

Annual Report
2008-2009



सत्यमेव जयते

Government of India

Ministry of Petroleum & Natural Gas



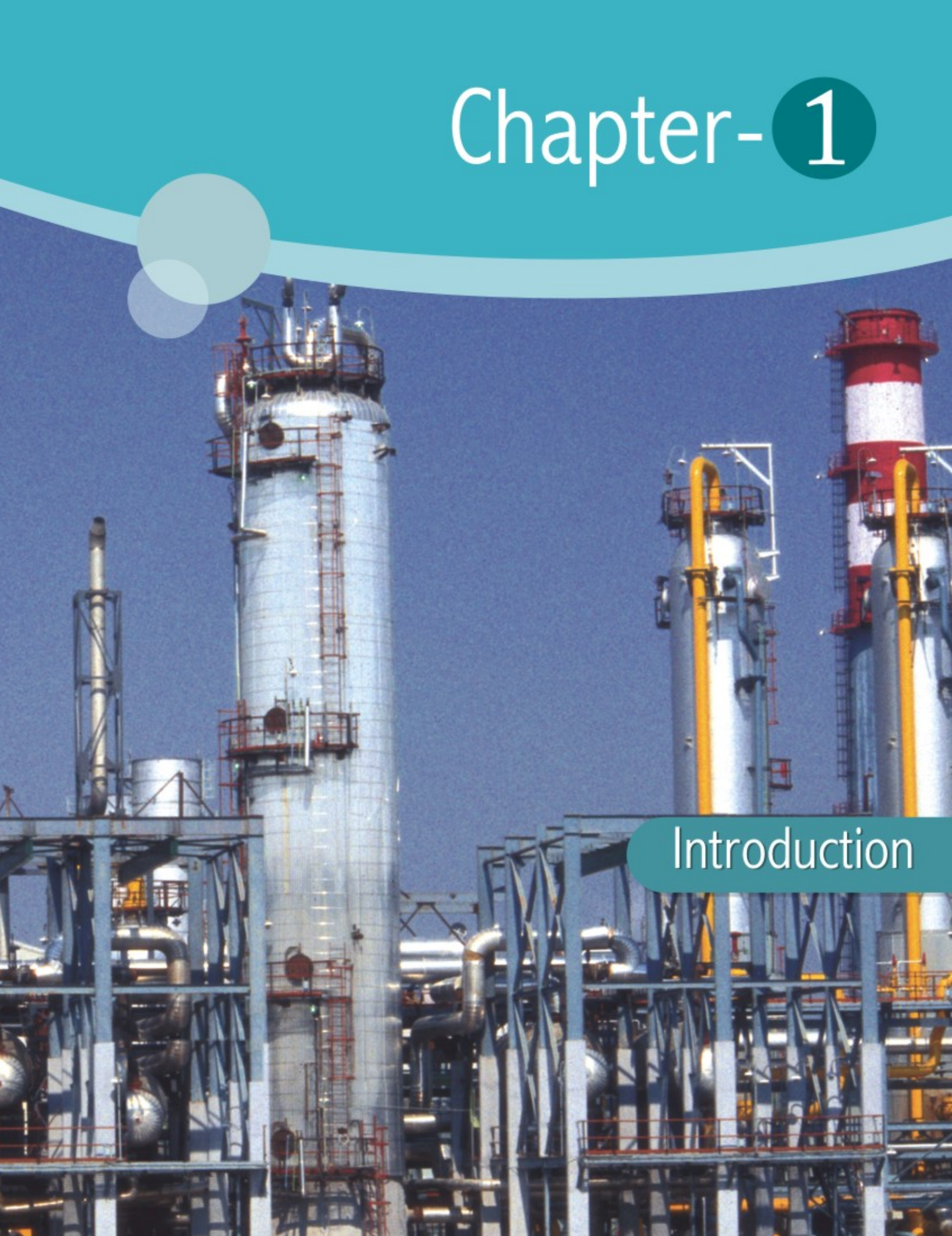
The Prime Minister, Dr. Manmohan Singh lighting the lamp at the dedication ceremony of the Mangala Oil Field to the Nation, at Barmer, in Rajasthan on August 29, 2009

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Chapter-1



Introduction

Introduction

1.1 The Ministry of Petroleum & Natural Gas is concerned with exploration and production of oil and natural gas (including import of Liquefied Natural Gas), refining, distribution & Marketing, import, export and conservation of petroleum products. The work allocated to the Ministry is given in Appendix–I. The names of the Public Sector Oil Undertakings and other organizations under the Ministry are listed in Appendix- II.

1.2 During the year under report, Shri Murli Deora held the charge as Minister of Petroleum & Natural Gas. Shri Dinsha J. Patel was holding the charge as Minister of State for Petroleum & Natural Gas.

1.3 Shri R.S. Pandey, IAS [NL:72] assumed the charge of the post of Secretary in the Ministry of Petroleum and Natural Gas, with effect from the forenoon of 01.08.2008.

1.4 Shri S. Sundareshan, IAS [KL:76] continues to hold the charge of the post of Additional Secretary in the Ministry of Petroleum and Natural Gas.

1.5 Shri P.K. Sinha, IAS [UP:77] continues to hold the charge of the post of Additional Secretary and Financial Advisor in the Ministry of Petroleum and Natural Gas.

1.6 Shri Sunil Jain [IFS:81] and Shri D.N. Narasimha Raju, IAS [KN:84] continue to hold the charge of the post of Joint Secretary in the Ministry of Petroleum and Natural Gas.

1.7 Shri Laxmi Narayan Gupta, IAS [OR:86] and Shri Apurva Chandra, IAS [MH:88] assumed the charge of the post of Joint Secretary in the Ministry of Petroleum and Natural Gas, with effect from the forenoon of 06.06.2008 and 09.01.2009 respectively.

1.8 PRINCIPAL ACHIEVEMENTS

The important statistical data relating to the physical performance of the oil and gas sector is given in Appendices – III to VII.



Shri Murli Deora, Hon'ble Minister of Petroleum & Natural Gas, speaking at the Special Ministerial Session



1.9 PERFORMANCE OF PETROLEUM & NATURAL GAS SECTOR

Efficient and reliable energy supplies are a precondition for accelerating the growth of the Indian economy. While the energy needs of the country are going to increase at a rapid rate in the coming decades, the energy resources that are indigenously available are limited and may not be sufficient in the long run to sustain the process of economic development. The share of oil and gas in the energy consumption has reached a level of about 45%. The Ministry of Petroleum and Natural Gas is mandated to take measures for exploration and exploitation of petroleum resources including natural gas and coal bed methane, and also distribution, marketing and pricing of petroleum products.

During the current year 2008-09 Crude Oil production has been 33.51 Million Metric Tonnes (MMT) with natural gas at 32.85 Billion Cubic Metre (BCM). This is against crude oil production of 34.118 MMT and natural gas production of 32.417 BCM during financial year 2007-08. Refinery production (crude throughput) during 2008-09 has been of the order of 160.77 MMT. This is against the refinery production of 156.103 MMT during financial year 2007-08.

1.9.1 Crude Oil Production

Crude Oil Production, was 33.51 MMT in 2008-09 as against the target of 36.00 MMT, thus there was 93% achievement of the target. The crude production during 2008-09 was lower by 1.8% than that achieved in 2007-08. The trend in crude oil production over the last eight years shows that it has remained in the range of 32 MMT to 34 MMT



Shri R. S. Pandey, Secretary (P&NG) inaugurating Media Centre of Petrotech-09.
Shri S. Sundareshan Additional Secretary, MOP&NG (Left) and Shri S. Behuria, Chairman, IOC (Right)

with year to year variation, as may be seen in Table-1.

Table-1: Crude Oil Production and Growth

Year	Crude Oil Production (MMT)	% Growth
2001- 02	32.032	
2002- 03	33.044	3.16
2003- 04	33.373	1.00
2004- 05	33.981	1.82
2005- 06	32.190	-5.27
2006- 07	33.988	5.59
2007- 08	34.118	0.38
2008- 09*	33.506	-1.79

*Provisional

It may be noted that the growth in crude oil production was relatively low in 2008-09. Various reasons that lead to this slower growth include excessive rains in Gujarat, road and transport constraints, non-availability of off-shore rigs, environmental and law and order issues in Assam etc.

1.9.2 Overseas Oil and Gas Operations

In order to enhance hydrocarbon securities for the country, the Government has been encouraging National Oil Companies (NOCs) to aggressively pursue equity oil and gas opportunities overseas. ONGC Videsh Limited (OVL) produced about 8.77 Million Metric Tonnes (MMT) of oil and equivalent gas during the year 2008-09 from its assets abroad in Sudan, Vietnam, Russia, Syria, Colombia and Venezuela. Though OVL has a target to acquire 20 MMTPA of O+OEG production by 2020 yet efforts are on to achieve it even earlier.

The largest ever acquisition of a foreign company viz., Imperial Energy PLc. U.K. (IEC) by an Indian Public Sector company, OVL at an acquisition cost of about US$ 2.1 billion has been accomplished in early 2009. IEC has oil and gas producing fields in Russia.

1.9.3 Natural Gas Production

During 2008-09 natural gas production was 32.85 billion cubic metre (BCM) as against the target of 36.94 BCM i.e. an achievement of 89%. Natural Gas production in 2009-10 is targeted to be about 52.116 BCM. The natural gas production in country is likely to be doubled by the end of XI Five Year Plan. The growth trend in natural gas production since 2001-02 is given in Table -2 below :

Table- 2: Natural Gas Production

Year	Natural Gas Production (BCM)	% Growth
2001- 02	29.714	
2002- 03	31.389	5.64
2003- 04	31.962	1.83
2004- 05	31.763	- 0.62
2005- 06	32.202	1.38
2006- 07	31.747	- 1.41
2007- 08	32.417	2.11
2008- 09*	32.850	1.34

*Provisional

1.9.4 New Exploration Licensing Policy (NELP)

New Exploration Licensing Policy (NELP) provides an



Shri R.S. Pandey, Secretary MOP&NG addressing farmers at Sugali & Lauriya Sugar Mills in Bihar



international class fiscal and contract framework for Exploration and Production of Hydrocarbons. In the first seven rounds of NELP spanning 2000-2009, Production Sharing Contracts (PSCs) for 203 exploration blocks have been signed. Under NELP, 70 oil and gas discoveries have been made by private/joint venture (JV) companies in 20 blocks. As exploration activities progressing, new oil and gas discoveries are likely to come in future.

The first deepwater crude oil production at the rate of about 10,000 barrels of crude oil per day has commenced by Reliance Industries Limited (RIL) and NIKO Resources Limited from deepwater block D6 in Krishna Godavari Basin on 17th September 2008. With commencement of the first crude oil production from deepwater in Krishna Godavari Basin, the year 2008 can be said to be a watershed in the history of exploration and production in the country.

The largest natural gas discovery in the country has been made in KG deepwater, from where production has commenced in April, 2009 with initial production of 5 million metric standard cubic metre per day (MMSCMD), which is likely to be ramped up to 40 MMSCMD in 2009. This gas production is likely to be doubled in next three to four years with peak production of about 80 MMSCMD. As on 1st April 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. In addition, US$ 5.2 billion investment has been made on development of discoveries.

With a view to accelerate further the pace of exploration, the Eighth round of NELP was launched on 9th April, 2009. In the eighth round of NELP, 70 exploration blocks comprising of 24 deepwater blocks, 28 shallow water blocks and 18 onland blocks will be offered. These 70 blocks cover a sedimentary area of about 1.64 lakh sq. km., which is 5.2% of the Indian sedimentary basinal area. 18 onland blocks fall in the States of Assam (2), Gujarat (8), Haryana (1), Madhya Pradesh (3), Manipur (2) and West Bengal (2). As regards offshore blocks, 28 shallow water and 24 deepwater blocks fall in the Western, Eastern and Andaman offshore areas.

1.10 COAL BED METHANE (CBM)

Coal Bed Methane is an environment friendly clean fuel similar to Natural Gas. To give impetus to the Exploration & Production, the Government had approved a comprehensive CBM policy in July, 1997 for exploration and production of CBM gas. As of now, 23 CBM Blocks have been awarded through competitive international bidding under first three rounds of CBM policy, under which blocks are being operated by technically competent companies. Two blocks were awarded on nomination basis and one block through the FIPB route. Twenty six CBM contracts were signed for exploration of CBM gas with estimated resources of about 1354.45 BCM. As of now, 174.58 BCM reserves have been established in 4 CBM blocks. First commercial production of CBM has commenced from July 2007 at the rate of about 6,800 cubic metres per day, which is currently at the rate of 72,000 cubic metres.

In the fourth round of CBM policy, 10 CBM blocks covering an area of about 5,000 sq. km shall be offered. These CBM blocks fall in the States of Assam (1), part Chhattisgarh & part Madhya Pradesh (1), Jharkhand (1), Madhya Pradesh (2), Maharashtra (2), Orissa (2) and Tamil Nadu (1).

1.11 POLICY FOR DEVELOPMENT OF NATURAL GAS PIPELINE

The Government of India has enacted 'The Petroleum and Natural Gas Regulatory Board Act, 2006'. The Board has been constituted on 25th June, 2007. The provisions of the Act (except Section 16) have been brought into force w.e.f. 1.10.2007. The Board would regulate refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas, excluding production of crude oil and natural gas.

1.12 PRODUCTION AND CONSUMPTION OF PETROLEUM PRODUCTS

During the current year 2008-09 production of petroleum products from crude oil and natural gas is 152.68 MMT. This shows an increase of 3.87% compared to the year 2007-08.

During the current year 2008-09 consumption of petroleum products (in terms of domestic sale) was 133.400 MMT. This shows increase of 3.45% compared to last year.

Year-wise production and consumption of petroleum products during 2001-02 to 2008-2009 may be seen in



Table-3 below. It may be observed that while consumption has broadly shown a steady upward trend, production has varied considerably over the years leading to greater dependence on oil imports, as may be seen in the next section.

Table- 3: Production and Consumption (indigenous sales) of Petroleum Products

Year	Production of Petro-Products* (MMTPA)	% Growth	Consumption of Petro-Products** (MMT)	% Growth
2001-02	102.209		100.432	
2002-03	106.510	4.21	104.126	3.68
2003-04	115.783	8.71	107.751	3.48
2004-05	120.819	4.35	111.634	3.60
2005-06	121.935	0.92	113.213	1.41
2006-07	137.353	12.64	120.749	6.66
2007-08	146.990	7.02	128.946	6.79
2008-09	152.680	3.87	133.400	3.45

Note: * Includes LPG production from Natural Gas.
**Excludes refinery fuels and includes imports also

1.13 IMPORTS AND EXPORTS OF CRUDE OIL & PETROLEUM PRODUCTS

During the financial year 2008-09, imports of crude oil has been 128.16 MMT valued at Rs. 3,41,887 crore. Imports of crude oil during 2007-2008 was 121.672 MMT valued at Rs.2,72,699 crore. This marked an increase of 5.33% during 2008-09 in quantity terms but increased by 25.37% in value terms. It may be noted that during the year 2001-02, the imports of crude oil was 78.706 MMT that increased to 128.155 MMT in 2008-09 i.e. an increase of 63% during 2001-02 to 2008-09.

The average price of International crude oil (Indian Basket) has increased from US$ 22.75/bbl in 2001-02 to US$ 83.57/bbl during 2008-09 i.e. an increase of about 267%. During the financial year 2008-09, the prices increased phenomenally to reach a peak of US$ 142.04/bbl on 3rd July, 2008 although, prices declined subsequently so that the average during 2008-09 was US$ 83.57/bbl. The trend in growth of crude oil imports and crude oil International (Indian Basket) prices may be seen in Table-4 :

Table- 4: Imports of Crude Oil and average Crude Oil Prices

Year	Imports of Crude Oil (MMT)	% Growth	Average Crude Oil Prices (Indian Basket) (US$/bbl.)	% Growth
2001-02	78.706		22.75	
2002-03	81.989	4.17	26.59	16.88
2003-04	90.434	10.30	27.98	5.23
2004-05	95.861	6.00	39.21	40.14
2005-06	99.409	3.70	55.72	42.11
2006-07	111.502	12.16	62.46	12.10
2007-08	121.672	9.12	79.25	26.88
2008-09*	128.155	5.33	83.57	5.45

*Provisional

It may be seen that despite considerable variations in International prices of crude oil, imports have followed a steady growth primarily to meet domestic demand of a burgeoning economy, apart from re- exports of petroleum products. With substantial increase in refining capacity in India, as seen earlier, exports of petroleum products have picked up during the last four years.

During the financial year 2008-09, exports of petroleum products in quantity terms is 36.931 MMT valued at Rs.1,17,458 crores, which marked a decrease by 9.44% in quantity terms but increased by 6.02% in value terms compared to 2007-08. The Exports were lower in 2008-09 after a very buoyant growth in the previous year. Nevertheless, it may be noted that the exports of petroleum products was 10.065 MMT in 2001-02 which steeply increased by 267% by 2008-09. Imports of petroleum products is relatively limited with greater focus on importing crude oil to utilize domestic capacity (Table-5).

Table- 5: Imports & Exports of Petroleum Products.

Year	Imports of Petroleum Products (MMT)	% Growth	Exports of Petroleum Products (MMT)	% Growth
2001-02	7.009		10.065	
2002-03	7.228	3.12	10.289	2.23
2003-04	8.001	10.69	14.620	42.09
2004-05	8.828	10.34	18.211	24.56
2005-06	13.440	52.24	23.461	28.83
2006-07	17.660	31.40	33.624	43.32
2007-08	22.462	27.19	40.779	21.28
2008-09*	18.285	-18.60	36.931	-9.44

*Provisional



1.14 LNG IMPORT

Pursuant to LNG coming under 'OGL', a Joint Venture Company, viz., Petronet LNG Limited (PLL), promoted by ONGC, GAIL, IOCL & BPCL, was formed in order to import LNG and to set up an LNG regasification plant at Dahej.

PLL signed a contract with Ras Gas, Qatar in July 1999 for import of 7.5 million metric tonnes per annum (MMTPA) LNG for a period of 25 years. As per the contract, supply of 5 MMTPA LNG commenced in 2004 and the supply of balance 2.5 MMTPA LNG would commence in last quarter of 2009. Further, PLL has signed a contract with Ras Gas, Qatar and British Petroleum Gas Marketing, UK for supply of 1.125 MMTPA LNG from January 2009 to September 2009, to meet the requirement of Ratnagiri Gas and Power Private Limited (RGPPL). In addition to the above term-contracts, LNG is also being sourced from spot market by PLL and Hazira LNG Private Ltd. (HLPL). During 2008-09, about 8.06 MMT LNG was imported, which is equivalent to about 28 MMSCMD of RLNG. Out of total LNG import of 8.06 MMT during 2008-09, the share of HLPL is about 1.56 MMT.

Concerted efforts are being made to augment the supply of LNG to the country. Regarding import of 5 MMTPA of LNG from Iran, the matter is being pursued with the Government of Iran. Minister (P&NG) discussed the issue with President of Iran at Shanghai in June 2006 and again during his last visit to Tehran on April 25 and 26, 2007. PLL is at advanced stage of discussion with Gorgon, Australia for import of 2.5 MMTPA LNG for Kochi LNG Terminal. GAIL and PLL are exploring possibility of import of LNG from various potential suppliers.

In order to handle increased LNG import, additional infrastructure is being created in the country. PLL's Dahej LNG terminal is being expanded from the current 5 MMTPA capacity to 10 MMTPA capacity. The expanded facility is expected to be ready for commercial utilization during 2009. HLPL LNG terminal is being expanded from 2.5 MMTPA to 5 MMTPA. Dabhol LNG terminal is expected to be completed in 2009. The terminal will, however, become fully operational only after completion of breakwater facilities in 2012. PLL is setting up an LNG terminal at Kochi which is planned to be commissioned in 2012. In addition LNG terminals are planned to be set up by IOC and ONGC at Ennore and Mangalore respectively.

1.15 REFINING CAPACITY

During the year 2008-09, domestic refinery production was 160.77 MMT as against the target of 164.65 MMT. By the end of XI plan, refinery capacity is expected to reach 240.96 MMT per annum. Availability of petroleum products during 2008-09 from domestic refineries and non-refineries was more than the domestic demand on overall basis demand except for Liquefied Petroleum Gas (LPG). In fact, the country is net exporter of petroleum products and products like Naphtha, Petrol, diesel and Aviation Turbine Fuel (ATF) etc. were also exported during the year.

1.16 IMPORT OF NATURAL GAS THROUGH TRANSNATIONAL GAS PIPELINES

(a) Iran-Pakistan-India (IPI) Gas Pipeline Project

In pursuance of the Cabinet decision of 9.2.2005, the Government is discussing the details of the Iran–Pakistan–India (IPI) Gas Pipeline Project with the Governments of Iran and Pakistan. 60 MMSCMD of gas is proposed to be supplied in Phase-I, to be shared equally between India and Pakistan. 90 MMSCMD of gas is likely to be supplied in Phase-II to India and Pakistan.

(b) Turkmenistan-Afghanistan-Pakistan-India (TAPI) Gas Pipeline Project

The Governments of Turkmenistan, Afghanistan and Pakistan proposed transnational gas pipeline to exploit available gas reserves in Turkmenistan. They designated ADB as the lead development partner. ADB carried out the study and approached India for participating in the project. India has been admitted as an official member of the Project in the 10th Steering Committee Meeting(SCM) of the Project held on April 23-24, 2008 in Islamabad.

The total capacity of the proposed pipeline is about 90 mmscmd and the length is about 1680 km. The length of pipeline in Turkmenistan, Afghanistan and Pakistan up to India border is 145 km, 735 km and 800 km respectively.

1.17 LPG MARKETING BY PUBLIC SECTOR OIL MARKETING COMPANIES (OMCs)

Public Sector Oil Marketing Companies (OMCs) viz.,

Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited and Hindustan Petroleum Corporation Limited are engaged in marketing of LPG in the country. With increased availability of LPG, the number of LPG customers enrolled by them has also been increasing over the years. The number of LPG customers served by OMCs as on 31.03.2009 was about 1057 lakhs.

OMCs have released 53.18 lakh new LPG connections during 2008-09. Total number of LPG Distributorships of OMCs in the country as on 31.03.2009 are 9366. OMCs had advertised 1340 locations for setting up LPG Distributorship in their Marketing Plan 2004-07 out of which interviews have been completed for 848 locations and the process for the balance 492 locations is expected to be completed by August 2009.

1.18 MARKETING OF 5 KG LPG CYLINDERS BY OMCs.

The basic purpose for launching of 5 kg cylinders is that the small size LPG cylinder in the domestic sector helps in fulfilling the demand of low income group in urban, semi-urban and rural pockets and also extends LPG reach to hilly terrain and interior areas on account of convenience in transportation. The LPG connection with 5 kg domestic cylinder in terms of deposit of Rs. 350/- per cylinder and low cost of refills of approximately Rs. 112/- (Delhi) is affordable for the low income groups. This also helps in meeting the requirement of economically weaker sections of the society for LPG refills and help in restricting deforestation thereby ensuring a pollution free, happy and healthy environment.

1.19 LPG AS AUTO FUEL

Government has permitted use of LPG, being a clean and environmentally friendly fuel, as an auto fuel. For this purpose, MOP&NG along with the other concerned Ministries/Departments has formulated necessary legislative and regulatory framework for safe usage of LPG as an automotive fuel.

Hon'ble Supreme Court has mandated conversion of old vehicles to LPG/CNG in cities which are equally or more polluted than Delhi and as per Hon'ble Court, the critically polluted cities are Ahmedabad, Agra, Bangalore, Chennai, Hyderabad, Kanpur, Kolkata, Lucknow, Mumbai, Pune, Surat and Sholapur.

OMCs had initially identified 228 locations for setting up of Auto LPG Dispensing Stations (ALDS) in various Metros and some other major cities. However, in view of directive of the Hon'ble Supreme Court classifying the cities into three categories, OMCs are at present primarily concentrating on category-I and category-II cities and have commissioned 447 ALDS as on 31.03.2009.

Auto LPG pricing is market determined and there is no subsidy on Auto LPG. Vehicle Manufacturers like Maruti,







Auto LPG Station

Hyundai, Tata-Motors, Hindustan Motors and Bajaj Auto have already started marketing factory fitted LPG cars / 3-wheelers with factory fitted Auto LPG Kits. Also, approved testing agencies like the Automotive Research Association of India (ARAI), Pune and Vehicles Research & Development Establishment (VRDE), Ahmednagar, have approved more than 30 LPG conversion kit manufacturers for 3-wheelers and 4-wheelers covering the entire range of petrol-driven vehicles for conversion to LPG. At present 25 manufacturers of conversion kits for 4-wheelers and 14 manufacturers of conversion kits of 3-wheeler vehicles have been approved by various Testing Agencies like ARAI Pune, VRDE Ahmednagar and IIP Dehradun.

1.20 STEPS TAKEN TO CHECK ADULTERATION OF PETROL/DIESEL AND STREAMLINING PDS KEROSENE DISTRIBUTION

Checking adulteration is a continuous process and the Ministry of Petroleum & Natural Gas has been reviewing steps taken to curb adulteration from time to time. In the process, several technological and institutional measures have been taken to contain adulteration. The steps taken by the Ministry are summarized below:

(i) Under the Control Orders issued by the Government to prevent fuel adulteration, under the Essential Commodities Act, 1955, State Governments are empowered to take action against those indulging in adulteration. Government have requested the State Governments/ Union Territory Administrations to take steps to control adulteration.

(ii) OMCs undertake regular and surprise inspections of Retail Outlets and also take action under Marketing Discipline Guidelines (MDG) and Dealership Agreements against those indulging in adulteration and malpractices. MDG provide for termination of dealership in the first instance of adulteration itself.

(iii) OMCs have introduced new tamper proof tank-truck locking systems to prevent en-route adulteration by transporters.

(iv) Keeping in view the misuse/diversion of SKO for adulteration, the import of SKO by private parties has been canalized through OMCs.

(v) As advised by the Government, Oil Marketing Companies (OMCs) have created a separate wing to report to a Director other than Director (Marketing), which will oversee and monitor all activities and operations to curb adulteration and specify norms and guidelines in this regard.

(a) **Automation of Retail Outlets:** In order to monitor the activities at retail outlets by adopting the latest technological improvements, automation of retail outlets is being implemented. MOP&NG has directed the oil marketing companies to complete automation of retail outlets selling more than 200 KL per month.

Out of 2357 Retail Outlets (ROs) selling more than 200 KL per month, 1233 ROs have already been automated by IOCL. The balance ROs are likely to be automated by April 2010. HPCL and BPCL have completed automation of their all the 1135 ROs and 1602 ROs targeted in the first phase. In the 2nd phase, out of 600 ROs automation, 342 ROs have been completed by BPCL. The balance ROs are likely to be completed by November 2009.

The figures show that as on 31.03.2009, Public Sector Oil Marketing Companies (OMCs) have completed approx 79% automation of the ROs selling more than 200 KL per month.

(b) **Monitoring of movement of Tank Trucks through Global Positioning System (GPS) :** In order to prevent adulteration during transportation, OMCs have been directed to install GPS for complete monitoring of the movement of all the company owned/dealer owned/contractor owned tank trucks.

Out of 19,600 Tank Trucks (TTs) (Co. owned/ dealer/ contractor TTs), IOCL have completed the GPS system on 16555 TTs. The balance TTs are planned to be covered with GPS by September 2009.

As on 31.03.2009, Public Sector Oil Marketing Companies (OMCs) have completed the GPS system on approx 88% of the TTs.

(c) **Third Party Certification of Retail Outlets:** OMCs have been directed to complete third party certification of all the retail outlets selling more than 100 KL per month and they have completed the third party certifications of all the ROs selling more than 100 KL per month as per their target in the 1st phase and 2nd phase.

(d) **Revising the Marketing Discipline Guidelines:** The Marketing Discipline Guidelines(MDG) under which the oil marketing companies take penal actions against the erring dealers have been revised during August 2005 making the penal actions more stringent. As per MDG, 2005, a dealership would be terminated in the first instance of adulteration itself.

1.21 NATIONAL AUTO FUEL POLICY

In line with the road map laid in the Auto Fuel Policy approved by the Government in October 2003, the following quality of fuel has been introduced all over the country:

As per the road map provided in the Auto Fuel Policy, in respect of four wheeled vehicles, Euro-III equivalent emission norms in the entire country and Euro-IV equivalent emission norms in the cities of Delhi/NCR, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur and Agra will be



Indianoil's R&D Centre, Faridabad



introduced from 1st April, 2010. The oil industry is planning for introduction of Euro-IV norms in the year 2010 in line with the Auto Fuel Policy. A Committee has been constituted to review Auto Fuel Policy targets for 1.4.2010 based on the source apportionment studies currently in progress by Ministry of Environment and Forests and other relevant materials.

Fuel quality	States/Cities	Date of introduction
Euro-III Petrol and Diesel	13 cities (Delhi/National Capital Region, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur, Agra, Solapur and Lucknow)	1.04.2005
Bharat Stage-II Petrol	All over country	1.04.2005
Bharat Stage-II Diesel	All States except Rajasthan, West U.P., Uttranchal, M.P., Punjab, H.P., and Jammu & Kashmir	1.04.2005
	Rajasthan	1.06.2005
	West U.P. and Uttaranchal	1.07.2005
	Madhya Pradesh, Himachal Pradesh and Chandigarh	1.09.2005
	Punjab and Jammu & Kashmir	1.10.2005



H-CNG Dispensing station



1.22 CONSERVATION OF PETROLEUM PRODUCTS

Impressive growth rate in Indian Economy has resulted in higher demand for various forms of energy and specifically in the petroleum sector. The growing energy demand coupled with a situation where the country has to depend on import of crude oil to meet a large percentage of the energy needs puts I pressure on economy as crude oil prices in the international market reached US$ 142.04 per barrel in July 2008. The sharp increase in the crude price over the last one year has brought the issue of Conservation as a central theme in all sectors and initiated measures for improving energy efficiency. With the projected increase in the demand of petroleum products by 5-6% per annum, energy conservation assumes special significance.

The need of the hour is to create an environment where conservation methods/ techniques/ equipments are adopted in the various sectors. Effective energy conservation measures can go a long way to serve the dual purpose of Energy Conservation and most importantly environmental protection.

In our country an identified scope of reducing energy consumption by 20% to 25% exits in all major sectors through conservation measures. As there are millions of consumers in the country, any savings achieved by individual consumers will cumulatively amount to large quantities and obviate the need to produce or import equivalent amount of new energy on a recurring basis.

The transport sector has become a major consumer of Petroleum products which has put a heavy pressure on the quality of environment. Deteriorating ambient air quality in the urban areas due to emissions from transport vehicles has been a matter of great concern in recent years. Apart from better quality of existing petroleum fuels, the use of less polluting fuels like Hydrogen and blending of Biodiesel and Ethanol are some of the steps which have the potential to control the impact on the environment and reduce the burden on the National exchequer.

In association with major national industrial associations, Petroleum Conservation Research Association (PCRA) has initiated steps to approach the Small and Medium Industrial clusters where energy consumption is substantial and a large scope for its optimization exists. Through interaction, the areas where Research & Development interventions are sought by the Industrial clusters are finalized and then necessary action initiated for required R&D and its implementation.

Petroleum Conservation Research Association (PCRA) has been active in undertaking energy conservation awareness campaigns through the Print, Electronic and Outdoor Media. These awareness campaigns are coupled with the direct services leading to improvement in efficient Energy utilization across all major sectors of the economy viz. transport, industry, agriculture, domestic and commercial. For enhancing the effectiveness and reach of PCRA's efforts, linkages have been developed with the "Bureau of Energy Efficiency" (BEE) and "Confederation of Indian Industry" (CII) where several joint programmes are planned and implementation.

PCRA team executes several activities like energy audits and institutional training programmes for industries, driver training programmes and Model Depot Project studies for the State Transport Undertakings (STUs) and other large fleet operators and conservation/ safety workshops for the domestic sector. PCRA also bridges the gap between the users of energy and the energy efficient equipments available in our country by sharing their features during the Technical seminars and workshops, which are conducted for a wide spectrum of industries depending on their requirements. Efforts to showcase the results achieved are taken through participation in National exhibitions targeted for the industries and also through Kisan Melas where information for the farmers is conveyed through the medium of films and literature.

PCRA's efforts are focused towards sharing and motivating the energy users to adopt the conservation techniques and practices. This is achieved through various mass media campaigns, seminars, training programmes, printed literature, essay and quiz competitions.

1.23 HYDROGEN AS AUTO FUEL

Hydrogen is receiving worldwide attention as a clean fuel and efficient energy storage medium for automobiles. Hydrogen can replace or supplement oil used in road transportation. Hydrogen production technologies can be both fossil fuel based and renewable resource based. However, substantial research and development is needed to establish use of hydrogen as an alternative fuel in a cost effective manner.

The Ministry of Petroleum & Natural Gas has set up a Hydrogen Corpus Fund with a corpus of Rs.100 crore with contribution from five major Oil Companies and Oil Industry Development Board (OIDB) for supporting Research and Development in various aspects of hydrogen, which could substitute part of natural gas as transport fuel in future.

IOC (R&D) has initiated a project for setting up a Hydrogen-CNG mixture dispensing station at IOC's Company Owned and Company Operated (COCO) retail outlet at Dwarka, New Delhi. This project is being partly funded by MNRE (Ministry of New & Renewable Energy) (50%) and partly from Hydrogen Corpus Fund (50%) created by Ministry of Petroleum & Natural Gas. The



station has been commissioned and will be used for fueling the demonstration vehicles under various research projects of IOC as well as other agencies funded by MNRE.

A Project for development and demonstration of heavy duty engines (TATA & LEYLAND make) with H_2-CNG Blends was approved by steering committee of Hydrogen Corpus Fund. Under this project containerized hydrogen test facility is being procured for conducting experimental studies.

A MoU has been signed with Society of Indian Automobiles Manufacturer (SIAM) and Ministry of New and Renewable Energy (MNRE) for the use of upto 30% H_2 in CNG in light duty vehicles such as 3 wheelers, mini buses and passenger cars. Experiments are under progress on these vehicles using H_2-CNG blends.

The implementation of H_2 blended CNG fuel will depend on the success of the above mentioned demonstration projects which are likely to be completed in next 2-3 years. The cost of Hydrogen-CNG would depend upon the cost of hydrogen production, cost of CNG ad the ratio in which they are blended.

A project has been initiated by IOC (R&D) for conversion of a gasoline fuel injected car (Maruti Swift) to gaseous fuel injection system in collaboration with M/s Harit Energy Solutions Ltd.

1.24 BIO-DIESEL PURCHASE POLICY

To encourage production of bio-diesel in the country, the Ministry of Petroleum and Natural Gas has announced a Bio-diesel Purchase Policy, in October, 2005, which became effective from 1.1.2006. Under this scheme Oil Marketing Companies will purchase bio-diesel for blending with High Speed Diesel (HSD) to the extent of 5% at identified purchase centres across the country. OMCs would buy bio-diesel at a uniform landed price, which is to be reviewed every six months. At present the purchase price of bio-diesel is at Rs. 26.50 per litre w.e.f. 22.8.2006.

The Policy has identified 20 purchase centres of the public sector Oil Marketing Companies (OMCs) all over the country. The OMCs would purchase bio-diesel meeting the standards prescribed by the Bureau of Indian Standards (BIS), from those bio-diesel manufacturers who register with them after satisfying the technical specifications, at a specified delivered price. Depending upon felt need and preparedness, the OMCs could also open more purchase centres.

However, Public Sector Oil Marketing Companies have not been able to purchase bio-diesel at the identified purchase centres so far, as the parties who have expressed interest are not willing to supply at the declared price. Facilities are not yet ready with other parties who have expressed their interest.

IOC is planning cultivation of Jatropha and other energy crops for the production of bio-diesel for blending with diesel. IOC has signed MoU with Government of Chhattisgarh on 19th November 2007 for entering into bio-diesel business in the State. In Madhya Pradesh IOC has applied for 30,000 hectares of non-forest wasteland for energy crop plantation. So far 2000 hectares have been allotted. A Joint Venture Company is proposed to be formed between IOC and Government of Chhattisgarh and JVC would initiate the crop plantation in the State.

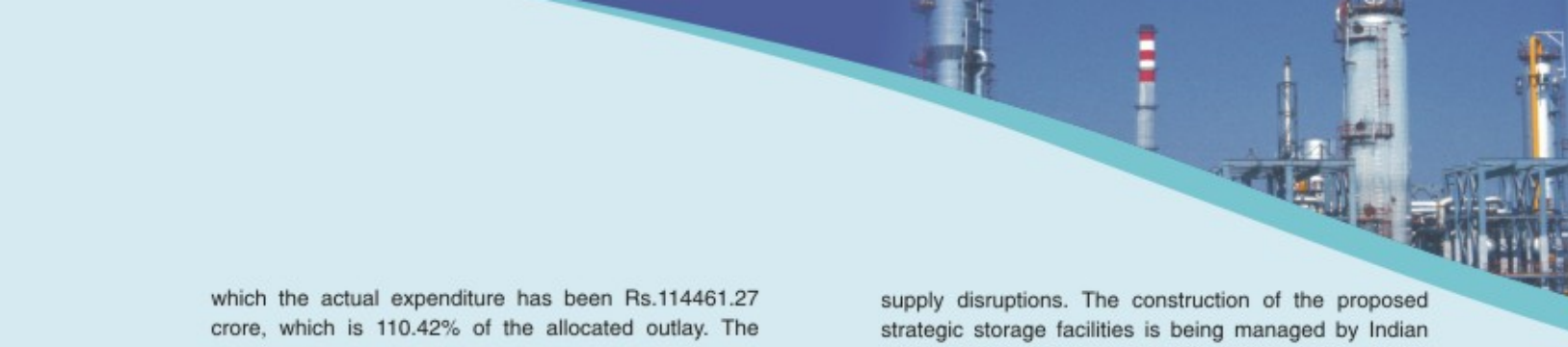
1.25 ETHANOL-BLENDED PETROL (EBP) PROGRAMME

Ministry of Petroleum & Natural Gas vide its notification dated 20th September 2006 has directed the Oil Marketing Companies (OMCs) to sell 5% Ethanol Blended Petrol (EBP) subject to commercial viability as per Bureau of Indian Standards specifications in entire country except North-Eastern States, Jammu & Kashmir, Andaman & Nicobar Islands and Lakshdweep with effect from 1st November 2006.

At present 5% EBP programme is being implemented in 16 States and 3 UTs out of 20 States and 4 UTs identified for implementing the programme. OMCs have finalised tenders for ethanol in all these States. The requirement of ethanol for the three year period is 180 crore litres. The OMCs have been able to contract 140.4 crore litres. They have so far procured 53.4 crore litres under the programme (as on 31.03.2009).

1.26 PLAN OUTLAY

The Tenth Five Year plan (2002-2007) outlay for the Oil & Gas sector had been fixed at Rs.103656.00 crore, against



which the actual expenditure has been Rs.114461.27 crore, which is 110.42% of the allocated outlay. The Eleventh Five Year plan (2007-2012) outlay for the Oil & Gas sector has been fixed at Rs.229072.60 crore, which is about 121% more than the Tenth Plan allocation. The Budget Estimate (BE) for the year 2008-09 was approved at Rs.46540.00 crore. These outlays of Oil PSUs are met from their own internal and extra budgetary resources .

1.27 EARNINGS OF OIL PUBLIC SECTOR UNDERTAKINGS

The Profit Before Tax (PBT) and the Profit After Tax (PAT) earned by Public Sector Undertakings in the Oil Sector during 2008-09 were Rs.45,130.25 crore and Rs.29638.49 crore respectively. Oil PSU-wise details are given below:

Annexure (Figures in Rs./crore)

Name of Oil PSU	Profit Before Tax 2008-09	Profit After Tax 2008-09	% of GOI Holdings as on 31.3.2009
ONGC	23914.96	16126.31	74.14
OVL	5366.50	2806.70	Nil
IOC	4328.59	2949.55	78.92
GAIL	4204.02	2803.70	57.34
HPCL	712.23	574.98	51.11
OIL	3386.97	2161.68	98.13
BPCL	1004.11	735.90	54.93
CPCL	- 593.11	-397.28	Nil
MRPL	1811.66	1192.54	Nil
NRL	319.59	235.65	Nil
EIL	520.47	344.53	90.40
BALMER LAWRIE	151.56	101.61	Nil
BIECCO LAWRIE	2.70	2.56	57.37
TOTAL	**45130.25**	**29638.49**	

1.28 STRATEGIC STORAGE

In order to ensure the energy security of the country, Government has given in-principle approval for constructing a Strategic Storage of crude oil of 15 MMT capacity, of which the first phase of 5 Million Metric Tonne (MMT) has been taken up at three locations, viz. Visakhapatnam (Vizag) (1.00 MMT), Mangalore (1.5 MMT) and Padur (2.5 MMT). This strategic storage would, in addition to the existing storages of crude oil and petroleum products with the oil companies, provide an emergency response mechanism in case of short term supply disruptions. The construction of the proposed strategic storage facilities is being managed by Indian Strategic Petroleum Reserves Limited (ISPRL), a Special Purpose Vehicle of the Oil Industry Development Board (OIDB). The proposed Strategic Crude Oil Storage would be in the underground rock caverns/concrete structure. The project involves a capital cost of approximately Rs. 2400 crore (at September 2005 prices) and Crude Oil cost of approximately Rs. 9000 crore (calculated at an average crude oil cost of US$ 55 per barrel and exchange rate of 1 US$=Rs. 44, as estimated in September, 2005), besides operation and maintenance cost estimated to be about Rs. 90 crore per annum.

The site wise progress is as under :-

a) **Visakhapatnam -** The underground civil work has started. More than 3.2 km of tunneling work has been done and approx. 2.5 lakh cubic meters of excavation has been completed. The scope of the above-ground works has been finalized and tendering for the above-ground work is in progress.

b) **Mangalore -** 89 acres of land has been acquired from Mangalore Special Economic Zone Limited (MSEZL). The bidding process for the underground civil work has been completed and work order to the successful bidder has been awarded.

c) **Padur -** The matter of acquisition of about 161 acres of land for the project is in the final stage and is likely to be completed by August, 2009.

The target date for completion of the entire project is December, 2012. Crude oil from the reserves will be released by a Government-appointed High Powered Committee, in the event of any short-term disruption in supplies, a natural calamity or any unforeseen global event, leading to an abnormal increase in crude oil prices.

1.29 RIGHT TO INFORMATION ACT – 2005

Right to Information (RTI) Act-2005 has been implemented in the Ministry of Petroleum & Natural Gas as per Gazette Notification of Government of India dated 15th June, 2005. RTI Act is inter-alia designed to promote transparency and accountability in the functioning of public authorities.

As per provisions of Section 5 and 19 of the Right to Information Act, 2005 and in supersession of all the earlier orders issued, with effect from 16th May, 2007, all the Under Secretaries (or Section Officers in the Sections where there is no Under Secretary) in the Ministry of Petroleum & Natural Gas have been designated as Public Information Officers (PIOs) in respect of Sections allocated to them. Accordingly, all the Directors / Deputy Secretary / Joint Adviser in the Ministry of Petroleum & Natural Gas have been designated as Appellate



Authorities in respect of their concerned Under Secretary / Section Officers (PIOs). All the PSUs under the administrative control of the Ministry of Petroleum & Natural Gas have also implemented RTI Act, 2005 and PIOs/APIOs and Appellate Authorities have been designated by them. Basic information in respect of the Ministry of Petroleum & Natural Gas and its all PSUs along with details of Appellate Authorities, PIOs & APIOs have been hosted on the websites of the Ministry and all Oil PSUs.

During 2008-09, 1186 applications/receipts including 80 appeals have been received under RTI Act, 2005 in the Ministry. Out of 1186 applications / receipts 1144 applications / receipts including 71 appeals have been disposed of. The remaining applications/receipts and appeals would be disposed of within the time limit prescribed in the RTI Act.

1.30 PUBLIC GRIEVANCE REDRESSAL SYSTEM IN OIL MARKETING COMPANIES (OMCs)

In the light of numerous complaints tickling in regarding supply & distribution of petroleum products/LPG across the country it was felt that public grievances redressal system in the Public Sector Oil Marketing Companies



The Union Minister for P&NG, Shri Murli Deora with Dy. Premier and Minister of Energy and Industry of Qatar, Mr. Abdullah Bin Hamad Al-Attiyah, in New Delhi. The Additional Secretary MOP&NG Shri S. Sundareshan is also seen.

needs to be streamlined. The following initiatives have been taken for the prompt and effective redressal of the grievances of customers :

1. **Toll Free Number :**

(i) In order to have a more convenient, easy and effective way for the customer to register their complaint and follow it up, OMCs have started the service of using Unique Toll Free Number :

Indian Oil Corporation Ltd. (IOC)	18002333555
Bharat Petroleum Corporation Ltd. (BPC)	18002227255
Hindustan Petroleum Corporation Ltd. (HPC)	18002333777 (LPG) 18002333999 (MS/HSD)

The above Toll Free Numbers are available across the country for the registration of complaint through call centers on 24x7 basis. On registration of a complaint, customers are given a registration number by the call center. Subsequently, the status of complaint can be reviewed by the customer by citing this number to call center.

(ii) The complaints through the service provider of call center is uploaded in a website for review and initiating action by officers of the company.

(iii) The complaint normally will be redressed by the respective offices within 2 working days and thereafter will be closed on the web portal mentioning the action taken. The call center will then give feed back to the complainant whenever the customer calls again.

(iv) If the complaint remains unresolved for 2 working days (after uploading on the web portal), the same gets forwarded to next higher office for reviewing at their end. After the complaint is forwarded to next higher office if it still remains unresolved for another 2 working days then the same shall be forwarded to next office in the hierarchy.

The above system has been put in place by OMCs from 2nd October, 2008 and nationwide advertisement in leading print media has been published. The same is also displayed in respective corporate website. The Toll Free Number is also being displayed in all retail outlets and distributorships.

2. **Customer Contact :**

To facilitate personal redressal of complaints, at Head Office, customers can meet senior officials on the 1st and 15th of every month between 3 and 4 pm. All field officers covering both retail and LPG in various revenue districts will also be available on the 1st and 15th of every month between 3 and 4 pm at designated retail outlets/LPG distributorships so that customers can visit the location and meet with field officers for prompt and immediate redressal of complaints.

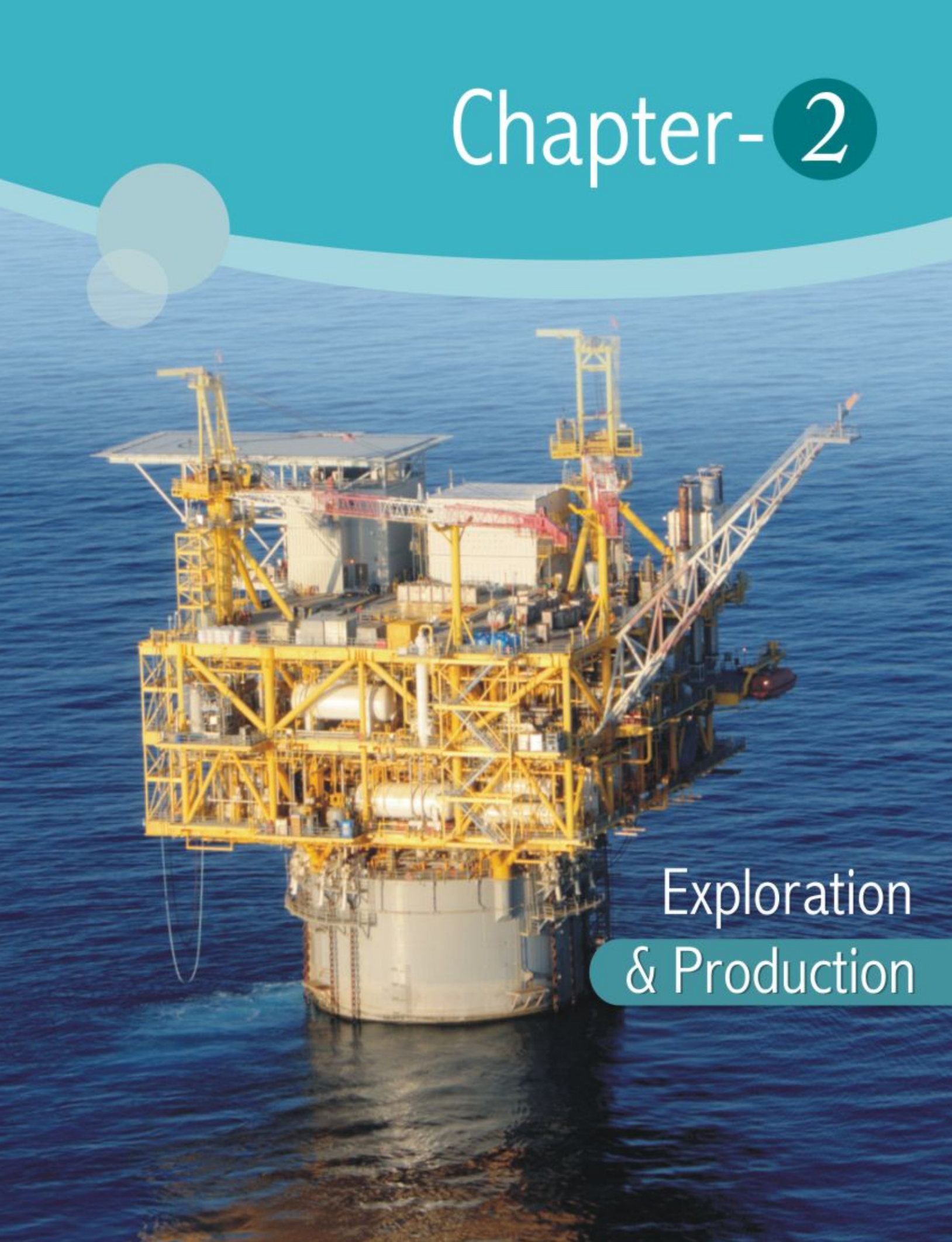
Over and above the latest initiatives mentioned above, the standard customer grievance redressal system is also functioning in the OMCs.

The performance of the above system will be constantly reviewed and the required resources will be enhanced so that all the systems for registering complaints are easily accessible to the customers and their grievances are attended promptly in a definite time bound manner.



The Union Minister for P&NG, Shri Murli Deora at a meeting to review the working of the Oil PSU's under the Ministry, Minister of State for P&NG, Shri Dinsha J. Patel is also seen.

Chapter-2



Exploration & Production

Exploration & Production

2.1 CRUDE OIL & GAS PRODUCTION

2.1.1 Oil and Natural Gas Corporation Limited (ONGC) and Oil India Ltd. (OIL), the two National Oil Companies (NOCs) and private and joint-venture companies are engaged in the exploration and production (E&P) of oil and natural gas in the country. Crude oil production by the NOCs during 2008-09 is 28.826 MMT (86% of total crude oil production). In 2009-10, crude oil production has been targeted at 29.334 by NOCs, which is marginally higher than the previous year.

In addition, crude oil production of 4.674 MMT was by the private and JV companies during 2008-09. Thus, total crude oil production in 2008-09 was about 33.5 MMT. In 2009-10. crude oil production in the country is targeted to be about 38 MMT, which is 13.4% higher than the previous year.

Gas production during the year 2008-09 was about 32.85 BCM by ONGC, OIL and private/JV companies. The contribution of private/JV companies in natural gas production was about 8.09 BCM (25% of total natural gas production) in 2008-09. Natural gas production in 2009-10 is targeted to be about 52.167 BCM, which is 59% higher than the previous year.

2.1.2 Measures taken to enhance hydrocarbon reserves and increase production:

(i) Major thrust on exploration in the new frontier areas like deep water and other geologically and logistically difficult areas and also ensuring continuation of exploration in the existing and unexplored areas.

(ii) Development of new fields and additional development of the existing fields through implementation of Improved Oil Recovery (IOR) and Enhanced Oil Recovery (EOR) projects in major fields and medium size fields. These projects are being implemented by ONGC & OIL.

(iii) Implementation of specialized technologies like extended reach drilling, horizontal drilling and drain hole drilling.

(iv) Obtaining the services of international experts whenever considered necessary.

(v) Maintenance of reservoir health through work-over operations and pressure maintenance methods.

(vi) Better reservoir delineation through three dimensional (3D) seismic survey of old fields.

(vii) Optimization and redistribution of water injection.

(viii) Infill drilling in the unswept areas of the reservoirs.

2.1.3 Consequent upon liberalization in petroleum sector, Govt. of India is encouraging participation of foreign and Indian companies in the exploration and development activities to supplement the efforts of national oil companies to narrow the gap between supply and demand. A number of contracts have been signed with both foreign and Indian companies for exploration and development of fields on production sharing basis.

2.1.4 Since 1991, Government of India has been inviting bids on regular basis with several rounds of bidding carried out till operationalisation of New Exploration Licensing Policy (NELP).

2.1.5 After the operationalisation of NELP under the first seven rounds, Production Sharing Contracts (PSCs) for 203 blocks had been signed.

2.2. THRUST AREAS FOR E&P SECTOR IN XI PLAN

The following thrust areas have been identified in XI Plan for overall development of E&P industry :

- Increasing domestic production by attracting investments, both private and public, in the upstream sector. This needs to be attempted by involving industry participants in formulating an investor friendly E&P investment regime.
- Taking all steps to increase the production from ONGC's (Oil and Natural Gas Corporation) assets including their maturing fields.
- 80% exploration coverage of sedimentary basins.
- Establishment of National Knowledge Hub during XI plan period.

2.3 ACQUISITION OF EQUITY OIL ABROAD

Acquiring equity oil and gas assets overseas is one of the important components of enhancing energy security for the country. The Government is encouraging national oil companies to aggressively pursue equity oil and gas opportunities overseas.

In 2008, OVL has acquired two blocks each in Brazil and Columbia and one block in Trinidad and Tobago. OIL-IOC alliance has acquired one block in Timor Leste and two blocks in Egypt. BPCL alongwith Videocon has acquired participating interest in 10 blocks in Brazil.



The largest ever acquisition of a foreign company, Imperial Energy PLc. U.K.(IEC) by an Indian Public Sector company, ONGC Videsh Limited at an acquisition cost of about US$ 2.1 billion has been accomplished in early 2009. IEC has oil and gas producing fields in Russia.

OVL produced about 8.77 Million Metric Tonnes (MMT) of oil and equivalent gas during the year 2008-09 from its assets abroad in Sudan, Vietnam, Russia, Syria, Colombia & Venezuela. OVL has a target to acquire 20 MMTPA of O+OEG production by 2020 but efforts are on to achieve it even earlier.

2.4 NEW EXPLORATION LICENSING POLICY

Government of India approved the New Exploration & Licensing Policy (NELP) in 1997 and it became effective in February, 1999 Since then licenses for exploration are being awarded only through a competitive bidding system and National Oil Companies (NOCs) are required to compete on an equal footing with Indian and foreign companies to secure Petroleum Exploration Licences (PELs). Seven rounds of bids have so far been invited under NELP, in which, 203 exploration blocks have been awarded. In addition, 28 exploration blocks were signed prior to NELP under various bidding rounds with private Indian and foreign Companies and National Oil Companies as Licensee. Under NELP, 70 oil and gas discoveries in 20 blocks have already been made.

First crude oil production from deepwater block D6 in Krishna Godavari Basin commenced on 17th September 2008 with production of about 10,000 barrels of crude oil per day by Reliance Industries Limited (RIL) and NIKO Resources Limited. The largest natural gas discovery in the country has been made in KG deepwater, from where production will commence in April 2009 with initial production of 5 million metric standard cubic metres per day (MMSCMD), which is likely to be ramped upto 40 MMSCMD in 2009. This gas production is likely to be doubled in next three to four years with peak production of 80 MMSCMD.

In the eight round of NELP, 70 exploration blocks comprising of 24 deepwater blocks, 28 shallow water blocks and 18 onland blocks are on offer. These 70 blocks cover a sedimentary area of about 1.64 lakh sq. km.

2.5 COAL BED METHANE (CBM) POLICY

Coal Bed Methane is a natural gas (Methane) adsorbed in coal and lignite seams and is an eco-friendly source of energy.



ONGC Hazira Plant

To harness this new source of energy in the country, the Government has approved a comprehensive CBM policy in July, 1997 for exploration and production of CBM gas.

As of now, 23 CBM Blocks have been awarded through competitive international bidding under first three rounds of CBM policy, under which blocks are being operated by technically competent companies. Two blocks were awarded on nomination basis and one block through the FIPB route. Twenty six CBM contracts were signed for exploration of CBM gas. As of now, 6 TCF reserves have been established in 4 CBM blocks.

First commercial production of CBM has commenced from July 2007 at the rate of about 6,800 cubic metres per day, which is currently at the rate of 72,000 cubic meters.

In the fourth round of CBM policy, 10 CBM blocks covering an area of about 5,000 sq. km. shall be offered. These CBM blocks fall in the States of Assam (1), part Chhattisgarh & part Madhya Pradesh (1), Jharkhand (1), Madhya Pradesh (2), Maharashtra (2), Orissa (2) and Tamil Nadu (1).

2.6 OIL AND NATURAL GAS CORPORATION LIMITED (ONGC)

Oil & Natural Gas Commission was established on 14th August, 1956 as a statutory body under Oil & Natural Gas Commission Act (The ONGC Act), for the development of petroleum resources and sale of petroleum products. ONGC was converted into a Public Limited Company under the Companies Act, 1956 and named as "Oil and Natural Gas Corporation Limited" with effect from 1st February, 1994. The Government disinvested around 10% of the equity shares of ONGC in March 2004 through a public offer in the domestic capital market at Rs. 750 per share. After the above disinvestment, the shareholding of the Government in ONGC came down to around 74.15%. At present, paid-up equity capital has increased to Rs. 2,138.9 crore after issuing bonus shares in ratio of one bonus share for every two shares held.



2.6.1 HIGHLIGHTS FOR THE YEAR 2008-09

- During 2008-09, ONGC has made 25 oil & gas discoveries in the areas under its operative control.
- State-of-the-art technologies inducted in hardware & software for seismic data acquisition, processing & interpretation, and in well logging.
- Advanced drilling techniques for sidetracks, multilateral and extended reach wells absorbed and implemented on fast track. Engineering design audit introduced with significant cost savings.
- ONGC Mittal Energy Limited (OMEL) and KazMuaniGas (KMG) signed a Heads of Agreement on 24th January, 2009 for Oil & Gas in Satpayev Block in Caspian Sea, Kazakhstan.
- In accordance with the provisions of Foreign Trade Policy 2004-09, ONGC has been accorded the status of "Premier Trading House", by the Zonal Joint Director General of Foreign Trade, Mumbai, Ministry of Commerce & Industries, Government of India, for achieving exports worth more than Rupees 10,000 crore during the current Financial Year 2008-09.
- ONGC has signed an MoU with Arrow Energy for co-operation in Coal Bed Methane Sector. The Main areas identified under the MoU are joint participation in blocks in India and abroad for exploration, field development and production of CBM; and sharing of knowledge, experience and transfer of technology in the CBM Sector.
- For the first time in the history of ONGC, three ONGC Fire Services personnel have been awarded the prestigious "Fire Services Medal for Meritorious Service" by the Government of India on the occasion of 60th Republic Day.



2.6.2 PHYSICAL PERFORMANCE DURING 2007-08 & 2008-09

	Unit	2007-08 Actual	2008-09 BE/MOU	2008-09 Actual
Seismic Survey				
On-land	2D (GLK/LK)	996.23	2505	2274.50
	3D (Sq. Kms.)	4488.7	6229	5523.90
Offshore	2D (GLK/LK)	7161.23	52430	74850.11
	3D (Sq. Kms.)	14869.93	16593	21257.82
Drilling				
Exploratory	Meterage ('000m)	251.58	483.99	297.145
	Wells (Nos.)	98	162	107
Development	Meterage ('000m)	482.23	514.28	477.144
	Wells (Nos.)	224	232	218
Total (Expl.+Dev)	Meterage ('000m)	733.81	998.27	774.289
	Wells (Nos.)	322	394	325
Production				
Crude Oil	**MMT**	**25.945**	**27.323**	**25.366**
Natural Gas	**MMM³**	**22333.90**	**21841.96**	**22489.478**
Value Added Products (VAP)				
LPG	000'T	1034.6	1074.0	1026.319
C2-C3	000'T	519.7	510.0	496.663
SKO	000'T	167.4	166.0	156.301
ARN/ LAN	000'T	1469.5	1507.8	1553.000
Others	000'T	65.5	62.0	21.627
TOTAL VAP	**000'T**	**3256.7**	**3320.0**	**3313.450**

2.6.3 FINANCIAL PERFORMANCE DURING 2008-09

(Rs. Crore)

Parameters	2007-08	2008-09
Plan Outlay	17651.04	19641.53
Total Income (Incl. Interest Income)	58630.33	69163.91
Net Profit	16701.65	16126.31

#Provisional.

2.6.4 PROGRESS OF PROJECTS

The progress of major projects of ONGC are as under:

MAJOR PROJECTS COMPLETED DURING THE YEAR

Sl. No.	Project	Date of completion	Approved Cost (Rs. in Crore)
1.	Barge Bumper, Boat Landing and Riser Protectors Project	06.05.08	148.84
2.	IOR Sobhasan	31.05.08	71.92

MAJOR PROJECTS APPROVED DURING THE YEAR

Sl. No.	Project	Approved Cost (Rs. in Crore)	Anticipated Completion
1.	2 Pipeline replacement project, Ahmedabad & Mehsana	188.18	June 2010
2.	LP Gas Processing & Compression project	142.00	October 2009
3.	MNW-NF Bridge Project	175.21	First half of 2009
4.	Revamping of WIN Platform	333.40	May 2010
5.	Barge Bumper-Boat Landing-Riser Protector Project Project Ph - II	289.60	May 2010

2.6.5 MAJOR INITIATIVES

i. Strategic goals set for two decades 2001-2020

- Doubling Reserve Accretion to 12 billion Mt O+OEG
- Improving Recovery Factor to the order of 40%
- Production of 20 MMTPA O+OEG equity oil and gas from acquisitions abroad.

ii. Short-term Strategy

- Time scheduled exploration activities for prospect recognition and drilling.
- Prioritisation of exploration activities on fast track basis for enhancing reserves accretion.
- Pre-drill 3D seismic in deepwater and blanket 3D in key growth areas.
- Knowledge building in new sectors of producing as well as frontier basins.

iii. Medium-long term Strategy

- Further intensification of exploration in the producing basins to realise the hydrocarbon resources to in-place volume conversion.
- Exploration spread in non-producing basins and yet to be explored basins to establish their potential and knowledge building.
- Major shift to deep offshore as the major thrust and contributing sector.

iv. Strategic Initiatives

- Substantive decentralization of administrative authorities together with delegation of financial authorities carried out to empower the field executives.
- ONGC entered in to Strategic Alliances and collaborations with industry leaders, Domain experts and corporates with niche strengths like
- Eni, Italy
- Norsk Hydro, Norway
- Roxar Software Solutions, Norway
- Halliburton
- NTNU, Norway and NGRI Hyderabad
- IPR Int. Ltd.
- Schlumberger Asia Services Ltd.
- Baker Hughes Singapore Pte.
- Halliburton Offshore Services Inc.
- Deepwater E&P in India, Technical Cooperation, Geo-steering software for geological and drilling events, Log forward modelling using High resolution Logs based on 3D reservoir models, Production optimisation, G&G interpretation workflows, drilling/ cementing techniques etc.
- Established ONGC TERI Biotech Ltd. In association with TERI for Bioremediation, Microbial Enhanced Oil Recovery and Prevention of Wax deposition in tubular.
- Best- in-class technology inducted in core areas of E&P activities

v. Infocom Projects

Comprehensive review of Information Technology, Communication and Control Networks carried out. Major projects in progress are as under.

1. Project EPINET (Exploration & Production Information Net): The entire 3D seismic data and original logs of more than 9000 wells have been computerised.
2. Project SAMPARC (System for Automated Management of Personnel Activities, Reimbursements & Claims): A portal based employee information system enables employees to access personal information & transact personal claims striving towards the goal of paperless office. This was upgraded to include various claims, reimbursements, leave information etc.
3. Project SCADA (Supervisory Control And Data Acquisition): This system will integrate the Assets,



Basins, Plants, Forward Bases and other Assets to the Corporate Data Centre facilitating 'anytime-anywhere' access to Production & Drilling data and real-time performance management.

4. The e-procurement process along with reverse auctioning has gone live and centralised electronic processing of vendors payment has been started for payment through National Electronic Fund Transfer (NEFT).
5. All Welfare Trusts of ONGC have been made online.

2.6.6 NON CONVENTIONAL SOURCES OF ENERGY

(i) Wind Power Project

ONGC has projected to install 50 MW wind power project in Gujarat. The electricity so generated will be wheeled to various ONGC Installations in Gujarat. This project is an initiative of ONGC towards its commitment for environment friendly and pollution free energy generation through renewable sources.

(ii) Installations of Solar thermal plants

Solar thermal plants in ONGC Guest house, Hospital, Academy hostel, officers club, Central workshop-Baroda and colony are already installed and initiatives have been taken to install the solar water Heating System at other locations of ONGC also. Solar panels were installed at well heads of (Bokaro) Jharkhand.

2.6.7 HEALTH, SAFETY AND ENVIRONMENT (HSE)

Environmental initiatives encompassed solid waste, liquid effluent, air emission monitoring mechanism for proactive planning to manage waste through environment friendly



ONGC Strategy meet being chaired by Shri R.S. Pandey, Secretary MOP&NG

technologies like bioremediation, reduction and recycling options and environmental reporting based on global reporting initiative principles.

2.6.8 CONSERVATION OF ENERGY AND PETROLEUM PRODUCTS

ONGC is actively pursuing energy conservation measures. The conservation of petroleum products namely HSD, Lube oil and natural gas are important activities. These measures include:-

- Measure taken to improve the efficiency of HSD consuming activities.
- Increase in lube oil change period resulting in substantial saving.
- Natural gas flaring has been reduced and the same is being supplied to consumers.
- Use of small DG sets and waste heat recovery equipment at offshore platforms, rigs, LPG plants at Hazira and Uran.
- Use of energy efficient equipment and devices such as Top drives, and turbo expanders at Hazira and Uran.
- Use of gas engines in place of diesel ones for power generation.
- Thermal energy cost reduction achieved by maintenance of steam traps at processing plants.
- Conducting Energy audit on regular basis and Petroleum Products Conservation Opportunities (PPCOs) are identified.
- Use of small DG sets during lean periods in rigs, Proper capacity utilization, rationalization and efficiency improvement of equipments, use of energy efficient devices.
- Harnessing solar energy by using solar water heaters/ photo-voltaic panels at various locations.

2.7 ONGC VIDESH LIMITED (OVL)

ONGC Videsh Limited (OVL), a wholly owned subsidiary of ONGC, was incorporated as Hydrocarbons India Private Limited on 5th March, 1965 with an initial authorised capital of Rs. 5 Lakhs, for the business of international exploration and production. Its name was changed to ONGC Videsh Limited on 15th June, 1989. The authorised and paid-up share capital of OVL as on



Shri R.S.Pandey, Secretary, MOP&NG reviewing ONGC's Assam Asset performance



31st March, 2007 was Rs. 1,000 crore. The primary business of the company is to prospect for oil and gas acreages abroad. These includes acquisition of oil and gas fields in foreign countries as well as exploration, production, transportation and sale of oil and gas.

OVL currently has participation in 41 projects in 16 countries namely Vietnam (3 projects), Russia (2 project), Sudan (4 projects), Iran (1 project), Iraq (1 project), Libya (3 projects), Myanmar (5 projects), Syria (2 projects), Egypt (2 project), Cuba (2 projects), Nigeria Sao Tome Principe JDZ (1 project), Brazil (5 project), Nigeria (2 projects), Colombia (6 project), Congo (1 project) and Venezuela (1 project). ONGC Videsh Limited has acquired Imperial Energy PLc. U.K. (IEC), at a cost of about US$ 2.1 billion. This is the largest ever overseas acquisition by an oil sector PSU.

OVL is currently producing oil and gas from Greater Nile Oil Project and Block 5A in Sudan, Block 06.1 in Vietnam, Al Furat project in Syria, Sakhalin-I project in Russia, Mansarovar Energy Project in Colombia and San-Cristobal project in Venezuela. In addition, OVL has also crude oil production from the blocks in Russia owned by Imperial Energy, a subsidiary of OVL. Block BC-10 in Brazil is currently under development with production expected to begin in 2009-10. Block A-1 and A-3 in Myanmar, North Ramadan Block and NEMED in Egypt, and Farsi Offshore Block in Iran have discoveries and appraisal work is being carried out after which the fields shall be put on development. The remaining projects are in exploration phase.

OVL started production of oil and gas in the year 2003 and achieved production of oil and oil equivalent gas (O+OEG) of 8.776 MMT in 2008-09. The consolidated gross revenue of OVL during the financial year 2008-09 stood at Rs. 18503.5 Crore registering a modest growth of 3.4% as against last year's gross revenue of Rs. 17901 Crore. During 2008-09, the consolidated profit after tax was at Rs. 2806.7 Crore as against Rs. 2397 Crore during 2007-08.

Further, OVL is pursuing acquisition of various oil and gas exploration and production opportunities in Russia, Central Asia, Latin America, Africa, and Middle East, which are at different stages.

2.8 OIL INDIA LIMITED (OIL)

OIL INDIA LIMITED (OIL), a Government of India Enterprise, under the administrative set-up of Ministry of Petroleum and Natural Gas, is engaged in the business of exploration, production and transportation of crude oil and natural gas.

The authorized capital of the company is Rs. 500 crores and the paid up capital of the company is Rs 214 crores.

OIL produces crude oil and natural gas from its oilfields in Assam and Arunachal Pradesh, non-associated gas from its fields in western Rajasthan and processes LPG from the natural gas in Assam. The Company presently has operational areas in Andhra Pradesh, Assam, Arunachal Pradesh, Mizoram, Orissa, Uttar Pradesh, Uttarakhand, Rajasthan and Pondicherry in the country.

OIL has acquired Participating Interest (PI) in 25 NELP blocks including the right of Operatorship 13 blocks. Besides, the Company holds PIs in another three Pre NELP in-country JV blocks and Production Sharing Interest (PSI) in one Joint Venture Contract with other partners in Arunachal Pradesh.

OIL is also pursuing exploratory activities outside the country in partnership with Indian as well as overseas companies. Out of these on-going ventures in seven different countries, six blocks are in Libya, two blocks each in Yemen and Egypt, and one block each in the Islamic Republic of Iran, Gabon, Nigeria and Timor-Leste. OIL is operator in the two blocks in Libya and the sole block in Gabon. OIL is continuously scouting for suitable overseas E&P opportunities in countries like Algeria, Nigeria, CIS countries etc.

The Company owns and operates a trunk crude oil pipeline in the North East region of the country for transportation of crude oil produced by OIL, ONGCL and other Joint Ventures in the region to feed Numaligarh, Guwahati and Bongaigaon Refineries. OIL also owns and operates a branch line to feed Digboi Refinery. The Company continues reverse pumping of RAVVA crude to Bongaigaon Refinery through its existing Barauni-Bongaigaon trunk pipeline. The Company has recently commissioned a 660 km long product pipeline from Numaligarh Refinery Ltd. (NRL) in Assam to Siliguri marketing terminal in West Bengal for transportation of petroleum products from NRL.

The natural gas produced in Assam is sold to different customers, viz. BVFCL, APGCL, NEEPCO, IOC (AOD), APL, nearby tea gardens and other small consumers. The non-associated gas produced by the Company in Rajasthan is sold to Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRVUNL). The Company also produces Liquefied Petroleum Gas (LPG) in its plant at Duliajan in Assam.

In view of the opening up of the hydrocarbon sector as well as to keep pace with the changing petroleum scenario, OIL has formulated its Strategic & Corporate Plan, which is presently under implementation.



Drill site of OIL INDIA at near Jaisalmer in Rajasthan

2.8.1 PHYSICAL PERFORMANCE

Parameter	Unit	2007-08	2008-09
Seismic Survey			
Onshore 2D	GLKM	2458.78	1512.41
3D	SQKM	1145.45	3494.50
Drilling			
Exploratory	'000 Mtr.	41.580	44.609
Development	'000 Mtr.	96.270	71.258
Crude Oil Production	MMT	3.101	3.468
Natural Gas Production	MMSCM	2340.46	2268.38
Natural Gas Sale	MMSCM	1828.85	1737.33
LPG Production	'000 Tonnes	48.17	47.61



2.8.2 FINANCIAL PERFORMANCE

Parameter	2007-08	2008-09
Plan Outlay	1210.33	1628.51
Total Income	6795.46	8137.88
Net Profit	1788.93	2161.68
Internal Resource	2111.10	3417.69

2.8.3 OTHER ACHIEVEMENTS

- Crude oil production of 3.468 MMT during 2008-09 is highest so far and 101.4% of target, with an increase of 11.8% over 2007-08.
- OIL has made 4 hydrocarbon discoveries in Assam during 2008-09.
- OIL was awarded 4 blocks in the seventh round of NELP consisting of one block as Operator and having participating interest in three blocks.
- OIL completed 660 Km long NRL - Siliguri Product Pipeline.
- OIL achieved daily rate of natural gas production (6.21 MMSCMD) in North East.

2.8.4 PROGRESS OF PROJECTS

(i) Domestic

The major projects related to E&P activities, implemented in 2008-09, are as under:

Sl. No	Name of the Project/Location	Project Cost (Rs Crore)	Status
1.	Mud tank system for drilling rigs	18.01	All the three sets of tanks system commissioned.
2.	Open-hole Logging units	56.99	Commissioning of all equipments completed on 23.12.2008.
3.	Product pipeline from Numaligarh to Siliguri.	468.92	Commissioned on 27.08.2008.
4.	Work over rigs	32.85	Three rigs commissioned in Sept'08 and 4th rig commissioned in Dec'08.

(ii) Overseas Projects

Details of Overseas projects are as under:

a) Exploration Service Contract - Farsi Offshore Block

OIL has 20% Participating Interest along with IOC (40%) and ONGC- Videsh Ltd. (40% and Operator) in the block. The consortium drilled/ completed 4 wells, where crude oil was discovered in 2 wells and gas in one well. Study to assess the commerciality of gas discovery is currently under progress. Crude oil discovery has been found to be non commercial.

b) Product Pipeline, Sudan

The construction of the 741 km long product pipeline by OVL was completed in August, 2005, ahead of scheduled time and handed over to the Ministry of Energy and Mines (MEM), Sudan. OIL has 10% PI in the Sudan Product Pipeline project.

c) Block 86 and 102 (4), Libya

OIL is having 50% PI and the Operator in the Block and IOC is partner with 50% PI, awarded in EPSA IV Bid Round 1 in the year 2004. OIL has since acquired 1,787.88 GLK (Ground Line Kilometre) of 2D seismic



Seismic survey at OIL's Block in Gabon

data. Processing and interpretation of 2D seismic data in progress. Drilling of 2 exploratory wells has been planned in 2009-10.

d) Block 95/2, 96/1, 2, 4, Libya

OIL-IOC in consortium with M/s Sonatrach, National Oil Company of Algeria, signed the EPSA on 25.05.2008.

e) Block - Shakthi, Republic of Gabon

OIL-IOC signed farm - in - agreement on 17.04.2006 for acquiring 45% PI (with Operatorship) in the block "Shakti" from M/s Marvis Pte. Ltd. Other parties in the block are IOC (with 45% PI) and Marvis Pte Ltd (with 10% PI). OIL carried out 36,412 km of aero-magnetic survey. Processing/interpretation of the data completed. Acquisition of 1,000 GLK of 2D seismic data in the block has commenced. Drilling of one well in 2009-10 has been planned.

f) Block OPL 205, Nigeria

OIL has signed Share Purchase Agreement (SPA) and Shareholders Agreement (SHA) on 31.08.2006 for acquiring 25% equity shares of Suntera Nigeria 205 Limited from M/s Suntera Resources Limited. Suntera Nigeria 205 Limited is a Nigerian company having 70% interest in onshore Exploration Block OPL 205, Nigeria. One well was drilled by the operator Suntera Nigeria 205 Ltd. in December, 2007, but no commercial hydrocarbon discovery was made.

g) Block 82 & 83, Yemen

OIL (with 15% PI) has been awarded Blocks nos. 82 and 83 in the year 2006 in the 3rd Bidding Round along with its consortium partners - MEDCOENERGI (45% PI- Operator), Kuwait Energy Company (25% PI) and IOC (15% PI). Signing of PSCs are awaiting the approval of Government of Yemen.

h) Extent of Globalization

OIL is actively pursuing opportunities for acquiring producing E&P assets, exploration acreages etc. in Africa, Middle East, South East Asia, South America, CIS countries and Russia. The Company would also associate with reputed companies for fulfilling the above objective jointly.

2.8.5 INITIATIVE TAKEN BY OIL

i. Efforts are being made to cover seismically Logistically Difficult Areas including Brahmaputra River Bed, rugged hilly terrain in river confluence and various difficult hilly areas in the NE.

ii. Effort will be enhanced to reduce the number of sick wells by bringing them back to production.

iii. OIL has so far acquired Participating Interest with other consortium partners in respect of 25 NELP blocks out of which OIL is operator in 13 Blocks. Various exploration activities are underway in respect of all these blocks.

iv. OIL's E&P initiatives overseas at present extends to 7 countries including Libya, Gabon, Iran, Nigeria, Yemen, Egypt and Timor Leste. Exploration within and outside the country along with acquisition of producing property is considered to be a major thrust area.

v. The Company has initiated a number of measures in its main producing fields in Assam and Arunachal Pradesh to increase productivity in these producing fields, which are as under:

- A number of geo-scientific studies like Integrated Basin modelling studies, Revitalization of old fields, Jorajan Re-Development, Thrust belt prospects, Stratigraphic trap prospects, Non- Associated Natural Gas Field development, Pilot study for carrying out Seismic Reservoir characterization of Eocene Reservoirs, post drill analysis of exploratory wells, Audit and certification of oil and gas reserves etc. were carried out in the recent past with the help of internationally reputed consultants and their recommendations like infill drilling, workover, enhancement in water injection etc. are being implemented.



- Various IOR/EOR measures which have been implemented / intensified are enhancing water injection, MEOR technique by using micro-organisms, optimization through artificial lift methods, use of Electric Submersible pumps (ESP), Jet-pumps etc., for bringing shut- in wells into production.
- Drilling of Horizontal and J-bend wells

vi. Charter hiring of six drilling rigs to supplement the in-house rigs and also to intensify drilling operation.

In order to produce the heavy oil and bitumen from the Baghewalla field in Jaisalmer district of Rajasthan, OIL entered into technical collaboration with M/S PDVSA of Venezuela and drilled the first pilot well for cyclic steam injection. Actions are now in hand to set up full scale production facilities at the earliest on the basis of outcome of the pilot project.

2.9 GAIL (INDIA) LIMITED

2.9.1 INTRODUCTION

The setting up of GAIL (India) Limited, formerly known as Gas Authority of India Limited in August, 1984 heralded a new era of natural gas in the country. GAIL is now completing 25 glorious yeas of service to the nation.

Since 1984, GAIL has made significant contributions to the nation's economy by supplying natural gas through its pipeline network for:

- Generation of over 87,000 MW of power.



GAIL's Auraiya Plant

- Production of over 145 million tonnes of Urea
- Production of LPG for over 0.7 Crore households in the country
- Over 5.75 Lakh vehicles in the country today running on CNG supplied by GAIL and over 7 Lakh household on piped Natural Gas (PNG) in the country.
- Production of petrochemicals of around 400,000 MTs which is used in the plastic industry

GAIL enabled the use of natural gas as a new energy resource in the country, which was earlier being flared in the offshore fields of Bombay High. The natural gas infrastructure of over 7,000 km. accounting for over 82% of the total pipeline infrastructure in India, set up so far by GAIL has contributed enormously to the economically and socially critical sectors such as fertilizers and power. GAIL also has the distinction of pioneering the clean fuel revolution for transport sector in the country with the introduction of CNG in Delhi and Mumbai which has significantly helped in reducing pollution levels in these two cities. The pipeline network of GAIL supplies natural gas to various sectors equivalent to 204 million barrels of oil equivalent per year, thus not only contributing to import substitution but also providing environment friendly fuel.

The natural gas infrastructure of GAIL plays a significant role in serving the nation by facilitating equitable geographical distribution of economic benefits. It provides ready market access to the domestic gas producers, making gas available to the customers including those who are remotely located, facilitating monetization and development of gas fields which are otherwise scattered and devoid of market access. The pipeline network has created choice for customers by providing cheaper, environment-friendly alternative fuel and has reduced import-dependency as natural gas has substituted liquid fuels such as Naphtha, fuel oil, etc. GAIL has also spearheaded the spread of City Gas and Piped Gas network in the country which has helped in bringing down pollution levels in metros such as Delhi and Mumbai. GAIL's pipeline network caters to the gas consumers in the states of Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, Delhi, Haryana, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Assam and Tripura.

In addition to supplying Natural Gas to various consumers, GAIL has also set up 7 LPG plants and a Petrochemical plant to extract value added products from gas. GAIL produces around 1.35 MMTPA of LPG for domestic consumption.

GAIL is now an integrated energy company along the natural gas value chain with global footprints. Today, GAIL has interests in the business of natural gas, LPG, liquid hydrocarbons and petrochemicals, the latter being value-added products. The Company has also entered in telecom sector by leasing bandwidth available through the OFC which is laid along the gas pipelines for their operation and maintenance. GAIL has also diversified into exploration & production, city gas distribution and is steadily developing an overseas presence.

In the area of corporate social responsibility, one of the major projects of GAIL has been setting up of Air Pollution





Related Disease Diagnostic Centers (APRDCs) in over 20 cities in various parts of the country, at a cost of about Rs. 4 Crores. Under this programme, the diagnostic centres equipped with modern diagnostic amenities related to respiratory and cardio-vascular diseases and well trained medical personnel have been set up in partnership with reputed Government / trust managed hospitals / institutions to provide diagnostic facilities and treatment to the people who are not able to afford baseline investigations for diagnosis. APRDC also works as R & D for development of facilities for diagnosing suspended particles, which are known to cause acute heart diseases.

In more recent times, GAIL has initiated steam conversion project based on waste heat recovery system from GAIL's gas turbines. This rare, multi-benefit project would not only utilize clean development mechanism (CDM) for power generation, but also lead to conservation of gas as well as increased energy efficiency.

GAIL has a consistent track-record of dividend payment. So far, GAIL has disbursed dividend of Rs.6,230 Crores to the shareholders including Government of India, which is more than six times the original investment of Rs. 845.65 Crores by the Government in its equity capital.

GAIL has declared bonus issue in the ratio of 2:1 during Oct.2008 and paid a total dividend of 70% on enhanced capital for 2008-09 amounting to Rs. 888 crores.

Further, the Government has been disinvesting its shareholding in GAIL from time to time, bringing down its equity holding to 57.345 percent and thereby contributing to the exchequer an additional amount of Rs. 3,400 Crores.

2.9.2 GAS TRANSMISSION

GAIL is presently operating approximately 6778 km of pipeline network in the country with a capacity of around 142 Million Standard Cubic Metres Per Day (MMSCMD) for transportation of natural gas. The details of the present pipeline network is as follows:

Sl. No.	Pipeline Network	Lengths
1.	DVPL	770
2.	HVJ	3397
3.	ASSAM	8
4.	TRIPURA	61
5.	GUJARAT REGION	742
6.	MAHARASHTRA REGION	125
7.	AP REGION	834
8.	TN REGION	260
9.	DUPL/DPPL	581
	TOTAL	6778

GAIL is the market leader in field transmission & distribution, carrying 80% of the entire gas available in the country.

2.9.3 PERFORMANCE

The physical and financial parameters for the years 2007-08 & 2008-09 are given below:

A) Physical

Parameters	Units	Actual Performance in 2007-08	Actual Performance in 2008-09
Gas Transportation	MMSCMD	82.10	83.29
Liquid Hydrocarbon Production	'000 MT	1347.101	1401
Petrochemical Production	'000 MT	385.593	420
LPG Transportation	'000 MT	2753.788	2744

B) Financial

Description	Units	Actual Performance in 2007-08	Actual Performance in 2008-09
Profit after Tax	Rs Crore	2601	2804
Gross Internal Generation (PAT+ Depreciation)	Rs Crore	3172	3364

2.9.4 PROJECTS

2.9.4.1 Major Pipeline Projects Completed During 2008-09

1. Hazimalangwadi to RCF Trombay (24" x 39 km): Completed on 12.7.2008
2. Karegoan to Pune Pipeline (30" x 68 km): Completed on 12.10.2008
3. RCF Trombay to BPCL Trombay (18" x 2.4 km): Completed on 18.7.2008
4. K Cheruvu Junction Point to Kakinada Junction Point (18" x 31 km) and Interconnectivity with RIL at Oduru: Completed on 29.8.2008
5. LPG Pipeline connectivity to BPCL Jaipur (4" x 13.6 km): Completed on 20.7.2008
6. LPG Pipeline connectivity to IOCL Guna (6" x 4 km): Completed on 27.7.2008
7. LPG Pipeline connectivity to Essar Oil- Jamnagar (6" x 16.7 km): Completed on 5.8.2008
8. Ambewadi to Usar Pipeline (30" x 49.3 Km) Completed on 06.02.2009
9. LPG Pipeline to IOCL Bottling Plant Gandhar (6"x1.3 Km) : Completed on 28.02.2009

2.9.4.2 Major Pipeline Projects Approved During 2008 -09

1. Capacity Augmentation of Kandla-Samakhiali LPG Pipeline (10" x 61 km) at a Project Cost of Rs. 58.2 Crore.
2. Pipeline for transportation of gas from Focus Energy to RRVUNL, Ramgarh (10"x 90" km.) at a project cost of Rs. 99.16 Crore
3. Last mile connectivity to Reliance consumers in KG Basin (12"x 8km.) at project cost of Rs. 30.55 crore
4. Connectivity to M/s HPCL, Rajahmundry LPG plant from Vizag-Secundrabad LPG P/L (4"x 3.5 km.) at project cost of Rs. 6.31 Crore.

2.9.4.3 Major On-going Pipeline Projects - 2008-09

Name of Project	Sanctioned cost	Schedule completion / Commissioning
Vijaipur-Dadri Pipeline (48" x 500 km)	Rs. 3720.20 Crores	30.4.2010
Dadri-Bawana Pipeline (36"x 39 km, 20" x 55 km)	Rs. 540.55 Crores	31.10.2009
Chainsa - Jhajjar- Bamnoli Pipeline (36"x86km, 16"x18 km)	Rs. 571.64 Crores	31.10.2009
Chainsa-Jhajjar Spur lines project (Sultanpur-Neemrana) (18"-4" x 234 km)	Rs. 396.13 Crores	30.10.2009
Kandla-Samakhiali P/L (10" x 61 km)	Rs. 58.2 Crores	28.02.2010
Dahej-Vijaipur P/L Ph-II (48" x 610 km)	Rs. 4429 Crores	31.10.2010
Bawana-Nangal P/L (30"x177 km, 18"x187 km)	Rs. 1816 Crores	31.10.2010
Jhajjar-Hissar P/L (20"x111 km)	Rs. 281 Crores	31.12.2011
Compressors at Jhabua & Vijaipur	Rs. 1512 Crores	31.10.2010
Compressors at Kailaras & Chainsa	Rs. 1167 Crores	30.04.2011



2.9.5 POLICY INITIATIVE UNDERTAKEN

GAIL has taken several initiatives in the area of HR/ HRD. A list of the major ones is given below:

- Streamlining of Transfer Petitions Committee (TPC) as a mechanism to address requests of employees pertaining to their transfer
- Review of various facilities, benefits and welfare measures for employees in line with prevailing best HR practices and Government guidelines
- Leveraging IT in HR processes through augmentation of SAP-ESS modules with additional functionalities, e-requisition of HR Services and e-payments to vendors/ suppliers

2.9.6 JOINT VENTURE PROJECTS OF GAIL

GAIL has formed a number of Joint Venture Companies for city gas distribution as also in other sectors. GAIL has plans of developing CNG infrastructure across the country as well as abroad. The domestic Joint Venture Companies are as under:

2.9.6.1 Mahanagar Gas Limited (MGL)

MGL, a Joint Venture with British Gas (BG) and Government of Maharashtra, was incorporated in May 1995 and has its operations in Mumbai and its suburbs. GAIL holds 49.75% stake in the Company, with an investment of Rs.44.45 crores.

2.9.6.2 Indraprastha Gas Limited (IGL)

IGL, a Joint Venture with Bharat Petroleum Corporation Limited (BPCL) and Government of National Capital Territory (NCT) of Delhi, was formed in December 1998. GAIL holds 22.5% stake in the Company, with an investment of Rs.31.50 crores. IGL has its operations in Delhi. It is catering to the world's largest CNG bus fleet.

2.9.6.3 Bhagyanagar Gas Limited (BGL)

BGL is a Joint Venture with Hindustan Petroleum Corporation Limited (HPCL), incorporated in August 2003. GAIL holds 22.5% stake in the Company. BGL presently has its operations in Vijaywada and Hyderabad. An investment of Rs.9.99 crores has been made in the Company.

2.9.6.4 Tripura Natural Gas Company Limited (TNGCL)

TNGCL is a Joint Venture of Tripura Industrial Development Corporation and Assam Gas Limited. GAIL acquired 29% equity stake in TNGCL in August 2005.

2.9.6.5 Central U.P. Gas Limited (CUGL)

CUGL is a Joint Venture of GAIL and Bharat Petroleum Corporation Limited (BPCL). It was incorporated in February 2005 for implementation of City Gas Projects in Kanpur and other cities of Central UP. GAIL has 22.5% stake in the Company.

2.9.6.6 Green Gas Limited (GGL)

GGL is a Joint Venture Company of GAIL and Indian Oil Corporation Limited (IOCL). It was incorporated in October 2005 for implementation of City Gas Projects in Agra & Lucknow cities. GAIL has 22.5% stake in the Company.

2.9.6.7 Maharashtra Natural Gas Limited (MNGL)

MNGL is a Joint Venture of GAIL and Bharat Petroleum Corporation Limited (BPCL). It was incorporated in January 2006 for implementation of City Gas Projects in Pune and other cities of Maharashtra (excluding Mumbai). GAIL has 22.5% stake in the Company.

2.9.6.8 Avantika Gas Limited (AGL)

AGL, a Joint Venture with Hindustan Petroleum Corporation Limited, has been incorporated in June 2006 for City Gas Distribution projects in the state of Madhya Pradesh. GAIL has 22.5% stake in the company.

2.9.6.9 Brahmaputra Cracker & Polymer Limited (BCPL)

This Joint Venture Company, with GAIL as the main promoter with equity participation of 70% and OIL, NRL and Assam Industrial Development Corporation (Government of Assam) holding 10% equity each, has been incorporated on 8.01.2007 with authorised capital of Rs. 1200 Crores

A Feedstock Supply Agreement has been signed between BCPL, and all three feedstock suppliers (Oil and Natural Gas Company Limited, Oil India Limited and Numaligarh Refinery Limited).

2.9.6.10 Ratnagiri Gas And Power Private Limited (RGPPL)

RGPPL is a joint venture company between GAIL, NTPC, Financial Institutions and MSEB. GAIL holds 28.337 % equity. The capacity of the Ratnagiri Gas & Power Station is 2,150 MW. LNG Storage block is near completion. Two LNG Tanks out of three are completed.

2.9.6.11 PETRONET LNG LIMITED (PLL)

PLL is a joint venture company between GAIL, BPCL, IOCL, ONGCL, Gaz De France and ADB. GAIL holds 12.5% equity at an investment of Rs.98.75 crores.

2.9.6.12 GAIL GAS LIMITED

GAIL (India) Limited has incorporated a wholly owned subsidiary in name of GAIL Gas Ltd on 27th May 2008 for implementation of the City Gas Distribution projects as a limited company under the Companies Act, 1956. GAIL Gas Ltd. shall be working as holding company to implement City Gas Distribution projects through branch/ unit offices. The setting up of the subsidiary will also help in part for compliance of requirement of unbundling of the business for GAIL which may come in future.

GAIL Gas Limited shall take up Distribution and Marketing of CNG as fuel for vehicles (inter city as well as intra city), Piped Natural Gas for domestic/ commercial/ industrial purposes and Auto LPG as fuel for transport vehicles in the various cities of India and abroad. The subsidiary company will also take up investment in and setting up of infrastructure, in the various cities of India and along the national highways for building CNG corridors which includes, among others, natural gas compressor stations, laying of the pipelines from City Gate Station(s) to the consumption areas and associated facilities, setting up of distribution points / retail outlets for CNG/ Auto LPG and transport gas through mobile cascades/ lorries. It will also carry out allied retail business activities at CNG / Auto LPG retail outlets within the cities and along the highways. GAIL Gas Limited will also form alliances with Gas Producers/ Strategic Partners for implementation of the City Gas Projects as per the strategic decisions taken by GAIL. The equity holding of GAIL in the City Gas Joint Venture Companies is also proposed to be transferred to GAIL Gas Limited. The initial authorized share capital of the subsidiary is Rs. 200 Crore.

GAIL Gas Ltd. participated in the bidding process initiated by PNGRB for grant of authorisation for implementing CGD project in 6 cities and emerged as winner for 4 cities namely Kota, Dewas, Sonepat and Meerut.

2.9.7 EXPLORATION AND PRODUCTION

E&P activities continued to remain in focus during the year. The production of crude oil in the Camay onland Block in Gujarat is in progress, where the company holds 50% participating interest.

GAIL along with other consortium partners was awarded 1 exploration block in Cauvery Onland in NELP-VII bidding round where GAIL is the operator. GAIL also farmed-in in 1 Exploration Block AD-7 in Myanmar along with OVL. Daewoo is the Operator of the block.

At present, GAIL has participating interest in 29 E&P blocks of which 4 are overseas (3 in Myanmar and 1 in Oman). GAIL is the Operator in one block awarded during NELP-VII bidding round and the Joint Operator in 1 onland block in Rajasthan awarded during NELP-VI bidding round. Hydrocarbon discoveries have been made in 8 E&P blocks including 3 overseas blocks (2 in Myanmar and 1 in Oman). Development and pre-development activities are in progress in 3 blocks. Appraisal and Exploration activities are in progress in other blocks.

GAIL is also participating in 3 Coal Bed Methane blocks and core hole drilling is in progress in 2 blocks.

2.9.8 INTERNATIONAL COOPERATION AND ENGAGEMENTS ABROAD

2.9.8.1 Formation of Joint Venture with China Gas Holdings Limited

GAIL made a strategic investment in China Gas Holdings Company in 2005 with an objective to enter into growing Chinese gas market. With this objective, a 50:50 Joint Venture company - GAIL China Gas Global Energy Holdings Limited between GAIL and China Gas Holdings Limited was formed for pursuing gas sector opportunities in China. Potential projects for implementation by the JV Company are being examined.

2.9.8.2 Farm-In in Myanmar

GAIL farmed-in in E&P Block AD-7, Myanmar with 10% participating interest. The Other consortium partners in the block are - Daewoo International Corp. - 60% (Operator), ONGC Videsh Limited (OVL) -20% and KOGAS- 10%.

2.9.8.3 Gas Sector Project in Nigeria

An Expression of Interest (EoI) for the development of gas infrastructure, particularly Gas Gathering and Processing facilities in Nigeria under US$ 30 billion Nigerian Gas Master Plan was submitted to the Ministry of Gas, Nigeria.

Meetings were held with the Minister of Gas, Nigeria and Nigerian Government officials about gas sector



opportunities in Nigeria. Nigerian Government welcomed GAIL's participation in the development of Nigerian gas sector including petrochemicals. Nigerian Government is expected to announce the short-listed companies for participation in the tendering process shortly.

2.9.8.4 Cooperation with Libya

Discussions were held with the Ministry of Electricity, Water and Gas (MEWG), Government of Libya and exchanged draft MoU for formation of Joint Venture Company between GAIL and MEWG for implementing gas pipeline and city gas distribution/CNG projects in Libya.

2.9.8.5 Cooperation with Egypt

GAIL made equity investment in three city gas companies in Egypt. National Gas Company (Natgas), Egypt is one of the largest city gas company where GAIL had made investment in 2004. In order to leverage the strengths of both the companies, GAIL and Natgas are in discussion for cooperation in pursuing city gas and CNG projects in India, Egypt and other African countries through a separate Joint Venture Company.

2.9.8.6 Trans-National Pipeline Projects

GAIL along with IOCL has been pursuing import of natural gas from Iran through Iran-Pakistan-India transnational gas pipeline.

GAIL is also pursuing import of natural gas from Turkmenistan through Turkmenistan- Afghanistan-Pakistan-India transnational pipeline.

2.9.8.7 Petrochemical Project

GAIL along with Reliance Industries Limited (RIL) is pursuing setting-up of petrochemical project in gas rich countries. High level delegation from GAIL & RIL visited Yemen and Qatar for discussion with the concerned authorities regarding setting up of petrochemical plant.

2.9.8.8 Cooperation with ITERA, Russia

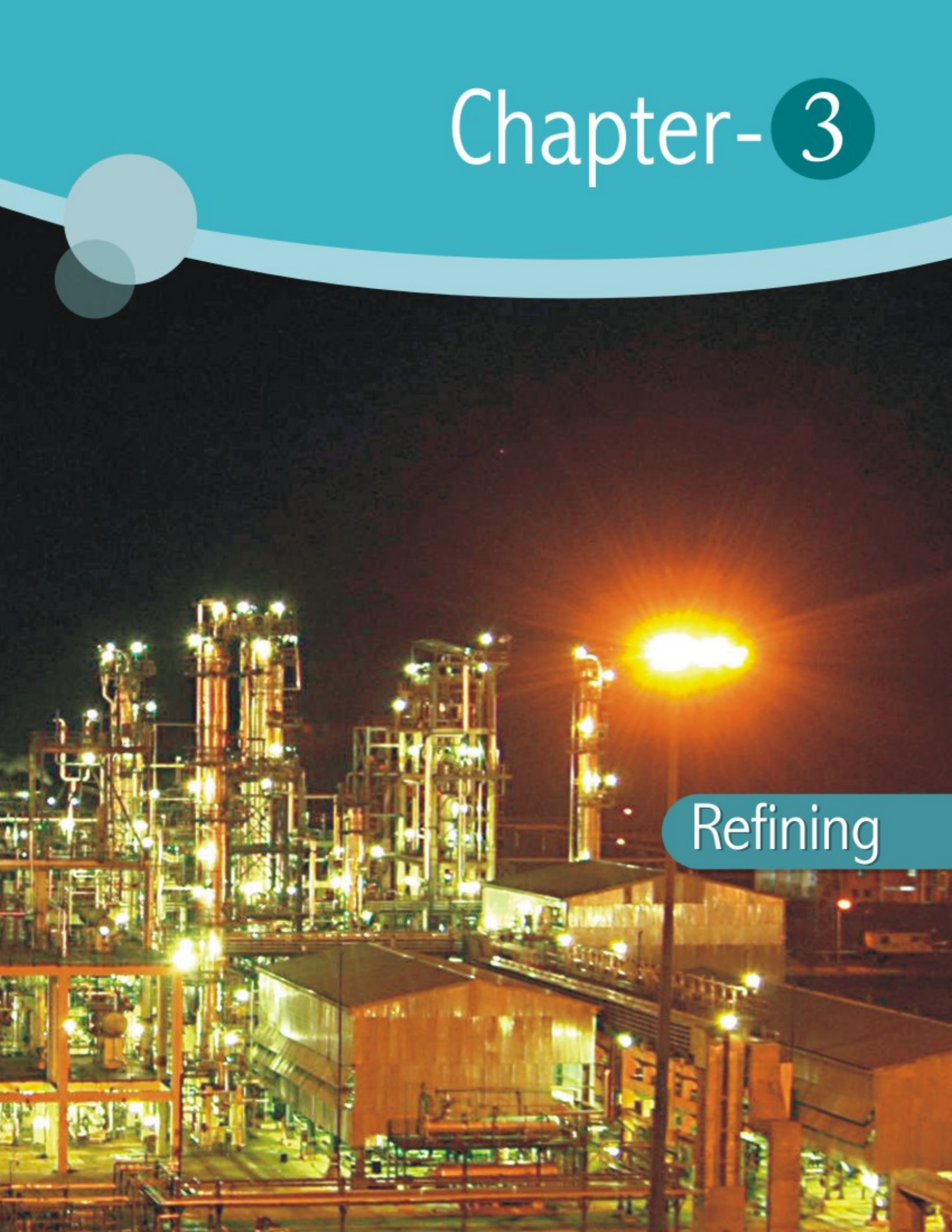
Signed a Memorandum of Understanding (MoU) with ITERA Oil & Gas Company of Russia for cooperation in projects such as CNG, Gas based Petrochemicals and E&P. Petrochemical opportunity in Russia offered by ITERA is being evaluated.

2.9.8.9 Delta Compressor, Argentina

Memorandum of Understanding (MoU) signed with Delta Compressor, Argentina for cooperation in CNG opportunities abroad.



Chapter-3



Refining

Refining

3.1 REFINING CAPACITY

The present refining capacity is 177.97 Million Metric Tonnes Per Annum (MMTPA) comprising of 105.47 MMTPA by PSUs and 72.50 MMTPA by private sector. At present, there are 20 refineries operating in the country, out of which 17 are in public sector and three in private sector. Out of the 17 Public Sector refineries, 8 are owned by Indian Oil Corporation Limited (IOCL), 2 each by Chennai Petroleum Corporation Limited (a subsidiary of IOCL), Hindustan Petroleum Corporation Limited (HPCL), Bharat Petroleum Corporation Limited (BPCL) and Oil and Natural Gas Corporation Limited and 1 by Numaligarh Refinery Limited (a subsidiary of BPCL). The private sector refineries belongs to Reliance Industries Limited and Essar Oil Limited.

3.2 CHENNAI PETROLEUM CORPORATION LIMITED (CPCL)

Chennai Petroleum Corporation Limited (CPCL) formerly known as Madras Refineries Limited was formed as a joint venture in 1965 between the Government of India (GOI), AMOCO India Inc., U.S.A. and National Iranian Oil Company (NIOC) having a share holding in the ratio 74%: 13%: and 13% respectively. In 1985, AMOCO disinvested in favour of GOI and the shareholding percentage of GOI and NIOC stood revised at 84.62 and 15.38 respectively. Later, GOI disinvested 16.92% of the paid up capital in favour of Unit Trust of India, Mutual Funds, Insurance Companies and Banks on 19th May 1992, thereby reducing its holding to 67.7%. A public issue of CPCL shares was also made in 1994. As a part of the restructuring, steps taken up by the Government of India, Indian Oil Corporation Limited (IOCL) acquired equity from GOI in 2000-01. Currently, IOCL holds 51.88% while Naftiran Inter-trade Company Limited (an affiliate of NIOC) continued its holding at 15.40%.

CPCL has two refineries, with a combined refining capacity of 10.5 million metric tonnes per annum (MMTPA). The Manali Refinery in Chennai has a capacity of 9.5 MMTPA and is one of the most complex refineries in India with Fuel, Lube, Wax and Petrochemical feedstocks production facilities. The second refinery at Cauvery



CPCL was awarded the Mother Teresa Award for Corporate Citizen 2008 by LIBA, Chennai



Basin, Nagapattinam was set up initially with a capacity of 0.5 MMTPA in 1993 and later enhanced to 1.0 MMTPA capacity in 2002.

3.2.1 PHYSICAL PERFORMANCE:

During the year 2008-09, the company processed 10.13 Million Metric Tonnes (MMT) of crude oil. The company achieved MoU Excellent rating for its overall performance during the year 2008-09.

3.2.2 FINANCIAL PERFORMANCE:

During the year 2008-09, the company achieved a turnover of Rs. 36,517 crore as against Rs. 32,889 crore in the previous year. The details of physical and financial performance are given below :

PHYSICAL & FINANCIAL PERFORMANCE

	2006-07	2007-08	2008-09
Curde Thruput in TMT	10402	10266	10125
Total Distillate%	68.5	67.5*	67.8
Turnover (Rs. Cr.)	29349	32889	36517
Lube	187.3	202.3	172.4
Wax	25.1	28.0	27.7
Profit Before Tax (Rs. Cr.)	881	1722	(593)
Profit After Tax (Rs. Cr.)	565	1123	(397)

*MoU audited number is 69.8

Figures in brackets represent loss.

3.2.3 PROJECTS COMPLETED DURING 2008-09

(a) **5.8 MGD Sea Water Desalination Plant :** A project for installation of 5.8 MGD Sea Water Desalination Plant at a cost of Rs.243.94 crore was commissioned.

(b) **20 MW Gas Turbine :** A 20 MW GT project with Heat Recovery & Steam Generation (HRSG) has been commissioned to augment power capacity at Manali Refinery at a cost of Rs.157.88 crore.

3.2.4 MAJOR PROJECTS UNDER IMPLEMENTATION :

(a) Euro-IV Preparedness on Auto Fuels

Auto Fuel Quality upgradation Project has been undertaken at an estimated cost of Rs. 2615 crore in Manali Refinery to produce MS/HSD meeting Euro-IV specifications for Chennai and Bangalore and Euro-III for other locations from April 2010 onwards, as per the Auto Fuel Policy. The NHDT/ISOM unit for MS production is expected to be commissioned by January 2010 and DHDT unit is expected to be commissioned by July 2010.

(b) Refinery-III capacity augmentation at Manali : CPCL has undertaken capacity augmentation of its Crude Distillation Unit (CDU)-III from 3.0 to 4.0 MMTPA of crude processing. The expected cost of this project is Rs. 200 crore and is expected to be completed by October, 2009.

(c) Revamp of existing Naphtha Hydrotreating/ Catalytic Reforming Unit : To produce high quality Motor Spirit (higher Octane) for meeting Euro-IV specifications, the existing Naphtha Hydrotreating/ Catalytic Reforming Unit at Manali Refinery is being revamped at an estimated cost of Rs. 270 crore and expected to be completed by November '09.

(d) New Crude Oil Pipeline : To overcome the risk associated with transportation of Crude Oil through the aging existing 30" Crude Oil Pipeline, laying of a new 42" Crude Oil Pipeline as replacement, from Chennai Port to Manali Refinery along the route of the proposed Port Connectivity Road is under implementation.

(e) Installation of Additional Crude Oil Tanks (2X50 TKL) : A project for installing two additional Crude Tank to augment Crude storage capacity at the Manali Refinery at an estimated cost of Rs. 81 crore and is expected to be completed by end of 2009.

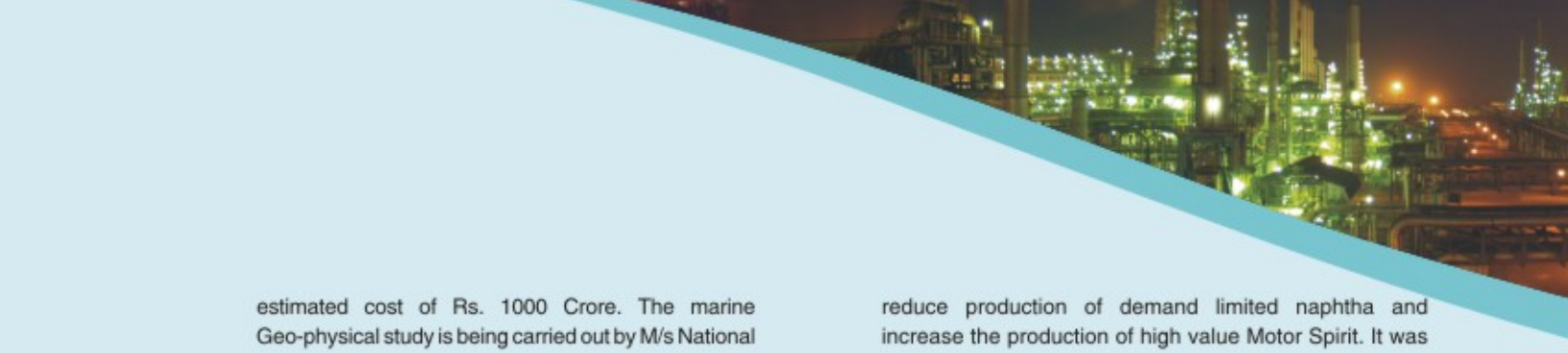
3.2.5 FUTURE PLANS :

(a) Resid upgradation Project

To improve the distillate yield of Manali refinery, CPCL has undertaken preparation of DFR and pre-project activities like selection of licensor, preparation of process packages, Environmental studies, etc. On establishing the economic viability of the project, the implementation of Resid Upgradation Project will be taken up. This Project is expected to be completed by the middle of 2012.

(b) Single Point Mooring (SPM)

CPCL has planned installation of an SPM, off, Ennore for Crude Oil imports for its Manali Refinery at an



estimated cost of Rs. 1000 Crore. The marine Geo-physical study is being carried out by M/s National Institute of Oceanography Technology, Chennai. The job of Marine Geo-tech studies has been awarded during March 2009. Appointment of Project Management consultants (PMC) for the project is under finalization.

(c) Container Freight Station/Multi Modal Hub

It is proposed to set up a Container Freight Station/ Multi Modal Hub at Chennai in the surplus land available with CPCL as a JV with M/s Balmer Lawrie. An Expression of Interest was signed on 18.3.2009 with M/s Balmer Lawrie.

(d) Propylene Unit Expansion

To enhance Propylene production capacity of Manali refinery, a feasibility study has been undertaken. The project will be implemented after establishing the economic viability and marketing tie-up.

3.3 BONGAIGAON REFINERY & PETROCHEMICALS LIMITED (BRPL)

BRPL was incorporated on February 20, 1974, with the objective of installation of Refinery having crude processing capacity of 1 MMTPA and a Petrochemical Complex consisting of Xylene, Dimethyl Terephthalate (DMT) and Polyester Staple Fibre (PSF) units. The crude processing capacity of the Refinery was enhanced to 2.35 MMTPA in 1995-96 by commissioning of its Refinery Expansion Units.

The Government of India which was holding 100% share of BRPL had divested its entire holding in BRPL in five tranches. The last tranche of disinvestment of 74.46% was made in favour of Indian Oil Corporation Limited (IOCL) and hence, BRPL became a Subsidiary Company of IOCL on 29th March, 2001. BRPL has now been merged with IOCL effective 25th March, 2009.

3.3.1 PHYSICAL PERFORMANCE

The refinery processed 2.16 million metric tones (MMT) of crude oil during the year 2008-09 as against 2.02 MMT in the previous year. LPG yield was 2.17% on crude throughput during the year. The company achieved lowest ever Fuel& Loss of 5.281% on crude throughput during the year 2008-09.

3.3.2 FINANCIAL PERFORMANCE

BRPL was merged with IOC on 25.3.2009 and accordingly its financial performance have been included in the IOC's balance sheet.

3.3.3 PROJECTS COMPLETED

Motor Spirit Maximization Project : This project will reduce production of demand limited naphtha and increase the production of high value Motor Spirit. It was commissioned on 31.1.2009 at a cost of Rs. 44.56 Crore.

3.3.4 ON GOING PROJECTS

The following two projects are presently under implementation:

(i) **Diesel Hydro Treatment (DHDT) Project :** This project will enable the Company to achieve the Euro - III quality specification of Diesel which will become applicable from April, 2010 as per Auto Fuel Policy of the Government. The estimated cost of this project is Rs.1649.39 crore. The project is likely to be completed by October, 2009.

(ii) **MS Quality Improvement Project :** The project will help the Company to achieve the Euro-III quality specification of Motor Sprit, which will be made available from April, 2010 as per Auto Fuel Policy of the Government of India. The estimated cost of the project is Rs. 293.6 crore and completion is scheduled by December, 2009.

3.3.5 PROJECTS UNDER CONSIDERATION:

Indmax Project

This project will help the Company to eliminate the demand limited black oil products (LDO, LVFO & FO) by converting them to high value lighter products like LPG & MS. DFR of the project has been prepared and is under process for approval.

3.4 NUMALIGARH REFINERY LIMITED (NRL)

Numaligarh Refinery, was set up as a grass-root refinery at Numaligarh in the District of Golaghat (Assam) in fulfillment of the commitment made by Government of India in the historic "Assam Accord", signed on 15th August, 1985 for providing the required thrust towards industrial and economic development of Assam. Both the Refinery and its adjacent Marketing Terminal were completed within the approved project cost of Rs. 2724 crore. Commercial production in the refinery commenced from 1st October, 2000.

3.4.1 PHYSICAL PERFORMANCE

During the year 2008-09, the crude throughput was 2.25 MMT. Distillate yield during 2008-09 was recorded at 84.72% .

3.4.2 FINANCIAL PERFORMANCE

During the year 2008-09, the company registered a profit (After Tax) of Rs. 235.64 crore. Sales Turnover during 2008-09 was Rs. 8853.33 crore.



3.4.3 PROJECTS UNDER IMPLEMENTATION

Siliguri Marketing Terminal Project at Siliguri : To improve the reliability of product evacuation in future, NRL has entered into an agreement with M/s Oil India Limited (OIL) for transportation white oil products from Numaligarh to Siliguri through a product pipeline. While the Product Pipe Line project is being implemented by Oil India Ltd., NRL is implementing the Marketing Terminal Project at Siliguri at an approved project cost of Rs.186.23 crore as a linked project to the pipeline project and expected to commence shortly.

12 MW Steam Turbine Generator (STG) Project : For energy conservation and overall efficiency of plant operations, NRL is installing a 12 MW STG at an estimated cost of Rs. 38.52 crore to generate power from surplus steam available in the Refinery and is in the final stage of commissioning.

Diesel Quality Up-gradation Project : To facilitate production of Euro-III HSD as well as limited quantities of Euro-IV HSD from April, 2010, the Diesel Quality Upgradation Project is being implemented in Numaligarh Refinery at an approved project cost of Rs. 435 crore. The project is to be completed by March 2010.

3.4.4 JOINT VENTURES

(i) **M/s Brahmaputra Cracker & Polymer Limited (Assam Gas Cracker Project)**

In order to implement the proposed Assam Gas Cracker Project in Dibrugarh district of Assam at an estimated cost of Rs. 5461 crores, a new joint venture company M/s Brahmaputra Cracker & Polymer Limited (BCPL) was incorporated on 08.01.07 with equity participation from GAIL (70%), OIL (10%), Government of Assam (10%) and NRL (10%). Besides equity participation, NRL has also planned to supply around 160 TMTPA of petrochemical grade naphtha as feed to the Gas Cracker. An amount of Rs. 110 Crore has been earmarked by NRL in the "XIth Five Year Plan" for this joint venture project. As on 31.03.09, NRL contributed Rs. 32.47 crores towards equity for the project. The project is scheduled for completion by 2012.

(ii) **M/s DNP Limited (Natural Gas Pipeline from Duliajan to Numaligarh)**

NRL has initiated actions for substitution of naphtha by natural gas as feed fuel in the refinery for improving the Company's refining margin. For implementation of the natural gas pipeline project from Duliajan to Numaligarh, a joint venture company M/s DNP Limited was incorporated on 15.06.07. Equity pattern of the joint venture company is M/s AGCL (51%), NRL (26%) & M/s OIL (23%). Project cost of the pipeline project is estimated at Rs. 318 crores. As on 31.03.09, NRL contributed Rs. 27.56 crores towards equity in the joint venture project. The natural gas pipeline system is targeted to be commissioned during 2009-10.

3.5 MANGALORE REFINERY & PETRO-CHEMICALS LIMITED (MRPL)

Mangalore Refinery and Petrochemicals Limited (MRPL), the first Joint Venture Petroleum Refinery in India, formed in 1987 jointly by M/S Hindustan Petroleum Corporation Limited, a public sector company and M/S Indian Rayon and Industries Limited and its associate companies (A.V. Birla Group), was set up with initial processing capacity of 3.69 million metric tones per annum Phase I started in 1996 and subsequently expanded to the present capacity of 9.69 million metric tones per annum in September 1999.

The refinery is located on the western coast of India close to Middle East and Far East Crude and product markets, primarily concerned to maximize middle distillates and fuel oils which was in short supply in India. Refinery is designed to process light to heavy and sour to sweet crude.

On 3rd March 2003, M/s. Oil & Natural Gas Corporation Limited (ONGC), acquired entire 37.39 % of equity capital held by M/S Indian Rayon and Industries Limited and its associates (A.V. Birla Group) in MRPL. A Debt Restructuring Package (DRP) was implemented in a record time of four weeks and ONGC infused further equity capital of Rs. 600 Crore on 30th March 2003, as envisaged under the DRP, increasing ONGC's equity holding to 51% and making MRPL a subsidiary of ONGC. ONGC subsequently bought the equity holding of Financial Institutions / Banks raising its equity holding in MRPL to 71.62% in June / July 2003.

3.5.1 PHYSICAL AND FINANCIAL PERFORMANCE

The refinery capacity utilization increased marginally from 12.55 MMT in 2007-08 to 12.59 MMT in 2008-09 thereby achieving a capacity utilization of 130%. The profit before tax (PBT) increased from Rs. 1733 crore in 2007-08 to Rs. 1812 crore in 2008-09 and the turnover increased from Rs. 37,339 crore to Rs. 42,719 crore during the above period.

The refinery exports of petroleum products has come down due to increased domestic absorption. About 38% of the products are exported. MRPL has entered into term supply contracts with State Trading Corporation Mauritius for the supply of 1 MMTPA products in 2006 (later renewed in 2007 for 3 more years) , and with Emirates National Oil Company (ENOC) for supplying 500 TMT HSD in 2006, which was also renewed for one more year in 2007.

In 2004 MRPL started clean fuel projects - Isomerization unit. Mixed Xylene units was also set up to improve refinery economics along with additional offsite infrastructure. Both units were commissioned in Dec 2006. Now MRPL is capable of producing Euro III/IV grades of MS.

Key performance parameters of MRPL for last 3 years are given in the following table:

Year	2006-07	2007-08	2008-09
Physical performance			
Throughput , MMT	12.535	12.547	12.586
Exports, MMT	5.35	4.83	4.45
Total Distillates	72.75%	71.67%	71.95%
Fuel & Loss	6.54%	6.71%*	6.42%*
Specific Energy Consumption, MBN	63.13	61.55	59.07
Financial Performance			
Turnover, Rs Crore	32,377	37,339	42,719
Exports, Rs Crores	11,615	11,141	11,608
Net Profit, Rs Crore	525	1,272	1,193
GRM, $/bbl	4.8	6.9	5.33

* Increased due to addition of ISOM & Mix Xylene units.



A night view of MRPL's Refinery



3.5.2 MAJOR PROJECT UNDER IMPLEMENTATION

MRPL has embarked on implementing Phase-III Refinery project at a revised estimated cost of Rs. 12412 crores. This will enhance the refining capacity from the existing 9.69 MMTPA to 15 MMTPA and also increase the distillate yield (Petrol, Diesel, LPG, Propelene, Naptha etc) by about 10% and eliminate low value black oil (FO/Bitumen) even while using more of low price high sulphur heavy oils and high acid crude oils. The project is under implementation and is expected to be completed by Oct 2011.

3.5.3 FUTURE PLANS

The strategic plans evolve around the basic objectives of GRM improvement, value addition to products and marketing expansion.

In order to gain from the low freight through VLCC and to cater to the increased volumes a study has been commissioned for installing SBM facilities at Mangalore Port. This will enable the refinery to source Crude through VLCC which will make it possible to bring West African, & South American crudes economically. This will also impart flexibility to the shipping operations and will improve GRM.

Low cost revamps are being taken up to de-bottleneck the CDU/VDU Phase1 and GOHDS units. As the fuel quality norms are becoming more stringent, the availability of low sulfur blend streams is crucial. GOHDS unit revamp are particularly planned for this objective and is likely to be completed before March 2010.



Inauguration of MRPL's First Retail Outlet


LADAKH FILLING STATION
WELCOME

Chapter-4



Marketing & Distribution

Marketing & Distribution

4.1 INDIAN OIL CORPORATION LIMITED (IOCL)

4.1.1

Indian Oil Corporation Ltd. (IOC) was formed in 1964 with the merger of Indian Refineries Ltd. (Estd. 1958) and Indian Oil co. Ltd. (Estd. 1959. Over the decades, it has evolved and grown to be India's largest commercial enterprise. During 2008-09 IOC posted net profit of Rs. 2,950 crore on an unprecedented turnover of Rs. 2,85,337 crore that too after holding the price line for the four major products - petrol, diesel, PDS kerosene and LPG for domestic use. IOC is also the first and the highest ranked Indian company in the Fortune 'Global 500', placed at 116th position by sales in 2008. It is the 18th largest petroleum company in the world.

4.1.2 PHYSICAL ASSETS

Following the merger of BRPL, IOC owns and operates 8 out of India's 19 refineries with a refining capacity of 49.7 million metric tonnes per annum (MMTPA). IOC Group with 2 refineries of Chennai Petroleum Corporation Ltd. (10.5 MMTPA) has combined refining capacity of 60.2 MMTPA

IOC's cross-country network of crude oil and product pipelines, spanning over 10,000 KM with total capacity of 71.6 MMTPA and the largest in the country, helps in meeting the vital energy needs of the consumers in an efficient, economical and environment-friendly manner.

As the flagship national oil company in the downstream sector, IOC supplies its products to millions of people everyday through a countrywide network of over 34,000 touch points. IOC operates the largest and widest network of retail outlets, numbering about 18,000. It supplies cooking gas to the doorsteps of about 53 million households through about 5000 LPG distributors. These efforts are backed by supplies from 167 terminals & depots, 101 aviation fuel stations and 89 LPG bottling plants. About 7,335 bulk consumer pumps are also in operation for the convenience of large consumers,



Panipat Refinery of IndianOil



ensuring product and inventory at their doorstep. The company is truly the leader in refining, marketing and pipeline transportation in the country. It also has in its fold one of the best R&D Centres in Asia.

THE YEAR WISE POSITION OF IOC'S MARKETING NETWORK IS INDICATED BELOW :

Description	As on 31.3.2007	As on 31.3.2008	As on 31.3.2009
Petrol/Diesel stations (Retail Outlets).	16540	17642	18278
Terminal & depots	177	166*	167*
Aviation fuel stations.	97	101	101
LPG bottling plants	89	89	89
LPG bottling capacity ('000 TPA)	4,028	4165	4259
LPG distributors	4,996	4996	4999
Towns covered	2,671	2683	2693
LPG customers (Million)	47.1	50.41	52.19

* Following merger of IBP with IOC, the terminals & depots of the two entities were rationalized to remove duplication and improve efficiencies.

In recent years, IOC has given thrust on rural format retail outlets, Kisan Seva Kendras (KSKs), widening its reach to rural India. 496 KSKs were commissioned in the year 2008-09 taking the total number to 2546. The KSKs represent a satisfying success story for IOC in its efforts to fuel development and help improve the living conditions of the rural masses. The facilities at KSKs inter alia include availability of seeds, pesticides, fertilizers, provisions, farm equipment, medicines, Nutan stoves, banking help including rural ATMs, communication etc. under one roof.

4.1.3 POLICY INITIATIVES UNDERTAKEN

IOC has taken several policy initiatives to ensure its competitiveness and growth in the changing business environment. These inter alia include the following.

- To constantly upgrade refining facilities aimed at improving product quality in line with international trends, adding value to its product slate, optimizing cost and reducing fuel & loss.
- Exchange of product streams among group company refineries to optimize capacity utilization and maximize gross refinery margins.
- Reduction in input cost to refineries through increase in processing of heavy and high sulphur crude oils.
- Merger of subsidiaries with itself for improved synergy. While IBP has been merged in May 2007, BRPL merged with IOC on 25.3.2009.
- Branding of products and services in order to improve focus on meeting niche market requirements and to provide better value for customers.
- Direct chartering of ships instead of going through Transchart under Ministry of Shipping.
- Improving offerings, both in quality and quantity, to customers through automation of retail outlets and installation of GPS based Vehicle Tracking System (VTS) in tank trucks transporting products to marketing touch points.
- Diversifying into natural gas business viz. including city gas distribution.

- Integration into exploration and production (upstream) and petrochemicals (downstream).
- Extending operations overseas in downstream marketing, exploration & production etc.
- Participation in the entire supply chain of bio-diesel.
- Undertaking training, consultancy, technical services and project management assignments in India and abroad
- To broaden the energy portfolio in a sustainable manner, to explore new & alternative sources of energy
- Improving performance in safety, health and environment.
- Putting in place a Risk Management Policy in line with requirements of clause 49 of Listing Agreement with Stock Exchange.



Shri R.S. Pandey, Secretary MOP&NG & Shri Sarthak Behuria, Chairman IOC exchanging MoU documents

- Implementation of ERP.
- Corporate Social Responsibility.

4.1.4 PERFORMANCE

The performance of IOC, in the financial year 2008-09, was spectacular with turnover, product sales and refinery & pipeline throughputs, all scaling new peaks.

4.1.5 FINANCIAL PERFORMANCE

The year 2008-09 saw an unprecedented rise in the price of crude oil. The challenge for IOC was to retain its leadership amidst spiraling oil prices coupled with the need to hold the retail prices in the interest of consumers. It became the first Indian company to record a turnover exceeding Rs. 2,85,337 crore, registering a net profit after tax of Rs. 2,950 crore. The company declared a dividend of 75% during 2008-09. It made a substantial contribution of Rs. 25,891 crore to the Central Exchequer. An additional and equally impressive amount of Rs. 31,638 crore was contributed to the State Exchequer. Details of some of the major financial highlights are tabulated below.

(Rs. in Crore)

Parameter	2006-07	2007-08	2008-09
Gross Turnover	2,20,779	2,47,479	2,85,337
Profit Before Tax	10,485	10,080	4,329
Profit After Tax	7,499	6,963	2,950
Earnings Per Share	62.90	58.39	24.30
Dividend Declared	2,251	656	910

Increase in foreign exchange loss due to appreciation in US Dollar vis-à-vis Indian Rupee, inventory valuation losses due to steep fall in crude oil prices, increase in Interest expenditure due to increase in rate of interest as well as increase in borrowing and loss on sale of Oil Bonds are the main reasons for lower profit during 2008-09.

4.1.6 PHYSICAL PERFORMANCE

Refineries clocked the highest-ever throughput of 51.4 million metric tonnes (MMT), registering an increase of 8.4% over the previous year. Pipelines were equally impressive, transporting 59.9 MMT of crude oil and products, and achieving a growth of 4.9%. The product sales (including exports) during 2008-09 touched an all time high of 66.17 MMT. The details in respect of the performance in the past and the current year are tabulated below.

(MMT)

S. No.	Description	2006-07	2007-08	2008-09
(A)	Refining - Throughput	44.0	47.4	51.4
(B)	Pipelines -Throughput			
(i)	Crude	32.4	35.8	38.3
(ii)	Product	19.3	21.3	21.6
	Total –B (i+ii)	51.7	57.1	59.9
(C)	Marketing – Product Sales			
(i)	Domestic			
	POL	53.36	57.55	60.89
	Gas	1.48	1.74	1.67
(ii)	Exports	3.13	3.33	3.61
	Total –C(i+ii)	**57.97**	**62.62**	**66.17**



Identification of new grades of crude oil, which suit IOC's refinery system technically and commercially, is an ongoing process. IOC has been proactive in diversifying sources of crude oil imports. Many initiatives were taken to enlarge the basket of crude oils to help bringing down input costs and widen supply sources. During the year 2008-09, 11 new grades of crude oils from countries like Angola, Malaysia, Gabon, Nigeria, Kango, Libya, Brunei, etc have been procured and processed.

4.1.7 INITIATIVES ON ENERGY CONSERVATION

IOC is committed to conservation of energy and reduction of hydrocarbon loss at all its refineries through continuous in-house process monitoring and induction of latest technology. As a result of these sustained efforts towards energy conservation, the energy index in terms of MBTU/BBL/NRGF of IOC refineries could be brought down to 64 in 2008-09 as against 67 in the previous year. These initiatives resulted in net hydrocarbon savings of about 73,000 tonnes per year.

4.1.8 SAFETY, HEALTH AND ENVIRONMENT

Emphasis in IOC has always been on sustainable development. The Corporation has always been committed to providing a safe work place and in the enrichment of quality of life of employees, customers and the community. Comprehensive safety, health & environment management systems are in place during implementation of projects and in all operating units and installations under which the facilities are periodically reviewed and upgraded from time to time for better performance. Safety systems are regularly audited for continuous improvement. Environment management systems of all Refinery units and Pipelines installations and major Marketing installations are certified to ISO-14001 standards. All Refineries are accredited for Occupational Health and Safety Assessment Series (OHSAS-18001)

SAFETY & HEALTH

Some of the major efforts of IOC during the period in respect of Safety are as under.

- Safety Award scheme of refineries has been modified to include implementation of recommendations of External Safety Audit / Surprised Safety Audit conducted by Oil Industry Safety Directorate (OISD).
- Advanced training on Personal Fall Protection Equipment (PFPE) and Scaffold Safety organized for participants from all the Divisions
- Oil spill response mock drill conducted at Vadinar in November 2008.
- Quarterly and Annual Offsite emergency drills were carried out at Refinery Units, Offsite disaster drill conducted by all Pipeline Installations and emergency response drill conducted by all Marketing installations.
- Safety film on Learning from Incidents in LPG Bottling Plants, Work at Height, Use of Respiratory Equipment and Use and Maintenance of Fire Fighting Equipment & Appliances developed.

ENVIRONMENT PROTECTION

IOC while achieving excellence in business activities is consciously committed to achieve environmentally sustainable growth and has continued with this endeavor. Some of the major efforts/achievements of IOC during the period in respect of environment protection are as under.

- Full compliance of effluent and emission norms at all Refinery units, Pipelines and Marketing installations.
- Rain water harvesting facilities developed at 4 refineries, 44 Marketing installations and 5 pipelines installations.
- Tier I oil spill response facility at Vadinar to handle oil spill upto 100 MT.
- For carrying out monitoring of ambient air quality in the vicinity of fuel retail outlets in and around Delhi, IOC R&D Center's Air Quality Monitoring Van was flagged off on 5.6.2008.
- 2 projects at Digboi and Haldia got registered under Clean Development Mechanism (CDM), and 4 projects are under various stages of validation.
- There was 11.7% reduction in fresh water consumption and 2.5% increase in reuse of treated effluent as compared to previous year.
- MoU signed with Paradip Port Trust (PPT) under which PPT will provide Tier-I Oil Spill Response facility for SPM at Paradip during tanker operation.

Description	2007-08	2008-09
Oily sludge treated for oil recovery in the Refineries	7000 MT	23000 MT
Reuse of treated effluent to the extent	80%	78%
Disposal of spent catalyst	3400 MT	2500 MT

4.1.9 RESEARCH & DEVELOPMENT

IOC has the distinction of being the first oil company in the country to venture into research and development with the establishment of IOC's R&D Centre in the year 1972. Besides pioneering and exhaustive work in lubricant formulations, refinery processes, pipeline transportation and alternative fuels, the centre is also the nodal agency for ushering the hydrogen fuel economy in the country.

The R&D centre has been providing technical services support to corporation's business domain and in meeting the varied needs and aspirations of its valued customers which has helped in bringing down the costs, improving efficiencies, increasing the yield of value added products and offering customized products and solutions.

IOC entered the select group of licensors of the highly guarded Needle coke technology. This technology, which has proven successful in two IOC refineries, was licensed to NRL. The work on installation of INDMAX, DHDT & ISOM technologies developed by IOC and licensed to BRPL, has progressed as per plan and all these technologies will be on stream in phases by the year 2012. Efforts are on for licensing of INDMAX to 2 international customers. IOC's DHDS catalyst, which is suitable for use in DHDT also, would be used in CPCL plant. A novel adsorbent based desulphurization process for gasoline and diesel has been developed. A new metal passivator additive, IndVi, for which Indian patent has been filed, has been developed and is being commercialised. A scheme of using metal laden E-cat as an additive for reduction of sulfur in gasoline has also been developed. Study has been initiated on assessment of extracted oils from SHALE in Assam and Arunachal Pradesh for processability with existing refinery infrastructure. Continuing with the development of intelligent pigs, used in pipeline operations, IOC became the first company to put caliper pigs for commercial trials. Ultra iMAX additive' developed by IOC R&D Centre has been selected by CPCL against global tender.

The efforts on the front of formulations and patents are tabulated below.

Description	2006-07	2007-08	2008-09
Formulations developed	180	186	186
Formulations commercialised	168	160	153
OEM Approvals	43	46	47
Patents granted	7	12	10



IndianOil has commissioned the first ISO-9001 product testing laboratory in Mauritius

With the experience gained from India's first pilot H-CNG dispensing station at the campus of R&D centre Faridabad, Indian's first commercial H-CNG dispensing station was setup at Dwarka, New Delhi with part funding from Ministry of New & Renewable Energy (MNRE) and rest from OIDB (Hydrogen Corpus Fund).

4.1.10 PROJECT IMPLEMENTATION

Projects Completed

Project	Approved Cost (Rs. crore)	Completion/ Commissioning
Panipat-Jalandhar LPG pipeline	187	November 2008
Paradip-Haldia Crude Oil pipeline	1420	January 2009
21 MW Wind Power project in Gujarat	132	January 2009
Koyali-Ratlam Pipeline	195	February 2009

Project approved

Among various projects approved during the year, the major ones are listed below.

(Rs. in Crore)

Project	Approved Cost	Date of approval
Branch line from KSPL, Viramgam to Kandla	349	February 2009
Paradip Refinery Project	29,777	February 2009
MS Quality Projects at Barauni, Guwahati and Digboi	2,513.60	April 2008
21 MW Wind Power project in Gujarat	132	July 2008

Ongoing projects

Projects valued over Rs. 61,000 crore are under implementation.



The details of major ongoing projects are tabulated below.

Project	Approved Cost (Rs. crore)	Anticipated Completion
Paradip Refinery	29,777	March-Nov. 2012
Naphtha Cracker, Panipat	14,439	November 2009
Resid upgradation, Koyali	5,882	January 2010
Once-through Hydrocracker & capacity augmentation, Haldia	2,869	December 2009
Panipat Refinery expansion: from 12 to 15 MMTPA	1,008	December 2009-Quality Upgradation Part April 2010-CDU, VDU, OHCU, DCU
MS Quality Upgradation Projects at Panipat, Mathura	1479	December 2009
Dadri-Panipat R-LNG line	298	December 2009
Augmentation of Mundra-Panipat crude Pipeline	205	June 2009
DHDT Project at Bongaigaon	1646.39	June 2010
Chennai-Bangalore Product Pipeline	273	June 2010

4.1.11 WIDENING HORIZONS

To achieve next level of growth in line with its vision, IOC is forging ahead on a well laid out road map through vertical integration - upstream into exploration and production, and downstream into petrochemicals, and through diversification into natural gas, besides globalization of its downstream operations.

4.1.12 EXPLORATION & PRODUCTION (E&P)

IOC has made successful forays in exploration & production and, with the passage of time, its capability to successfully establish itself in this new area of business is slowly but surely strengthening. To enhance the upstream integration, IOC has been pursuing E&P activities both within and outside the country, in collaboration with consortia partners, as briefly indicated below.

Domestic

Along with consortium partners, IOC has equity participation in 12 blocks including 2 CBM blocks. These include the Type-S Cambay onshore blocks, for which 1st time IOC has been allocated operatorship, and 1 KG deep sea block awarded under the NELP-VII. IOC's Participating Interest (PI) in the above blocks range from 15% to 100%. The blocks are in various stages of exploration activities.

Gas discovery was made in the Mahanadi offshore exploration block MN-OSN-2000/2. The appraisal plan for the discovery submitted to Directorate General of Hydrocarbons (DGH) was approved by DGH on 12.9.2008. Commerciality of the discovery is being established.

Appraisal plan for the Gas discovery made in the block AAP-ON-94/1 in Assam-Arunachal Pradesh, has been submitted to DGH on 24.9.2008.

Overseas

As regards overseas initiatives in E&P, IOC in association with consortia partners has equity participation in 9 blocks located in Iran, Gabon, Nigeria, Yemen, Libya and Timor-Leste. IOC's participating interest in these blocks ranges from 12.5% to 50%. The blocks are in various stages of exploration activities.



Construction of Naphtha cracker at Panipat Refinery

IOC, along with OIL, signed an agreement on 2.6.2008 with Reliance Industries Ltd. (RIL) for 'farm-in' with 12.5% PI each in the deepwater Block-K in Timor-Leste. The Government of Timor-Leste has approved the assignment on 15.10.2008.

4.1.13 PETROCHEMICALS

Entering into the Third Phase of IOC's petrochemical journey, work on biggest Petrochemical investment yet, the Rs. 14,439 crore (US$ 3.1 Billion), Naphtha Cracker and downstream Polymer units project at Panipat is steadily progressing and is expected to be commissioned by the end 2009. The Naphtha Cracker has a capacity of 850000 MTPA of Ethylene and 600000 MTPA of Propylene. Besides 325000 MTPA of MEG, the unit would also produce 650000 MTPA of Polyethylene and 600000 MTPA of Polypropylene.

IOC has established itself in LAB business both in India and abroad as a major supplier to the detergent industry. LAB sales in 2008-09 of 126722 MT including approx. 21406 MT of physical exports have been nearly at par with production of 129006 MT.

Similarly, IOC is fast consolidating its PTA business and is catering to all major domestic customers spread in various parts of the country. Exports of PX during 2008-09 was 5072 MT

The details of sales figures for LAB and PTA are tabulated below.

Product	Sales ('000 MT)		
	2006-07	2007-08	2008-09
LAB	122	134	127
PTA	183*	375	408

* Unit commissioned in August 2006

4.1.14 GAS

IOC has successfully completed five years in the business of natural gas and sold 1.85 MMT (including internal consumption) of R-LNG during 2008-09.

GAS TIE-UP

IOC is one of the promoters of M/s Petronet LNG Limited (PLL) and markets 30% of re-gasified LNG (R-LNG) imported by PLL from Ras Gas, Qatar, amounting to 1.5 million metric tonnes per annum (MMTPA), from PLL's Dahej terminal in Gujarat on the West coast.

Further, PLL has tied up a term contract for 2 years with Ras Gas for 1.5 MMTPA of LNG of which 0.5 MMTPA is IOC's share, which is being supplied to Ratnagiri Gas and Power Project Ltd. (RGPPL). IOC will also be suppling 0.25 MMTPA of R-LNG to Pragati Power Corporation Limited (PPCL). IOC has signed another contract with PLL for supply of an additional 0.75 MMTPA of R-LNG from 3rd quarter of 2009.

City Gas Distribution (CGD) Projects

Green Gas Ltd., a joint venture company of IOC and GAIL for city gas distribution in Agra and Lucknow, has commissioned one mother station each in Agra and Lucknow. Three daughter booster stations have been set up in Lucknow and two in Agra. During 2008-09, 13,208 MT and 8919 MT of gas was sold in Lucknow and Agra, respectively.

Several MoUs were signed with a number of companies for undertaking CGD projects in various cities.

Franchise Agreements have been entered into with CGD players like IGL & MGL and CNG is being sold through IOC retail outlets. Franchise Agreements have also been entered into with Adani Energy Limited, GEECL, SITI Energy and GSPC Gas Limited for marketing of CNG through IOC retail outlets.

LNG at Doorstep

IOC has successfully taken forward its innovative project "LNG at Doorstep" for distributing LNG through cryogenic tankers directly to the consumers, for industrial/captive power applications. More than 15960 MT LNG has been supplied during 2008-09 through this initiative.

IOC has signed a contract with PLL for expanding the LNG loading capacity at Dahej from the existing 12000 MT to 20540 MT. Based on the additional capacity, new customers have been identified with 3 of whom, Heads of Agreements (HoAs) have been signed.



IndianOil "LNG at Doorstep"facility at Pen, Maharashtra

4.1.15 INITIATIVES IN BIO-DIESEL

IOC has been at the forefront of technology development for production of bio-diesel from various edible and non-edible oils and its application in vehicles and energy crop plantation.

IOC has taken up initiatives to start energy crop plantation in the states of MP, Chhattisgarh and UP. In MP, IOC has



been allotted 2000 hectares of revenue wasteland in Jhabua district where pre-plantation activities have commenced. In Chhattisgarh, Joint venture company, IndianOil-CREDA Bio-fuels Ltd. has been formed with Chhattisgarh Renewable Energy Development Agency (CREDA) of Chhattisgarh State government, to take up plantation of energy crops. In UP, IOC has signed a MOU with M/s Ruchi Soya to explore the possibility of contract farming in the districts of Jhansi and Lalitpur.

4.1.16 ETHANOL BLENDED PETROL (EBP)

5% EBP is made available in 15 states and 3 UTs. Pilot projects have been launched in two locations (Uttar Pradesh & Karnataka) for trial marketing of 10% EBP.

4.1.17 INITIATIVES IN THE POWER SECTOR

IOC has signed a Joint Venture Agreement with Tata Power for setting up a coal based captive power plant in joint venture for supply of power to IOC's integrated complex at Paradip. The JV Captive power plant is proposed to be located at Naraj Marthapur about 100 kms from IOC's proposed refinery at Paradip and would supply power to the Paradip refinery through dedicated transmission lines. Activities related to incorporation of the Joint Venture Company are currently in progress.

4.1.18 INITIATIVES IN RENEWABLE ENERGY

As an integrated energy company with a strong environment conscience and in view of the over dependence on imported crude, to diversify into alternative energy sources like wind power which can be used for own consumption and marketed as well, a 21 MW wind power project was initiated in Kuch district of Gujarat. It consists of 14 Wind Electric Generators of 1.5 MW capacity each. All the machines have been commissioned.

In keeping with IndianOil's vision to be an "Energy" major and its commitments toward a cleaner environment, IndianOil has taken several initiatives towards greening its product portfolio / offerings.

Rural Solar Lighting Project

Life comes to a standstill for millions of Indian rural households after sunset due to non-availability/poor quality of power. The alternate light source for these people is kerosene lamps, which provide very poor quality of lighting and the fumes generated pose health hazards. To obviate these shortcomings, IndianOil conceived and embarked upon the rural solar lighting project.

Indian Oil Corporation's first Solar Charging Station (pilot project), for charging solar lanterns, was commissioned at its Kisan Seva Kendra (special format petrol/diesel station for rural areas) at Sathla, about 25 km from Meerut on 21 Aug 2008. Subsequently, the second Solar Charging Station was commissioned at Azad KSK, Chokoni, under Bareilly Divisional Office.

Solar lanterns are charged by solar energy at the central charging station at Kisan Seva Kendra during the day. The charged lanterns are taken by the villagers / shopkeepers on rent in the evening and the discharged (used) lanterns are returned in the morning for re-charging. Alternatively, delivery and pick-up services are provided by the RO/KSK dealer for a small charge (say 50 paise to 1 rupee per lantern per day). The key learning from this pilot project has been (1) The need to shift from CFL to LED based lighting (which reduces cost significantly), (2) Understanding market segments amongst villagers, (3) Usage of kerosene lanterns and cost thereof, (4) Energy requirement of villagers, (5) Villagers' preferences and affordability.



Solar panels on rooftop at KSK, Sathla



4.1.19 INNOVATION & TECHNICAL EXCELLENCE

Some of the major innovative schemes/systems implemented, leading to savings for the company by cutting down capital and/ operating costs, and to system improvement, are described below.

Step-less Control System for Hydrocracker MUG compressor at Mathura

A novel, Step-less Capacity Control System for power savings has been installed in Makeup Gas Compressor of DHDT unit at Mathura refinery, recycle gas compressor of Haldia refinery and in make-up gas compressor of HDT unit in Guwahati refinery. It has facilitated compressor spill back valve to be completely closed, thereby resulting in a fuel savings of approx. 1000 MT/year in Mathura, 256 MT/ year in Haldia and 515 MT/year in Guwahati Refinery..

Data Reconciliation and Yield Accounting Package at Mathura

DRYA (Data Reconciliation and Yield Accounting Package), first of its kind in IOC, was implemented for working out Daily Production Balance using real time process data at Mathura.

After successful implementation of package at Mathura in Oct '07, the project was implemented at Gujarat, Panipat, Guwahati, Barauni & Haldia Refineries and the Site Acceptance Test (SAT) for the package has been completed during 2008-09.

Processing of Heavy and Sour Crude Oils

High volatility and spiraling costs of crude oil posed major challenges to the refining sector during the year. As a strategy to reduce the input costs, IOC refineries enhanced processing of low-priced heavy and high sulphur crudes. HS crude processing has been progressively increased from a level of 23.2 MMT in 2007-09 to 23.7 MMT in 2008-09.

INFORMATION TECHNOLOGY

- Implementation of INDSOFT software package for LPG Distributors as a unified and common Documentation and Controls System.
- IOC and BPCL have taken lead in the Industry by implementing B2B transaction between IOC and BPCL, resulting in substantial saving of time and better turn around time of tank trucks.
- SAP Consultancy project for implementing SAP in CPSTL/ CPC/ LIOC in Sri Lanka undertaken.
- State-of-the-art Data Centre at CBTC equipped with Energy Management System, CC TV, Access Control System, Building Management System, etc. has been set up.
- Business Processes and Systems Audit conducted by M/s Ernst & Young for ensuring quality and controls in SAP system.
- Implementation of Production Scheduling (PS) Package at Gujarat and Panipat.

4.1.20 QUALITY ASSURANCE

With a view to improving the quality assurance to customers, various initiatives have been undertaken by IOC. Some of the important initiatives are as under.

Automation of Petrol/Diesel Stations (Retail Outlets)

IOC has embarked upon a plan of automating 2357 retail outlets. 1233 retail outlets have already been automated up to March 2009.

Vehicle Tracking System (VTS)

In order to ensure that quality product reaches the customer at retail outlets, a Vehicle Tracking System is under implementation by IOC. As on 31.3.2009, around 16,555 trucks have been covered out of a total number of around 19,600 tank trucks.

4.1.21 CORPORATE SOCIAL RESPONSIBILITY

As a responsible Corporate Citizen, IOC has been making substantive contribution every year to national causes, social welfare and community development programme throughout the country, particularly, in the vicinity of its major units/installations to improve the quality of life of the people. The community development programme adopts a multi-disciplinary approach incorporating health, family welfare, education, environment protection, drinking water & sanitation, empowerment of women and other marginalized groups.

Under Community Development Programme, about 25% is spent under Special Component Plan (SCP) and Tribal Sub-Plan (TSP) for improving the quality of life of the people of SCs and STs.

Indian Oil Foundation (IOF)

The IndianOil Foundation (IOF) a non-profit Trust has been created under the Indian Trusts Act, 1882 to protect, preserve and promote the National Heritage, in collaboration with ASI and NCF of the Government of India.

Indian Oil Scholarship schemes:

The IndianOil Scholarship' is awarded to 450 meritorious students in select categories to nurture and support talent among the deserving students belonging to families with less than rupees one lakh as the gross joint annual income of the family, out of which 50% are reserved for SC/ST/OBC students, 25% of the scholarship is



earmarked for girl students and 10% for Physically Handicapped students.

Indian Oil Sports Scholarship Scheme:

IOC has also introduced a Sports Scholarship Scheme under which, 55 scholarships for 7 games (Cricket, Table Tennis, Badminton, Tennis, Chess, Hockey & Golf) are awarded to promising upcoming junior players in the age groups of 15 to 18 years representing State in team games and on National ranking in others.



Indian Oil Tennis star Sharath Kamal participated in the Beijing Olympics.

4.1.22 SUBSIDIARIES

(a) Bongaigaon Refinery & Petrochemicals Limited (BRPL)

BRPL merged with IOC w.e.f. 25.03.2009.

(b) **Chennai Petroleum Corporation Limited (CPCL)**

Turnover of CPCL during 2008-09 increased to Rs.36,517 crore from Rs.32,889 crore in the previous year.

Major ongoing projects include capacity augmentation at Manali, Auto fuel upgradation and revamp of existing Naptha Hydrotreating Catalytic Refining unit.

(c) Lanka IOC Limited (LIOC)

LIOC operates 150 petrol & diesel stations in Sri Lanka along with a lube manufacturing and marketing set up. It has also ventured into bunkering business.

In 2007-08, LIOC has become No. 1 Company in Sri Lanka in terms of turnover. Turnover of the company during 2008-09 increased to Rs. 1,922 crore from Rs. 1,720 crore in the previous year.

(d) IndianOil (Mauritius) Ltd. (IOML)

IOML, a wholly owned subsidiary of IOC, holds around 22% of the market share in POL products in Mauritius. It has port terminal at Port Louis with storage capacity of 24000 MT, the first full-fledged petroleum products testing laboratory in Mauritius, network of 17 ROs and also has presence in aviation as well as bunkering business. IOML is adjudged at 18th position amongst 'Top 100 Companies' of Mauritius.



IOML (Indian Oil Mauritius Limited) terminal at Mer Rouge, Mauritius

(e) IOC Middle East FZE, Dubai, U. A. E.

As part of its efforts to reach new markets in the Middle East, Africa and CIS countries, a wholly-owned subsidiary, IOC Middle East FZE, was registered at Jebel Ali Free Trade Zone in UAE in April 2006. It is blending and marketing of SERVO lubricants. SERVO trademark has been registered in U.A.E. and distributors have been appointed for Oman, Qatar & Bahrain. In November 2008, SERVO lubricants were launched in Oman.

During 2008-09, its turnover was Rs. 50 crore as against Rs.41 crore in the previous year.

(f) IndianOil Technologies Limited (ITL)

ITL is a wholly owned subsidiary of IOC with an objective to market the entire range of technologies developed at IOC's R&D Centre at Faridabad, Haryana. During 2008-09, the company's turn over was Rs.1.94 crore against Rs.1.91 crore during 2007-08.

4.1.23 MAJOR ACCOLADES

IOC has been recognized as a leading player in the country's energy sector and has been the recipient of numerous awards and accreditations for sustained deliverance of quality products and services. Some of the major distinctions achieved by the company are listed below.

- WPC Excellence Award 2008 for 'Hydroprocessing Technology for Green Fuels - Basics to Commercialization through Innovation'
- Petrofed Award to R&D Centre for 'Innovator of the Year-Team' for Marine Oil development
- Golden Peacock Award to R&D Centre for Eco-Innovation
- Stevie Winner Award by International Business Awards 2008 for 'Car in A Tank' promo scheme.
- Oil & Gas Supply Chain Excellence award - India Times Mindscape and Business India
- In November 2008, 'Gold Trophy' of "Scope Meritorious Award for Environmental Excellence and Sustainable Development" for the year 2006-07
- "Safety Innovation Award 2008" for the fourth consecutive year in the Safety Convention 2008 organized by Safety & Quality Forum, Institution of Engineers (India), Delhi State Centre
- WIPO (World Intellectual Property Organization) gold medal for the Development & Commercialization of Novel Process Technology, "INDE Sweet & INDE Treat", for removal of H2S & Mercaptans from LPG through Continuous Film Contactor (CFC)
- Best Performer OISD Safety Award (1st Position) for the year 2007-08 under Group-II (POL Marketing Organization) Category
- 1st prize by OISD for Best Safety Performance during 2007-08 for Barauni Refinery
- International Safety Award-2007 constituted by British Safety Council for NRPL Panipat
- SAP Certified Customer Competence Centre
- Smart Workplace award, instituted by Economic Times for CBTC
- SAP ACE award consecutively for 2006, 2007 and 2008
- CIO 100 award consecutively for 2006, 2007 and 2008

4.2 HINDUSTAN PETROLEUM CORPORATION LIMITED (HPCL)

4.2.1.1 HPCL is a mega Public Sector Undertaking (PSU) integrated oil Company in India, with Navratna status. It has two refineries producing a wide variety of petroleum products- fuels, lubricants and specialty products; one in Mumbai (West Coast) having a capacity of 5.5 MMTPA and the other in Visakhapatnam (East Coast) with a capacity of 7.5 MMTPA. The Corporation holds equity stake of 16.95% in Mangalore Refinery & Petrochemicals Limited, a state-of-the-art refinery at Mangalore with a capacity of 9.69 MMTPA. HPCL is also progressing towards setting up of 9 MMTPA capacity refinery in the state of Punjab with joint collaboration with M/s Mittal Investment.

4.2.1.2 HPCL owns and operates the largest Lube Refinery in the country producing Lube Base Oils, having a capacity of 335,000 Metric Tones, Contributing over 40% of the country's total Lube Base Oil production. Besides, the Corporation owns six Lube Blending Plants (2 in Mumbai and 1 each at Budge Budge, Ramnagar, Chennai & Silvassa) and a Lube oil pipeline for evacuation of base oil from Mumbai Refinery. Presently HPCL is producing over 300 grades of lubes, specialties and greases.



Club HP Outlet

4.2.1.3 To succeed in the competitive environment, the Corporation has taken up initiatives such as Business Process Re-engineering exercise, creation of Strategic Business Units, ERP implementation, HR initiatives such as Organizational transformation, Balanced Score Card, Competency Mapping, bench marking of refineries and terminals for product specifications/safety, ISO certification of Refineries/ marketing / pipeline operations, branding of fuels, supply chain management for improving logistics, customer focused approach, upgradation and modernization of facilities.



4.2.2 MARKETING INITIATIVES UNDERTAKEN DURING 2008-09

Retail Initiatives : Retail constitutes 58% of HPCL's overall business. Both the Corporate and Retail Brands of HPCL enjoy high brand recall among consumers. The year 2008-09 had witnessed increasing customer confidence in HPCL.

Branded Fuels: HPCL was the first company to introduce Branded Diesel "Turbojet" in the Indian Market. Turbojet continues to receive excellent customer acceptance & now constitutes 7.7% of total HSD Sales. Similarly MS "Power" constitutes 17.3% of total MS sales during 2008-09.

Leveraging on Technology to enhance Quality.

- **Retail Automation :** HPCL has pioneered the concept of e-fuel stations in India, having fully automated over 40 Retail outlets in Mumbai/Vashi. Quality Assurance through Quality control is an international practice. Retail Automation focuses on end to end solution in monitoring the sales and stock online and eliminates manual intervention. The feature includes real time density at the point of sale to enhance customer confidence; plugging loop holes across the supply chain through GPS/GSM technology based Vehicle Management System. Retail Automation completed at 885 outlets under Phase I&II. Work under Phase III covering 800 sites is in progress and 789 outlets have been covered as of Mar '2009.
- **Vapour Recovery System (VRS) :** As part of efforts to preserve and improve environment HPCL has implemented Stage II Vapour Recovery system at about 418 of its outlets as of 31.03.09. This pioneering initiative has helped to improve the Quality of Air in the forecourt of outlets and reduced the stock loss.
- **Network Expansion**

  Rural Initiative : To touch the lives of people in the rural sector and make available quality fuel and convenience at the point of consumption, HPCL has introduced the novel idea of branded rural outlets "Hamara Pumps".

LPG SBU

- Started a unique 24x7 automated service, HP Gas Anytime, an SMS based real time booking & allied service to LPG customers in Kerala.



Launch of E Fuel Campaign at Delhi - HPCL

- Visakh Cavern facility handled 564 TMT of LPG which resulted in logistics savings of Rs.101.5 Crores
- LOT System : LOT Valve launched for commercial cylinders facilitating Industrial Customers to regulate LPG flow rate as per requirement
- Automated all 10 CNG stations in Ahmedabad facilitating centralized monitoring and integrating all CNG operations.
- Launched "Safety & Conservation" oriented products like Fire-retardant Aprons, Power Saving Devices & new innovative Flame Lighters, to benefit customers & conserve energy.

4.2.3 MARKETING INITIATIVES UNDERTAKEN

Retail Branding: HPCL have branded 3394 Retail outlets as "Club HP" outlets as of March '09. Club HP outlets constitute 40% of total Retail network and accounts for 64% of total MS & 61% of total HSD sales. To ensure consistent delivery of superior Customer services these outlets are audited by M/s Bureau Veritas, a reputed international Third Party Agency.

During 2008-09 "Turbojet" was added at 280 Retail Outlets taking the total number to 4809 as on 31.3.09 and "Power" was added at 403 Retail Outlets taking the total number to 3557 as on 31.3.09.

4.2.4 REFINERIES HIGHLIGHTS/INITIATIVES 2008-09

Mumbai Refinery :

(i) Mumbai Refinery processed 6.65 MMT crude with Capacity utilization of 121%, Fuel & Loss 6.64 wt %. Distillate Yield of 69 wt %, Specific Energy Consumption of 89% MBTU/ BBL/ NRGF/ MBTU/ BBL/ NRGF.

(ii) Agreement with US Trade Development Agency (USTDA) was signed for Technical assistance grant related to following areas and is the first oil company to get this grant from USTDA:
- Bottom upgradation project.
- Asset Integrity Management Program

(iii) New flare system was commissioned during Apr-May'08 as a first step towards commissioning of mega project "Green Fuels & emission Control"

(iv) Implemented Risk Based Inspection (RBI) technique to enhance the reliability of equipment.

(v) Initiated online furnace cleaning to improve furnace efficiency, maximization of crude throughput and refinery margins.

Visakh Refinery

(i) Visakh Refinery processed 9.158 MMT with Capacity Utilization of 122%, Fuel & Loss of 5.7 wt %, Distillate Yield of 75.7 wt %, lowest ever Specific Energy Consumption of 85.8 MBTU/BBL/NRGF.

(ii) Procured new simulation software (SHARC) for FCC process modeling.

(iii) Commissioned Optrode Analyzer in July'2008 for FO stability testing as a part of Shell PFI M-57 on VBU throughput maximization.

4.2.5 AWARDS/RECOGNITION

HPCL has received many awards / recognitions during the year in different fields. Some of them are as under:



Shri R.S. Pandey, Secretary MOP&NG and Shri A. Balakrishnan, C&MD-HPCL after signing MoU document



- HPCL has been awarded **"CIO 100 Award"** of IDG (International Data Group) is one of the most prestigious recognition in the IT Industry worldwide for the third consecutive year in recognition of Excellence in deploying technology solution.
- HPCL has been awarded **"Golden Peacock Award"** for Excellence in Corporate Governance -2007 in the Petroleum category.
- HPCL has won the Reader's Digest **"Trusted Brand -Asia" Platinum Award 2008** in Petrol Station Category awarded by Reader's Digest in May 2008.
- HPCL has scaled up its ranking to 290th position during 2007-08 in the prestigious list of **Fortune Global 500** as compared to 336th position last year.
- HPCL's Mumbai Refinery has bagged the prestigious Greentech Gold Award-2008 in Petroleum Refinery Sector for outstanding achievement in Environment Management for the 6th consecutive time.
- Asia Star 2008 Award for excellence in packaging in the Asia Pacific Region, for design and development of the PET bottle for lubricants in India.
- INDIA STAR 2008 Award for excellence in packaging in India in the consumer pack category for marketing Lubricant Oil in PET bottles.
- 10 LPG Bottling Plants have won the Greentech Environment Excellence Award for the year 2008.

4.2.6 PERFORMANCE

The performance for the year 2008-09 is as follows

4.2.6.1 PHYSICAL PERFORMANCE

Refineries

	Unit	2008-09
Mumbai Refinery		
Crude Throughput	TMT	6651.6
Total Distillates	Wt. %	69.9
Specific Energy Consumption	(MBTU/BBL/NRGF)	89.0
Visakh Refinery		
Crude Thruput	TMT	9154.8
Total Distillates	Wt. %	73.6
Specific Energy Consumption	(MBTU/BBL/NRGF)	85.8

* Actual yields have been adjusted for crude mix & Bitumen effect

Marketing

Particulars	Unit	2008-09
Total Sales	MMT	23.85
Commissioning :		
Retail Outlets	Nos.	250
SKO/LDO Dealerships	Nos.	0
LPG Distributorships	Nos.	18
New LPG Enrolment	Lac	12.83

4.2.6.2 FINANCIAL PERFORMANCE

(All figures in Rs. Crores)

	2008-09
Sales Turnover (including other receipts)	1,32,708
Net Sales after Pool Account adjustments (including other receipts)	1,25,658
Increase /(Decrease) in Inventory	-1,837
Operating Expenses	1,20,045
Profit before Depreciation, Interest & tax (PBDIT)	3,776
Depreciation	981
Interest	2,083
Profit Before Tax	712
Tax	137
Profit After Tax (PAT)	575
Dividend (incl. Tax on dividend)	208
Retained Profit	367
Internal Resources Generated	1,383
Value Added	8,269
Contribution to Exchequer	20,990

4.2.7 PROJECTS

MAJOR PROJECTS COMPLETED

GFEC Project at Mumbai Refinery :

The cost of the project is Rs.1731.01 crore and was completed in March 2009.

MAJOR PROJECT APPROVED DURING 2008-09 :

Resitement of Visakh Terminal

The cost of the project is Rs.756 Crore. Black Oil Terminal

will be commissioned by Dec. 2010, LPG Plant by March 2011 and White Oil Terminal by Dec. 2011.

ON-GOING PROJECTS:

Clean Fuels Project at Visakh Refinery :

Objective of the project is to meet EURO II and EURO III norms for MS. Revised cost is Rs. 2147.79 Crore and expected to be commissioned by June 2009.

Lube Oil Base Stock Project at Mumbai Refinery :

Objective to the project is to improve LOBS specifications to API Gr-II category with a capability to produce API Gr-III. The revised cost of the project is Rs.1030 Crore and expected completion by May 2010.

New FCCU project at Mumbai Refinery:

Objective of the project is to increase its secondary processing capacity. The total cost of the project is Rs. 900.47 Crores and is expected to be completed by May 2010.

LPG Plant: Irumpanam:

The project is setting up of 44 TMTPA LPG Bottling plant at Irumpanam (Kochi) at a cost of Rs. 37.50 Crores and anticipated completion of the project is June 2009

4.2.8 POLICY INITIATIVES UNDERTAKEN :

HPCL has undertaken a path of high growth in keeping with the national priorities. The ambitious plans include furthering the synergies and participating in the oil industry's growth by vertically integrating in the upstream and downstream sectors. The policy initiatives undertaken also include growth and diversification ventures in the following sectors:

4.2.9 JOINT VENTURES / SUBSIDIARIES

(a) South Asia LPG Co. Pvt. Ltd. (SALPG)

SALPG, a Joint Venture Company with Total Gas and Power India (a wholly owned subsidiary of Total of France) was incorporated on November 16, 1999, with HPCL's equity contribution of 50%. First of its kind in India, the underground SALPG Cavern facility for storing LPG was commissioned in December, 2007 and formally inaugurated by the Hon'ble Minister of Petroleum & Natural Gas on 14th January, 2008. The Cavern Marine Terminal has a 60,000 MT capacity underground LPG storage Cavern and associated receiving & despatch facilities at Visakhapatnam.

(b) Hindustan Colas Ltd. (HINCOL)

The performance of HINCOL, another Joint Venture with Colas of France, incorporated on July 17, 1995, has been extremely impressive as it has registered significant growth during the year. HINCOL achieved a volume growth of 32% and profitability growth of 97% during the year and consolidated its status as the Market Leader.

(c) HPCL-Mittal Energy Ltd. (HMEL)

HPCL has entered into a Joint Venture with M/s. Mittal Energy Investments Pte Limited (MEI), Singapore, an L.N Mittal group company, for implementation of Guru Gobind Singh Refinery, a greenfield refinery project located at Bathinda, Punjab. The refinery is designed to process 9 MMTPA of Arab Heavy Crude with flexibility to process other heavy/sour/acidic crudes. The configuration of the refinery includes primary units and secondary process units viz. CDU/VDU, VGO-HDT, FCC, NCU/ISOM, HGU, DHDT, SRU, DCU and Polypropylene manufacturing facilities. Other facilities include utilities such as CPP, Steam generation, Effluent Treatment plant, product storage etc. Anticipated completion of the project is December 2010.

(d) Prize Petroleum Company Ltd. (PPCL)

HPCL, in partnership with ICICI and HDFC, had formed this Joint Venture E&P Company for participating in exploration and production of hydrocarbons. PPCL was incorporated on October 28, 1988. PPCL is also providing consultancy services related to E&P.

(e) Petronet India Ltd. (PIL)

Petronet India Ltd. (PIL) was incorporated on May 26, 1997 as a joint venture company with 50% equity by oil PSUs and balance 50% taken by private companies/financial institutions. Special Purpose Vehicles (SPVs) were floated by PIL with oil companies for implementing individual pipeline projects, viz, Petronet MHB, Petronet CCK and Petronet VK which are operating companies.

(f) Petronet MHB Ltd. (PMHBL)

HPCL, along with Petronet India Limited (PIL) promoted Petronet MHB Limited (PMHBL) for construction of Mangalore- Hassan- Bangalore Pipeline at a cost of Rs. 667 Crores with debt equity ratio of 3:1. The joint venture company was incorporated on July 31, 1998. Initially PIL & HPCL each contributed 26% towards equity. ONGC joined as a strategic partner in the company by taking 23% equity in April, 2003. The Pipeline is meeting the transportation needs between Mangalore-Hassan-Bangalore.

(g) Bhagyanagar Gas Ltd. (BGL)

Bhagyanagar Gas Ltd. (BGL) was incorporated on August 22, 2003 as a Joint Venture Company by GAIL and HPCL for distribution and marketing of environmental friendly fuels (green fuels) viz. CNG and Auto LPG for use in the transportation, domestic, commercial and industrial sectors, in the state of Andhra Pradesh.



(h) Aavantika Gas Ltd. (AGL)

Aavantika Gas Limited (AGL) was incorporated on June 07, 2006 as a Joint Venture Company by GAIL and HPCL for distribution and marketing of environmental friendly fuels (green fuels) viz CNG and Auto LPG for use in the transportation, domestic, commercial and industrial sectors, in the State of Madhya Pradesh.

4.2.10 EXPLORATION AND PRODUCTION INITIATIVES IN INDIA AND ABROAD :

HPCL has ventured into new business opportunities to access additional revenue streams and to emerge as an integrated energy company. The Corporation's foray into the upstream sector would provide access to equity oil to ensure energy security. HPCL ventured into upstream sector in 1998 by promoting a JVC, M/s Prize Petroleum Co. Ltd.. Prize Petroleum currently operates three onshore marginal fields in Gujarat, Cluster 7 marginal fields near Mumbai High and one onshore E&P block each in Gujarat and Madhya Pradesh.

HPCL currently has participating interest in 27 blocks in India and overseas, including 3 blocks of HMEL. 4 overseas blocks, where HPCL has participating interest are one each in Australia & Oman and two in Egypt.

4.2.11 CSR ACTIVITIES :

As a socially responsible citizen, HPCL every year undertakes various long term and short term measures for the marginalized section of the society under the heading of Special Component Plan (SCP) and Corporate Social Responsibility(CSR), the former being a part of government plan and the later as a company initiative. The Company has been spending an increasing percentage of its annual profits on the social sector every year and also monitoring implementation of distinct schemes like AIDS prevention, vocational training for unemployed youth, education of rural children, computer training, health care facilities etc. The Corporation has initiated various CSR projects keeping in view the above stated objectives.

4.2.12 IMPORTS AND EXPORTS OF BULK PETROLEUM PRODUCTS PERTAINING TO HPCL

(a) The quantities of Crude oil & Petroleum products imported during 2008-09 were 11.50 MMT and 1.92 MMT valued at Rs.31,685 crore and Rs.7,054.01 crore respectively. During the same period 1.54 MMT of petroleum products valued at Rs. 4,686.6 crore were exported.

(b) Product imports during 2008-09 was 1.92 MMT valued at Rs. 7,054.01 crore as against 2.34 MMT valued at Rs. 7,138.66 crores during 2007-08. The export of petroleum products were 1.54 MMT valued at Rs. 4,686.6 crores during 2008-09 as compared to 2.22 MMT valued at Rs. 5,669,27 crore during 2007–08.

(C) Petroleum products have been exported to several countries including Singapore, Japan and Korea etc.

4.3 BHARAT PETROLEUM CORPORATION LIMITED (BPCL)

4.3.1.1 BPCL is integrated Oil Company engaged in refining of crude oil and marketing of petroleum products. It has also diversified into the upstream sector, manufacture and marketing of petrochemical feedstock.

4.3.1.2 The Corporation has an all-India presence through its extensive marketing network. The Corporation's employees presently number 14016.

4.3.1.3 The Authorised share Capital and paid-up Capital of the Company as on 31.3.2009 was Rs. 450 crores and 361.54 crore respectively. The shares of BPCL are listed on the Bombay Stock Exchange and National Stock Exchange of India Ltd.

4.3.1.4 During 2008-09, the two refineries at Mumbai and Kochi achieved a combined throughput of 19.95 MMT.

4.3.1.5 During 2008-09, BPCL commissioned 151 retail outlets and total number of Retail Outlets as on 31.3.2009 is 8402.

4.3.1.6 During 2008-09, 21 new LPG Distributorships were commissioned and the total number of distributorships as at the end of March 2009 was 2158. During 2008-09, 14.16 lakhs customers were enrolled and the total customer population as on 31.3.2009 is 269 Lakhs. BPCL was the first Oil Company to take up the initiative to set up Auto LPG Dispensing station for vehicles run on LPG. BPCL has plans to set up 74 LPG stations in various cities (including metros) across the country in a phased manner.

4.3.2 FINANCIAL PERFORMANCE

The financial performance of the Corporation during the years 2007-08 and 2008-09 is as follows:

(Figure in Rs. Crore)

Description	2007-08	2008-09
Profit/(Loss) before tax	2597.29	3170.48
Profit /(Loss) after tax	1580.56	735.90

4.3.3. PROJECT IMPLEMENTATION

MAJOR PROJECTS APPROVED DURING THE YEAR

Hydro Cracker Revamp and Setting up new CCR at Mumbai Refinery : The objective of this project is revamping Hydrocracker Unit to increase capacity from 1.75 to 2 MMTPA with capability to upgrade High Sulphur Diesel components to EURO III / EURO IV HSD and setting up 0.9 MMTPA capacity Continuous Catalytic Regenerator Reformer (CCR) facilities to upgrade part Naphtha to EURO III / EURO IV MS to meet Auto Fuel Policy requirement. The approved cost of the project is Rs.825 crore. The project is scheduled for completion in December 2011.

ONGOING PROJECTS

Fuel Quality Upgrade at Mumbai Refinery : The project envisages revamping of the existing Diesel/Naphtha Hydro-desulphurisation and reformer Units to produce Euro IV grades of MS and HSD by April 2010, in line with the Auto Fuel Policy announced by Government of India. The approved cost of the project is Rs. 390 crore. The overall physical progress is 53% and is targeted for completion by January 2010.

Capacity Expansion cum Modernisation Project at Kochi Refinery : The project envisages facilities for production of auto fuels conforming to Euro -III norms, refinery capacity expansion by 2.00 MMTPA, from 7.5 to 9.5 MMTPA and refinery modernization to reduce the operating cost. The revised approved cost of the project is Rs.3941.41 crore. The overall physical progress is 71.5% and is targeted for completion by December 2009.

Bina Despatch Terminal : The project envisages the setting up of dispatch terminal with appropriate storage, distribution and other infrastructural facilities, adjacent to the refinery complex at Bina. The approved cost of the project is Rs. 639.11 Crore Physical Progress as on 31.3.2009 is 74.7% and is scheduled for completion by November 2009.

Bina Kota Pipeline : The project envisages the laying of an 18" dia, 257 Km long cross-country product pipeline from Bina to Kota, to facilitate the economic evacuation of MS, HSD, SKO and ATF from the new refinery at Bina. The pipeline will be connected to the existing multi-product pipeline Mumbai-Manmad-Manglia-Piyala Bijwasan at Kota, in order to facilitate distribution of Bina Refinery products to Northern Region markets. The pipeline is designed for an initial throughput of 2.8 MMTPA and the approved cost of the project is Rs. 405.82 crore. The Physical Progress as on 31.03.2009 is 53.3%. The project is scheduled for completion by October 2009.

LPG Import facilities at Uran : BPCL will be setting up an LPG import facilities at Uran (near Mumbai). The liquid cargo jetty at Jawaharlal Nehru Port Trust (JNPT) shall be utilized for handling imported LPG for unloading from ships and transferred through pipeline of 12" dia/12.5 km. long, in cryogenic condition from JNPT to BPCL Uran LPG Plant for storage in 2x8000 MT double integrity cup in cone full containment type tanks. The approved cost of the project is Rs. 304.40 crores. The project is scheduled for completion by December 2010.



Ultima RO



4.3.4 JOINT VENTURE PROJECTS

Bharat Oman Refineries Ltd. : Bharat Oman Refineries Ltd. (BORL), promoted by Bharat Petroleum Corporation Ltd. (BPCL) and Oman Oil Company Ltd. (OOCL) has an authorized capital of Rs 4500 crore and paid up capital of Rs 151 crore. BPCL has share of Rs 75.5 crore. BPCL's total equity contribution in BORL as on 31.3.2009 stands at Rs. 975 crore. BPCL has made a further contribution of Rs. 400 crore towards share application money.

The Project envisages setting up of a 6 MMTPA grassroots refinery block at Bina, Madhya Pradesh, and Crude Oil import / supply system consisting of a Single Point Mooring System (SPM), Crude Oil Terminal (COT) at Vadinar, Gujarat and 943 kms. Long cross country crude oil pipeline from Vadinar to Bina (VBPL). The built capital cost is estimated to be Rs 10378 crore and is being financed through a debt/equity mix of 1.6:1.

As on 31.03.2009, the overall physical progress of the project stands at 90%. The cumulative expenditure is Rs. 5114 crore with a cumulative commitment of Rs. 9462 crore. The project is scheduled for commissioning by December, 2009.

Central U.P. Gas Ltd. (CUGL) : Central U.P. Gas Ltd. (CUGL) a Joint Venture Company with authorized capital of Rs. 60 crore was set up in March 2005, with GAIL India Ltd as the other partner. CUGL is implementing the project for supply of CNG to household, industry and automobile sectors in Kanpur. BPCL's investment in this project is Rs. 13.5 crore, being 22.5% share of the equity capital. The project envisages setting up of 16 CNG mother stations and City Gas Distribution Network in Kanpur at a total project cost of Rs.324.6 crore. As on 31.03.2009, CUGL has commissioned 6 CNG stations in Kanpur.

Maharashtra Natural Gas Ltd. (MNGL) : Maharashtra Natural Gas Ltd. (MNGL) was set up in January 2006 as a Joint Venture Company (JVC) with GAIL India Ltd as the other partner for setting up facilities for distribution of CNG to the household and automobile sector in the city of Pune and adjacent areas in Maharashtra except Mumbai, New Mumbai and Thane. The authorized capital of MGNL is Rs. 100 crore. BPCL's investment in this project is expected to be Rs. 22.5 crore, being 22.5% share of the equity participation in the project cost of Rs. 343.2 crore. Govt. of Maharashtra will be having a share of 5% and rest 50% share will be offered to Financial Institutions. The present contribution of BPCL is Rs.5.01 crore. The project will be implemented in Phases. As on 31.3.2009, eight CNG stations are operational.

Sabarmati Gas Ltd. : Sabarmati Gas Limited (SGL) a Joint Venture Company (JVC) promoted by BPCL and Gujarat State Petroleum Corporation. Ltd (GSPCL) with an authorized capital of Rs. 100 crore, for implementing the City Gas Distribution Project for supply of CNG to the



Ramkrishna Bajaj Award : BPCL receives the Ramkrishna Bajaj National Quality Award

household and automobile sector in the city of Gandhinagar, Mehsana & Sabarkantha Districts.

BPCL and GSPCL will each subscribe to 25% of the equity capital of the JVC the balance will be offered to Financial Institutions. As on 31.03.2009, five CNG stations have been commissioned

4.3.5 POLICY INITIATIVES UNDERTAKEN

4.3.5.1 Strategic Initiatives

Strategic Initiatives identified are:

(a) Customer focused approach.

(b) Build on product sourcing capabilities.

(c) Brand building.

(d) Strengthening Retail Network-security and development.

(e) Building international trading skills.

(f) Investments in R&D and technology.

(g) Adopt an integrated on-line ERP solution.

(h) Focused initiatives in LNG, Power, Petrochemicals and E&P.

(i) Development of clean and renewable energy e.g. Wind Power, Solar Power and Bio -diesel.

BPCL has initiated various activities to meet the future challenges from competitors.

4.3.5.2 Renewable Energy

BPCL has taken steps to develop non conventional / renewable resources of energy and has undertaken various initiatives in tapping non - conventional energy sources like bio diesel, wind energy, solar energy and fuel cells in order to develop such alternate sources of energy.

BPCL have started adopting new technologies and has taken initiative in the following areas:-

Bio-diesel : Aiming for sustainable development, huge tracts of unproductive, barren and non cultivable land are proposed to be used for the growth of Jatropha and Karanje plants. The plantations would be a contribution towards environment protection, prevention of soil erosion and a feedstock for manufacturing bio diesel.

BPCL is in discussion with various State Governments to set up Bio-Diesel Value Chain. The prominent States initially under discussions are Uttar Pradesh, Chhattisgarh, Madhya Pradesh, Rajasthan, Uttaranchal, etc.

In the State of Uttar Pradesh, BPCL has lunched "Project Triple One" - the Biodiesel value chain which envisages cultivating 1 million acres of wasteland, creating 1 million jobs and producing 1 MMT of Biodiesel from plantation to replace diesel by the year 2015. A joint venture company, M/s. Bharat Renewable Energy Ltd has been incorporated for this project and progress is under way in this regard.

Non-conventional Energy Initiatives

Windmills : BPCL has been one of the first oil companies to successfully utilize non conventional energy sources by generating 5 MW power through windmills (four of 1.25 MW each) in the hilly range of Kappatguda in Karnataka. Work on the project, was completed in July 2007 and the windmills are currently in operation. BPCL has identified 2 states i.e. Maharashtra and Rajasthan for setting up Windmills during the year.

Solar Farm : A 1 MW capacity grid connected solar farm is proposed to be set up at one of BPCL's LPG bottling plant in Lalru in the state of Punjab. The technical and financial evaluation of the proposal is under process.

Hydrogen Fuel cell : A prototype for studying Hydrogen fuel cell technology was developed at Bangalore LPG Plant. The project involves production of Hydrogen by electrolysis of water with potassium hydroxide as catalyst.

Solar cum Wind Power : A 5KVA solar cum wind power generator has been commissioned at one of the COCO Retail Outlet near Kolkata. Also one 5KVA Solar power generator has been installed at a COCO Retail Outlet at Bangalore. The performance of these systems is closely monitored and a decision to provide such a facility elsewhere will be taken in due course.

Poly Electrolyte Membrane Fuel cell generator: A 3KVA Poly electrolyte membrane fuel cell (PEMFC) generator to operate on Hydrogen energy has been provided at a COCO Retail outlet near Hyderabad to take care of light load. This is a pilot project undertaken for the first time in the country along with BHEL and its performance is being monitored.

4.3.5.3 BUSINESS INITIATIVES

(a) Retail Initiatives

BPCL has pioneered in the customer loyalty programmes in the Oil Industry and has embarked upon various Marketing initiatives. These initiatives are receiving good response from the customers and have created a brand differentiation for BPCL in the minds of consumers. Some of them are Petrocard, Smart fleet card, In and Out stores, Pure for sure Programme Branded Fuels, retail Automation etc.

(b) Industrial & Commercial

The fully secured B2B portal http://ebiz.bpc.co.in which caters to over 8000 of its Industrial customers. Besides it has also set up facility for easy and convenient way of making payment through e-banking initiative.

(c) LPG

Bharat Metal Cutting Gas (BMCG) : BPCL has launched Bharat Metal Cutting Gas (BMCG), an ideal fuel developed to replace the conventional Acetylene,



used for metal cutting and brazing applications.

Rural Marketing of LPG : Rural marketing is a priority area and towards this, BPCL has positioned 22 Rural Marketing Vehicles (RMVs) that move around from village-to-village and fill LPG cylinders in the presence of the customer. Lakhs of connections have been made available to the far-flung villages from RMVs catering to rural areas.

4.3.6 EXPLORATION AND PRODUCTION

BPCL in addition to being a pioneer downstream refining

Status of Oil and Gas Blocks in India

Block	Operator	Block area (sq km)	PI (%)	Current Status
NELP IV (2 Offshore Blocks)	ONGC	KG -10600; MN- 9980	10.00%	Drillable Prospects identified. Efforts are on by ONGC to source deep water Rigs.
NELP IV (1 Onshore Block)	ONGC	CY - 280	40.00%	Block in 2nd Phase of Exploration. 1 committed well to be drilled shortly.
NELP VI (2 Offshore Blocks)	ONGC	KG2 -11851; KG5- 11922	10.00%	Seismic surveys in progress.
NELP VI (2 Onshore Blocks)	ONGC	CY1 - 214; CY2 - 375	20.00%	Seismic surveys in progress.
NELP VI (1 Onshore Block)	GSPC/ GAIL	RJ - 4,613	10.00%	Seismic surveys in progress.
NELP VII (1 Onshore Block)	HOEC/ BPRL	RJ - 1424	25.00%	PSC signed. Applied for PEL

Status of Oil and Gas Blocks Abroad

Block	Operator	Block area (sq km)	PI (%)	Current Status
Australia WA-388-P	Oilex	2,850	20.00%	Processing/interpretation of 2D over. 3D acquisition completed. Processing in progress.
Oman Block 56	Oilex	5,809	12.50%	7 wells drilled, 3 have indicated HCs. - to be tested. 4 more wells to be drilled in 2009.
East Timor (JPDA)	Oilex	3,741	25.00%	3D data acquisition completed. Processing in progress. Drilling planned in end 2009.
Australia AC/P 32	Coogee	1,072	20.00%	Well drilling completed. No indication of Hydro carbon presence. Post well studies to be taken up.
North Sea 48/1b & 2/c	EnCore	106	25.00%	Well drilling over. Well simulation technical studies on
Brazil-Espirito Santo	Petrobras	1,645	15.00%	Re-entry of well completed to TD of 5744m. Well logging in progress.
Brazil-Sergipe Alagoas	Petrobras	2831	20.00%	3D reprocessed data being reprocessed. Environment clearance awaited.
Brazil-Potiguar	Petrobras	1,535	10.00%	Reprocessed 3D data being interpreted. Drilling planned in 2009.
Brazil-Campos	Anadarko	716	12.50%	Drilling of one well in progress. Reached target depth of 6024 meters. Well has shown positive indications of presence of liquid hydrocarbons.
Mozambique	Anadarko	10760	10.00%	3D seismic over. Drilling of 2 wells planned in 2009.

and marketing company has marched ahead in its endeavour to acquire oil security; BPCL has formed and incorporated in October 2006, a wholly owned subsidiary company, Bharat Petro Resources Ltd. (BPRL) with an authorized capital of Rs. 1000 crore to implement BPCL's plans in Exploration and Production sector. BPRL has acquired participating interest in 26 oil and gas blocks in India and abroad.

BPCL board in its meeting of 31.10.2006 approved transfer of all E&P Assets, Liabilities and investments along with the commitments & expenditures and also assignment of BPCL's participating interest in Production Sharing contracts to BPRL.

4.3.7 RESEARCH & DEVELOPMENT

During the year, Corporate R&D Centre made significant contributions in value addition at the refineries through development and commercialization of in-house catalysts like CO combustion promoter catalyst for fluid catalytic cracker units, LPG sweetening catalyst, process optimization studies leading to selection of optimum catalysts & additives like GSR additive, detailed crude evaluations, crude preheat train fouling studies and selection of suitable antifoulant chemicals. R&D also made major contributions to improve the profitability of business units through development and commercialization of value added products such as Bharat Metal Cutting Gas (BMCG) and process schemes for reducing logistic costs. The Centre has also developed a cost effective process during the year for conversion of non-edible oils with high free fatty acid content to biodiesel and the process is being scaled-up for setting up pilot plant for process demonstration. Major research projects have been initiated in the emerging areas like coal to clean liquid fuels, bio-fuels and gas storage. As part of new initiatives, BPCL entered into collaborations with leading research organization as listed below:

(a) Indian Institute of Science, Bangalore and Central Salt and Marine Research Institute for the development of nano materials for on board storage of natural gas and hydrogen for transport applications,

(b) Indian Institute of Science, Bangalore for the development of on '3rd generation CIGS thin film solar voltaic cells' for harnessing solar energy.

(c) Tamilnadu Agricultural University for the development of technology for bio-diesel production from Micro algae.

4.3.8 INTERNATIONAL CO-OPERATION

(a) Crude imports

BPCL has always been taking initiative in increasing the supply source for crude oil for widening the geographical supply sources with a view to ensuring uninterrupted crude oil supply. The supply base (number of countries) has increased from seven in 2002-03 to twelve countries



BPCL OSTS - Ghar





VLCC evacuating products at the facility

in 2008-09 as given below :

(in TMT)

Country	2002-03	2006-07	2007-08	2008-09
Abu Dhabi	1689	1408	2205	1899
Algeria	-	-		263
Angola	-	-	125	-
Azerbaijan	-	426	865	897
Brunei	--	469	267	394
Dubai	-	271	207	-
Egypt	169	-		-
Iraq	-	-		278
Iran	-	72	721	403
Kuwait	2024	2520	1985	1965
Libya	-		677	538
Malaysia	529	1029	1125	591
Nigeria	353	466	530	650
Qatar	-	490	877	770
Russia	-	218	225	-
Kazakhstan	-	-	133	-
Saudi Arabia	1881	3393	3729	4053
Yemen	1066	2516	829	-
Total	**7711**	**13278**	**14500**	**12701**
No. of Countries	7	12	15	12

BPCL is the first PSU oil company to

- Source Azeri crude oil from Azerbaijan
- Enter into a Term agreement with Qatar Petroleum, a National Oil Company of Qatar for Import of Al-Shaheen crude oil.

(b) Details of Imports/Exports of petroleum products during the year 2008-09 are:

(Figs in TMT)

	Total
Product Imports	
LPG	195
HSD	1057
SKO	254
BASE OIL	6
Sub Total	**1512**

(Figs in TMT)

	2008-09
Product Exports	
Naphtha	703
Furnace oil	436
Benzene	4
Base Oil	8
Sub Total	**1152**

4.3.9 EFFORTS TOWARDS DIVERSIFICATION OF CRUDE OIL SOURCING :

Crude Oil : In order to increase crude oil security and to expand the Supply base, BPCL increased the number of Term Contract Suppliers from four in 2002-03 to seven in 2007-08 and further increased to nine in 2008-09.

The following are the efforts towards expanding crude oil sources:

(i) During 2008-09, BPCL procured the following new crude oils for processing at their refineries and widened their our crude oil basket.

Crude Oil	Crude Oil Country
Saharan Bland	Saharan BlandAlgeria
Arab Medium	Arab MediumSaudi Arabia

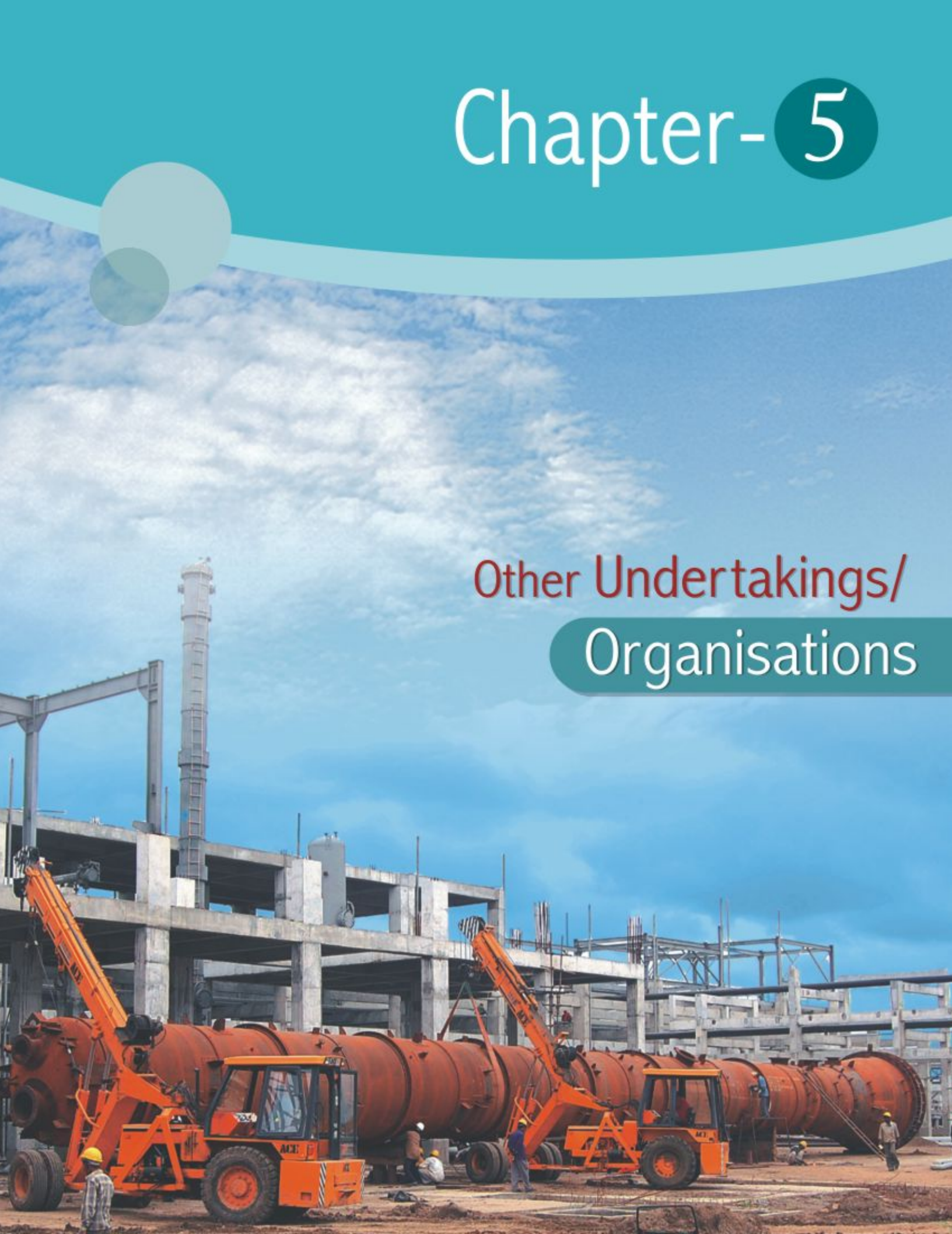
(ii) BPCL have studied the assays and arranged for samples of new crude oils for finding their suitability with a view to enhance the crude oil basket for their refineries.

Crude	Country
Agbami	Nigeria
Kikeh	Malaysia
Saxi	Angola

These grades would be sourced based on techno-commercial evaluation.



Chapter-5



Other Undertakings/ Organisations

Other Undertakings/ Organisations

5.1 DIRECTORATE GENERAL OF HYDROCARBONS (DGH)

DGH

5.1.1 The Directorate General of Hydrocarbons (DGH) was established under the administrative control of Ministry of Petroleum & Natural Gas by Government of India Resolution in 1993. Objectives of DGH are to promote sound management of the oil and natural gas resources having a balanced regard for environment, safety, technological and economic aspects of the petroleum activity. DGH has been entrusted with certain responsibilities concerning the Production Sharing Contracts for discovered fields and exploration blocks, promotion of investment and monitoring of E&P activities including review of reservoir performance of major fields. In addition, DGH is also engaged in opening up of new /unexplored areas for future exploration and development of non-conventional hydrocarbon energy sources. Details of the main activities undertaken by DGH during 2008-09 are as under:

5.1.2 Opening up of new areas for Future Exploration

With a view to open up new areas for exploration, DGH has carried out reconnitory surveys in poorly explored/unexplored basins with the aim to upgrade geological information of the areas and carve-out new blocks for offer under future rounds of New Exploration Licensing Policy (NELP). Following activities were conducted.

i) **Speculative 2D Seismic survey in Andaman, East and West Coast of India :**

DGH has initiated speculative 2D Seismic Survey in East and West Coast of India covering 10,000 LKM under India Span-II program through M/s GX Technology, USA and for which, Seismic data acquisition work is under progress. Speculative 2D seismic survey of 7240 LKM in Andaman offshore areas was acquired.

ii) **Marine Magnetic Telluric and Seismic Survey :**

DGH has acquired 99 LKM of marine seismic and 13 stations of Magneto Telluric (MT) data through National Geophysical Research Institute, Hyderabad (NGRI) in Kutch offshore area to explore the sub trappean sediments.



The Union Minister MOP&NG, Shri Murli Deora addressing at the signing ceremony of Production Sharing Contracts under NELP-VII, in New Delhi on December 22, 2008



iii) **Analysis of aerial images/ remote sensing data over Narmada Cambay/ Deccan Syneclise region in Central India:**

The final report on analysis of remote sensing imaginaries on Cambay and the Deccan Syneclise region has been submitted and is being examined by DGH. This study will help to understand the geology of sub-trappean sediments for hydrocarbons.

iv) **MT Survey in Central India:**

In order to understand the basement configuration, tectonics and nature of sediments, DGH has acquired 103 stations of MT data through NGRI.

v) **Seismic survey in Kutch basin :**

DGH has initiated 2D seismic survey in Kutch Basin through NGRI and has acquired 481.40 LKM of seismic data.

5.1.3 Implementation of NELP :

The development of E&P sector has been significantly boosted through NELP Policy of Government of India, which brought major liberalization in the sector and opened it up to for private and foreign investment, where 100% Foreign Direct Investment (FDI) is allowed. NELP provides a level playing field to the private operators either Indian or Foreign, by giving them the same fiscal and contract terms as applicable to NOCs for the offered acreages.

India has an estimated sedimentary area of 3.14 million square kilometre, comprising 26 sedimentary basins, out of which, 1.35 million square kilometre area is in deepwater. National oil companies viz. Oil & Natural Gas Corporation Limited (ONGC), OIL India Limited (OIL) and Private/Joint Venture companies are actively engaged in exploration and production. Before implementing the New Exploration Licensing Policy (NELP) in 1999, 11% of Indian sedimentary basinal area was under exploration, which has now increased to a level of 48%.

Till date, seven rounds of NELP have been concluded and 203 Production Sharing Contracts (PSCs) for onland, shallow water and deepwater blocks have been signed. 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. In addition, US$5.2 billion investment has been made on development of discoveries. Under NELP, 70 oil and gas discoveries have been made in 20 blocks. Presently oil and natural gas production is being made from 3 NELP blocks.

In the eighth round of NELP, 70 exploration blocks comprising of 24 deepwater blocks, 28 shallow water blocks and 18 onland blocks are on offer. These 70 blocks cover a sedimentary area of about 1.64 lakh sq. km., which is 5.2% of the Indian sedimentary basinal area. 18 onland blocks are on offer and these fall in the States of Assam (2), Gujarat (8), Haryana (1), Madhya Pradesh (3), Manipur (2) and West Bengal (2). As regards offshore blocks, 28 shallow water and 24 deepwater blocks fall in the Western, Eastern and Andaman offshore areas.

5.1.4 Monitoring of Production Sharing Contracts

Government of India has signed contracts for 28 discovered fields, 26 CBM blocks, 28 exploration blocks under pre-NELP regime and 203 blocks under NELP regime. DGH monitors the execution of management of these Production Sharing Contracts on behalf of GOI through Management Committees set up for each block / field. This involves in depth review of annual work programme, project monitoring, calculation of reserves and production profile, making simulation model of the field, review and approval of development plan, budget and safety management system.

About US $ 12.256 billion (approx. Rs. 83,000 crores) investment has already been made by companies on exploration & production. During 2008-09, Private/JV sector produced 4.67 MMT of oil & gas 8.09 BCM of natural gas.

5.1.5 Monitoring of the Petroleum Exploration Licenses held by National Oil Companies (NOCs) – on nomination basis

DGH reviewed the progress of exploration activities in respect of Petroleum Exploration Licenses held by NOCs (ONGC and OIL) on nomination basis on a half-yearly basis vis-à-vis minimum committed work programme.



5.1.6 Field Development, Reservoir and Production Monitoring

DGH is monitoring the development activities of various fields under the Production Sharing Contracts such as Panna-Mukta, Ravva, Tapti, Laksmi, Gauri, Kharsang, PY-3, etc. Major activities carried out during this period pertaining to private sector fields are summarized below:

- Development/infill drilling plans for various fields /blocks
- Commerciality Report for Kameshwari-1 & 2, Kameshwari West-6, CB-ONN-2002-/1 and Deen-Dayal(W), KG-22 & 31 in KG-OSN-2001/3 block, D-24 & D-25 in KG-OSN-2001/2 block, Amguri-11, West Patan-3, Sanad East-1 were examined.
- Proposals of workover jobs for various fields/blocks were examined.
- Well-wise pressure production, injection data for various fields/ blocks were monitored.
- Review of hydrocarbon resources and reserves of all the Medium & small sized fields.

5.1.7 Redevelopment Plans of Mumbai High North, South, Neelam and Heera Fields

DGH is continuously monitoring the field performance based on redevelopment plans, Progress of IOR Pilot, G&G and other studies on regular basis. As on date, two IOR pilots (namely High pressure air injection & SWAG), which were identified in Mumbai High field have not been implemented. Well wise/ field wise monthly data from Heera and Neelam assets of ONGC is being regularly updated for the performance monitoring of the fields. To analyze the field performance voluminous data of more than 1100 wells of Mumbai High field is being updated on a regular basis in DGH.

DGH is continuously interacting with different Assets of ONGC on the performance of 15 major IOR/EOR projects. Based on the data provided by the assets/ ONGC and mutual discussions, recommendations, notes are submitted for field implementation and improvement in recovery.

5.1.8 Monitoring the performance of major oil fields of Oil India Limited

DGH monitors the performance of major oil fields of Oil India Limited. The reservoir data, reports and discussions were analyzed and reviewed by DGH.

5.1.9 Safety & Environment

Safety and Environment related aspects of private/JV companies are being regularly monitored by DGH through periodic safety audits and inspections. Safety and Environment audit/ inspections of 10 fields (1 Offshore + 9 Onshore) Ravva, Indrora, Lohar, Bakrol, Ingoli, Unawa, Asjol, North Balol, CB-ON/3 & CB-ON/7 were carried out jointly by a team of DGH & OISD. Two environment related studies namely Potential Land Subsidence in the shallow gas fields of CB-ONN-200/2 block in Surat and Tracking of migratory path of Olive Ridley turtle in the east coast of India are being carried out under the aegis of DGH.

5.1.10 Computer System for E&P Activities

Important technical studies, such as, Reservoir simulation, log interpretation and loading of seismic and other related technical data and seismic interpretation are being carried out on workstations in a networked environment based on client server architecture. For NELP-VIII, blocks are being carried out and data packages are being prepared after analysis of seismic and other geo-scientific data. Proposals on development and appraisal locations were reviewed and the commercial viability of the discoveries assessed.

5.1.11 Coal Bed Methane (CBM):

For exploration and production of CBM in the country, Government has so far awarded 26 CBM blocks in different coalfields of India under three rounds of CBM held so far. These blocks are located in the states of West Bengal (4), Jharkhand (6), Chattisgarh (3), Madhya Pradesh (5), Andhra Pradesh (2), Rajasthan (4), Gujarat (1) and Maharashtra (1). The CBM resources in the awarded blocks are estimate about 1374 BCM, with production potential of around 38 MMSCMD during peak production period. DGH approved the commercial assessment made by different operators for 4 CBM blocks. The total established reserves in these blocks as approved by DGH are about 6.24 TCF.

Commercial production of CBM in India is no longer a myth but a reality. The steady comingled flow of more than 6000 cubic metre of gas per day from the pilot wells drilled in Sohagpur (East & West) CBM blocks of RIL, Raniganj (South) CBM block of GEECL and from Jharia block of ONGC, bear ample testimony to the story of success. The commercial production of CBM in the country has already commenced w.e.f. 14.07.2007. Current CBM gas production is 50,000 cubic metre per day for the Raniganj south block.

In the fourth round of CBM policy, 10 CBM blocks covering an area of about 5,000 sq. km. are are on offer. These CBM blocks in the States of Assam (1), Part Chhattisgarh & part Madhya Pradesh (1), Jharkhand (1), Madhya Pradesh (2), Maharashtra (2), Orissa (2) and Tamilnadu (1).



5.1.12 Gas Hydrates

Gas Hydrate is at R&D stage world over. India, U.S.A & Japan are one of the pioneers in the field of Gas Hydrates. In accordance with the roadmap for National Gas Hydrate Programme (NGHP), India has already acquired core samples with the help of the drill ship "JOIDES Resolution", USA. In December 2008, an MOU was signed between the Directorate General of Hydrocarbons (DGH) and U.S. Geological Survey (USGS), USA for cooperation on exchange of scientific knowledge and technical personnel in the field of Gas Hydrate and research with the view to exploit the potential of the Gas Hydrate as an alternate source of energy.

5.1.13 Oil Shale

Resource assessment of oil shale deposits in Assam and Arunachal Pradesh is in progress with the expertise of an international reputed company. Field work in respect of data collection has been initiated.

5.1.14 Status of International & National Co-operation

Cooperation with following Institutes and Regulators in various fields are ongoing. Some of the highlights are as under:

- United State Geological Survey, USA: Gas Hydrate related research programme and cooperation.
- Department of Industry and Resources, UK: Reservoir Management and CBM.
- United State Department of Energy, USA: Gas Hydrate related programme.
- NPD, Norway: Management of Hydrocarbon resources.
- ERDU, UK: Evaluation of development plans and study of frontier basins in India.

5.1.15 Work by Advisory Council

The Advisory Council of DGH advises on the technical matters/scientific projects to be implemented by DGH. Council also examines major technical studies and progress of work carried out by DGH.

5.2 ENGINEERS INDIA LIMITED

5.2.1 Introduction

Engineers India Limited (EIL) was established in 1965 to provide engineering and related technical services for petroleum refineries and other industrial projects. Over the year, it has diversified and excelled in various fields. EIL has emerged as Asia's leading design, engineering and turnkey (LSTK) contracting company in the following fields:

- Petroleum Refining
- Petrochemicals, Chemicals & Fertilizers
- Pipelines
- Offshore Oil & Gas
- Onshore Oil & Gas
- Terminals & Storages
- Mining & Metallurgy
- Infrastructure

EIL provides a wide range of technologies for oil & gas processing industry besides a comprehensive range of project related technology and engineering services spanning from project conceptualisation to commissioning. EIL also undertakes projects on LSTK basis. EIL's Quality Management System conform to ISO quality standards (version ISO- 9001:2000). The Services offered include the following:

Pre Project Services

- Feasibility Studies
- Environment Impact Assessment
- Technology & Process Licensor Selection
- Cost Estimation

Project Implementation Services

- Project Management
- Process Design
- Detailed Engineering
- Procurement`
- Inspection and Expediting
- Construction Management
- Commissioning and Plant start-up Assistance

Specialist Services

- Heat and Mass Transfer Equipment Design
- Environment Engineering
- Information Technology
- Specialist Materials and Maintenance
- Plant Operations & Safety including HAZOPS & Risk Analysis
- Refinery Optimization Studies
- Yield & Energy Optimization Studies

Turnkey Contracts

- Engineering
- Procurement
- Construction & Commissioning

To enhance reach and client proximity, EIL has a network of regional offices in Chennai, Vadodara and Kolkata; branch office in Mumbai and overseas engineering/ marketing office in Abu Dhabi which is the hub for its activities in the Middle East. Besides, EIL has Inspection/ Procurement offices at various locations all over India and also in London and Milan and construction offices at different project sites in India and abroad. To strengthen its domestic and overseas LSTK business, EIL formed two joint ventures during 2008-09; M/s. "TEIL Projects Ltd". has been formed with M/s. Tata Projects Ltd. and M/s. "Tecnimont EIL Emirates" with M/s. Tecnimont Spa. Italy. EIL also has a wholly owned subsidiary in Malaysia (EIL Asia Pacific Sdn Bhd) for executing projects and one subsidiary in India (Certification Engineers International Ltd.) for providing certification and inspection services.

The Right to Information Act 2005 has been implemented in the company with a Public Information Officer and an Appellate Authority nominated to address issues under the act. Information as per provisions of the Act is posted on the company's website www.engineersindia.com. EIL also has two Grievance Redressal Committees – one for vendors/suppliers/contractors and the other for employee related issues. For dealing with complaints relating to sexual harassment, EIL has a designated committee in the Women's Cell.

5.2.2 Performance

(a) Physical performance – important assignments secured during 2008-2009

During the year EIL secured new business worth Rs. 3929 crores comprising consultancy business of Rs.1299 crores (including overseas business of Rs.130 crores) and LSTK business of Rs. 2630 crores. Details of major jobs secured are given below:

Domestic

- Consultancy Services for HCU Revamp at Mahul Refinery for BPCL, Mumbai
- Preparation of Basic Design Engineering Package for the Revamp of CDU/VDU-I and CDU/VDU-II for CPCL, Chennai
- PMC services for Vijaipur-Dadri Pipeline, Dadri-Bawana Pipeline and Compressor Station works at Jhabua & Vijaypur for GAIL (India) Limited
- Consultancy Services for Additional Gas Processing Facilities for ONGC, Hazira
- PMC Services for De-butanisation project at Uran Plant for ONGC, Mumbai
- Development of Institutional Buildings at North & South Campus for Delhi University
- PMC services for Compressor Station Works at Kailaras and Chainsa for Vijaipur-Dadri Pipeline project for GAIL (India) Limited
- EPCM services for 4th Stream Upgradation Project for Bauxite Mine from 6.3 Million TPY to 6.825 Million TPY & Alumina Refinery from 5.25 Lakh TPY to 7.00 Lakh TPY for NALCO
- Consultancy services for implementation of Diesel Quality Upgradation Project at Numaligarh Refinery for NRL
- Engineering Consultancy Services for two 0.36 MMTPA Aluminium Smelter Projects (Mahan and Aditya) for Hindalco Industries Limited, Mumbai
- PMC Services for Strategic Storage of Crude Oil in Underground Caverns at Padur for ISPRL, New Delhi



Chairman, EIL receiving the Award by the hands of H.E. Smt. Pratibha Devisingh Patil, President of India



- PMC Services for Dahej Petrochemical Complex at Dahej for ONGC Petro-additions Limited, New Delhi
- PMC Services for setting up Rajiv Gandhi Institute of Petroleum Technology at Rai Bareily
- Consultancy Services to Municipal Corporation of Delhi
- Techno-economic Validation Study of East West Pipeline System Project for Reliance Gas Transportation Infrastructure Ltd.
- EPCM Services for 2nd Phase Expansion Project of Mines, Alumina Refinery and Aluminium Smelter of NALCO (additional value)
- Consultancy Services for three projects at Neelam & Heera Offshore Fields of ONGC, Mumbai
- PMC Services for Construction of Examination Building of Delhi University

Overseas

- Engineering & PMC services under New Services Contract for M/s SONATRACH, Algeria

LSTK

- Engineering, Procurement, Construction & Commissioning of Sulphur Block at Mangalore - LSTK on OBE Basis for MRPL, Mangalore
- Engineering, Procurement, Construction & Commissioning of PFCC Unit at Mangalore - LSTK on OBE Basis for MRPL, Mangalore

(b) Financial Performance

The details of the financial performance of the company for 2008-2009 are as under.

(Rs. in crores)

Description	2007-08	2008-09
TURNOVER	737.75	1532.46
OTHER INCOME	135.57	221.52
PROFIT BEFORE TAX	293.88	520.47
PROFIT AFTER TAX	194.60	344.53



C&MD EIL Shri Mukesh Rohatgi presenting the cheque for PM's National Relief Fund to Shri Murli Deora, Hon'ble Minister of Petroleum & Natural Gas



5.2.3 Projects

As a design engineering consultancy organization executing projects on behalf of clients in the hydrocarbon sector and process industry, EIL does not have projects of its own.

5.2.4 Policy Initiatives Undertaken

Salient policy initiatives taken during 2008-09 includes the following:

- Two Joint Ventures formed – M/s. TEIL Projects Ltd. with M/s. Tata Projects Ltd. and M/s. Tecnimont EIL Emirates with M/s. Tecnimont Spa., Italy for undertaking LSTK projects in India and overseas.
- Promoted "open-book method" of LSTK contract execution in India and secured two such LSTK jobs from M/s. MRPL during the year.
- MOU signed with M/s. Essar Offshore Subsea Ltd. for providing Engineering/ Consultancy Services for ONGC offshore projects in shallow waters (upto 300 meters).
- Emphasis on enhancing overseas business – Brazil, Qatar, UAE identified as potential target segments.
- To sustain contact with potential clients and enhance market presence, actively participated in international conferences and exhibitions including international oil and gas exhibition in Turkmenistan, World Petroleum Congress in Spain, Abu Dhabi International Petroleum Exhibition and Conference 2008 in Abu Dhabi, India-CIS Round Table on Hydrocarbons in New Delhi and in the PETROTECH 2009 Conference & Exhibition.
- An enterprise-wide e-Documentation System being implemented in the company to enable systematic storage and retrieval of information/data and expedite project implementation.
- Development of Delayed Coking and Diesel Hydrotreating technologies collaboration with IOC (R&D).
- Association with M/s. OIL in the review of work having done by M/s. Headwaters for direct liquefaction of coal and review of proposals received by Planning Commission for Coal to Liquids Project.
- Enhanced focus on recruitment and training including campus recruitment. Training focus includes Leadership and Management skill development, technology & functional programmes, managerial and behavioural programmes.
- EIL signed the MoU on corporate performance with Ministry of Petroleum & Natural Gas for 2008-2009 with challenging targets for turnover of Rs.1550 crores, gross margin of Rs.430 crores (without impact of Pay Revision) and new business secured of Rs.2140 crores.

5.2.5 Overseas Activities

With a vision to strengthen EIL's presence in Overseas Markets, EIL made substantial efforts to strengthen its existing client base as well as to explore new territories. The following have been major activities in this regard :

- EIL has been awarded major contract by M/s Sonatrach of Algeria for providing Engineering Consultancy services for "New Services Contract" for 7 Projects
- EIL's overseas office in Abu Dhabi is in constant touch with clients for exploring various opportunities in Oil and Gas Sector. EIL has conceptualized Abu Dhabi office as a hub of all Middle East Operations
- In Order to consolidate its overseas business operations EIL organized an interactive meet "Globalization of Brand EIL" with its agents/ sponsors/ business associates overseas. The Meet was attended by representatives from twelve countries like Kingdom of Saudi Arabia, Myanmar, Oman, UAE, Libya, Iran, Ecuador etc.
- During the current financial year EIL also concluded the formalities of registering a new Joint Venture Company with Tecnimont of Italy in Portugal with office at Abu Dhabi for executing EPC projects. EIL and Tecnimont are presently in the process of finalizing the registration formalities of office in Abu Dhabi
- To enhance its global presence, EIL also participated in 4 international exhibition/Conferences i.e. ADIPEC 2008 held in Abu Dhabi, 19th World Petroleum Congress held in Madrid, International Oil & Gas Exhibition held in Turkmenistan and Petrotech 2009 held in New Delhi
- In addition to the above EIL explored new countries such as Turkmenistan, Myanmar, Ecuador, Bangladesh to open new markets for EIL overseas
- EIL has engaged a management consultant i.e. McKinsey to develop a roadmap for Internationalization and is now in the process of implementing its report. As per recommendations from McKinsey, EIL is now focusing 3 countries Brazil, Oman and Abu Dhabi.

5.3 BIECCO LAWRIE LIMITED

Biecco Lawrie Limited (BLL), a Government of India Enterprise, under the administrative control of the Ministry of Petroleum & Natural Gas (MOP&NG), was



established in 1919 and became a Government Company in 1972. This is a medium sized Engineering Unit with diversified activities having two factories located at Kolkata. As on 31.3.2009, the Company has an Authorized Capital of Rs. 50 crores while the Issued, Subscribed and Paid-up Capital is Rs. 42 crores. The President of India and the Oil Industry Development Board (OIDB) hold 57.37% and 41.85% respectively, of the Equity Share Capital.

During 2008-09, BLL registered a total turnover of Rs. 52.11 crore and attained a net profit of Rs. 2.56 crore BLL had a past history of incurring loss. The trend was arrested in financial year 2003-04 and effective 2004-05, it has started registering profit.

The physical performance of BLL for 2008-09 with regard to turnover of electrical operations inclusive of switchgears, electric repair jobs and electrical projects is Rs. 56.80 crores as against Rs. 52.30 crores achieved last year. BLL has recently bagged an order worth Rs. 40 crores for supply & erection of 2 (two) 33 KV sub-stations at Rajarhat. BLL also hopes to have an order of Rs. 10 crores in Hydel at Arunachal Pradesh.

BLL had drawn up its Restructuring Plan to ensure sustainable performance and growth of the Company. The Restructuring Plan of BLL was placed by the Government before the Board for Restructuring of Public Sector Enterprises (BRPSE) for their consideration. BRPSE has since submitted its recommendations, which are under active consideration of the Government.

5.4 BALMER LAWRIE & COMPANY LIMITED

Balmer Lawrie & Co. Ltd. (BL) was established in 1867 as a Partnership Firm and was incorporated as Private Limited Company in 1924. It was subsequently converted into a Public Limited Company in the year 1936 with its Registered Office at Kolkata. The authorised capital,



33/11 KV New Substation at JSEB Ranchi Construction Done by BIECCO LAWRIE LTD.



paid-up capital and reserves & surplus of the Company as on 31.3.2009 was Rs. 30 crores, 16.29 crores and 3.72 crores respectively.

The Company is a diversified, medium sized Company with operations spread throughout India and overseas. The main activities of the Company are classified into a number of Strategic Business Units (SBU) viz., (i) Manufacturing Related (Industrial Packaging, Greases & Lubes, Performance Chemicals and Tea), (ii) Service Related (Logistics Infrastructure, Travel & Tours and Logistics Services), (iii) Research & Development Related (Technology & Product Development, Applications Research Laboratory and Product Development Centre).

During the year 2008-09, the Company manufactured 30.65 lakh barrels/drums, 35000 MT of Greases/Lubricants and 5260 MT of leather chemicals.

The total turnover of the Company during 2008-09 was Rs. 1775.79 crores. The profit after tax of Company was Rs. 101.61 crores during the year 2008-09 against Rs. 86.93 Crores during 2007-08.

During the financial year 2008-09, the Company has spent Rs. 3.59 lakh in Eastern and Western Region for Special Component Plan (SCP) & Tribal Sub Plan (TSP).

5.5 BALMER LAWRIE INVESTMENTS LIMITED

Government of India, in view of its planned deregulation of oil and globalisation of the economy, decided to disinvest 33.58% of its total equity holding of 59.58% in IBP Company Limited (IBP) to a strategic partner with management control. Consequently, the shareholding of IBP, in its erstwhile subsidiary Balmer Lawrie & Company Limited (BL), was de-merged in favour of Balmer Lawrie Investments Limited (BLIL), which was incorporated on 20th September 2001 under the Companies Act, 1956, in which the President of India holds 59.67% of its total paid up equity capital. BLIL is under the administrative control of Ministry of Petroleum & Natural Gas having its Registered office at Kolkata.

BLIL is a non-banking financial Company as defined under section 45-I(f) of the Reserve Bank of India Act, 1934. BLIL does not carry on any business except to hold 1,00,64,700 equity shares of Rs. 10/- each of BL. The present strength of the Board is of two Directors, out of which one is from the Government. BLIL does not have any employees except the Company Secretary who is deputed from BL. The Equity shares of BLIL are under compulsory demat mode and are listed in two Stock Exchanges across the country, viz., Kolkata & Mumbai Stock Exchanges. The Authorised share capital of BLIL is Rs. 25 crores. The Issued and Subscribed capital of the Company is 22.19 crore.

The total turnover of the Company during 2008-09 was Rs.1889.14 lakhs. The profit after tax of Company was Rs.1796.17 lakhs during 2008-09 as against Rs.1396.76 lakhs during 2007-08.

5.6 Oil Industry Development Board (OIDB)

5.6.1 Objectives of the Oil Industry Development Board (OIDB)

The Oil Industry (Development) Act, 1974 was enacted for the development of oil industry following successive and steep increase in the international prices of crude oil and petroleum products since early 1973, when the need of progressive self-reliance in petroleum and petroleum based industrial raw materials assumed greater importance.

5.6.2 Functions of the Board

The Oil Industry Development Board was established on 13th January, 1975 under the Oil Industry (Development) Act, 1974 to provide financial assistance for development of Oil Industry. Its organizational set up consists of:-

(a) Chairman (b) Members and (c) Secretariat

The functions of the Board, as defined in Section 6 of the Act, involve rendering financial assistance to the promotion of all such activities as are, in its opinion, conducive to the development of the Oil Industry. The financial assistance is extended by way of loans and grants for activities such as prospecting, refining, processing, transportation, storage, handling and marketing of mineral oil, production and marketing of oil products and production of fertilizers and chemicals.

5.6.3 Resources of the Board

The funds required for various activities, envisaged under the Act, are made available by the Central Government after due appropriation by Parliament from the proceeds of cess levied and collected on indigenous crude oil. The proceeds of this duty are credited to the Consolidated Fund of India and sums of money, as the Central Government think fit, are made available to the OIDB after appropriation by the Parliament. The current rate of cess on crude oil produced in the country is Rs.2500/- per tonne (w.e.f. 1st March, 2006) excepting on blocks in joint ventures under New Exploration Licensing Policy (NELP). Since inception and up to 30th September, 2008, the Central Government has collected more than Rs. 78300 crore (approx.) as cess. Out of this, OIDB has received an amount of Rs. 902 crore (approx.).

This amount of cess so received by OIDB i.e. Rs.902 crore together with internal receipts generated as interest income on loans given to various oil sector companies and short term investment of surplus funds has contributed to Oil Industry (Development) Fund to accumulate to Rs.9500 crore (approx.) as on 31st March, 2009.



5.6.4 Assistance to Oil Industry

The Oil Industry Development Board has been entrusted with the responsibility to render, in such manner, to such an 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. The Board renders financial assistance by way of payment of loans for projects, disbursements of grants for Research and Development programmes and funding expenditure of Scientific Advisory Committees, study groups, task forces etc. The OID Board determines the terms and conditions including interest rates for project loan from time to time subject to periodical review at least every three months depending on the interest rates prevailing in the market. According to the formulation as recommended by the Standing Committee and approved by the OID Board, the month-end interest rates for Government Securities having different residual maturities as latest available in RBI's monthly bulletin are the benchmark rates for computing interest rates on OIDB loans for different tenures on monthly basis. 50% of corresponding month end margins of AAA rated Bond on Govt. Securities available in page INCORP are then added to the benchmark rate for arriving at the interest rate. On the basis of the above formulation, OIDB term loans carried the following interest rates for the month from April,2008 to March, 2009:

Interest rates charged on OIDB loans (Financial Year 2008-09)

(%) per annum

Month	Period of Loan			
	1 Year	3 Years	5 Years	10 Years
April 2008	8.24	8.25	8.20	8.24
May 2008	8.51	8.45	8.35	8.38
June 2008	8.41	8.40	8.28	8.27
July 2008	8.38	8.59	8.64	8.67
August 2008	8.51	8.69	8.74	8.79
September 2008	9.73	9.89	9.96	9.49
October 2008	10.18	10.13	10.10	9.93
November 2008	10.17	9.85	9.80	9.64
December 2008	10.32	9.78	9.74	9.76
January 2009	10.16	9.45	9.52	9.33
February 2009	8.65	8.97	8.92	8.96
March 2009	7.02	6.76	6.93	6.91

As per the recommendations of the Standing Committee, further discounts on interest rates on OIDB loans are given to following projects:

- Projects of Strategic National Importance that have a direct bearing on the energy security of the country are eligible for a discount of 100 basis points on the effective interest rates.
- Environmental Improvement projects and projects for special areas, such as, North-East region, J&K state etc. are eligible for a discount of 50 basis points on the effective interest rates.

5.6.5 Deployment of Funds

The OIDB has accorded highest priority to the programs connected with exploration, production, refining, marketing, research and development etc. and the activities related to the energy security of India. So far OIDB has upto 31st March 2009 extended following financial assistance to the Oil Industry:

Financial assistance since 1975

(Rs. in Crore approx.)

	Cumulative up to March 2009
Loans	26,007
Grants	1,296
Total	27,303

In addition, the Board has invested its funds in the equity share of M/s. Biecco Lawrie Ltd (BLL) to the tune of Rs.17.58 crore and M/s Indian Strategic Petroleum Reserves Limited (ISPRL) to the extent of Rs.293.42 Crore (approx.) till 31st March, 2009. A major portion of loan has been given to oil companies for meeting capital outlay of plan projects. As per the directives of Government, an amount of Rs.98 Crore has also been paid towards Royalty to the State Governments other operations till date, to meet the commitment on fiscal conditions in Production Sharing Contracts (PSCs) relating to discovered fields in first & second rounds of NELP.

Details of financial assistance given during last five years

(Rs. in crore)

Year	Loan	Grants	Total
2004-05	2211.83	75.21	2287.04
2005-06	760.00	89.51	849.51
2006-07	1827.90	211.45	2039.35
2007-08	1982.10	105.80	2087.90
2008-09	3043.00	135.94	3178.94



(Rs. in crore)

S.No.	Name of the organization (Plan Project Loans)	Funds disbursed 2008-09
1	IOCL	1750.00
2	HPCL	385.00
3	BRPL	358.00
4	BPCL	469.00
5	Duliajan Numaligarh Pipeline Ltd. (DNPL)	81.00
	Total	**3043.00**

Disbursement of Loan during the year 2008-09

5.6.6 Details of the projects funded by OIDB during 2008-09

5.6.6.1 Indian Oil Corporation Limited : Loan of Rs.1750 Cr.

M/S IOCL has availed a loan assistance of Rs. 1750 Crore from OIDB during the year 2008-09 to part finance its following projects:

a) Naptha Cracker and Polymer Complex at Panipat : Rs.440.00 crore

This project envisages creation of a petrochemical hub, which will engineer significant industrial activity in the coming years.

A Naptha Cracker Complex based on captive utilization of Naptha from Panipat, Mathura and Koyali refineries of Indian Oil will be established at Panipat. With a capacity of 800000 MT/year of ethylene production, the Cracker complex will have associated units viz. hydrogenation, butadiene extraction, benzene extraction etc. besides downstream polymer units like swing unit, a dedicated HDPE unit and MEG unit. The entire approved loan of Rs.440 crore for the year 2008-09 has been released by OIDB.

b) Diesel Quality & Distillates Yield Improvement Project (Hydrocracker) at Haldia Refinery (OHCU) (environment related project)-Loan of Rs.177 Crore

The objective of the project is to improve Diesel quality to meet Euro-III/Euro-IV equivalent quality requirements with effect from 1st April, 2010. In addition to the improvement in the diesel quality, commissioning of the project facilities will result in improvement of distillates yield of the refinery. OIDB has released an amount of Rs. 177 Crore to IOCL during the year.

(c) Residue upgradation – MS&HSD quality improvement to meet Euro-III/IV equivalent specification at Gujarat Refinery (environment related project)-Loan of Rs.1133 Crore

The objective of the project is to improve the product quality to meet Euro-III/Euro-IV equivalent quality levels, which would result in improvement of distillates yield of the refinery and would enable processing of increased quantity of High Sulphur Crude. The estimated cost of the project is Rs.5693 crore. IOCL availed a loan of Rs.1133 Crore from OIDB for this project during the year.

5.6.6.2 Hindustan Petroleum Corporation Limited: Loan of Rs.385 crore

M/S Hindustan Petroleum Corporation Limited (HPCL) is a downstream company engaged in refining and marketing of petroleum products. A loan assistance of Rs.385 Crore was made available by OIDB to M/s HPCL for the following projects:

(a) Upgradation of LOBS quality at Mumbai Refinery : Rs.130 Crore

In order to meet international lube oil base stocks (LOBS), HPCL is putting up a project called "LOBS Upgradation Project" at Mumbai Refinery. For this, HPCL intends to set up a new raffinate Hydrotreater and hydro-isomerisation dewaxing unit for production of LOBS conforming to Group-II/III specifications. The entire approved loan of Rs.130 crore for the year 2008-09 has been released by OIDB to HPCL for the project.

(b) FCCU at Mumbai Refinery : Loan of Rs.200 crore

HPCL is planning to increase its crude processing capacity of its Mumbai Refinery from its existing capacity of 6.5 MMTPA to an overall capacity of 7.9 MMTPA by de-bottlenecking the existing units. At this enhanced crude processing capacity, the existing secondary processing units viz. Lube Processing unit of capacity 330 TPA and the Fluid Catalytic Cracking Unit (FCCU) of capacity 1.0 MMTPA will not be able to utilize the full output from Vacuum Distillation Units(VDU). In order to make full use of the feed generated and to maximize the profitability of operation, it was decided by the company to increase the existing FCCU capacity of Mumbai Refinery. The Company had initially planned to increase the existing FCCU capacity to 1.456 MMTPA by revamping the existing units. However, the Company has decided to set up new grassroot FCCU with a capacity of 1.456 MMTPA at a new location within the existing refinery area and operate both FCCU at total capacity of 2.456 MMTPA. The estimated cost of the project is Rs.900 crore. The OIDB has released the entire approved loan of Rs.200 crore during 2008-09.

(c) Relocation of Chennai terminal near Ennore Port : Loan of Rs.55 crore.

HPCL proposes to develop a Greenfield oil tankage



facility of 140000 kilo litre capacity at Ennore, near Chennai. The Ennore terminal will supply white-oils like Motor Sprit (MS), ATF, Kerosene (SKO), High Speed Diesel (HSD) to Chennai and outside Chennai, which at present, is being supplied from Company's existing marketing terminal at Tondiarpet, Chennai. The Project is set up by HPCL for the following reasons :

The safety audit conducted by the Company and the State level High Power Tripartite Safety Committee recommended that the existing terminal, which is situated in a thickly populated area pose a grave danger to the lives of nearby inhabitants in real time emergency because of the narrow and congested approach roads restricting the movements of fire-tender and rescue vehicles. This therefore needs to be shifted to a place where human dwellings are minimum.

The project envisages construction of various facilities like tankages, tank truck (TT) loading gantry stations, tank wagon loading gantry facilities, fire fighting facilities, automation, buildings/structures. The estimated cost of the project is Rs.224 crore. The OIDB has released the entire approved loan of Rs.55 crore during 2008-09.

5.6.6.3 Bongaigaon Refinery and Petrochemicals Limited : Loan of Rs.358 crore

Diesel Hydro-Treatment Project (DHDT) :
Loan of Rs. 358 crore

In pursuation of the decision to meet Euro-III/IV quality specifications of Diesel to be applicable from 01.04.2010, BRPL is implementing the Diesel Hydro-Treatment Project (DHDT) with a capacity of 1.20 MMTPA. The project is scheduled to be completed by September,2009. This is an environment friendly scheme and a mandatory one as far as diesel specification is concerned.

EIL has since submitted the Detailed Feasibility Report (DFR) with the project cost estimates of Rs.1597.20 crore as of January,2006 cost basis, inclusive of a foreign exchange component of Rs.273.60 crore and financing cost of Rs.46.77 crore. OIDB has released the entire approved loan of Rs.358 crore to BRPL during the year 2008-09.

5.6.6.4 Bharat Petroleum Corporation Limited

(a) Bina-Kota Pipeline Project : loan of Rs. 71 crore

Bharat Oman Refineries (BORL) a joint venture company between Bharat Petroleum Corporation Limited and Oman Oil Company Ltd (OOCL) is implementing a project for setting up a 6 MMTPA grassroots refinery at Bina, in Madhya Pradesh along with associated facilities. The project is scheduled for commissioning in December, 2009.

As per the joint venture agreement, the marketing of refined petroleum projects from the Bina refinery would be carried out by BPCL, who are setting up the Bina Dispatch Terminal (BDT) with appropriate storage, distribution and other infrastructure facilities, adjacent to the refinery complex.

The project envisages laying a 18" diameter, 265 KM long cross country pipeline from Bina to Kota for economic evacuation of MS, SKO, HSD and ATF from Bina refinery. The pipeline will originate from the Bina Dispatch Terminal and terminate at Kota TOP. The pipeline will be connected to the existing multi-product pipeline Mumbai-Manmad-Manglya-Piyala/Bijwasan at Kota to facilitate distribution of Bina Refinery Products to the northern region markets.

DFR for the project was approved by BPCL Board on 27.07.07 at a total project cost of Rs. 405.82 crore. OIDB has released the entire approved loan of Rs. 71 crore for the project during 2008-09.

(b) Bina Despatch Terminal project : Loan of Rs.87 crore

As covered in Bina-Kota Pipeline project, BPCL shall be storing and marketing the refined petroleum projects from the Bina refinery. Bina Despatch Terminal (BDT) with appropriate storage, distribution and other infrastructure facilities shall be set up at Bina, adjacent to the refinery. BDT will have product storage tanks, dispatch facilities for rail/road and



pipeline transportation and all other infrastructure/ support facilities for distribution of products to the demand centres. DFR for the project was approved by BPCL Board on 07.05.2007 at a total project cost of Rs.490.71 crore. OIDB has released the approved loan of Rs.87 crore during 2008-09.

(c) Facilities to produce Euro-IV Auto Fuels from Mumbai Refinery : Loan of Rs.25 crore

The project envisages setting up facilities for :

HSD quality upgradation through DHDS unit revamp to meet Mumbai metro demand for Euro-4 HSD from April, 2010.

MS quality upgradation by installation of FCC Gasoline treating facilities and sourcing 200 TMTPA reformate from Kochi Refinery to meet Mumbai metro demand of Euro-4 MS from April, 2010.

Proposed modifications are essential for production of Euro 4 and Euro 3 Auto fuels in line with Auto Fuels policy. DFR for the project was approved by BPCL Board on 18.12.2006 at a total project cost of Rs.390 crore. OIDB has released the approved loan of Rs.25 Crore during 2008-09.

(d) Capacity Expansion cum Modernisation Project of Kochi Refinery : Loan of Rs.286 crore

The project envisages Motor Spirit (MS)/High Speed Diesel (HSD) quality upgradation to Euro-II equivalent norms and expansion of existing refining capacity by 2.0 MMTPA (from 7.5 MMTPA to 9.5 MMTPA) as well as modernization jobs to reduce the operating cost of the refinery. The project will install facilities such as Vacuum Gas Oil (VGO), Hydro Desulphurization Unit (HDS) and Naptha Splitter Unit (NSU)/CCN splitter/NHT/CCR which are essentially required for meeting the environmental norms for MS and HSD. The project is scheduled for commissioning in September, 2009. DFR for the project was approved by BPCL Board on 05.04.2006 at a total cost of Rs.2591.80 crore. OIDB has released the approved loan of Rs.286 crore during 2008-09.

(e) Duliajan Numaligarh Pipeline Limited (DNPL) : Loan of Rs.81 crore

The project is of strategic importance for development of the North East area of the country and is being considered as first step towards setting up Energy Highway in the State of Assam. The main objective of the project is to supply natural gas to NRL. While for NRL, this would lead to a substantial saving in its operating cost as it will replace the Naphtha presently being used for this purpose, it will also help OIL to monetize its natural gas and reduce flaring. As for Assam Gas Corporation Limited (AGCL), this project will be a major step towards setting up a trunk transportation of natural gas. The total cost of the project has been estimated at Rs.324.26 crore. OIDB has released an amount of Rs.81 crore to DNPL during 2008-09.

5.6.7 Grants in aid for R&D activities

Section 6 of Oil Industry (Development) Act, 1974, inter-alia, provides that the Board may render assistance for scientific & technological economic research that could be directly or indirectly useful to oil industry. Hydrocarbon Vision 2025 also envisages that sufficient resources may be made available for appraising the unexplored/partly explored acreages through Oil Industry Development Board.

The OIDB has been providing grant to five organizations namely Directorate General of Hydrocarbons (DGH), Petroleum Conservation Research Association (PCRA), Centre for High Technology (CHT), Oil Industry Safety Directorate (OISD) and Petroleum Planning and Analysis Cell (PPAC) as per the resolutions/directions of the Central Government for carrying out their activities.

5.6.8 Grants for R&D activities

Upstream Sector

In respect of OIDB grant related to upstream sector, a Peer group comprising Joint Secretary (Exploration) Ministry of Petroleum & Natural Gas, Secretary, OIDB and representatives from DGH, ONGC, and OIL has been constituted by OID Board to examine these proposals in the first instance and give its recommendations. The recommendations of the Group are submitted before the OID Board for decision. The projects that are approved by OID Board with an outlay of more than Rs.25 lakh are sent to Central Government for conveying its approval before release of grant in terms of Rule 24 of OID Rules. Since 1998, the OID Board/Central Government has approved more than 50 projects at an estimated cost of about Rs.160 crore. Most of these projects have been completed. A number of projects have yielded considerable benefits to oil industry in terms of oil production, upgradation of technology and identifying new areas for exploration etc. The total grants released by OIDB for the upstream sector projects since 1998 amounted to Rs.81 crore approximately.

Review Committees

The above Peer Group also reviews the progress of the OIDB funded projects in the upstream sector.



The recommendations of the Peer Group are presented before OID Board for consideration and appropriate directions.

Downstream Sector

The projects related to downstream sector are considered and recommended by Scientific Advisory Committee (SAC) on Hydrocarbons set up by the Ministry. These projects are primarily funded through CHT. The members representing SAC are eminent persons in various fields of Oil Industry. The tenure of this Committee is two years after which Ministry of Petroleum & Natural Gas reconstitutes it. Scientific Advisory Committee on Hydrocarbons also reviews progress of R&D projects in the downstream sector.

5.6.9 National Gas Hydrate Programmes (NGHP)

National Gas Hydrate Programme is for mapping gas hydrates for utilization as future alternate energy resource by abstracting methane from solids below the sea-beds in deep oceans and the permafrost regions of the world. The programme was initiated in 1997 with a Steering Committee and a Technical Committee of NGHP. Based on the review of seismic data by the Technical Committee, two areas in Indian waters, one along East Coast and other on West Coast have been identified as "Model Laboratory Areas" for further R&D work. DGH is the coordinator of the programme. Review of various projects under this programme is done by a Steering Committee set up by the Ministry of Petroleum & Natural Gas. An amount of Rs.194 crore (approximately) has been given for various activities under NGHP that included Rs.54 crore contributed by Oil PSUs upto March 2009.

5.6.10 Hydrogen Corpus Fund

The Ministry of Petroleum & Natural Gas has set up a Hydrogen Corpus Fund on the use of hydrogen as an auto fuel. The Government of India is of the view that the Indian Oil Industry should to work synergistically and in close coordination with reputed technological institutions to make headway in this frontier area. With this object in mind, the Ministry has set up a hydrogen corpus fund of Rs.100 crore with contribution from Oil PSUs/OIDB as follows:

1. OIDB Rs.40 crore
2. ONGC, IOC, GAIL Rs.16 crore each
3. HPCL, BPCL Rs. 6 crore each.

OIDB is to maintain the Account of the fund. OIDB has so far contributed an amount of Rs.10 crore to the corpus. M/S IOCL and ONGC have initiated R&D activities for usage of Hydrogen as a source of energy.

Expenses on Grants/Schemes sponsored by OIDB/Govt. of India

The OIDB incurred the following expenditure on grants/schemes sponsored by Govt. of India/OIDB during the year 2008-09 :

5.6.11 Assistance to Technical Institutes/CSIR Laboratories /Other Govt. sponsored projects

S. No.		Name of the Institutes	Amount in Rs. Crore
	A	**Regular Grantee Institutes**	
1		Directorate General of Hydrocarbons	48.30
2.		Petroleum Conservation Research Association	52.93
3.		Centre for High Technology	6.33
4.		Oil Industry Safety Directorate	6.95
5.		Petroleum Planning & Analysis Cell	6.57
		Total (A)	**121.08**
	B	**R&D Grants**	
6.		Oil & Natural Gas Corporation Limited	1.10
7.		Indian Institute of Technology, Delhi	0.02
8.		Delta Studies Institute (DSI)	0.36
9.		Bharathidasan University	2.41
10.		North East Institute of Science & Technology (NEIST) (Formerly Regional Research Laboratory)	0.13
11.		Central Institute of Plastics Engineering & Technology (CIPET)	5.00
		Total (B)	**9.02**



(Rs. in Crore)

S. No.		Name of the Institutes	Amount in Rs. Crore
	C	**Schemes/Projects sponsored by Govt. of India/OIDB**	
12.		National Gas Hydrate Programme (NGHP) (NIO)	0.45
13.		NGHP (DGH)	0.23
14.		NGHP (NGRI)	0.39
15.		Jan Kerosene Pariyojana	1.80
16.		Rajiv Gandhi Institute of Petroleum Technology (RGIPT)	2.97
		Total (C)	**5.84**
		Grand Total (A+B+C)	**135.94**

OIDB has been providing assistance to educational institutes such as IIT Delhi, CIPET, Chennai, North East Institute of Science & Technology (NEIST) (Formerly Regional Research Laboratory) , NGRI, Hyderabad, IIP, Dehradun etc. for various R&D projects undertaken by them.

5.6.12 Major Activities

Government of India decided to build a Strategic Crude Oil Reserve of 5 MMT through a Special Purpose Vehicle (SPV). The SPV named Indian Strategic Petroleum Reserves Limited (ISPRL) was initially a subsidiary of Indian Oil Corporation Limited (IOCL). It has now become a wholly owned subsidiary of Oil Industry Development Board (OIDB) w.e.f. 09.05.2006.

Three locations were selected for creating the strategic reserves, Visakhapatnam (1.00 MMT), Mangalore (1.5 MMT) and Padur (2.5 MMT). The Capital cost for constructing the strategic storage facilities is estimated to be Rs.2397 crores and the operation and maintenance cost is expected to be Rs.90 crores per annum at September 2005 prices. The cost excludes the price of crude oil which shall be procured at the prevailing market rates after the respective caverns are ready to be filled. As on 31.3.2009 the authorized capital, paid up capital and subscribed capital of the company were Rs. 1,000 Crores, Rs 500 Crores and Rs. 190.91 crores respectively. Project wise status is as under:-

1. Visakhapatnam (Storage Capacity : 1.33 MMT)

Engineers India Limited (EIL) has been appointed as Project Management Consultant (PMC). The scheduled mechanical completion is by July 2011 and commissioning by January 2012. EIL is being assisted by M/s SWECO of Sweden, as their back-up consultant.

Land has been taken on lease from Visakhapatnam Port Trust. MoU has been signed with Eastern Naval Command for working use of their land for underground works. Requisite Environmental clearance from Ministry of Environment & Forests and Consent for Establishment from Andhra Pradesh Pollution Control Board has been obtained. After Supplementary site investigations, to avail the benefits of lower marginal costs for additional capacity, it has been decided to increase the cavern capacity to 1.33 MMT.

The underground civil works have been awarded to M/s. Hindustan Construction Company Limited (HCC) in January 2008 through a Reverse Auction process (the first of its kind for a rate contract job & such a large magnitude). The completion period is 36 months. National Insurance Company Limited has been awarded the Contractors' All Risk Insurance cover of the underground civil works. A total tunneling of 3200 meters was completed on 31.03.2009.

The scope of above ground works has been finalized. Tendering activities for above ground works are in progress.

2. Mangalore (Storage Capacity : 1.5 MMT)

EIL has been appointed as the Project Management Consultant. EIL is being assisted by M/s Geostock of France, as their back-up consultant. The land identified for Mangalore Cavern falls in the Mangalore SEZ area and 89 acres of land is being acquired from the Mangalore Special Economic Zone Limited (MSEZL). In-principle approval for Establishment of Strategic Storage under SEZ Rules 2006 has been received. The terms are under negotiation. Environmental clearance has been received from MOE&F. Consent for Establishment has also been obtained from the State Pollution Control Board. The scheduled date for Mechanical completion is November 2012

3. Padur (Storage Capacity : 2.5 MMT)

EIL has been appointed as the Project Management Consultant. Government of Karnataka has issued the order for land acquisition at Padur/Heruru villages in October 2008. The matter regarding acquisition of around 161 acres of land for the project has been taken up with KIADB. Cadastral Survey for plot and Central Line Survey for pipeline route has been completed. Supplementary investigations and Cadastral Survey for pipeline route are in progress. The target date for Mechanical completion is December 2012.



OIDB has released funds to the tune of Rs.293.18 crore (aprox.) to till 31st March, 2009 for all the 3 projects at Visakhapatman, Mangalore & Padur and for pre-project activities including secretariat expenditure.

5.6.13 Setting up of Rajiv Gandhi Institute of Petroleum Technology (RGIPT)

The Government of India felt the need to establish a single training and educational institution that can render expert Technical and Management Training to the existing petroleum industry and which can provide world class multi-disciplinary techno-management, academic programmes in the petroleum fields for creating Human Resource of the future on a global basis to meet the emerging demand scenario in India and abroad. The establishment of RGIPT is a step in the above direction. The Institute will be of international repute.

The Institute is being set up at Jias, Rai Bareilly at an estimated cost of Rs. 685 crore including the cost of land. Out of this an amount of Rs.150 crore comprising cost of land (Rs.45 crore) and Capital Expenditure (Rs.105 crore) will be borne by OIDB. Constituent Oil PSUs viz. ONGC, OIL, GAIL, IOCL, BPCL and HPCL would contribute to endowment fund of Rs.250 crore in the ratio of their profit after tax during the financial year 2005-06. Remaining Rs.285 crore would be met from budgetary support from Government of India through MOPNG.

RGIPT has procured and acquired 47.50 acre of land at Jias by entering into an agreement with Indian Oil Tanking Limited, a Joint Venture of IOCL. OIDB released an amount of Rs. 4.25 crore during the year 2007-08. Further an amount of Rs.2.97 crore has also been released to RGIPT for procurement of capital items during the year 2008-09.

5.6.14 Strategic Underground storage for Natural Gas

OID Board in its 66th meeting held on 15th December, 2005 had approved preparation of Pre Feasibility Report by EIL for Strategic Storage of Natural Gas along with approach plan in the Indian context at a cost not exceeding Rs.2.85 crore. EIL appointed M/s PB Energy Storage Services, Houston, Texas as Consultant for preparation of the report. For the purpose, two Committees were also formed by the Ministry/OID Board for (i) providing details on depleted fields/likely to be depleted fields and (ii) Committee for overseeing the preparation of the report.

The recommendations made in the report are being studied.

5.6.15 OIDB Office building at Noida to house its office and its regular grantee institutions

The OIDB is constructing its own office building at Sector-73, NOIDA on a plot measuring 16000 sq. mts to house its office and the offices of Indian Strategic Petroleum Reserves Limited (ISPRL), Directorate General of Hydrocarbons (DGH), Petroleum Planning & Analysis Cell (PPAC), Centre for High Technology (CHT) and Oil Industry Safety Directorate (OISD). M/s Engineers India Limited (EIL) is the Project Management Consultant (PMC) & M/s Rajinder Kumar Associates is the Architect for the project. A Sub-Committee constituted by OID Board comprising Secretary OIDB, Nominee of AS&FA, MOP&NG and Chairman, EIL and FA&CAO, OIDB has been supervising the matter relating to selection of contractors and for monitoring the construction activities. The estimated cost of the construction of the OIDB Bhawan is Rs.140 crore (approx.). OIDB has incurred Rs.91.38 Crore on the project upto March 2009.

5.7 OIL INDUSTRY SAFETY DIRECTORATE (OISD)

The Oil Industry Safety Directorate (OISD) assists Safety Council under Ministry of Petroleum & Natural Gas (MOP&NG) headed by Secretary, P&NG as Chairman and includes Additional / Joint Secretaries, Advisors in MOP&NG, Chief Executives of all Public Sector Undertakings (PSUs) under the Ministry, Chief Controller of Explosives (CCE), Advisor (Fire) of the Govt. of India, DGMS and the Director General of Factory Advice Service & Labour Institute etc. as members.

5.7.1. Standardisation

OISD develops safety standards for hydrocarbon industry to keep them abreast of the latest design and operating



practices in the areas of safety and fire fighting in the developed countries. OISD Standards are reviewed periodically to incorporate the latest technological developments, and experience gained in their implementation so as to update them in line with the current international practices. 1 new Standards and Complete review of 7 existing standards were approved by Safety Council in 2008. As on date, OISD has issued 111 safety standards.

5.7.2 External Safety Audits (ESA)

External Safety Audits (ESAs) are carried out periodically to check compliance w.r.t implementation of safety standards. ESA of 4 refineries, 4 Gas Processing and Petrochemical plants, 17 marketing locations i.e POL terminal/ Depot, LPG plants, 58 on land and 7 offshore Exploration and Production (E&P) installations and 1732 km cross country pipelines have been carried out in 2008-09. Additionally, pre-commissioning inspection of 6 new projects in refineries and 11 marketing locations and 1484 km of cross country pipeline has been carried out in line with approved methodology. In addition, surprise safety audit of 5 refineries and 2 Gas Processing Plants were also carried out.

5.7.3 Safety Performance Evaluation

Safety performance evaluation is done by specially developed system based on total loss concept. The evaluation for the year 2007-08 have been completed and safety awards were distributed by Secretary, Petroleum & Natural Gas & Chairman, Safety Council in July, 2008.

5.7.4 Safety in Offshore Operations

Petroleum & Natural Gas (safety in offshore operations) Rules 2008 were promulgated and OISD was notified as Competent Authority to administer these rules in June 2008. A MoU has been signed with Mineral Management Service (MMS), USA, federal agency that manages US's natural gas, oil and other mineral resources on the outer continental shelf.

5.7.5 Training Programs/Workshops

Technical Conference/workshops covering entire oil industry are organized to discuss latest developments, sharing of experiences etc. Conference/workshop on "Safety Instrumentation in Oil & Gas Industry", "Construction Safety in Project Execution" and "Risk based Safety Management in E&P Sector" and "Gaseous Fuels" were organised in 2008-09.

5.7.6 Incident Investigations & Analysis

OISD investigates as well as participates in investigation of major incidents depending upon the severity/damage to analyse the cause etc. A data bank of incidents is maintained and analysis reflecting statistical trends, areas of concern, major recommendations etc. is disseminated to industry through advisory notes, workshops, training programme etc.

5.7.7 Dissemination of Safety Information

OISD publish a quarterly technical journal – "Petrosafe" and newsletter "OISD Newsletter" to disseminate information on various safety related activities. OISD at its website www.oisd.gov.in provides latest list of standards, "Petrosafe", "OISD Newsletter", upcoming events, etc.

5.8 CENTRE FOR HIGH TECHNOLOGY (CHT)

Centre for High Technology (CHT) was established by Ministry of Petroleum & Natural Gas in 1987 as a specialized agency of the oil industry to assess futuristic technology requirements for acquisition, development and adoption in the field of refinery processes, petroleum products, additives, storage and handling of crude oil, products and gas.

CHT acts as the Technical Wing of the Ministry for implementing the scientific and technological programmes. Its major function include assessment of technology requirement as also operational performance of the refineries specifically from the point of view of energy utilization, acts as focal point of oil industry for coordinating and funding of research work in refining and marketing areas, exchange of information & experience, co-ordinate and pursue the programmes of "Scientific Advisory Committee on Hydrocarbons".

5.8.1 Major activities undertaken during 2008-09

5.8.1.1 Integrated Refinery Business improvement Programme" by M/s. Shell Global Solutions International (Shell GSI)

CHT on behalf of the four refineries viz. BPCL-Kochi, IOCL-Mathura, CPCL-Manali and HPCL-Visakh signed the Agreement with Shell GSI for the 'Integrated Refinery Business Improvement Programme'. The focus areas are i) Refinery Margin Improvement ii) Improved Energy & Loss Performance and iii) Operations & Asset Management.

The assessment phase has been completed at all the four refineries with approval of the projects for implementation (PFI). The approved PFI that are under implementation in these four refineries have an improvement potential of US $ 92 M i.e. 39 cents / barrel. The entire programme is expected to be completed by February 2010.

5.8.1.2 Industry Workshop on "Pipeline Operations and Quality Management"

CHT organized a two day industry Workshop on "Pipeline Operations and Quality Management" on 20-21st June 2008



at the Leela Kempinski, Kovalam, Trivandrum through M/s. Shell Global Solutions International.

About 100 delegates participated in the Workshop. The Workshop was conducted through plenary session and three parallel syndicate meetings covering 'Quality Management', 'Refining' and 'Pipeline Operations'. Working group consisting of senior executives from Refineries, Marketing, Pipelines, QC and Panel members from the three syndicates discussed the issues and identified major areas, which need immediate attention to address quality give away.

5.8.1.3 Roadmap to reduce Pipelines Quality Giveaway

The oil companies, CHT and Ministry formed four working groups to chart roadmap for reducing the quality giveaway in pipelines. These were "Restructuring the Quality System", "Value of Quality Giveaway", "Infrastructure Improvement" and "Pipeline Interface Management".

A consolidated report of the four working groups with roadmap has been submitted to MOP&NG in March 2009.

5.8.2 Scientific Advisory Committee (SAC) on Hydrocarbons of Ministry

5.8.2.1 SAC Meetings

CHT coordinated the activities of Scientific Advisory Committee on Hydrocarbons of Ministry in identifying and funding of R&D project.

During the period, three meetings of the Scientific Advisory Committee were held viz., April 2008 at IISC



Sri R.S. Pandey, Secretary MOP&NG inaugurating Oil & Gas Conservation Fortnight



Bangalore, September 2008 at CSIR Vigyan Kendra and March 2009 at BPCL, Mumbai.

5.8.2.2 R&D Projects Recommended by the SAC

Following four R&D projects were recommended by the Scientific Advisory Committee for funding by OIDB.

a. Hydrogen Generation by Thermo Chemical Process of ONGC for funding from Hydrogen Corpus Fund (HCF)

b. Setting up of Hydrogen Dispensing station and demonstration of Hydrogen vehicles during Commonwealth Games of IOC-R&D for funding from HCF.

c. HPCL-IIT Delhi's project proposal on "Hydrogen production for Natural gas (Methane) by Catalytic decomposition" for funding from HCF.

d. Coal to Liquid (CTL) Technology of EIL and BPCL R&D for funding by CHT / OIDB..

5.8.2.3 Key areas for improvement for R&D activities

SAC also identified seven key areas for improvement for Research & Development activities and constituted the working groups for preparing the approach paper for submission to Ministry. These were Acceptance of technology, Project Monitoring, Energy Efficiency improvement in Refineries, Hydrogen, Energy Efficiency improvement in Automobiles, Environment and HR issues for getting more PhD students.

Four of the working groups have submitted the draft reports, which were deliberated during the last SAC meeting at BPCL Mumbai in March 2009.

5.8.3 R&D projects approved by the Oil Industry Development Board and monitored by CHT :

Two R&D projects approved by the Oil Industry Development Board are as under :-

(a) "Simulation and Modelling in the area of Coal to Liquid Study" on "Developing Protocols of Gasifiers of a mixture of Coal & Petroleum Coke of IIT Madras.

(b) "Infrastructure Facility for Pilot Scale Bio Reactor of 1000 litre working volume" for Oil Zapper, Oilivorous-S and Oilivorous-A production of TERI.

5.8.4 Dissemination of knowledge and information

CHT organized 'Meet on sharing of best Operational Practices' on Lube & Wax, Pipelines, Power & Utilities, Distillation, Delayed Coker & Visbreaker, Reformer, FCCU and Fuel & Loss for sharing of best operational practices and improvements.

With a view to keep abreast with the latest developments / trends that are taking place worldwide in the field of Petroleum Refining. CHT organizes seminars and workshops, publishes technical journals viz. "Technology Scan" and CHT Bulletin on various process areas.

5.8.5 Review of Auto Fuel Policy

Ministry have constituted a three member Committee comprising Shri M. B. Lal (Chairman, Scientific Advisory Committee) as the Chairman and Dr. K. S. Balaraman, Executive Director, CHT and Dr. R. K. Malhotra, Executive Director, IOC (R&D) as members for reviewing the Auto Fuel Policy. The Interim Report of the Committee was submitted to MOP&NG in October 2008.

5.8.6 Jawaharlal Nehru Centenary Awards for Energy Performance of Refineries for 2007-08

CHT has evaluated the energy performance of refineries for 2007-08 for distribution of awards under 'Minimum Specific Energy Consumption' and 'Maximum Improvement in Specific Energy Consumption over previous best' categories. The recommendations are under consideration of the award committee of Ministry for selecting the refineries.

5.8.7 Oil & Gas Conservation Fortnight (OGCF) Awards for 2009

In order to select refineries (awardees) on the basis of their performance in the area of 'Steam leak', CHT organized Oil & Gas Conservation Surveys in the refineries during the period 19-22 January 2009

CHT has evaluated the survey date for consideration by the Award Committee of Ministry for selecting the refineries for Award.

5.8.8 Review / recommendation by CHT

CHT reviewed and examined applications for Foreign Technology Collaboration and applications for issuance of Essentiality Certificates for various refining projects. Also recommendations for optimization of capacity utilization of North East Refineries viz. NRL and BRPL.

CHT compiled and analysed physical performance of refineries for QPR meeting.

5.9 PETROLEUM INDIA INTERNATIONAL

5.9.1 Petroleum India International (PII) is a consortium of Public Sector Companies in the petroleum, Petrochemicals and engineering sector. The member companies include Indian Oil Corporation Ltd., Bharat Petroleum Corporation Ltd., Bongaigaon Refinery & Petrochemicals Ltd., Chennai Petroleum Corporation



Ltd., Engineers India Ltd., Hindustan Petroleum Corporation Ltd, Oil India Ltd and Indian Petrochemicals Corporation Ltd. PII was established in 1986 with the common objectives of mobilizing the individual capabilities of its member companies into a joint endeavour for providing technical managerial and other human resources on a global basis.

5.9.2 It is a very unique organisation mandated to offer the collective joint expertise of its members to client organisation globally in all areas of the petroleum & petrochemical sectors. It offers its services in all areas of the Oil & Gas Sector covering – Technical Backup Services, Technical Consultancy Services, Management Consultancy Services, Turnaround Maintenance Service, Information Technology Services, PMC services, HRD & Training Services besides engaging in export of commodities used in the Oil Industry. As a result of its successful proven experience, PII is eminently positioned to undertake assignments globally by offering cost effective & value-added solutions to its clients based across Middle East (Kuwait, Bahrain, Oman & Saudi Arabia), African region (Kenya, Ghana, Nigeria, Ethiopia & Yemen), UK & USA. The turnover of the company during 2008-09 was Rs. 3175 lakh with a net profit of Rs. 542 lakh.

5.10 PETROLEUM PLANNING & ANALYSIS CELL (PPAC)

The Petroleum Planning & Analysis Cell (PPAC) was created w.e.f. 1st April 2002 after dismantling of the Administered Pricing Mechanism (APM) in the petroleum sector and abolition of the erstwhile Oil Coordination Committee (OCC). The Governing Body under the chairmanship of Secretary (Petroleum & Natural Gas) and comprising of senior officials of the Ministry of Petroleum & Natural Gas (MOP&NG) and Chief Executives of major oil and gas Public Sector Undertakings (PSUs) as members, provides supervision and guidance in the functioning of PPAC. PPAC assists Ministry of Petroleum and Natural Gas (MOP&NG) inter alia, in the discharge of following functions:

1. Administration of Subsidy on PDS Kerosene and Domestic LPG and Freight Subsidy for Far-flung areas.
2. Maintenance of information/data bank relating to Oil PSUs and Oil and Gas sector
3. Analyzing the trends in the international oil market and domestic prices.
4. Forecasting, consumption, import and export trends of Crude oil, Petroleum products etc.

During the year, the following important activities and initiatives were taken by PPAC :

(i) Subsidy claims of Oil Marketing Companies (OMCs) under the Government Schemes on Domestic LPG and PDS Kerosene, and Freight Subsidy (For Far-Flung Areas) were processed by PPAC and a total amount of Rs.2640.60 crore under the above Schemes were disbursed to the OMCs for 2007-08.

(ii) In view of the growing importance of natural gas sector in the energy economy of the country as well as abroad, the data on natural gas is also collected, compiled and hosted at PPAC website (www.ppac.org.in).

(iii) In an open and globalised hydrocarbon sector like India, the quality of data and statistics is of fundamental importance for effective policy-making. PPAC has, in close cooperation of oil and gas companies, initiated the process of formulation of a comprehensive data quality guidelines and manuals.

(iv) The MOP&NG, Government of India has entered into an Arrangement/MOU with the Department of Energy, Government of U.S.A. on 9th February, 2006 for cooperation in the exchange of information relating to the Hydrocarbon Sector. PPAC as the designated agency of the MOP&NG and the Energy Information Administration (EIA) of the U.S. Deptt. of Energy are tasked with developing cooperative activities under

the arrangement. During the year, PPAC and EIA have exchanged information on measures being taken to improve data quality and forecasting techniques.

(v) As an integral part of the Indo-Japan Energy Dialogue, PPAC is engaged in conducting joint studies with the Institute of Energy Economics, Japan (IEEJ). A joint study on 'Measures for Stabilization of Asian Natural Gas Market' was completed in April, 2008.

(vi) Under the Agreement signed between PPAC, acting through the Government of India, and US Trade Development Agency (USTDA), acting through the Government of U.S.A., USTDA has agreed to provide a grant of US $6,90,000 for undertaking a study of National Gas Grid in India, estimated to cost $ 920,000 excluding taxes. Balance amount of the study, is to be borne by PPAC. In accordance with the Grant Agreement, M/s ICF International, a US firm has been selected to undertake the study project. The contract with the selected party is under finalization in consultation with USTDA.

(vii) It assisted the High Powered Committee on financial position of the OMCs, which was set up by the Government under the chairmanship of Shri B.K. Chaturvedi, Member, Planning Commission and worked as a Secretariat for coordination with various stakeholders. The Committee submitted the report to the Government on 31st July, 2008.

Chapter- 6



Conservation of Petroleum Products





Conservation of Petroleum Products

6.1 The oil crisis of 1970s brought into sharp focus the need for conservation of petroleum products due to the enormous hike in country's import bill. The Government of India, in response to the oil crisis, set up the Petroleum Conservation Research Association (PCRA) in 1978.

PCRA is a registered society under the aegis of Ministry of Petroleum & Natural Gas, Government of India. As a non-profit organization, PCRA is a national government agency engaged in promoting energy efficiency in various sectors of economy. It helps the government in proposing policies and strategies for petroleum conservation, aimed at reducing excessive dependence of the country on oil requirement. Over the years, PCRA has enlarged its role in improving productivity in use of various sources of energy, for the purpose of achieving environment protection and sustainable development.

PCRA is committed towards the fifth fuel i.e. "energy efficiency", to augment the four conventional sources of energy viz. coal, petroleum, nuclear and renewable. To achieve this, PCRA is relentlessly pursuing Demand Side Management as a cost effective alternative compared to augmenting supplies.

6.2 PCRA's Activities - An Overview

PCRA Book on 'Practical Guide to Energy Conservation'

During the 8th edition of the International Oil and Gas Conference and Exhibition 'PETROTECH-2009' at New Delhi from 11th – 15th Jan.'09, a book by PCRA, 'Practical Guide to Energy Conservation' was released by Ron Stevens, Dy. Premier and Minister of International and Intergovernmental Relations, Alberta,



Sri Murli Deora, Minister MOP&NG flagging off a car rally



Canada, in the presence of Shri S. Sundareshan, Additional Secretary, MOPNG, Govt. of India and a host of dignitaries and delegates from India and abroad. The book covers in detail, the energy conservation opportunities in Energy Intensive sectors like Iron and Steel, Pulp and Paper, Cement, Thermal Power Plants, Petroleum Refineries, Drilling Rigs, Fertilizers and Sugar along with more than 250 case studies to demonstrate the saving potential through suitable measures. This book will serve as a ready reckoner for energy managers and shop floor supervisors to adopt energy conservation practices in their respective industries to save energy cost particularly in small and medium enterprises.

Training for ONGC employees on Energy Conservation

PCRA is conducting 400 numbers of one-day training programs on Energy Conservation Techniques for 20000 ONGC executives. The program was inaugurated by Sh. D.N.Narasimha Raju, Joint Secretary(M) & ED,PCRA, at ONGC HQ Dehradun on 18.06.08. Total 273 programmes have been organized till 31st March 2009 at ONGC locations like Dehradun, Delhi, Karaikal, Chennai, Rajahmundry, Uran, Mehsana, Ahmedabad, Ankleshwar, Goa, Agartala, Kolkata, Bokaro, and Durgapur. The balance programmes will be organized at various far flung places like Jorhat, Silchar,Hazira, Cambay etc. This training program is a first of its kind activity in terms of the nature and magnitude of the job. The programme modules have been designed keeping in mind the equipment found at the rigs, platforms, plants & offices/buildings of ONGC. PCRA officers are the faculty for the programmes.

Other major comprehensive classroom training programmes organized by PCRA during the period were for employees of Birla Copper at Dahej and Kerala Metal and Mines Ltd. at Thavera.

6.3 Field Activities

Field Activities are one of the core areas of PCRA operations. Through Sectoral field activities PCRA engineers and its external experts are able to reach the targeted groups with innovative energy conservation programmes. These activities are designed to cover a large spectrum of socio-economic profile of our country in different sectors viz Industrial, Transport, Domestic, Agriculture & Commercial.

6.3.1 Chartered Activities

Field Activity performance in Transport, Industrial Agricultural and Domestic sectors during 2008-09 is given below:

S.N.	Activity	Achievement
1	Energy Audit	213
2	Fuel Oil Diagnostic Study	163
3	Service to Small Scale Industry	119
4	Follow-up	319
5	Institutional Training Programme	445
6	Seminar/Technical Meet/ Consumer Meet	92
7	Model Depot Project	109
8	Driver Training Programme	642
9	Kisan Mela	49
10	Youth Programme	716
11	Exhibition	66
12	Workshop-Industrial	248
13	Workshop-Transport	440
14	Workshop-Domestic	343
15	Workshop-Agriculture	357
	Total	**4321**

6.3.2 Energy Audits:

During 2008-09, PCRA has conducted 495 energy efficiency audits in the Industrial sector, which include energy audits (213), fuel oil diagnostic studies (116) and walk through audits (119) in small-scale industries. The Savings identified through these studies were 2,28,777 KLOE and the savings realized through follow up services



provided to clients where such studies were conducted in the previous years was 74,642 KLOE. The monetary value of savings identified and savings realized during this period is Rs. 686 crores and Rs. 224 crores respectively.

Empanelment of Energy Auditors:

Over the years PCRA has been playing an important role of developing quality energy auditors whose services become available to industries and commercial establishments in the country. PCRA's empanelment committee comprises members from BEE, NPC, TERI and PCRA. Today a strong force of 91 PCRA empanelled energy auditors is providing service to the Indian industry.

Seminars:

Technical seminars are an effective tool for the dissemination of recent advances in technologies and also for improvement in operational practices for improving energy efficiency. In this direction PCRA has during 2008-09 organized 92 Seminars/ Technical Meets in different parts of the country for the benefits of specific industrial sectors. During these seminars the PCRA experience of conducting energy efficiency studies in that sector are shared through case study presentation where in details of investment required and the benefits accrued through implementation of the energy conservation measures are shared. A seminar on energy conservation was also organised at Aizwal in Mizoram on 07.11.2008 where the Chief Guest was Lt. General (Retd) M.M Lakhera ,PVSM,AVSM,VSM, Governor of Mizoram.

Institutional Training Programmes

PCRA's Institutional Training Program (ITP) is an activity primarily meant to share the experience gained by PCRA during industry audits. These training programmes are targeted at raising the awareness level of the members of industry about the conservation opportunities that can be realized through the energy audit of their plant. During the period, PCRA conducted 445 Industrial Training Programs in various industries.

6.4 PCRA's Driver Training Programmes

Transport sector that accounts for around 50% of the country's consumption of petroleum products remained another major area of focus for PCRA during the year 2008-09. During 2008-09 PCRA conducted over 642 DTPs training over 12,840 drivers resulting in improvement of average KMPL. During this year, the job of training the entire fleet of drivers was awarded to PCRA by the following STUs:

- **MSRTC(Maharashtra)**
- **HPSRTC (Himachal Pardesh)**
- **UPSRTC (Uttar Pradesh)**

In addition several STUs like North East Karnataka State Road Transport Corporation (NEKSRTC) and Kerala State Road Transport Corporation (KSRTC) have taken the initiative of developing an annual calendar for this programme and are getting the same executed through PCRA.

6.5 Networking with other agencies:

Energy Conservation Center Japan (ECCJ):

As part of Government of India's initiative for cooperation with Japan in the field of oil & gas, PCRA executed an MOU with "The Energy Conservation Center Japan (ECCJ)" on 28th June 2006 in New Delhi.

(a) Training on Energy Conservation Technologies was provided to 33 Indian delegates in Japan from 5th to 14th September 2008. The delegates comprised members from PCRA, Oil sector, Iron & Steel Industry and Pulp and Paper industry.

(b) A Two-day interactive workshop involving members from Japanese Textile Industry, research institutions, policy makers and concerned associations was organized in Mumbai on 4-5 October 2008.

(c) One technical expert from ECCJ presented the Japanese approach to the development of fuel efficiency standards and energy labeling in Pulp & Paper sector at the international seminar organized by PCRA in Delhi on 9-10th November 2008.

State Institute of Rural Development (SIRD):

During 2008-09, capacity development programmes were continued with the respective SIRDs and more SIRDs were included for introducing the PCRA module on energy conservation in SIRD's regular training programmes that are conducted for State Government functionaries. In addition, collaboration with some SIRDs for developing a gallery of PCRA posters and literature and display of conservation messages through glow signboards were also taken up. During this year, list of SIRDs where integration has been successfully initiated and implemented are:

PCRA capsule of around 2 hours duration that includes presentation, films, demonstration etc. is tailor made to suit the profile of the participants which comprises District/ Block/ Mandal/ Panchayat level officers, Self Help Groups, Youth, Women, Students, etc.



S. No.	Name of SIRD	No. of Programmes
1	Andhra Pradesh Academy for Rural Development (APARD), Hyderabad	48
2	Mahatma Gandhi Institute of Rural Energy Development (MGIRED),Bangalore	48
3	Gandhigram Rural University (GRU), Dindigul, Tamilnadu	34
4	SIRD, Maraimalainagar, Tamilnadu	36
5	SIRD, Mizoram-Kolasib	2
6	SIRD, Nagaland-Kohima	2
7	SIPARD, Tripura-Agartala	2
8	SIRD, South Sikkim	2
9	SIRD, Lucknow	24
10	SIRD, J&K	35
11	SIRD, Haryana-Nilokheri	18

6.6 Other major Activities

Conservation Technology Center (CTC):

To bridge the gap between the industry and the energy efficient equipment manufacturers, a unique initiative in the form of having a permanent exhibition of these equipment was taken and accordingly, a permanent exhibition stall was provided on the first floor of Sanrakshan Bhawan. This exhibition was inaugurated by Additional Secretary, MoP&NG and Vice-Chairman, PCRA on 12.02.08.

Since its inauguration, more and more manufacturers of energy efficient equipment have come forward and utilized the space at CTC for displaying their products. The technology center is frequently visited by school children and delegations from India and abroad.

Digital Countdown Timers and Variable Message Signboards:

To reduce the fuel loss during idling of vehicles at traffic signals, a unique initiative of procuring and installing Countdown Timers and Variable Message Signboards at traffic intersections in Kolkata, Navi Mumbai and Chennai was taken. These devices were installed after obtaining permission from the local authorities.

Integrated Energy Efficiency Services to the Army and Paramilitary Forces:

An integrated programme for energy conservation was organized for the Central Reserve Police Force (CRPF) at their group centre at Bantalab in Jammu. The services included :

- Energy audit of all office buildings, residential quarters, school and hospital
- Efficient Driver Training Programme
- Efficient MDP Study
- Transport Workshop
- LPG Clinic for housewives and cooks
- Youth programmes
- Training on energy conservation for officers and staff
- Training for implementation of solid waste management
- Training on Biofuel for officers and staff

An integrated programme for energy conservation was organized for the Southern Command of Indian Army that covered the entire aspect of usage of energy. Nutan Himveer Bukharis that are utilized by the defence personnel at high altitudes were provided to the Army for ascertaining the benefits of this Bukhari in comparison with the conventional unit currently being used.

Special Projects

Study on Barriers for Improvement of Energy Efficiency in the Steel Re Rolling Mill Sector : A study in all six clusters of Steel Re Rolling Mills with regards to barriers for improvement in Energy Efficiency was conducted by PCRA as per the requirements of the job awarded by UNDP-GEF Project (Steel). The study involved seeking data regarding 20% of the Steel Re rolling Mills in each cluster and an in depth study of the various stakeholders like technology providers, financial institutions etc. The job was awarded to PCRA against competitive bidding.

6.7 Research & Development

During the year 2008-09, Research & Development activities provided strong support to PCRA's energy conservation efforts by developing and commercializing Energy Efficient products, processes and technologies for energy saving and environment protection.

Research & Development Projects at a glance:

6.8 Important cluster projects sponsored in the year 2008-09.

S. No.	Particulars	No. of Projects	Value of Projects (Rs. in Lakh)
1	Projects awarded during 2008-09	9	161
2	On-going projects	55	847

(a) PCRA sponsored a project on accelerating replications of energy efficient and environment friendly technologies in small and micro enterprises with an objective to propagate energy efficient metal melting technologies in textile & engineering gray iron foundry cluster in Ahmedabad.

(b) Large and high capacity mechanical ventilators that produce ventilation in underground mines are required to be operated round the clock and all year round. It may be mentioned here that mine fan consumes as much as 30% of the total energy used in mines. PCRA sponsored the above project to Indian School of Mines University, Dhanbad to develop, design and implement an innovative concept for reducing the energy consumption in main mine ventilation fans.

6.9 Education & Mass Awareness Campaign

India consumes petroleum products worth Rs. 4,00,000 crores per annum and it depends on imported crude oil to the extent of more than 75% of its demand. The projected growth of consumption of petroleum products is 2.4% till 2030. Keeping in view the increasing demand of petroleum products, one of the best ways to reduce the consumption is to adapt Fuel Efficiency and Petroleum Conservation. Japan is 9.2 times energy efficient per $1000 of GDP compared to India.

National Level Campaign

Apart from the rising demand of petroleum products, India is the fifth largest emitter of carbon dioxide in the world after USA, China, Russia and Japan. 450 MMT out of 1100 MMT of CO_2 emissions in India are form fossil fuels.



Shri S. Sundareshan, Addl. Secretary, MOP&NG, inaugurating HPCL Pavilion at Petrotech 2009



Conservation of fossil fuel is therefore not only vital to be fuel efficient, but also because of its multiplying effect of reduction of CO_2 emission into the environment.

Keeping the above in view, A national level media campaign titled "SAVE FUEL yaani SAVE MONEY" is being launched by PCRA beginning February 2009.

"Yaani" is the Mascot for the Campaign that would represent a piggy bank to symbolize the saving potential of fuel efficiency measures. A total of 14 creatives are being produced that are listed below :

(a) Television Commercial :

- "Traffic Light" (45 seconds) to promote switching off car engine at traffic red lights.(TV Celebrity)
- Television Commercial "Home" (30 seconds) to promote LPG savings by housewives.
- Television Commercial "Pump" (30 seconds) to promote fuel efficiency in transport sector. (TV Celebrity)

(b) Print Advertisements :

- Launch Ad to promote petroleum conservation in all sectors of economy
- Fuel Efficiency in Transport Sector
- To promote Car Pooling
- Industrial Energy Efficiency
- To promote LPG saving in Domestic Sector
- To promote Diesel saving for Bus/Truck Drivers

(c) Radio Spots :

- "Office" (60 seconds) to promote Car Pooling
- "Dhakkan" (50 seconds) to promote LPG savings in Domestic Sector
- "Kabab" (40 seconds) to promote to promote Diesel saving for Bus/Truck Drivers
- "Ramesh" (40 seconds) to promote Diesel saving in Agriculture Sector
- "Red Signal" (40 seconds) to promote switching off car engine

Print Media Campaign

Newspaper advertisements were released in the leading newspapers throughout the country. The ads were designed to attract the attention of the end users of petroleum products and motivate them to change their habits to fuel saving measures. A series of articles on petroleum conservation targeted at youths were published in Reader's Digest to generate awareness on the need and urgency of Fuel Efficiency and Petroleum Conservation. Articles were also published in Children's magazine "Chandamama".

Television Campaign

Television advertisements on fuel saving measures in transport and domestic sector featuring celebrities, viz. Mr. Boman Irani and Mr. Jaspal Bhatti were run on 7 leading Television News Channels.

Radio Campaign

Radio advertisements on conservation measures in transport, domestic, industrial and agriculture sectors were released on All India Radio in 32 state capitals.

Exhibitions:

Through participation in National and international exhibitions, PCRA exhibits its in-house capabilities and expertise through display of information about successful case studies about its services provided to various sectors. PCRA participated in /organized more than 66 exhibitions during 2008-09. Some of the Major Exhibitions where PCRA participated are as below:

(a) PCRA put up a stall on the theme of 'Energy Conservation' during the 28th India International Trade Fair at New Delhi from 14th – 27th Nov., '08. Sh. D.N. Narasimha Raju, Joint Secretary, MOPNG, Govt. of India and Executive Director, PCRA inaugurated the stall. The stall also had a puppet show on the conservation theme and drew huge crowds, both children and adults.

(b) In Sunderbans in West Bengal, PCRA set up a stall in "Sunderban Kristi Mela" during 22-30th Dec. '08 which was visited by Lok Sabha Speaker Shri Somnath Chatterjee and Shri Gopalkrishna Gandhi, Governor of West Bengal.

Inclusion of Conservation Topics in NCERT Books

PCRA initiated efforts to include chapters on Oil

Conservation in NCERT schoolbooks and its efforts have borne fruit. One full chapter of 10 pages – "Khatam Ho Jaye To" in Hindi and "What If It Finishes…?" in English with illustrative texts on oil conservation has been included in class V Environmental Studies text book (Aas Pas - Hindi , Looking Around - English). In class VIII Science book, Ch 5 on coal and petroleum, general tips on saving petrol & diesel with PCRA's role have been included.

Printed Literature

Brochures, leaflets, posters were printed in Hindi, English and Vernacular languages and distributed all throughout the country during the year.

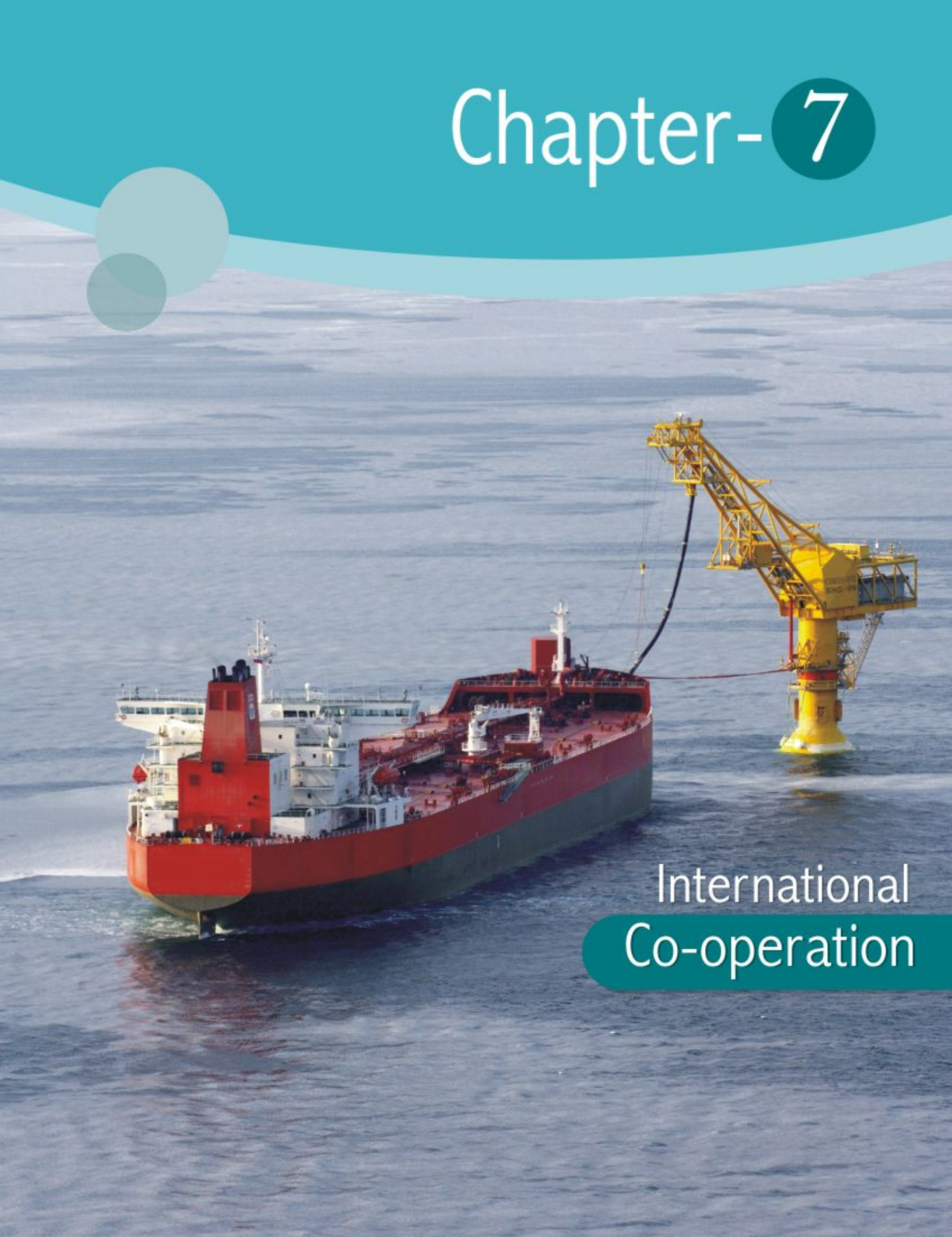
Outdoor Publicity

Electronic Display Boards, Bus Panels, Metro Rail, Railway Bridge Panels with Conservation messages were displayed in various locations of the country to promote petroleum conservation.



Shri R.S. Pandey, Secretary MOP&NG flagging of a Publicity van during OCGF

Chapter-7



International Co-operation

International Co-operation

7. INTERNATIONAL CO-OPERATION

7.1. To address its energy concerns, India is continually committed to bilateral cooperation with foreign countries both in upstream and downstream sectors. In order to give special attention to the matters relating to International Cooperation, International Cooperation (IC) Division is functioning in the Ministry since April, 2005.

7.2. The principal role of the IC Division is to promote long term engagement of Indian companies in the hydrocarbon sector abroad. The specific areas to be pursued abroad are:-

(i) Equity participation in developed oil and gas fields;

(ii) Exploration and production contracts in new fields, both oil and natural gas;

(iii) Participation in mid-stream and down stream projects in the oil and gas sector;

(iv) Promotion of Indian participation in transnational oil and gas pipeline projects;

(v) Participation in bilateral bodies such as Joint Commissions and Joint Working Groups on Hydrocarbon Cooperation to ensure that India's interests in specific countries are effectively projected and pursued;

(vi) Participation at regional and global multilateral fora to pursue issues of interest to India such as organization and functioning of oil markets; investments and joint ventures in the Hydrocarbon sector and cooperation between academic and research institutions to promote R&D, transfer of technology, training, dissemination of data on hydrocarbon, etc.

7.3 In order to explore new avenues and also to augment the ongoing efforts being undertaken in the oil market abroad, the Minister of Petroleum and Natural Gas has undertaken a number of visits abroad during the year 2008-2009. The overseas visits of the Minister of Petroleum and Natural Gas and the objectives achieved are as under:-

Overseas Visits By The Minister (P&NG)

S.No.	Countries visited	Objectives of the visit
1.	Venezuela (8.4.2008 to 10.4.2008)	To attend signing of Joint Venture between ONGC-Videsh Ltd. and CVP.
2.	Islamabad, Pakistan (23.4.2008 to 24.4.2008)	To attend the Steering Committee meeting of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) Gas Pipeline Project.
3.	Jeddah, Saudi Arabia (21.6.2008 to 22.6.2008)	To attend Energy Minister's Meeting.
4.	Madrid, Spain (29.6.2008 to 3.7.2008)	To attend the World Petroleum Congress.
5.	Dushanbe, Tajikistan (27.8.2008 to 29.8.2008)	To participate in Shanghai Cooperation Organization Summit.
6.	Moscow, Russia (5.11.2008)	Bilateral Meeting with Prime Minister and Energy Minister of Russia.
7.	Doha, Qatar (10.11.2008)	Member of delegation led by the Prime Minister.
8.	London, UK, 18-19 December, 2008	To attend London Energy Meeting
9.	Astana, Kazakistan 12-13 March, 2009	Meeting of Inter Governmental Commission



Shri Murli Deora, Union Minister, MOP&NG and Mr. Sufian Al, Minister of Petroleum & Mineral Resources, Syria, England exchanging the MoU documents



Shri Murli Deora, Union Minister, MOP&NG in a meeting with Dy. PM in-charge of Energy, Qatar at Doha



7.4 An overview of international operations of oil PSUs.

The oil and gas PSUs have vigorously pursued overseas opportunities with a view to enhance the energy security of India not only in the area of E&P but also to undertake commercial operations in order to turn into global players. The International Cooperation Division has provided support in many of these initiatives through diplomatic support. A list of such ongoing projects is as follows:

List of important Overseas Projects

Country	Name of the Block	Participating Interest with details of other partners
Vietnam	Block 06.1	OVL - 45% BP - 35% PV - 20% Operator British Petroleum (BP)
	Block 127	OVL - 100%
	Block 128	OVL - 100%
Russia	Sakhalin - 1	OVL - 20% Exxon - 30% Sodeco - 30% SMNG - 11.5% RN Astra - 8.5% (Operator Exxon Mobil)
Sudan	GNOP Block 1, 2 & 4	OVL - 25% CNPC - 40% Petronas - 30% Sudapet - 5% (Joint Operatorship)
	Block 5A	OVL - 24.125% Petronas - 67.815% Sudapet - 8% (Operator Petronas and Sudapet joint operator)
	Block 5B	OVL - 23.5% Petronas - 39% Sudapet - 13% Lundin - 24.50% (Operator – Petronas and Sudapet joint operator)

contd...

List of important Overseas Projects *(Contd...)*

Country	Name of the Block	Participating Interest with details of other partners
Myanmar	Block A-1	OVL - 20% Daewoo - 60% KOGAS - 10% GAIL - 10% (Operator Daewoo)
	Block A-3	OVL - 20% Daewoo - 60% KOGAS - 10% GAIL - 10% (Operator Daewoo)
	Block AD-2	OVL - 100%
	Block AD-3	OVL - 100%
	Block AD-9	OVL - 100%
	Block AD-7	OVL - 20% Daewoo - 60% KOGAS - 10% GAIL - 10% (Operator Daewoo)
Iraq	Block 8	OVL - 100%
Iran	Farsi Offshore Block	OVL - 40% IOC - 40% OIL - 20% (Operator OVL)
Egypt	Block 6	OVL - 70% IPR - 30% (OperatorIPR)
	Block NEMED in Offshore	OVL - 33% Shell - 51% (operator) Petronas -16%
	Block, 3 & 4	GSPC - 50% (operator) OIL - 25% HPCL - 25%
Syria	Block 24	OVL - 60% IPR International - 40% (Operator IPR International)
	AL Furat (4 PSA)	Himalaya Energy (Syria) B.V. - 33.33% to 37.5% Shell - 66.67% to 62.5%
Cuba	Block 25, 26, 27, 28, 29, 35A & 36	OVL - 30% Repsol YPF - 40% Norsk Hydro - 30% (Operator - Repsol YPF)
	Block 34 & 35	OVL - 100%

contd...



List of important Overseas Projects *(Contd...)*

Country	Name of the Block	Participating Interest with details of other partners
Brazil	Block BC-10	OVL - 15% Shell - 50% Petrobras - 35% (Operator Shell)
	Block ESM470	OVL - 100%
	SM-1413	OVL - 100%
	BM SEAL -4	OVL - 25% Petrobras - 75% (Operator Petrobras)
	BM BAR-1	OVL - 25% Petrobras - 50% Devon - 25% (Operator Petrobras)
Colombia	MECL	OVL - 50% Sinopec - 50% (Joint Operatorship)
	Block RC-8	OVL - 40% Ecopetrol - 40% Petrobras - 20% (Operator OVL)
	Block RC-9	OVL - 50% Ecopetrol - 50% (Operator Ecopetrol)
	Block RC-10	OVL - 50% Ecopetrol - 50% (Operator OVL)
	Block CPO-5	OVL - 100%
	Block SSJN-7	OVL - 50% Pacific Stratus Energy Colombia (Operator) - 50%
Nigeria Sao Tome Principe	Block-2, JDZ	OVL 13.5%, M/s Sinopec/Addax Petroleum/ ERHC Energy Inc. Consortium 65% PI, Equator Exploration Ltd. 9% PI, A & Hatman 2.5.% PI, Foby Engineering 5% PI and Momo deepwater JDZ 5%PI.
Nigeria	OPL 279	OMEL - 45.5.% EMO - 40% TOTAL: 14.5% (Operatorship OMEL)

contd...

List of important Overseas Projects *(Contd...)*

Country	Name of the Block	Participating Interest with details of other partners
	OPL 285	OMEL - 64.33% EMO - 10% TOTAL: 25.67% (Operatorship OMEL).
Turkmenistan	Block 11-12, Offshore	OMEL - 30% Maersk Oil - 36% Wintershall - 34% with Operatorship
Congo	MTPN	OVL - 20% ENI - 40% Exxon Mobil - 40% (Operator ENI).
Venezuela	San Cristobal Project	OVL - 40% CVP - 60% (Operated jointly)
Trinidad and Tobago	Block NCMA-2	OMEL - 65% Petrotrin - 35% (Operator OMEL)
Gabon	Shakthi Block	OIL - 45% IOC - 45% Marvis 10%
Yemen	Block 82 & 83	Medco - 45% Kuwait Energy - 25% IOC - 15% OIL - 15% (Operator Medco)
Nigeria	BlockOPL-205	Summit Oil* - 30% Suntera - 35% IOC - 17.5% OIL - 17.5% (Operator Summit Oil)
Libya	Block -43	OVL - 100%
	Block-81-1,	OVL - 100%
	Block NC- 188 & 189	OVL - 49% TPOC - 51% (Operator TPOC)
	Block 102/4	OIL - 50% IOC - 50%
	Area 95-96,	IOC - 25% OIL - 25% Sonatrach 50%
	Area 86	OIL - 50% IOC - 50%
Timor-Leste	Block-K	RIL - 75% IOC - 12.5% OIL - 12.5% (Operator RIL)



7.5 Bharat Petroleum Resources Ltd.(BPRL) a wholly owned subsidiary of BPCL has acquired participating interest in 16 blocks abroad in consortium with other partners. These blocks are located in Brazil (10), Mozambique (1), Australia (3) UK(North Sea)(1) and Oman (1). HPCL is a consortium partner in one block each in Oman, Australia and Egypt.

7.6 Joint Working Group (JWG) meeting for cooperation in the hydrocarbon sector with following countries were held during the year.

- Turkey
- South Africa
- Norway
- Romania
- Kazakhstan
- Russia

Bilateral MoUs for promoting cooperation in the Oil and Gas sector were signed with following countries during the year.

- Turkmenistan
- Brazil
- Colombia
- Syria

7.7 The Ministry of Petroleum and Natural Gas organized the first ever India-CIS Round Table on Hydrocarbons in New Delhi, on 25-26 November, 2008.

The objectives of this Round Table were to bring together leaders of the hydrocarbon industry for common benefit, showcase the capabilities of the countries from CIS and India in the field of oil and gas and build mutually beneficial and enduring partnership of strategic dimension between India and the CIS region.

H.E. Mr. Sergey Shmatko , Energy Minister of Russia was Chief guest at the Round Table. Senior officials from Belarus, Kazakhstan, Russia, Tajikistan, Turkmenistan and Uzbekistan also attended the event.

7.8 **Turkey- Israel- India proposal**

The Foreign Minister of Turkey, during his visit to India in February 2008, had outlined a proposal for cooperation between Turkey, Israel and India for transportation of crude oil from the Caspian region through the Mediterranean and Red Sea and into India. Briefly, this project envisages transport of crude oil from Ceyhan port in Turkey to Ashkelon port in Israel in the Mediterranean Sea, initially through very large crude carriers (VLCCs) and eventually by laying a sub-sea pipeline. Thereafter, crude oil will be transported through the existing Ashkelon- Eilat pipeline in Israel to Eilat port on the Red Sea. From there, crude oil may be carried to India/ other parts of Asia. The project is still in a conceptual stage and requires a detailed feasibility study to establish its techno-commercial viability. A tripartite meeting between Turkey-Israel-India was held in September 2008 at Ankara to discuss conceptual features of the project.

7.9 **Petrotech -2009**

The 8th International Oil and Gas Conference and Exhibition was held in New Delhi from 11th to 15th January 2009. The theme of this Conference was "Energy independence with global cooperation: Challenges and Solutions". Petrotech-2009 was inaugurated by Shri Pranab Mukherjee, Hon'ble Minister of External Affairs in august presence of Shri Murli Deora, Minister of Petroleum & Natural Gas and other dignitaries on 12th January 2009 at Vigyan Bhavan.

7.10 The Petrotech – 2009 Conference focused on the Indian hydrocarbon industry in the context of global trends and provided a major platform for presentation and technical papers by experts as well as in-depth discussion and debate on an emerging challenges and opportunities. Participation by a galaxy of Ministers and CEOs from across the globe made this a crucial conference and delegates got an opportunity to attend and learn about the latest developments pertaining to hydrocarbon sector.

7.11 The Ministerial level delegation from following countries participated in the event:

S. No.	Name of the Country	Name of the Minister
1.	Saudi Arabia	H.E. Mr. Ali Ibrahim Al-Naimi, Minister of Petroleum and Mineral Resources
2.	Qatar	H.E. Mr. Abdullah Bin Hamad Al-Attiyah, Deputy Premier & Minister of Energy & Industry
3.	Oman	H.E. Dr. Mohammed bin Hamad Al Rumhy, Minister of Oil & Gas
4.	Angola	H.E. Mr. Eng. Anibal Octavio Teixeira da Silva, Vice Minister of Petroleum



The President's Special Adviser on Petroleum Matter, Nigeria, O. Egbogah and the Additional Secretary, Ministry of Petroleum & Natural Gas, Shri S. Sundareshan at the bilateral meeting, in New Delhi on January 13, 2009

5.	Canada	H.E. Mr. Ron Stevens, Deputy Premier & Minister International & Intergovernmental Relations
6.	Nepal	H.E. Mr. Rajendra Mahato, Minister of Commerce and Supplies
7.	Mozambique	H.E. Mr. Salvador Namburete, Minister for Energy
8.	Sri Lanka	H.E. Mr. AHM Fowzie, Minister of Petroleum and Petroleum Resources Development
9.	Sudan	H.E. Mr. Al Zubair Ahmed Al Hassan, Minister of Energy & Mining
10.	Syria	H.E. Eng. Sufyan Al - Allao, Minister of Petroleum and Mineral Resources

7.12 Bilateral meetings between visiting Ministers and Minister (Petroleum & Natural Gas) were held. The participating Ministers also called on Prime Minister on 14th January 2009.

7.13 Foreign Direct Investment (FDI) Policy is notified from time to time by the Department of Industrial Policy and Promotion, Ministry of Commerce. The recent policy statement in this regard has been brought out in terms of Press Note No. 4(2006) that was amended vide Press Note No. 5 (2008) dated 12th March, 2008. In view of the continued requirement for foreign investment and technical know-how in the petroleum and natural gas sector, the present FDI policy is as follows :

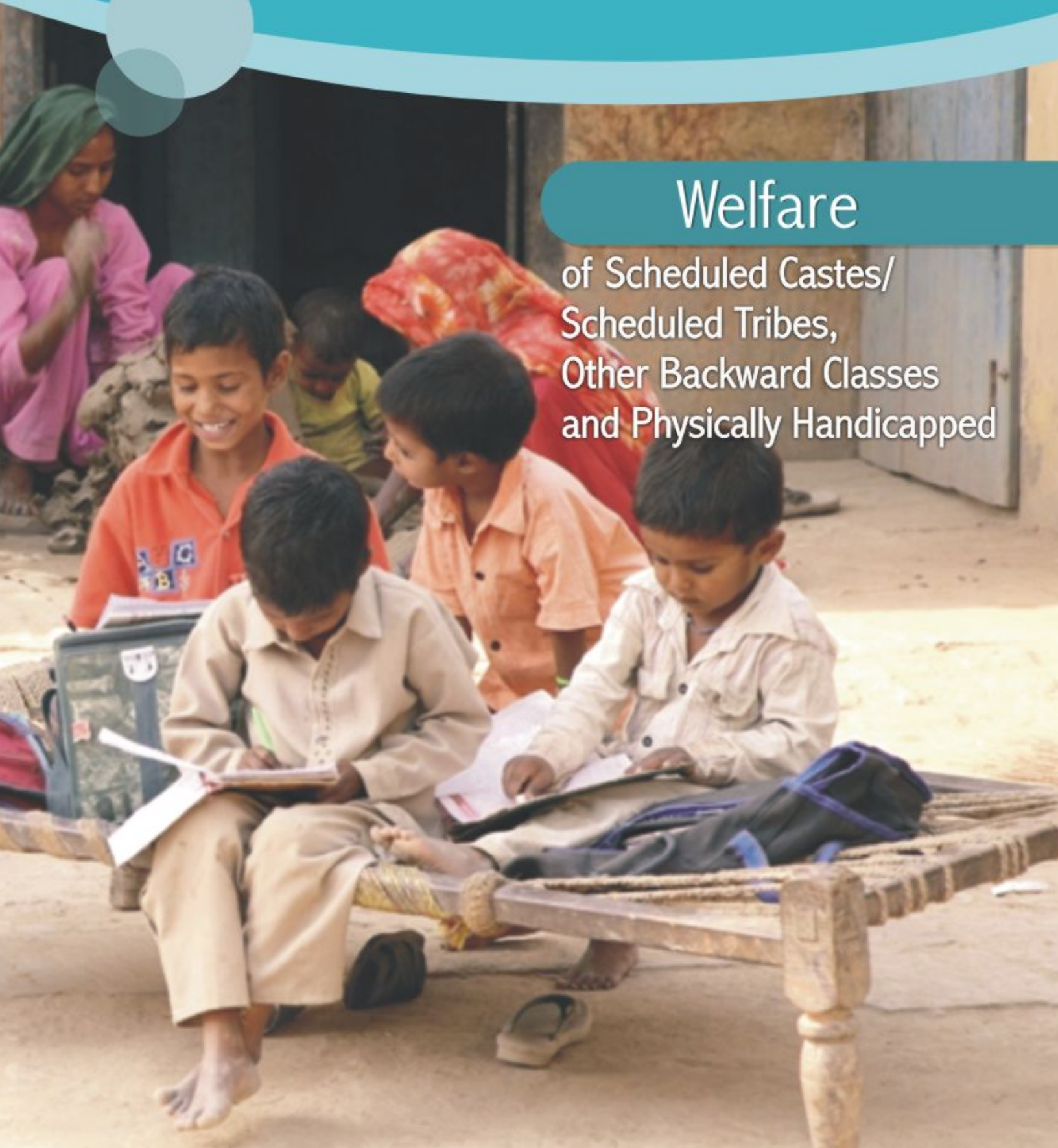
- 100 percent foreign investment through automatic route in exploration, petroleum product marketing, petroleum product pipelines, Natural Gas/LNG pipelines and petroleum refining in the private sector.
- FDI upto 49% is permitted with prior approval of FIPB for petroleum refining by the Public Sector Undertakings (PSUs).
- 100% FDI allowed through automatic route in the case of actual trading and marketing of petroleum products.

7.14 As against the broad FDI policy as above, market access and national treatment is anyway accorded to FDI projects for trade and distribution of petroleum products subject to minimum overall investment of Rs. 2000 crores in the sector.

7.15 It is on the above lines that foreign investment and trade agreements in goods and services in the WTO negotiations as well as bilateral and purililateral have been taken up for the petroleum and natural gas sector. The agreement with Association of South East Asian Nations (ASEAN), European Free Trade Association (EFTA) as well as bilateral agreement with Korea, Japan, Malaysia, Thailand and others are being accordingly taken up so as to address the energy concern of the economy.

7.16 In order to enlarge the availability of petroleum and natural gas, some joint study groups have been recently set up like the Common Market for Eastern & Southern Africa (COMESA) for examining the feasibility of Free Trade Agreement (FTA) between India and COMESA as well as another one with Iran.

Chapter- 8



Welfare

of Scheduled Castes/
Scheduled Tribes,
Other Backward Classes
and Physically Handicapped

Welfare

of Scheduled Castes/ Scheduled Tribes, Other Backward Classes and Physically Handicapped

8.1 The guidelines in respect of the Reservation for the Scheduled Castes/Scheduled Tribes, Other Backward Classes and Physically Handicapped persons issued from time to time by the Department of Personnel & Training, the Department of Public Enterprises, the Ministry of Social Justice and Empowerment and Ministry of Tribal Affairs are being implemented in the Ministry of Petroleum & Natural Gas and the Public Sector Undertakings under its administrative control. The SCT Cell of this Ministry monitors the implementation of reservation policies in PSUs as well as in the Ministry. The PSUs have also constituted Implementation Cells under the supervision of their Liaison Officers to safeguard the interests of SCs/Sts, OBCs and People with the Disability (PWD) employees and to redress their grievances. The Liaison Officers of the PSUs are responsible for ensuring implementation of the Presidential Directives as well as the various orders of the Government. Remedial action on the grievances of the SCs/Sts, OBCs and PWD employees of PSUs received through members of Parliament, National Commission for SCs and STs National Commission for Scheduled Area and Scheduled Tribe are taken, wherever necessary.

The status of appointment of SCs/STs/OBCs/PWD persons is monitored by the Ministry through Half yearly report furnished by PSUs separately. As per instructions from Department of Public Enterprises all the PSUs have been requested to lunch Special Recruitment Drive to fill up back-log vacancies arisen till 1.11.2008 reserved for SC, ST and PWD. .

In pursuance of the observations of Parliamentary Committee on the Welfare of SCs/STs/PWD persons and the Presidential Directives on Reservations for SCs/STs in service a team lead by the Liaison Officer of this Ministry inspects the Reservation Roaster maintained by the Units of PSUs, annually. During 2008-09 the team has inspected rosters of 20 out of 48 units of PSUs where Rosters are maintained.

8.2 SPECIAL COMPONENT PLAN FOR SC/ST/PH FOR 2008-09

Under this plan, most of the PSUs of this Ministry are undertaking the following developmental activities for the Welfare of SC/ST population during 2008-09:

- Scholarship/Financial Assistance for purchase of books/ uniforms etc to SC/ST students in neighboring schools
- Every year Rs. 2.00 crore has been allocated to various works Centers of ONGC and SCP/STP towards Welfare at upliftment of SC/ST communities



Shri KK Acharya, MD, CPCL, distributed basic welfare items to Physically Challenged People 0n Independence Day 2008





- Education for Primary level Schools, hiring of teacher, provision of Uniform, note books, stationary etc. to school going children
- During the financial year 2008-09 the PSUs of this Ministry have made provision in the plan outlet for award of scholarship to SC/ST students
- A Special drive relating to SC/ST/OBC/PH welfare activities is being launched during the period 2008-09 i.e. recruitment, minimizing the shortfall etc.
- Most of the PSUs of this Ministry are implementing the provisions under disability act, 1995 is respect to identification of course, implementing various provision of 3% reservation of course in Orthopedically handicapped (OH), Visually handicapped (VH) and Hearing Handicapped (HH) category.

8.3 BACKLOG OF SC/ST/OBC/PH IN OIL COMPANIES UNDER THE ADMINISTRATIVE CONTROL OF THE MINISTRY AS ON 31.3.2009.

Direct Recruitment

PSU	Number of backlog Reserved Vacancies remaining (Direct Recruitment)							
	Group A		Group B		Group C		Group D	
	SC/ST	OBC/PH	SC/ST	OBC/PH	SC/ST	OBC/PH	SC/ST	OBC/PH
Balmer Lawrie	Nil	5	Nil	2	16	4	60	25
OIL	2/0	Nil	2/0	Nil	20/0	11/0	Nil	7/0
EIL	44/58	107/33	Nil	0/1	Nil	1/0	Nil	Nil
BPCL	0/2	44/28	Nil	Nil	Nil	0/7	Nil	Nil
NRL	10/0	19/0	Nil	Nil	3/0	5/0	Nil	5/0
IOC	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
GAIL	Nil	66/1	0/4	25/2	0/4	0/2	0/2	Nil
HPCL	61/40	77/4	Nil	Nil	Nil	0/13	0/1	53/5
ONGC	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
BRPL	1/0	4/0	Nil	Nil	Nil	1/2	1/1	5/0
CPCL	Nil	0/1	1/3	0/4	Nil	0/7	Nil	Nil
BIECCO LAWRIE LTD.	0/1	5/0	0/1	3/1	8/1	0/11	0/8	8/4
MRPL	Nil	0/7	Nil	Nil	22/0	Nil	Nil	Nil

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- Join a car pool
- Drive in the correct gear
- Always maintain the recommended tyre pressure
- Walk or cycle short distances

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PETROLEUM CONSERVATION RESEARCH ASSOCIATION.
Ministry of Petroleum & Natural Gas, Govt. of India.

Chapter- 9



Welfare, Development and Empowerment of Women

Welfare, Development and Empowerment of Women

9.1 The Ministry of Petroleum & Natural Gas and Public Sector Undertakings/Organisations under its administrative control have been taking full initiatives towards welfare and development as also to empower the women employees. With a view to deal with gender sensitization and to promote the cause of women empowerment, special programmes are organized focusing on their professional development and welfare activities. These include external and in-house training, programmes on women health, sponsoring them to attend the National Meet of the Forum of Women in Public Sector, etc.

9.2 Women Forum have been formed in the PSUs to look after the interest of the women employees. List of Do's and Don'ts prepared by the National Commission for Women has been circulated for attention of all employees. Committees have been set up to attend to redressal of complaints on 'Sexual harassment at work place.'

9.3 The number of women employees vis-à-vis total number of employees as on 31.03.2009 in the oil PSUs is tabulated as below:-

Sl. No.	Name of PSU	Total No. of Employees	Total No. of Women Employees
1.	ONGC	32002	1974
2.	IOCL	32472	2527
3.	HPCL	11255	767
4.	BPCL	14059	1181
5.	GAIL	3544	174
6.	EIL	3028	332
7.	OIL	8374	325
8.	CPCL	780	49
9.	BRPL	1638	77
10.	NRL	777	36
11.	MRPL	1255	57
12.	BIECCO LAWRIE	437	5
13.	BALMER LAWRIE	1422	92
14.	ONGC (V)	200	8



9.4 As on 31.3.2009, against the total strength of three hundred & five [305], two hundred and sixty (260) employees are in position at present in the Ministry (Proper) out of which fifty (50) are women.

Chapter- 10



Development of North-Eastern Region

Development of North-Eastern Region

10.1.1 ONGC

ONGC has been actively pursuing the exploration activities in the N.E. Sector viz Assam, Tripura, Nagaland, etc. ONGC has been keeping the outlay for E&P activities in the North-East at about 10% of its total annual outlay. ONGC has taken several steps as part of its Socio Economic Development Programme (SEDP), henceforth called the Corporate Citizen Policy (CPP). The endeavour is to upgrade/evaluate the overall industrial and socio-economic level of the area.

10.1.2 Skill Development in SILK Weaving

During last two years as part of Corporate Social Responsibilities (CSR), Assam Asset of ONGC has undertaken creating skill development in 'Silk Weaving', to realise the vision of making Sivasagar as a 'Silk Hub.'

Six Improved Silk Weaving Training Centres imparted training during 2008-09 for three months at Geleki, Sonari and Rudrasagar with the association of experts from Shanti Sadhana Ashram, Guwahati. 330 young women from 70 villages located in the oil field areas of Assam Asset in about 16 Gram Panchayats were selected in 2008-09 for participation in the three months training programme. Last year, during 2007-08, Assam Asset had conducted a similar exercise wherein 170 young women were successfully imparted training in improved silk weaving.

Thus, about 500 skilled persons have been generated at the grassroots level, to undertake silk weaving to attain the dual objective of achieving economic self-reliance at the village level as well as to revive the heritage of local silk industry in Sivasagar District.

In 2008-09, handloom weaving training to 330 women was imparted in operational areas of ONGC in Assam through Shanti Sadhana Ashram, Guwahati. Details are as under:

Sl. No.	Location	Number of Beneficiaries
1.	Lakwa	110
2.	Geleki	110
3.	Rudrasagar	110





10.1.3 ONGCpura Project

ONGC has taken up steps to provide Urban Amenities in Rural Areas (PURA), a vision of His Excellency, the then President of India Dr. A.P.J. Abdul Kalam. PURA envisages bridging the rural-urban gap and achieving a balance of socio-economic development. ONGC has set up the ONGCpura Trust with a seed capital of Rs.10 crore. Since its launch in the year 2005, under ONGCpura activities an NGO has been asked to undertake self employment generation activities in Tripura. 10 sewing machines were provided for training of women under ONGCpura to kick start their entrepreneurial trait.

The expenditure made under CSR in North East by ONGC is as under:

(Rs. Lakhs)

	2004-05	2005-06	2006-07	2007-08	2008-09
Assam	95.16	88.30	99.88	103.59	1548
Tripura	14.59	65.51	60.60	65.99	741

10.2 OIL INDIA LIMITED

OIL has accorded top priority towards the all-round development of the people residing in and around the Company's area of operation. With the understanding that there is a need to strike a balance between the overall objectives of achieving corporate excellence vis-à-vis the corporate responsibility towards the community. It is this twin objective of business and social commitment that has prompted OIL to embark upon massive programmes of educational, health and infrastructural development endeavors; an attempt to invest technology with a human face.

10.2.1 Various ongoing CSR initiatives

Social Survey:

OIL conducted a social survey through Dibrugarh University in the year 1983 (in its operational areas in the North-East) to evolve a CSR Strategy. Based on the recommendation of the survey, the Company introduced a



Rupantar

scheme entitled Social Welfare Programme (SWP) in 1984 and later on another scheme called Areas Development Scheme (ADS) in 1996. The SWP policy places OIL's commitment of protecting the environment, upliftment of education, Health and socio-economic Development a topmost priority. All-round development of education, rural infrastructure, primary health care, environment protection, promotion of sports/sportsperson (especially rural sports), assistance to youth and women organizations in carrying out community development activities are some of the key areas covered under SWP.

Area Development Scheme (ADS) was introduced in 1996 with the objective of supporting the various socio-cultural activities in the operational areas. The Scheme covers the construction of roads, setting up of educational institutions and primary health centres in the North East Region and other operational areas of the company. Based on the recommendations of the Social Survey, OIL has till date constructed over 100 bridges/1400 Kms of roads (PWD/Village roads) and provided financial assistance to most of the educational institutions in and around OIL's operational areas in Assam.

Health - OIL's Mobile Dispensary services:

The mobile hospital services of OIL have always been one of the most significant community welfare projects of the Company. Today, the team of doctors and paramedical staff of OIL hospital cater to the basic medical needs of the villages in and around OIL's operational areas.

In the recently carried out social audit of OIL's community welfare initiatives, the Company's Mobile Hospital services were ranked very highly by all the respondents. Based on this feedback, the Company decided to increase the number of visit as well as extend the services to new areas. From the earlier 16 – 20 visits per month, the mobile services make 40-50 visits per month. The Company has signed a MoU with St Luke's Hospital, which will extend the services to villages in Tinsukia District while the Company's own team would cater to villages in Dibrugarh District.

Education:

OIL has been providing financial assistance to all-round development of education from primary to higher education. As on date, the Company has provided financial assistance towards construction of school building, libraries, auditoriums, teachers' common room etc in over 350 institutions in the Company operational areas in Upper Assam. The Company also provided Merit Scholarships to students who excel in their 10th and 12th Board exams from schools in and around OIL's operational areas in Upper Assam. In its commitment to the all-round development of higher education, OIL has sponsored two prestigious Chairs (KD Malaviya Chair in Geosciences at Dibrugarh University & Sankardeva Chair in Literature at Guwahati University). Recently, the Company has extended a one time financial assistance of Rs 3.68 Crore to Business and Centre of Management Studies, Dibrugarh University and Rs 1.5 Crore to Assam Engineering College, Guwahati.



Mobile Dispensary



General Nursing Midwifery (GNM) training in OIL Hospital, Duliajan:

The nursing school in OIL Hospital Duliajan conducts 3 years General Nursing Midwifery (GNM) training course which is recognized by the Directorate of Medical Education, Government of Assam. The annual intake is 20 (Twenty) candidates, out of which two vacancy each is reserved for SC and ST and four for OBC candidates. Stipend is paid to the students in addition to limited hostel accommodation, uniform and protective clothing.

Financial Assistance to Socio-Cultural/ Sports/ Youth Organizations/ Mahila Samities: The Company has supported the youth and women organizations in a big way. The support is mainly in terms of financial assistance towards enabling the different organizations in carrying out their developmental activities.

OIL places a heavy accent on sports. Besides sponsoring national ranking tournaments every year, the Company recruits promising young players and gives them every opportunity to advance their sports careers. OIL has taken up schemes of holding exhaustive football camps with trained coaches to provide professional training in the rural areas of Upper Assam. OIL is also promoting rural sports by developing several village playgrounds and organizing different games in the oilfield areas.

10.2.2 Initiatives for Socio-Economic Development

Project Rupantar- The New CSR Initiative: In order to address the problem of growing unemployment and poverty, OIL has undertaken a long-term project named Rupantar (transformation) of investing in projects, which can help the unemployed youths to find alternate source of employment. Oil India Limited signed a MoU with the State Institute of Rural Development (SIRD), Assam at the Company's field headquarters in Duliajan on 8th



September, 2003. The guiding provisions of the MoU are a long term vision to generate sustainable self employment avenues for the educated unemployed youths in and around the Company's operational areas in upper Assam. The project aims to create self employment avenues and promote entrepreneurship in the region and generate sustainable sources of livelihood. In order to help the large number of unemployed youth and strengthen the rural economy, the focus is on development of agro-based industries, diversification in handloom products with special focus on eri and muga (world famous golden silk of Assam) poultry farming, pig breeding, duck rearing, fishery, sericulture, organic farming etc. Till date over 2000 SHGs have already been formed and a large number of these SHGs have received loans from banks.

The agro-based industries are not only helping in ensuring the economic independence of the people residing in and around OIL's operational areas but at the same time result in wealth creation and self-employment to a large section of the people of Upper Assam. Oil India christened this new project as "Rupantar" (an Assamese word meaning Transformation) – which is providing the rural poor and the unemployed an opportunity to become self-employed.

10.2.3. Oil India Rural Development Society (OIRDS)

Agriculture Development Programme:

OIL INDIA RURAL DEVELOPMENT SOCIETY (OIRDS) under the aegis of OIL adopts villages under registered Pathar Parichalona Samity (PPS), provides assistance and technical guidance to farmers in nearby villages of OIL's operational areas for agricultural development. Extensive in-field training on modern methods of cultivation both in Kharif & Rabi, farming equipment, high-yielding seeds, organic fertilizers etc. are introduced and distributed to farmers of the region. Introduced in the year 1991, 31 villages have been adopted under this scheme till date.

Handicraft Training & Production Centre (HTPC): Established in 1984, OIL's Handicraft Training and Production Centre, located at Duliajan imparts training to women on Handicraft, Weaving, Embroidery and Tailoring on monthly stipendiary for a 9 months period.

Till date, over 500 women have been trained, most of whom have set-up their own small production units.





10.2.4 Project ASWAN

OIL is replacing the telecommunication system of 1157 Km crude oil trunk pipeline which supplies crude oil to the four refineries in India's north eastern region with optical fibre cable (OFC). The additional capacity (bandwidth) that will be available in the OFC System, would act as an infrastructure provider for value added services in telecommunication business. OIL has committed to provide the spare bandwidth to Government of Assam's ASWAN (Assam State Wide Area Network) project which aims to connect all the district headquarters of the state.

10.2.5 Expenditure of CSR Activity in North East

Expenditure incurred by Oil India Limited on social welfare activities is as under

(Rs. Lakhs)

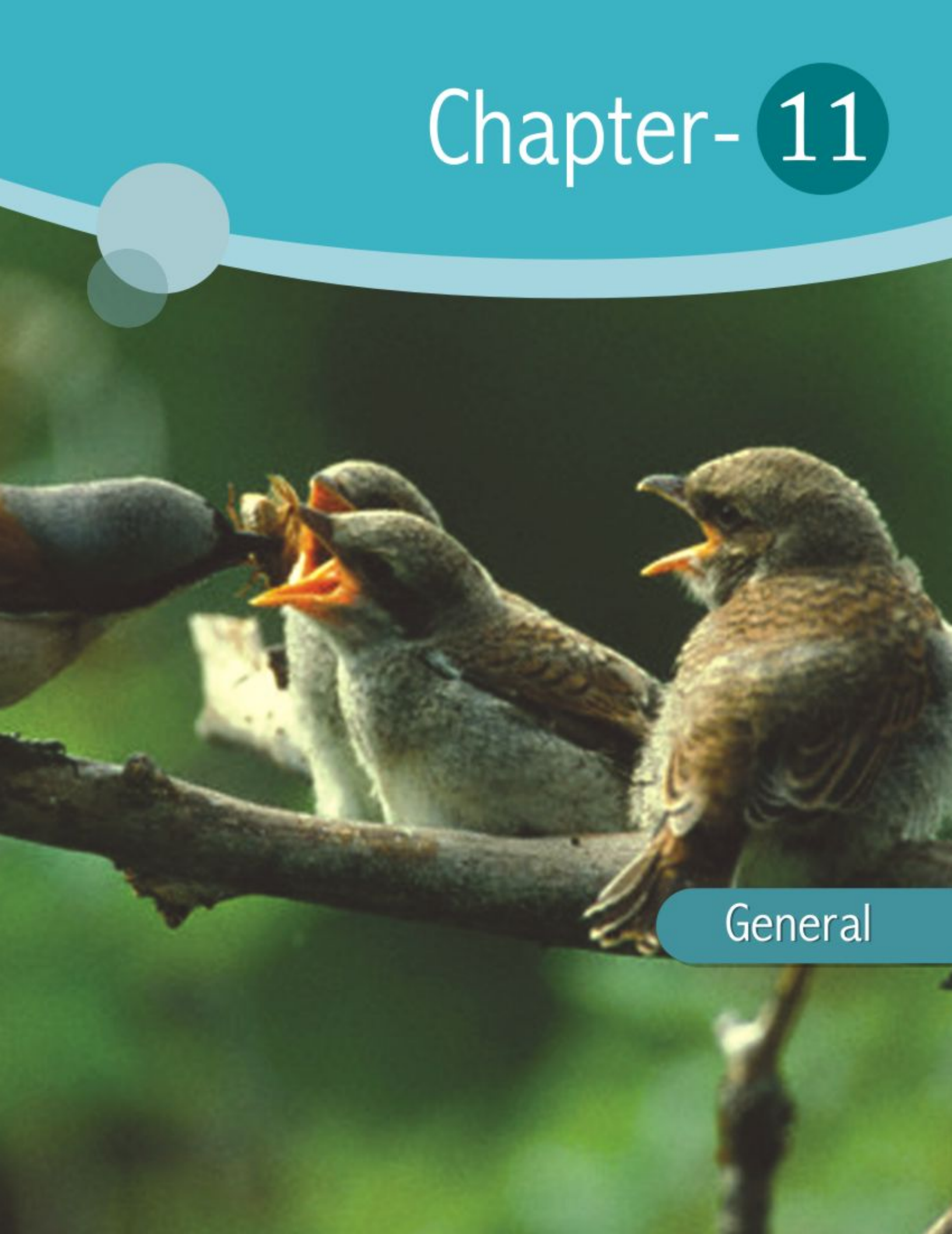
	2004-05	2005-06	2006-07	2007-08	2008-09
Assam	458.60	842.79	1,122.56	1,516.81	1,908.54
Arunachal Pradesh	7.50	24.90	73.14	125.90	27.7

10.3 Bongaigaon Refinery & Petrochemicals Ltd.

BRPL has taken up various social up-liftment schemes from time to time in its neighbourhood under the Special Component Plan and Tribal Sub-Plan. The outlay for these activities is gradually being increased over the years and the various schemes under the aforesaid Plans are given due importance. For the year 2008-09, the Company has earmarked Rs.2.00 crore for socio-economic up-liftment under the Special Component Plan and Tribal Sub- Plan in the region.



Chapter- 11



General

General

11.1 PROGRESSIVE USE OF HINDI

11.1.1 The Ministry of Petroleum & Natural Gas is implementing provisions of the Official Language Act, 1963 and Rules framed thereunder. It is also responsible for the implementation of Official Language Policy in various Offices of Public Sector Undertakings under its administrative control.

11.1.2 This Ministry has been notified under Rule 10 (4) of the Official Language (Use for Official Purpose of the Union) Rules, 1976. Three sections of the Ministry viz. Administration Section, Library and SC/ST Cell have been identified under Rule 8 (4) for doing their entire work in Hindi. The Establishment Section is also required to do entire work in Hindi in respect of group 'C' and 'D' employees. Eleven types of works have been identified under the aforesaid Rule for doing in Hindi only. Further, instructions have been issued, under the said Rules to all Officers/ employees of the Ministry who are proficient in Hindi, to prepare and submit drafts etc. of following categories of communications in Hindi language only:

(a) All communications to State Government & Union Territory Administration in Region 'A' and Region 'B' and all offices, Undertakings, etc. of Central Government situated in these Regions or to any person in these Regions.

(b) Replies to all incoming communication written in Hindi.

(c) Reply to application, appeal or representation written or signed by an employee in Hindi.

11.1.3 The Ministry has prepared a time-bound programme to impart in-services training to all its employees who do not possess working knowledge of Hindi. Under this programme, 3 employees were nominated for Prabodh class under Hindi Teaching Scheme during 2008-09. A time-bound programme for imparting Hindi Stenography/Hindi typing training to Stenographers and Lower Division Clerks (LDCs) of the Ministry has also been prepared, under which 1 Stenographers and 2 LDCs were nominated for training.

11.1.4 The first working day of every month is observed as Hindi Divas in the Ministry. All the Officers/ employees are expected to undertake official work only in Hindi on that day. Similarly, the PSUs under the Ministry have also been advised to observe Hindi Divas every month in their offices.

11.1.5 The 'Hindi Fortnight' was celebrated in the Ministry during 14-28 September, 2008 and a number of competitions viz., Hindi essay writing competition, Hindi noting/drafting competition etc. were organized. 33 participants were given cash awards.

11.1.6 On the occasion of Hindi Divas/ Week/ Fortnight/ Month, the message from Hon'ble Minister for P&NG and Hon'ble Cabinet Secretary was circulated among all the Officers of the Ministry and all of the PSUs.

11.1.7 Two Hindi workshops were organised during the year in which 25 Dealing Assistants participated. These workshops enabled them to increase their work in Hindi by 10%.

11.1.8 The Parliamentary Committee on official Language committee inspected the Ministry and 32 offices of PSUs under the administrative control of the Ministry scattered throughout the country. 20 PSU offices were entrusted with the coordination work also. The location in-charge and offices of official language actively participated in the inspections. All the PSUs were made aware of findings of the Committee and orders were issued for removing short comings.

11.1.9 All computers were provided with Hindi software during the year.

11.1.10 On the recommendation of the Hindi Advisory Committee a Petroleum Shabdawali has been prepared which has been got authenticated by the nodal office Scientific & Technical Glossary Commission.

11.1.11 In order to undertake the Official Language implementation work effectively, an Official Language Implementation Committee (OLIC) is functioning in the Ministry under the chairmanship of Joint Secretary (Admn.). All the Public Sector Undertakings under the Ministry are members of the Committee. This Committee reviews the overall progress of implementation of the Official Language Policy in the Ministry and the Public Sector Undertakings, as also the progress of implementation of the Annual Programme circulated by Department of Official Language.



11.1.12 Quarterly progress reports on progressive use of Hindi are sent to Department of Official Language, and Quarterly progress reports received from Public Sector Undertakings are reviewed in the Ministry.

11.1.13 So far, 347 offices of the Public Sector Undertakings, in which 80 percent staff acquired working knowledge of Hindi, have been notified in pursuance of Rule 10 (4) of the Official Language (Use for Official Purpose of the Union) Rules, 1976. The Public Sector Undertakings have been advised to conduct survey of their offices with a view to ascertain the number and percentage of employees who have acquired working knowledge of Hindi.

11.1.14 The Annual Programme for the financial year 2008-09 received from the Department of Official Language was circulated to all officers of the Ministry and Chief Executives of PSUs/Offices. Various Sections in the Ministry and all PSUs were instructed to ensure its proper implementation.

11.1.15 Books, magazine and newspapers published in Hindi are available in Ministry's library. Help books, such as Administrative and Technical Terminology in Hindi, English-Hindi Dictionaries etc. have been provided to various Sections and Desks.

11.1.16 With a view to assess position of compliance of Official Language Rules and use of Hindi in the various offices of PSUs in different parts of the country, an inspection Team has been constituted under the Chairmanship of a Joint Secretary who is also the Chairman of OLIC of the Ministry. 13 offices in region "A", "B" and "C" have been inspected in 2008-09.



The Eco-Park at Indian Oil's Barauni Refinery

11.2 PUBLIC GRIEVANCE CELL (PG CELL)

In accordance with the guidelines of the Cabinet Secretariat, Government of India, the Public Grievance Cell has been functioning in the Ministry of Petroleum & Natural Gas. This Cell has been attending to the Grievances of members of the public against the Public Sector Oil Companies and other departments under the administrative control of this Ministry. All possible efforts are being taken to ensure the regular monitoring of the public grievances received through Department of Public Grievances. Department of Administrative Reforms and Public Grievances and other Departments of the Government as well as the members of the public. A systematic mechanism has been evolved so as to ensure speedy and expeditious redressal of the public grievances. This Public Grievance Cell is functioning under the charge of Director of Public Grievances. Ministry of Petroleum & Natural Gas. In addition, a new online system called "Centralized Public Grievance Redress and Monitoring System" (CPGRAMS) has been introduced in the month of June, 2008. With the aid of this online system, public grievances from the public and others are received speedily and is convenient for the common man..

During the year 2008-09, the Public Grievance Cell of this Ministry received 2,141 grievances out of which 1,943 grievances have been redressed. The pendency of the grievances as on 31st March, 2009 was 198 grievances only.

11.3 INFORMATION FACILITATION COUNTER

The Information Facilitation Counter of the Ministry of Petroleum & Natural Gas was set up on 30th June, 1997. Its main responsibilities are to ensure transparency in the working of this Ministry and providing relevant information on all aspects of Oil Industry to the members of public. The Citizens' Charter of this Ministry is the guiding force which aims at educating the common man about the

consumers' entitlements to public services, including the standards of performance, quality of products, mode of access to information, etc.

The type of information provided to the public has been ranging from the supply of Basic Petroleum Statistics to the provision of information on various locations in the country rostered under various Marketing Plans for Retail Outlets, LPG Distributorships and Kerosene Agencies. Dealer Selection Guidelines (both in Hindi and English) are provided to the members of the Public to enlighten them about the eligibility criteria.

During the year 2008-09, about 3500 members of the public have benefitted from the Information Facilitation Counter.

11.4 e-GOVERNANCE INITIATIVES

The terms governance and good governance are increasingly being used in development literature. Governance describes the process of decision-making and the process by which decisions are implemented (or not implemented). Good governance accomplishes this in a manner essentially free of abuse and corruption, and with due regard for the rule of law. These days with ICT initiatives, the concept of good governance has assumed a whole new dimension.

Taking advantage of the latest ICT enabled tools, Ministry of Petroleum & Natural Gas with the support of National Informatics Centre (NIC) has taken sincere initiatives towards adoption of best practices and integrated delivery of useful information.

- A high speed Local Area Network (LAN) with around 130 nodes with OFC backbone supported by L2 & L3 manageable switches is operational in the Ministry. The LAN along with internet facility has also been extended to officials of E&S division situated in Paryawaran Bhawan. Cyber security measures have been implemented for the existing LAN.
- Website (http://petroleum.nic.in) of the Ministry is operational and time to time updated with new contents provided by the concerned divisions of the Ministry. This website provides latest organizational changes, new policies, annual reports, Minister's speeches, upcoming events, monthly statistics and links to other oil sector related websites.
- An IntraNet Portal "IntraPetro" with the primary goal for timely circulation of notifications, office orders, circulars, announcements and online availability of various IT enabled integrated services. This portal works as a gateway for many useful applications like Notice Board, Pay-slip, Income Tax Calculation Sheet, Complaint Monitoring. Various online enterable, downloadable and printable forms pertaining to various divisions of the Ministry are being provided through this Portal.
- A web based MIS Application "Overseas Projects Information System (OPIS)" is operational to facilitate the higher official of the Ministry and PSUs in monitoring physical and financial progress of the project taken up by Oil Sector PSUs.
- e-Governance applications like "Telephone Bills Payment & Monitoring System", "O&M Pendency Monitoring System", "File/Receipt Movement & Tracking System (OPA)", "Composite Payroll System (CompDDO)", "Personnel Information System", "Notice/Bulletin Board Services", "RTI Request & Appeal Management Information System" are functional in the Ministry to facilitate various sections of the Ministry.

11.5 OUTSTANDING AUDIT OBJECTIONS

Audit had shown a total number of 48 Inspection Reports/Paras as outstanding against this Ministry as on 31.3.2009. Attempts have been made to settle the outstanding Audit observations expeditiously.

11.6 C & AG'S REPORT

A summary of important Audit observations made available by the office of C&AG for the year 2008-09 are at Appendix VIII.

11.7 RECENT CHANGES IN PRICING AND TAXATION OF PETROLEUM PRODUCTS

International prices of crude oil and petroleum products have remained volatile in the recent past. The Indian basket of crude oil, which averaged $79.25/bbl during 2007-08, had gone up to an unprecedented level of $142.04 per barrel on 3rd July, 2008 before declining sharply due to fall in the demand on account of economic recession in major oil consuming countries in the world. The Indian basket of crude oil, which averaged $129.72 per barrel in June'2008 came down to $46.02 per barrel in March'2009. However, the average price of Indian Basket of crude oil for 2008-09 was $83.57 per barrel.

The benefit of softening of the international oil prices has been partly offset by the depreciation of the rupee. The rupee has depreciated by around 28%, from Rs. 40.03 per US$ in April 2008 to the current level of Rs. 51.23 per US$ in March 2009.

The trend in the international prices of Indian basket of crude oil and sensitive petroleum products for March 2002, 2002-03, 2003-04, 2005-06, 2006-07,2007-08 and 2008-09 is depicted below:



TRENDS IN INTERNATIONAL OIL PRICES & DOMESTIC PRICES

Period	Crude Oil (Indian Basket)	Petrol	Diesel (0.50%Sulphur)	Kerosene	LPG
	($/Bbl.)	($/Bbl.)	($/Bbl.)	($/Bbl.)	($/MT)
Mar-02	23.31	26.43	23.27	23.65	194.00
2002-03	26.65	30.04	28.86	29.24	279.67
2003-04	27.97	35.01	30.39	31.11	277.02
2004-05	39.21	48.97	46.91	49.51	368.57
2005-06	55.72	64.51	64.70	69.43	481.04
2006-07	62.46	72.62	74.12	77.03	499.67
2007-08	79.25	90.76	92.91	94.33	683.49
2008-09	83.57	89.42	101.75	104.37	688.00

Notes: - The composition of Indian Basket of Crude represents Average of Oman & Dubai for sour grades and Brent (Dated) for sweet grade in the ratio of 62.3:37.7 for 2008-09, 61.4:38.6 for 2007-08, 59.8:40.2 for the year 2006-07, 58:42 for the year 2005-06 and 57:43 for the prior period. - Price of kerosene is for Arab Gulf Market

- LPG Price is Saudi Aramco CP based on 60:40 butane/propane ratio
- Price of Petrol is 92 RON unleaded for Singapore market.
- Price of Diesel is for 0.5% sulphur for Arab Gulf Market

11.7.1. UNDER RECOVERIES OF PSU OIL MARKETING COMPANIES

India imports over 75% of its crude oil requirement to meet the domestic demand for petroleum products. With the cost of crude oil constituting a substantial part of cost of the final petroleum products, international oil prices have a decisive role in domestic pricing. However in India, the final energy consumers have not borne the brunt of rising crude oil prices mainly because of the cushioning effect of government policies.

The Public Sector Oil Marketing Companies (OMCs) viz. IOCL, BPCL and HPCL pay trade parity price to refineries when they buy products like Petrol and Diesel and import parity price to refineries for PDS Kerosene and Domestic LPG. Accordingly, they ought to get Retail Selling Prices (RSPs) based on this cost. However, actual RSPs are controlled by the Government. The difference between the required prices based on trade parity/import parity and actual RSP realized (excluding taxes, dealer commission) represents the under-recoveries of the OMCs.

As passing on the entire impact of the steep increase in the international oil prices to the consumers would have resulted in sharp increase in the domestic prices to unaffordable levels, besides pushing up inflation and affecting the growth momentum of the country, the Government took certain measures in favour of common man, by ensuring that the predominant part of the burden of

under-recoveries was shared by the Government through issuance of Oil Bonds and by the Public Sector Upstream Oil Companies. As a result, the consumers' interests were protected and only minimal price increases were effected in respect of the sensitive petroleum products.

In June 2008, when the under-recoveries of the OMCs were estimated at Rs. 2,45,305 crore for 2008-09 due to steep increase in the international oil prices, the Government, approved the following measures on 4.6.2008:

a) Increase in the retail selling prices of Petrol by Rs. 5/- per litre and Domestic LPG by Rs. 50/- per 14.2 kg. Domestic LPG cylinder;

b) Reduction in the Customs Duty on Crude Oil, Petrol, Diesel and other petroleum products by 5%;

c) Reduction in the Excise Duty on unbranded Petrol and unbranded Diesel by Rs. 1/- per lite.

In view of the decline in the international oil prices, the Government reduced the retail selling prices of the sensitive petroleum products on two occasions as indicated below (at Delhi), with corresponding reductions in the rest of the country :

- Effective from 6.12.2008 – Petrol by Rs. 5/- per litre and Diesel by Rs. 2/- per litre; and
- Effective from 29.1.2009 – Petrol by Rs. 5/- per litre, Diesel by Rs. 2/- per litre and Domestic LPG by Rs. 25/- per cylinder.

The price reductions have had a positive impact on softening the inflation rate in the country.

During the year 2008-09, the OMCs incurred under-recoveries of Rs.1,03,292 crore on the sale of sensitive petroleum products. Oil Bonds amounting to Rs.71,292 crore, along with upstream contribution of Rs.32,000 crore, fully compensated the under-recoveries. However, the Oil Bonds amounting to Rs.10,306 crore (out of the total Oil Bonds of Rs.71,292 crore) are yet to be issued.





11.7.2. REDUCTION/CHANGES IN CENTRAL TAXES

LPG as "Declared Goods"

LPG (Domestic) became "Declared Goods" under CST Act and the maximum Sales Tax/VAT rate of 4% effective 19.4.06 across all States/Union Territories. This reduced the rates of Sales Tax levied by States to 4% as against VAT rate of 12.5% levied by most of the States.

The Government has taken a number of measures to rationalize taxes and duties on Petrol and Diesel to keep the consumer prices of these sensitive petroleum products within reasonable limits. The details of rationalization in duties on sensitive petroleum products since April 2002 are given below:

Changes in Customs Duty rates with effect from 1st April, 2002

(Percentage)

Product	1st Apr. 2002	19th Aug. 2004	1st Mar. 2005	14th Jun 2006	5th Jun 2008
Crude	10	10	5	5	Nil
Motor Spirit	20	15	10	7.50	2.50
Diesel	20	15	10	7.50	2.50
Kerosene (PDS)	10	5	Nil	Nil	Nil
LPG	10	5	Nil	Nil	Nil

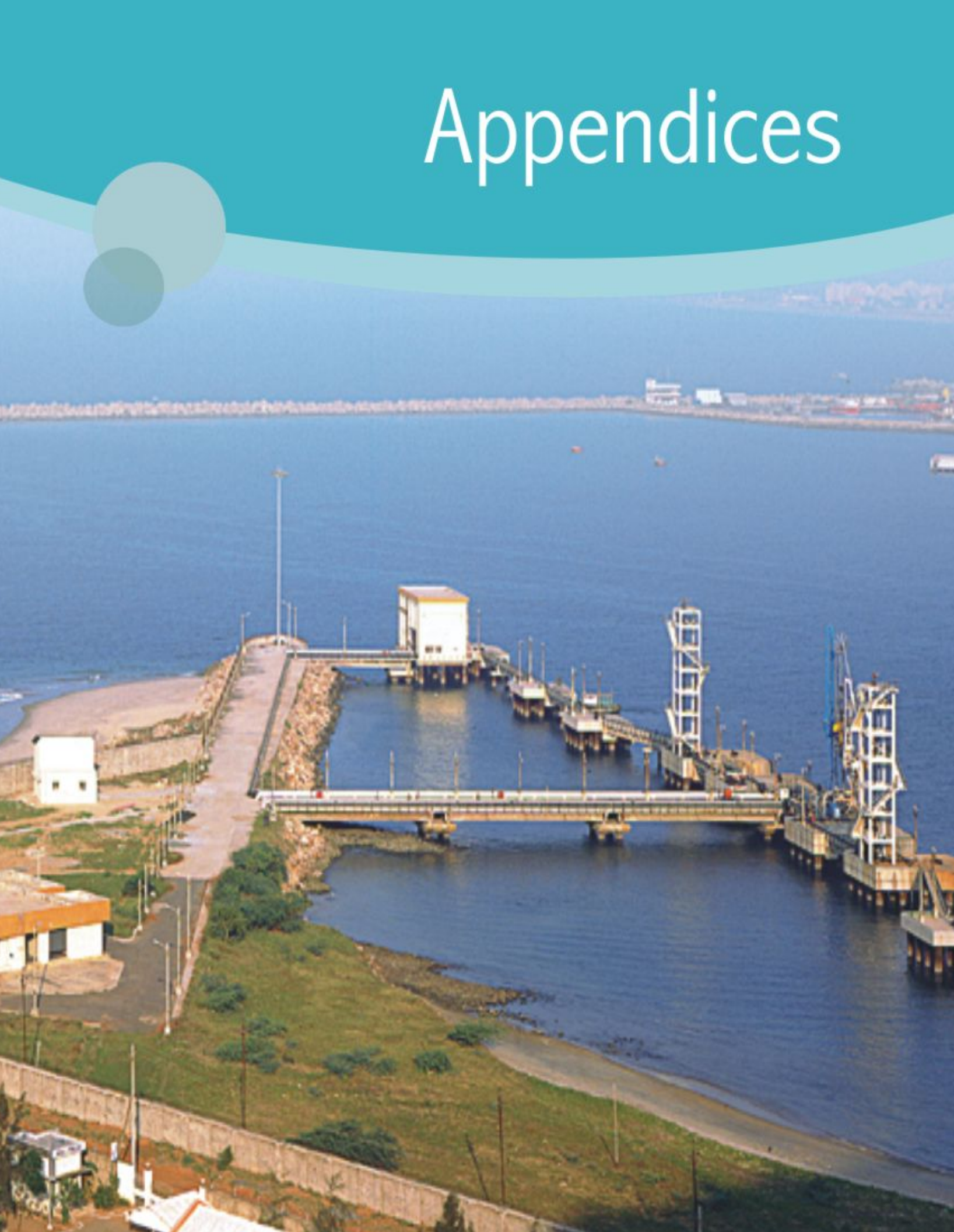
Changes in Excise Duty Rates with effect from 1st April'2002

Product	AS ON 1/4/02	AS ON 4/6/02	AS ON 1/3/03	AS ON 16/6/04	AS ON 19/08/04	AS ON 1/3/05	AS ON 1/3/06	AS ON 1/3/07	AS ON 1/3/08	AS ON 5/6/08
Crude (cess) (Rupees/MT)	1800	1800	1800	1800	1800	1800	2500	2500	2500	2500
Petrol - Advalorem Specific	32.00% Rs 7/Ltr	30.00% Rs. 7/Ltr	30.00% Rs. 7.50/Ltr	26.00% Rs 7.50/Ltr	23.00% Rs 7.50/ltr	8.00% Rs. 13/ltr	8.00% Rs. 13/ltr	6.00% Rs. 13/ltr	Nil Rs. 14.35/ltr	Nil Rs. 13.35/ltr
(Rs/Ltr) at Delhi	**10.53**	**10.82**	**11.81**	**11.97**	**11.90**	**14.59**	**14.59**	**14.66**	**14.78**	**13.75**
HSD - Advalorem Specific	16.00% Re 1/Ltr	14.00% Re 1/Ltr	14.00% Rs 1.50/Ltr	11.00% Rs 1.50/Ltr	8.00% Rs 1.50/ltr	8.00% Rs 3.25/Ltr	8.00% Rs 3.25/Ltr	6.00% Rs 3.25/Ltr	Nil Rs 4.60/Ltr	Nil Rs 3.60/Ltr
(Rs/Ltr) at Delhi	**2.85**	**2.80**	**3.59**	**3.32**	**3.01**	**4.80**	**4.80**	**4.69**	**4.74**	**3.71**
Kerosene (PDS)	16.00%	16.00%	16.00%	16.00%	12.00%	NIL	NIL	NIL	NIL	NIL
LPG (Dom.)	16.00%	16.00%	16.00%	8.00%	8.00%	NIL	NIL	NIL	NIL	NIL

Note: - With effect from 1/3/2003 NCCD at the rate of Rs.50/per MT imposed on crude oil. - With effect from 09.07.04 - An additional levy of Education Cess @ 2% has been imposed. Revised to 3 % effective 01/03/2007



Appendices



Appendix - I

WORK ALLOCATED TO MINISTRY OF PETROLEUM AND NATURAL GAS

1 Exploration for, and exploitation of petroleum resources, including natural gas and Coal Bed Methane.

2 Production, supply, distribution, marketing and pricing of petroleum, including natural gas, Coal Bed Methane and petroleum products.

3 Oil refineries including Lube Plants.

4 Additives for petroleum and petroleum products.

5 Lube Blending and greases.

6 Planning, development and control, of and assistance to all industries dealt with by the Ministry.

7 All attached or subordinate offices or other organizations concerned with any of the subjects specified in the list.

8 Planning, development and regulation of oilfield services.

9 Public sector projects falling under the subject included in this list. Engineers India Limited and IBP Company, together with its subsidiaries, except such projects as are specifically allotted to any other Ministry/Department.

10 The Oil Fields (Regulation and Development) Act, 1948 (53 of 1948).

11 The Oil and Natural Gas Commission Act, 1959 (43 of 1959).

12 The Petroleum & Minerals Pipelines (Acquisition of right of User in Land) Act, 1962 (50 of 1962).

13 The Esso (Acquisition of Undertakings in India) Act, 1974 (4 of 1974).

14 The Oil Industry (Development) Act, 1974 (47 of 1974)

15 The Burmah-Shell (Acquisition of Undertakings in India) Act, 1976 (2 of 1976).

16 The Caltex (Acquisition of Shares of Caltex Oil Refining (India) Limited and of the Undertakings in India of Caltex (India) Limited Act, 1977.

17 Administration of the Petroleum Act, 1934 (30 of 1934) and the rules made thereunder.

18. Administration of Balmer Lawrie Investments Limited and Balmer Lawrie and Company Limited.

19. Petroleum & Natural Gas Regulatory Board Act, 2006.

Appendix - II

List of public sector undertakings and other organisations under the administrative Control of the Ministry of Petroleum & Natural Gas

I. Oil Companies in which Government of India has a shareholding (31.03.2009)

1.	Oil & Natural Gas Corporation Limited	74.14%
2.	Indian Oil Corporation Limited	78.92%
3.	Hindustan Petroleum Corporation Limited	51.11%
4.	Bharat Petroleum Corporation Limited	54.93%
5.	GAIL (India) Limited	57.34%
6.	Engineers India Limited	90.40%
7.	Oil India Limited	98.13%
8.	Biecco Lawrie & Co. Limited	57.37%
9.	Balmer Lawrie Investments Limited	59.67%

II. Subsidiaries and Other Companies

1.	ONGC Videsh Limited	-	wholly owned by ONGC
2.	Mangalore Refinery & Petrochemicals Limited	-	subsidiary of ONGC
3.	Chennai Petroleum Corporation Limited	-	subsidiary of IOC
4.	Numaligarh Refineries Limited	-	subsidiary of BPCL
5.	Certification Engineers International Limited	-	wholly owned by EIL
6.	EIL Asia Pacific Sdn BHD	-	wholly owned by EIL

III. Other Organisations

1. Oil Industry Development Board
2. Petroleum Conservation Research Association
3. Oil Industry Safety Directorate
4. Centre for High Technology
5. Petroleum India International
6. Directorate General of Hydrocarbons



Appendix - III

PRODUCTION OF CRUDE OIL AND NATURAL GAS

ITEM	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
1	2	3	4	5	6	7	8
1. CRUDE OIL PRODUCTION ++ ('000' Tonnes)							
(a) Onshore:							
Gujarat	6042	6131	6189	6251	6213	6177	5945
Assam/Nagaland	4660	4592	4701	4475	4400	4357	4674
Arunachal Pradesh	74	77	83	103	108	102	102
Tamil Nadu	395	375	391	385	353	298	265
Andhra Pradesh	300	281	226	216	252	279	289
Total (a)	11471	11456	11590	11430	11326	11213	11275
of which							
OIL	2951	3002	3196	3234	3107	3100	3468
ONGC	8445	8380	8320	8095	8058	7921	7563
JVC/Private	75	74	74	101	161	192	243
(b) Offshore:							
ONGC	17560	17677	18165	16309	17993	18020	17800
JVC/Private	4013	4240	4226	4451	4669	4885	4431
Total (b)	**21573**	**21917**	**22391**	**20760**	**22662**	**22905**	**22231**
Grand Total (a+b)	**33044**	**33373**	**33981**	**32190**	**33988**	**34118**	**33506**
2. NATURAL GAS PRODUCTION (Million Cubic Metres)							
(a) Onshore:							
Gujarat	3531	3517	3710	3831	3294	2931	2605
Assam/Nagaland	2047	2204	2249	2408	2526	2598	2573
Arunachal Pradesh	36	44	40	48	35	30	30
Tripura	446	508	497	480	520	534	553
West Bengal (CBM) $	-	-	-	-	-	15	20
Tamil Nadu	466	605	678	906	1130	1169	1243
Andhra Pradesh	2038	1927	1707	1663	1525	1567	1524
Rajasthan	162	168	213	242	242	255	216
Total (a)	**8726**	**8973**	**9094**	**9578**	**9272**	**9099**	**8764**
of which							
OIL	1744	1887	2010	2270	2265	2340	2268
ONGC	5871	5779	5658	5751	5876	5877	5753
JVC/Private	1111	1307	1426	1557	1131	867	742
(b) Offshore:							
ONGC (Mumbai High)	18367	17805	17313	16823	16567	16457	16737
JVC/Private	4296	5184	5356	5801	5908	6861	7348
Total (b)	**22663**	**22989**	**22669**	**22624**	**22475**	**23318**	**24085**
Grand Total (a+b)	**31389**	**31962**	**31763**	**32202**	**31747**	**32417**	**32849**

* Provisional

++ Includes condensates

Note: Exploration activities were suspended by ONGC in Nagaland w.e.f. 5th May 1994.

Source : ONGC, OIL and DGH.
$ Coal Bed Methane production.

Appendix - IV

REFINERY CRUDE THROUGHPUT

('000' Tonne)

Refinery / Location	Refinery Crude Throughput						
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09*
1	2	3	4	5	6	7	8
(a) PUBLIC SECTOR	**82015**	**89495**	**93107**	**96946**	**108172**	**112541**	**112223**
IOC, Guwahati, Assam	458	891	1002	864	839	920	1076
IOC, Barauni, Bihar	2994	4304	5082	5553	5469	5634	5940
IOC, Koyali, Gujarat	12434	12758	11698	11543	12953	13714	13852
IOC, Haldia, West Bengal	4513	4518	5418	5502	5836	5715	6042
IOC, Mathura, Uttar Pradesh	8207	8248	6387	7938	8883	8033	8601
IOC, Digboi, Assam	581	602	651	615	586	564	623
IOC, Panipat, Haryana	6101	6338	6390	6507	9435	12821	13070
Total IOC	**35288**	**37659**	**36628**	**38522**	**44001**	**47401**	**49204**
BPCL, Mumbai, Maharashtra	8711	8757	9138	10298	12030	12746	12262
BPCL, Kochi, Kerala	7580	7854	7924	6939	7742	8134	7739
Total BPCL	**16291**	**16611**	**17062**	**17237**	**19772**	**20880**	**20001**
HPCL, Mumbai, Maharashtra	6078	6108	6118	6249	7419	7409	6652
HPCL, Visakh, Andhra Pradesh	6851	7591	8121	7980	9377	9409	9155
Total HPCL	**12929**	**13699**	**14239**	**14229**	**16796**	**16818**	**15807**
CPCL, Manali, Tamil Nadu	6176	6387	8181	9680	9784	9802	9718
CPCL, Narimanam, Tamil Nadu	643	653	742	682	618	464	418
Total CPCL	**6819**	**7040**	**8923**	**10362**	**10402**	**10266**	**10136**
BRPL, Bongaigaon, Assam	1463	2126	2311	2356	2067	2020	2163
NRL, Numaligarh, Assam	1879	2200	2042	2133	2504	2568	2251
MRPL, Mangalore, Karnataka	7253	10069	11809	12014	12536	12525	12577
ONGC, Tatipaka, Andhra Pradesh	93	91	93	93	94	63	84
(b) PRIVATE SECTOR	**30544**	**32345**	**34309**	**33163**	**38379**	**43562**	**48549**
RPL, Jamnagar, Gujarat	30544	32345	34309	33163	36616	36931	35636
ESSAR Oil Ltd. Vadinar					1763	6631	12913
Total (a+b)	**112559**	**121840**	**127416**	**130109**	**146551**	**156103**	**160772**

* Provisional

Note: 1) CPCL and BRPL are subsidiary of IOC.
2) KRL and NRL are subsidiary of BPCL.
3) MRPL is subsidiary of ONGC.



Appendix - V

PRODUCTION OF PETROLEUM PRODUCTS

('000' Tonne)

PRODUCTS	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09*
1	2	3	4	5	6	7	8
(a) From Crude Oil							
1. Light Distillates of which	**28619**	**31971**	**32865**	**32427**	**38104**	**40111**	**40222**
LPG	4903	5348	5570	5525	6315	6732	6996
Mogas	10361	10999	11057	10502	12539	14167	16020
Naphtha	9650	11317	14100	14509	16660	16440	14826
Others[LD]	3705	4307	2138	1891	2590	2772	2380
2. Middle Distillates of which	**55937**	**60018**	**62509**	**64432**	**71225**	**76649**	**80309**
Kerosene	10028	10187	9298	9078	8491	7794	8223
ATF/RTF/Jet A-1	3053	4289	5201	6196	7805	9107	8071
HSD	40207	43316	45903	47572	53465	58361	62889
LDO	2079	1659	1546	923	803	671	606
Others[MD]	570	567	561	663	661	716	520
3. Heavy Ends of which	**19584**	**21474**	**23205**	**22891**	**25931**	**28170**	**29985**
Furnace Oil	7529	8737	10560	10320	12325	12638	14749
LSHS/HHS/RFO	4638	4635	4410	3985	3372	3166	2935
Lube Oils	684	666	646	677	825	881	874
Bitumen	2941	3397	3349	3576	3891	4507	4713
Petroleum Coke	2659	2743	3162	3182	3779	4129	4241
Paraffin Wax	42	53	64	63	63	64	69
Other Waxes	3	0	4	3	5	7	5
Others[HE]	1088	1243	1010	1085	1671	2778	2399
Total (1+2+3)	**104140**	**113463**	**118579**	**119750**	**135260**	**144930**	**150516**
(b) From Natural Gas							
LPG	2370	2320	2240	2185	2093	2060	2162

*: Provisional

LD: Includes Propylene, C-3, Propane, Hexane, Special Boiling Point Spirit, Benzene, Toluene, Petroleum Hydro Carbon Solvent, Natural Heptane, Methyl Tertiary Butyl Ether, Poly Isobutine, Poly Butadine Feed Stock and Methyl Ethyl Keetone Feed Stock.

MD: Includes Mineral Turpentine Oil, JP-5, Linear Alkyl Benzene Feed Stock, Aromex, Jute Batching Oil, Solvent 1425, Low Sulphur Heavy Fuel HSD, Desulphurisation Hydrocracker Bottom and Special Kerosene.

HE: Includes Carbon Black Feed Stock, Sulphur, Solar Oil, Light Aluminium Rolling Oil and Extracts.

Appendix - VI

SALES/CONSUMPTION OF PETROLEUM PRODUCTS

	Products	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09*
1	**Light Distillates of which**	**31755**	**34335**	**35204**	**33662**	**37076**	**38556**	**39908**
	LPG	8351	9305	10245	10456	10849	12165	12193
	Mogas	7570	7897	8251	8647	9285	10332	11257
	Naphtha	11929	11868	13993	12194	13886	13294	13875
	NGL	32	0	0	0	0	0	0
	Others	3873	5265	2715	2365	3055	2766	2583
2	**Middle Distillates of which**	**52065**	**52023**	**53906**	**54423**	**57595**	**62823**	**66364**
	SKO	10405	10230	9395	9541	9505	9365	9303
	ATF	2269	2484	2811	3296	3983	4543	4455
	HSDO	36644	37074	39651	40191	42896	47669	51668
	LDO	2063	1619	1476	883	720	667	551
	Others	684	616	573	512	491	579	387
3	**Heavy Ends of which**	**20306**	**21393**	**22524**	**25129**	**26078**	**27567**	**27128**
	Furnace Oil @	8027	8312	9136	8921	9257	9469	9267
	LSHS/HHS@	4711	4633	4404	3907	3361	3248	3170
	Lubes/Greases	1250	1427	1347	2081	1900	2290	2149
	Bitumen	2986	3373	3337	3508	3833	4506	4705
	Petroleum Coke	2563	2877	3129	4928	5441	5950	5870
	Paraffin Wax	41	41	60	268	303	80	199
	Other Waxes	13	20	20	105	64	65	3
	Others	715	710	1090	1411	1919	1959	1765
TOTAL		**104126**	**107751**	**111634**	**113213**	**120749**	**128946**	**133400**
Refinery Fuel		7650	8240	8537	9141	10920	11751	11912
Grand Total		**111776**	**115991**	**120171**	**122354**	**131669**	**140697**	**145312**

* Provisional

Note : 1994-95 onwards total & product-wise consumption includes private sales also.

@ : LSHS sales by pvt. parties included in FO. Break-up to these two products is not available.



Appendices - VII

IMPORTS / EXPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS

(Qty :'000' Tonne, Value : Rs.Crore)

ITEM	2001-02		2002-03		2003-04		2004-05	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	2	3	4	5	6	7	8	9
				GROSS IMPORTS				
A. Crude Oil	**78706**	**60397**	**81989**	**76195**	**90434**	**83528**	**95861**	**117003**
B. Petroleum Products								
I.Light Distillates	**3967**	**4287**	**3857**	**5418**	**4529**	**6034**	**5391**	**9973**
1. LPG	659	810	1073	1867	1708	2558	2334	4413
2. MS	-	-	-	-	-	-	233	501
3. Naphtha	3308	3477	2784	3551	2371	2884	2214	4029
4. Propane/Butane/MTBE	-	-	-	-	450	592	610	1030
II.Middle Distillates	**424**	**425**	**806**	**934**	**906**	**1015**	**1027**	**2047**
1.ATF	2	9	2	7	2	9	3	14
2.SKO	391	388	698	808	804	890	210	429
3.HSD	31	28	106	119	100	116	814	1604
III.Heavy Ends	**2618**	**2537**	**2565**	**2495**	**2566**	**2674**	**2410**	**2868**
1.FO / LSHS	1425	1030	1256	1084	953	810	741	692
2.Lubes / OthersHEI	1193	1507	1309	1411	1613	1864	1669	2176
Total(B)	**7009**	**7249**	**7228**	**8847**	**8001**	**9723**	**8828**	**14888**
Grand Total(A+B)	**85715**	**67646**	**89217**	**85042**	**98435**	**93251**	**104689**	**131891**
Petroleum Products				**EXPORTS**				
I.Light Distillates	**5008**	**4927**	**4493**	**5475**	**5448**	**7100**	**6288**	**11512**
1.LPG	-	-	-	-	-	-	145	306
2.MS	2406	2570	2336	3011	2979	4021	2897	5625
3.Naphtha	2515	2234	2067	2325	2176	2653	2926	5030
4.TAME	87	123	90	139	83	117	0	0
5.Reformate/Benzene/ Hexane	-	-	-	-	210	309	320	551
II.Middle Distillates	**3084**	**2747**	**3875**	**4337**	**7841**	**8713**	**9973**	**16690**
1.SKO	-	-	-	-	-	-	207	460
2.HSD/LDO	2890	2571	3178	3547	6181	6763	7286	11782
3.ATF	194	176	697	790	1660	1950	2480	4448
III.Heavy Ends	**1973**	**545**	**1921**	**1056**	**1331**	**968**	**1950**	**1726**
1.FO/LSHS	482	255	1120	902	1310	928	1792	1517
2.VGO/Lubes	272	211	101	109	17	36	102	137
3.Coke/Bitumen/CBFS/ White Oil/Paraffin/HEE	1219	79	700	45	4	4	56	72
4. Others	-	-	-	-	-	-	-	-
Total	**10065**	**8219**	**10289**	**10868**	**14620**	**16781**	**18211**	**29928**
				NET IMPORTS				
A. Crude Oil	**78706**	**60397**	**81989**	**76195**	**90434**	**83528**	**95861**	**117003**
B. POL. Products	**-3056**	**-970**	**-3061**	**-2021**	**-6619**	**-7058**	**-9383**	**-15040**
Grand Total	**75650**	**59427**	**78928**	**74174**	**83815**	**76470**	**86478**	**101963**

TAME: Tertiary Amyl Methyl Ether.

Source: Petroleum Planning & Analysis Cell, New Delhi.

HEI: Includes Coke, Bitumen, Lube Oil Base Stock, Low Sulphur Waxy Residue, Carbon Black Feed Stock, Rubber Processing Oil, Waxes and Petroleum Jelly.

HEE: Includes Benzene, Hexane, Aromex, Mixed Xylene & others (DGCI&S).

Cont...

(Qty :'000' Tonne, Value : Rs.Crore)

ITEM	2005-06		2006-07		2007-08		2008-09*	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
	10	11	12	13	14	15	16	17
			GROSS IMPORTS					
A. Crude Oil	**99409**	**171702**	**111502**	**219029**	**121672**	**272699**	**128155**	**341887**
B. Petroleum Products								
I.Light Distillates	**6181**	**14855**	**8005**	**21369**	**9485**	**29221**	**7950**	**27470**
1. LPG	2883	7042	2278	5766	2832	8700	2347	7832
2. MS	486	1286	421	1326	328	1137	397	1530
3. Naphtha	2331	5400	5306	14277	5983	18470	4988	17349
4. Propane/Butane/MTBE	481	1127	0	0	342	914	218	759
II.Middle Distillates	**1846**	**4532**	**2392**	**6938**	**5443**	**17556**	**4186**	**16147**
1.ATF	2	12	2	17	3	20	3	32
2.SKO	1044	2617	1423	4250	2489	8324	1449	6459
3.HSD	800	1903	967	2671	2951	9212	2734	9656
III.Heavy Ends	**5413**	**8585**	**7263**	**12853**	**7533**	**14223**	**6149**	**17276**
1.FO / LSHS	1434	2099	2983	5174	1187	2211	1201	3234
2.Lubes / OthersHEI	3979	6486	4280	7679	6346	12012	4948	14042
Total(B)	**13440**	**27972**	**17660**	**41160**	**22461**	**61000**	**18285**	**60893**
Grand Total(A+B)	**112849**	**199674**	**129162**	**260189**	**144133**	**333699**	**146440**	**402780**
			EXPORTS					
Petroleum Products								
I.Light Distillates	**7769**	**17384**	**12344**	**32581**	**13937**	**42220**	**12828**	**42366**
1.LPG	53	164	112	342	99	401	109	455
2.MS	2417	5843	3615	10191	4258	13614	5330	17500
3.Naphtha	5066	10787	8411	21431	9297	27365	7284	24028
4.TAME	0	0	0	0	0	0	0	0
5.Reformate/Benzene/ Hexane	233	590	206	617	283	841	105	383
II.Middle Distillates	**11453**	**26102**	**15171**	**39993**	**18931**	**54919**	**17337**	**60895**
1.SKO	121	371	150	541	137	492	77	362
2.HSD/LDO	8504	18654	11369	29198	14308	40871	13770	47521
3.ATF	2828	7077	3652	10254	4486	13556	3490	13012
III.Heavy Ends	**4239**	**6488**	**6109**	**8520**	**7911**	**13650**	**6766**	**14197**
1.FO/LSHS	1815	2268	3759	4988	4718	6811	5932	11795
2.VGO/Lubes	993	1577	859	1826	1498	3236	215	813
3.Coke/Bitumen/CBFS/ White Oil/Paraffin/HEE	339	302	66	77	409	614	172	377
4. Others	1092	2341	1425	1629	1286	2989	447	1212
Total	**23461**	**49974**	**33624**	**81094**	**40779**	**110789**	**36931**	**117458**
			NET IMPORTS					
A. Crude Oil	**99409**	**171702**	**111502**	**219029**	**121672**	**272699**	**128155**	**341887**
B. POL Products	**-10021**	**-22002**	**-15964**	**-39934**	**-18318**	**-49790**	**-18646**	**-56565**
Grand Total	**89388**	**149700**	**95538**	**179095**	**103354**	**222909**	**109509**	**285322**

TAME: Tertiary Amyl Methyl Ether.

*: Provisional.

HEI: Includes Coke, Bitumen, Lube Oil Base Stock, Low Sulphur Waxy Residue, Carbon Black Feed Stock, Rubber Processing Oil, Waxes and Petroleum Jelly.

HEE: Includes Benzene, Hexane, Aromex, Mixed Xylene & others (DGCI&S).



Appendices - VIII

C & AG'S REPORT

AUDIT REPORT NO. PA 9 OF 2008 (Performance Audit)

INDIAN OIL CORPORATION LIMITED

(a) Operation of Haldia Refinery

The capacity utilisation of Haldia Refinery of Indian Oil Corporation Limited (Company) was low during 2002-03 to 2005-06 and the Company had to bring in products from other regions. Capacities of the secondary processing units like Diesel Hydro Desulphurisation Unit (DHDS) and Resid Fluidised Catalytic Cracking Unit (RFCCU) were not commensurate with the primary crude processing capacity of the refinery. This resulted in diversion of unprocessed feedstock for production of low value products, blending of considerable quantity of distillate products as cutter stock as well as lower crude throughput leading to substantial revenue loss. There was also lack of preparedness for meeting the product (Euro III high speed diesel) specification requirements of Auto Fuel Policy (February 2002) of government of India. Despite availability of domestic demand for Group II LOBS, there was not only under utilisation of Catalytic Iso-Dewaxing Unit (CIDWU) but the unit was used for generation of Euro III high speed diesel.

(b) Marketing of petroleum products to bulk consumers

Indian Oil Corporation Limited is the largest oil marketing company in the country. Bulk sales constituted 41.42 per cent of its total sales in 2006-07. With the dismantling of Administered Price Mechanism in April, 2002, the market environment became liberal and more competitive. Audit undertook a review of the performance of the company in marketing of products to bulk consumers during the period 2002-03 to 2006-07. It was observed that while other oil marketing companies (OMCs) were able to maintain or increase their market share during the five years ended March 2007 the Company's market share in products like naphtha, FO/LSHS and bitumen declined. There was a shift of customers to other OMCs and also to other alternative fuels. The Company did not have a well-formulated strategy to arrest its declining market share arising from these market developments. The sale bulk products (except MS and HSD from 2004-05) was not monitored through performance parameters in the MOU entered with the Government. Discounts were extended beyond the caps fixed without achieving sales targets. There were instances where the Company sold regulated petroleum products like HSD and MS below cost to bulk consumers by extending discounts beyond marketing margins. The Company overlooked the credit limits fixed for the consumers; 25 per cent of the outstanding dues, as of March 2007, were beyond the approved credit ceiling. Several infrastructural facilities provided by the Company to bulk consumers were idle or underutilised for three years and more and in some cases had not been used since inception. The Company also under recovered transportation costs incurred by it to deliver products at consumer's destination.

OIL AND NATURAL GAS CORPORATION LIMITED

DEEP WATER EXPLORATION

(i) Oil and Natural Gas Corporation Limited (Company) acquired ten deep water nomination blocks, 34 deep water blocks in New Exploration Licensing Policy (NELP) rounds (I to VI) and acquired 90 percent

participating interest (PI) in one block from M/s. Cairn Energy India Limited (CEIL) in March 2005. The Company has been engaged in deep water exploration since 1970 and gained momentum with the advent of project ' Sagar Samriddhi' in the year 2003-04.

(ii) The Company took repetitive extensions for the nominated blocks, however it could not drill the committed number of wells in two nominated blocks due to non-availability of rigs capable of drilling in deep waters. The Company had also not made any firm plan to further explore or surrender the nomination blocks (September 2007).

(iii) Lack of scheduling the issuance of Letters of Award for seismic survey contracts, non-verification of financial status while awarding the contracts as well as not specifying date of mobilisation of vessels and non-completion of date acquisition before the onset of monsoon had a cascading effect on completion of Minimum Work Programme (MWP) targets.

(iv) As against 51 wells committed, 35 wells were planned in the 10th Five Year Plan (FYP) ended 2006-07. Further, inordinate delay in finalisation of contracts caused postponement of drilling of seven wells resulting in non-fulfilment of the MWP commitments. Five blocks under NELP-II had to be relinquished by the Company for non-completion of MWP committed, after paying an amount of Rs. 114.13 crore as penalty to Ministry of Petroleum and Natural Gas (MOP&NG). Also, the Company had expended Rs. 368.89 crore on the relinquished blocks. The Company paid another amount of Rs. 10.02 crore to MOP&NG as penalty in respect of one block for non-completion of MWP of drilling one well.

(v) The Company could not plan Acquisition, Processing and Interpretation (API) of seismic date and requisite number of wells needed to establish initial-in-place (IIP) reserve. The Company could accrete only 26.30 per cent of total reserve accretion from the blocks awarded to it originally. The remaining major portion of the accretion came from the block acquired from CEIL. Five discoveries claimed by the Company in nomination as well as NELP blocks were not acknowledged by the MOP&NG/ Directorate General of Hydrocarbons.

AUDIT REPORT NO. CA 10 OF 2008 (Regularity Audit)

GAIL (India) LIMITED

Material Management Sales and Distribution, Juman Resources and Project System modules of ERP system.

GAIL (India) Limited initiated a proposal of switching over to ERP in 1998 and finally completed the project in August 2005 at a cost of Rs. 63.98 crore. Audit reviewed the overall performance of four of the nine modules of the system namely Material Management, Sales and Distribution, Project System and Human Resource for the period April 2005 to March 2007 in selected offices of the Company. The review revealed non-mapping of vital business requirements and functionalities and a lack of customisation and utilisation of all available features which had led to underutilisation of the ERP SAP solution. The system further suffered from lack of input controls and validation checks; therefore requiring manual intervention and thus affecting the reliability of database. These inadequacies resulted in an incompatibility of the system to meet all business requirements of the Company and risk of defective/delayed MIS reporting and decision-making. The underutilisation of the system compromised the basic objectives of leveraging information for competitive advantage in the market, improving operational efficiency and productivity and achieving higher customer service and satisfaction.

OIL AND NATURAL GAS CORPORATION LIMITED

Financial Management module of ERP

In October 2003, Project Information Consolidation for Efficiency (ICE) was initiated which envisaged utlisation of all ten modules of SAP i.e. my SAP Financials and Logistics ERP package, alongwith my SAP Oil & Gas Upstream Solutions. This system was implemented across the Company between October 2003 and January 2005 at a total investment (excluding implementation cost) of Rs. 81.50 crore. IT audit of Financial Management in ERP environment was conducted to obtain assurance on the reliability and integrity of the financial data entered, processed and reported in the ERP system.

IT audit revealed deficiencies in customization, input controls and validation checks. These deficiencies affected cost allocation and cost accounting done in controlling modules and incorrect cost center assignment in transactions in logistics module and their subsequent flow to accounting documents. Deficiencies in validation checks led to inconsistent tasks being performed. Apart from these, migration of date from the legacy system to ICE without proper verification and cleaning led to erroneous



information being stored in the system. The Company needs to take measures for reviewing and rectifying these deficiencies.

OIL INDIA LIMITED

Material Management system

Oil India Limited is engaged in exploration, development and production of crude oil, Natural Gas and Liquified Petroleum Gas (LPG). It operates mainly in North Eastern region, Orissa, Rajasthan and Uttaranchal. The Company started (April 2005) implementation of 'Enterprise Resource Planning' (ERP) system for improved efficiency and effectiveness in all its business processes, introduction of a system of cost management at par with the best in the world, and continuous improvement in productivity. Audit of material management revealed lack of input and validation controls leading to incomplete data base, delay in capturing data, discrepancies in data with regard to details of vendors, transactions and excess issue of materials. Incomplete porting of data from the legacy system resulted in understatement of provisions with regard to slow moving items. Also material requirement planning was being done manually even after implementation of ERP system.

AUDIT REPORT NO. CA 11 OF 2008 (Regularity Audit)

Bharat Petroleum Corporation Limited laid five pipelines for evacuating products from Chennai Petroleum Corporation Limited under a product marketing agreement. The pipeline laid



for the evacuation of Naphtha at a cost of Rs. 4.28 crore remained unutilised since its commissioning (March 2001)

(Para 14.1.1)

Delay in drawing the sample from the storage tank and not testing the contents of the pipeline by Chennai Petroleum Corporation Limited resulted in supply of Naphtha to the buyer that did not comply with specifications. The buyer rejected the consignment resulting in avoidable expenditure of Rs. 2.97 crore on transportation.

(Para 14.2.1)

Chennai Petroleum Corporation Limited failure to reduce the contracted demand resulted in avoidable expenditure of Rs. 1.22 crore towards demand charges.

(Para 14.2.2)

GAIL (India) Limited incurred an expenditure of Rs. 3.07 crore on Liquefied Petroleum Gas marketing activities before the issues relating to the conditions attached to the Ministry's approval to the same were resolved. Due to non-viability of the conditions, the permission was finally withdrawn rendering the expenditure of Rs. 3.07 crore wasteful.

(Para 14.3.1)

GAIL (India) Limited suffered a loss of interest of Rs. 1.13 crore by keeping funds during March 2006 to March 2007 with SBI at a lower rate of interest as compared to other banks.

(Para 14.3.2)

Hindustan Petroleum Corporation Limited inapt implementation of a new incentive scheme on the basis of performance already attained by the employees and paid for under an existing incentive scheme led to avoidable payment of unproductive incentive of Rs. 76.26 crore.

(Para 14.4.1)

Hindustan Petroleum Corporation Limited failure to enter into an agreement with Visakhapatnam Municipal Corporation for the additional requirement of one lakh Imperial Gallons per Day for the





period June 2002 to August 2007 after the expiry of the previous agreement in May 2002 resulted in avoidable payment of penal charges amounting to Rs. 2.18 crore.

(Para 14.4.2)

Non-encashment of a bank guarantee by Hindustan Petroleum Corporation Limited, despite the dues exceeding the value of available bank guarantees resulted in non-recovery of dues to the extent of Rs. 1.91 crore.

(Para 14.4.3)

Delay in procurement of panels by Hindustan Petroleum Corporation Limited, resulted in extra expenditure of Rs. 1.32 crore on excess fuel consumption.

(Para 14.4.4)

Expenditure of Rs. 43.29 crore by Indian Oil Corporation Limited on creation of infrastructure for production of Butane-I proved unfruitful due to failure in ensuring the guaranteed quality of feed stock.

(Para 14.5.1)

Inadequate study and non-assessment of the commercial viability of the exploration project by the Indian Oil Corporation Limited, led to wasteful expenditure of Rs. 28.44 crore.

(Para 14.5.2)

Indian Oil Corporation Limited's failure to realistically assess the design parameters of available inputs resulted in idle investment of Rs. 19.79 crore on Sulphur Recovery Unit and interest liability of Rs. 1.99 crore on the investment.

(Para 14.5.3)

Due to delay in augmenting the captive generating capacity to meet the demands of the new projects the Indian Oil Corporation Limited incurred an avoidable expenditure of Rs. 9.07 crore.

(Para 14.5.4)

Indian Oil Corporation Limited failed to remove its operational bottlenecks for optimum utilization of unloading bays in time. Consequently, it failed to minimize transportation cost on bulk Liquefied Petroleum Gas movement and incurred avoidable transportation cost of Rs. 3.60 crore.

(Para 14.5.5)

IBP Company Limited could not dispose of the land acquired in 1999 at a cost of Rs. 4.59 crore for additional product storage project subsequently abandoned in 2002. This resulted in loss of interest of Rs. 1.90 crore on idle investment on land besides wasteful pre-operative expenditure of Rs. 1.14 crore.

(Para 14.5.6)

IBP Company Limited did not fix separate rates for product transportation over hilly and plains terrain while road bridging resulting in extra expenditure of Rs. 1.02 crore due to payment of hill rate for distance covered in the plains.

(Para 14.5.7)

Public Sector Oil Marketing Companies viz., Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited and Hindustan Petroleum Corporation Limited incurred avoidable loss of revenue of Rs. 47.14 crore on sale of Liquefied Petroleum Gas at concessional rate to ineligible category of customers during the period July 2002 to April 2003.

(Para 14.6.1)

Oil and Natural Gas Corporation Limited failure to upgrade and create facilities to contain the basic sediments and water content in the crude oil supplies within limits resulted in loss of revenue of Rs. 96.96 crore.

(Para 14.7.1)

Due to delayed procurement of stand-by rotors for variable speed motors, the Oil and Natural Gas Corporation Limited sustained net loss of revenue of Rs. 9.12 crore.

(Para 14.7.2)

Due to non-utilisation of a self owned vessel fitted with revamped anchor handling and towing system (AHTS) for towing operations and deploying it on operations other than towing, the Oil and

Natural Gas Corporation Limited incurred an avoidable expenditure of Rs. 6.42 crore on charter hiring of a vessel having AHTS for such operations.

(Para 14.7.3)

Oil and Natural Gas Corporation Limited incurred wasteful expenditure of Rs. 4.99 crore due to mismanagement of procurement and commissioning of Portable Top Drive System.

(Para 14.7.4)

Oil and Natural Gas Corporation Limited's indecision and delay in procuring lube oil for running an equipment for recovery of value added product from flaring gas resulted in wastage of the gas worth Rs. 4.61 crore.

(Para 14.7.5)

Airports Authority of India, Food Corporation of India, Mahanadi Coalfields Limited, Eastern Coalfields Limited, Securities Trading Corporation of India Limited, UP Industrial Consultants Limited, The New India Assurance Company Limited, The Oriental Insurance Company Limited, United India Insurance Company Limited, Bharat Heavy Electricals Limited, Indian Oil Corporation Limited, Hindustan Petroleum Petroleum Corporation Limited, National Hydroelectric Power Corporation Limited, National Highways Authority of India, MECON Limited and Cotton Corporation of India Limited.

During test check in Audit, several cases relating to non-recovery, short recovery, undue payment, excess payment, excess allowance of discount etc., by Central PSUs were pointed out. In 30 such cases pertaining to 16 PSUs, where Audit pointed out an amount of Rs. 27.16 crore for recovery, the Management of the PSUs recovered an amount of Rs. 20.71 crore during the year 2006-07.



Inauguration of Mundra-Delhi Pipeline by Smt. Sonia Gandhi, Hon'ble Chairperson, UPA





सत्यमेव जयते

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