Introduction: The Oil Industry in India

The three companies IndianOil, Hindustan Petroleum and Bharat Petroleum are essentially Refining and Marketing Companies though they are often called “OMCs” for Oil Marketing Companies. The Ministry of Petroleum and Natural Gas is perhaps one of the largest ministries in the country and has under its control a wide range of companies like IOC, BPCL, HPCL, ONGC, GAIL, OIL, EIL as well as other joint venture companies such as IGL and MGL. The oil industry in India is fairly well developed with a blend of new technology as well as ancient infrastructure that has been refurbished. But first, for some history. India is an integral part of the world's petroleum history with crude oil being discovered in the remotest parts of the North East, at Digboi in the late 19th century. In fact, even today, the Digboi oilfield has some of the oldest running oil wells in the world. The town, also known for its verdant township with quaint bungalows, is seen as a cradle of the oil industry in India. Legend has it that the town got its name from the phrase "dig-boy-dig," which is what the English told the labourers as they dug for crude oil. Digboi’s history began in 1867 when a small group of men from the Assam Railway and Trading Co. found their elephants’ legs soaked in black mud and it smelt somewhat like oil. The first well was dug and soon in 1889, the English started a small oil installation. India (and Asia) got its first refinery in Digboi in the year 1901.

Besides this brief shot at history, the story of the oil industry in India was quite somnolent, compared to the hectic energy driven economic success of the developed world. The earlier petroleum companies in India was made entirely of foreign companies. The indigenous oil industry was born out of the vision of Pandit Jawaharlal Nehru, the first Prime Minister of India and his Industries Minister Malaviya. The aim was to pursue a policy of self-sufficiency in the petroleum sector as a strategic requirement of a free nation.

It is quite easy to see why they thought the way they did. After Independence much of the country's oil industry was effectively in the hands of a private monopoly led by a combination of British-owned oil companies Burmah and Shell and U.S. companies Standard-Vacuum and Caltex. During the 1930s, a small number of Indian oil traders did manage to trade outside this cartel by importing petroleum products from the erstwhile Soviet Union. But supplies were irregular and there was practically no worthwhile marketing network. During the war, the supply of petroleum products in India was regulated by a committee in London. Within India, a committee under the chairmanship of the general manager of Burmah-Shell and composed of oil company representatives pooled the supply and worked out a set price. Prices were regulated by the government which also coordinated the supply of oil in accordance with defense policy.

The supply of petroleum products was not very regular after Independence and the practice of wartime rationing lasted until 1950. Though the government’s 1948 Industrial Policy Resolution declared that the oil industry will be an area of the economy that should be reserved for state ownership and control, the country remained effectively
In 1949, when India asked the Multinational oil companies to offer advice on a refinery project to make the country more self-sufficient in oil they advised against the project and said that it could only be run at a considerable loss. The companies were prepared to consider building two refineries, but only if these refineries were allowed to sell products at a price ten percent above world parity price. The government refused, but within two years, an event in the Persian Gulf caused the companies to change their minds and build refineries. The companies had lost their huge refinery at Abadan in Iran to Prime Minister Mussadegh’s nationalization decree and were unable to cater to India’s petroleum needs from a sterling-area country. With the severe foreign exchange problems created, the foreign companies feared new Iranian competition within India. Even more important, the government began to discuss setting up a refinery by itself. Between 1954 and 1957, two refineries were built by Burmah-Shell and Standard-Vacuum at Bombay, and another was built at Vishakapatnam by Caltex.

The government came into disagreement with Burmah Oil over the Nahorkatiya oil field shortly after its discovery in 1953. It refused Burmah the right to refine or market this oil and insisted on joint ownership in crude production. Shortly afterwards, the government accused the companies of charging excessive prices for importing oil. The companies also refused to refine Soviet oil that the government had secured on very favorable terms. The government was impatient with the companies’ reluctance to expand refinery capacity or train sufficient Indian personnel. In 1958, the government formed its own refinery company, Indian Refineries Ltd. With Soviet and Romanian assistance, the company was able to build its own refineries at Noonmati, Barauni, and Koyali. Foreign companies were told that they would not be allowed to build new refineries unless they agreed to a majority shareholding by the Indian government.

**Efforts on Self sufficiency**

Growing Soviet imports led the foreign companies to respond with a price war in August 1961. At this time, IndianOil had no retail outlets and could sell only to bulk consumers. The oil companies undercut IndianOil’s prices and left it with storage problems. IndianOil then offered even lower prices. The foreign companies were the ultimate losers because the government was persuaded that a policy of allowing IndianOil’s dominance in the market was correct. This policy allowed IndianOil the market share of the output of all refineries that were partly or wholly owned by the government. Foreign oil companies would only be allowed such market share as equaled their share of refinery capacity.

The government decided to nationalize the country’s remaining refineries. The Burmah-Shell refinery at Bombay and the Caltex refinery at Vishakapatnam were taken over in 1976. The Burmah-Shell refinery became the main asset of a new state company; Bharat Petroleum Ltd. Caltex Oil Refining (India) Ltd. was amalgamated with another
state company, Hindustan Petroleum Corporation Ltd., in March 1978. Hindustan had become fully Indian-owned on October 1, 1976, when Esso’s 26 percent share was bought out. On October 14, 1981, Burmah Oil’s remaining interests in the Assam Oil Company were nationalized, and Indian Oil took over its refining and marketing activities. The companies – IndianOil, BPCL and HPCL, collectively known as ‘Oil Marketing Companies” were operating under a controlled, multilayered and cross subsidizing system which had its guaranteed returns formulae. But the times were changing. The global equilibrium of Supply and Demand was changing and for a variety of reasons the Indian domestic market could not be insulated from it.

**Global Supply and Demand**

While one of the major drivers of oil prices are Supply and Demand issue there are other factors as well like trading speculation, the dollar exchange rate, political disruptions, conflicts and the Organization of the Petroleum Exporting Countries(OPEC). For a very long period, between 1861-2010, of roughly 150 years, oil prices adjusted for inflation (in 2010 dollars) have been in the $10-30 range for all but about 35-40 years, which were made up of three periods highlighted by three major peaks in prices - in 1860-1861, 1979-1980 and 2007-2008.

As oil prices rise, a number of related activities are encouraged on the supply side. New technologies are developed. New areas are explored for crude. New fields are developed. Producing wells are brought on line in the new fields. More crude is produced from existing fields using new technologies. That is, in time, installed capacity to produce oil could be increased and more oil can be produced. But can this go on forever-higher oil prices encouraging new technologies and exploration activities to increase global oil output? No. While new fields come on stream, older fields are getting depleted and stop producing. The demand for oil, as with anything else, depends on its price, the price and availability of substitutes (including mass transportation), climatic conditions, and government regulations and, possibly most importantly on gross domestic product (GDP). The production of a unit of national economic output, or GDP, requires some energy input, with countries invariably using different amounts of energy depending on what they produce and their energy efficiency. It is for this reason that global economic growth is such an important determinant, or driver, of oil prices.

To some economists, US Federal Reserve monetary policy plays a key role in determining oil, as well as other commodity, prices. The more the central bank prints money, the higher the demand for goods and the more intense the speculation. Knowing that money is depreciating at a fast rate, consumers and producers become speculators and develop high inflationary expectations. This means that producers withhold commodities anticipating higher prices around the corner. Similarly, consumers rush to buy and store commodities in anticipation of price increases. In the case of oil, while producers can keep oil off the market in anticipation of higher prices, it entails a cost.

For consumers to hoard oil, they incur a storage cost. Speculation on futures markets could potentially increase price volatility but not long-term prices. If a speculator buys an oil futures contract, the purchase adds to the demand for oil. But if the speculator does not take delivery, use the oil, or take the oil off the market and store it, that is sells the
futures contract before maturity, then there is no net addition to demand and it is difficult to see how oil prices (as opposed to price volatility) are affected. Oil prices are quoted in dollars. Ultimately, it makes no difference how oil is priced - in Dollars, Euros or Yen. But the price may go up or down and by differing amounts in differing currencies because of exchange range movements.

Another factor (besides crude quality) that affects the price of crudes is the location of the oil - that is, how difficult it is to transport it and how close it is to the market. From the crude producers’ side, the production (or lifting) cost may be the most important factor about any crude oil, and this varies dramatically across the world depending on the size of the reservoir, the condition of the reservoir, the depth of the oil from the surface and the nature of the general surroundings. While precise figures are trade secrets, an overall picture is possible with rough figures we have compiled for marginal cost of a barrel (the cost of producing an additional barrel) and the average cost (including all costs such as development and capital costs divided by the number of barrels produced) over the years:

Modern technology has increased the availability of crude oil through enhanced oil recovery methods from existing reservoirs and from non-conventional sources (oil shale and tar sands), with the average cost of enhanced recovery oil coming in at $30-$70, and for non-conventional sources $35-$120. The advantage of Persian Gulf oil is clear - it is the cheapest oil to produce and get to market. This affords Middle East oil exporters an unbelievable operating margin (or rent) when oil is selling for about $100 per barrel. In terms of location, besides having the cheapest production cost, the Persian Gulf has crude in abundance, with about 55% of global reserves of conventional crude oils. This is likely to increase to about 65% as exploration activity in Iraq picks up, economic sanctions on Iran are lifted and reserves outside the Persian Gulf are depleted more quickly. The estimated reserves of recoverable oil from non-conventional sources are roughly on a par with conventional crude reserves. While the Persian Gulf is the center of conventional crude oil reserves, North America (the United States and Canada) are at the center of crude that may be recovered from shale and tar sands, with North America having about 50% of the global reserves from these sources.

Administered Pricing Mechanism

After the nationalization of the Petroleum Sector the role of the Government as the Regulator came into existence. With huge investments to be made for expansion of infrastructure and the need to protect vulnerable sections with cross subsidies the Government established the Administered Pricing Mechanism (APM). In the early 1950s, petroleum pricing was based on a system of Valued Stock Account (VSA). Under this system, the basic selling prices of major petroleum products were determined as the sum of f.o.b. Ras Tanura price, ocean eight, insurance, ocean loss, import duty, interest and other charges as well as 10 % remuneration. However, the government decided to abandon this system of pricing as it was based on assumed costs rather than actual costs. Consequently, the Oil Price Enquiry Committee (OPEC) set up in 1960 recommended that ceiling selling prices for bulk refined products should follow the import parity principle.
regime wherein costs were reimbursed as per standards laid out with respect to throughputs, yield patterns, fuel and loss, operating cost, capital employed, etc. Companies were allowed a 12% post - tax return on their networth were reimbursed their borrowing costs. The APM was aimed at ensuring continuous availability of petroleum products to consumers at fairly stable process and crude to refiners, while ensuring the socio - economic objectives of the Government.

But there were serious unintended effects of the APM. Oil pricing was divorced from underlying economic realities. The prices of sensitive products were not reflective of the economic cost of these products. Subsidies and cross - subsidies resulted in a wide distortion of consumer prices and led to a wasteful use of energy. The APM provided little incentive for improving productivity or efficiency as returns were guaranteed on the capital employed. Competition was stifled with marketing companies acting as mere distribution companies.

In the 1980’s and 1990’s, import of petroleum products soared from 2.2 million tonnes in 1975 to nearly 18 million tonnes in 1995. Given the high levels of import in the Indian economy, the APM, which was supposed to insulate the country from global markets, lost its relevance. Further, it was estimated that during the Ninth Plan Period, an investment of about Rs. 1,24,000 crores The would be required to create the necessary infrastructure to meet the demand of petroleum products in the country. It was recognized that such a scale of investment was not possible by the Government or the public sector oil companies. Participation of private capital from both domestic and international sources was considered imperative. The APM, divorced from economic realities, was not attractive to private investors.

The main features of the APM were as follows:-

(a) National crude oil producing companies namely ONGC and OIL were allowed operating cost plus 15% post tax return on capital employed for indigenous crude oil production. Capital employed represents the sum total of net fixed assets (gross block of fixed assets less depreciation) and normative working capital.

(b) Oil refineries, pipelines and marketing companies were allowed operating cost and return on capital employed. Capital employed was bifurcated into net-worth and borrowings. Net-worth was taken from the balance sheet as the sum total of equity capital and free reserves. The balance capital employed was considered as borrowings. On the net worth portion, return @ 12% post tax was provided whereas the average actual rate of interest was provided on the borrowings.

(c) Subsidization of consumer prices of certain products like Kerosene for public distribution and Domestic LPG by cross-subsidization from certain products like Petrol, Aviation Turbine Fuel (ATF), etc., and indigenous crude oil.

(d) Uniform prices of each administered petroleum product at all refinery locations by equalizing all costs like cost of crude oil, freight, margins to oil companies etc.

(e) It ensured stable prices so that the domestic market is insulated from the volatility of prices in the international market.
The APM objectives were achieved through the operation of the Oil Pool Account which was used to adjust the variation in various elements of costs. The Government in January, 1995 had appointed a Strategic Planning Group on Restructuring of the Oil Industry (‘R’ Group) comprising eminent experts from the Public Sector and Private Sector, distinguished energy experts and academicians to make recommendations to meet the policy objectives and initiatives required for restructuring the oil industry. The ‘R’ Group had recommended the gradual phasing out of APM and introduction of free marketing mechanism due to following reasons:

- APM cannot generate sufficient financial resources required for investments in the upstream and downstream sectors. Private Capital as well as foreign direct investment would not be forthcoming in view of the inherent regulatory controls imposed by the government.
- APM does not provide strong incentives for investments in technological upgradations or for cost minimization. APM has not been completely successful in achieving the primary objective of ensuring a consumer friendly and internationally competitive vibrant petroleum sector capable of global presence to provide energy security to the country.
- Since all costs are reimbursed, there is no incentive to make profitable investments. Therefore, cost plus formula breeds inefficiencies. With the entry of the private sector, the cost plus formula will encourage ‘gold plating’ of the plant and inflate costs which the consumer would have to bear.
- The subsidies and cross subsidies have resulted in wide distortions in the consumer prices and do not reflect economic cost of petroleum products, which are not being passed on to consumers automatically. This in turn has led to inefficient use of precious fuels and large-scale misuse of highly subsidized products.

**R Group Recommendations**

In 1995, the Ministry of Petroleum and Natural Gas (MoPN&G) set up the Oil Industry Restructuring Group (‘R’ Group) to come up with a time bound program of reforms in the petroleum sector. As a follow up to the ‘R’ group recommendations, the Government appointed an inter-ministerial Expert Technical Group (ETG) which was required to examine various scenarios reflecting the impact of different levels of duty structures on various sectors. The ETG recommended a time-bound programme of reforms to move towards a market driven pricing mechanism for petroleum products in the country. Following the ETG’s recommendations, the Government(Ministry of Petroleum & Natural Gas decided on a series of decision enumerated below :-

1. The cost plus formula for pricing of indigenous crude was withdrawn by linking the price receivable by oil producers to a phased import parity scheme.

2. Retention pricing system for refineries was abolished and refinery gate prices were linked to import parity except for controlled products, namely, Motor Spirit (MS), High Speed Diesel (HSD), LPG and Aviation Turbine Fuel (ATF). Refinery gate prices for controlled products were fixed on an adjusted parity basis.

3. Ex - storage point prices of HSD were fixed at import parity with immediate effect, while consumer prices of other controlled products were linked to a phased import parity. Prices of other petroleum products were decontrolled.

4. Imports and exports of all petroleum products except crude, natural gas liquids (NGL), ATF, MS and HSD were decanalised. Sourcing and imports of crude by private and joint sector refineries was allowed.

5. Phased rationalization of duties on crude and petroleum products was announced.

6. Conditional marketing rights for transportation fuels, namely MS, HSD and ATF subject to investments of Rs. 2000 crores in refining or infrastructure in oil and gas sector or a minimum crude production of 3 million tonnes per annum were announced.

7. Establishment of a regulatory framework to oversee the functioning of and enforcing a competitive frame work in the hydrocarbons sector was suggested.

Besides this, initiatives for opening the sector to private players on selective basis were started in mid 1980s. Private participation in the refining sector in the form of joint ventures with public sector was announced in 1986. Subsequently, MRPL was set up in 1987. The marketing of lubricant - based stocks was allowed in 1992. The government had allowed parallel marketing of LPG (liquefied petroleum gas) and SKO (superior kerosene oil) in 1993, under which the import of these products were decanalised and private parties were allowed to import and market them at market determined prices. In addition, the refining sector was delicensed in 1998. Further, while naphtha exports were decanalised with effect from June 1998, Furnace Oil (FO) imports were decanalised under the provisions of the Export - Import policy in July 1998. Freight under - recoveries on HSD to the extent of 20% were passed on in the selling prices in January 1999.

In 2000, refining sector was opened up for foreign investment with the government allowing FDI at 100% equity in refining sector. Since then, the sector has been further opened up and FDI is also permitted in pipelines and marketing and E&P segments. The government planned to move from administered Pricing Mechanism (APM) to Market Determined Pricing Mechanism (MDPM). With the declared objective of moving towards market determined prices for petroleum products, Government announced the dismantling of the Administered Pricing Mechanism (APM) effective from 1.4.2002. However, it was decided to continue to subsidize PDS kerosene and domestic LPG on the ground that these were fuels of mass consumption largely consumed by "economically weaker sections of society". The subsidy on these two products was to
be continued on a flat rate basis financed from the budget and was to be phased out in three to five years. The Oil Marketing Companies (OMCs) were to adjust the retail selling prices of these products in line with international prices during this period, however, this part was not implemented. In compliance with Government directions, the OMCs did not make the necessary adjustment in prices of PDS kerosene and domestic LPG with international prices commensurately, resulting in losses on account of these two products. In October 2003, Government decided that the OMCs would make good about a third of the losses on these two products from the surpluses generated by them on petrol and diesel while the balance losses would be shared equally by the upstream companies (ONGC/OIL/GAIL) and the OMCs.

This burden sharing arrangement began to collapse in the face of unprecedented, sharp and spiraling increase in international oil prices, particularly since late 2003, combined with sharp week-to-week and even day-to-day volatility. The impact of this global price trend on the domestic situation has been two fold. First, the burden of subsidy on PDS kerosene and domestic LPG ballooned to unprecedented levels. Second, Government took back control of price setting for petrol and diesel, and restrained the 'pass-through' of the international prices to domestic consumers. The Government on 26th October 2005 set up a committee under the Chairmanship of Dr. C. Rangarajan, (Chairman, PM’s Economic Advisory Council) to look into the various aspects of pricing and taxation of petroleum products with a view to stabilizing/ rationalizing their prices, keeping in view the financial position of the oil companies, conserving petroleum products, and establishing a transparent mechanism for autonomous adjustment of prices by the oil companies.

**Petroleum & Natural Gas Regulatory Board**

The Petroleum Regulatory Board Bill was first introduced in the Lok Sabha on May 06, 2002, and was then referred to a Group of Ministers, which, in turn, referred it to the Parliamentary Standing Committee on Petroleum and Chemicals for examination on May 17, 2002. The report of the Committee was presented to the Lok Sabha on May 08, 2003, that suggested nearly 26 amendments. After incorporating those amendments, the Bill was then renamed as the PNGRB Bill, 2003. However, the Bill lapsed on account of the dissolution of the 13th Lok Sabha, in terms of Article 107(5) of the Constitution. The Petroleum Ministry reintroduced the Bill in the Rajya Sabha on December 21, 2005. This bill was tabled in Lok Sabha on 21st March 2006 and got the consent of President of India on 31st March 2006. It became an Act on 2nd April 2006(19 of 2006). The Act was notified by the Government on 1st October 2007. The India Hydrocarbon Vision 2025 suggested opening up the hydrocarbon market so that there is free and fair competition, between public sector enterprises, private companies and other international players. In addition, it was suggested to restructure the oil sector PSUs with the objective of enhancing shareholder value and disinvest in a phased manner. The vision also emphasized on the need for developing regulatory and legislative framework and setting up independent regulators for both the upstream & downstream sectors.
The Minister for Petroleum and Natural Gas introduced in the 13th Lok Sabha, "The Petroleum Regulatory Board Bill, 2002" on 6th May, 2002. After a very arduous journey spanning over eight years, the Petroleum and Natural Gas Regulatory Board Bill was passed by both the Houses and received Presidential assent and thereafter became an Act on April 3, 2006. The Board was established by the Government on 1st October 2007. This was to open a new phase of reform and development for the Indian oil and gas industry. Primarily, the Petroleum & Natural Gas Regulatory Board (PNGRB) was established to foster competition among entities and to lay down, by regulations, technical standards and specifications, including safety standards, in activities relating to petroleum, petroleum products and natural gas, including construction and operation of pipeline and infrastructure projects related to downstream petroleum and natural gas sector. Apart from the power to register entities, the Board would authorise the entities to lay, build, operate or expand a common carrier or contract carrier or city or local natural gas distribution network. It is also entrusted with the power to declare pipelines as common carriers or contract carriers and further regulate access to such common carriers or contract carriers or city or natural gas distribution networks. With respect to the prices of notified petroleum, petroleum products and natural gas, the Board will not only monitor the prices and take corrective measures to prevent restrictive trade practice by entities but will also ensure correct display of information about the maximum retail prices fixed by entities of such petroleum, petroleum products and natural gas, as may be notified by the Central Government. Besides, PNGRB will secure equitable distribution of petroleum and petroleum products, lay down and enforce retail service obligations for retail outlets and marketing service obligations for entities.