

AN ANALYSIS OF MARKETING AND CONSUMPTION TRENDS IN INDIAN OIL INDUSTRY

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ABSTRACT

Marketing strategies such as product differentiation and marketing skills are some of the factors that help various public sector oil companies and big private sector player to sustain their market share in the cut throat competition. Logistics or back-end support, in terms of product movement, pipeline infrastructure, tanks, depots and retail pump network, is the single biggest factor to differentiate the competing players. Another thing is the government support that is enjoyed by the public sector companies has a big advantage of a tremendous back-end infrastructure. With very little to differentiate the product of one refiner from another, branded petrol and various value added services are being promoted by the oil companies.

Another factor for success depends on having oil equity i.e. to be an independent oil and gas exploration and production company. The era of easy oil finds is over so the Indian companies have to train their sights on new oil discoveries in areas of challenging locations like deep waters, frontier basins that have not caught the fancy of the global oil companies yet. Other than new oil discoveries by marketing companies they are on forefront of acquiring equity oil and gas assets overseas.

Keywords : Production, Consumption trends, Marketing share, & distribution, Retailing and Renewal sources of energy

INTRODUCTION

The Indian Petroleum Industry is one of the oldest in the world Industry has come a long way since independence. A process of transition begun since mid nineties, it was basically to attract funds and technology from abroad in petroleum sector. The sector in recent years has been characterized by rising consumption of oil products, declining crude oil production. Oil sector is broadly divided into two segments upstream and downstream. The upstream activities of consist of two activities i.e. exploration and production of crude oil. Downstream activities include refining and selling crude oil products such as gasoline, jet fuel, petrol, diesel and lubricants.

OBJECTIVES OF THE PROJECT

1. To analyze various marketing strategies adopted by Oil companies in the oligopoly market to build their brand
2. To analyze consumption trend and measures that can bridge the gap between demand and supply of petroleum products
3. To determine the success factors for the growth of oil companies

METHODOLOGY

1. Collection of secondary Data already present in magazines, books, internet, journals and newspapers for Analysis.
2. Different alternatives available for the success of Oil Companies in India.
3. Finding various control measures for the efficient operation of Indian Oil Companies.

LIMITATIONS OF THE STUDY

1. Secondary information pertinent to marketing and consumption trend in Indian Oil Industry is not available in sufficient quantities.
2. Research is based on secondary sources so it may not give the full version of data on the basis of accuracy and reliability

MARKETING STRATEGIES

Marketing or selling of petroleum products is one of the activities of downstream segment which is done by companies like Indian Oil, Bharat Petroleum, Hindustan Petroleum, Reliance, etc. Downstream marketing success depends on distribution infrastructure requirement to reach the customers which consist of storage terminals, transportation facilities, and retail stations in case of petrol, diesel, Aviation Turbine Fuel, number bottling plants, LPG dealers and pipelines.

Overall marketing and distribution network of India is around 20000 retail stations out of which more than 18000 retail outlets belonged to public sector oil companies. Private sector players are allowed to market petroleum products from 2002. Reliance planned to set up 5800, Essar 1700 and Shell 2000 retail outlets. Oil exploration major ONGC had also obtained the permission from government in 2003 to open and operate 1100 outlets. So in such a cut throat competition petroleum companies are adopting various marketing strategies to enhance and sustain its marketing share in the country. Some of these marketing initiatives by petroleum companies are as follows:

1. BRANDING PETROLEUM PRODUCTS

Bharat Petroleum Corporation Limited (BPCL) was the first company to come out with branded fuel. The company in 2002 introduced its brand SPEED into the market which was the first of its kind in fuel category. As a signal from BPCL, remaining players also came up with their own brands of fuel and diesel. HPCL introduced POWER while IOC came up with XTRAPREMIUM and XTRAMILE a brand of diesel.

Industry was witnessing a change which had already been happened on Global base. Petroleum companies around the world are already practicing such kind of strategies to build loyal customer base. This was a major step to create differentiation among products which was earlier very difficult to create.

Considering the fact that Indian consumers are constantly becoming aware of environmental friendly products, introduction of branded fuels seemed to be a timely move. And since emission norms have become stringent in the country, oil companies were required to come up with environment friendly products for the interest of the market.

NEED RECOGNITION OF A PREMIUM FUEL

The reason for spending huge amount of money on refining and marketing of premium fuels by Indian Oil companies is because of the change in automobile transmission norms regulations to tackle the issue of increasing population. The two major factors are:

1. Stringent emission requirements
2. Need for improved drivability, lower noise, more power and improved fuel economy.

To cope with this requirement, automobile manufacturers started coming up with more sophisticated engine and emission technology which demands premium fuel. Thus this necessity lead to the launch of premium fuels in the Indian as well as International Market.

INDIAN OIL CORPORATION –

To give healthy competition to BPCL, IOC launched its own brand of fuel as XTRAPREMIUM and diesel as XTRAMILE. Both of these brands were launched on August 24'2002 at the capital city of India, New Delhi. Since then the company never looked back and keep on expanding its market share. Current statistics shows that IOC during the year, Indian Oil sold 49 million tones of petroleum products attaining a volume growth of 5.7% in 2006-2007 over the previous year. Its two flagship brands made a gigantic contribution to this growth rate. XTRAPREMIUM and XTRAMILE, Indian Oil's petrol and diesel brands joined the portfolio of 'leadership brands' like SERVO, Indane and XTRAPOWER. IOC by its virtue of largest number of retail outlets spread across the length and breadth of the country is the market leader in the branded petrol segment. According to the latest press conference on Indian Oil Performance held at New Delhi on May 29, 2009 Indian Oil's branded fuels - XTRAPREMIUM petrol and XTRAMILE diesel - maintained their firm leadership status, with a market share of 48.6% and 59.6% respectively among branded fuels in the market. XTRAPREMIUM and XTRAMILE are now available at 6,446 and 9,256 retail outlets of Indian Oil respectively.

Table – 1
Market Share of Branded Fuel

Company	% Market share in Branded Petrol (2007-2008)	2008-2009 (April-Feb)	% Market share in Branded Diesel (2007-2008)	2008-2009 (April-Feb)
IOC	45.5	48.5	58	60
BPCL	33	28.5	20	20.5
HPCL	21.5	23	22	19.5

Source: Business Standard

1. While it is quite difficult to predict the fuel for the future, but there would be an increase use of bio-fuels. So compatibility with bio fuels has to be established.
2. Development of new test procedures to evaluate the enhanced performance characteristics.

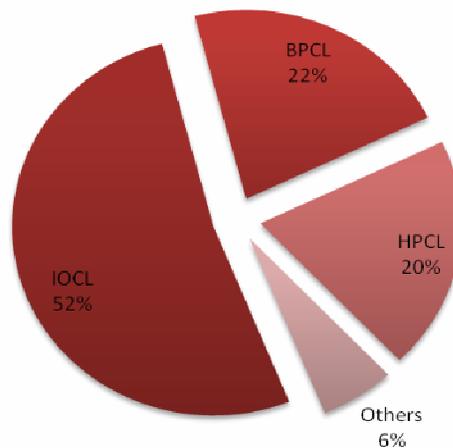
2. RETAILING

As competition increased companies started focusing more on marketing activities. Petrol stations have been converted to what we are seeing today as modernized retail outlets. BPCL revolutionized the retailing concept of petrol pumps. It gave clear indications that even petrol stations can be a part of the developing retail industry in the Indian market. BPCL launched the ‘Pure for Sure’ campaign in 2001 to make sure that petroleum products were delivered properly in terms of quality and quantity. Similar campaigns were launched by HPCL and IOC. If HPCL was in talks for its Club HP program IOC also had some amount of brand recall through its XTRACARE outlets. The need for advertising was felt because of the other players in the market.

The concept of brand building was not new to the petroleum world. Global oil companies like SHELL, EXXON MOBIL, and BP have been offering value added fuels to its customers that claimed to lower exhaust emissions.

Market today is dominated by the oil PSUs with a retail network of more than 18500 petrol pumps spread across the country. So for the new player the real challenge lies in competing with the huge retail network and setting up a similar network. The most important factor is a good, extensive and broad network of retail outlets as well as pipelines to supply products. IOC, BPCL, HPCL and IBP have these in varying degrees. Reliance is also engaged in setting up these network

Chart – 1: Market Share



Source: www.equitymaster.com

BHARAT PETROLEUM CORPORATION – Some of the marketing initiatives by BPCL are:

1. Customer and Retail Service

- BPCL tied up with Apollo Tyres and installed accurate tyre gauges provided by the company at most of its outlets. Another agreement was signed with Pepsi Co. and entire range of Pepsi soft drinks was made available at various BPCL outlets.
- BPCL tied up with Bob Card Limited to launch first co-branded credit card in India. An added feature of the card was that it permitted fuelling of vehicles by drivers on the authorization of vehicle owners.
- **Industry and Commerce** – BPCL supply HSD and Lubricants to a host of its industrial customers such as ONGC, RIL, HLL, Tata Electric, Dunlop, Ceat, Asian Paints, etc.
- **Aviation** – With a spread in 16 airfields across the country BPCL marketed ATF to both domestic and international airlines. Over 25 international airlines including British Airways, Singapore Airlines, Air Canada, etc are major customers of BPCL for ATF.
- Since packing is a crucial aspect of brand image BPCL had launched a complete new range of customer friendly, easy to handle packs of lubricants.

2. Advertising And Promotion – BPCL has launched an advertising campaign “Talk to us” as their services aimed at effecting valuable customer involvement and opinion. This was done to seek valuable feedback from customers to upgrade the quality of services offered and to educate customers regarding LPG and maintenance of vehicles. BPCL’s promotion initiatives were an ongoing effort such as Farmer’s Mela, Sales promotion program Customer Bonanza which was promoted extensively via posters, handbills and hoardings besides electronic media. BPCL provided coupons to customers with purchase of every liter of petrol or lubes to win 2001 prizes including Maruti Zen Car as 1st prize.

Table – 2
Marketing and Distribution Network of Oil Companies

Particulars	IOC	BPCL	HPCL	IBP	RIL
No. of Refineries	10	3	2		1
Refinig Capacity (mtpa)	60.2	24.5	13		27
Petrol Pumps	8034	4854	4863	2778	1400
LPG Bottling Plants	79	42	40		
LPG Dealers	4990	1828	1898	74	
Avaition Fuel Stations	93	16	10		
Product Pipelines (kms)	7404	609	511		1600

Source: Company’s respective websites

3. OEM Tie-ups for Lubricants

Original Equipment Manufacturers (OEMs) of vehicles and equipment are coupled with emerging environmental regulations and new technologies. So they are constantly trying to reduce maintenance costs. Indian Oil companies are concentrating on fetching the benefits from marketing of lubricants because the prices are not regularized by the government. Oil Companies are promoting their brand of lubricants by signing up with celebrities as their brand ambassadors. Various lubricant brands of various oil companies are as follows:

1. Mak Lubricants – BPCL:

Bharat Petroleum offers a full range of Automotive Engine Oils, Gear Oils, Transmission oils, Specialty Oils and Greases. The correct usage of these Lubricants of right quality ensures

prolonged and trouble free vehicle operation, providing maximum benefits to the users of present day modern vehicles. BPCL commissioned its own LOBS plant at Mumbai, using the latest Chevron Lummus Global patented 'All Hydro Processing Technology' in June 2006. This has enabled to manufacture superior quality 'MAK Base' oils. Some of the marketing initiatives by Lubes SBU of BPCL are as follows:

Retail Channel – BPCL's Lubes SBU have undertaken various initiatives in co-ordination with Retail Business to grow sales volume through their strong retail outlet network across the country channel. Initiatives undertaken by the SBU are setting up of Hero Honda City Works, Tata Authorised Service Station (TASS) and installation of Quick Oil Change Machines at retail outlets.

Bazaar Channel – With a network of 190 PLDs, 600 MAK Garages and MAK Mobile Vans established to improve reach and penetration in rural and unrepresented areas of MAK Brand, the SBU could reach to the last mile as far as the customers are concerned. BPCL continue to improve brand visibility across the network and there by lead to increase in their market share across the segments.

Industrial Channel – Large number of prestigious customers has been added during the year to already existing prestigious customer list. BPCL is also a supplier of initial engine oil fill to TATA Motors, TVS, Hero Honda etc. and they also hold respectable share of Railway and Defence business.

Other initiatives – Another major initiative was to reach the rural population through tie-up with ITC – e-choupal network which has spread the MAK brand across the country in rural areas also. Currently this network is available in Uttar Pradesh, Maharashtra, Rajasthan, Madhya Pradesh and is likely to extend to other states also shortly. MAK also embarked on another thrust area of enrolling garages across the country in the network of "MAK Garages" there by providing standardized service across the network. This initiative not only provides opportunity for the garages to enhance their business opportunity but also provides an assurance to the end customers that their vehicles are getting the right kind of lubricants.

Brand Ambassador – To promote MAK brand among the youth and improve the brand visibility, MAK signed up M.S.Dhoni as Brand ambassador in the year 2006. The rise of MAK brand in the minds of the consumers as well as market share coincided with the rise of Dhoni also, who today is the Youth icon of the year and also the Captain of the Indian team.

OEM Partnerships of BPCL – BPCL is continuously working alongside OEMs to develop and upgrade genuine oils (Lubricants) for their vehicles and equipments to address the requirements of ever changing technology. R&D and marketing teams of BPCL have provided solutions for efficient and specialized lubricant applications in steel, cement, power, engineering, road construction and other leading industries in India. These applications include various compressor, genset, shock absorber oil manufacturers who provide branded lubricants for use during and after warranty for peak performance. OEMs have acknowledged BPCL's identity of quality base oil producer, best in class R&D capabilities and marketing acumen. In addition to Indian presence with plethora of lubricant options for all cross sections of the industry, BPCL (MAK LUBRICANTS) also has agreements with leading automotive manufacturers having both National & International presence. BPCL has a long and successful history of partnerships with leading OEMs across all vehicle categories. With strong brands, superior technology and width and depth of distribution, BPCL (MAK LUBRICANTS) is an ideal partner for progressive OEMs seeking to offer their consumers the best products and services.

Hero Honda Motors Limited - The single largest two-wheeler manufacturer in the world has an association with BPCL (MAK LUBRICANTS) since the year 2004. MAK Lubricants during the five years of association has become the largest supplier of engine oils for initial fill as well as to

HHML dealers, authorized service stations and spare part stockiest. BPCL has been working closely with HHML & its sister concerns to develop specialty products like Engine oils and Shock Absorber Fluids which can meet the stringent HONDA (JAPAN) specifications. Apart from the above BPCL has commissioned Hero Honda City Works an exclusive servicing option for HHML customers' at BPCL Retail Outlets.

Tata Motors - Commercial Vehicles Division is the largest manufacturer of commercial vehicles in India. BPCL has long and fruitful relationship with Tata Motors for over 5 years. This includes a strategic alliance for supplying of Engine oils for initial fill as well as co-branded engine oils and specialty products to Tata Motors dealerships, Authorized Service Network & Tata Motor Spare part dealerships across the country. MAK Lubricants has been jointly working with Tata Motors in all areas including joint product development, promotion and customer service. BPCL's MAK TATA MOTORS CH4 15 W 40 was specially developed for Tata Motors and is endorsed by Tata Motors for use in all their commercial vehicles fitted with both Tata & Cummins Engine. Apart from the above BPCL has commissioned Tata Authorized Service Stations servicing option for TML customers' at BPCL Retail Outlets and many more are expected to get activated over the years.

General Motors India – General Motors India has already completed 12 years of Indian Operations and is the manufacturer of diesel & petrol passenger cars and multi utility vehicles in the country. BPCL has a strategic alliance for supplying Co-branded engine oils and speciality products to the General Motors dealerships and authorized service network across the country. BPCL (MAK LUBRICANTS) is jointly working with General Motors India in all areas including joint product development, promotion and customer service. BPCL GM MAK Genuine 15 W 40 Diesel & Petrol Engine Oils were specially developed for General Motors and is endorsed by General Motor for use in all their passenger cars as well as Utility vehicles. Apart from the above BPCL has commissioned Vehicle Care Centre an exclusive servicing option for customers' wherein GMI has adopted such VCC's at BPCL Retail Outlets and more such VCC's are expected to get activated over the years.

TVS Motor Company – TVS Motor Company is the third largest two-wheeler manufacturer in India and one among the top ten in the world, with annual turnover of more than USD 1 billion in 2008-2009, and is the flagship company of the USD 4 billion TVS Group. BPCL (MAK LUBRICANT) has an exclusive tie-up with TVS MOTOR COMPANY to supply engine oils for initial service fill as well as TVSM dealers, Authorized service stations and spare part stockists. BPCL is also working to develop, manufacture and supply specially formulated engine oils and speciality products for use in TVSM two wheelers as well as factory requirement. . TVS TRU 4 the first JASO MA 2 specification oils of its kind has been introduced by BPCL for use in TVSM two- wheelers and is distributed through all TVSM authorized dealerships & workshops as well as BPCL's extensive reseller network.

L&T Komatsu – L&T Komatsu is the market leader in the excavator segment & commands more than 50% of the market share. BPCL (MAK LUBRICANT) has a tie-up with L&T Komatsu for the past 5 years to supply oils for supply to L&T Komatsu dealerships & users. BPCL is also working to develop manufacture and supply specially formulated hydraulic transmission oils and speciality products for use in L&T Komatsu excavators

2. SERVO – Indian Oil Corporation:

Servo is the brand leader among lubricants and greases in India and has been conferred the “Consumer Super brand” status by the Superbrands Council of India. SERVO serves as a one-stop shop for complete lubrication solutions in the automotive, industrial and marine segments. Indian

Oil is recognized for its cutting-edge technology and high-quality products so SERVO is backed by world class R&D and an extensive blending and distribution network.

Retail Channel – In the retailing segment, besides Indian Oil petrol stations, SERVO range of lubricants is available through a network of SERVO Xpress stations, bazaar outlets and thousands of auto spare parts shops across the country. The SERVO Xpress is a one-stop shop for quick, easy and convenient auto care, providing customers with a refreshing experience. The SERVO Xpress stations have facilities for oil change, tyre/battery checkups, A/C service, vacuum cleaning, perfuming, upholstery cleaning, polishing and lamination installation too. Lubrication is the art of reducing friction between rubbing and rolling surfaces.

3. Hindustan Petroleum Corporation Ltd:

HPCL is a Global Fortune 500 Refining & Marketing Oil Company has signed up the young and upcoming Tennis sensation Sania Mirza for endorsement of their retail Brands. In the past few years HPCL has been successful in building retail brands and this move is a new strategy in their marketing efforts. This strategy will provide their brands with the energy required to compete in the market place. This synergy revolves around her youthful personality and the vibrancy of their brands. HPCL has mega brands like Club HP, Power, Power 93, TurboJet, HP Milcy, HP Racer, HP Champion and HP Gas in its portfolio.

SUCCESSFUL FACTORS FOR THE GROWTH OF INDIAN OIL COMPANIES

1. Self Reliance

Oil is the single most important source of energy in India and is imported in huge quantities from Saudi Arab, Kuwait, Iran, United Arab Emirates (UAE) and Malaysia. India is the seventh largest consumer of oil in the world. Oil accounts for one third of India’s total energy consumption and its inability to produce oil in sufficient quantities to meet domestic needs India has to depend on imports. The uncertainty in oil prices and availability of petroleum products derives the importance of self sufficiency in this sector. The reasons for the self reliance of Indian Oil Companies for growth are as follows:

- **Under – recoveries** – The Oil Marketing Companies pay trade/import parity price to refineries when they buy products. The difference between the required prices based on trade parity/import parity and the regulated actual selling price realized (excluding taxes, dealer commission) resulted in the under-recoveries in oil companies. The burden of under-recoveries have been shared by the Government in the form of oil bonds, upstream oil companies by offering of discounts on crude oil sold to the oil marketing companies and OMCs themselves. The following table shows under recoveries since 2004-05 to 2008-09 which is increasing with an average annual growth rate of 53%.

Table – 3

Under Recoveries

Under Recoveries	2004-05	2005-06	2006-07	2007-08	2008-09
Kerosene and LPG	17842	24630	28584	34625	45825
Petrol and diesel	2304	15370	20803	42498	57467
Total	20146	40000	49387	77123	103292

Source: Ministry of Petroleum and Natural Gas

- **Demand and Supply Gap** – Another reason self reliance is because of the huge mismatch between supply and demand. India's dependency on oil grew steadily from 30% in 1984 to 62% in 1997. It is expected to be 77% by 2010 and almost 90% by 202. The production of crude and products witnessed low growth in 2008-09, compared to the previous year. The 3 per cent growth in refinery production in 2008-09 was mainly on account of the impressive growth of private sector production. Commissioning of Reliance Petroleum Ltd. (SEZ) Refinery in Gujarat in December 2008, the total installed capacity of India refineries increased from 148.97 MMTPA to 177.97 MMTPA by the end of 2008-09. While the production of crude oil declined in 2008-09 and its consumption increased.
- **Exhaustion of Oil Reserves** – India's ninth five year plan has stated that the nation would exhaust all its existing oil and crude deposits by 2012. So India needs to explore and find out new sites that can provide crude oil as the demand for oil is expected to multiply in years.
- **Fluctuation in the Oil Prices** – The Petroleum sector has been shaken by the huge fluctuation in international oil prices during 2008-09. The Indian basket of crude oil, which averaged US\$ 79.25/bbl during 2007-08, went up to US\$ 142.04 per barrel on July 3, 2008 and the average for the year 2008-09 stood at US\$ 83.57 per barrel all this has increased India's oil import bills. Moreover direct subsidies on oil products to protect households and domestic industry can lead to higher fiscal deficits. The burden of subsidies tends to grow as international prices rise which leads to additional pressure on government budgets.

These reasons demonstrate the need of offshore exploration on high priority as Indian Oil Companies have already exploited the most easily explorable sites to the fullest. So oil companies has to diversify geographically as the consumption of petroleum products is rising exponentially each and every year over a constant production of oil.

RECENT DEVELOPMENTS FOR SELF RELIANCE IN THE PETROLEUM AND NATURAL GAS SECTOR

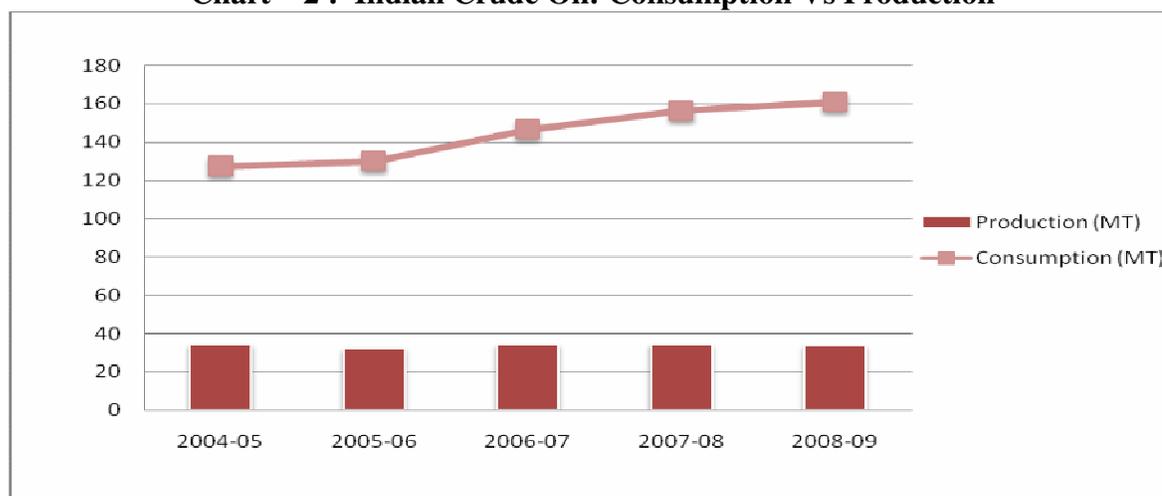
- **Crude Oil production from Krishna Godavari Basin** – First crude oil production in KG Basin started in September 2008 with initial production of about 5,000 barrels per day by the Reliance Industries Limited and the NIKO Resources Limited. Natural gas development project for development of gas discoveries from block 6 in KG Basin is being undertaken by the Reliance Industries Limited (RIL) and NIKO Resources Limited. The first gas production from this block is expected during 2009.
- **Acquisition of oil and gas assets abroad** – Oil & Natural Gas Corporation Videsh Limited (OVL) produced about 8.78 million metric tonnes of oil and equivalent gas during the year 2008-09 from its assets abroad in Sudan, Vietnam, Russia, Syria and Colombia. In 2008, OVL acquired two oil blocks each in Brazil and Colombia. The largest ever acquisition of a foreign company, Imperial Energy Plc., U K (IEC) by an Indian public sector company, ONGC-Videsh Ltd. took place in 2008. Besides, IECOVL-IOC alliance, BPCL along with Videocon, too have acquired oil assets abroad.

PROGRESS UNDER NEW EXPLORATION LICENSING POLICY

Since operation the NELP in 1999, in seven rounds of NELP, 203 Production Sharing Contract (PSC) have been signed, thereby increasing the area under exploration more than four times. In the 2008-09 concluded NELP-VII, 181 bids were received from 95 companies including 21 foreign companies. Under NELP, 68 oil and gas discoveries have been made by private/joint venture companies in 19 blocks, which have added more than 600 MMT of oil equivalent hydrocarbon reserves. As on April 1,

2009, investment commitment under NELP is about US\$ 10 billion on exploration, against which actual expenditure so far under NELP is about US\$ 4.7 billion.

Chart – 2 : Indian Crude Oil: Consumption Vs Production



Source: Ministry of Petroleum and Natural Gas

**Table – 4
Petroleum Industry Production**

Particulars	Unit	2004-5	2005-6	2006-7	2007-8	2008-9
Production Petroleum Products	MT	120.82	121.94	137.35	146.99	152.68
Consumption Petroleum Products	MT	111.63	113.21	119.55	128.95	124.17
Refinery Production						
1. Public Sector	MT	93.11	96.95	108.17	112.54	112.22
2. Private Sector	MT	34.31	33.16	38.38	43.56	48.55
Total	MT	127.42	130.11	146.55	156.1	160.77
Exploratory Drilling						
Wells	Number	117	114	96	106	121
Metrage	000'	329	342	263	293	342

Source: Ministry of Petroleum and Natural Gas

2. Renewable Energy

Another successful factor for oil companies is to look for alternative sources of energy i.e. by full conversion of all the remaining oil-powered heat and power sources to gas, coal, and renewable will lead to substantial oil savings in the developing world. There will be a time when nonconventional energy will be an integral part of our lives. Solar, Wind, Bio fuels, Hydrogen, are various forms of renewable energy.

Toyota has entered into the market of using renewable energy to charge a car in a big way. The solar charging station by Toyota was put on display at the Tokyo Motor Show 2009. It works by collecting the sun's energy through solar panels and then stores the energy in a battery that is later used to charge and power the vehicle. This is just another great innovation that is pushing our world to a 'greener' lifestyle and will use renewable energy in every day application.

The fact that solar charging station which is solar powered and other non conventional forms of energy has the industry in anticipation, Bharat Petroleum as a responsible energy company in India has made first big steps with its latest renewable energy advertising campaign. BPCL has started harnessing some of these renewable sources of energy. These include biodiesel, solar energy, wind energy, and hydrogen fuel

Table – 5
Estimated Renewable Energy Potential and Achievements in India (as on 31.12.2007)

Power from Renewables	Estimated Potential (MW)	Cumulative Achievement (MW)
Bio Power	16881	605.8
Wind Power	45195	7844.52
Small Hydro Power	15000	2045.61
Cogeneration-bagasse	5000	719.83
Waste to Energy	2700	55.25
Solar power	-	2.12
Total (in MW)	84776	11272.13

Source: www.indiastat.com

Estimated potential power available from renewable sources of energy in India is more than 84000 MW and approximately 11000 MW of energy is achieved which is just 13% of the total estimated potential energy. Potential Solar Photovoltaics (PVs which converts solar radiation into direct current electricity) is estimated to be 20 MV per Sq. Km and only 2.12 MW of energy is utilized in India. So it is clear from the fact that still lot of energy has to be tapped from the renewable sources.

Renewable energy is green, clean and sustainable energy and with such an opportunity available financial contribution in these projects was increased in the states where these projects were already in progress. Apart from this, financial assistance was also provided to other states as well in 2007 for various projects. In Andhra Pradesh 8.66 crore was contributed in 2006-7 for biogas plants which is twice of the assistance provided in 2005-6 and same is the case with West Bengal. In case of small hydro power projects financial assistance has been increased by many times during 2006-7 in Bihar and Himachal Pradesh. Karnataka is the state where funds for the Small Hydro Power was first provided in 2006-7 of around 10.2 crore. According to chart – 4 funds for renewable energy projects such as small hydro power, energy from waste and biogas plants has been increased year on year basis from 2004-5 to 2006-7.

Table – 6

State-wise central financial assistance provided under various heads of Renewable Energy Scheme/Programs in India (Rs. in Crore)

**Table – 6.1
Small Hydro Power**

State	2004-5	2005-6	2006-7
Arunachal Pradesh	10.1	3.6	8.55
Bihar	-	0.46	6.53
Himachal Pradesh	11.71	0.89	6.64
Jammu & Kashmir	3.25	10.08	-
Karnataka	-	-	10.2
Mizoram	2.7	12.54	8.69
Punjab	0.13	1.48	2.19
Sikkim	-	2.7	5.24
India	36.1	47.07	52.41

**Table – 6.2
Biogas Plants**

State	2004-5	2005-6	2006-7
Andhra Pradesh	2.41	4.32	8.66
Gujarat	1.19	2.01	3.88
Kerala	0.8	0.17	1.23
Madhya Pradesh	1.47	-	6.64
Maharashtra	2.66	2.7	2.76
Orissa	1.68	2.25	3.49
Uttar Pradesh	1.47	0.4	0.84
West Bengal	2.41	3.31	7.33
India	21.91	28.32	51.33

**Table – 6.3
Solar Thermal**

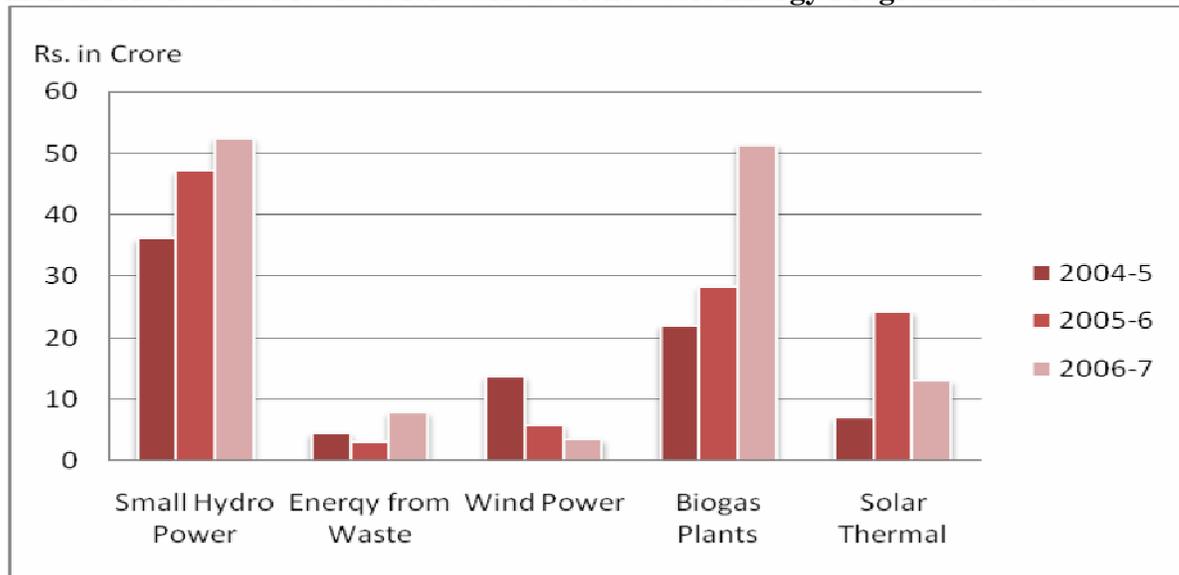
State	2004-5	2005-6	2006-7
Andhra Pradesh	0.22	0.04	0.19
Chhattisgarh	-	0.14	0.11
Gujarat	0.37	0.36	1.05
Haryana	0.2	0.35	0.29
Karnataka	-	0.07	0.41
Maharashtra	0.27	0.1	0.31
Tamil Nadu	0.04	0.35	0.1
Uttar Pradesh	0.22	0.08	0.02
India	6.9	24.17	13.02

**Table – 6.4
Wind Power**

State	2004-5	2005-6	2006-7
Andhra Pradesh	3.08	0.07	-
Karnataka	2.73	0.43	0.03
Maharashtra	-	-	0.03
West Benqal	0.48	-	1.37
Others	7.4	5.18	2
India	13.69	5.68	3.43

Source: www.indiastat.com (from table 6.1 – 6.4)

Chart – 4
Financial Assistance Provided for Various Renewable Energy Programs in India



Source: www.indiastat.com

FINDINGS AND CONCLUSION

Key to marketing success depends on oil marketing company’s increased focus on establishing a brand identity so as to capture the market share. Consequently Oil marketing companies are investing in renovating and upgrading their retail networks besides offering a higher value added service mix. Their marketing strategies are thus aimed at differentiating service, improving visibility and enhancing customer satisfaction.

There is no way available to fill the oil supply gap presently. It will be filled partly from traditional sources, partly from new alternatives, partly from simple efficiencies but a large portion will have to be filled by demand destruction and even the alternative sources of energy still have to be tapped in great amount.

Oil marketing companies are not allowed to charge market rates and upstream companies pay the deficit of the marketing companies. Oil Distribution system cannot be taken in isolation and made more efficient but the entire Oil and Gas sector ruled by PSUs need reforms.

The world will be in a worse condition by 2020 even with all the alternatives and efficiencies outlined above. If this cannot be solved globally but locally it can be considered at least to gain a competitive edge. Companies and governments must take energy risks with capital intensive projects, innovative energy sources, new modes of transport and through cutting consumption with taxes and rationing systems. Growth and decline will in truth be unpredictable as disordered price movements drive demand up and down but liquid energy demand will always want to grow faster than supply. The global population has reached an unsustainable energy demand level to support the lifestyles we desire. Conservation will be a necessity but it will be painful.

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