allowed foreign companies to prospect for oil and gas in India on the same terms as Indian companies. "It opened up new vistas of oil and gas exploration prospects in India," says V K Sibal, director general in the Directorate General of Hydrocarbons.

The response to the first four rounds of exploration between 1999 and 2004 in the NELP were very encouraging, and production-sharing contracts were signed for 90 blocks. The bids for the 5th round have already been submitted and will be opened soon. In contrast only 28 blocks were awarded in pre-NELP rounds in 11 years.

The most important finds of recent years are the discovery of gas in the



DRILLING IN THE DESERT: Rajasthan remains the catalyst for Cairn Energy's growth

Krishna-Godavari Basin off Andhra Pradesh in the Bay of Bengal. The gas discovery there earlier this year — estimated to be 20 trillion cubic feet (tcf) — by the Gujarat state government's Gujarat State Petroleum Corporation (GSPC) has given a fillip to international oil companies. The GSPC find follows an earlier one in the Krishna-Godavari Basin made two years back by Reliance Industries, India's largest conglomerate with interests in petrochemicals, oil refining and oil exploration. These discoveries have prompted international exploration companies like Cairn Energy, British Gas and Hardy Exploration — which have been present in India for a while — to bid for more blocks under new rounds of the NELP.

"This is the country's largest gas discovery," claims Gujarat chief minister

Narendra Modi of the GSPC gas discovery, adding that the projections of 20 tcf worth \$50 billion were conservative and the reserves could be much more.

There is a general consensus that the find is important. "The discovery announced by GSPC is notable and would attract further interest of international exploration companies," said Nigel Shaw, outgoing CEO of British Gas in India.

GSPC holds an 80 per cent interest in the discovered field while Geoglobal Resources of Canada and Jubilant Enpro have 10 per cent each.

According to industry sources, if the quantity of the reserves are realised then it would be around the same size as the Sakhalin I and II fields in Russia and Exxon Mobil's Jansz on Australia's north-

western coast, and bigger than Reliance's deep-water discovery in 2002 of 14 tcf in the Krishna-Godavari basin.

The Scotland-based Cairn Energy PLC first arrived in the Indian subcontinent in 1994 when it got an exploration licence in Bangladesh, and has been present in India for nearly a decade. Encouraged by the discoveries in Bangladesh and in the Bay of Bengal, Cairn acquired and began to operate the Ravva field in Andhra Pradesh in 1996. The Ravva field currently produces approximately 50,000 barrels of oil per day, 2.4 million tonnes a year.

"Cairn has made more than 25 oil and gas discoveries in South Asia including 12 in Rajasthan. The biggest of these is the Mangala discovery in northern Rajasthan in January 2004 which was the biggest find in India for 22 years. The company has invested around \$2 billion in the last ten years. More than 150 wells have been drilled, primarily in India but also in Bangladesh," said Laurie Smyth, managing director of Cairn in India.

Cairn's first discovery was a gas find made in a pre-NELP block in the Cambay Basin in May 2000. Cairn has also bid for blocks in NELP V, the results of which are awaited. Their consortium partners in the bidding are ONGC and in two blocks they also bid with the Italian company ENI. "Both oil and gas discoveries have been made by us. We believe there is still potential for further exploration success in India, which is now a significant hydrocarbon destination. The company continues to look at the growth potential from its operations across South Asia and India will be central to that growth," says Smyth.

Cairn generates more than 60 per cent of its revenue from oil and gas fields in India and the percentage is likely to go up when fields in the Rajasthan block are commissioned. The company hopes there will be significant benefits from the world class discoveries in Rajasthan, the bulk of which will come on stream by the end of 2007. The production in Rajasthan is targeted at more than 120,000 barrels of oil per day, 5.8 million tonnes per year.

Another company which has had an active interest in exploration in India is British Gas. A leading player in the global energy market, the British Gas group is a dynamic growing business with operations in 20 countries over five continents. British





THE SEARCH FOR ENERGY RESOURCES CONTINUES: An offshore oil platform

The Majors in the Petroleum Exploration Licence areas

Company/Operator	PEL area (sq km)	PEL area (%)
ONGC	568,300	57.18
Reliance Industries	282,843	28.46
Oil India Ltd	43,156	4.34
CAIRN	30,283	3.05
HOEC	29,569	2.97
OAO GAZPROM	7,779	0.78
PHOENIX	6,928	0.70
OAKLAND	6,133	0.62
OTHERS	18,884	1.90

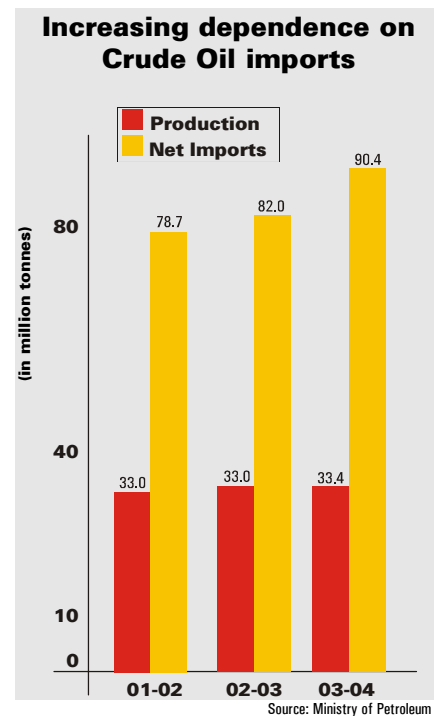
Source: Directorate General of Hydrocarbons

Gas set foot in India a decade back offering consultancy services. They are currently working on a total of five discovered fields in the Panna/Mukta and Tapti concession areas. Panna/Mukta began producing in 1987 and Tapti in 1997. The Panna Field is estimated to have original oil in place of one billion barrels and original gas in place of 1.9 tcf. Tapti has estimated gas in place of 3.75 tcf. In 2004, average production from the Panna/Mukta and Tapti fields was around 3.9 million tonnes of oil equivalent.

“We established Mahanagar Gas in 1995 with the Gas Authority of India to distribute piped gas around the Mumbai region and we then acquired a majority stake in Gujarat Gas in 1997. We entered the exploration and production business in February 2002 when we acquired 30 per cent interests in the Panna/Mukta oil and gas fields and the Tapti gas field,” says Shaw.

“British Gas sees India as a long-term investment with significant market growth potential and a country to which we are very committed. The group emphasised this commitment last year when we announced to our shareholders that India is a target country for growth. Gas constitutes a significant 8.5 per cent of India’s fuel basket,” Shaw adds.

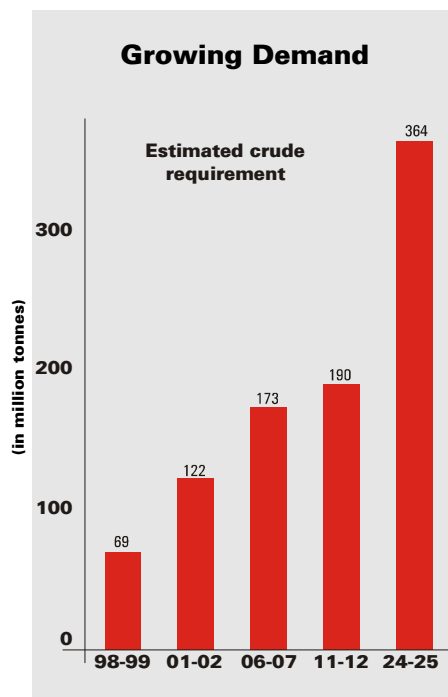
Meanwhile, another exploration compa-



ny — Hardy Exploration and Production Limited — has also been beefing up its exploration efforts in the country. Hardy signed the first production-sharing contract in 1996. "At that time we signed up four blocks from pre-NELP bidding rounds IV to VII. These were all exploration blocks. Hardy first produced oil in 1997 from a block which was earlier considered non-commercial," says Ashu Sagar, vice president with Hardy.

Hardy at one time was working on seven discovered fields in Gujarat but these have since been divested, and the other blocks at present are exploration blocks. "We have already produced 33 million tonnes of oil discovered in India. There is a greater potential for oil production. The recent oil find of Cairn was a big one. There are a number of smaller finds taking place. Gas is in the limelight because of two quick world-class discoveries — both in Krishna-Godavari Basin, by Reliance and GSPC," says Sagar.

"Thanks to its remarkable proficiency in oil field management, Cairn Energy has been producing oil at the rate of over 50,000 barrels per day from its Ravva Field on the east coast of India. A similar proficiency is also evident in the Gulf of Cambay where the company is producing gas at 3.2 mmscmd (million standard cubic meters per day) from the Lakshmi and



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HYDROCARBON DESTINATION: Nigel Shaw, outgoing CEO of British Gas in India

Gauri fields," says Sibal.

India has a long tradition in oil exploration. The search for oil in India began in 1866 in Upper Assam and oil was struck at Digboi in 1889. Discoveries were made in the northeastern region in the late 1950s and early '60s but the boost came when the government formed Oil & Natural Gas Commission (ONGC) in 1956.

After a few small finds in the Cambay basin, ONGC had its first and largest find so far in Bombay High in 1974. Subsequently, more discoveries were made in the Krishna-Godavari, Cauvery and Rajasthan sedimentary basins. With annual production of 26 million tonnes of oil, ONGC remains the largest oil producer in the country.


India has 26 sedimentary basins, spread over 1.39 million sq km on land and 1.75 million sq km offshore, including 1.35 million sq km in deep water areas. According to India's Hydrocarbon Vision 2025, 35 per cent of this is to be appraised by 2007 and the entire 3.14 million sq km area is to be appraised by 2025. These areas are estimated to hold about 28 billion tonnes of hydrocarbon resources.

In India the projected crude requirement for 2006-07 is 173 million tonnes against this the domestic crude production is 33

mt. Similarly, the projected requirement for gas for 2006-07 is 231 mmscmd while the domestic gas supply is 65 mmscmd. Increase in domestic production can help reduce this gap.

One of the major initiatives taken towards enhancing energy security in the country is the concerted efforts to acquire oil and gas equity abroad and participating interest in producing or prospective properties. ONGC-Videsh Limited (OVL) and other national oil companies are already involved in 14 countries and the Indian presence is being established in another 33 countries. Committed investment so far is in excess of \$5 billion. During the last one year, OVL acquired exploration blocks in Australia, Egypt, and Qatar; OVL & Oil India obtained interests in a block in Ivory Coast while the consortium of Oil India and Indian Oil Corporation acquired one exploration block in Libya.

Although the private sector companies entered the industry just 11 years ago, they account for about 17 per cent of the national oil and oil equivalent gas production. Investments in the private and joint venture sector for exploration (pre-NELP and NELP) and development amounts to \$3.22 billion.

However, if successes continue like the discoveries in the Krishna-Godavari basin, and certain reforms like independent regulatory mechanism and development of spot markets are initiated, a surge of interest among overseas exploration majors can only be expected. 

On the Web

Cairn Energy: www.cairn-energy.plc.uk

British Gas: www.bg-group.com

Hardy Exploration: www.hardyoil.com