

Factors Affecting Competition in upstream and downstream oil and gas sector in India: A historical analysis of policy and fiscal framework

Ghosh Ranidipa*

Introduction

The Indian Petroleum industry is one of the oldest in the world, with oil being struck at Makum near Margherita in Assam in 1867 nine years after Col. Drake's discovery in Titusville. The industry has come a long way since then. For nearly fifty years after independence, the oil sector in India, has seen the growth of giant national oil companies in a sheltered environment. A process of transition of the sector has begun since the mid nineties, from a state of complete protection to the phase of open competition. The move was inevitable if India had to attract funds and technology from abroad into our petroleum sector. The sector in recent years has been characterized by rising consumption of oil products, declining crude production and low reserve accretion. India remains one of the least-explored countries in the world, with a well density among the lowest in the world.

The years since independence have, however, seen the rapid growth of the upstream and downstream oil sectors. There has been optimal use of resources for exploration activities and increasing refining capacity as well as the creation of a vast marketing infrastructure and a pool of highly trained and skilled manpower. Indigeneous crude production has risen to 35 million tonnes per year, an addition of fourteen refineries, an installed capacity of 69 million tonnes per year and a network of 5000 km of pipelines. But with the consumption of hydrocarbons said to increase manifold in the coming decades (155mmtpa by the end of the 10th plan) the liberalisation, deregulation and reforms in the petroleum sector is essential for the health and overall growth of our economy.

India remains one of the least explored regions in the world with a well density of 20 per 10000km². Of the 26 sedimentary basins, only 6 have been explored so far. The Oil and Natural Gas Corporation (ONGC) and the Oil India Limited (OIL)- the two upstream public sector oil companies- in 1981/82 had taken their search to previously unexplored areas. Number of wells drilled as well as the meterage increased . However current reserve accretion continues to be low.¹

The downstream industry includes oil refineries, petrochemical plants, petroleum products distributors, retail outlets and natural gas distribution companies. The downstream industry provides consumers thousands of products such as gasoline, diesel, jet fuel, heating oil, asphalt, lubricants, synthetic rubber, plastics, fertilizers, antifreeze, pesticides, pharmaceuticals, natural gas and propane. Both internationally and within India the oil and gas sector is characterized by existence of "integrated" companies, which are present in all these three sectors.

The dominant players in the upstream oil and gas sector are ONGC, Oil India Ltd. Private Players include Cairn, RIL, and NIKO etc. In the downstream sector the dominant player is GAIL. Hindustan Petroleum, Indian Oil, IBP etc. ONGC and OIL are the largest players with about 85 percent share of the total domestic oil and gas production and 77.4 percent of the total natural gas production. The share of the private and JVs is around 14 percent and 23 percent of the total crude oil and natural gas production respectively. The refining segment is also dominated by NOCs i.e IOCL (42%) and HPCL (10%). The factors which influence the competition in the market are the governmental policies, its regulations, functions of regulatory authorities, governments control on price mechanism etc.

India's Oil and Gas sector is increasingly making its presence felt in the international arena. At present, India is the sixth largest crude oil consumer and the ninth largest crude oil importer in the world. The sector is also increasing its share in the global refining capacity. The position of the Indian refining segment in the world is expected to

* High Court at Calcutta. The Author can be contacted at ranidipa.g@gmail.com, ghosh.ranidipa@yahoo.in

¹ Oil & Gas overview

strengthen further with plans of Reliance Petroleum Limited (RPL) to commission another refinery with a capacity of 29 Million Metric Tonnes Per Annum (MMTPA), in addition to its existing 33 MMTPA refinery at Jamanagar, Gujarat, which was the first fully private refinery to be commissioned in India. As a result, Reliance refinery would have world's largest refining capacity in a single location. Essar Oil also commissioned its 10.5 MMTPA refinery at Vadinar, Gujarat, in 2006-07 (December 2006) making it the second fully private refinery in India.

However, a key concern for the hydrocarbon sector is the mismatch between demand and supply of both, domestic crude oil and natural gas in India. While the domestic production of crude oil has stagnated around 31-33 Million Metric Tonnes (MMT) per year for the last few years, the demand for crude oil has been steadily increasing. Consequently, India's dependence on imported crude oil has been rising and in 2005 -06, it was over 70% of the domestic requirements. During the year, India imported 99.41 MMT of crude oil, at a cost of US\$ 38.78 billion. This growing import dependence not only raises supply risks, but also makes the economy susceptible to market risks. The supply risks arise primarily from uncertainty of crude oil availability due to potential instability in certain oil producing countries. The market risks originate from oil prices pushing-up inflation and adversely impacting economic growth.

Similarly, there exists a mismatch between demand and domestic production of natural gas. Against a total demand of 162.03 Million Metric Standard Cubic Meter per Day (MMSCMD) the availability of natural gas is only 81.17 MMSCMD resulting in a substantial gap of about 50%, consequently demand is limited by supply. In view of the rising demand-supply gap in both crude oil & gas, there is an urgent need for India to increase public and private investments, especially in the exploration and production segment. However, currently there exist certain constraints affecting competition and therefore, private investment in the sector. The major impediments include lack of independent regulation in the upstream and downstream segments; lack of transparency in pricing of petroleum products & natural gas and entry barriers for new players in the marketing of transport fuels and distribution of natural gas.

As the petroleum sector is of paramount importance for the growth of Indian economy. The Indian petroleum sector has historically been a regulated one with the exploration and production activities being concentrated in the hands of Government undertakings. The Government's growing concern over the widening gap between the demand for hydrocarbons and the domestic production have led to the announcement of several policy measures in recent times. These measures were designed to attract the much needed private Indian and foreign capital investment in the upstream sector in order to provide an impetus to exploration and production activities in the country. Now let us discuss the regulatory authorities of the concerned sector.²

1. Legal Framework

1.1 Upstream Sector

i) The Oilfields (Regulation and Development) Act, 1948

This Act provides for regulation of oilfields and for development of mineral oil resources in the upstream sector.

Under this Act, GoI is empowered to grant mining rights for the exploration and production of mineral oil and natural gas in India and levy royalty on the production of crude oil and natural gas. The main provisions are as follows:

- all mining leases should be granted in accordance with this Act (mining lease includes exploration);
- any mining lease contrary to this Act shall be void and of no effect;
- GoI has the power to make rules in respect of conservation and development of mineral oil; and
- the holder of a mining lease has to pay royalty in respect of any mineral oil mines, quarry, excavated or collected by him from the leased area as per the specified rates.

² Competition in India's energy Sector by TERI: Final Report June 2003

ii) Petroleum and Natural Gas Rules, 1959

These Rules are made by Gol in exercise of the powers conferred by section 5 and section 6 of The Oilfields (Regulation and Development) Act, 1948, regulating the grant of exploration licenses and mining leases in respect of petroleum and natural gas which belong to Union of India, for its development and conservation. These Rules provide for two types of rights, the Petroleum Exploration Licence and the Mining Lease, both for onshore and offshore blocks. A license or lease in respect of land where ownership vests with the State Government is granted by the State Government with the prior approval of Gol. The licence or lease is granted for a specified period against prescribed payment, in accordance with the terms and conditions detailed in the Act and the Rules. In the event of a petroleum discovery, the Petroleum Exploration Licence is converted into a Mining Lease.

The Mining Lease grants exclusive rights to exploit hydrocarbons, subject to limitations on the mining area, terms and conditions specified, and payments, as provided for in these Rules. Gol is empowered to grant a license or a lease in respect of any land or mineral under the ocean within the Territorial Waters or the Continental Shelf. The Rules relating to award of mining rights through lease are on the same basis as for onshore areas.

iii) The Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976

This Act defines the sovereign right of India over territorial waters upto 12 nautical miles measured from the appropriate baseline, to the seabed and subsoil underlying, and the airspace over such waters.

Union of India also has sovereign rights for the purpose of exploration, exploitation, conservation and management of natural resources in the Exclusive Economic Zone, which includes the Continental Shelf and extends upto 200 nautical miles. It also exercises exclusive jurisdiction in respect of authorizing all such operations as are necessary for the exploration and exploitation of the resources of the Zone.

The Union of India is further empowered to extend the jurisdiction of any of the existing laws of India to the Exclusive Economic Zone. In pursuance of these powers, the Government of India has extended the applicability of the Income Tax Act, 1961 to operations carried out within the Continental Shelf, and the applicability of the Customs Act, 1965 to specific coordinates within the Zone.

iv) The Oil Industry (Development) Act, 1974

This Act provides for the development of board for the development of oil industry and for the levy of a duty of excise on the production of crude oil and natural gas. Amongst its other functions, the Oil Industry Development Board (OIDB) established under the aegis of this Act has the powers to extend financial and other assistance for the development of the oil industry. Such assistance includes making grants, advancing loans, providing guarantees, underwriting shares and subscribing to the stock of any oil industrial concern.

The Act provides for constitution and establishment of Oil Industry Development board. The prescribes the condition of service of members. The Act prescribes the following functions of the board:

- Subject to the provisions of this Act and the rules made thereunder, the Board shall render, in such manner, to such extent and on such terms and conditions as it may deem fit, financial and other assistance for the promotion of all such measures as are, in its opinion, conducive to the development of oil industry.
- Without prejudice to the generality of the provisions of such-section (1), the Board may render assistance under that sub-section by-
- making grants or advancing loans to any oil industrial concern or other person who is engaged or is to engage in any activity referred to in clause (k) of section 2;
- guaranteeing on such terms and conditions as may be agreed upon loans raised by any oil industrial concern or other person which are repayable within a period not exceeding twenty-five years and are

floated in the market or loans raised by an oil industrial concern or other person from any bank which is a scheduled bank, or a State co-operative bank, as defined in the Reserve

Bank of India Act, 1934;

- guaranteeing on such terms and conditions as may be agreed upon deferred payments due from any oil industrial concern or other person in connection with import of capital goods from outside India or in connection with purchase of capital goods from outside India or in connection with purchase of capital goods within India by such concern or other person;
- guaranteeing on such terms and conditions as may be agreed upon loans raised from, or credit arrangements made with, any bank or financial institution in any country outside India by any oil industrial concern or other person in foreign currency :

Provided that no such guarantee shall be given without the prior approval of the Central Government;

- underwriting the issue of stock, shares, bonds, or debentures by any oil industrial concern and retaining as part of its assets any stock, shares bonds or debentures which it may have to take up in fulfillment of its obligations thereto;
- acting as agent for the Central Government or, with its approval, for any overseas financial organisation or credit agency in the transaction of any business with

any oil industrial concern in respect of loans or advances granted, or debentures subscribed by the Central Government of such organisation or agency;

- subscribing to the stock or shares of any oil industrial concern;
- subscribing to the debentures or any oil industrial concern repayable within a period not exceeding twenty-five years from the date on which they are subscribed to:

Provided that nothing contained in this clause shall be deemed to preclude the Board from subscribing to the debentures of any oil industrial concern, the amounts outstanding thereon may be convertible at the option of the Board into stock or shares of that concern within the period the debentures are repayable.

1.2 DOWNSTREAM SECTOR

i) The Petroleum Act 1934

An Act to consolidate and amend the law) relating to the import, transport, storage, production, refining and blending of petroleum. Whereas it is expedient to consolidate and amend the law relating to import, transport, storage, production, refining and blending of petroleum.

It controls over import, transport and storage of petroleum. It authorises the Central government to make rules in the following aspects:

- prescribing places where petroleum may be imported and prohibiting its import elsewhere;
- regulating the import of petroleum;
- prescribing the periods within which licences for the import of petroleum Class A shall be applied for, and providing for the disposal, by confiscation or otherwise, of any petroleum Class A in respect of which a licence has not been applied for within the prescribed period or has been refused and which has not been exported;
- regulating the transport of petroleum;
- specifying the nature and condition of all receptacles and pipelines in which petroleum may be transported;
- regulating the places at which and prescribing the conditions subject to which petroleum may be stored;

- specifying the nature, situation and condition of all receptacles in which petroleum may be stored;
- prescribing the form and conditions of licences for the import of petroleum Class A and for the transport or storages of any petroleum, the manner in which applications for such licences shall be made, the authorities which may grant such licences and the fees which may be charged for such licences;
- determining in any class of cases whether a licence for the transport of petroleum shall be obtained by the consignor, consignee or carrier;
- providing for the granting of combined licences for the import, transport and storage of petroleum, or for any two of such purposes;
- prescribing the proportion in which any specified poisonous substances may be added to petroleum and prohibiting the import, transport or storage of petroleum, in which the proportion of any specified poisonous substance exceeds the prescribed proportion; and
- generally, providing for any matter which in its opinion is expedient for proper control over the import, transport and storage of petroleum including the charging of fees for any service rendered in connection with the import, transport and storage of petroleum.
- It prescribes the following guidelines for testing of petroleum:

Inspection and sampling of petroleum-

- The Central Government may, by notification in the Official Gazette, authorize any officer by name or by virtue of office to enter any place where petroleum is being imported, transported, stored, produced, refined or blended and to inspect and take samples for testing of any petroleum found therein.
- The Central Government may make rules- (a) regulating the taking of samples of petroleum for testing; (b) determining the cases in which payment shall be made for the value of samples taken, and the mode of payment, and (c) generally, regulating the procedure of officers exercising powers under this section.

Standard Test Apparatus-

- A standard apparatus for determining the flash-point] of petroleum shall be deposited with an officer to be appointed in this behalf by the Central Government by notification in the Official Gazette.
- Such apparatus shall be engraved with the words "Standard Test Apparatus", and shall be verified and corrected from time to time and replaced, when necessary, in accordance with rules made under Sec. 21.
- The Standard Test Apparatus shall, on payment of the prescribed fee, be open to inspection at all reasonable times by any person wishing to inspect it.

Certification of other test apparatus-

- The officer appointed under Sec. 15 shall, on payment of the prescribed fee, if any, compare with the Standard Test Apparatus and apparatus for determining the flash-point of petroleum which may be submitted to him for this purpose.
- If any apparatus is found by him to agree with the Standard Test Apparatus within prescribed limits, the officer shall engrave such apparatus with a special number and with the date of the comparison, and shall give a certificate in respect of it in the prescribed form, certifying that on the said date the apparatus was compared with the Standard Test Apparatus and was found to agree with it within the prescribed limits, and specifying any corrections to be made in the results of tests carried out with the apparatus.

A certificate granted under this section shall be valid for such period as may be prescribed.

- A certificate granted under this section shall, during the period for which it is valid, be proof, until the contrary is proved, of any matter stated therein.
- The officer shall keep a register in the prescribed form of all certificates granted by him under this section.

Testing officers –

- The Central Government may authorize any officer by name or by virtue of office to test petroleum of which samples have been taken under this Act, or which may have been submitted to him for test by any person, and to grant certificates of the results of such tests.

Manner of test-

- All tests of petroleum made under this Act shall be made with a test apparatus in respect of which there is valid certificate under Sec. 16, shall have due regard to any correction specified in that certificate, and shall be carried out in accordance with rules made under Sec. 21.

Certificate of testing-

- The testing officer after testing samples of petroleum shall make out a certificate in the prescribed form, stating whether the petroleum is petroleum Class A or petroleum Class B or petroleum Class C, and if the petroleum is petroleum Class B or petroleum Class A, the flash-point of the petroleum.
- The testing officer shall furnish the person concerned, at his request, with a certified copy of the certificate, on payment of the prescribed fee, and such certified copy may be produced in any Court in proof of the contents of the original certificate.
- A certificate given under this section shall be admitted as evidence in any Proceedings which may be taken under this Act in respect of the petroleum from which the samples were taken, and shall, until the contrary is proved be conclusive Proof, that the petroleum is petroleum Class A or petroleum class B or petroleum Class C, and, if the petroleum Class B or petroleum Class C, of its flash-point.

Right to require re-test-

- The owner of any petroleum, or his agent, who is dissatisfied with the result of the test of the petroleum may, within seven days from the date on which he received intimation of the result of the test, apply to the officer empowered under Sec. 14 to have fresh samples of the petroleum taken and tested.
- On Such application and on payment of the prescribed fee, fresh samples of the petroleum shall be taken in the presence of such owner or agent or person deputed by him, and shall be tested in the presence of such owner or agent or person deputed by him.
- if, on such re-test, it appears that the original test was erroneous the testing officer shall cancel the original certificate granted under Sec. 19, shall make out a fresh certificate, and shall furnish the owner of the petroleum, or his agent, with a certified copy thereof, free of charge.

Power to make rules regarding tests-

The Central Government may make rules-

- for the specification, verification, correction and replacement of the Standard Test Apparatus;
- prescribing fees for the inspection of the Standard Test Apparatus;
- regulating the procedure in comprising a test apparatus with the Standard Test Apparatus;
- prescribing the form of certificate to be given in respect of a test apparatus so compared, and the period for which such certificate shall be valid;
- prescribing the form of the register of such certificates;
- prescribing fees for comparing a test apparatus with the Standard Test Apparatus;
- regulating the procedure of testing officers in carrying out tests of petroleum, providing for the averaging of results where several samples of the same petroleum are tested, and prescribing the variations from standard temperatures which may be allowed;
- prescribing the form of certificate of tests of petroleum and the fees which may be charged therefore;
- providing, where the results of the testing of samples raise a doubt as to the uniformity of the quality of the petroleum in any lot under test, for the division of the lot into sub-lots, and for the selection and

testing of samples of each sub-lot and for the averaging of results in accordance with the results of those samples;

- prescribing fees for re-tests under Sec. 20 and providing for their refund where the original test was erroneous; and
- generally, regulating the procedure of all officers performing duties connected with the testing of petroleum, and providing for any matter incidental to such testing.

Special rules for testing viscous or solid forms of petroleum- The central Government may also make rules providing specially for the testing of y form of petroleum which is viscous or solid or contains sediment or thickening ingredients, and such rules may modify or supplement any of the provisions this chapter or of the rules made under Section 21 in order to adapt them to the special needs of such tests..

iii) **The Petroleum Minerals Pipeline Act 1976**

This Act authorizes the Central government to acquire land for the purpose of laying pipeline. It lays down the procedure for acquiring land.

2. POLICY FRAMEWORK

2.1 UPSTREAM SECTOR

i) Pre NELP

Prior to the NELP, the oil fields (regulation and development) act and Petroleum and natural gas rules regulated the issue of license and PSU's. Under the industrial policy prevailing at the time, exploration blocks were offered for exploration and production only to national oil companies. ONGC and OIL were the only public sector companies involved in exploration and production till 1997 while IOCL was the primary entity concerned with refining and processing oil after extraction. Private companies had access to hydrocarbon resources prior to the NELP only through joint venture arrangements entered in to with Government, instead of complete participation through a bidding process. These Joint venture arrangements contemplated mandatory participation of the GOI through the national oil companies. In 1986 in addition to offering exploration blocks (Nomination basis) to national oil companies, the Government extended the offering of oil and gas acreages to private investors, including foreign investors. The government further liberalized the petroleum exploitation and exploration policy in 1991 inviting discovered fields for joint or independent development to national oil companies as well as to private or international investors on a competitive bidding basis. Companies would bid for the minimum work commitment for each phase of exploration, indicating in their bids the share of profit petroleum expected by them at various levels of returns, based on either multiples of investment recovered or on post tax rates of return. Cost recovery was ring fenced by producing area with development and production costs in respect of producing area being recoverable only from revenues of that producing area. However exploration costs incurred in a block in which producing area was located could be recovered from revenues of that producing area. There was no minimum commitment regarding expenditure. The companies winning the blocks would enter in to a PSC with the Government.

National oil companies had the option of taking 30% participating interest in a pre NELP contract at the time of a commercial discovery, such that they would meet their proportionate share of development and production costs as well as an additional 10% working participation in any block they chose, with 10% exploration costs being borne by them. Contractors were required to offer the entire share of oil accruing to them as cost oil to the Government of India during this pre-NELP contract phase.

ii) NEO EXPLORATION LICENSING POLICY

In pursuance of the Industrial Policy Resolution, 1956, ONGC and OIL, the National Oil Companies (NOCs) have monopolised the upstream segment in India. In 1979, the Government made the first systematic attempt of introducing private participation in the segment by providing licenses. As exploration activities had been initiated

only in a few (15%) potential oil bearing areas and as there was delay on the part of the Government to award contracts for oil exploration, the outcome was not satisfactory. Initially private players were interested. However, there were entry barriers such as reservation of most prospective acreage for NOCs such as: a) NOCs could participate in the private operated fields where they had the option to share profits once it commenced production without taking part in incurring exploration costs; b) Unattractive fiscal terms; c) Lack of significant finds and the slow rate of progress/delay in signing contracts; As a result, licensing rounds held between 1979 and 1995 resulted in investment of only US\$ 2 billion.

In 1997, the Government announced the NELP. Under the policy, the Government intended to provide a level playing field to all the players for award of exploration acreages. Under the NELP, ONGC and OIL were also required to compete to obtain oil blocks instead of being given on the nomination basis as in the past by the Government. Interested parties could bid directly without mandatory participation of NOCs and carried interest of the Government/NOCs. In addition, players are given seven years of income tax holiday from the commencement of commercial production, and customs duty on import for exploration operation is abolished for the players. Total freedom is also given to companies to market gas in the domestic market.

Under the six rounds of NELP completed so far, a total of 162 onshore and offshore blocks have been awarded as compared to 21 blocks awarded under the previous licensing rounds held from 1992 to 1997. There has been significant improvement in private sector participation under these rounds. Out of the total 162 blocks, 56 blocks have been awarded to either private companies or to a consortium of private companies. The number of bids per block by the players has also been increasing in the respective rounds. In the sixth round of NELP, of the total 52 blocks, ONGC had been awarded 25 blocks, while Reliance Industries had received 7. Of the 25 assets awarded to ONGC, the Indian firm will be the operator in 24, while Cairn Energy will run the remaining one. Though maximum blocks have been won by the NOCs or only NOC led consortium, the role of private players has been steadily increasing. Around 35% of the total blocks have been awarded to only private (domestic and foreign) players or consortia. While foreign players have also won blocks under these rounds, many blocks have been awarded to consortium in which they have a minority stake. Seven blocks have been awarded to only foreign companies in these six rounds.

Although the number of blocks awarded to PSUs and PSU led consortium is higher than offered to private players, large chunk of the investments have come from the private players (Indian and foreign). Players such as RIL and Cairn Energy India Limited (CEIL) each have invested more than ONGC. Further, the number of discoveries by these players has been far more as compared to those by the PSUs.

As on March 2005, total private investment in the E&P sector under NELP was around 3 times the investment made by the PSUs. Furthermore, even the success rate (number of discoveries as compared to the total blocks awarded) of private sector oil companies was much better than the NOCs. Consequently, NELP rounds have not only seen an increase in private participation in the sector but also an enhancement of domestic reserves. Under the five rounds of NELP, discoveries by private participants have been much more significant than that of NOC's. For instance, the Reliance gas find in 2002 in the Krishna Godavari (KG) Basin was around 14 Trillion Cubic Feet (TCF). In 2005–06, based on an independent assessment, RIL revised the reserve potential for the Dhirubhai-1 and Dhirubhai-3 wells to 11.3 TCF from the earlier estimate of 5.32 TCF. Consortium led by Gujarat State Petroleum Corporation (GSPC) made a discovery of around 20 TCF of gas at the KG–8 well located in the KG Basin.³

The salient features of NELP are as follows :

- Identification of areas in Indian sedimentary basins which can be opened for exploration and production: -
 - Preparation of Basin Information Dockets.
 - Preparation of Data Packages for blocks on offer.
- Promotional activities for NELP: -
 - Activities related to fixation of Marketing Consultant.

³ Website of PNGRB

- Interaction with E&P Companies globally
- Arranging Data Rooms at different venues for NELP data viewing.
- Arrangements for viewing of data on 'Web'.
- Co-ordination with G&G Group and Processing Group to fulfill the requirement of data for E&P companies – Sale of data (Regional).

Respond to query about the data to E&P companies.

- Co-ordinate with Ministry right from the declaration of NELP to bid receiving.
- Co-ordination in the process of bid evaluation: -
 - Formation of teams.
 - Co-ordination with Ministry.
 - Preparation of DGH Annual Activity Report.
 - Preparation of PSC documents after the award of blocks.
 - Suggesting areas for geological, geochemical and geophysical.

Exploration in different parts of Indian sedimentary basins where hydrocarbon explorations are either poor or nil.

- Any other assignment directed by Director General (DGH) from time to time.⁴

iii) THE HYDRO CARBON VISION 2025

The hydrocarbons sector plays vital role in the economic growth of the country. It is necessary to have a long-term policy for the hydrocarbons sector, which would facilitate meeting the future needs of the country. The Hydrocarbons Vision - 2025 lays down the framework which would guide the policies relating to the hydrocarbons sector for the next 25 years. Issues such as energy security, use of alternative fuels, interchangeability of technology are vital to ensure that the mix of energy sources used in the economy is optimal and sustainable and that adequate quantities of economically priced clean and green fuels are made available to the Indian consumers. Oil and gas continue to play a pre-eminent role in meeting the energy requirements of the country 45% of the total energy needs would be met by the oil and gas sector, though some amount of interchange between oil and gas is foreseen. The current levels of per capita energy consumption in India are extremely low as compare to the rest of the world. In terms of comparison with the developed countries, the differentials are even more marked. Growth of the economy would lead automatically to growth in energy consumption, as there is a direct correlation between the GDP and energy consumption. India is amongst the lowest in consumption of hydrocarbon in terms of kilograms of oil equivalent. Viewed from all angles, therefore, the hydrocarbon sector is most crucial for determining the energy, security for the country. The presence of the Public Sector Undertakings (PSUs) in exploration, production and marketing of petroleum products has been pre-dominant in the last four decades. The oil sector PSUs stand out in performance both in terms of operational efficiencies and profitability amongst all the PSUs in India. This pre-eminence of the PSUs in the oil sector is a matter of pride.

Issues such as E&P, refining, marketing, external policy, oil security, tariff and pricing, and restructuring and disinvestment are addressed by the Group, to ensure that an optimal mix of energy resources are made available to the consumer at the right price.⁵

With regard to the energy sector in general and the hydrocarbon sector in particular, the E&P vision will be to undertake a total appraisal of the Indian sedimentary basins for hydrocarbon potential and to optimize production of crude oil and natural gas in the most efficient manner. This can be achieved through intensive exploration efforts endorsed by effective mobilisation and infusion of technology and capital. Leveraging upon India's IT strength and highly skilled manpower, the E&P industry will have to develop a strong technology base to become globally competitive.

⁴ A dissertation report on the topic Future Market Strategies in Gas Retailing by Chetan Sharma

⁵ Regulatory & Fiscal Regime, Chapter 13

Under the New Exploration Licensing Policy (NELP), the sub-continent has been divided into geographically distinct exploration blocks. The allotment of these blocks is done by bids in the nature of lease/mining licence for a specified period. The government still retains ownership control over these areas and enters into a production-sharing contract with the successful bidder.⁶

Objectives

- To assure *energy* security by achieving self-reliance through increased indigenous production and Replacement Ratio of more than 1.
- To keep pace with technological advancement and application and be at the technological forefront in the global exploration and production industry.
- To achieve as near as zero impact, as possible, on environment.⁷
- To maintain around 90% self-sufficiency of middle distillates in the sector with an appropriate mix of national oil companies, foreign players and private Indian players.
- To develop a globally competitive industry.
- To have a free market and healthy competition amongst players. .
- To develop appropriate infrastructure such as ports, pipelines etc. for an efficient hydrocarbons industry.
- To improve customer services through better retailing practices.
- To make available un-adulterated quality products at reasonable prices.
- To achieve free pricing for products while continuing subsidized prices for some products in certain remote areas, which are to be identified and reviewed from time to time.⁸

Conclusion

The Hydrocarbon Vision to be converted into prioritized action agenda for implementation in the medium and long term. In brief, the main thrust of the activities would be:-

- Focus on oil security through intensification of, exploration efforts and achievement of 100% coverage of unexplored basins in a time bound manner to enhance domestic availability of oil and gas.
- Secure acreages in identified countries having high attractiveness for ensuring sustainable long term supplies.
- Pursue projects to meet the deficit in demand and supply of natural gas, and facilitate availability of LNG.
- Maintain adequate levels of self-sufficiency in refining (90% of consumption of middle distillates).⁹
- Establish adequate strategic storage of crude and petroleum products in different locations.
- Create additional infrastructure for distribution and marketing of oil and gas.
- Open up the hydrocarbon market so that there is free and fair competition, between public sector enterprises, private companies and other international players.
- Create a policy framework for cleaner and greener fuels.
- Have a rational tariff and pricing policy, which would ensure the consumer getting the petroleum products at the most reasonable prices and requisite quality, eliminating adulteration.
- Announce a long-term fiscal policy to attract required investments in the hydrocarbon sector.
- Restructure the oil sector PSUs with the objective of enhancing shareholder value and disinvest in a phased manner in all the oil sector PSUs.
- To develop regulatory and legislative framework for providing oil/gas security 'for the country.

iii)COLD BED METHANE POLICY

⁶ Project Monitor Hydro Carbon Vision 2025 by P.N.V Nair

⁷ Hydrocarbon Vision 2025

⁸ Supra 12

⁹ Supra 14

The Ministry of Coal had awarded 3 contracts for the exploitation of CBM. However, significant progress has not been made in these projects as the players perceived that the terms and conditions of the contracts were not attractive. Under the new policy³, the blocks are identified by the Ministry of Coal and awarded by MoPNG for exploration and production. The first round of granting CBM exploratory blocks was announced in April 2001. The CBM policy contained terms similar to those offered under the NELP scheme. The major features of the CBM policy are as follows:

- Biddable Production Level Payment (PLP) based on work program offered by the contractor to the Government.
- Division of contract into 4 phases:
 - Phase I - Exploration Phase. (3 years)
 - Phase II - Pilot Assessment and Market Surveys and Commitments. (5 years)
 - Phase III - Development Phase. (5 years)
 - Phase IV - Production Phase. (25 years)
- Contractor provided with option to walkout after end of Phase I & II.
- Declaration of commerciality to be based on the sole decision of the contractor.¹⁰

2.2 DOWNSTREAM

i) APM

The country has traditionally operated under an Administered Pricing Mechanism for petroleum products. This system is based on the retention price concept under which the oil refineries, oil marketing companies and the pipelines are compensated for operating costs. The administered pricing policy of petroleum products ensures that products used by the vulnerable sections of the society, like kerosene, or products used as feedstocks for production of fertilizer, like naphtha, may be sold at subsidized prices.

Under the APM, all entities are assured a minimum return on their investments. While the ONGC (Oil and Natural Gas Corporation Limited) and OIL (Oil India Limited) are allowed a return of 15% on employed capital, the downstream companies get 12% (post tax) on their net worth. Though there are incentives for exceeding the norms laid down by the OCC (Oil Coordination Committee), it is widely accepted that the system neither fosters innovation nor offers any significant incentive for efficiency.¹¹ Some of the criticisms of the system are enumerated below.

- It puts a low premium on innovation and efficiency.
- It leads to non-optimal investment decisions that are not in conformity with market dynamics.
- Since the government controls product prices, political forces exert pressure on price levels. In the electricity sector, this has led to non-viability of most state electricity boards and in the oil sector, the result was an oil pool account deficit of 150 billion rupees.
- With an oil-gross domestic product elasticity of more than unity, India has been one of the world's fastest growing oil markets.

Subsequent to the 1991 reforms, oil consumption has been growing at a rate of over six per cent. Although there has been a slowdown in the current year, India is still the fourth largest oil market in Asia with an annual consumption of over 85 MT (million tonnes). The growth in demand is expected to be robust in the next decade and OCC projections indicate that demand will reach 155 MT by 2006/07. Meeting such a demand would require massive investment, far beyond the scope of the public sector. This called for the involvement of the private sector, both domestic and foreign.

Criticism of oil sector regulation and the need to attract private investment has caused far-reaching changes in the regulation of the oil industry. The objectives of this deregulation are outlined below.

¹⁰ Regulatory Fiscal Regime Chapter 13

¹¹ Background paper : Issues in the derogation of the oil & gas sector by R.K Narang, Anirudh Sen, and Leena Srivastava

- Increase competition in the industry by allowing the entry of more players. Only a competitive market can spur oil companies to deliver value to consumers and ensure the international competitiveness and long-term survival of the Indian oil industry.
- Attract private capital which, in turn, requires that market forces be allowed to operate freely.
- Remove constraints on economic pricing of products and services to enable the industry to earn a reasonable return on investment.

Gradually, the Government of India moved away from the administered pricing regime to market-determined, tariff-based pricing. Free imports are permitted for almost all petroleum products except petrol and diesel. Free marketing of imported kerosene, LPG and lubricants by private parties is permitted. It is contemplated that in a phased manner, all administered price products will be taken out of the administered pricing regime and the system will be replaced by a progressive tariff regime in order to provide a level playing field for new investments in a free and competitive market.

In April 2002 India abolished the Administrative Pricing Mechanism (APM) controlling the price of petroleum products. Under the APM, product prices were directly administered by the GoI, based on an opaque and complex “cost of operating capital plus” formula. Under the new regime, OMCs would be free to set retail product prices based on an import parity pricing formula. The domestic refining and retail sector was also opened to private-sector firms, leading to the emergence of a small private-sector retailing presence in India consisting of firms such as RIL. Because of the importance of LPG and kerosene as cooking fuels for India’s low-income population, per unit subsidies funded from the government’s budget were maintained on LPG and on a fixed proportion of supplied kerosene. However, these were to be phased out between 2005 and 2007. Subsidies are yet to be phased out. Under the new pricing regime, it was expected that retail prices for petroleum products (including prices for domestic kerosene and LPG) would fluctuate with changes in the price of India’s crude basket.

In practice, the post-APM product pricing regime beginning in 2002 was adhered to only very briefly by the GoI in these four key markets. With the sustained rise in crude prices beginning in 2004, the GoI increasingly looked to restrict the ability of OMCs to increase retail prices of these four products, so as to protect Indian consumers. By mid-2004, the post-APM model of product pricing had been effectively abandoned, with the GoI once again centrally controlling upward price revisions. Since 2004, retail prices for petrol and diesel have been revised upward less than ten times by the GoI, while LPG and kerosene prices have remained effectively fixed.

The cost of “effective” subsidies: under-recoveries to Oil Marketing Companies

The effect of significantly lower product retail prices than crude input prices – a large “effective

subsidy” – has been the increasing accumulation of “under-recoveries” by OMCs. Underrecoveries are a notional measure representing the difference between the trade-parity cost of refined product paid by OMCs and their realised sale price. In fact, the actual refinery-gate prices paid by OMCs are not necessarily congruent with formula-based trade-parity prices as formally calculated. Trade-parity prices depend on a variety of factors such as contract prices and transport costs, meaning under-recoveries cannot be isolated on the balance sheets of OMCs. They are an indicative measure of the rate of effective subsidisation. There has been significant debate within India over the appropriateness of “under-recoveries” as a category for measuring the burden of the current pricing policy on OMCs. It is argued that the refinery-gate prices paid by OMCs (all of whom are vertically-integrated refiners) are less than trade-parity prices, as currently calculated, meaning the actual effect of managed prices is less than that suggested by under-recovery figures. However, this debate is not of great significance here. The key fact is that Indian domestic product prices have not risen in line with the significant generalised increase in international crude prices that has occurred since 2004-05, and as such have placed a significant subsidy burden on OMCs. Under-recoveries as a category provide a notional indication of the extent of this burden. Just as importantly, the measure continues to be used by the GoI to inform policy decisions.

Under-recoveries have escalated sharply in recent years, from less than USD 10 billion in FY 2004-05 to close to USD 30 billion in FY 2008-09. Indeed, the generalized moderation in crude prices since mid-2008 has not implied a wholesale reduction in the incidence of under-recoveries. In FY 2008-09, the Indian crude basket price averaged just over USD 80/bbl. At current retail prices, under-recoveries will be incurred from any crude price above around USD 55-60/bbl.

The mounting burden of under-recoveries has seriously affected the operational functioning and financial health of OMCs. For example, between April and December 2008 alone, India's three key OMCs lost between 25 and 43% of their total net worth.¹¹ Already in 2005, it was recognised by the GoI that OMCs could not function properly and sustainably under the weight of building under-recoveries, shrinking liquidity and significantly impaired corporate flexibility. Instead of burdening the balance sheets of OMCs with massive under-recovery losses, therefore, the GoI has increasingly looked for alternative solutions to the under-recovery issue.

Along with requiring upstream oil and gas PSUs (Public-Sector Undertakings) to provide OMCs discounted crude and other tariffs. The GoI has increasingly looked to issue off-budget "oil bonds" to OMCs to paper over the systemic financial and commercial issues reproduced within the current product pricing regime. The proportion of the under-recovery burden absorbed by the issuance of oil bonds has risen rapidly, while in FY 2008-09.

Need for Reform

There has been considerable talk of reform to petroleum product pricing arrangements since the re-election of the Congress-led government in May 2009. For a significant period before elections were held, the government deferred making major reform decisions that might incite the electorate. However, Prime Minister Singh and his Cabinet had reiterated their commitment to reducing government controls on fuel pricing in late-2008 as part of a review of the Integrated Energy Policy of 2006 (IEP).

A proposal for pricing reform emanating from the Ministry of Petroleum and Natural Gas (MPNG) was circulated immediately following the 2009 election. The proposal suggested that OMCs set product prices every three months, based on the quarterly average price of the Indian crude basket. This, it was proposed, would occur until crude reached USD 70-75/bbl, at which point the government would again implement price-caps to protect consumers. Developments in international crude markets have since overtaken the proposal, effectively making it unsuitable, at least for the present.

With the insufficiency of this proposal, actual downstream reform in the time since the government was re-elected has been marginal and piecemeal. The government has, for example, looked, with OMCs, to enforce the quantity restrictions on kerosene – so not more than the set quantity is sold at subsidised prices. Further, as part of the new government's first budget (for FY 2009-10), India's Finance Minister announced approximately USD 2 billion would be set aside to compensate OMCs for their losses under current pricing arrangements. This is a sign that the GoI is beginning to bring off-budget subsidisation onto the official budget itself. The magnitude of this budgeted subsidisation, however, is clearly insufficient, given that oil bond issuance in 2008-09 was close to USD 20 billion. As part of the budget speech, the GoI announced it would set up a committee to "advise on a viable and sustainable system of pricing petroleum products". This committee, headed by eminent Indian economist Kirit Parikh, recently released its findings. It sets out a bold vision for reform of the product pricing, including the immediate liberalisation of petrol and diesel markets. The practical impact of this ambitious reform statement (hereafter the "Parikh Report") remains to be seen, and indeed, analysts have reason to be sceptical of its potential influence on GoI policy. Since 2006 the recommendations of several committees convened on this subject, no less bold in scope, have failed to alter the GoI's petroleum sector policies.¹²

Petroleum product pricing policy therefore seems to be in a situation of stasis at present. The moderation of international oil prices in early 2009 took some of the fiscal pressure from the issue, with under-recoveries decreasing slightly and OMCs requiring less financial assistance from the government. Indeed, in the first quarter

¹² Infra 13

of FY 2009-10, Indian Oil Corporation, India's largest OMC, recorded one of the largest quarterly profits in its history. In the second half of 2009, however, oil prices again trended strongly upwards, and OMCs again began to record large under-recoveries. Under-recoveries for FY 2009-10 are currently expected to be in the order of USD 15 billion. As long as tight supply-demand balances remain, as expected, a medium-term feature of global crude markets, petroleum pricing will continue to be an issue for India's government, eventually requiring fundamental pricing policy reform, to solve.¹³

ii) 11th FIVE YEAR PLAN

LNG imports since 2004-05 have been able to bridge the gap partially. The situation is likely to improve once production starts from Krishna- Godavari (K-G) basin reserves in a couple of years. Besides natural gas, the country has significant CBM and underground coal gasification (UCG) resources. Coal India Limited (CIL) and ONGC are already implementing two CBM projects. Blocks have also been allocated through competitive bidding process to private companies for exploration and exploitation of CBM. Production of 3.78 bcm from CBM and 2.99 bcm from UCG are included in the Eleventh Plan targets.¹⁴

iii) POLICY FOR DEVELOPMENT OF NATURAL GAS PIPELINES AND CITY OR LOCAL NATURAL GAS DISTRIBUTION NETWORKS

The objective of the policy is to promote investments from public as well as private sector in natural gas pipelines and city or local natural gas distribution networks to facilitate open access for all players to the pipeline network on a non-discriminatory basis, to promote competition among entities and to protect the end consumer. A Gas Advisory Board (GAB), will be set up to promote and develop the gas pipeline network in India.¹⁵

iv) GAS LINKAGE COMMITTEE

The Gas Linkage Committee (GLC), was established to manage the allocation of gas to eligible customers. This was linked with the administered price mechanism, which depressed domestic gas prices for certain sectors. However, new fields under the National NELP, are already exempt from the purview of the GLC and can trade at market prices.

REFERENCES

1. Competition Law (Fifth Edition) By Richard Wish
2. Guide to the Competition Law by Gautam Banerjee
3. Working Paper:- India's Downstream Petroleum Sector by International Energy Agency
4. Study on Common Price Pool Mechanism prepared by Mercados Energy Market India Private Ltd
5. Regulatory and Fiscal Regime
6. Competition in India's Energy Sector by TERI
7. Annual Report 2009-10 by Ministry of Petroleum and Natural Gas
8. Oil & Gas Scenario in India by KPMG
9. Oil & Gas Overview
10. Legal & Tax Summit 2009

¹³ India's Downstream Petroleum Sector by International Energy Agency

¹⁴ 11th Five Year Plan by Planning Commission

¹⁵ Supra 17