

Annual Report

2007-2008



सत्यमेव जयते

Government of India

Ministry of Petroleum & Natural Gas

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An aerial photograph of a large industrial facility, likely a refinery or chemical plant. The scene is dominated by a massive blue crane structure in the center-right, which is casting a long shadow across the ground. To the left of the crane, there are numerous large, cylindrical storage tanks arranged in rows. In the foreground, there are various industrial buildings, including a prominent yellow one on the right, and a complex network of pipes and walkways. The ground is a mix of light-colored gravel or sand and darker patches. The overall impression is one of a large-scale industrial operation.

Chapter-I

INTRODUCTION



I. INTRODUCTION

I.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 organisations under the Ministry are listed in Appendix - II.

I.2 Shri Murli Deora and Shri Dinsha Patel continue to hold the charge as Minister of Petroleum & Natural Gas and Minister of State for Petroleum & Natural Gas, respectively.

I.3 Shri M.S. Srinivasan continues to hold the charge of Secretary in the Ministry of Petroleum & Natural Gas.

I.4 Shri S. Sundareshan (IAS/KL:76) assumed charge of the post of Additional Secretary in the Ministry of Petroleum & Natural Gas, with effect from the forenoon of 30.04.2007.

I.5 PRINCIPAL ACHIEVEMENTS

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

I.6 CRUDE OIL & NATURAL GAS PRODUCTION

During 2007-08, crude oil production in the country is expected to be about 34.763 million metric tonnes (MMT) and 31.67 billion cubic metres (BCM) of natural gas production as against the production of 33.99 MMT of crude oil and 31.74 BCM of natural gas in 2006-07.

I.7 During XI Plan period, crude oil production is likely to increase 24% as against actual crude oil production during X plan period. With exploration and development efforts made under New Exploration Licensing Policy (NELP), Natural Gas production in the country is likely to be doubled from the present level of gas production of about 90 million standard cubic metres per day (MMSCMD) by end of 11th Five

Year Plan. In order to accelerate exploration in the country, more numbers of exploration blocks in onland, shallow water, deepwater and frontier areas are to be offered during XI plan period resulting in 80% coverage of Indian sedimentary basin.

I.8 In view of unfavourable demand – supply balance of hydrocarbons in the country, acquiring equity oil and gas assets overseas is one of the important components of enhancing energy security. The Government is encouraging National Oil companies to aggressively pursue equity oil and gas opportunities overseas. Overseas production can be swapped, sold or brought to Indian refineries on commercial considerations.

I.9 New Exploration Licensing Policy (NELP) provides an international class fiscal and contract framework



Hon'ble Minister of Petroleum and Natural Gas, Shri Murli Deora filling the fuel tank of a car in Mumbai on 2nd Dec' 07 for the Car Mileage Rally organized by PCRA for the cause of promoting fuel efficiency in the country



for Exploration and Production of Hydrocarbons. In the first six rounds of NELP spanning 2000-2007, contracts for 162 exploration blocks have been signed. Under NELP, 58 oil and gas discoveries have been made in 17 exploration blocks. As the exploration progresses, new oil and gas discoveries are likely to come in future. Under seventh round of NELP, Government has offered 57 exploration blocks, which was launched on 13th December 2007. The offered blocks are - 19 deepwater blocks, 9 shallow water blocks and 29 onland blocks. Exploration blocks in onland areas are located in the states of Assam (1), Bihar (3), Chattisgarh (1), Gujarat (11), Madhya Pradesh (2), Rajasthan (3), Tamil Nadu (2) and West Bengal (6). Out of 19 deepwater blocks, 15 exploration blocks are in western offshore areas and 3 exploration blocks are in eastern offshore areas. One deepwater exploration block is in Andaman Nicobar basin. Amongst shallow water blocks, 6 blocks are in Mumbai basin in western offshore, while 3 blocks are in KG basin in eastern offshore. In order to attract exploration companies to bid for the offered acreages, road-shows have been organized at Mumbai, London, Houston, Calgary and Perth and investors' meet at Singapore. Bid closing date is 25th April 2008.

1.10 IMPORTS AND EXPORTS

The quantity of Crude oil & Petroleum products imported during 2006-07 was 111.502 MMT and 16.967 MMT valued at Rs. 219029 crore and Rs. 40389 crore respectively. In the same period 32.737 MMT of petroleum products valued at Rs. 80898 crore were exported. During April-November, 2007 of the year 2007-08, 79.738 MMT of crude oil valued at Rs. 165789 crore and 12.710 MMT of petroleum products valued at Rs. 33766 crore of petroleum products have been imported and 26.609 MMT valued at Rs. 68980 crore have been exported. There was an increase of 10.0% in quantity and rise of 10.1% in value of import of crude oil during April-November, 2007 over same

period of preceding year. Crude oil import during April-November 2006 of year 2006-07 was to the tune of 72.460 MMT valued at Rs. 150044 crore.

The product imports during April to November 2007 of year 2007-08 were to the tune of 12.710 MMT valued at Rs. 33766 crore as against 11.836 MMT valued at Rs. 28439 crore during the corresponding period of year 2006-07. The change in imports of products during April to November 2007 of year 2007-08 vis-à-vis the import during the corresponding period of preceding year was thus 7.4% higher in terms of quantity and 18.7% higher, in terms of value. The export of petroleum products went up to 26.609 MMT valued at Rs. 68980 crore during April to November 2007 of year 2007-08 as compared to 22.372 MMT, valued at Rs. 57413 crore during the same period of the year 2006-07. Export of petroleum products during April to November 2007 was higher by 18.9% in terms of quantity and 20.1% in terms of value over the exports during the corresponding period of previous year.

1.11 STRATEGIC STORAGE

In order to enhance the energy security of the country and to safeguard against short term supply disruptions, Government have approved setting up of 5 Million Metric Tonnes (MMT) strategic crude oil storages at various locations in the country (Vizag (1.0 MMT), Mangalore (1.5 MMT) and Padur (2.5 MMT). This strategic storage would be in addition to the existing storages of crude oil and petroleum products with the oil companies and would 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, owned by Oil Industry Development Board (OIDB).

The proposed Strategic Crude Oil Storages would be in underground rock caverns / concrete structure and are projected to be ready in a period of 54 months. The estimated cost of the project is



approximately Rs. 2,400 crore and crude oil cost of Rs. 9,000 crore (at an average crude oil cost of \$55/ bbl and exchange rate of 1US \$ = Rs. 44) besides operation and maintenance cost of Rs. 90 crore per annum.

The proposed storages sites are located near the coast line of East and West so that they are readily accessible to refining sector and are ideally adapted to marine distribution. The status report on implementation of the project by ISPRL at three locations is as under:-

VISAKHAPATNAM:

Out of a total 68 acres of land, a lease deed has been finalized with Visakhapatnam Port Trust (VPT) for acquisition of 38 acres of land. For the remaining 30 acres of land MOU has since been signed with Eastern Naval Command. Engineers India Ltd (EIL) has been appointed as a Project Management Consultant for the project. EIL, the PMC has appointed M/s SWECO, Sweden as their back up Consultant. Bidding process for work allocation has been completed.

MANGALORE:

An approximately 82 acres of land is required for strategic storage at Mangalore. This is being acquired from Mangalore Special Economic Zone Limited (MSEZ). The process of land acquisition is on advance stage. Back up consultant for Mangalore project is identified by EIL. Central Line Survey for Pipeline route has been completed and draft report on Cadastral Survey has been received by EIL and is under review.

PADUR (UDUPI):

Detailed Feasibility Report (DFR) was approved by Government of India in November 2006. Details of land requirements have been identified and pipeline

route survey is underway. Action is being initiated to acquire land for strategic storage and to acquire right of use for pipelines (Approx. 35 kms).

1.12 INTERNATIONAL ENERGY FORUM SECRETARIAT (IEFS)

The International Energy Forum has 62 member countries. It has an Executive Board comprising of representative of 13 countries and two organizations IEA and OPEC. India is a member of the Executive Board of IEF. The annual contribution of the budget of IEFS are on calendar year basis and are voluntary. The total IEFS budget is apportioned amongst 62 countries based on the total trade ratio (import plus export). For the calendar year 2007 and 2008, this Ministry has contributed an amount of US\$ 73,000 & US\$ 79,000 respectively, as a membership fee.

The 11th International Energy Forum Ministerial level meeting is proposed to be held in April, 2008 in Rome, Italy, which is being hosted by Italy and co-hosted by Mexico and India. A number of bilateral meetings with other countries are also expected on the sidelines of this meeting.

1.13 REFINING CAPACITY

The domestic refining capacity as on 1.4.2007 was 148.97 Million Metric Tonnes Per Annum (MMTPA). Availability of petroleum products during 2006-07 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. However, MS/HSD of Euro-III grade had to be imported during the year in view of implementation of Auto Fuel Policy for upgraded fuels.



I.14 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 :-

	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

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 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.

I.15 CONSERVATION OF PETROLEUM PRODUCTS

India has witnessed an economic growth resulting in a rise in GDP by nearly 9% in the last few years. This has resulted in a significant growth in the 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 large pressure on the economy as crude oil prices in the International market are nearing \$100 per barrel. 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 a lot of thought on 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 % exists 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, 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 implemented.

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, etc.

1.16 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. For development of hydrogen as a fuel, the Ministry of Petroleum & Natural Gas has set up a Hydrogen Corpus Fund with contribution from five major Oil Companies and OIDB. A roadmap has been set up by IOC (R&D), the nodal agency for the hydrogen research project, for hydrogen production, dispensing, storage application and its utilization in scooters, 3-wheelers and buses. Demonstration projects in pipeline include using 10% hydrogen in CNG at IOC (R&D) centre at Faridabad and a similar demonstration project later in Delhi. Another Hydrogen and H₂-CNG Mixture Dispensing Station is planned to be set up by Indian Oil Corporation as a demonstration project partially funded by MNRE (50%) and partially from Hydrogen Corpus Fund (50%). Work for setting up of this station is likely to commence during the current financial year. Presently, in India, Hydrogen is being produced mainly from steam reforming of naphtha and natural gas in fertilizer and petroleum refining industries. Hydrogen as a by-product is also being produced in the chemical industry. Hydrogen is



expensive for energy applications in comparison to the existing hydrocarbon fuels. Further, there is no infrastructure available in the country for regular use of Hydrogen as an energy carrier. Introduction of Hydrogen energy applications in the market would require an integrated system development approach. This will include all aspects of Hydrogen energy technologies such as production, storage, transportation, delivery and end use applications and associated devices. While some progress has been made in the world and in India, considerable R&D and technology development efforts are required to achieve a low cost of production of Hydrogen, its safe storage, transportation and applications including development of devices and systems which operate with Hydrogen fuel. In addition, it is necessary to create an extensive infrastructure for producing, transporting and storing large quantities of Hydrogen before its large-scale use can take place. Hydrogen operated devices/systems/

applications will have to be developed for optimal use of Hydrogen. Codes and standards are also required to address safety concerns and speedy commercialization of Hydrogen as a fuel. There are several scientific, technical and engineering challenges, which need to be resolved. Apart from R&D efforts, technology demonstration projects, pre-commercial pilot plants, manpower development etc. are required. Therefore, the Ministry of New and Renewable Energy (MNRE) has initiated the process of preparing a National Hydrogen Energy Road Map.

1.17 BIO-DIESEL PURCHASE POLICY

To encourage production of bio-diesel in the country, the Ministry of Petroleum and Natural Gas announced a Bio-diesel Purchase Policy, in October 2005, which became effective from 1.1.2006. The Policy has identified 20 purchase Centres of the public sector Oil



Shri M. S. Srinivasan, Secretary- MOP&NG inaugurates Main Electric Sub station, GPEC Project of HPCL's Mumbai Refinery in the presence of Shri Arun Balakrishnan, C&MD-HPCL and Shri M A Tankiwala, Director-Refineries, HPCL.



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.

OMCs 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.

1.18 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.

The purchase price of ethanol is discovered and finalized by the OMCs through open tender system as per CVC guidelines. At present 5% EBP programme is being implemented in 17 States and OMCs have finalised tenders for ethanol in all these States. The EBP releases have since commenced at all locations in 15 States and 4 Union Territories. With this, about 70% of the identified States have been covered. The requirement of ethanol for the three year period is 180 crore litres. The OMCs have been able to contract 140 crore litres. They have so far procured 19.35 crore litres under the programme (as on 31.12.2007).

Cabinet Committee on Economic Affairs (CCEA) has taken following decisions on 9th October, 2007 regarding EBP Programme:

- (i) 5% blending of ethanol will be mandatory and 10% blending will be optional from October 2007 and thereafter mandatory from October, 2008.
- (ii) Purchase price of ethanol has been fixed at

Rs. 21.50 per/ltr. ex-factory on uniform basis for next three years.

Necessary consultations are being held with all the stakeholders to give effect to the above decisions.

1.19 PLAN OUTLAY

The Tenth Five Year Plan (2002-2007) outlay for the Oil & Gas sector had been fixed at Rs.1,03,656.00 crore, against which the actual expenditure has been Rs.1,14,461.27 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.2,29,072.60 crore, which is about 121% more than the Tenth Plan allocation. The Budget Estimate (BE) for the year 2008-09 has been proposed at Rs.48,031.26 crore. These outlays will be met from the internal and extra budgetary resources of the Public Sector Undertakings.

1.20 EARNINGS OF OIL PUBLIC SECTOR UNDERTAKINGS

The Profit Before Tax (PBT) and the Profit After Tax (PAT) earned by the Public Sector Undertakings in the Oil Sector during 2006-07 were Rs. 50,717.50 crore and Rs. 34,268.59 crore respectively. The PBT and PAT for 2007-08 are expected to be about Rs. 47,624.61 crore and Rs. 32,149.54 crore respectively.

1.21 NATURAL GAS

Natural Gas has emerged as one of the most preferred fuel due to its environmentally benign nature, greater efficiency and cost effectiveness. At present, the main producers of natural gas are Oil and Natural Gas Corporation Limited (ONGC), Oil India Limited (OIL) and the Joint Ventures of Panna Mukta & Tapti, and Ravva. Out of the total production of around 96 MMSCMD, after internal consumption, LPG extraction and unavoidable flaring, around 73 MMSCMD is available for sale to various consumers. In addition, around 7 MMTPA of re-gasified LNG (about 23 MMSCMD) is also being supplied to domestic consumers.

Gas produced by ONGC and OIL from the existing nominated blocks is sold at administered prices fixed by the Government. As against a total allocation of



150 MMSCMD of gas, actual supply under APM is presently around 53 MMSCMD. However, availability of APM gas is expected to decline sharply over the coming years.

Exploration and Production (E&P) activities in the country have been intensified with the New Exploration Licensing Policy (NELP). Six bidding rounds have been successfully undertaken. A total of 162 blocks have been awarded. NELP – VII is in progress under which 57 blocks have been offered for bidding. The initial results have been very encouraging with gas discoveries in Cambay basin, KG offshore basin and Mahanadi basin. On account of these, it is projected that there would be a substantial increase in the production of natural gas in the coming years.

1.22 ATTEMPTS TO IMPROVE GAS AVAILABILITY

Government of India has adopted a multi-pronged strategy to augment gas supplies and bridge the gap between supply and demand for the domestic market. These cover:-

- (a) Intensification of domestic E&P activities;
- (b) Exploitation of unconventional sources like Coal Bed Methane (CBM);
- (c) Underground coal gasification;
- (d) Implementation of National Gas Hydrate Programme (NGHP) for evaluation of hydrate resources and their possible commercial exploitation;
- (e) LNG Imports
- (f) Gas sourcing through transnational gas pipelines.

The E&P activities have been intensified following the New Exploration Licensing Policy. So far, 6 bidding rounds have been successfully undertaken and NELP VII is underway. A total of 162 blocks have been awarded in shallow water, deep waters and onland areas to PSUs, JVs and foreign companies till date. The initial results have been very encouraging, with gas discoveries in Cambay basin, KG offshore and Mahanadi basin. Similarly, significant oil reserves have been discovered in Rajasthan. It is expected that more

hydrocarbon discoveries would materialize in the coming years as more and more investment is made in E&P activities.

ONGC has carried out seismic survey and drilled 18 boreholes for detailed Underground Coal Gasification (UCG) site characterization in the selected Vastan mine block. The data is currently under analysis for identifying exact location for pilot UCG. Four new sites, one in Gujarat and 3 in Rajasthan, have also been identified.

The National Gas Hydrate Programme is being implemented with a scientific approach and a programme has been undertaken for exploratory drilling. Over the past few years, huge amount of seismic data and other data have been collected and field studies have been undertaken to study the hydrate deposits and identify areas of prospectivity. Hydrate deposits are indicated both in western as well as eastern offshore areas of India. Reserves estimation is under process, based on the drilling core samples collected recently.

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 RasGas, 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 2009. Further, Petronet LNG Ltd. (PLL) has signed a contract with RasGas, Qatar in July 2007 for supply of 1.25 MMT LNG to meet the requirement of Ratnagiri Gas and Power Private Limited (RGPPL). As per the contract, the duration of supply is one year starting from July 2007. In addition to the above term-contracts, LNG is also being sourced from spot market by PLL and Hazira LNG Private Limited (HLPL). During 2006-07, about 6.95 MMT LNG was imported, which is equivalent to about 23 MMSCMD of RLNG. Out of total LNG import of 6.95 MMT during 2006-07, the share of HLPL is about 1.09 MMT. During 2007-08, about 1.1 MMT LNG has been imported by HLPL upto November 2007.



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 recent visit to Tehran on April 25 and 26, 2007. PLL is at an advance 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 scheduled to be completed by September 2008. It is planned to be further expanded to 12.5 MMTPA. HLPL's LNG terminal is being expanded from 2.5 MMTPA to 5 MMTPA. Dabhol LNG terminal is expected to be completed by end of December 2008. The terminal will, however, become fully operational only after completion of breakwater facilities in March 2011. PLL is setting up an LNG terminal at Kochi which is planned to be commissioned in 2011. In addition, LNG terminals are planned to be set up by IOC and ONGC at Ennore and Mangalore respectively.

India is in a geographically advantageous position, because of huge gas deposits to its North-West in Russia and Central Asian Republics, in West Asia in Iran, Qatar and Abu Dhabi, and finally towards its South/South East in Myanmar and Bangladesh. These reserves are at distances that make it economically viable to lay a gas pipeline. Discussions are presently underway with the Iranian Government for import of 30-90 MMSCMD gas through Iran-Pakistan-India (IPI) pipeline in 2 phases. India has also agreed to join the Turkmenistan-Afghanistan-Pakistan (TAP) pipeline project to source gas from the Daulatabad region of Turkmenistan.

I.23 IMPORT OF NATURAL GAS THROUGH TRANSNATIONAL GAS PIPELINES

(a) Iran-Pakistan-India 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.

A tripartite Joint Working Group (JWG) of Iran, Pakistan and India has been formed. Six meetings of the trilateral JWG have been held; the last meeting being held in New Delhi on June 28 and 29, 2007.

Two separate Secretary level Joint Working Groups (JWGs), viz., India Pakistan JWG and India Iran Special JWG, have been constituted. Three meetings of India-Iran SJWG have been held. Five meetings of India-Pakistan JWG have been held; the last meeting was held on June 27 and 28, 2007 in New Delhi. Details regarding transportation tariff and transit fee for passage of pipeline through Pakistan, price review, gas availability, governing law, etc were discussed in the meeting.

During the 4th tripartite meeting held in Tehran on January 24 & 25, 2007, a gas pricing formula regarding pricing of gas at Iran-Pakistan border was agreed between Iran and Pakistan sides, subject to approval from the respective Governments. India conveyed to the Iranian side, vide letter dated 28.2.2007, that the total price payable at India-Pakistan border would also include and depend on transportation cost and transit fees payable by India to Pakistan for passage of gas through Pakistan; as there was no clarity on these, it was not possible for India to decide regarding the total price implication. Subsequently, Iran demanded introduction of a price revision clause in the 5th Tripartite JWG meeting held at Tehran during May 28 and 29, 2007. The 6th Tripartite meeting was held in New Delhi on June 28 and 29, 2007; several issues, including gas price review clause, were discussed amongst the participating countries. It was decided to carry forward the discussions to the next round of meetings.

Iran proposed to hold the Seventh Trilateral Meeting in Tehran during last week of September 2007. However, it was felt that a bilateral meeting between India and Pakistan should precede the trilateral meeting,



as bilateral issues, such as transportation tariff and transit fee, needed to be resolved first. Certain technical and commercial issues relating to the project also were required to be discussed with Pakistan. Therefore, India did not participate in the trilateral meeting in Tehran held before the bilateral meeting.

(b) Turkmenistan-Afghanistan-Pakistan (TAP) Gas Pipeline

Daulatabad area of Turkmenistan is reported to have abundant gas reserves. The Governments of Turkmenistan, Afghanistan and Pakistan proposed the transnational gas pipeline to exploit the available gas reserves in Turkmenistan. They designated ADB as the lead development partner. ADB had carried out the study and approached India for participating in the project. An Indian delegation led by Hon'ble Shri Dinsha Patel, Minister of State for Petroleum and Natural Gas visited Ashgabat, Turkmenistan to participate in the 9th Steering Committee Meeting of the countries participating in Turkmenistan-Afghanistan-Pakistan (TAP) Gas Pipeline Project held on February 14-15, 2006 as an 'Observer'. The Steering Committee invited India to become an official member of the project.

The Ministry of Petroleum & Natural Gas brought the matter before the Cabinet in May 2006 after inter-Ministerial discussions. The Cabinet in the meeting held on 18th May 2006, accorded 'in principle' approval to the proposal for India joining the TAP project. Decision of the Government of India to join Turkmenistan-Afghanistan-Pakistan Gas Pipeline Project as an official member was conveyed to ADB in June 2006. ADB has been requested to appropriately take up India's request for joining the project with the Governments of Afghanistan, Pakistan and Turkmenistan. ADB has circulated Draft Framework Agreement for comments to these Governments for inclusion of India as an official member. ADB has suggested April 21-24, 2008 for holding the next meeting of the Technical Working Group and the Steering Committee respectively of the participating countries.

I.24 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.

I.25 ASSAM GAS CRACKER PROJECT (BRAHMPUTRA CRACKERS AND POLYMERS LIMITED)

- The Hon'ble Prime Minister laid the foundation stone of Brahmaputra Crackers and Polymers Limited (BCPL) on April 9 2007, at Lepetkata, District Dibrugarh.
- The Government had approved implementation of Assam Gas Cracker Project at a project cost of Rs.5460.61 crores. Provision of Rs.2138 crores and Rs.908.91 crores has been made for capital subsidy and feedstock subsidy respectively.
- 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 08.01.2007 as 'Brahmaputra Cracker and Polymer Limited' (BCPL). Certificate of commencement of Business has been obtained on 12.9.2007.
- Gas Supply Agreement (GSA) has been signed with OIL and ONGCL. Naphtha supply Term Sheet has also been signed with Numaligarh Refinery Limited (NRL). Necessary environmental and pollution control clearances have been obtained.
- About 90% of the land committed by Government of Assam (GOA) has been acquired by BCPL, the balance land will be transferred after completion of the



rehabilitation of the project affected families by GOA. Further, process for acquisition of additional land for BCPL and CISF townships has also been initiated.

- Regarding financial closure, OADB has granted in-principle approval for a term loan of Rs.327 crores. Four banks have shown interest for the arrangement of balance loan and proposal for arrangement of same through consortium lending is under consideration.

EIL has been selected as Project Management Consultant (PMC). Notice Inviting Tender (NIT) for LLDPE/HDPE and polypropylene units has been released. The work for topographical survey has been awarded to M/s RITES. Overall plot plan for infrastructure activities has been issued. Steps required prior to commencement of construction, viz, Basic Engineering design and Water and power required for construction, etc., have been initiated. The project is expected to be completed in 2012.

1.26 RETAIL OUTLET DEALERSHIPS COMMISSIONED

The number of retail outlet (RO) dealerships (petrol pumps) set up by OMCs during the year 2007-08 (April-December, 2006) were 1,095. 692 ROs are likely to be set up during January-March, 2008.

1.27 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 subsidized LPG in the country under Public Distribution System. 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 31.12.2007 was about 986.5 lakh.

OMCs had set a target for release of about 60 lakh new LPG connections during financial year 2007-08 out of which about 44 lakh connections have been



Indane bottling Plant at Madanpur Khadar near Delhi – one of the 89 plants, which together roll out 12.3 lakh cylinders per day.

released during April-December, 2007. Similarly, OMCs had set a target for setting up of 180 new LPG distributorships during financial year 2007-08, out of which 58 distributorships have been commissioned during April-December, 2007. Total number of LPG distributorships of OMCs in the country as on 31.12.2007 was 9,352.

1.28 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.109/- 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.

During April-December, 2007, OMCs have released approximately 40,700 number of 5 Kg connections in 29 States and 2 UTs. As on 31.12.2007, the total number of customers with 5 Kg LPG cylinders served by OMCs was about 3.76 lakhs.

1.29 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 289 ALDS in 89 cities as on 31.12.2007.

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

1.30 PARALLEL MARKETING OF LPG.

In order to increase the availability of LPG and to foster competition, the private sector was allowed to participate in the Parallel Marketing Scheme (PMS) of LPG in April 1993 by decanalising imports of LPG. Under the scheme, a private party can undertake import of LPG after obtaining a rating certificate from one of the approved rating agencies given in the LPG (Regulation of Supply and Distribution) Order, 2000. LPG under PMS is sold at market-determined prices by the private parties. Parallel marketers have imported about 478 TMT of LPG under PMS during April-December, 2007. Cumulatively, parallel marketers have imported about 2,980 TMT of LPG upto November, 2007 since 1993.

1.31 PDS KEROSENE & DOMESTIC LPG SUBSIDY SCHEME, 2002

Ministry of Petroleum & Natural Gas is administering the Scheme through which the Public Sector Oil Marketing Companies (OMCs) are being paid subsidy at 1/3rd level of 2002-03 at a flat rate from the Union Budget. This translates to subsidy at the rate of Rs.22.58 per 14.2 kg domestic LPG cylinder and Rs.0.82 per litter on PDS Kerosene.

1.32 FREIGHT SUBSIDY (FOR FAR FLUNG AREAS) SCHEME, 2002

Under the Freight Subsidy Scheme, the Public Sector Oil Marketing Companies (OMCs) are being compensated on the freight being incurred to distribute the subsidized products in the far flung remote areas.



I.33 FURTHER CONTINUATION OF BOTH THE SUBSIDY SCHEMES

On 11th October, 2007, the Government has approved further continuation of “PDS Kerosene & Domestic LPG Subsidy Scheme 2002” and “Freight Subsidy (For Far Flung Areas) Scheme, 2002” for a period of three more years from 1.4.2007 to 31.3.2010 at the same rates as followed from 2004-05 onwards i.e. at one-third level of the rate of subsidy of 2002-03.

I.34 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 RTI 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 all PSUs along with details of Appellate Authorities, PIOs & APIOs have been hosted on the websites of the Ministry and all Oil PSUs.



Indian Oil achieved a 4.4% growth in finished lube sale during 2006-07 and expected over 15,000kl of lube oil base stock.



From 1st January, 2007 to 31st December, 2007, a total of 559 applications including 53 appeals have been received under RTI Act, 2005 in the Ministry. Out of 559 applications, 546 applications including 52 appeals have been disposed of. The remaining applications and appeals would be disposed of within the time limit prescribed in the RTI Act.

I.35 STEPS TAKEN TO CHECK ADULTERATION OF PETROL/DIESEL AND STREAMLINING PDS KEROSENE DISTRIBUTION

The Government/Public Sector Oil Marketing Companies (OMCs) have taken the following steps to contain the menace of adulteration :-

- (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 cases of adulteration being established.
- (iii) Government has taken the initiative to expedite the installation of Global Positioning System (GPS) monitor the movement of tank trucks.
- (iv) OMCs have introduced new tamper proof tank-truck locking systems to prevent en-route adulteration by transporters.
- (v) Keeping in view the misuse/diversion of SKO for adulteration, the import of SKO by private parties has been canalized through OMCs.
- (vi) 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.

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:

- 1. 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.

IOCL (including IBP Division) have informed that out of 2357 Retail Outlets (ROs) 928 ROs have already been automated. The balance 1429 RO will be automated by March 2008. Out of 1135 ROs, HPCL have completed 885 retail outlets with automation. The remaining 250 ROs are planned to be completed by December 2007. BPCL have completed 820 ROs and propose to complete remaining 780 ROs by March 2008.
- 2. Third Party Certification of Retail Outlets :** IOCL has informed that out of 6554 ROs selling more than 100 KL per month, third party certification of 6408 ROs have been completed. Remaining ROs will be certified by October 2007. BPCL has informed that they have around 4614 retail outlets selling more than 100 KLS per month and third party certifications have been completed in respect to 6688 ROs. HPCL have informed that they have 3400 outlets selling more than 100 KL per month. They have appointed M/s Bureau Veritas as their third party certification agency. 3082 outlets have been audited by M/s Bureau Veritas. Balance will be completed by Jan 08.
- 3. 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.

In case of IOCL (including IBP Division), out of 19,600 Tank Trucks (TTs) (Co. owned/dealer/contractor TTs), the GPS system has been installed in 4477 TTs. The balance 15123 TTs would be covered with GPS by January 2008 as contracts have already been placed for all TTs. In case of HPCL informed that out of 5782 TTs (Co. owned/dealer/contractor TTs), they have completed the GPS system in 3208 TTs. The balance 2574 TTs would be covered with GPS by January 2008. In case of BPCL, out of 4800 TTs (Co. owned/dealer/contractor TTs), they have installed the GPS system in 3001 TTs. The balance 1799 TT would be covered with GPS by January 2008.

4. **Marker System in Kerosene :** To check adulteration in auto fuels, and also to check diversion of subsidized kerosene, Government have also advised OMCs to introduce marker in kerosene. Public Sector OMCs have commenced introduction of marker in kerosene on all India basis with effect from 1.10.2006. Under the new system, Marker is being put in kerosene in all depots. This system heralds the introduction of world class technology to curb and eventually eliminate the menace of adulteration of transportation fuels along the supply chain. With the marker's presence, adulteration even with very low

levels of kerosene can be detected. MS/HSD Control Order, SKO Control Order and MDG 2005 have been amended for making provision regarding introduction of marker system in Kerosene to check adulteration. A committee has been set up in the Ministry to monitor the progress of the marker system. Oil Marketing Companies in the Private sector have also been simultaneously asked to introduce marker system in Kerosene

5. **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.
6. **Jan Kerosene Pariyojna :** To streamline the PDS Kerosene distribution system and contain diversion of kerosene for adulteration and other unauthorized usages, Jan Kerosene Pariyojna (JKP) had been launched initially for a period of 6 months on a pilot basis in 414 blocks with effect from 2.10.2005. The Pilot scheme has been further extended upto 31.03.2008.
7. **Smart Card Scheme :** With the objective of ensuring that the benefit of the subsidy reaches the targeted consumers in an efficient

Extremely high leakage (More Than 50%)	Very high leakage (40-50%)	High leakage(20-40%)	Low leakage (Less Than 20%)
Six States	Four States	Nine States	Four States
Bihar, Chandigarh, Delhi, Jharkhand, Orissa and Punjab	Assam, Chhattisgarh, Tamil Nadu and Uttaranchal	Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Rajasthan and Uttar Pradesh	Goa, Himachal Pradesh, Kerala and West Bengal



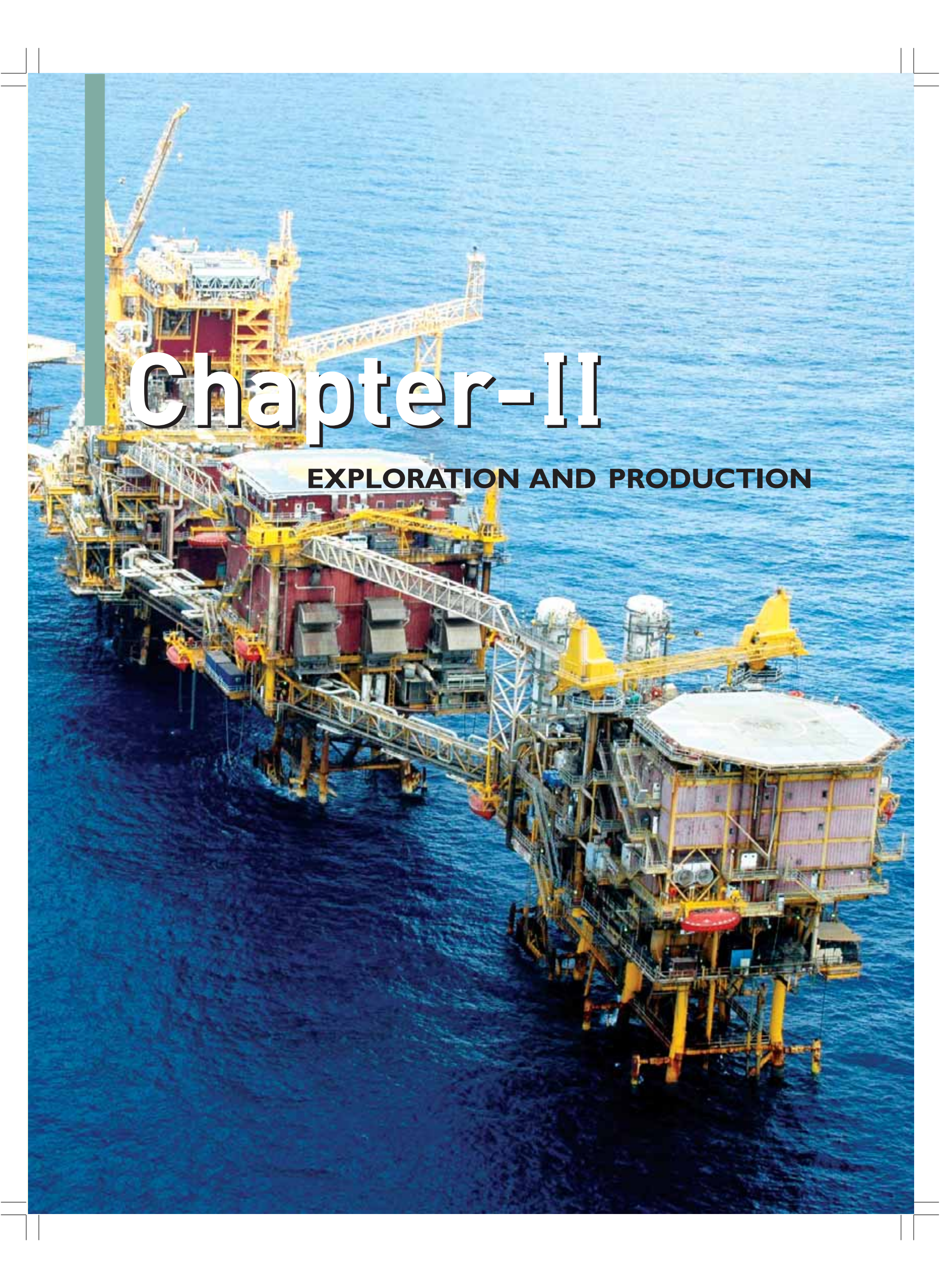
and cost-effective manner and to prevent any leakages, this Ministry has proposed introduction of Smart Card System for distribution of PDS kerosene. The scheme is proposed to be introduced initially on an experimental basis. In the Pilot project, subsidized kerosene through Smart Card is proposed to be available to BPL families while all other ration card holders would be given non-subsidized kerosene. Oil Marketing Companies (OMCs) would ensure adequate availability of PDS as well as non-subsidized kerosene during the entire period of implementation of the Pilot project.

I.36 ALLOCATION OF PDS KEROSENE TO STATES/UTs

- (i) PDS kerosene has been allocated to States/UTs on a historical basis. In accordance with the policy adopted by the Government of India in 2000, Kerosene (SKO) allocation for distribution under the Public Distribution System (PDS) was reduced every year beginning 2001-02 till 2003-04, taking into account the number of LPG connections released in each State/Union Territory. While the initial allotment for 2004-05 was based on the criteria adopted hitherto, additional allocations were made during the year to meet urgent emergent demand. For the years 2005-06 and 2006-07, allocations have been maintained at the level of 2004-05, including additional allocations made during that year. Allocations for 2007-08 have been maintained at the level of 2005-06 and 2006-07.
- (ii) With a view to assessing the genuine demand of kerosene in different States/UTs, in December 2004, the Government commissioned a comprehensive study of the subject through the National Council for Applied Economic Research (NCAER).

NCAER in their report, submitted in October, 2005, have estimated Kerosene demand in 22 States and 1 UT surveyed by them. NCAER has estimated that siphoning off of kerosene for non-household purpose is 18.1%, diversion of kerosene from PDS to open market is 17.9% and diversion of kerosene to no card households is 2.6%. Total leakage is thus estimated at 38.6% of total sale of PDS kerosene.

- (iii) On the basis of leakage of PDS kerosene, States have been classified in four categories viz. extremely high leakage (more than 50%), very high leakage (40 to 50%), high leakage (20 to 40%) and low leakage (less than 20%). The details are given in the statement at page 18.
- (iv) Further, in order to formulate a long-term pricing policy, the government had constituted an Inter-Ministerial Committee under the Chairmanship of Dr. C. Rangarajan, Chairman, Economic Advisory Council to the Prime Minister to examine different aspects of pricing and taxation of petroleum products with a view to stabilizing/rationalizing their prices, keeping in view the financial position of the oil companies, the investment needed in the sector, the need to conserve petroleum products, and establishing a transparent mechanism for the autonomous adjustment of prices by the oil companies. The Committee submitted its report on 17.2.2006. The Committee has inter alia recommended to restrict the subsidy on kerosene to BPL families only. The Government has accepted the recommendations of Dr. Rangarajan Committee Report and has decided 'in principle' that subsidy on PDS kerosene be limited to BPL families only. The proposal to work out the modalities to implement this decision and for rationalizing the allocation of PDS kerosene among States/UTs is under the consideration of the Government.



Chapter-II

EXPLORATION AND PRODUCTION



2. EXPLORATION AND 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 2007-08 is expected to be about 29.663 MMT as against the production of 29.11 MMT of crude oil during 2006-07.

In addition, there will be production of 5.1 MMT from the private and JV companies during 2007-08. Thus, total crude oil production in 2007-08 is expected to be about 34.763 MMT.

Total gas production during the year 2007-08 is expected to be about 31.67 BCM by ONGC, OIL and private/JV companies. The contribution of private/JV companies in gas production will be about 7.65 BCM in 2007-08.

2.1.2 Several measures taken to enhance hydrocarbon reserves and increase production are:

- 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 awarded to 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).

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

The following thrust points, discussed under respective industry segment, merit consideration for the healthy overall development of the 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 during XI plan period
- Establishment of National Knowledge Hub during XI plan period.

2.3 ACQUISITION OF EQUITY OIL ABROAD

In view of unfavourable demand – supply balance of hydrocarbons in the country, acquiring equity oil and



gas assets overseas is one of the important components of enhancing energy security. The Government is encouraging National Oil companies to aggressively pursue equity oil and gas opportunities overseas. Overseas production can be swapped, sold or brought to India refineries on commercial considerations. ONGC Videsh Limited (OVL) has participation in 35 projects with 50 blocks in 17 countries namely Vietnam (3 projects), Russia (1 project), Sudan (4 projects), Iran (1 project), Iraq (1 project), Libya (3 projects), Myanmar (5 projects), Syria (2 projects), Qatar (1 project), Egypt (2 project), Cuba (2 projects), Nigeria Sao Tome Principe JDZ (1 project), Brazil (1 project), Nigeria (2 projects), Colombia (4 project), Turkmenistan (1 project) and Congo (1 project). Out of the existing 35 projects, OVL is operator in 15 projects and joint operator in 2 projects in 10 countries.

OVL produced about 7.95 Million Metric Tonnes (MMT) of oil and equivalent gas during the year 2006-07 from

its assets abroad in Sudan, Vietnam, Russia, Syria and Colombia. OIL, IOC and GAIL are also engaged in acquiring overseas E&P assets. While OIL-IOC consortia have acquired blocks in Libya, Gabon, Yemen and Nigeria, GAIL has acquired interests in an offshore block in Myanmar.

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). Six rounds of bids have so far been invited under NELP, in which, 162 exploration blocks have been awarded. In addition, 28 exploration blocks were signed prior to NELP. Under NELP, 58 oil and gas discoveries



ONGC Videsh Ltd. (OVL) is one of the biggest Indian multinationals, with 38 Oil & Gas properties in 18 countries. The picture shows an ONGCian flanked by Chinese and Sudanese in an Oilfield in Sudan.



in 17 blocks have already been made in Cambay onland, North East Coast and Krishna-Godavari deepwater areas, for which, development plans by the operators, viz., Cairn, RIL and Niko are in progress.

With Exploration and development efforts made under NELP, Natural Gas production in the country is likely to be doubled from the present level of gas production of about 90 million standard cubic metres per day (MMSCMD) by end of 11th Five Year Plan.

India has an estimated sedimentary area of 3.14 million square kilometres, comprising 26 sedimentary basins, out of which, 1.35 million square kilometre area is in deepwater. At present 1.38 million square kilometres are held under Petroleum Exploration Licenses in 18 basins by national oil companies viz. Oil & Natural Gas Corporation Limited (ONGC), OIL India Limited (OIL) and Private/Joint Venture company. Before implementing the New Exploration Licensing Policy (NELP) in 1999, 11% of Indian sedimentary basins was under exploration, which has now increased significantly.

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. Coal is both the source and reservoir rock for CBM. CBM production is done by simple depressurization and dewatering process. To harness this new source of energy in the country, the Government approved a comprehensive CBM policy in July, 1997 for exploration and production of CBM gas.

As of now, 23 CBM Blocks were awarded through competitive international bidding in the first three rounds of CBM policy, under which blocks are being operated by technically competent companies. 2 blocks were awarded on nomination basis and one block through FIPB route. 26 CBM exploration blocks are under operation. 6 TCF reserves have already been established in 4 CBM blocks. First commercial production of CBM has commenced from July 2007.

As regards the fourth round of CBM, carving out of CBM blocks is in initial stage in consultation with Ministry of Coal. Once the clearance from Ministry of Coal becomes available, necessary action for launch of CBM-IV round will be taken.

2.6 OIL AND NATURAL GAS CORPORATION LIMITED (ONGC)



Oil & Natural Gas Commission (then 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 February 1, 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. 21,388.73 crore after issuing bonus shares in ratio of one bonus share for every two shares held.

2.6.1 Highlights for the Year 2007-08 (upto December, 2007)

- 19 oil and gas discoveries have been made by ONGC in 2007-08 till December, 2007.
- ONGC Videsh Limited have acquired 35 overseas projects in 17 countries including 9 overseas projects acquired in 2007-08.
- 4 new Clean Development Mechanism(CDM) projects of ONGC have been registered with United Nations, which is highest among Central PSUs.
- ONGC discovered Initial In place (IIP) reserves of 169.52 MMT of Oil and Oil equivalent Gas (O+OEG) from domestic fields, the highest during the last 11 years. Ultimate reserve accretion for 2006-07 is 65.56 MTOE.
- ONGC has been awarded 25 blocks out of 52 blocks offered under NELP-VI round of bidding: 10 in onland, 2 in offshore shallow water and 12 in Deepwater Offshore.
- ONGC has 7 blocks in Coal Bed Methane (CBM); production is expected to commence from 2009.



2.6.2 Physical Performance during 2006-07 & 2007-08

	Unit	2006-07Actual	2007-08 BE/MOU	2007-08 Actual Apr to Dec'07*	Expected2007-08
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Seismic Survey

On-land	2D (GLK/LK)3D (Sq. Kms.)	1238.0	575	342.83	3779.83
		3392.9	6438	2341.89	7712.89
Offshore	V2D (GLK/LK)3D (Sq. Kms.)	8512.9	5850	1428.28	16863.28
		20769.7	15919	6636.92	17659.92

Drilling Total **33913.5** **28782** **10749.92** **46015.92**

Exploratory	Meterage ('000m) Wells (Nos.)	220.618	402.812	175.55	348.98
		87	139	69	138
Development	Meterage ('000m) Wells (Nos.)	406.234	492.46	372.26	466.23
		178	231	166	221
Total (Expl.+Dev)	Meterage ('000m) Wells (Nos.)	626.852	895.27	547.81	815.2
		265	370	235	359.0

Production

Crude Oil	MMSCM	26.051	27.160	19.495	26.463
Natural Gas	MMSCM	22442.3	22097.7	16986.826	21648.94
Value Added Products	000Tonnes	32384	3244.8	2442.38	3172.83

* Provisional Data



2.6.3 Financial Performance during 2007-08

(Rs. in Crore)

Parameters	2006-07 (Actual)	2007-08 (BE)/MOU	2007-08 (Actual) April to December 2007*	Projections January 2008- March 2008
Plan Outlay	13305.03	17887.06	10770.38	7575.74
Total Income (Incl. Interest Income)	55656.73	53686.28	47180.85	8281.7
Net Profit	15642.91	14716.01	14074.55	1251.28
* Provisional Data				

2.6.4 Achievement

- ONGC posted a net profit of Rs. 14074.55 Crore during first nine months (April to December 2007) of 2007-08 as compared to Rs. 12961.28 Crore for the corresponding period of 2006-07. The profit is after sharing the subsidy/under-recoveries of Rs. 13528 Crore during 2007-08 (up to December 2007).
- 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.

Major projects completed during the year

Sl. No.	Name	Approved Cost (Rs. in Crore)
1.	Mumbai High South Redevelopment	6579.25
2.	D-I Development	506.52
3.	IOR North Kadi Phase-I	62.86



Major projects approved during the year

Sl. No.	Name	Approved Cost (Rs. in Crore)	Status/ Anticipated Completion
1.	Construction of new process complex MHN	2853.29	May 2010
2.	Development of B-22 Cluster Fields	2323.40	Sept. 2010
3.	Offshore Grid Interconnectivity Project (OGIP)	740.02	March 2012
4.	Development of B-46 Cluster Fields	1436.21	May 2010
5.	Development of B-193 Cluster Fields	3248.78	Aug. 2010
6.	Mumbai High South Redevelopment Phase – II	5713.07	May 2010



Hon'ble Prime Minister Dr. Manmohan Singh (extreme right) keenly observing a model of 'Rajiv Gandhi Urja Bhavan' being set up by ONGC for holistic research on Alternate Energy Sources. Delhi Lt. Governor Tejinder Khanna, UPA Chairperson Ms. Sonia Gandhi, Minister of Petroleum & Natural Gas (P&NG) Murli Deora, Delhi Chief Minister Ms. Sheila Dikshit and Minister of State (P&NG) Dinsha Patel are also seen with ONGC CMD R. S. Sharma (back, 2nd from right).

2.6.5 The progress of major projects of ONGC are as under:

2.6.6 Major Initiatives

i. Strategic goals set for two decades 2001-2020

- Doubling Reserve Accretion to 12 billion MMT 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 seismics 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

- Comprehensive organizational restructuring – “Corporate Rejuvenation Campaign” (CRC) – conceptualised and launched across the entire organization changing from Business Group concepts to Asset/Basin Management with focus on results rather than activities.
- Substantive decentralization of administrative authorities together with delegation of financial authorities carried out to empower the field executives.



- ONGC entered into Strategic Alliances and Collaborations with industry leaders, Domain experts and corporates with niche strengths like
- ENI Italy
- Statoil Hydro, Norway
- Roxar Software Solutions, Norway
- Halliburton and Offshore Services Inc.
- NTNU, Norway
- NGRI Hyderabad
- IPR Int. Ltd.
- Schlumberger Asia Services Ltd.
- Baker Hughes Singapore Pte.
- TGT for 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.

- 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 and communication and Control Networks was carried out.



ONGC has become the first-ever Indian company in the Fortune magazine's list of 'World's Most Admired Companies', 2007. The picture shows ONGC CMD and Directors with the award. From left: Director (T&FS) U N Bose, Director (Offshore) N K Mitra, CMD R S Sharma, Director (Exploration) D K Pande, Director (HR) Dr. A K Balyan and Director (Onshore) A K Hazarika



Plans were finalized for modernization, expansion and integration of all Infocom systems.

2.6.7 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 are already installed and initiatives have been taken to install the solar water Heating System at ONGC colony Dehradun & Noida, Girls Polytechnic hostel and ONGC Academy, Dehradun.

2.6.8 Health, Safety and Environment (HSE)

Environmental initiatives pertaining to metamorphosis of existent environment management system to conform to international benchmark, to minimize and to add value to the waste through reduction at source as well as recycling options and thus, turning environmental liabilities into opportunities

Environmental initiatives encompassed solid waste, liquid effluent, air emission monitoring mechanism for proactive planning to manage waste through environment friendly technologies like bioremediation, reduction and recycling options and environmental reporting based on global reporting initiative principles.

2.6.9 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.
- Using natural gas geysers at Mehsana.
- Thermal energy cost reduction achieved by maintenance of steam traps at processing plants.
- Conducting Energy audit on regular basis and identification of 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 Limited on March 5, 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 June 15, 1989. The authorised and paid-up share capital of OVL as on March 31, 2007 was Rs. 1,000 crore. The primary business of the company is to prospect for oil and gas abroad. This includes acquisition of oil and gas fields in foreign countries as well as exploration, production, transportation and sale of oil and gas.

OVL has presence in 17 countries. It has 37 oil and gas projects. OVL has production of oil and gas from Sudan, Vietnam, Syria, Russia and Colombia. Block BC-



An installation at Sakhalin in Russia, where ONGC Videsh is operating to bring in equity oil for India

IO 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, Najwat Najem Structure in Qatar 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 7.952 MMT in 2006-07 as compared to 6.339 MMT in 2005-06. The consolidated gross revenue of OVL during the financial year 2006-07 stood at Rs. 11,901 crore registering 46% increase from last year's gross revenue of Rs. 8,171 crore. During 2006-07, the consolidated profits (PAT) were at Rs. 1,663 crore, against Rs. 901 crore for 2005-06 registering 85% increase.

Further, OVL is pursuing acquisition of various oil and

gas exploration and production opportunities in Central Asia, Latin America, Africa, Middle East and South East Asia, 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. 500.00 crores and the paid up capital of the company is Rs. 214.00 crore.

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 Assam, Arunachal Pradesh, Mizoram, Orissa, Uttar Pradesh, Uttarakhand and Rajasthan in the country. OIL is operating in 19 nominated ML and 19 nominated PELs. The Company has acquired participating interest in a total of 21 NELP blocks up to the end of NELP-VI bidding round with the right of Operatorship in respect of 12 blocks. The Company also holds Participating Interests (Pis) in another four Pre-NELP JV blocks in India and Production Sharing Interest (PSI) in one Joint Venture Contract with other partners in Arunachal Pradesh.

OIL is presently active overseas in seven countries, viz. Libya, Gabon, Iran, Nigeria, Yemen, Sudan and Bangladesh, pursuing various upstream E&P activities. In addition, the Company is continuously scouting for suitable E&P opportunities in other countries like Syria, Indonesia, Oman, Kazakhstan, Russia, etc., either alone or with suitable partners.

OIL owns and operates a trunk crude oil pipeline in the North East region of the country for transportation of crude oil produced by OIL as well as ONGC including ONGCL's other partners like CANORO in the region to feed Numaligarh, Guwahati and Bongaigaon refineries. OIL also own 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 natural gas produced in Assam is sold to different customers, viz. BVFCL, APGCL, NEEPCO, IOC (AOD), APL and nearby tea gardens. The non-associated gas produced by the Company in Rajasthan is sold to Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRVUNL). OIL also

produces Liquefied Petroleum Gas (LPG) in its plant at Duliajan, 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.

2.8 .I Physical Performance:

			2007-08		
Parameter	Unit	2006-07 (Actual)	Target	Actual upto 31.12.2007	Anticipated (2007-08)
Seismic Survey :					
Onshore 2D	GLKM	1,185.77	4,830	2,336.13	3,480
3D	SQKM	923.39	1,150	373.52	1,414
LKM	2,500	—	33,912	33,912	
Drilling :					
Exploratory	‘000 Mtr.	42.066	88.650	30.494	43.650
Well	No.	9	22	7	11
Development	‘000 Mtr.	72.553	105.20	68.852	96.569
Well	No.	23	35	21	35
Crude Oil Production	MMT	3.107	3.50	2.274	3.20
Natural Gas Production	MMSCM	2,264.57	2,976	1,754.74	2,375
Natural Gas Sale	MMSCM	1,767.50	2,423	1,372.05	1,859
LPG Production	‘000Tonnes	43.75	45	35.510	45

2.8.2 Financial Performance

(Rs. in Crore)

Parameter	2006-07 (Actual)	Target	2007-08	
			Achievement (Estimated) upto 31.12.2007	Anticipated (2007-08)
Plan Outlay	1,620.96	1,705.68	843.45	1,519.68
Total Income	6,007.78	5,932.28	4,716.30	6,228.45
Net Profit	1,639.99	1,327.59	1,275.08	1,468.54
Internal Resource	1,241.17	1,910.73	1,116.57	1,303.97



2.8.3 Other Achievements:

- The integrated enterprise application (SAP-ERP) capability have been expanded across the organization through e-networking to cover business and information related to all aspects of Company's activities.
- The J-Bend drilling technology has been adopted for the first time in OIL during the year 2007-08.
- Horizontal wells drilled during the year resulted in significant increase of crude oil production.
- During the year, OIL executed Gas Supply Agreement with M/s. Brahmaputra Cracker and Polymer Ltd. for supply of gas for feedstock and fuel to Assam Gas Cracker Project.

2.8.4 Progress of Projects:

(i) Domestic

The following major project related to regular E&P activities is at various stages of implementation:

Sl.No.	Name of the Project/Location	Approved Cost (Rs. in Crores)	Status
I.	Product pipeline from Numaligarh to Siliguri	468.92	1. Laying of 396 km pipeline completed. 7 river crossings by micro- tunnelling mode is to be completed 2. Project is likely to be completed in 2007-08.

(ii) Overseas Projects

Details of Overseas projects are as under:

a) Exploration Service Contract – Farsi Offshore Block

OIL has 20% Participating Interest (PI) 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 oil discoveries is currently under progress.

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, 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 data. Processing and interpretation of 2D seismic data in progress.

d) Block -102(4), Libya :

OIL is having 50% PI and the Operator in the block and the other partner is IOC with 50% PI, awarded in EPSA IV Bid Round 2 in the year 2006. 1,278.80 GLK of 2D seismic data was acquired in the block. Currently processing/ interpretation is in progress. OIL plans for 700 sq. km. of 3D seismic survey in both blocks 86 and 102/4.

e) Block – Shakthi, Republic of Gabon:

OIL 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. Actions are in hand for acquisition of 1,000 GLK of 2D seismic data in the block.

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). PSCs are awaiting the approval of Government of Yemen.

h) Area 95, 96, Libya :

The consortium led by M/s. Sonatrach, Algeria with PI of 25% each by OIL and IOCL was awarded onland area comprising of 4 blocks in the recently concluded Libyan Exploration Gas Bid Round – IV, 2007.

i) 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:

- Exploration within and outside the country along with acquisition of producing property is considered to be a major thrust area.
- Exploratory efforts will also be enhanced in the petroliferous Upper Assam basin in the Northeast to test a large number of structures by drilling.
- Baghjan and North Chandmari are going to be the centre stage for development activities in Assam.
- Enhanced efforts will be put to reduce the number of sick wells by bringing them back on stream.
- Expeditious exploratory work planned in approx. 1960 sq km of logistically difficult terrains in the NE such as Brahmaputra River, riverine terrain, swampy and marshy areas, rugged hilly terrain with forests, etc.
- Efforts to produce heavy oil from Baghewala field, Rajasthan will continue.
- To pursue NELP opportunities aggressively including equity participation.
- Enhancement of pressure maintenance, IOR / EOR schemes, additional workover efforts,



OIL's Oil collecting Station at Jorajan, Assam



closer monitoring of reservoirs and well performance, have been given important consideration in future plan of crude oil production.

- Upper Assam basin reaching maturity in oil & gas exploration, the new discoveries are gradually diminishing in size resulting in limited scope for development. Production facilities like well-head production set-up, QPS, EPS, etc. will immediately be commissioned to put the successful wells onto production.
- Enhancement of sale of natural gas to the potential consumers in the North-East is considered as a major strategy of the Company for future. To meet the gas requirement of the market including additional gas for proposed Brahmaputra Cracker and Polymer Limited, City Gas distribution in Guwahati etc., actions have already been taken to develop the non-associated gas reserves in Assam.

In view of the changed scenario in the hydrocarbon sector and to meet the future challenges OIL has formulated long term Strategic and Corporate Plan. The plan also calls for a diversified business portfolio for the Company through selective presence in the oil and gas value chain covering amongst others refining, marketing/retailing, gas monetization through cracker/power generation and extension of existing business of pipeline services and E&P services as a service provider. The plan is being implemented through six distinct modules

- Business and Organization Restructuring and Creation of a New Performance Management System.
- Change Management and Creation of a new HR Policy to meet the requirements of the new and emerging competitive business environment.

- Implementation of Enterprise Resource Planning (ERP)
- Performance Improvement and Cost Reduction
- Manpower Redeployment
- Corporate Governance Framework

2.9 GAIL (INDIA) LIMITED

2.9.1 GAIL (India) Limited, India's principal Gas Transmission and Marketing Company, was



created in 1984 with the objective of accelerating and optimizing the effective and economic use of natural gas and its fractions to the benefit of national economy. In line with core objective of its incorporation, GAIL has, over the years, developed natural gas infrastructure for sustained development of gas market in the country. GAIL, in the last two decades of its existence, has created a sizeable natural gas market in the country and presently markets around 25 BCM of Natural Gas. GAIL handles around 28 BCM of Natural Gas through its Transmission Network. Currently, GAIL's market share in gas transmission and marketing is 79% and 70% respectively.

GAIL has integrated across the Gas value chain, and has transformed itself from a Gas Transmission and Marketing Company to an Integrated Gas Major with an entry into the Global Market. GAIL has expanded downstream into Gas Processing – LPG & other value-added Liquid Hydrocarbon Products and Gas-based Petrochemicals. It has also leveraged its core competence by way of setting up world's largest Liquefied Petroleum Gas (LPG) Transmission Pipeline (Jamnagar-Loni pipeline). It has extended the fibre optic network already laid along the pipeline infrastructure for Telecom Business.

To ensure long-term security of gas-supply from multiple sources, the Company has ventured into Liquefied Natural Gas Re-gasification and Exploration & Production through Joint Ventures / Equity Participation routes. In fact, GAIL played



a lead and pivotal role in sourcing R-LNG from RasGas, Qatar and developing the R-LNG market.

GAIL has also ventured into downstream natural gas business by way of Joint Ventures/ Equity Participation.

Today, GAIL is the owner and operator of :

- India's largest Gas Transmission Network (6778 km pipelines)
- World's longest exclusive LPG Pipeline (Jamnagar-Loni pipeline -1269 kms) and Vizag-Secunderabad LPG pipeline (653 kms.)
- Seven Gas Processing facilities with a capacity of more than 1.2 MMTPA of LPG
- Largest gas-based Petrochemicals Complex in North India with an installed capacity of 310,000 TPA of Polyethylene (HDPE,

LLDPE), which is undergoing capacity expansion up to 410,000 TPA

- Optical Fibre Cable Network of more than 13,000 km to offer bandwidth as a Carrier's Carrier in the Telecom sector

The Company has a paid-up Capital of Rs. 845.65 crores. Government of India holds 57.35% of its equity, and the remaining is held by GDR holders (6.01%), ONGC and IOC (4.83% each) and other Institutional & individual holders (26.98%).

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



Laying of GAIL- Dahej-Uran Pipeline for Natural Gas transmission



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. Dahej-Uran Pipeline (DUPL) and Dabhol-Panvel pipeline (DPPL) have been commissioned by GAIL on July 11, 2007. Kelaras-Malanpur, Vijaipur-Kota and Jagoti-Pitampur pipelines have been commissioned by GAIL in July 2006, January 2007 and March 2007 respectively.

The details of pipelines, for which authorizations have been issued recently to GAIL, are as follows:

Sl. No.	Name of the Pipeline	Length (in km)
1.	Dadri-Bawana-Nangal Pipeline	610
2.	Chainsa-Gurgaon-Jhajjar-Hissar Pipeline	310
3.	Jagdishpur-Haldia Pipeline	876
4.	Dabhol-Bangalore Pipeline	730
5.	Kochi-Kanjirkkod-Bangalore/Mangalore Pipeline	822

2.9.3 Performance at a glance for the years 2006-07 & 2007-08 (projected) are given below:

A) Physical

Parameters	Units	Actual Performance in 2006-07	Performance in 2007-08 upto Dec.'07 (provisional)	Projected Performance in 2007-08
Gas Transportation	MMSCMD	77.28	82.08	81.54
Liquid Hydrocarbon Production	'000 MT	1343	1016	1280
Petrochemical Production	'000 MT	354	277	379
LPG Transportation	'000 MT	2491	1971	2534

B) Financial

Description	Units	Actual Performance in 2006-07	Performance in 2007-08 (Upto Dec, 07)	Projected Performance in 2007-08
Profit after Tax	Rs in Crore	2387	1879	1778
Gross Internal Generation (PAT+ Depreciation)	Rs in Crore	2962	2308	2379

GAIL (India) Limited has paid dividend of Rs.969.27 crore (including Corporate Dividend tax) for the year 2006-2007.



2.9.4.1 Projects

Major Pipeline Projects Completed During 2007-08

- (i) Dahej to Panvel Pipeline Project. (30" X 390 Km from Dahej to Panvel)

- (ii) Panvel to Dabhol Pipeline Project (30" X 188 Km from Panvel to Dabhol): Completed on 11.07.2007.

2.9.4.2 Major On-going Pipeline Projects - 2007 - 08 (as on 25.12.2007)

Name of Project	Sanctioned Cost	Schedule Completion/Commissioning	Present Status	
			Physical Progress (as on 31.12.2007)	Financial Progress. (as on 31.12.2007)
Spur lines of Dahej – Uran Pipe Project i.e, pipelines to MSEB Uran, DFCL and Trombay.	Rs. 160 Cr. (Apportioned cost of branch Lines)	March' 08	Branch Lines - 65%	55%
Pipeline to Pune and Usar. (DPPL – II)	Rs. 550 Cr. (Apportioned cost of Phase - II)	April' 08	69%	24%



GAIL compressor station at Hazira, Gujarat



2.9.5 Joint Ventures 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:

(i) 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.

(ii) 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.

(iii) 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.

(iv) 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.

(v) 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.

(vi) 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.

(vii) 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.

(viii) AVANTIKA GAS LIMITED (AGL):

AGL, a Joint Venture with Hindustan Petroleum Corporation Limited, has been incorporated on 7th June, 2006 for City Gas Distribution projects in the State of Madhya Pradesh.

(ix) BRAHMAPUTRA CRACKER & POLYMER LIMITED:

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. The company has been named as 'Brahmaputra Cracker and Polymer Limited' (BCPL). Project Office has been opened in Guwahati on 16.6.2006. Land acquisition process has been started by the Government of Assam, which is likely to be completed by March 2007. Oil Industry Development Board (OIDB) has granted in-principle approval for a term loan of Rs.327 crores. Discussions are on with the financial institutions/banks for raising debt.



(x) RATNAGIRI GAS AND POWER PRIVATE LIMITED (RGPPPL):

GAIL has been pursuing opportunities of Mergers and Acquisitions (M&A) in various sectors. A noteworthy outcome in this direction has been the acquisition of assets of the Dabhol Power project by a new Joint Venture Company, namely, Ratnagiri Gas and Power Private Limited (RGPPPL), where GAIL has 28.5% participating interest. The company has paid Rs.500 crores as advance pending allotment of equity shares. It is an integrated project, i.e., gas based power plant of 2,184 MW and a LNG import and regasification facility with a capacity of 5 MMTPA. Commissioning of this project will offer an opportunity to the Company to import 2.9 MMTPA of LNG for merchant sales.

(xi) 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. PLL was formed for importing LNG and setting up of LNG import and Regasification facilities. PLL has finalized a long-term LNG supply contract with Ras Gas, Qatar for import of 7.5 MMTPA; the present supply under the contract is 5 MMTPA. The Dahej terminal is under operation at its full capacity of 5 MMTPA. It would be expanded to 10 MMTPA.

GAIL has installed a countrywide GAILTEL Network Management Center (NMC), which is a state-of-the-art telecom network management facility, enabling centralized monitoring and control of the entire GAILTEL network. This network management centre is designed for 24 X 7 operations with world class facilities to ensure reliability, safety and security of the operational systems. The NMC houses high-end NMS servers, which allow centralized control over the entire telecom assets in the areas of real time fault management, remote configuration management, network performance management and asset security management.

2.9.7 Exploration and Production

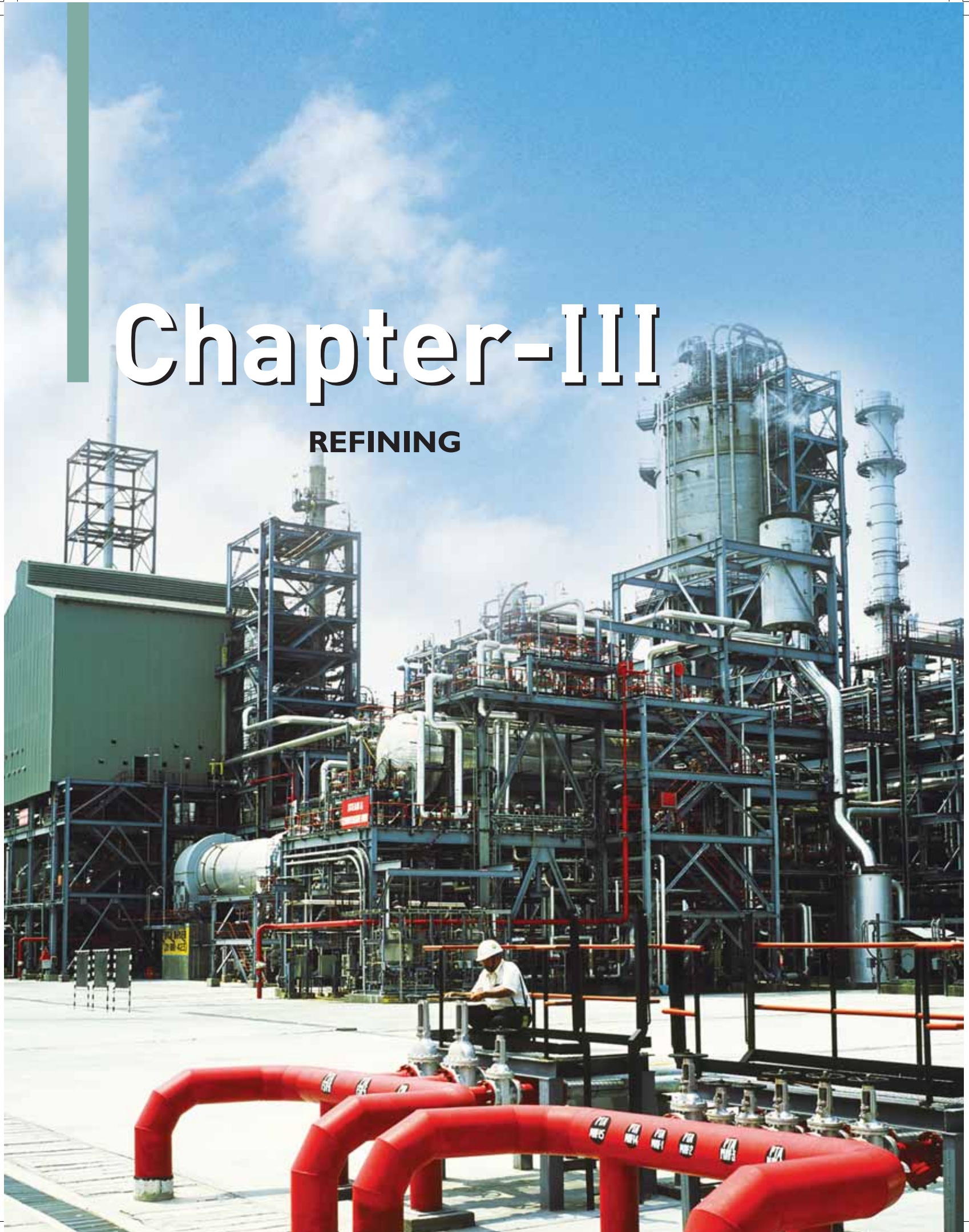
E&P activities continued to remain a focus during the year. The production of crude oil in the Cambay Block in Gujarat has started; the company holds 50% participating interest. GAIL, along with other consortium partners, was awarded Block 56 in Oman through bidding. GAIL has two blocks in Myanmar which have gas finding. In the Coal Bed Methane third bidding round, the consortium led by GAIL was awarded three CBM blocks. GAIL has also bid for 28 exploration blocks in the NELP-VI bidding round. Under VI round of bidding 52 blocks are finalized. 57 blocks are being offered for bidding under NELP – VII.

2.9.6 Telecommunication - GAILTEL

GAIL has utilized its telecommunications network, which is for its captive use for pipeline network, to connect various cities. Presently it owns 13,000 km of optical fibre cable and offers its bandwidth to telecom operators. GAIL has also joined hands and signed an MOU with Power Grid Corporation and Rail Tel for cooperation in telecom sector. GAIL is also in the process of acquiring National Long Distance (NLD) license, which would throw open the lucrative corporate and Government segment. This shall mean a significant increase in the size of the addressable market.

Chapter-III

REFINING





3. REFINING

3.1 REFINING CAPACITY

The present refining capacity in the country is 148.97 Million Metric Tonnes Per Annum (MMTPA) comprising of 105.47 MMTPA by PSUs and 43.50 MMTPA by private sector. At present, there are 19 refineries operating in the country, out of which 17 are in public sector and two in private sector. Out of the 17 Public Sector refineries 7 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, 1 each by Numaligarh Refinery Limited (a subsidiary of BPCL) and Bangaigaon Refinery and Petrochemicals Ltd. (a subsidiary of IOCL). The private sector refineries belong 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 Basin, Nagapattinam was set up initially with a capacity of 0.5 MMTPA in 1993 and later its capacity was enhanced to 1.0 MMTPA in 2002.

3.2.1 Physical Performance

During the year 2006-07, the company processed 10.40 Million Metric Tonnes (MMT) of crude oil, which was higher than the figure of 10.36 MMT in the previous year. The company achieved MoU Excellent rating for its overall performance during the year 2006-07.

3.2.2 Financial Performance

During the year 2006-07, the company achieved a turnover of Rs.29,349 crore as against Rs.25,408 crore in the previous year. The profit before tax was higher at Rs.881.00 crore as against Rs.723.00 crore. The profit after tax was Rs.565.27 crore as compared to Rs.480.96 crore in the previous year. The company maintained the dividend rate of 120% for the year 2006-07.



A view of CPCL's 5.8 MGD Desalination Plant at Kattupalli near Ennore



3.2.3 Projects completed

3.2.3.1 MGD capacity Sewage Reclamation Plant :

An additional 2.5 MGD capacity Sewage Reclamation Plant was commissioned in January, 2007 at a cost of Rs.47.00 crore to enhance the water availability for Manali Refinery by processing metro sewage.

3.2.3.2 Offsite Automation Project :

An Offsite Automation facility for auto blending various components of MS Diesel and Furnace Oil has been completed during the year 2006-07 at a cost of Rs.26.8 crore. This project will improve the blending operation for meeting the product specification.

3.2.3.3 Windmill Power Project :

In order to promote clean energy and contribute to the global movement in reducing green house gas

emissions, CPCL has implemented a Windmill Power Project of 17.6 MW capacity. This project was installed at a cost of about Rs.90.00 crore and was completed by September, 2007.

3.2.4 New Project initiatives :

3.2.4.1 Auto Fuel quality Projects to meet Euro-IV

CPCL has taken up the following initiatives in order to supply Euro-IV MS and HSD to the market well before the scheduled date of 1st April 2010.

- Setting up a New Diesel Hydro treating unit by December 2009 to enable the Refinery to upgrade diesel quality to Euro-IV standard.
- Capacity augmentation of the existing Catalytic Reformer Unit and setting up of a new isomerisation unit by the year 2009 for upgradation of MS quality to Euro-IV standard.



Dedication of CPCL Windmill Farm at Rajampatti in Dindigul District, Tamilnadu on 6th October 2007.



3.2.4.2 Refinery 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 capacity of CDU-I will also be revamped by additional 0.7 MMTPA. The expected cost of these projects is Rs.314 crore and is expected to be completed by early 2009. With the implementation of these projects, the capacity of Manali Refinery will increase from 9.5 to 11.2 MMTPA.

3.2.5 Other on-going projects (Approved prior to 2006-07)

A 5.8 MGD Desalination Project and 20 MW GT project at an estimated costs of Rs.231.34 crore and Rs.157.88 crore respectively are being implemented.

3.2.6 Future Plans

3.2.6.1 15 MMTPA Refinery - cum - Petrochemical Complex

A pre-feasibility study for setting up of a New Integrated 15 MMTPA Refinery-cum-Petrochemical complex at Ennore near Chennai has been completed. CPCL is following up with Govt. of Tamil Nadu for allocation of about 3000 acres of land near Ennore Port.

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



A view of the Delayed Coking Unit (DCU)-I of BRPL after implementation of TPM.



Terephthalate (DMT) and Polyester Staple Fibre (PSF) units. The crude processing capacity of the Refinery was enhanced to 2.35 MMTA in 1995-96 by commissioning of its Refinery Expansion Units.

The authorized equity capital and the paid-up capital of the Company is Rs.200 crore and Rs.199.82 crore respectively. The Government of India disinvested its equity share of 74.46% to Indian Oil Corporation Limited (IOCL) in March, 2001 and hence BRPL became the subsidiary Company of IOCL on 29th March, 2001.

3.3.1 Physical Performance

The refinery processed 2.067 million metric tones (MMT) of crude oil during the year 2006-07 as against 2.356 MMT in the previous year. LPG yield of 2.32% on crude throughput during the year 2006-07 was

better than the previous highest of 2.25% achieved in the year 2003-04. The company achieved lowest ever Fuel & Loss of 5.40% on crude throughput during the period 2006-07.

3.3.2 Financial Performance

The Company earned a net profit of Rs.185 crore in 2006-07. The Company expects to earn an estimated net profit of Rs.314 crores for the year 2007-08. The Company achieved highest ever turnover of Rs.6426 crore during the year 2006-07.

3.3.3 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



Shri Murli Deora, Hon'ble Minister of Petroleum & Natural Gas giving away the 1st prize for 'Minimum Steam Leak' to BRPL. Award is being received by Shri A.K. Sarmah, MD, BRPL, A. Saran, Director (O), BRPL.



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.1431.91 crore. The project is likely to be completed by October, 2009.

- (ii) **Motor Spirit Maximization Project:** This project will reduce production of demand limited naphtha and increase the production of high value Motor Spirit. The estimated cost of this project is Rs.44.56 crore. The project is likely to be completed by August, 2008.

3.3.4 Projects under consideration:

- (i) **Motor Spirit Quality Up gradation Project**

The Company has taken action for setting up a Motor Spirit Quality upgradation project by using the existing idle Xylene Isomerisation unit to meet

Euro-III equivalent specification of Motor Spirit. The project is expected to be completed by September, 2009.

- (ii) **Indmax Project**

BRPL has proposed to install indmax Project which works at high operation severity to maximize production of LPG and Gasoline from various residual petroleum fractions using Fluidised Catalytic Cracking (FCC) reactor-regenerator configuration and proprietary catalyst formulation.

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. The project is expected to be completed by the year 2012.



Free Medical Health Camps organized by BRPL at Dhaligaon under Community Development Scheme



3.3.5 Merger with holding Company IOCL:

Considering the benefits of synergy and integration of business operation of BRPL with the holding Company, IndianOil, the Board of Directors of both the companies have taken in-principle decision for merger of BRPL with IndianOil, subject to approval of the Government of India. Necessary steps in this regard have already been taken.

3.4 NUMALIGARH REFINERY LIMITED (NRL)



Numaligarh Refinery, Popularly known as “Assam Accord Refinery” had been 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. Commissioning process of Numaligarh Refinery was completed in June 2000 and commercial production commenced from 1st October, 2000.

3.4.1 Physical Performance

During the year 2006-07, the crude throughput was 2504 TMT. During April-Sept. 2007, the crude throughput was 1246 TMT. Distillate yield of 84.74% was achieved by NRL during 2006-07.

3.4.2 Financial Performance

During the period 2006-07, the Company registered a profit (After Tax) of Rs.568.80 crore. Sales Turnover during the period 2006-07 was Rs.7930.327 crores. The Company has paid Rs.139.77 crore as dividend for the year 2005-06.

3.4.3 Completed Projects

MS Project (Euro-III Specification)

In order to add value to surplus Naphtha produced in the Refinery, NRL has commissioned a Motor Spirit

Plant with a rated capacity to produce 185 TMT of MS per annum during the financial year 2006-07. The Project was completed within the approved cost of Rs.296.86 crores during the Xth Five Year Plan (2002-07).

3.4.4 Projects under implementation

Siliguri Marketing Terminal Project under implementation 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 of 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 setting up Product Receiving and Dispatch Terminal at Siliguri at an estimated project cost of Rs. 149.57 crores and Dispatch Terminal at Numaligarh at an estimated project cost of Rs. 4.32 crores.

12 MW Steam Turbine Generator (STG) Project

As a part of efforts towards continuous improvement in energy conservation and overall efficiency of plant operations, NRL is installing a 12 MW STG at an estimated cost of Rs.33.00 crore to generate power from surplus steam available in the Refinery.

Diesel Quality Up-gradation Project

In line with ‘Auto Fuel Policy’, NRL has been producing HSD conforming to BS-II & Euro-III grade up to 90% capacity utilization of Crude Distillation Unit without additional capital investment. Since the present capacity utilization of refinery is restricted upto 90% for producing Euro-III grade HSD, actions have been initiated for revamping the Hydrocracker and Hydrogen Units for production of Euro-III HSD at 100% capacity utilization to meet requirements of the ‘Auto Fuel Policy’ from April, 2010. A provision of Rs.299 crores has been kept in the ‘XIth Five Year Plan’ outlay for completion of the project within the Five Year Plan period.



3.5 MANGALORE REFINERY & PETROCHEMICALS LIMITED (MRPL)



Mangalore Refinery and Petrochemicals Limited (MRPL), first joint venture company for setting up a crude petroleum Refinery in India was formed in 1987 jointly by Hindustan Petroleum Corporation Limited alongwith Indian Rayon and Industries Limited and its associate companies (A.V. Birla Group). The refinery project was commissioned in March, 1996 with an actual capacity of 3.69 MMTPA. The expansion project of MRPL, having capacity of 9.69 MMTPA, was commissioned in April, 2001. The refinery is located at Mangalore on the western coast of India, primarily conceived to maximize middle distillates, such as kerosene and diesel. The refinery is designed to process light to heavy and sour to sweet crude. The performance of MRPL started deteriorating after dismantling of APM for refineries in April, 1998 and the Company came very close to becoming a sick company by 2002-03.

With the approval of the Government, ONGC acquired the entire stake of Aditya Birla Group in MRPL for Rs.59.43 crore and also infused additional equity capital of Rs.600 crore in March, 2003 as part of the approved debt restructuring plan. With this, ONGC acquired 51% stake in the equity of MRPL. Thus, MRPL became a Government company within the meaning and scope of Section 617 of the Companies Act, 1956 and also a subsidiary company of ONGC. In June / July 2003, ONGC acquired 35.80 crore equity shares held by banks and financial institutions issued against part conversion of their loans in terms of debt restructuring plan, increasing its stake in MRPL to 71.62%.

MRPL is the first refinery in India to produce Euro-III High Speed Diesel (HSD) and Euro-III Motor Spirit (Petrol).

3.5.1 Physical Performance

During the year 2006-07, the Company processed highest ever throughput of 12.54 million metric tonnes (MMT) of crude oil achieving 130% capacity utilization, produced 11.712 MMT of finished goods and dispatched 11.44 MMT of finished goods. Yield for the

year was 93.46%, comprising distillates 72.75% and heavy ends 20.71%. The fuel & loss of the refinery was 6.54%. The Company's Mixed Xylene Plant to recover maximum quantity of Xylene (Ortho, Para & meta xylenes and also ethyl benzene) using distillation process was commissioned on 17.11.2006. The Company's Isomerization Unit consisting of Mixed Light Naphtha Hydrotreater (LNHT), Bensat, Penex (LNHT/DeP/Penex) process unit was commissioned on 30.12.2006.

3.5.2 Financial Performance

During the financial year 2005-06, the Company earned a net profit of Rs.525.52 crore. Taking an overall prudent view, and the forthcoming investment in expansion programmes, the Company declared a dividend of 8%.

3.5.3 Future Plans

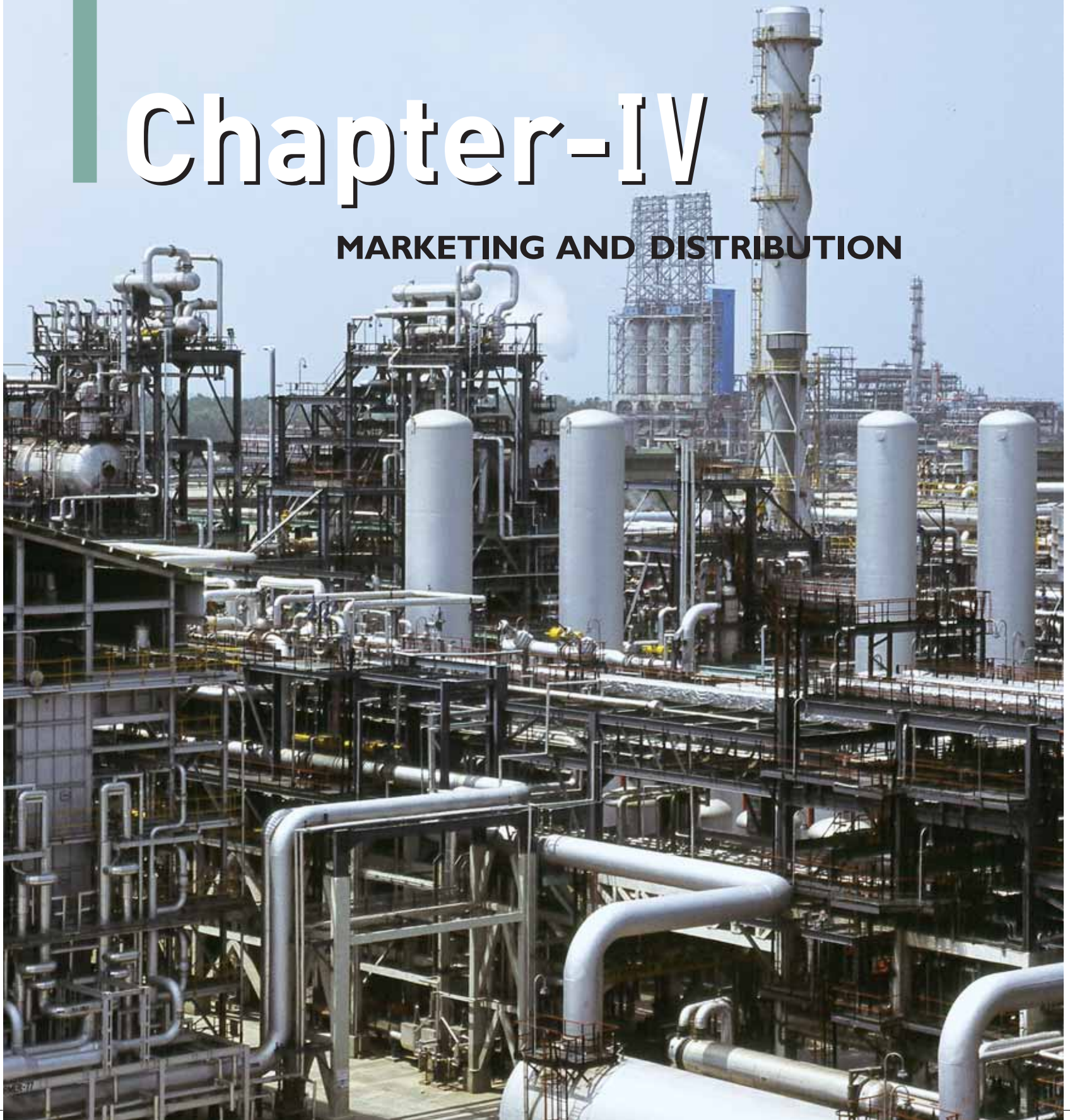
The strategic plans evolve around the basic objectives of GRM improvement, value addition to products and marketing expansion. As part of the proposed Olefin project, in the first phase the refinery plans to expand its propylene production capacity and add manufacturing of poly propylene (PP). The surplus c3/c4 streams from existing refinery and phase 3 expansion can be converted into high value propylene and then to PP. Preliminary feasibility study is being executed through EIL.

In order to gain from the low freight through Very Large Crude Carrier (VLCC), a study has been commissioned for installing Single Buoy Mooring (SBM) facilities at Mangalore Port. This will enable the refinery to source Crude through VLCC, and hence W. African, & South American crudes can be made economical. This will also impart flexibility to the shipping operations and will improve GRM of the company.

Low cost revamps are being taken up to de-bottleneck the CDU Phase I, GOHDS and Hydrogen units. As the fuel quality norms are becoming more stringent, the availability of low sulfur blend streams is crucial. GOHDS and Hydrogen unit revamps are particularly planned for this objective.

Chapter-IV

MARKETING AND DISTRIBUTION





4. MARKETING AND DISTRIBUTION

4.1 INDIAN OIL CORPORATION LIMITED (IOCL)



- 4.1.1** Indian Oil Corporation Ltd. (IOC) is the country's largest commercial enterprise with a sales turnover of Rs. 2,20,779 crore and profit after tax of Rs. 7,499 crore for the financial year 2006-07. It is the first and the only company in the country to achieve the landmark of crossing Rs. 2,00,000 crore in turnover. IOC is also the 20th largest petroleum company in the world. It is the first and the highest ranked Indian company in the Fortune 'Global 500', placed at 135th position by sales.



India's first experimental Hydrogen-CNG dispensing station set up at Indian Oil's R&D Centre for trials on select vehicles on way to commercialisation of Hydrogen as an alternative automotive fuel.

4.1.2 Physical Assets

IOCL owns and operates 7 out of India's 19 refineries with a refining capacity of 47.35 million metric tonnes per annum (MMTPA) (31.8% industry share). IOC Group has 3 additional refineries, 2 of Chennai Petroleum Corporation Ltd. (10.5 MMTPA) and 1 of Bongaigaon Refinery & Petrochemicals Ltd. (2.35 MMTPA). Combined refining capacity of the IOC group



Single Buoy Mooring at Vadinar in the Gulf of Kutch for receipt of imported crude oil through Very Large Crude Carriers.

is 60.2 MMTPA (40.4% industry share). IOC has the largest network of cross-country crude oil and product pipelines, spanning about 9,300 KM. With a capacity of 61.7 MMTPA, it holds a share of 66% of downstream industry capacity in pipelines. The company has an extensive marketing network of over 33,800 touch points (55% industry share) to service customers across the length and breadth of the country. IOC operates the largest and widest network of retail outlets,



numbering about 17,100. It reaches Indane cooking gas to the doorsteps of about 49 million households. 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 growth of IOC's marketing touch points over the past three years, status as on 31.12.2007 and projection upto 31.3.2008 is indicated below:

- Exchange of product streams among group company refineries to optimize capacity utilization and maximize gross refinery margins.
- To reduce input cost to refineries through increase in processing of heavy and high sulphur crude oils.

Description	2004-05	2005-06	2006-07	2007-08 (up to 31.3.2008)	Projected up to 31.3.2008
Petrol/Diesel stations (Retail Outlets)-Nos.	10,228	11,754	16,540	17,114	17,431
LPG (indane) distributors-No.	4,699	4,856	4,996	4,987	4,992
Aviation fuel stations-No.	95	97	97	101	101
SKO/LDO dealers.	3,555	3,565	3,955	3,956	3,956
Terminal & depots	158	167	167	167	167
Bulk consumer pumps	5,878	6,284	6,685	7,033	7,075
LPG (Indane) bottling plants – No.	87	88	89	89	90

IOC added 1202 retail outlets in 2006-07, including 743 rural format *Kisan Seva Kendras (KSKs)*, widening its reach to rural India. 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 keeping with international trends, adding value to its product slate, optimizing cost and reducing fuel & loss.

- To merge subsidiaries, namely, IBP Co. Ltd. and Bongaigaon Refinery and Petrochemicals Limited (BRPL) with itself for improved synergy. While IBP has been merged in May 2007, the process in respect of BRPL is at an advanced stage.
- Branding of products and services in order to improve focus on meeting niche market requirements and to provide better value for customers.
- 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. sourcing, transportation and marketing, 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.
- 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 M.S. Srinivasan, Secretary, Ministry of Petroleum and Shri Sarthak Behuria, Chairman, Indian Oil with documents of the MoU signed with the Government of India for the Year 2007-08.

- Implementation of ERP.
- Direct chartering of ships instead of going through Transchart under Ministry of Shipping.
- Implementation of electronic based Performance Management System.
- Corporate Social Responsibility.

4.1.4 Performance

The performance of India's flagship oil company IOC, in the financial year 2006-07, was exceptional with turnover, profits, product sales and refinery & pipeline throughputs, all scaling new peaks.

4.1.5 Financial Performance

The year 2006-07 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. IOC successfully rode through this difficult situation. It became the first Indian company to record a turnover exceeding US\$50 billion (Rs. 2,20,779 crore), registering a net profit after tax of Rs. 7,499 crore. The company declared a healthy dividend of 190% during 2006-07. It made a massive contribution of Rs. 28,431 crore to the Central Exchequer, 16% higher than the corresponding figure of 2005-06. An additional and equally impressive amount of Rs. 27,733 crore was contributed to the State Exchequer. Details of some of the major financial highlights are tabulated below.

Parameter	2004-05	2005-06	2006-07	2007-08 (April - September)
Gross Turnover (Rs. crore)	1,50,729	1,83,172	2,20,779	1,12,497
Profit Before Tax (Rs. crore)	5,955	6,706	10,485	7,490
Profit After Tax (Rs. crore)	4,891	4,915	7,499	5,286
Earnings Per Share (Rs.)	41.88	42.08	62.90	Not applicable
Dividend Declared (Rs. crore)	1,694	1,460	2,251	Not applicable



4.1.6 Physical Performance

Refineries clocked the highest-ever throughput of 44 million metric tonnes (MMT), registering an increase of 14.3% over the previous year. Pipelines were equally

impressive, transporting 51.7 MMT of crude oil and products, and achieving a growth of 14%. The product sales touched an all time high of 57.97 MMT. The details in respect of the performance in the past 3 years and the current year are tabulated below.

(Figures in MMT)

S. No.	Description	2004-05	2005-06	2006-07	2007-08 (April – December, Provisional)
A)	Refining - Throughput	36.6	38.5	44.0	35.10
B)	Pipelines - Throughput				
i)	Crude	25.351	27.341	32.437	26.438
ii)	Product	17.679	18.006	19.259	15.473
	Total – B (i+ii)	43.030	45.347	51.696	41.911
C)	Marketing – Product Sales				
i)	Domestic				
	POL	48.17	46.22	53.36*	42.40*
	Gas	0.69	1.30	1.48	1.45
ii)	Exports	1.96	2.09	3.13	2.59
	Total – C (i+ii)	50.82	49.61	57.97	46.44

* Including sales of IBP Co. Ltd.



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 70.6 in 2006-07 as against 72.5 in the previous year. These initiatives resulted in net hydrocarbon savings of about 24,000 tonnes per year, valued around Rs. 39 crore.

4.1.8 Safety, Health and Environment

Safety is an integral part of work culture in IOC. Compliance to safety standards is considered by the company as a strict requirement for its operations. Safety training is an essential part of induction course

that is imparted to all the employees. It is supplemented by regular refresher programmes and advanced programmes on various aspects of safety.

Safety & Health

All refineries are accredited for Occupational Health and Safety Assessment Series (OHSAS - 18001). All refineries are also rated under International Safety Rating System (ISRS).

IOC had commissioned M/s DuPont to undertake safety foundation building exercise at Gujarat, Haldia and Mathura refineries, which has been completed. The observations/recommendations are under various stages of implementation.

Environment Protection

Environment management systems of all refinery units, pipelines installations and major marketing installations



Business as usual at Gujarat Refinery — feathered friends feel at home in the serene environs of a hi-tech refinery.



are certified to ISO-14001 standards. Some of the major efforts/achievements of IOC during the year in respect of environment protection are as under.

- Full compliance of effluent and emission norms has been achieved at all refinery units, pipelines and marketing installations.
- Treated effluent has been reused to the extent of 80% at the refineries. Panipat refinery continues to maintain zero discharge.
- Under Clean Development Mechanism (CDM), seven projects are under various stages of validation. Host country approval has been obtained for four projects, one each at Guwahati, Haldia, Digboi and Panipat refineries.
- Vapour recovery system has been provided at 10 marketing retail outlets to arrest vapours while fuelling the vehicles and discharging the vapours back into storage tanks.
- Rain water harvesting has been undertaken at several marketing locations.

4.1.9 Research & Development

IOC has the distinction of being the first oil company in the country to venture into research and development. Established in the year 1972, IOC's R&D Centre has, over the years, acquired the capabilities to develop products meeting the latest international specifications as well as customized products to meet special application requirements.

Over the past three and a half decades, the R&D Centre has developed over 2200 formulations of lubricating oils and greases, of which more than 500 are active in the market, to satisfy the needs of Indian industry and consuming sectors of defence, railways, public utilities and transportation. It has been providing necessary technology solutions to IOC's operating divisions by developing innovative, cost-effective and environment-friendly products and processes with strong technical back-up services.

Since past two decades, R&D Centre has also ventured into providing research associated service

activities related to promotion of technology in refining processes and pipeline transportation including fluid catalytic cracking, hydroprocessing, catalysis, residue upgradation, distillation simulation and modelling, lube processing, crude evaluation, process optimization, material failure analysis, etc.

2006-07 was a very successful year for the R&D Centre in terms of commercialization of technologies developed in-house. INDMAX, a hallmark technology developed by the Centre for maximization of LPG and light distillates from refinery residues, was selected for the integrated refinery-cum-petrochemical complex coming up at Paradip, as well as at Bongaigaon Refinery & Petrochemicals Ltd. The Centre also licensed its Diesel Hydrotreating



A tranquil spot on the sprawling campus of Indian Oil's R & D Centre at Faridabad near Delhi.



The Data Centre and Communications Hub at Gurgaon — providing online country wide connectivity for business transactions.

technology to these two refineries. These successes have catapulted the Centre into the elite league of multinational technology licensors. A new joint venture, Indo Cat Pvt. Ltd. has been formed with Intercat, USA, for manufacture of FCC catalysts and additives developed by R&D Centre, in India.

With the second global Original Equipment Manufacturer (OEM) approval for IOC's *SERVO* Marine Oils by Wartsila, Switzerland, IOC became the first Indian and Asia-Pacific oil company to possess such home grown technology, joining the select band of 5 global marine oil technology players (BP-Castrol, Exxon Mobil, Shell, FAAM, Total-Fina/Elf). The above mentioned OEM validation also qualifies IOC's *SERVO* Marine Oils to cater to almost

90% of global marine engine population for their lubrication requirements.

180 cost effective formulations were developed by the Centre during the year, of which 168 have been commercialized. 43 product approvals from OEMs and 7 patents (including 3 international patents), were also received. The R&D Centre now has as many as 111 active patents to its credit, including 61 international patents. During the period April-December 2007, 167 lubricating oil formulations were developed, of which 148 have been successfully commercialized.

As a step towards ensuring energy security to the nation, IOC's R&D Centre has been made the nodal agency by the Government of India for spearheading



The pilot plant of INDMAX - an inhouse technology chosen for deployment at the Bongaigaon and Paradip Refineries.



the use of Hydrogen energy in the country. Subsequent to the commissioning of India's first experimental H-CNG fuel dispensing station at the R&D Centre, action is in hand for commissioning of a commercial dispensing station at an existing retail outlet in Delhi in the year 2008. Meanwhile, IOC, in coordination with vehicle manufacturers, plans to take up lab scale development of H-CNG engines.

4.1.10 Project Implementation

Projects Completed in 2006-07

Projects valued around Rs.10,000 crore were commissioned during the year, as given below.

S. No.	Project (Rs. in crore)	Approved Cost
1.	Capacity expansion at Panipat refinery from 6 to 12 MMTPA	4300
2.	553,000 TPA – pX/PTA plant at Panipat refinery	4500
3.	MS quality upgradation project at Gujarat refinery	495
4.	6 MMTPA, Mundra-Churwa crude oil pipeline and onshore crude oil storage facilities at Mundra	298
5.	103 KM, Koyali-Dahej product pipeline	90
6.	158 KM branch pipeline to Chittaurgarh from Koyali-Sanganer product pipeline	83

Ongoing Projects

Projects valued over Rs. 50,000 crore are under implementation. The details of major ongoing projects are tabulated below.

Refinery Projects

Name of the Project	Approved Cost (Rs. in crore)
Naphtha Cracker project at Panipat refinery	14,439.00
Residue Upgradation and MS & HSD Quality Improvement project at Gujarat refinery	5,693.00
Improvement in Diesel Quality & Distillates Yield (Hydrocracker) project at Haldia refinery (OHCU)	2,869.00
Panipat Refinery Additional Expansion Project (PRAEP)	1008.00



Pipeline Projects

Name of the Project	Approved Cost (Rs. in crore)
Paradip-Haldia crude oil pipeline	1,178.00
Koyali-Ratlam product pipeline	224.69
Dadri-Panipat R-LNG spur line	250.66
Augmentation of Mundra-Panipat crude oil pipeline	204.74
Panipat-Jalandhar LPG pipeline	186.72
Chennai-Bangalore product pipeline	232.11

Marketing Projects

Name of the Project	Approved Cost (Rs. in crore)
Tap-off Point (TOP) at Bangrod, Ratlam (MP) on Koyali-Ratlam pipeline	148.00

4.1.11 Widening Horizons

IOC has taken appropriate steps for realizing its vision of becoming 'a diversified, transnational, integrated energy company' through integration - backwards into exploration and production, and forward into petrochemicals, and through diversification into natural gas. It has already entered the global market in downstream marketing with subsidiaries in Sri Lanka, Mauritius and Middle East.

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, as briefly indicated below, in collaboration with consortia partners.



The Indian Oil Group, with 80 million tonnes per annum refining capacity in its fold by 2011-12, aspires to play a key role in realising India's bid to emerge as an export-oriented hub for finished products.



Domestic

1. Eight exploration blocks along with various consortia partners, acquired through various rounds of New Exploration and Licensing Policy (NELP) of the Government of India.
2. Two "Farm-in" blocks
3. Two Coal Bed Methane (CBM) blocks.

IOC's participating interest in the above blocks ranges from 15% to 43.5%. The blocks are in various stages of exploration activities.

Overseas

As regards overseas initiatives in E&P, IOC in association with consortia partners has participation in 8 blocks located in Iran, Gabon, Nigeria, Yemen and Libya. IOC's participating interest in these blocks ranges from 5% to 50%. The blocks are in various stages of exploration activities. The company is also exploring opportunities to acquire a suitable medium-sized E&P company to consolidate its upstream portfolio.

4.1.13 Petrochemicals

IOC entered the Petrochemicals business with the commissioning of Linear Alkyl Benzene (LAB) unit



Shri Buddhadeb Bhattacharjee, Hon'ble Chief Minister of West Bengal, and Shri Sarthak Behuria, Chairman, Indian Oil, exchanging the MoU signed for development of a petroleum, chemical and petrochemical investment region at Haldia.

at Gujarat refinery in August 2004. This was followed by commissioning of Paraxylene/Purified Terephthalic Acid (pX/PTA) unit at Panipat refinery in August 2006. Presently, a Naphtha cracker unit is under implementation at Panipat refinery at an estimated cost of Rs. 14,439 crore.

In the only second year of operation, the LAB unit at Gujarat refinery operated at 102% capacity (1,20,000 tonnes per annum) and its sales achieved 34% market share. Besides domestic sales, sizeable exports were made to Indonesia, Norway, Oman, Thailand, Turkey and Vietnam. With the commissioning of pX/PTA plant at Panipat, IOC has emerged as a major petrochemicals player in the country. The details of sales figures for LAB and PTA are tabulated below.

Product	Sales ('000 MT)	
	2006-07	2007-08 (April-December, Provisional)
LAB	122	98.5
PTA	183*	257

* Unit commissioned in August 2006

As regards other initiatives in petrochemical business, a Memorandum of Understanding (MoU) has been signed with Haryana State Industrial & Infrastructure Development Corporation for launching a special purpose vehicle for development of a petrochemicals hub at Panipat. Likewise, plans are afoot to set up a refinery-cum-petrochemicals unit at Paradip.

GAS

Gas Tie-up

IOC is one of the promoters of M/s Petronet LNG Limited (PLL) and, resultantly, gets 30% of re-gasified LNG (R-LNG) imported by PLL, amounting to 1.5 MMTPA, from PLL's Dahej terminal in Gujarat on the west coast. During 2006-07, the company sold about 1.48 million metric tonnes of gas. 0.15 MMT was additionally supplied for in-house consumption. Further, PLL has tied up a term contract for 2 years



with Ras Gas for 1.5 MMTPA of LNG. (IOC's share 0.5 MMTPA). This quantity is being supplied to Ratnagiri Gas and Power Project Ltd. (RGPPL). Subsequently, this quantity will be supplied to Pragati Power Corporation Limited (PPCL) from October 2009 onwards. IOC has signed a Gas Sales Agreement with PPCL for the same.

IOC has another contract with PLL for supply of an additional 0.75 MMTPA of R-LNG from 3rd quarter of 2009.

City Gas Distribution Projects

IOC and GAIL have formed a joint venture company called 'Green Gas Ltd.' for city gas distribution in Agra and Lucknow. The company has commissioned one mother station each in Agra and Lucknow in April 2006. Three daughter booster stations have been set up in Lucknow and two in Agra.

Several other projects for city gas distribution in various cities are being planned through formation of joint venture companies with Great Eastern Energy Corporation Limited (GEECL) and GAIL.

LNG at Doorstep

The existing system of natural gas supply through pipelines has deprived the customers located at some distance from such pipelines, of the advantage of this low-cost and environment-friendly fuel. Keeping this in mind, IOC has introduced the concept of a virtual pipeline that involves transportation of natural gas in liquid form by cryogenic containers up to the customers' premises.

IOC has successfully commissioned this innovative project "LNG at Doorstep" for distributing LNG directly to the consumers for industrial/captive power applications. Supplies to two pilot project customers – H&R Johnson located at Pen, Maharashtra and Schott Glass located at Jambusar, Gujarat, have already commenced. Approx. 2250 MT of LNG was sold till mid-December 2007 through this initiative. Based on the demand from potential customers and availability of LNG, business expansion will be taken up in a phased manner.

4.1.14 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. Pioneering studies by IOC's R&D Centre have shown that bio-diesel produced from Jatropha seeds is on par with that produced from vegetable oils. At present, engine durability assessment is in progress in collaboration with Tata Motors Ltd., Pune, and field trials using 10% bio-diesel blends are on in multi-utility vehicles in association with Mahindra & Mahindra Ltd. and Lubrizol India Pvt. Ltd. R&D Centre is also actively engaged in the development of a continuous process (esterification) for production of bio-diesel.

IOC's efforts at promoting bio-diesel at a time when there is an urgent need for increasing energy security of the country have won international recognition as its R & D Centre has been awarded the 'Frost & Sullivan Award for Industry Innovation and Advancement' in the Indian biofuels industry for its breakthrough research in the area.

IOC plans to start commercial pilot projects on bio-diesel production in states, which have clear land allotment policy favorable to commercial energy-crop plantation. To this effect, it has signed a MoU with the Government of Chhattisgarh for formation of a joint venture company in the state. IOC has also applied to the Government of Madhya Pradesh for allotment of non-forest wasteland for the above purpose.

4.1.15 Initiatives in the Power Sector

IOC has explored the feasibility of setting up a coal-based power project in joint venture with Tata Power Co. (TPC) on captive basis for supplying power to IOC's Paradip complex. Actions have been initiated towards formation of a joint venture company.

In order to meet the requirement of coal for the project, IOC had submitted an application to Ministry of Coal for allocation of an appropriate coal block in Orissa under PSU dispensation. Follow up is being made with the Ministry of Coal since the first application made in January 2007 and, as advised by the Ministry of Coal from time to time, various other prospective coal blocks have been assessed and, in October 2007, a fresh request has been made to the Ministry of Coal for



allotment of Chaturdhara coal block in Orissa. While assurance has been given by the Ministry of Coal in this regard, allocation is yet to be received.

4.1.16 Innovation & Technical Excellence

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

Flare Gas Recovery

During the year 2006-07, a flare gas recovery system was commissioned at Mathura refinery, for the first time in India. This facility is projected to result in fuel savings of Rs. 299 lakh per year. With the commissioning of this system, flaring of gas would be reduced by 4,500 tonnes per annum, reflecting IOC's concern for the environment and energy conservation.

On-line Catalyst Replacement in Continuous Catalytic Reformer Unit (CCRU) at Mathura Refinery

Mathura refinery of IOC achieved another distinction. It was the first Indian refinery to accomplish on-line catalyst replacement in CCRU, during September 2006. About 43 tonnes of catalyst was replaced while the unit was in operation at 90% throughput level. This initiative reduced unit shutdown time by about 10 days, as a result of which, 7,500 tonnes of additional Euro-III MS could be produced.

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 to 43.8% as against 38.5% in 2005-06.

Sharing of Intermediate Streams among Refineries

Innovative sharing of intermediate streams between IOC Group refineries, located far and wide, surmounting geographical constraints, enabled

optimisation and value addition besides enhancing margins across the refineries.

Marketing of Kerosene in Bottles

A pilot project for marketing of "Bottled SKO" was commissioned at Rewari on 17.10.2007 with a capacity of 300 KL per month. The product is being marketed as "Jyoti" brand and has been positioned in grocery shops, hardware/paint shops, auto spare shops, vehicle workshops and with private marketers of LPG. Approximately 500 retailers are operative in Gurgaon & Faridabad districts at present. The sales figures of the product have reached up to 1000 bottles/day. Government of Haryana has initiated a proposal for exemption of license to resellers and marketing agents, and is also extending support for smooth operation of this pilot project.

4.1.17 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, which sell more than 200 KL per month of transport fuels (petrol & diesel). 975 retail outlets (41.4%) have already been automated up to December 2007. The benefits envisaged are as under.

- Quantity monitoring on real-time basis through stock reconciliation
- Quality monitoring by virtue of stock reconciliation as well as observation of different parameters like level, density and temperature
- Enhanced customer service through automatic billing
- Accuracy in documentation
- Real-time reconciliation of fuel stocks
- Availability of past history of transactions



- Information flow of all retail outlets' activities to central office

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 31.12.2007, around 4500 trucks have been covered out of a total number of around 20,000 tank trucks. The work is continuing for installation of the system on the remaining tank trucks.

4.1.18 Subsidiaries

(a) Bongaigaon Refinery & Petrochemicals Limited (BRPL)

Consequent to the transfer of 74.46% equity



Indian Oil's Ladakh Filling Station at Leh, which holds the distinction of being the petrol/diesel station located at the highest altitude in the world.

shares of the government of India in BRPL to IOC in 2001, BRPL became its subsidiary.

The operation of BRPL has been greatly facilitated with the allocation of 1.50 MMTPA of Ravva crude ex Krishna-Godavari basin by the Ministry of Petroleum & Natural Gas.

BRPL recorded a turnover of Rs.6,425.96 crore as against Rs.6,288.64 crore in 2005-06. The profit after tax was higher at Rs.184.98 crore in 2006-07, registering an increase of approximately 6% as compared to Rs.174.76 crore in 2005-06.

In order to improve the diesel quality in line with Euro-III norms, BRPL is setting up a Diesel Hydrotreating unit at an anticipated cost of Rs. 1432 crore. The project is likely to be completed by October 2009.

(b) Chennai Petroleum Corporation Limited (CPCL)

With the transfer of equity shares by the Government of India to IOC as a part of its restructuring initiatives, IOC holds 51.88% equity share in CPCL.

CPCL, with its two refineries at Manali and Nagapattinam in Tamil Nadu, processed 10.40 MMT of crude oil in 2006-07, which was slightly higher than the figure of 10.36 MMT in the previous year. Turnover during the year increased to Rs. 29,349 crore from Rs.25,408 crore in the previous year. The corresponding figures for profit after tax are Rs. 565.27 crore and Rs. 480.96 crore, respectively.

In order to promote clean energy and to contribute to the global movement in reducing greenhouse gas emissions, CPCL has implemented a Wind Power project of 17.6 MW capacity at a cost of about Rs. 90 crore. CPCL expects to earn approx. 32,000 carbon credits annually through this scheme.

Other major ongoing projects include setting up a Diesel Hydrotreating unit and capacity augmentation of the existing Catalytic Reformer unit for improvement in HSD and MS quality to meet Euro-IV norms at Manali refinery, and



capacity augmentation of the refinery from 9.5 to 11.2 MMTPA.

(c) Lanka IOC Limited (LIOC)

LIOC stood 3rd in terms of sales turnover among private companies in Sri Lanka for the financial year 2006-07, recording sales of approx. 490 TKL of petroleum products, with a turnover of SLR 32,796 million (INR 1,405 crore).

LIOC also commenced bunker fuel sales at Trincomalee Port during May 2007 and is gearing up to extend bunker fuel sales at Colombo Port. LIOC is awaiting the final approval from Government of Sri Lanka for developing 75 new retail outlets.

Since November 2007, LIOC has started commercial production of lubricants at its newly set up Lube Blending Plant (LBP) of 18 TMTPA capacity at Trincomalee, at an investment of SLR 500 million (INR 17.72 crore). LIOC currently has a market share of 13% in the lubricants market in Sri Lanka.

(d) Indian Oil (Mauritius) Ltd. (IOML)

IndianOil (Mauritius) Ltd., a wholly-owned subsidiary company of IOC, holds 19% of the market share in POL products in Mauritius. It sold about 163 TKL of petroleum products in the year 2006-07, generating a gross turnover

of Rs. 2,97.1 crore. The profit after tax for the year was Rs. 5.6 crore.

With significant presence in aviation fuel business, IOML holds a market share of 38% in the aviation fuel business. It also has 25% equity in the new petroleum terminal at the Sir Seewoosagar Ramgoolam International Airport built at a cost of US\$ 16 million, partnering Shell, Caltex-Chevron and Total.

A comprehensive petroleum laboratory for testing all fuels and lubricants was commissioned in March 2007. The laboratory is the first full-fledged petroleum products testing laboratory in Mauritius and has already gained international accreditations such as ISO 9001-2000.

(e) IOC MIDDLE EAST FZE, Dubai, U.A. E.

As part of its efforts to reach new markets, a wholly-owned subsidiary, IOC Middle East FZE, was registered at Jebel Ali Free Trade Zone in UAE in April 2006 for blending and marketing of *SERVO* lubricants in the Middle East, Africa and CIS countries with an initial share capital of United Arab Emirates Dirham (AED) 1 million (Rs.1.26 crore). The company commenced operations during the year 2006-07 and achieved sales of 209 MT of finished lubes and 3854 MT of base oils, with a turnover of Rs. 17.60 crore.



Dr. Navinchandra Ramgoolam, Hon'ble Prime Minister of Mauritius, inaugurating the state-of-the-art product-testing laboratory at the Mer Rouge Terminal of Indian Oil (Mauritius) Ltd. Others from left are Shri Sarthak Behuria, Chairman, Indian Oil Corporation and Shri Rajesh Jeetah, Hon'ble Minister of Commerce, Mauritius.

4.1.19 AWARDS AND ACCREDITATIONS

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. Some of the major distinctions achieved by the company are listed below.

4.1.19.1 IOC is the Numero Uno Company in India and among the Best Globally

IOC, the highest ranked Indian company in the prestigious Fortune 'Global 500' listing in 2007, moved up 18 places from the previous year and



is placed at 135th position. The company occupies 20th position in the Petroleum Refining category.

IOC is placed at 5th position in Refining & Marketing worldwide and 8th overall, in Asia – Platts' "Top 250 Global Energy Companies" for 2007.



Dr. Manmohan Singh, Hon'ble Prime Minister of India, presenting the SCOPE Award for Excellence & Outstanding Contribution to Public Sector Management —Institutional Category 2005-06 to Indian Oil Chairman, Shri Sarthak Behuria. Also seen is Smt. Kanti Singh, Hon'ble Minister of State, Department of Heavy Industries.

4.1.19.2 Among India's 'Top Valuable Companies' in BT 500 Listing

IOC stands as the topmost petroleum downstream company in the recently declared 15th edition of Business Today's *BT500* listing of India's 'Most Valuable Companies'. It occupies 6th position with a market cap of Rs. 50, 324 crore amongst the listing of public sector companies of India, which also includes public sector banks and financial institutions. It is ranked at number one in 'combined top 10 by sales', the companies including both private and public sector units. It is in the top slot also amongst 'top 15 companies by revenue' and is ranked at second position amongst 'top 15 by profit' amongst the PSUs.

4.1.19.3 Ranked 2nd Amongst India's 'Top 50 Most Valuable Brands'

IOC has been ranked at 2nd position amongst 'The Top 50 Most Valuable Brands' of India for the year 2006-07, assessed by the global brand valuation firm,

Brand Finance of London.

4.1.19.4 The Coveted WIPO Gold Medal to IOC's R&D Centre

The innovative prowess of IOC's R&D Centre has been recognized worldwide once again. It has been bestowed with the coveted WIPO (World Intellectual Property Organisation) Gold Medal for the development and commercialization of novel process technologies, 'INDESweet & INDETreat', for removal of H₂S and Mercaptans from LPG through Continuous Film Contactor (CFC) process.

4.1.19.5 Frost & Sullivan Award for Industry Innovation and Advancement

IOC has been chosen as the recipient of the 'Frost & Sullivan Award for Industry Innovation and Advancement' in the Indian biofuels industry for its breakthrough research in the area of alternative energy options.

4.1.19.6 Oil Industry Safety Directorate Awards

IOC bagged two awards from the Oil Industry Safety Directorate (OISD) of the Ministry of Petroleum and Natural Gas (MoP&NG). While one award was won under the 'LPG Marketing Organisation' category, the other was under the 'Refinery' category, which went to IOC's Mathura refinery.

4.1.19.7 The 'Most Admired Retailer of the Year' Award

IOC has been presented the 'Most Admired Retailer of the Year' award in the category of Rural Retailing, by the India Retail Forum (IRF), which is one of most substantive intellectual and information exchange platforms for retail business in the Indian sub-continent. This award is recognition of IOC's new and novel business model of Kisan Seva Kendra retail outlets, which are primarily low cost, no-frills petrol stations, custom-designed to cater to the needs of the rural segment.

4.1.19.8 SAP ACE – Awards for Customer Excellence for IOC

IOC bagged for the second consecutive year, the 'SAP ACE – Awards for Customer Excellence for



the year 2007' for Innovation in Implementing Business Continuity for SAP R/3 Environment.

4.1.19.9 SCOPE Gold Trophy for Best Practices in Human Resource Management 2005-06

IOC has been conferred the prestigious SCOPE Meritorious Award for Best Practices in Human Resource Management for the year 2005-06. The SCOPE Meritorious Awards have been instituted by the Standing Conference of Public Enterprises (SCOPE) to recognise significant achievements of member enterprises in various fields, such as, corporate social responsibility and responsiveness, human resource management, good corporate governance, R&D and innovation, environmental excellence and sustainable development, and the best managed PSE set up under section 25.

4.1.20 IOC, the only Petroleum Company as 'The Most Trusted Brand' in ET's Brand Equity's Annual Survey

IOC is the only petroleum company amongst 100 industrial giants, which has appeared in 'The Most

Trusted Brand' Listing in ET's Brand Equity's annual survey. Improving its rank from 97th position in 2006, IOC is placed at 93rd position for the year 2007. IOC has also improved its position among the top 10 service brands by climbing one step to the 7th position in 2007.

4.2 HINDUSTAN PETROLEUM CORPORATION LIMITED (HPCL)



4.2.1.1 Hindustan Petroleum Corporation Limited (HPCL) is integrated Oil Company in India. It has two refineries producing a wide variety of petroleum products - one in Mumbai (West Coast) having a capacity of 5.5 MMTPA and other in Visakhapatnam (East Coast) with 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 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. HPCL



Sportstars on Indian Oil's rolls with Shri V.C. Agrawal, Director (HR), Indian Oil, at the 7th Annual Awards function of Petroleum Sports Promotion Board at New Delhi in August, 2007.



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.



CLUB HP Retail Outlet

4.2.1.2 During 2006-07, the two refineries of the Corporation achieved a combined crude throughput of 16.66 MMT. The throughput expected to be achieved during 2007-08 is 16.77 MMT. The total sales of petroleum products during the period 2006-07 were 19.80 MMT. The total sales of petroleum products expected to be achieved during 2007-08 are 21.39 MMT. During the year 2006-07 the sales turnover was Rs. 97,603 crores and profit after tax was Rs. 1,571 crores. The sales turnover expected to be achieved during 2007-08 is Rs. 1,01,721 crores and profit after tax expected to be achieved during 2007-08 is Rs. 473 crores. The Board of Directors had recommended dividend of Rs. 709 crores for the year 2006-07.

4.2.1.3 During the period 2006-07, the Corporation commissioned 673 Retail Outlets and 44 LPG distributorships and released 11.36 lacs new LPG connections. During the period 2007-08, new Retail outlets and LPG distributorship expected to be commissioned is 550 and 100 respectively. The new LPG connections expected to be released during 2007-08 is 15.0 lacs.

4.2.2 Major Projects Completed

- **Pune Solapur Pipeline Project (PSPL) :** Extension of Mumbai Pune Pipeline by lying 343 km long multi products cross-country pipeline from Pune (Loni) to Solapur (Pakni) via Hazarwadi (near Miraj) and setting up a pumping station at Loni, Tap off Facility at Hazarwadi and Receipt station at Pakni. The design capacity of the extended pipeline is 2.14 MMTA and 1.18 MMTA for Loni Hazarwadi and Hazarwadi Pakni section respectively, were mechanically completed on 30.09.2006 as per schedule and commissioning of the pipeline was commenced on 2nd November 2006.
- **LPG Plant Loni (TOP):** The project on setting up 44 TMTA bottling plant at Loni TOP (Jamnagar -Loni Pipeline) was completed in April 2006 and facilities were commissioned in May 2006 at the cost of Rs. 11.80 crore.

4.2.3 Major Project Approved

- **Lube Oil Base Stock Upgradation Project (LOBS)**

Mumbai refinery produces various grades of LOBS with sulphur above 300 ppm and saturates below 90%, which fall under API Gr-I category. Customer requirement & market demand is for LOBS quality with sulphur below 300 ppm and saturates above 90%, which falls under API Gr-II category. Hence, to retain/increase market share of LOBS, under this project it is intended to improve LOBS specifications to API Gr-II category with a capability to produce API Gr-III. The project was approved in October 2006 with a cost of Rs. 638.90 crore and a completion scheduled is April 2009.

- **LPG Plant: Irumpanam:**

The project for setting up of 44 TMTA LPG Bottling plant at Irumpanam (Kochi) on the land available in the POL terminal was approved in October 2006 with a cost of Rs.37.50 crore and is scheduled for completion in April 2008.



- **Installation of New FCCU project at Mumbai Refinery:**

To set up a new grass root FCCU with a capacity of 1.456 MMTPA at a new location using the already ordered equipment of the FCCU revamp. Project was approved in October 2006 with a cost of Rs. 900.47 crore and completion is scheduled in September 2009. The Project envisages setting up the following major facilities within the existing Refinery Complex:

- FCCU Feed Section consisting of feed Pre-heaters & Furnace
- Reactor –Regeneration section consisting of catalyst circulation circuit, catalyst handling section, MAB, flue gas cooling circuit
- Main Fractionator and Gas Concentration Unit (GCU)
- Fuel Gas scrubbing section (FGSU)
- Fuel gas treating section

Associated utilities, DCS, substation required for parallel operation of new FCCU with existing FCCU.

4.2.4 On- going Projects

- **GFEC Project at MR:**

Mumbai Refinery Green Fuel and Emission Control Project (MR-GFEC): Refinery has undertaken mega project at an approved cost of Rs.1850 crores to meet the MS/HSD of EURO-III Grade. The project also envisages to enhance refining capacity from 5.5 MMTPA to 7.9 MMTPA. The project is expected to be completed mechanically by January 2008.

- **Clean Fuel Project at VR:**

Visakh Refinery Clean Fuel Project: Refinery has undertaken mega project at an approved cost of Rs. 2147.80 crores to meet the MS/HSD of EURO III Grade. The project also envisages to enhance refining capacity from 5.5 MMTPA to 7.9 MMTPA. The project is expected to be completed mechanically by January 2008.

- **Mundra Delhi Pipeline Projects (MDPL):**

Mundra Delhi Pipeline Project: The Pipeline project having a capacity of 5 MMTPA approved in July 2004 at a cost of Rs. 1756.93 crores (revised) is completed project mechanically in May 2007. The Pipeline originating from West coast location at Mundra (Gujarat) and terminating at Bahadurgarh is being catered to market in North India.

- **LPG Plant: Rajahmundry:**

The project for setting up 44 TMTA bottling plant at Rajahmundry was approved in November 2004 at the cost of Rs. 24.25 crore with a completion scheduled of 18 months from the takeover of Land. The land possession has been taken over in May 2006. The work is in progress.

4.2.5 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 areas:

4.2.6 Joint Ventures

The status of the joint ventures companies (JVCs) promoted by HPCL is as follows:

- **Mangalore Refinery & Petrochemicals Limited :-** MRPL with a capacity of 3 MMTPA was commissioned in March 1996. The capacity of the refinery was enhanced to 9 MMTPA during 1999-2000. ONGC acquired the entire equity stake of IRIL in MRPL on 03.03.2003 and also infused Rs.600 crores into MRPL as additional equity on 30.03.2003. Consequent to the restructuring, HPCL's equity stands at 16.95%, A fresh Shareholder Agreement dated 03.03.2003 has been signed by HPCL with ONGC to take care of the interests of HPCL. MRPL declared a dividend of 8% for the financial year 2006-07.



- **Hindustan Colas Ltd. (HINCOL) :-** The performance of HINCOL, a Joint Venture Company jointly promoted with M/s COLAS SA, France continues to be encouraging. HINCOL currently operates six manufacturing plants across India, manufacturing international quality value-added bituminous products such as bitumen emulsions & cutbacks and modified bitumen. During the year, HINCOL consolidated its growth further by achieving a 42% growth in volumes and an all impressive 118% growth in profitability. The Joint Venture Company maintained the dividend of 15% during the year 2006-07
- **South Asia LPG Co. Pvt. Ltd. (SALPG) :-** This 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 participation of 50%. It is the first underground cavern storage facility in the country for a 60,000 MT LPG Underground Mined Cavern with its associated receiving & dispatch facilities at Visakhapatnam. The financial outlay for the project is Rs.333.30 crores and has been financed through Debt-Equity of 2.33:1. Debt is fully tied up with a consortium of seven banks lead by State Bank of India. The financial closure of the project has already been achieved. The SALPG cavern would be the second deepest mined cavern in the world. Geostock of France is the consultant for the project and the facility is being constructed by Larsen and Toubro Ltd. The construction work for the underground cavern has been completed and for the above ground facilities the same is in progress. The project is expected to be commissioned by Dec 2007 / Jan 2008.
- **Petronet India Ltd. (PIL) :-** Petronet India Ltd. (PIL) was formed in May 1997 as a joint venture company with 50% equity by oil PSUs and balance 50% being 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.

Since oil companies are now having pipelines independently, PIL has initiated action to disinvest its equity holding in individual JVCs.

- **Petronet MHB Ltd. (PMHBL) :-** HPCL alongwith Petronet India Ltd. (PIL) had promoted Petronet MHB Ltd (PMHBL) for the construction and operation of Mangalore – Hassan - Bangalore pipeline. PIL and HPCL were the promoters of PMHBL, each having 26% equity participation. ONGC has joined as a strategic partner in the Company by taking 23% equity. The product pipeline from Mangalore to Bangalore, with a tap off point at Hassan, has been executed at a cost of 639 crore. The pipeline is meeting the transportation needs between Mangalore, Hassan and Bangalore. Due to lower throughput and pipeline tariff, the operational and financial viability of the project has been affected. PMHBL has gone for the Debt restructuring process. The same has been approved and is under implementation. As a part of this process, PMHBL has allotted equity shares to ONGC, HPCL and lending banks. Their equity shareholding in PMHBL now stands at 28.77%, and 34.56% respectively. PMHBL achieved a throughput of 1.428 MMT during the year 2006-07, which is 40% higher compared to 1.013 MMT achieved during last year.
- **Prize Petroleum Co. Ltd. :-** HPCL, in partnership with ICICI and HDFC, had formed this Joint Venture E&P Company viz Prize Petroleum Company Ltd. for participating in exploration and production of hydrocarbons. Prize Petroleum Company Ltd. is also providing consultancy services related to E & P.

During the year, Prize Petroleum along with its consortium partners, M/s Hindustan Petroleum Corporation Limited and M3energy



has signed Service Contract for an offshore field cluster consisting of three fields (Cluster-7). The Company has also been awarded an onshore block along with a consortium partner, under NELP VI and signed Production Sharing Contract with MOP&NG. The company is a Joint Executing Operator for these offshore and onshore fields.

The company has drilled 3 new wells at Hirapur field and one well at Khambel field. The total crude oil production from these fields was 74,412 bbls during 2006-07. The total revenue during 2006-07 was Rs.402 lacs which is higher by 211% over the revenue of Rs 190 lacs of the last year.

- **Bhagyanagar Gas Ltd. :-** Bhagyanagar Gas Ltd. (BGL) has been 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. HPCL and GAIL would hold 22.5% of the equity while 5% would be held by the Government of Andhra Pradesh and 50% by Strategic/Financial investors.

BGL successfully launched CNG in Hyderabad during the year 2006-07. At present, Vijayawada and Hyderabad are the two cities to have CNG as alternate fuel in



Execution of Financing Documents of GGSRL:- Consortium of 26 lenders led by the State Bank of India have, on 27th July, 2007 committed a 14 year project finance term loan of approximately Rs. 7,800 crore to Guru Gobind Singh Refineries Ltd. (GGSRL), a joint venture of Hindustan Petroleum Corporation Limited (HPCL) and Mittal Energy Investments Pte. Limited, Singapore for setting up a 9 MMTPA Greenfield Refinery at Bathinda in Punjab. In a ceremony held in Mumbai, the participating Banks/ LIC concluded the agreement in the presence of the members of the Board of the Sponsors and Senior Management of the participating Lenders.



the entire South India. The joint venture company commissioned 5 CNG dispensing stations in Vijayawada and Hyderabad taking the total number of CNG dispensing stations to 8. BGL is also operating 4 Auto LPG Outlets – 3 in Hyderabad and one in Tirupati. BGL signed an agreement with APSRTC for supplying CNG to its buses at Vijayawada.

- **Aavantika Gas Ltd. :-** Aavantika Gas Limited has been 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.

The joint venture company has drawn up the

Business Plan for implementing its activity initially at Indore. Construction of first CNG Mother Station and four Daughter Stations at Indore is in progress.

• **Guru Gobind Singh Refinery Project**

A joint venture has been established with Mittal Energy Investments Pte. Ltd for setting up of a green field refinery at Bhatinda. This will be a state-of-art refinery with an initial capacity of 9 MMTPA. The project is expected to cost around Rs 18,000 crore and the facilities include refinery units, pipeline from Mundra to Bhatinda, crude oil receiving terminal, SPM and jetty at Mundra port. The project has achieved the financial closure and is expected to be completed by the year 2011.



Shri M.S. Srinivasan, Secretary-MOP&NG participating at Think Green with HPCL, at HPCL Stall during the Petrotech 2007 Exhibition



4.2.7 Control of Pollution and other Environmental Initiatives

A separate department exists in both the Refineries at Mumbai and Visakhapatnam to monitor and control pollution and effluent levels. Both the refineries have been meeting the statutory regulations and standards set by State Pollution Control Board and Ministry of Environment & Forest, Govt. of India.

4.2.7.1 Initiatives at Mumbai Refinery

- **Green Fuel & Emission control project :** In order to produce eco-friendly automobile fuels and to upgrade their quality, thereby improving the quality of ambient air nationwide, the Mumbai Refinery has undertaken this modernization project at the cost of Rs. 1850 crore.
- **On line Ambient Air Quality data (3no. Station) displayed on HPCL Refinery Web site :** All the three stations are connected to a Central PC for monitoring the analyzers data. Ambient Air Quality within CPCB limits. Service factor is maintained at 100%.
- On line Stack emission data is being analysed on a continuous basis. Up-gradation of CPP analyzer stack station software from present PLC based to PC based inline with other stack stations has been proposed. On line stack emissions (SOX, NOX, CO &SPM) quality within MPCB/CPCB limits. Service factor is maintained at 100%.
- Replacement of existing ETP-I & ETP-II with new Integrated ETP by adopting Cyclic



HPCL was awarded the OISD Safety Award for the year 2006-07 in the category POL Marketing Organisations. Secretary, P&NG, Mr. M.S. Srinivasan presented the award to Mr. Arun Balakrishnan, C&MD, HPCL. Also present are Mr. S. Roychoudhury, Director (Marketing) and Mr. M.A. Tankiwala, Director (Refinery), HPCL.



Activated Sludge treatment followed by Membrane Bio-Reactor and TTP, has been approved at a cost of Rs. 138 crore. Design basis and Process Package finalization has been completed, tender finalized, Project under implementation by M/s HDO on Lump Sum Turn Key (LSTK) basis and expected to be completed by March 09.

- Two Rotary Drum Skimmers (RDS) installation has been in progress at the upstream of Old & New API separators for better recovery of free oil and reduce load on API Separators. It will be completed by May 08.
- Tank farm modifications in Fuels Refinery to segregate Oily Water & Rain water and reduce load on New Integrated ETP / API Separators has been approved and Project Management Consultancy has been placed on M/s EIL.
- Other Projects initiated by the corporation at Mumbai Refinery include sludge management, solid waste management and green belt development.

4.2.7.2 Initiatives at Visakh Refinery

- **Clean Fuel Project :** Visakh Refinery has undertaken the project at an approved cost of Rs. 2147.8 crore to meet the MS/HSD of EURO-III grade.

Other projects initiated by the Corporation at Visakh Refinery include.

Emission Management:

- Treated Merox SWSG along with DHDS-SWSG I & II in DHDS-SRU.
- Commissioned SRU-Integration project there by mitigating smell issues, black sulphur production etc to a very large extent.
- Carrying out Leak Detection and Repair program (LDAR) in the Refinery to mitigate fugitive emissions.

Liquid Effluent Management:

- Provided aeration facility in ETP-II equalization east tank

Hazardous Waste Management:

- Carried out ex-situ processing of high oily sludge to recover oil.
- Carried out in-situ processing of high oily sludge to recover oil.

4.3 BHARAT PETROLEUM CORPORATION LIMITED (BPCL)



4.3.1.1. BPCL is an 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. The Corporation has an all-India presence through its extensive marketing network.

4.3.1.2. The Corporation's employees presently number 13999. The Authorized Share Capital and Paid-up Capital of the Company as on 31.12.2007 was Rs. 450 crore and 361.54 crore respectively. The shares of BPCL are listed on the Stock Exchanges at Mumbai and National Stock Exchange of India Ltd.

4.3.1.3. During 2006-07, the two refineries at Mumbai and Kochi achieved a combined throughput of 19.78



A long shot of BPCL's Mumbai Refinery



A view of BPCL's Kochi Refinery

million metric tones (MMT) . The throughput during 2007-08 is expected to be 20.7 MMT. During the year 2006-07, the All Products Sales were 23.45 MMT and the total sale of petroleum products during 2007-08 is expected to be 23.93 MMT. During the period 2006-07, BPCL commissioned 480 new retail outlets and 21 LPG distributorships. During 2007-08 the expected commissioning new retail outlet and LPG distributorships would be 815 and 51 respectively. The corporation released 11.93 lakh new LPG connections during 2006-07. During 2007-08, 16.9 lakh new LPG connections expected to be released. The profit after tax during 2006-07 was Rs. 1805.5 crore. The profit after tax during 2007-08 is expected to be Rs. 1327 crore (provisional).

4.3.2 Major Projects Completed

- **Crude Oil Receipt Facilities (CORF) at Kochi Refinery – Phase I**

The project which envisages setting up of crude oil receipt facilities (CORF) consisting of Single Buoy Mooring (SBM) for berthing of large crude carriers (VLCCs), onshore tanks and associated pipelines was commissioned in December 2007 within the approved cost of Rs. 821 crore.

- **Extension of Mumbai Manglia (Indore) Pipeline to Piyala with a feeder pipeline to Bijwasan (Delhi):**

The proposal for extending the Mumbai Manglia Pipeline to Piyala and a feeder pipeline to Bijwasan (Delhi) was commissioned in March 2007 within the approved cost of Rs.807.46

crore. The pipeline will help in the economic evacuation of additional products available from the Mumbai refinery, and to cater to the requirements of Northern region. The total pipeline length from Mumbai to Bijwasan is about 1379 Km.

4.3.3 Major Projects Approved

The Bina Kota Pipeline project envisages the laying of an 18" dia, 265 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 is designed for an initial throughput of 2.8 MMTPA and the approved cost of the project is Rs. 405.82 crore.

The DFR has been approved by the board on 27.07.07. Detailed route survey / Cadastral survey completed. Job of Geo-tech investigation of major rivers completed. Acquisition of ROU/ROW is in progress.

Award of Project Management Consultancy (PMC) is under finalization and the project is scheduled for completion by October 2009, in synchronization with Bina Refinery.

4.3.4 On-Going Projects

The Fuel Quality Upgrade project at Mumbai Refinery envisages revamping of the existing Diesel / Naphtha



BPCL Signs MoU with MOP&NG for 2007-08



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 and the implementation activities have commenced.

The Capacity Expansion cum Modernisation Project at Kochi Refinery 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 approved cost of the project is Rs.2591.80 crore and is targeted for completion by September 2009.

Bina Despatch Terminal :- BPCL will be undertaking the marketing of refined petroleum products from the new refinery being set up at Bina by its JV Company Bharat Oman Refineries Ltd. (BORL) BPCL has entered into the product purchase agreement with BORL for

marketing of products from the refinery. The revised DFR for the project was approved by BPCL Board in July 2007. 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. 490.71 crore.

Project Management Consultancy for Terminal has been awarded to M/s. EIL. All major packages are planned to be awarded by end March 2008 and the project is scheduled for completion by November 2009, in synchronization with Bina Refinery.

4.3.5 Policy initiatives taken by BPCL

Product Security

Product exchange MoUs are in place with other marketing companies to ensure regular and timely availability of products to the customers. BPCL was



Laying of foundation stone of the Rajiv Gandhi Institute of Petroleum Technology



BPCL's new retail visual identity - OSTTS at Mawai

initially holding equity of 32% in Numaligarh Refineries Ltd. (NRL) thereafter; during 2001 BPCL has acquired a controlling stake of 62.9% in NRL.

BPCL joint venture company 'Bharat Oman Refineries Ltd' is setting up a 6 MMTPA Refinery at Bina in Madhya Pradesh to ensure availability of products in Central & Northern India. Besides, strategic pipeline project interconnecting the Bina Refinery and Northern & Western India has been implemented to ensure most economical product positioning.

Exploration & Production

In the year 2007-08, BPCL moves forward in its endeavour to consolidate its presence in the upstream oil and gas sector. Considering the need for a focused approach for E&P activities and implementation of the investment plans of BPCL at a quicker pace, a wholly owned subsidiary company of BPCL, by the name Bharat PetroResources Limited (BPRL) with an authorized share capital of Rs 1000 crore was incorporated in October 2006, with the objective of carrying out Exploration and Production activities.

Having started with three Indian blocks in its portfolio in 2004 (awarded during the NELP IV round), and a commitment of approximately Rs.158 crore during the exploration phases for these blocks, BPCL, has during the years 2006-07 and 2007-08 achieved significant progress in terms of acquiring new blocks and making progress on the blocks which were already acquired. As on 31.12.2007, BPCL has participating interest in 24 oil & gas blocks in India and abroad.

International Trade & Risk Management

The International Trade department has been restructured and a new International Trade & Risk Management (ITRM) team has been setup to meet the new challenges in crude oil procurement. BPCL further consolidated its position during the year and implemented end to end process for supply chain management with the objective of optimizing crude oil imports and refinery processing in tune with market demand. The design of the supply chain process is customer backed, as opposed to production driven. Efficient inventory management and maximizing the net corporate realization has been the key objective.

Research & Development

Recognizing the role of innovation & technological excellence in achieving and sustaining competitive edge in the high tech business, BPCL is continuously strengthening the infrastructure at its Corporate R&D Centre, Greater Noida, Uttar Pradesh, as well as at its Product & Application Development Centre, Sewree, Mumbai, and R&D centre at Kochi Refinery.

As part of new initiatives, BPCL signed an MoU with Korea Institute of Energy Research (KIER), a premier research institute of Korean Government with the objective of collaboration in energy research and technology development.

R&D Centre at Sewree enabled the Corporation, especially the Lubes Business, to achieve a higher growth and better profitability through development of several new formulations and alternate formulations for existing Lube & Grease products.



BPCL's new retail visual identity - OSTTS at Bijapur



Expansion of this R&D Centre was successfully commissioned in November, 2006.

R&D Center at Kochi Refinery is continuously engaged in research to develop value added products from the Refinery streams. Natural Rubber Modified Bitumen and Bitumen Emulsion are the popular value added products developed by this Centre.

Business Initiatives

Refinery

Major policy initiatives taken by refinery SBU are as under :

- Constant efforts to upgrade product quality in line with trends world wide.
- Optimizing cost in the entire value chain from sourcing and transporting of crude, processing and optimization of product mix and eventually realizing better margins.

Retail

BPCL has aggressively focused on upgrading facilities and services at the retail outlets, deploying the latest retail techniques and customer management tools along with superior infrastructure and technology to make the consumer's visit to the petroleum retail outlet an experience in itself. Towards this, BPCL has gone in for aggressive marketing and roll out of numerous customer centric propositions. The emphasis was on enhancing customer enablement coupled with strategic network expansion. The attention paid to site quality in urban markets and strategic expansion on the highways paid off handsomely. In the highway sector, the throughput per outlet grew from 179 kilolitres (KL) per month in 2005-06 to 196 KL per month in 2006-07. The qualitative aspects of BPCL's retail network continued to make it stand apart from the outlets of other marketing companies expansion with the over all throughput per RO being much higher than that of the industry. The initiative Highway Network Assurance Program with the help of One Stop Truckers Shop (OSTS) – Ghar and Highway Star ROs led to an impressive growth in the highway segment.

BPCL's commitment of delivering value to the

customers continued with the expansion of the 'Pure for Sure' (PFS) network through enrolment of new retail outlets under PFS brand. A total of 5502 retail outlets representing 73% of the network, have been certified under the PFS banner. Efforts are on to bring the remaining non-PFS outlets within the ambit of third party audit in order to ensure product assurance of Quality and Quantity at each and every outlet.

A major thrust area during the year was automation of retail outlets. Aggressive plan were drawn up and implemented in this area. With the customer being the focus of all retail innovations, full automation BRASS-RT (Bharat Retail Automation Solution & Services-Real Time) will provide customers with complete transparency in terms of exact quantity of fuel dispensed, automated receipt and better payment options through Smartcard / Credit / Debit cards. Automation was made available in 320 ROs during 2006-07. It is proposed to cover about 1000 retail outlets in 2007-08 .

BPCL has created an Assurance network consisting of Company operated OSTs supported by dealer operated Highway Star outlets. These outlets have differentiated propositions for truckers. These outlets have differentiated propositions for truckers and motorists. These new format OSTs pack a host of amenities ranging from hygienic restrooms for both segments, laundry, Kirana store, an amphitheater, and a fully equipped multi-cuisine Dhabha and restaurant with separate dining areas for truckers and motorists.

BPCL's Allied Retail Business (ARB) is not only the largest non-fuel revenue generator in the industry during 2006-07 but also amongst the leading retail networks in the country offering a basket of services ranging from C-stores, Quick Service Restaurant to financial and travel related services.

The retail business continued its tradition of bagging honours on all fronts. Locations across the country received numerous awards in the areas of Health, Safety and Environment. BPCL was conferred with the award for the best branded Auto fuel for the brand Speed, by Frost and Sullivan, a global growth consulting and training company based on customer research.



Industrial & Commercial

The year 2006-07 was significant for the I&C business as over 1000 customers serviced by erstwhile Kochi Refineries Ltd (KRL) were taken over by BPCL consequent to the merger KRL with BPCL. The merger process which started in September 2006 was completed smoothly without any interruptions. BPCL recorded the highest growth in HSD sales to Industrial customers.

BPCL is an active participant in the marketing of spot cargos of LNG. Consequently, the Re-gasified Liquid Natural Gas (R-LNG) sales volumes increased to 665 TMT during April – Dec 07 against 679 TMT during the year 2006-07. With the enhanced availability of R-LNG, BPCL was able to add two prestigious names to its list of customers during 2007-08.

Bunkering has been identified as a major growth driver in the years to come, BPCL has ambitious plans to position itself in the international bunkering market. BPCL is in the process of setting up a joint venture company for this purpose with a foreign partner, where each will hold a 50% equity stake.

BPCL has introduced several valued added services for customers, with a view to differentiate itself from the competitors. E- Biz, E-banking, SMS alerts to customers, Energy Audits etc. are some of the initiatives pursued in this direction.

4.3.6 LPG

With a view to expand horizons and foray into the retail business, the LPG SBU has launched 'Beyond LPG' initiative, a value added service to Bharat Gas consumers, by providing a variety of products and services at their door step at attractive prices. The product range was expanded and currently, the products offered through this channel include a range of kitchenware, gas stoves, electrical appliances, solar lighting, pre-paid re-charge vouchers for cellular phones and FMCG products including food & grocery etc from reputed brands.

Bharat Metal Cutting Gas (BMCG) an ideal fuel developed to replace conventional acetylene for metal cutting and brazing applications. BMCG has been

accredited by leading agencies like Welding Research Institute, Trichy, Research Design & Standards Organization (RDSO), Lucknow and Naval Materials Research Laboratory, Ambarnath.

The LPG reticulated system referred to in common parlance as 'Piped LPG gas' has been designed to meet the captive requirements of buildings ensuring round the clock LPG supply and reaching the households at a low pressure. The system is safer as compared to cylinder safety with increased convenience. BPCL has so far connected 21,916 households through the reticulated LPG system.

4.3.7 Lubricants

In the extremely competitive environment, BPCL managed to consolidate its position. A number of initiatives were taken up to retain and increase the market share. The sales network was expanded during the year by appointing additional Primary Lube Distributors and by adding a large number of multi-product counters to the existing network. MoU has been signed with M/s Adani Energy Ltd for marketing BPCL brands of lubricants from their gas stations. During the period April – Dec. 07, the lubricant sales were 156 TMT against sales of 133 TMT during the year 2006-07.

In its endeavour to expand export operation during the year, entry was made in U.A.E., Bangladesh and Nepal. An MoU has been signed with a major petroleum retailing company in Africa for entering into African countries.

4.3.8 Investment in Joint Venture Projects :

- **Bharat Oman Refineries Limited**

Bharat Oman Refineries Ltd, (BORL), promoted by Bharat Petroleum Corporation Ltd. (BPCL) and Oman Oil Company Ltd. (OOCL) has authorized capital of Rs 4500 crore and paid up capital of Rs. 151 crore. BPCL has share of Rs. 75.5 crore (50% of the paid up capital as on 30.9.2007). Additionally, Zero Coupon Convertible Debentures of Rs. 900 crore have been subscribed by BPCL.



Central India Refinery (CIR Project) was aimed to meet BPCL product requirements in the Northern and Central Regions and to reduce our dependence on other oil companies for its product supplies in the fully de-regulated scenario.

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).

MOU has been signed with Government of Madhya Pradesh on 6.5.2005 comprehensively covering all the Financial/Fiscal incentives.

The estimated project cost is Rs 10378 crore and is being financed through a debt/equity mix of 1.6:1. A consortium of 19 banks has sanctioned a total loan of Rs 6090 crore that completes the debt closure and the balance equity will be arranged as and when required in future.

As on 1.12.2007, the overall physical progress of the project stands at 37%. The cumulative expenditure is Rs. 1466 with a cumulative commitment of Rs. 7706 crore. The project is scheduled for commissioning by December, 2009. BORL has plans to make an IPO to complete its equity closure.

- **Indraprastha Gas Co. Limited**

Indraprastha Gas Co. Limited, (IGL) a joint venture with GAIL, India Ltd, was set up in December 1998 with an Authorized Capital Rs. 220 crore for implementing the project for supply of CNG to households and automobile sectors in Delhi.

BPCL has invested Rs. 31.50 crore in IGL for a 22.5% stake in the equity. IGL shares are listed on the stock exchange, Mumbai and National Stock Exchange of India Ltd.

IGL has commissioned 153 CNG stations in Delhi up to September 2007. Number of CNG vehicles has crossed 175000 up to September 2007. IGL have given connections (PNG) to more than 1,00,000 customers as on September 2007.

The company is looking beyond NCT of Delhi by expanding its business in NCR cities of Noida, Greater Noida, Ghaziabad of Uttar Pradesh and Sonapat and Panipat of Haryana.

- **Petronet LNG Limited**

Petronet LNG Ltd. (PLL) was formed for importing LNG and setting up of LNG Terminals at Dahej and Kochi with facilities like jetty, storage, re-gasification facilities etc to supply Natural Gas to various industries in the country. PLL was promoted by four public sector companies' viz. BPCL, IOC, ONGC and GAIL who contributed 12.5% each to the equity. The balance equity was raised over a period of time from Gaz de France -10%, Asian Development Bank - 5.2%, balance 34.8% was raised from the public in March 2004.

The shares of PLL are listed on the Stock Exchange, Mumbai and the National Stock exchange of India Ltd. BPCL has invested Rs. 98.75 crore as equity contribution in the company. The company has been giving returns to shareholders in the form of dividend.

PLL has set up LNG receipt and re-gasification Terminal facilities of 5 MMTPA capacity at Dahej in Gujarat and started commercial supplies of re-gasified LNG from April 2005. PLL has plans to expand its capacity at Dahej to 10 MMTPA, which is expected to be completed by July 2008.

The setting up of LNG terminal at Kochi with 5.0 MMTPA capacity has been taken up and is expected to be completed within 36 months from the date of EPC award.

Petronet LNG has emerged as a dominant gas supplier and accounts for 25% of the total gas supplies of the country.



- **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. UPSIDC – a representative of Govt. of Uttar Pradesh will be having a share of 5% and rest 50% has been taken by Asian Development Bank, IDFC and ILFS.

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 30.9.2007, CUGL has commissioned 5 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 MNGL 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. The first phase envisages setting up 29 CNG stations,

main steel grid line of 55 km. connecting CNG stations and the District Regulatory Stations, MDPE & HDPE network at an estimated cost of Rs. 256.8 crore. The Phase II envisages setting up of additional 12 CNG stations, balance steel grid network and requisite HDPE and MDPE network at an estimated cost of Rs. 86.4 crore.

- **Sabarmati Gas Ltd.**

Sabarmati Gas Limited (SGL) a Joint Venture Company (JVC) promoted by BPCL and Gujarat State Petroleum Corporation. Ltd (GSPCL) was incorporated in June 2006, with an authorized capital of Rs. 100 crore, for implementing the City Gas Distribution Project for supply of CNG to the 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 30.9.2007, BPCL has contributed Rs.2.01 crore towards equity.

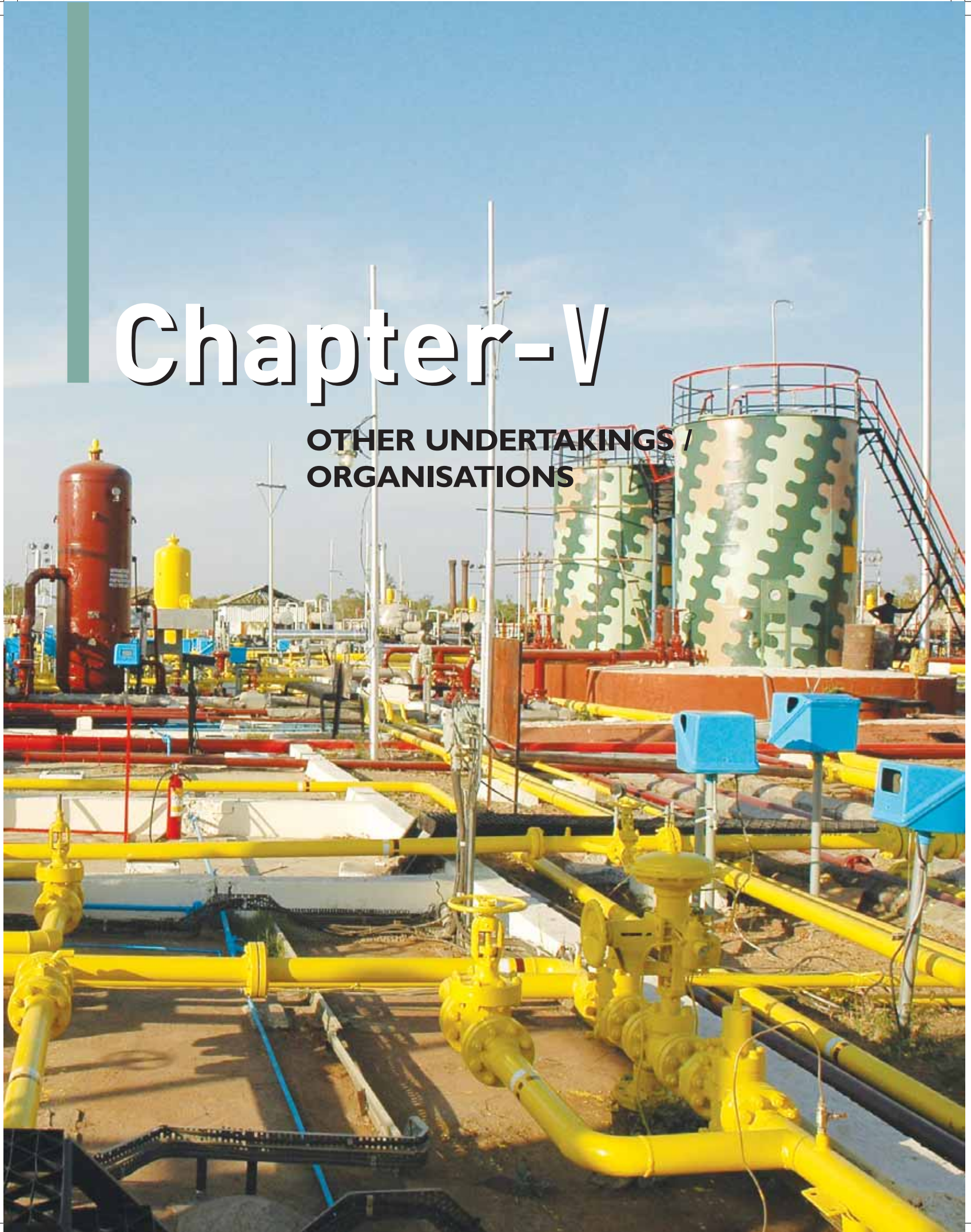
The project envisages setting up 6 City Gate stations, 40 daughter regulating stations, 30 CNG stations, 220 km steel pipeline, over next 15 years in two phases at an estimated cost of Rs. 410.16 crore.

- **BHARAT STARS Services Private Limited**

A new Joint Venture Company was incorporated on 13.09.2007 for Into Plane Fuelling Services at Bangalore Airport, along with ST Airports PTE Limited, Singapore, with an authorized capital of Rs.10 crore. The project is under implementation. BPCL's present contribution is 0.05 crore.

Chapter-V

OTHER UNDERTAKINGS / ORGANISATIONS





5. OTHER UNDERTAKINGS/ ORGANISATIONS

5.1 DIRECTORATE GENERAL OF HYDROCARBONS (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 2007-08 (till December 2007) 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 reconnoitry 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) Seismic survey in Kutch basin

2D seismic survey in Kutch Onland in which total quantum of work planned was 900 GLK and the



Mr. Awad Ahmed AL-Jaz, Hon'ble Minister of Energy and Mining of Sudan and Shri Murli Deora, Hon'ble Minister of petroleum and Natural Gas inaugurates HPCL's stall at the India Africa Hydrocarbon Conference and Exhibition held at Delhi.



work progress during April to November 2007 is 181.25 GLK.

ii) Marine Magnetic Telluric (MT) and Seismic Survey:

This included marine seismic of 235 LKM and marine MT (Magneto Telluric) of 32 stations. The work progress during April to November 2007 is 99.543LKM of marine seismic and 13 marine MT stations.

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

The collection and analysis of data is in progress.

iv) MT Survey in Central India:

The total quantum of work planned was 2 profiles. One profile completed during April to November 2007.

v) Geochemical Surveys carried out by DGH

Regional surface geochemical survey has been carried out in the Deccan Syncline basin. 1000 soil samples have been collected and analysed. Report preparation is currently ongoing. In Bastar basin, 300 samples were collected, analysed and interpreted.

The survey in respect of Ganga basin has been initiated and is in progress. It is proposed to collect about 1000 samples from this basin.

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 National Oil Companies (NOCs) for the offered acreages.

India has an estimated sedimentary area of 3.14 million

square kilometres, comprising 26 sedimentary basins, out of which, 1.35 million square kilometre area is in deepwater. At present 1.38 million square kilometre are held under Petroleum Exploration Licenses in 18 basins by national oil companies viz. Oil & Natural Gas Corporation Limited (ONGC), OIL India Limited (OIL) and Private/Joint Venture company. Before implementing the New Exploration Licensing Policy (NELP) in 1999, 11% of Indian sedimentary basins was under exploration, which has now increased significantly.

In the first six rounds of NELP, expected investment is of the order of US \$ 8 Billion. Oil and Oil-Equivalent Gas (O+OEG) in place reserve accretion under NELP is approximately 600 million metric tonnes.

5.1.4 Monitoring of Production Sharing Contracts

Government of India has signed contracts for 28 discovered fields, 26 CBM blocks and 190 blocks for exploration and development to Private / JV & NOCs. Out of this, contracts for 160 exploration blocks, 26 CBM block and 28 discovered fields are under operation. 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 \$ 7625.5 Million investment has already been made by companies on Exploration & Production till March 2007. During 2006-07, Pvt/JV sector produced 4.83 MMT of oil and 7.04 BCM of natural gas, which is about 14% and 22% of country's oil and gas production.

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 Tarapur, Palej, Pramoda, South West Panna and CB-OS-I were examined.
- Proposals of Work-over 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 of ONGC

DGH is continuously monitoring the field performance based on redevelopment plans, Progress of IOR, 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 700 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 review 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

Correspondence has been made with the officials of

Oil India Limited regarding the availability of Geological, Production and Reservoir data for various fields. Part of the data has been received after detailed interaction /discussions with the Geoscientists and engineers of OIL. The same is under review at 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 PY-3, Panna-Mukta, Kharsang, Amguri, Allora, Dholasan, Kanawara, North Kathana, Cambay, Sabarmati, Dholka, Wavel, North Ballol, Indrora, Lohar, Bakrol, Palej, Asjol and Sangapur fields have been carried out till November 2007.

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-VII, blocks were carved out and data packages were 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. Newly acquired Data by GX Technology, USA is under study for a regional review of the East Coast and West Coast areas. Quality check of logs re-construction, interpretation of logs for petrophysical parameters, production analysis for fluid contact and reservoir simulation were carried out.

5.1.11 National Knowledge Centre (NKC)

DGH has embarked upon the project of setting up National Knowledge Hub (NKH) of Geo-science data for E&P industry in India. The Expression of interest has been issued through advertisement in National/ International papers/magazine. Further action is in progress.

5.1.12 Coal Bed Methane (CBM)

Development plan of the Raniganj (South) CBM block submitted has been approved for exploitation of CBM.



Field Development Plan of CBM blocks: SP(East)-CBM-2001/I and SP(West)- CBM-2001/I have been examined and approved. DGH has identified about seven CBM blocks for CBM-IV bidding round. Action has been initiated by DGH to generate CBM related data for preparation of dockets of the identified blocks.

5.1.13 Gas Hydrates

DGH convened an International Conference on Gas Hydrates in February, 2008. The objective of the proposed Gas Hydrate Conference was to deliberate on the scientific results of the studies and the outcome of the Expedition-I gas hydrate coring/drilling program and also to know the status of gas hydrate programs of other countries. The conference *inter alia*, also provided information on the available technologies for gas hydrate reservoir delineation and gas production from hydrate bearing reservoirs.

5.1.14 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.

5.1.15 Essentiality Certificates

During April 2007 to Nov 2007, DGH has issued 8348 Essentiality Certificates enabling the National Oil Companies and Private/JV companies to import concessional/duty free goods for petroleum operations.

5.1.16 Status of International & National Cooperation

Cooperation with following Institutes and Regulators in various fields are ongoing.

- **Alberta Research Council (ARC), Canada:-** Review of sedimentary basins in India and reserves estimation.
- **NPD, Norway:-** Management of Hydrocarbon resources.
- **ERDU, UK:-** Evaluation of development plans and study of frontier basins in India.
- **Imperial College, London:-** Visualisation

technologies, evaluation of thin bed and tight reservoirs, etc.

- **University of Aberdeen, UK:-** High pressure, high temperature and ultra deep water drilling.

5.1.17 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 (EIL)



- 5.2.1** Engineers India Limited (EIL) was established in 1965 to provide engineering and related technical services for petroleum refineries and other related projects. Over the years, it has diversified into and excelled in various fields. EIL has emerged as Asia's leading design, engineering and turnkey contracting company in Petroleum Refining, Petrochemicals, Chemicals & Fertilizers, Pipelines, Offshore Oil & Gas, Onshore Oil & Gas, Terminals & Storages, Mining & Metallurgy and Infrastructure.

EIL provides a comprehensive range of project engineering services spanning from project feasibility, process design, detailed engineering, procurement, construction and project management through to supervisory assistance for commissioning and plant start-up. EIL also undertakes projects on Lump sum Turnkey (LSTK) basis. It continues to play a significant role in the hydrocarbon and process industries, both in India and abroad. Engineers India is an ISO 9001:2000 accredited Company.

The Right to Information Act 2005 has been implemented in the company and a Public Information Officer and an Appellate Authority have been 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 has its head office in New Delhi, regional engineering offices in Chennai, Kolkata & Vadodara and a branch



office in Mumbai. It has inspection offices at all major equipment manufacturing locations in India and a wholly owned subsidiary Certification Engineers International Ltd. (CEIL) for undertaking independent certification & third party inspection assignments. Outside India, EIL has an engineering office in Abu Dhabi, which is a hub for the Middle East, a marketing office in Saudi Arabia, inspection offices in London & Milan and a wholly owned subsidiary, EIL Asia Pacific Sdn. Bhd.(EILAP) in Malaysia.

The total manpower strength of the Company as on 31.12.2007 was 2708.

5.2.2 Performance

- (a) Physical performance – important assignments secured during 2007 – 2008 (up to December 2007)

During the year (till December 2007) EIL secured new business worth Rs. 2951 crores comprising of consultancy business of Rs.1840 crores (including overseas business of Rs.289 crores) and Lump Sum Turn Key (LSTK) business of Rs.1111 crores. Details of major jobs secured are given below:

Domestic

- EPCM services for 9 Million TPA Guru Gobind Singh Refinery at Bathinda of HPCL-Mittal Energy Limited (HMEL)
- PMC services for Grassroots dual feed (Gas/Naphtha) Cracker Complex at Lepatkata, Assam of Brahmaputra Cracker & Polymer Ltd. (BCPL), Assam
- EPCM services for new FCCU at Mumbai Refinery of HPCL.
- EPCM services for CDU/VDU-III Revamp of CPCL, Chennai.
- EPCM services for NHT/CRU Revamp of CPCL, Chennai.
- PMC services for DHDS Revamp at Mumbai Refinery of BPCL.
- Preparation of BDEP for SWS, ARU, Coker

LPG Caustic Treatment and Technical Support services for preparation of Process Package for licensed units of Residue Upgradation Project, CPCL, Chennai

- EPCM services for Bina Despatch Terminal of BPCL, Noida.
- PMC services for Vijaipur-Dadri - Bawana Gas Pipeline Project and Compressor Station works for GAIL.
- PMC services for 26 Well Platforms Revamp Project of ONGC, Mumbai.
- Modernisation and Restructuring of Mumbai Airport, MIAL – Independent Engineer Services.
- PMC services on deposit concept for Rugby Stadium and other sports facilities for Commonwealth Games 2010, Delhi University.
- PMC services on deposit concept for laying of Interceptor Sewers along Najafgarh Drain and Shahdara Drain for Abatement of Pollution in River Yamuna of Delhi Jal Board.



EIL's C & MD Shri Mukesh Rohatgi, Chief Minister of Delhi Smt. Sheila Dikshit and CEO Delhi Jal Board Shri Arun Mathur after signing the agreement on Yamuna Cleaning Project in New Delhi.



Overseas

- PMC services for Replacement of NGL Pipeline Network Project in Gas Fields (EPC Phase) for GASCO, Abu Dhabi .
- PMC services for Integrity Enhancement of Fire Protection System for Abu Dhabi Refinery Phase- III of Abu Dhabi Oil Refining Company (TAKREER), Abu Dhabi.
- PMC services for Algiers Refinery for NAFTEC, Algeria
- PMC services for Olefins Conversion unit and Polypropylene units at Ruwais for Abu Dhabi Polymer Company Ltd.(BOROUGE), Abu Dhabi
- PMC services for ABBR Modification Project (FEED Phase) for GASCO, Abu Dhabi

- Consultancy services for reduction line 1 & 2 Rectiformers Replacement Project for ALBA, Bahrain
- Feasibility study for Bitumen Production Project at Sohar Refinery for Sohar Refinery Co., Oman

LSTK

- DHDT&NHT/ISOM units of Euro-IV Quality Upgradation Project at CPCL-Chennai on "open book estimate concept".

Business Forecast (January – March 2008)

Following assignments may materialise during the period January to March 2008:

- Preparation of DFR and BDEPs for Utilities & Offsites for EURO-IV Project and preparation of BDEPs for ARU, SWS and Coker LPG Treater for Residue Upgradation Project of CPCL.



High level visit of EIL to Abu Dhabi for discussions with ADNOC, GASCO where H. Excellency Talmiz Ahmed, Ambassador of India to Abu Dhabi was also present



- EPCM services for Diesel Hydrotreater Project of HPCL at Vizag Refinery.
- EPCM services for Diesel Quality Upgradation Project of Numaligarh Refinery.
- PMC services to SONATRACH, Algeria for LPG trains.
- Bankable technical/commercial Feasibility Study alongwith technology selection of Aluminium Smelter Project in Saudi Arabia.

Business Secured during 2006-2007

During 2006-2007, EIL secured business worth Rs. 1916 crores, of which Rs. 68 crores worth of business was from overseas markets and the remaining Rs. 1848 crores was from the domestic market.

(b) Financial Performance

Turnover of EIL was Rs. 571.08 crores during the year 2006-07 as against Rs. 790.48 crores during the year 2005-06. Its profit before tax and profit after tax were Rs. 204.64 crores and Rs. 142.99 crores respectively in 2006-07 as compared to Rs. 199.78 crores and Rs. 138.64 crores respectively during 2005-06.

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 2007-08 include the following:

- MoU signed with M/s Tata Projects Limited for setting up a joint venture for undertaking LSTK projects in India and Abroad.
- Promoted "open-book method" of LSTK contract execution in India and secured one such LSTK job from M/s. CPCL.
- MoU signed with ONGC for providing Engineering Consultancy Services to their projects in India for a period of five years.

- Emphasis on enhancing geographical spread, Oman added as new business segment to international business of the company.
- Secured US Patent for CFC Technology developed jointly with IOC (R&D).
- To sustain contact with potential clients and enhance market presence, participated in international exhibition in Egypt, Indo-African Hydrocarbon Conference & Exhibition and PETROTECH 2007
- An enterprise-wide e-Documentation System being implemented in the company to enable systematic storage and retrieval of information/data.
- As a follow-up to the formulation of the Corporate Risk Policy, 23 key risk issues have been identified and Action Plans for assessment, minimization and/or mitigation of 18 of these risks have been implemented in the company.
- To further comprehend employee needs and expectations, an Employee Engagement Study has been initiated in the company.
- 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 2007-2008 with challenging targets for turnover of Rs.963 crore, gross margin of Rs.226 crore and new business secured of Rs.1940 crore.

5.3 BALMER LAWRIE & COMPANY LIMITED (BL)



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, paid-up capital and reserves & surplus of the Company as on 31.3.2007 was Rs. 30 crore, 16.29 crore and 254.02 crore 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) Oil & Natural Gas Related (Industrial Packaging, Greases & Lubes and Performance Chemicals), (ii) Export Related including Infrastructure for Exports (Container Freight Station and Tea Blending & Packaging), (iii) Infrastructure and Services Related (Travel & Tours, Logistics Services and Engineering Technology & Services, and (iv) Research & Development Related (Engineering, Design & Development Center, Applications Research Laboratory and Product Development Centre).

During the year 2007-08, the Company is expected to manufacture 32 lakh barrels/drums. The Company is expected to produce 34,000 MT of Greases/Lubricants during 2007-08, compared to 32,000 MT achieved during the period 2006-07. Similarly, the production of leather chemicals is estimated to be 4,6 00 MT during the year 2007-08.

The total turnover of the Company is estimated at Rs. 1,400 crores in the year 2007-08. The profit after tax of Company was Rs. 70.22. crore during the year 2006-07, whereas the estimated profit after tax during the year 2007-08 is Rs. 72.50 crore.

Company is following the Official Language Act strictly. All the documents, which come under Section 3(3) of the Official Language Act, are being issued bilingually in all the locations of the Company.

During the financial year 2007-08, the Company has utilised about Rs. 5.33 lakh, for Special Component Plan (SCP) & Tribal Sub Plan (TSP).

5.4 BALMER LAWRIE INVESTMENTS LIMITED (BLIL)



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. BLIL has five non-executive Directors on its Board out of which two are independent in terms of listing requirements. 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 crore. The Issued and Subscribed capital of the Company is Rs. 22.19 crore.

The total turnover of the Company is estimated at Rs. 1,475.88 lakhs in the year 2007-08. The profit after tax of Company was Rs. 928.72 lakhs during the year 2006-07, whereas the estimated profit after tax during the year 2007-08 is Rs. 1396.13 lakhs.

5.5 BIECCO LAWRIE LIMITED (BLL)



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 31.3.2007, the Company has an Authorized Capital of Rs. 50 crore while the Issued, Subscribed and Paid-up Capital is Rs. 42 crore. The President of India and the Oil Industry Development Board (OIDB) hold 57.37% and 41.85% respectively, of the Equity Share Capital.

During the financial year under review, the Company is expected to register a total turnover of Rs. 60.17 crore (inclusive of Excise Duty) and attained net profit (provisional) of Rs. 1.41 crore upto the period 31.12.2007. Net Worth of the Company as on 31.3.2007 was negative and stands at Rs. 17.28 crore. The Company 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 the Company for 2007-08 with regard to turnover of electrical operations inclusive of switchgears, electric repair jobs and electrical projects is estimated to be Rs. 58.90 crore as against 51.40 crore achieved in the corresponding period of the preceding financial year, showing a positive trend in 2007-08.

The Company 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.

5.6 OIL INDUSTRY DEVELOPMENT BOARD (OIDB)

5.6.1 Objectives of the Oil Industry Development Board (OIDB)

The Oil Industry (Development) Act, 1974 was enacted 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 great 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 first 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, 2007, the Central Government has collected more than Rs.71000 crore as cess. Out of this, OIDB has received an amount of Rs.902.40 crore.

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.8800 crore (approx.) as on 31st March, 2007.

5.6.4 Assistance to Oil Industry

The OIDB 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 grant of loans for projects, disbursement of grants for Research and Development programs and funding expenditure of Scientific Advisory Committees, Study Groups





and 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. On the basis of the above formulation, OIDB term loans carried the following interest rates for the month from April 2007 to December 2007 :-

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.

Prepayment Fee

The OID Board has allowed prepayment of loans to enable oil companies to retire their costlier loans. The companies are given option of prepayment of their existing loans after paying a lump sum prepayment fee of 0.5% of the loan proposed to be prepaid. The companies are also given "Interest Reset" option if they wish to continue with the existing loan after paying the lump sum resetting charges on the same rates as applicable for prepayment of loan.

(%) per annum

Month	Period of loan			
	1 year	3 years	5 years	10 years
April 2007	8.84	9.04	8.92	9.06
May 2007	10.76	9.67	9.42	9.28
June 2007	10.69	9.31	9.37	9.44
July 2007	9.31	9.00	8.91	8.91
August 2007	8.92	8.91	8.95	9.01
September 2007	8.51	8.70	8.86	9.02
October 2007	7.84	8.11	8.09	8.57
November 2007	8.68	8.56	8.62	8.71
December 2007	8.40	8.46	8.57	8.70

As per the recommendations of the Committee, further discount on interest rates on OIDB loans are also given to certain type of projects such as:-

- Project 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

5.6.5. Deployment of funds

The OIDB has accorded highest priority to programmes connected with exploration, production, refining, marketing, research and development etc. and the activities related to the energy security of India. So far OIDB has up to 31st December 2007 extended following financial assistance to the Oil industry:



Financial assistance since 1975

(Rs. in crore approx.)

	Cumulative up to 31.12.2007
Loans	21,864
Grants	1,120
Total	22,984

In addition, the OI DB has invested its funds in the equity share of M/s Biecco Lawrie Ltd (BLL) to the tune of Rs.17.58 crore and in M/s. Indian Strategic Petroleum Reserves Ltd. (ISPRL) to the extent of Rs.94 crore till 31.12.2007. A major portion of the loan assistance has been given to oil companies for meeting capital outlay of plan projects. As per the directives of Government, an amount of Rs.93 crore has also been paid towards Royalty to the State Governments till 31.12.2007 to meet the commitment on fiscal conditions in production sharing contracts(PSCs) relating to discovered fields in first & second rounds of NELP. It is also mentioned that OI DB sold its equity of Rs. 90.80 crore to V/s Oil India Ltd. at Rs. 355.12 crore (@ Rs.39.11 per share of Rs.10). The total capital gain stood at Rs.264.32 crore.

Details of financial assistance given during last five years

Year	Loans	Grants	Rs. in crore
2003-04	520.00	77.21	597.21
2004-05	2,211.83	75.21	2,287.04
2005-06	760.00	89.51	849.51
2006-07	1,827.90	211.45	2,039.35
2007-08 (upto 31.12.2007)	882.10	65.15	947.25

Disbursement of Loans during the year 2007-08 (Up to 31.12.2007)

(Rs. in crore)

Sl. No.	Name of the Organisation Plan Projects Loans	Allocation of Funds (2007-08) BE	Funds disbursed Upto 31.12.2007
1	IOCL	857.10	857.10
2	HPCL	25.00	25.00
	Total	882.10	882.10

5.6.6. Abstract of the projects funded by OI DB during 2007-08 (upto 31st December 2007)

5.6.6.1 Indian Oil Corporation Limited:- Rs.857.10 crore

- (i) Naptha Cracker project at Panipat - Rs. 250 crore

This project shall lay the foundation for creation of a world class petrochemical hub, which will engineer significant industrial activity in the coming years.

The project envisages setting up a Naptha Cracker Complex based on captive utilization of Naptha from Panipat, Mathura and Koyali refineries of Indian Oil. 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 LLDPE/HDPE swing unit, a dedicated HDPE unit and MEG unit. Loan assistance of Rs.250 crore was provided by OI DB to IOCL upto 31.12.2007 during the year 2007-08 for the project.

- (ii) Diesel quality and distillate yield improvement (Hydro cracker) at Haldia Refinery - Rs. 350 crore.

The objective of the project is to improve the diesel quality to meet Euro-III/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 also result in improvement of distillates yield of the refinery. A loan assistance of Rs.350 crore was provided by OIDB to IOCL upto 31.12.2007 during the year 2007-08 for the project.

- (iii) Panipat Refinery Expansion Project- Rs. 257.10 crore

As part of its capacity expansion projects, IOCL created an additional refining capacity at its Panipat refinery to bridge the deficiency of petroleum products in Northern Region. The project has been commissioned in August 2006. With this expansion, the total capacity of Panipat refinery has been increased to 12 MMTPA. As a part of this project IOCL also commissioned India's largest Diesel Hydrotreater, Hydrogen Generation and Hydro-cracker unit at Panipat. An amount of Rs.257.10 crore was released by OIDB to IOCL upto 31.12.2007 as loan assistance during 2007-08 for the project.

5.6.6.2 Hindustan Petroleum Corporation Limited:- Rs. 25 crore

M/S Hindustan Petroleum Corporation Limited (HPCL) is a downstream company and engaged in refining and marketing of petroleum products. Loan assistance of Rs.25 crore was made available by OIDB to M/s HPCL upto 31.12.2007 for Upgradation of quality of Lube Oil Based Stocks (LOBS) at Mumbai Refinery during the financial year 2007-08. The project envisages setting up the following new facilities within the existing Lube Refinery Complex with the objective to meet the international standard for LOBS:-

- Raffinate Hydrotreating Unit
- Selective Isomerisation catalytic Dewaxing Unit

5.6.7 Grant 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 providing sufficient resources for appraising the unexplored/partly explored acreages through Oil Industry Development Board.

a) Regular Grantee Institutions

The OIDB has been providing grant in aid 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) on continuous basis 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 in aid related to upstream sector, a Sub-Committee comprising of Jt. Secretary (Exploration) Ministry of Petroleum & Natural Gas, Secretary, OIDB and representatives from DGH, ONGC, and OIL has been constituted by OI Board to examine these proposals in the first instance and give its recommendations. The recommendations of the Sub-Committee are submitted before the OI Board for decision. The projects having an outlay of more than Rs.25 lakh that are approved by OI Board are sent to Central Government for approval before release of grant in terms of Rule 24 of OI Rules. Recently, the OI Board in its 72nd meeting held in December, 2007 has approved increase in Board's power for approving grants upto Rs.5.00 crore from the present limit of Rs.25.00 lakh in a single case. Necessary action is being taken to notify amendment in OI Rules.



A number of projects on R&D in the upstream sector have yielded considerable benefits to oil industry in terms of oil production, upgradation of technology and identifying the new areas for exploration etc. The total grants released by OIDB for the upstream sector projects since 1998 upto 31.12.2007 amounted to Rs.76 crore.

Review Committee

The OI Board has constituted a Sub-Committee comprising of Jt. Secretary (Exploration), Ministry of Petroleum & Natural Gas, DG, DGH and Secretary, OI DB to review the progress of the OI DB funded projects in the upstream sector. This Committee meets from time to time and reviews the progress of the projects in the upstream sector. The recommendations of the Sub-Committee given in its various meetings are presented before OI Board for consideration and appropriate directions for implementation of the projects in a more efficient manner wherever necessary.

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 Centre for High Technology (CHT). The members representing SAC are eminent persons in various fields of Oil Industry. The tenure of this Committee is for a period of two years.

5.6.8.1 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 by constituting a Steering Committee and a Technical Committee. 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. OI DB has, up to 31.12.2007, given grant to the tune of Rs.148.16 crore for various activities under NGHP.

5.6.8.2 Hydrogen Corpus Fund

The Ministry of Petroleum & Natural Gas has set up a Hydrogen Corpus Fund in the wake of interest across the world on the use of hydrogen as an auto fuel. The Government of India is of the view that the Indian Oil Industry should also 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/OI DB as follows:

- | | |
|--------------------|-------------------|
| 1. OI DB | Rs. 40 crore |
| 2. ONGC, IOC, GAIL | Rs. 16 crore each |
| 3. HPCL, BPCL | Rs. 6 crore each. |

Indian Oil Corporation Limited (IOCL) is nominated as the coordinator of the programme whereas the OI DB is directed to maintain the Bank Account of the fund. OI DB has so far contributed an amount of Rs.10 crore to the corpus. M/S IOCL and ONGC have initiated some R&D activities for usage of Hydrogen as a source of energy.



Expenses on Grants/Schemes sponsored by OI DB/Govt. of India

The OI DB incurred the following expenditure by way of grants to institutions and on schemes sponsored by Govt. of India/OI DB during the year 2007-08 (upto 31.12.2007):

Sl. No.	Name of the Institutes	Amount in crore
A	Grants to Regular Grantee Institutes	
1	Directorate General of Hydrocarbons	16.05
2.	Petroleum Conservation Research Association	8.50
3.	Centre for High Technology	5.95
4.	Oil Industry Safety Directorate	4.40
5.	Petroleum Planning & Analysis Cell	3.95
	Total (A)	38.85
B	R & D Grants	
6.	Oil & Natural Gas Corporation Limited	3.18
7.	Oil India Limited	6.53
8.	Indian Institute of Technology, Delhi	0.02
9.	National Geophysical Research Institute	0.80
10.	IIP, Dehradun	9.95
11.	Government of Rajasthan, Deptt. of Petroleum	0.29
12.	Regional Research Laboratory, Jorhat	0.03
	Total (B)	20.80
C	Schemes/Projects sponsored by Govt. of India/OI DB	
13.	National Gas Hydrate Programme	0.16
14.	Setting up Rajiv Gandhi Institute of Petroleum Technology Society(RGIPTS)	4.25
15.	Jan Kerosene Pariyojana	1.09
	Total (C)	5.50
	Grand total (A+B+C)	65.15



5.6.8.3 Assistance to Technical Institutes/CSIR Laboratories

OIDB has been providing assistance to educational institutes viz IIT Delhi, Central Institute of Plastic Engineering and Technology (CIPET), Chennai, Regional Research Laboratory, Jorhat, National Geophysical Research Institute, Hyderabad, Indian Institute of Petroleum, Dehradun etc. for creating infrastructure for training and research.

5.6.9 New Initiatives

i) Construction of Strategic Crude Oil Storages through a Special Purpose Vehicle named Indian Strategic Petroleum Reserve Limited (ISPRL)

The Government of India has decided to build a Strategic Crude Oil Reserve of 5 MMT through a Special Purpose Vehicle (SPV). The SPV named as Indian Strategic Petroleum Reserves Limited (ISPRL), was initially a subsidiary of Indian Oil Corporation Limited. It has become a wholly owned subsidiary of OIDB w.e.f. 09.05.2006. Three locations selected for creating the storages are Vishakhapatnam (1.0 MMT), Mangalore (1.5 MMT) and Padur (2.5 MMT). Capital cost for constructing the strategic storage facilities is estimated at Rs.2397 crore with operational and maintenance cost at Rs.90 crore p.a. The creation of facility will take about 56 months from 9th May, 2006 and the cost of crude will be incurred from 6th to 8th year. M/s Engineers India Limited is the Project Management Consultant for the project.

38 acres of land has been acquired from Vishakhapatnam Port Trust for constructing the strategic storage at Vishakhapatnam. For the remaining 30 acres of land, an MOU has been signed with Eastern Naval Command for making use of their land for underground works. Approximately 82.62 acre of land from Mangalore Special Economic Zone (MSEZ) has been acquired. On account payment of Rs.41.31 crore has been made to MSEZ for acquiring land in SEZ area. Permission has been obtained from Development Commissioner,

SEZ, Mangalore, under SEZ rules for establishment of unit in SEZ area.

Environmental clearance has been received in respect of site at Vishakhapatnam whereas it is under process in respect of Mangalore and Padur. Technical bids for underground facilities at Vishakhapatnam have been evaluated. The successful bidders are being asked to participate in the reverse auction process for award of job. The underground work is proposed to be awarded on item rate basis and the contract for the above ground work will be awarded on Lump Sum Turn Key (LSTK) basis.

5.6.9.1 Implementation of Pilot Scheme on strengthening the distribution of PDS Kerosene under OIDB financial assistance

The Government has approved a Pilot Project for revamping the PDS Kerosene Distribution Network with the primary objective of:-

- i) Ensuring that this heavily subsidized product is made available in the required quantities to the intended beneficiaries i.e. the families below poverty line and
- ii) To eliminate the diversion of PDS SKO for adulteration.

The Pilot project is, in the first instance, to be implemented in 10% of the blocks of the country. Thereafter, the working of the scheme would be independently assessed and, based on the experience gained; Government will consider scaling up the scheme to cover the entire country.

The salient features of the scheme are: -

- Oil Marketing Companies (OMCs) will establish at least one Kerosene (SKO) dealership in each of the country's development blocks (at present, less than half the blocks are covered and there is disproportionate, often multiple concentration, in urban blocks).
- In consultation with the District Administration and the wholesale dealer, about 5-10 sub-wholesale points will be located in each block.



- There will be a dedicated fleet of tanker-trucks (TTs) for transportation of PDS kerosene to ensure widespread public information and transparency, as these TTs will prominently display the special logo that is devised for the dedicated fleet. It will be clearly written on the outside of the TT that it is transporting kerosene meant for the Public Distribution System.
- To bring storage dispensing services at SKO dealerships at par with the modern facilities provided at petrol and diesel outlets by OMCs at their own expense, the Oil Industry Development Board (OIDB) will fund OMCs to ensure the installation of the facilities envisaged in the scheme at each of the dealerships covered under the pilot project:

The scheme provides for supply of kerosene to sub-wholesale points under the direct supervision and responsibility of the OMCs. Panchayats and Gram Sabhas will be empowered to generally supervise the availability of PDS SKO at subsidized prices in consultation with State Governments. A reporting mechanism will be put in place for Panchayats/Gram Sabhas to report any deficiencies to the State Administration and the OMCs concerned.

The capital expenditure on the scheme is anticipated at Rs.696 crore besides recurring expenditure of Rs.250 crore per annum. As per the directions of the MOP&NG, the entire capital expenditure of Rs.696 crore is to be met out of OIDB funds. Initially, 10% of the above expenditure i.e. Rs.69.6 crore will be incurred on the scheme on a Pilot basis in 10% of blocks. The total funds released by OIDB upto 31.12.2007 towards the scheme amounted to Rs. 22.30 crore.

5.6.9.2 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 sector for creating Human Resource on a global basis to meet the emerging demand 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 or Ministry of Human Resource Development. The RGIPT has been registered in the name of RGIPT Society on 31.08.2006.

RGIPT Society is in the process of procurement and acquisition of 47.50 acre of land at Jias. The OIDB has released an amount of Rs.4.25 crore during 2007-08 towards procurement of land.

5.6.9.3 Strategic Underground storage for Natural Gas

Ministry of Petroleum & Natural Gas has decided to establish a strategic storage system for natural gas to ensure continuity of supplies to downstream industries in case of possible short-term supply disruptions. The strategic storage of natural gas would be built by OIDB. To begin with, the Ministry has proposed for gas storage of 1 billion cubic meters (BCM) that would imply a supply source of 33 MMSCMD for a period of one month.

For this purpose, the OID Board has constituted the following two Committees:-

- a) Committee for preparation of Pre-Feasibility Report/Draft Feasibility Report for setting up of strategic natural gas storage facilities.



- b) Committee for details of Depleted Oil & Gas fields for setting up of Strategic Natural Gas Storage Facilities.

The Committee for Preparation of PFR/DFR recommended a proposal of M/s Engineers India Limited at a cost of Rs.2.85 crore for preparation of Pre-feasibility Report for storage of 3 Billion Standard Cubic Meter (BCM) of Natural Gas by developing a strategic reserve. The scope of work consists of preparation of PFR by way of study of various alternatives of storages. It will cover the desk study, data collection and its interpretation, reconnaissance of possible locations, evaluation and ranking of sites based on the requirement of the Government, methodology for preparing DFR, preliminary cost estimates and the schedule for the project. The study is in progress. The funds released by OIGB upto 31.12.2007 amounted to Rs.1.34 crore.

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



Shri U D Chaubey, C & MD, GAIL (India) Ltd. inaugurating the OISD's International Conference on "Gaseous Fuels"



their implementation so as to update them in line with the current international practices. 3 new Standards and Complete review of 5 existing standards were approved by Safety Council in 2007. As on date, OISD has issued 110 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 one Gas Processing and Petrochemical plant, 4 marketing locations i.e POL terminal/ Depot, LPG plants, 50 on land Exploration and Production (E&P) installations and 6 offshore installations have been carried out till December, 2007. Additionally, pre-commissioning inspection of one new projects in refineries and 6 marketing locations and 1474 km of cross country pipeline has been carried out in line with approved methodology till December, 2007.



Shri MS Srinivasan, Secretary, P&NG with Safety Award Winners from IOCL

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 2006-07 was completed in 2007 and safety awards were distributed.

5.7.4 Training Programs/Workshops

Technical workshops covering entire oil industry are organized to discuss latest developments, sharing

of experiences etc. One conference on "Safety Competencies in Refining, Petrochemicals and Gas Processing" was organized in 2007.



Shri MS Srinivasan, Secretary, P & NG inaugurating the OISD's International Conference on "Safety Competencies in Refining, Petrochemicals & Gas Processing".

5.8 CENTRE FOR HIGH TECHNOLOGY (CHT)



Centre for High Technology (CHT) was established in 1987 as a specialized agency of the oil industry to assess futuristic requirements, acquire,



Shri Murli Deora, Hon'ble Minister of Petroleum & Natural Gas giving away the 1st prize for 'Minimum specific consumption for 2006-07' to MRPL, Mangalore. Award is being received by Shri R. Rajamani, MD-MRPL: S.C. Tandon, Senior Advisor and other Senior Officials.



develop and adopt technologies 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 CHT sponsored completed R&D projects :

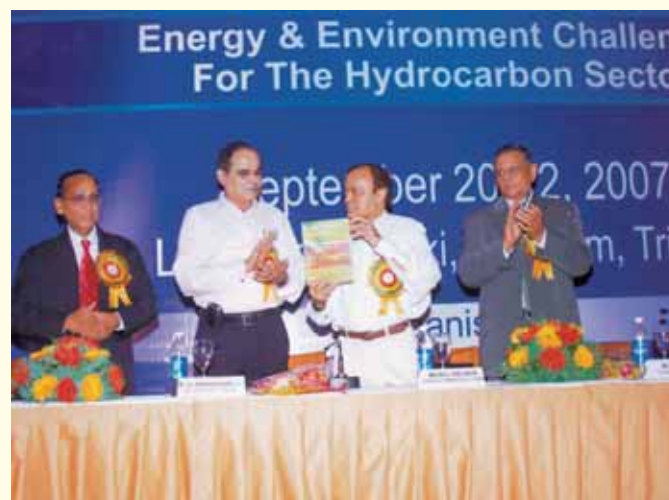
During the year 2006-07, CHT has completed the following R&D projects:-

- Development of Catalyst for Ultra Deep Desulphurisation of Gas Oil by IIP.
- Development of Know-How for Super critical Solvent Recovery in PDA Technology by IIP, EIL and HPCL.
- Development of Regenerative Process for Sulphur Dioxide Removal from Lean Gas Stream by IIP.
- Assessing the Impact of Regulations on Ambient Air and on Health in Delhi under Phase-I by TERI.

With a view to keep abreast with the latest development/trends that are taking place worldwide in the field of Petroleum Refining, CHT has organized seminars and workshops, published technical journals viz. "Technology Scan" and CHT Bulletin and held Activity Committee Meeting on various process areas.

CHT compiled and evaluated the energy performance of PSU refineries for 2006-07 for distribution of 'Jawaharlal Nehru Centenary' Awards, instituted by MOP&NG. These awards were for two categories i.e. i) 'Minimum Specific Energy Consumption' and ii) 'Maximum Improvement in Specific Energy Consumption over previous best'. During the 17th Oil & Gas Conservation Fortnight (OGCF-2007) in January 2007, CHT organised the Oil & Gas Conservation

Surveys in the refineries to select awardees on the basis of their performance in the area of 'Steam Leak'.



Shri Murli Deora Hon'ble Minister for Petroleum & NG releasing the compendium of Technical Papers at the XIV Refinery Technology Meet held in September 2007 at Kovalum, Trivendrum.

5.8.2 "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 on 19th December 2006 'Integrated Refinery Business Improvement Programme'. The overall programme schedule is three years. Three main phases of the program for each of the refineries include 'Assessment', 'Implementation', and 'Aftercare'. The focus areas are (i) Refinery Margin Improvement, (ii) Improved Energy & Loss Performance and (iii) Operations & Asset Management.

The programme is progressing as per schedule. Assessment Phase has been completed at all the four sites. Implementation of the approved projects is in progress at Kochi, Mathura and Manali Refineries, while approval of Proposals for Improvement (PFIs) has just been completed at HPCL, Visakh Refinery. The approved PFIs will be implemented as per the overall plan mutually agreed by Refineries and SGSI. It will be followed by After Care stage. The entire programme is expected to be completed by February 2010.



5.9 PETROLEUM INDIA INTERNATIONAL (PII)



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 PII has provided technical Project Management Consultancy, HRD and Training Services. Information Technology and Procurement Services to the oil and gas sector in Kenya, Ghana, Bahrain, UK, USA and Saudi Arabia. The turnover of the company during 2006-07 was 3499 lakh with a net profit of Rs. 788 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 (PNG) and senior officials of MOPNG and Chief Executives of major oil and gas PSUs as members provides necessary supervision, guidelines in the functioning of PPAC. It is attached to Ministry of Petroleum & Natural Gas (MOP&NG) to assist the Government, 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 and

communication system to deal with emergencies and unforeseen situations.

3. Analyzing the trends in the international oil market and domestic prices.
4. Forecasting and evaluation of petroleum import and export trends.

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

- (i) Subsidy claims of oil companies under the government schemes on (a) domestic LPG, (b) PDS Kerosene, and freight subsidy for far flung areas were processed by PPAC and a total amount of Rs.2606 crore under the above schemes were disbursed to the oil companies for 2006-07.
- (ii) In view of the growing importance of natural gas sector in the energy economy of the country as well as abroad, the methodology for collection of data on natural gas was formulated in consultation with the industry for timely collection, compilation and dissemination of data and statistics on natural gas. The relevant data are now being hosted in PPAC website (www.ppac.org.in)
- (iii) In an open and globalised hydrocarbon sector like India's, the quality of data and statistics is of fundamental importance for effective policy-making. The Ministry of Petroleum and Natural Gas, 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 Ministry of Petroleum & Natural Gas 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 organized workshops on improvement of data quality in the oil and gas sector in India



including participation of the PPAC delegation in the workshop organized by EIA in its headquarter in Washington D.C. during October 2007. Subsequently, PPAC has initiated the process of formulation of a comprehensive data quality guidelines and forecasting techniques.

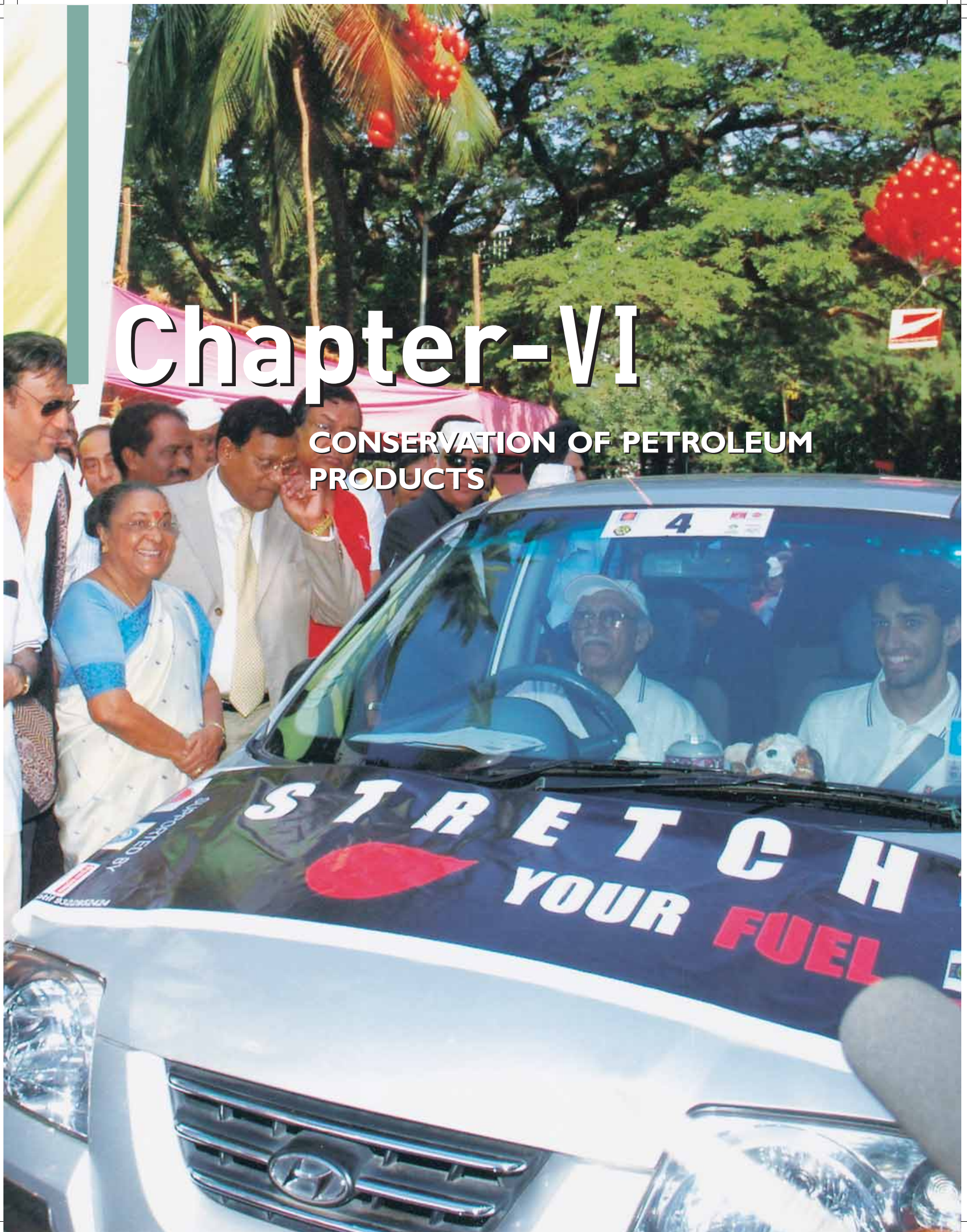
- (iv) As an integral part of the India-Japan Energy Dialogue, PPAC is engaged in conducting joint studies with the Institute of Energy Economics, Japan (IEEJ) under the provisions of an MoU signed in February 2006. During 2007-08, a joint study on 'Stabilization of Asian Natural

Gas Market' has been taken up by PPAC and IEEJ.

- (v) 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. on 30 June 2006, USTDA has agreed to provide a grant of US \$6,90,000 for undertaking a study of National Gas Grid in India. The process of selecting a US firm to undertake the project is nearing completion during March 2008 and the study will commence thereafter.

Chapter-VI

CONSERVATION OF PETROLEUM
PRODUCTS





6. CONSERVATION OF PETROLEUM PRODUCTS

6.1 Petroleum Conservation Research Association (PCRA), on behalf of Government of India, Ministry of Petroleum & Natural Gas has been working for the development and deployment of strategies for energy conservation and environment protection in the major sectors of economy, viz., Industry, agriculture, transport, domestic and commercial.

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 in response set up the Petroleum Conservation Action Group (PCAG) in 1976, which was subsequently reconstituted as PCRA in 1978. Over the years, new developments have shaped and given thrust to PCRA's programs and activities.

6.2 PCRA's Activities – An Overview

Oil and Gas Conservation Fortnight 2008

Oil and Gas Conservation Fortnight (OGCF) is a significant annual event of the Ministry of Petroleum and Natural Gas, which is organized from 15th January to 31st January every year. During the period, a large number of activities like rallies, marathons, human chain, technical seminars, symposiums, quiz and painting competitions etc. are arranged by PCRA in coordination with Oil Companies for the propagation of oil and gas conservation message amongst the major consuming sectors namely, Transport, Industrial, Agricultural, Household and Commercial.

OGCF 2008 took off with impressive Inaugural Functions all over India on 15th January, 2008. The theme for this year was "SAVE OIL, SAVE GAS, SAVE



Hon'ble Minister of Petroleum and Natural Gas, Shri Murli Deora flagging off PCRA car Mileage Rally in Mumbai on 2nd Dec'07 to promote fuel efficiency in the country



OUR CHILDREN". The event at New Delhi was inaugurated by Shri Murli Deora, Hon'ble Minister of Petroleum & Natural Gas on 18th January, 2008. The function was also graced by Shri Dinsha Patel, Hon'ble Minister of State for Petroleum & Natural Gas, Secretary, Petroleum & Natural Gas and Additional Secretary, Petroleum & Natural Gas.

6.3 FIELD ACTIVITIES – (2007-08)

Field Activities are one of the core areas of PCRA operations. The energy conservation programs through these activities are designed to cover a large spectrum of socio-economic profile of our country in different sectors viz. Industrial, Transport, Domestic, Agricultural and Commercial.

6.3.1 INDUSTRIAL SECTOR

During 2007-08 (April '07 - December '08), PCRA conducted 125 energy audits in the industrial sector. The savings identified through these studies was 60590 KLOE (Rs. 115 crore) and the savings realized through follow up studies was 11600 KLOE (Rs. 22 crore).

These are aimed at identifying the possible areas of improvement in energy use efficiency and promotion of fuel-efficient practices and equipment in small, medium and large industries.

Seminars/Technical Meets

During 2007-08, PCRA organized/participated in 27 Seminars/ Technical Meets across the country. These events were very important occasion to disseminate and exchange ideas on technical aspects related to energy efficiency in industries among different stakeholders.

Institutional Training Programs

PCRA's institutional training program (ITP) is an activity primarily meant to share the experience gained by PCRA during industry audits. Institutional training programs are conducted in large/medium industry for groups of 20-30 managers/supervisors/technicians. Experience is shared through discussion on case studies of specific energy audits that have

resulted in sizeable energy saving potential/realization in similar type of industries. During 2007-08, PCRA conducted 50 such Industrial Training Programs in various industries.

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. Our empanelment committee comprises members from Bureau of Energy Efficiency (BEE), National Productivity Council (NPC), TERI and PCRA. Today a strong force of 87 PCRA empanelled energy auditors is providing service to the Indian industry.

International/National Networking

- **A) International :** As a 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. This MoU was extended for a further period of one year in June 2007.
- **B) National :** During the year PCRA associated actively with the Regional/National Industry bodies such as FICCI, ASSOCHAM, Power Trading Corporation, Thane Belapur Industries Association, Federation of All India Textile Manufacturers Association etc. to carry out jointly the activities such as seminars, technical meets, training programmes and energy audits.
- MoU was entered with Bureau of Energy Efficiency/ Central Pulp and Paper Research Institute for collaboration in the field of energy efficiency and jointly providing services to the industry.

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 2007. During 2007-08, PCRA conducted over 279 Driver Training



Programmes (DTPs) training over 4500 drivers. The average improvement in kmpl was to the tune of 10-12%. During this period, PCRA conducted DTP for Southern Command of Armed Forces free of cost. Also conducted DTP in CRPF Jammu Sector.

Agriculture Sector

Besides taking an initiative towards integrating its activities with the structured programmes of State Institutes of Rural Developments (SIRDs), PCRA efforts in this sector focused on awareness spreading through van publicity campaigns of the state field publicity departments, workshops on bio-diesel and simple tips to save diesel in different agricultural equipment, kisan melas, exhibitions etc.

6.5 Research & Development

During the year 2007-08, 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.

R & D Projects

Sl. No.	Particulars	No. of Projects	Value of Projects (Rs. in Lakh)
1.	Projects awarded during 2007-08	31	428
2.	On-going projects	67	913
3.	Projects completed in 2007-08	4	59
4.	Commercialized	16	
5.	Patent filed	5	

6.6 Education & Mass Awareness Campaign

Conservation of fossil fuel is not only vital because of its limited known resources in the world, but also because of its multiplying effect of reduction of Carbon

Dioxide emission into the environment. The annual sale of petroleum products in our country put together stands at approx. Rs. 4,00,000 crore. Even in a very conservative manner, if we consider a scope of 2-2.5% savings, it is indeed phenomenal that our country has an assured scope of saving Rs. 8,000 – 10,000 crore every year on the amount of expenditure we spend on petroleum products. However, in order to accomplish such a saving, what we require is a strong motivation of each one of us end users of petroleum products. And that is where the role of Education Campaign comes into force.

Print Media Campaign

The campaign includes activities such as, Advertisement/ Article/Editorial in Newspaper/ Magazine, Literatures/ Leaflets/Posters/Stickers/Calendars etc. Newspaper advertisement was released in the leading newspapers throughout the country apart from PCRA articles in leading magazines. The advertisements were designed to attract the attention of the end users of petroleum products and motivate them to change their habits to fuel saving measures.

Printed Literature

The complete set of PCRA free literatures was revised for the first time during 2007-08 that has been consolidated into 6 booklets, 3 leaflets, 9 posters and 2 stickers covering the sectors of transport, industry, domestic and agriculture. Apart from the sectoral literatures, PCRA, during 2007-08, brought out two special booklets for children on the importance of fuel efficiency and petroleum conservation literatures. A total of 4.5 lacs copies of PCRA literature have been printed and distributed all throughout the country during the year.

Electronic Media Campaign

Radio advertisements on fuel efficiency were carried out on Radio Mirchi, Radio City and Red FM in 7 cities of the country. Tips on fuel efficiency on transport, industrial and domestic sectors were effectively put across to the listeners in the form of radio jingles to motivate them imbibe fuel saving habits in their day-to-day life.



Exhibition

Exhibiting its strategy, strength and achievement through panels, transslides and displaying it during seminars and exhibitions throughout the country has been an effective media of information dissemination for PCRA. During 2007-08, PCRA organized / conducted 34 nos. exhibitions in various parts of the country.

6.7 CLUSTER BASED RESEARCH & DEVELOPMENT APPROACH

Research & Development Department adopted “cluster approach” during the year 2007-08 to rapidly spread the message of the need and the benefits of energy conservation among the industrial clusters.

The main focus was on the energy intensive Industrial Clusters e.f. Leather, Pulp & Paper, Textile, Cold Storage, Brassware, Marine and Refectory etc.

PCRA's R&D Department could achieve in bringing the representatives from the industries operating inefficiently due to obsolete technology and lack of skilled manpower to a common platform along with the engineering institutes for identifying the felt need / designing of prototypes for energy efficient processes for the industries.

6.8 NEW INITIATIVES BY PCRA

- A Conservation Technology Centre show casing the energy efficient technologies and products available in the Indian Market was established in PCRA, Sanrakshan Bhawan, 10, Bhikaji Cama Place, New Delhi. The center was inaugurated on 12.02.2008 by Additional Secretary, Ministry of Petroleum & Natural Gas / Vice Chairman, PCRA and provides a single window solution to industries aiming for Conservation of Energy.



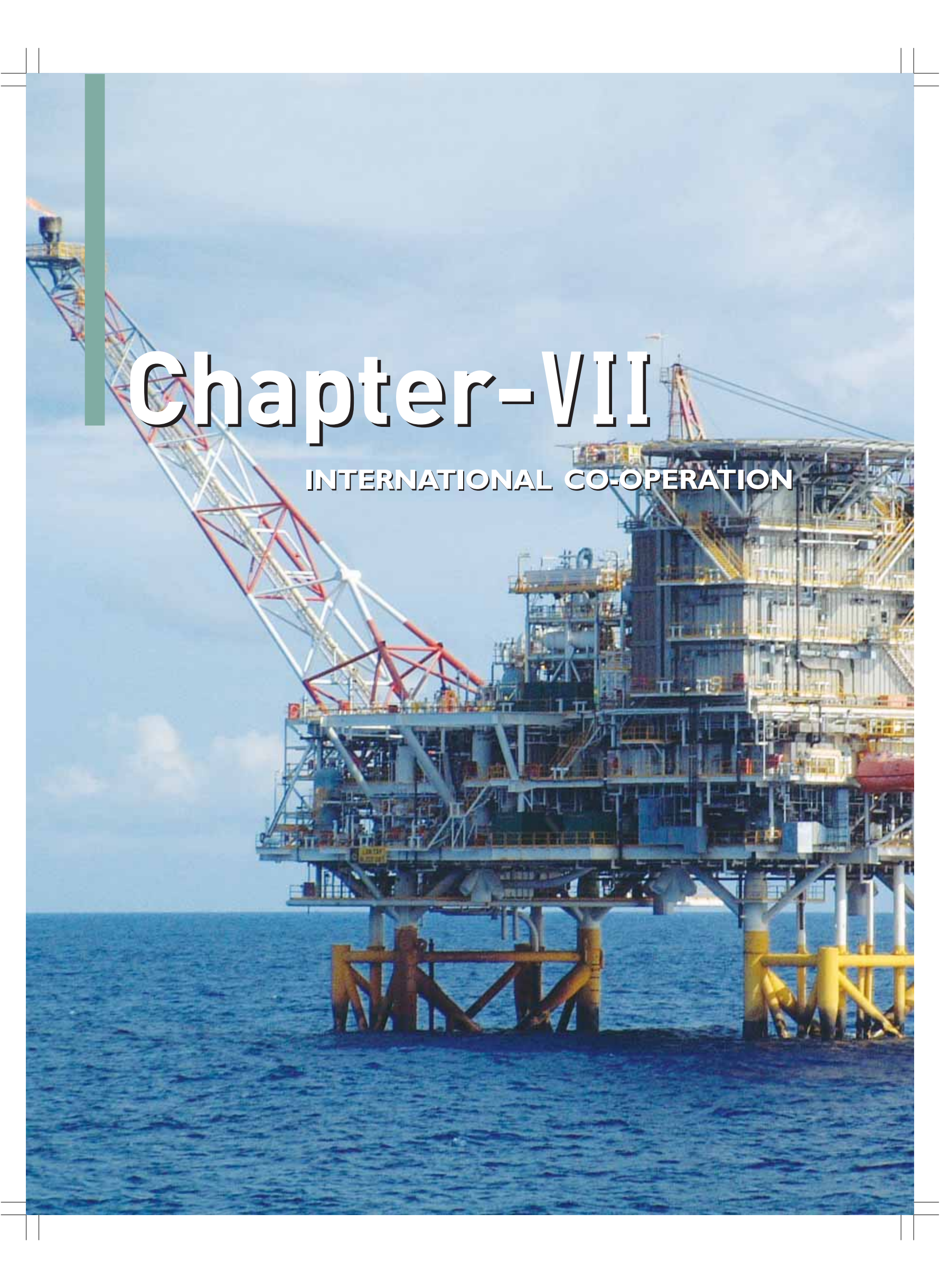
Addl. Secretary, MOP & NG, Shri S. Sundareshan inaugurated the Conservation Technology Centre set up by PCRA in New Delhi on 12th Feb' 08 to promote new initiatives and innovations in the field of energy efficient technology & product in the country.



- PCRA has signed a MoU with BEE in July 2007 for a period of one year. Under the MoU, PCRA in association with SIAM and its members will work to further improve efficiency in automotive manufacturing industry and fix the modalities of formalizing the Standards and labelling procedure for Indian automotive vehicles.
- For minimizing the loss of Hydrocarbon Fuel due to idling of vehicles at Traffic Signals, action is initiated for installation of Count Down Timer (CDT) and Variable Message Signboard (VMS) at 20 traffic intersection in Metro Cities.
- Action was initiated for the development of a scientific methodology based on statistical approach for the development of saving methodology to calculate saving arising out of PCRA's range of activities.
- PCRA organized two seminars in New Delhi and Chennai involving all stakeholders on issues leading to the development of full efficiency standards and labelling for vehicles in India.
- A Conservation Car Rally was organized in Mumbai in December 2007 to promote the concept of good driving habits, attracted extensive attention of the media.



Hon'ble Minister of Petroleum and Natural Gas, Shri Murli Deora lighting the lamp on inauguration of Oil and Gas conservation fortnight'08 in New Delhi on 18th Jan'08 in presence of Hon'ble Minister of State, Petroleum & Natural Gas, Shri Dinsha Patel and Secretary, Petroleum & Natural Gas Shri M.S. Srinivasan

A large offshore oil rig is shown in the background, featuring a complex network of steel structures, pipes, and platforms. A prominent red and white crane arm extends from the rig towards the left side of the frame. The rig is situated in the middle of a deep blue ocean under a clear sky. The text 'Chapter-VII' is overlaid in a large, white, sans-serif font, with a green vertical bar to its left. Below it, the text 'INTERNATIONAL CO-OPERATION' is written in a smaller, white, sans-serif font.

Chapter-VII

INTERNATIONAL CO-OPERATION



7. INTERNATIONAL CO-OPERATION

7.1 With a view to addressing its energy concerns, India is continually committed to bilateral cooperation with foreign countries both in the upstream and downstream sectors. In order to give a fillip to the matters relating to international cooperation, an exclusive Division, named the International Cooperation(IC) Division has been functioning in this 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 Hon'ble Minister/MOS have undertaken a number of visits abroad during the year 2007-2008. The overseas visit of the Minister/MOS and the objectives achieved are as under:-

OVERSEAS VISITS OF MINISTER

Sl.No.	Countries visited and period	Objectives of the visits
1.	Syria, Algeria, Egypt & Iran(18.4.2007 to 26.4.2007)	For enhancing presence in the upstream and downstream sectors in Algeria, Syria, Egypt & Iran
2.	Saudi Arabia, Riyadh(1.5.2007 to 3.5.2007)	For attending Second Round Table Meeting of Asian Ministers on Regional Cooperation in Oil and Gas Economy
3.	France, Paris(31.5.2007 to 1.6.2007)	For attending Ministerial conference at UNESCO.H.Q, Paris.
4.	Bishkek, Krygzstan(15.8.2007 to 16.8.2007)	For attending Shanghai Cooperation Organization Meetings
5.	Myanmar(23.9.2007 to 24.9.2007)	For attending signing ceremony of PSCs
6.	Doha, Qatar(29.10.2007 to 31.10.2007)	For participating in the 6 th conference on Natural Gas
7.	Moscow(25.11.2007 to 27.11.2007)	For attending meetings with officers of Russian Government and companies relating to projects in Oil & Gas sectors.
8.	London, Houston & Calgary (23.01.2008 to 26.01.2008)	NELP Roadshow



OVERSEAS VISITS OF MOS

Sl.No.	Countries visited and period	Objectives of the visits
I.	USA-Newark NJ, Calgary and Houston TX(25.1.2008 to 31.1.2008)	NELP Roadshows at Houston and Calgary

7.4 An overview of International operations of oil PSUs.

The oil 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 :

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-I	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 operator ship)
	Block 5A	OVL -24.125% Petronas-67.87% 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)



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%
Iraq	Block 8	OVL-100%
Iran	Farsi Offshore Block	OVL-40%IOC-40%OIL-20%
Libya	Block NC-188 & NC-189	OVL-49%TPOC-51%(Operator-TPOC)
	Block 81-1	OVL-100%
	Block 43	OVL 100%
Qatar Egypt	Najwat Najim Block 6	OVL-100% OVL-70% IPR-30% (OVL and IPR will jointly develop the block with IPR taking the lead during exploration phase)
	Block NEMED in Offshore	OVL-33% Shell-51% Operatorship patrons -16%
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%



Brazil	Block BC-10	OVL-15% Shell-50% Petrobras-35% (Operator-Shell)
Colombia	Omimex	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)
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-60% EMO-40% (Operatorship OMEL)
	OPL 285	OMEL-90% EMO-10% (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).
Ivory Coast	Block CI-112,	OIL 11.5%
Gabon	Shakthi Block	OIL 45% IOC 45% Marvisptc Ltd. 10%



Yeman	Block 82 & 83	OIL 15% MEDCOENERGS 45% Kuwait Energy 25% IOC 15%
Nigeria	Block OPL-205	IOC 17.5% OIL 17.5% Suntera 35% Summit Oil International Ltd. 30%
Libya	Block 102/4	OIL 50% IOC 50%
	Area 95-96,	IOC 25% OIL 25% Sontrach 50%
	Area 86	OIL 50% IOC 50%

OTHER PROJECTS

Sl.No.	Country	Name of the Project	Operator/Status
1.	Sri Lanka	a) Bunker Fuel Marketing	Commissioned by IOC at Trincomalee Port in May, 2007
		b) Construction of 18000 NTPA Lube Blending Plant at Trincomalee	Commissioned in November, 2007
2.	Oman	Block 56	HPCL has participating interest alongwith Oilex, GAIL, VIDECON and BPCL
3.	Australia	Block WA-388-P	HPCL has participating interest alongwith Oilex, GSPC, VIDECON and BPCL



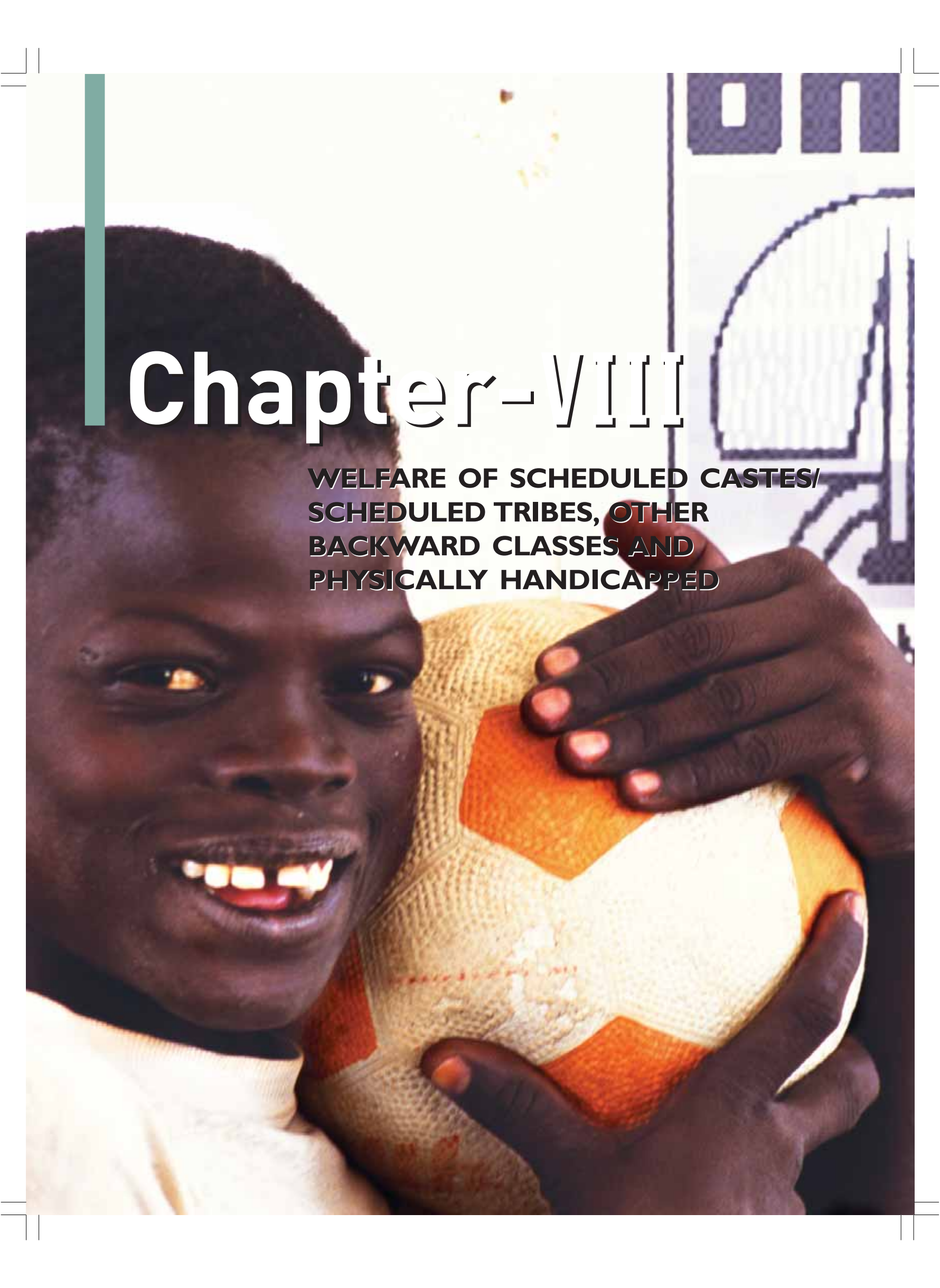
7.5 The first-ever India Africa Hydrocarbon Conference and Exhibition was held in New Delhi 6-7th November, 2007, keeping in view the desire of both India and the African nations to intensify and widen cooperation in the Hydrocarbon Sector. A road map was drawn out, the contours of which envisage (i) Hydrocarbon Cooperation Agreements at the macro level to identify the broad areas of cooperation in the field of Exploration and Production and Refining; (ii) stepping up crude oil imports, and exports of petro-products by India; (iii) technology transfer and cooperation in R&D; (iv) retail marketing of Fuels and Lubricants by Indian Companies in Africa; and (v) training of technical and managerial personnel of African nations in hydrocarbon industry management.



Hon'ble Minister of Mauritian Dr. Rajesh Jeetah and Hon'ble Minister of Petroleum & Natural Gas Sri Murli Deora after signing of the agreement between MRPL and State Trading Corporation, Mauritius, for the former to supply Petroleum products to the latter for 3 years.



In Sudan, ONGC Videsh Limited (OVL) is working with China National Petroleum Corporation, a subsidiary of the Malaysian National Oil Company Petronas and the National Oil Company of Sudan Sudapet.

A close-up photograph of a young boy with dark skin and short hair, smiling broadly at the camera. He is holding a soccer ball with orange and white panels. The background is slightly blurred, showing a wall with some posters or drawings. The text 'Chapter-VIII' is overlaid on the left side of the image, and the chapter title is centered below it.

Chapter-VIII

**WELFARE OF SCHEDULED CASTES/
SCHEDULED TRIBES, OTHER
BACKWARD CLASSES AND
PHYSICALLY HANDICAPPED**



8. WELFARE OF SCHEDULED CASTES/ SCHEDULED TRIBES, OTHER BACKWARD CLASSES AND PHYSICALLY HANDICAPPED

- 8.1** The orders relating to 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 Physically Handicapped (P/H) 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 P/H 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/Physically Handicapped persons is monitored by the Ministry through Quarterly report furnished by PSUs separately.

In pursuance of the observations of Parliamentary Committee on the Welfare of SCs/STs/PH 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 Roster maintained by the Units of PSUs, annually. In 2007 the team has inspected rosters of 40 out of 48 units of PSUs where Rosters are maintained.



ONGC is extensively involved in bringing about sustainable development in the lives of people in and around its operational installations.



8.2 BACKLOG OF SC/ST/OBC/PH IN OIL COMPANIES UNDER THE ADMINISTRATIVE CONTROL OF THE MINISTRY AS ON 31.12.2007

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	Nil/2	Nil/1	Nil/4	9 / 7	Nil/1	36/ 25	18/ 13
OIL	Nil	Nil	1/Nil	1/Nil	3/ 3	15/ 45	4/ 15	Nil/ 7
EIL	29/ 30	68/ 18	Nil	1/ 1	Nil/ 1	4/ Nil	Nil	Nil
BPCL	Nil/ 2	48/ 2	Nil/ 2	296/ 4	Nil/ 11	252/ 7	Nil/ 10	373/ 5
NRL	8/ Nil	Nil	Nil	Nil	Nil	Nil	1/ Nil	Nil/ 5
IOC	Nil	Nil/ 4	Nil	Nil	Nil/ 1	Nil/ 32	Nil/ 5	41/ 5
GAIL	Nil	66/ Nil	Nil/ 3	25/ Nil	3/ 2	Nil	Nil	Nil/ 1
HPCL	28/ 11	53/ Nil	-	-	-	-	-	-
ONGC	NIL	41/ Nil	2/ Nil	2/ Nil	Nil	Nil	Nil	Nil
BRPL	-	-	-	-	-	Nil/ 2	-	-
MRPL	4/ Nil	1/ Nil	Nil	Nil	10/ 2	6/ Nil	Nil	Nil
CPCL	-	Nil/ 1	-	1/ 2	-	Nil/ 6	-	-
BIECCO LAWRIE LTD.	Nil/ 3	4/ Nil	Nil/ 1	4/ 1	8/ 2	Nil	Nil/ 13	8/ Nil

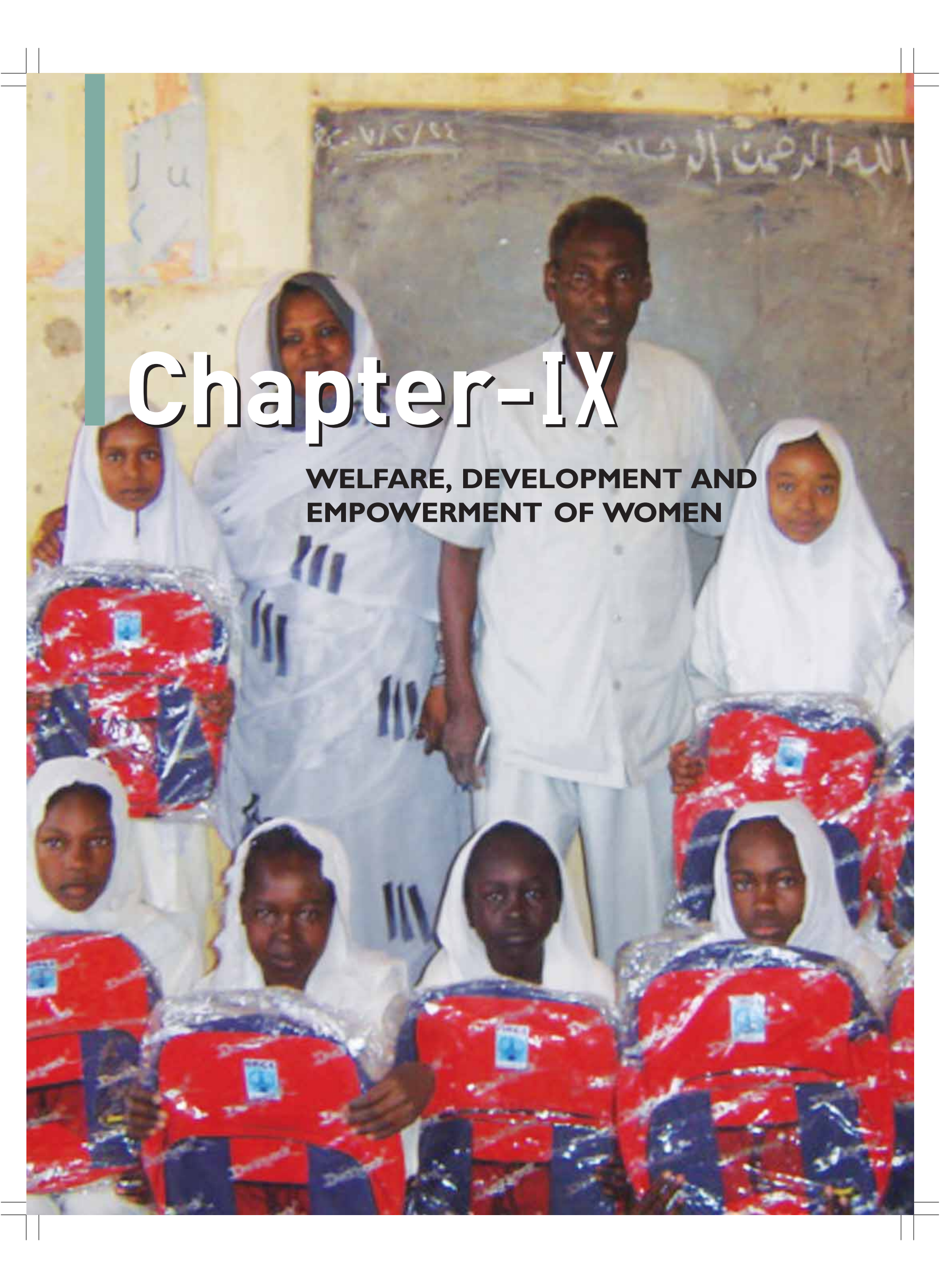
* 1 SC appointee in Group A of OIL was declared unfit.

** Posts are technical and highly skilled and not enough suitable candidates were found. Process is on for finding suitable candidates.

*** In BPCL Refinery Mumbai, SRD was undertaken for 7 Group C posts only, however, the posts are

technical and due to unavailability of suitable candidates only 1 post could be filled. Another SRD is under process very shortly.

**** IOC had previously intimated 16 backlogs as on 1.9.2005 currently which is showing as 10. Therefore, it is understood that the previous vacancies were wiped out during the period.



Chapter-IX

**WELFARE, DEVELOPMENT AND
EMPOWERMENT OF WOMEN**



9. 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 organised 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 Fora 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** In the Ministry of Petroleum & Natural Gas, a Women Cell has been constituted since January 1998 to cater to women's issues/grievances and to look into the complaints of sexual harassment, if any. The Women Cell has been reconstituted on 18.01.2006. The guidelines of the Supreme Court, the Ministry of Human Resources Development and Ministry of Labour are implemented in this regard. This cell is headed by a senior lady officer.
- 9.4** As on 01.01.2008, against the total strength of three hundred & five (305), two hundred & sixty seven (267) employees are in position at present in the Ministry (Proper) out of which fifty one (51) are women.



ONGC has associated itself with Himjyoti Foundation, for development of underprivileged children in Uttarakhand. The picture shown a classroom of a school with girls from underprivileged social segments; the school is being run by ONGC.



9.5 The number of women employees vis-à-vis total number of employees as on 31.12.2007 in the oil PSUs is tabulated as below :-

Sl. No.	Name of PSU	Total No. of Employees	Total No. of Women Employees
1.	ONGC	30,987	1,941
2.	IOCL	29,445	2,473
3.	HPCL	10,891	708
4.	BPCL	13,977	1,167
5.	GAIL (India) Limited	3330	174
6.	EIL	2,712	311
7.	OIL	8,408	319
8.	CPCL	1,685	76
9.	BRPL	1,689	78
10.	NRL	762	36
11.	MRPL	1,206	55
12.	Biecco Lawrie	437	5
13.	Balmer Lawrie	1,438	78

Chapter-X

**DEVELOPMENT OF NORTH -
EASTERN REGION**

ONGC



10. DEVELOPMENT OF NORTH - EASTERN REGION

10.1 The Ministry of Petroleum & Natural Gas has no budget allocation for implementation of centrally sponsored schemes and programmes in any States including North-Eastern States in the Petroleum Sector. However, the oil PSUs, under the administrative control of this Ministry, on their own and through their own resources have been implementing schemes and projects on commercial considerations as also some socio-economic programmes for the development of North-Eastern Region. Following are the contributions of the oil PSUs in social, employment and training activities.

10.1.1 OIL & NATURAL GAS CORPORATION LIMITED (ONGC)

ONGC has been actively pursuing the exploration activities in the N.E. Sector viz Assam, Tripura, Nagaland, etc. ONGC is routinely keeping the Outlay

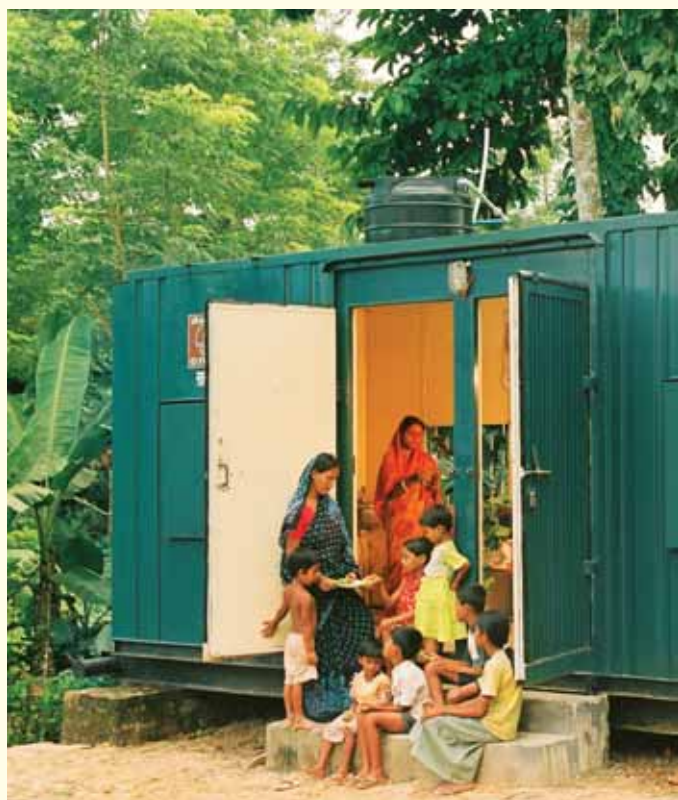
for E&P activities in the North-East at about 10% of its total annual outlay. ONGC has taken several steps as part of its Socio Economic Development Programme (SEDP), henceforth called the Corporate Citizen Policy (CPP). The endeavour is to upgrade/evaluate the overall industrial and socio- economic level of the area.

ONGC has taken up steps to provide Urban Amenities in Rural Areas (PURA), a vision of His Excellency, the President of India. PURA envisages bridging the rural-urban gap and achieving a balance socio-economic development. ONGC has set up the ONGC-PURA Trust with a seed capital of Rupees Ten 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.

10.1.2 OIL INDIA LIMITED

Oil India Limited views Social Welfare as a genuine expression of goodwill and responsibility towards humanity and the Nation. The projects undertaken by OIL from time to time are as follows:

- 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.
- 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, in Assam.
- The Company has extended a one time financial assistance of Rs 2.0 Crore to Assam Medical College, Dibrugarh, Rs 2.5 Crore to Silchar Cancer Hospital, Rs 1.0 Crore to Guwahati Medical College, Rs 1.Crore to Sri Sankaradeva Netralaya, Guwahati.



ONGC is spearheading a movement to provide Urban amenities to Rural Areas (PURA). The first such project is being undertaken in Tripura.



- Since inception, 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.
 - Recently, the Company has extended a one time financial assistance of Rs 3.68 Crore to Centre of Business and Management Studies, Dibrugarh University and Rs 1.5 Crore to Assam Engineering College, Guwahati.
 - 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.
 - 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 1770 Self Help Groups (SHGs) have already been formed and a large number of these SHGs have received loans from banks.
1. So far 1930 SHGs have been formed out of 12 economic activities namely Farm Mechanization; Dairy Farming; Pig Breeding; Duck Rearing; Goat Rearing; Mushroom Cultivation; Diversification of Handloom Products; Food Processing Computer Training Centers ; Farmer's Service Centers; Agro Processing and Marketing; Broom Making
 2. A marketing outlet named AASTHA has been opened at the HTPC campus at Duliajan. Plans are on to open a bigger outlet in the old bus stand opposite OIL market at Duliajan. Efforts are also on to open up small marketing outlets in Dibrugarh and Tinsukia.
 3. Infrastructures created under Project Rupantar till date:
 - One Extension cum Training Centre
 - Two Poultry Hatchery Units
 - One Handloom Growth Centre
 - One Mushroom Spawn Laboratory
 - One Eco Hatchery
 - One Computer Training Centre
 - One Marketing Centre (Aastha)
 - Ten Pig Breeding Centers/Villages
- **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. The emphasis is towards motivating the rural farmers to take up agriculture as a commercial activity, which otherwise, was a means of subsistence only. Over the years, this initiatives have encouraged unemployed youths of neighboring villages of OIL's operational areas to depend permanently on agriculture rather than searching for employment mostly in OIL. On experimental basis, Ginger cultivation was also introduced last year with tremendous success and OIRDS is looking forward to venture more on cash crop in future.

- 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.
- Despite overwhelming concern to find more oil, OIL has always given top priority towards the upliftment of the less privileged sections of the society in which it operates. It is this twin objective of business and social commitment that has prompted OIL to embark upon massive programmes of educational, medical and infrastructure development endeavors; an attempt to invest technology with a human face. As the company enters newer areas it ushers in hope and development for the people of these remote rural areas; connecting them to the mainstream and helping them realize their dream of a prosperous future.

10.1.3. GAIL (INDIA) LIMITED (GAIL)

GAIL started its activities in Assam in 1992 and has been supplying gas to around 50 customers since then. The average gas supply in Assam is 0.47 MMSCMD. The supply of gas is made to Assam State Electricity Board (ASEB) as a fuel for their power plants at Maibella and Geleki in the district of Sibsagar; Hindustan Fertilizers Corporation Ltd. (HFCL) as a feedstock for their fertilizer plants at Namrup in the district of Dibrugarh; and as a fuel to large number of tea estates for tea leaf processing.

In Tripura, GAIL (India) Limited has created pipeline network to connect different gas fields of ONGC to the consumers. GAIL has laid around 60 km of pipeline connecting ONGC gas fields at Agartala Dome, Rokhia and Konaban, and is supplying around 1.34 MMSCMD natural gas to power plants of Government of Tripura and NEEPCO.

In addition to this, GAIL is also supplying natural gas to Tripura Natural Gas Company Limited (TNGCL), which subsequently supplies gas to a large number of domestic consumers. GAIL has recently acquired a majority stake of 29% in this company under a Joint Venture route, in alliance with Tripura Industrial Development Corporation (TIDC) and Assam Gas Company Limited (AGCL).

In addition to supply, distribution and marketing of natural gas, GAIL has constructed and has been operating a LPG Plant at Lakwa in the district of Sibsagar, which incurred an investment of around Rs.240 crore. The LPG plant has a capacity to produce 85,000 tonnes of LPG per annum for meeting the requirement of about 6 lakhs domestic LPG consumers. LPG produced from this plant is presently being supplied to IOCL, AOD's bottling plants at North Guwahati & Silchar and, in future, would be supplied to a host of other small new bottling plants coming up in the states of Nagaland, Manipur, Arunachal Pradesh, Meghalaya and Mizoram.

GAIL's natural gas and LPG businesses provide direct and indirect employment to a large number of people in the north-east Region and contribute significantly to the state exchequer by way of tax revenues.

In the area of Petrochemicals, GAIL has taken the initiative to setup Assam Gas Cracker Project in Joint Venture at Lepetkata in the district of Dibrugarh. GAIL holds 70% of equity in the JV, named Brahmaputra Cracker and Polymers Limited.

GAIL has also integrated backwards by securing one E&P Block in Tripura under NELP – IV bidding and another E&P Block in Assam under NELP – V bidding. GAIL holds 80% and 35% respectively of the equity in these blocks. GAIL has initiated action for the early development of these fields.

GAIL has also been associated with the people of



North-East Region and has significantly contributed towards society & community development, in and around the areas adjoining its installations. GAIL has undertaken several projects under its Social Responsibility Programmes with special thrust on Community Development, Education, Environment Protection, Healthcare, Infrastructure, etc. The Company's efforts in this direction are being stepped up over the current financial year in a more planned and comprehensive manner.

10.1.4 BONGAIGAON REFINERY & PETROCHEMICALS LTD. (BRPL)

Bongaigaon Refinery & Petrochemicals Limited (BRPL) has made a gross investment of Rs.1147 crore up to 31st March 2007 in putting up various plants and associated manufacturing facilities at Dhaligaon. During the year 2007-08, a further capital investment of Rs.471.19 crore is envisaged against various projects. BRPL is providing raw materials for some of the downstream industries in North-East Region. Thus BRPL has been contributing to the industrial and economic development of the region.

BRPL has so far contributed an amount of Rs.1270.00 crore to the exchequer of Assam in the form of sales tax and duties & taxes up to 2006-07 and during 2007-08 (upto September) was Rs.39.00 crore.

Further BRPL has been taking up various social upliftment 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 2007-08, the Company has earmarked Rs.1.15 crore for socio-economic upliftment under the Special Component Plan and Tribal Sub- Plan in the region.

10.1.5 NUMALIGARH REFINERY LIMITED (NRL)

Numaligarh Refinery Limited (NRL) has participation in the following two Joint Venture Projects under implementation in North East Region :

Utilisation of Natural Gas Project

NRL has initiated actions for substitution of Naphtha

by natural gas as fuel for power plant and as feed and fuel in Hydrogen Plant. Substitution of Naphtha by natural gas is expected to improve net refining margin for the Company. In this regard, NRL has signed agreements with M/s OIL for supply of 1.0 MMSCMD of natural gas to Numaligarh Refinery and with M/s Assam Gas Company Limited (AGCL) for transportation of natural gas from Duliajan to Numaligarh through a new pipeline. For implementation, operation and maintenance of the natural gas pipeline, AGCL and NRL have formed a joint venture Company, M/s DNP Limited with equity participation of 40% by NRL and 60% by AGCL. The estimated project cost is Rs.318 crore. Purchase orders for procurement of long lead equipments have been placed. The project is targeted to be completed by end 2008.

Participation in Assam Gas Cracker Project

In order to implement the proposed Assam Gas Cracker Project at an estimated cost of Rs.5461 crore, a new joint venture company M/s Brahmaputra Cracker & Polymer Company Limited (BCPL) was incorporated on 08.01.07 with equity participation from GAIL (70%), OIL (10%), Government of Assam (10%) and NRL (10%). NRL will also supply 160 TMT of petrochemical grade Naphtha per annum to the proposed Gas Cracker project as feed. The 'Feed-Stock-Supply-Agreement' was signed between NRL and M/s BCPL on 19.09.07. An amount of Rs.110.00 crore has been earmarked by NRL in the "XIth Five Year Plan" for this joint venture project.

For implementation of the "Plan Projects" of NRL, an amount of Rs.625.00 crore has been earmarked in the XIth Five Year Plan (2007-12).

10.2 NORTH EAST REFINERIES

10.2.1 There are four refineries in Assam, viz., Guwahati, Digboi, Bongaigaon Refineries and Petrochemicals Limited (BRPL) and Numaligarh Refineries Limited (NRL). Guwahati and Digboi refineries are fully owned by Indian Oil Corporation (IOC), BRPL is subsidiary of IOC and NRL is a subsidiary of Bharat Petroleum Corporation Limited (BPC). These refineries mostly refine crude produced by ONGC, OIL and Ravva crude. As these refineries are of sub-economic size and suffer from locational



disadvantages, they need Government's intervention for ensuring their viability after the dismantling of the APM. Even though these refineries are unviable, it is necessary to keep them operational and viable in view of the need to stimulate industrial development and to provide for socio-economic development in the northeast region.

The year of commissioning and the capacity of NE refineries are given in the following table:

Refinery	Year of Commissioning	Capacity (MMT)*
Digboi	1901	0.65
Guwahati	1962	1.00
BRPL	1979	2.35
NRL	2000	3.00
Total		7.00

*Million Metric Tonne.

A comparison of profit after tax of NRL and BRPL for the years 2003-04, 2004-05, 2005-06, 2006-07 and 2007-08 (April – December, 2007) is given below :

(Rs. in crore)

Name of the Refinery	2003-04	2004-05	2005-06	2006-07	2007-08 (April – December, 2007)
NRL	214.95	409.15	448.93	568.80	352.96
BRPL	303.74	478.30	174.76	184.98	263.92

Chapter-XI

GENERAL





II. GENERAL

II.1 PROGRESSIVE USE OF HINDI

II.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.

II.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.

II.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, 4 employees were nominated for Prabodh class under Hindi Teaching Scheme during 2007-08. 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 3 Stenographers and 3 LDCs were nominated for training.

II.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.

II.1.5 The 'Hindi Fortnight' was celebrated in the Ministry during 14-28 September, 2007 and a number of competitions viz., Hindi essay writing competition, Hindi noting/drafting competition etc. were organized. 16 participants were given cash awards.



Hon'ble Union Home Minister gives away Indira Gandhi Rajbhasha Award to EIL

II.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.

II.1.7 The Parliamentary Committee on Official Language committee inspected 18 offices of PSUs under the administrative control of the Ministry scattered throughout the country. 16 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.

II.1.8 All computers were provided with Hindi software during the year.

II.1.9 In order to undertake of 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.

- 11.1.10** 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.
- 11.1.11** So far, 345 offices of the Public Sector Undertakings, in which 80 per cent 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. One office was denotified due to closure of the project. 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.
- 11.1.12** The Annual Programme for the financial year 2007-08 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.
- 11.1.13** 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.
- 11.1.14** 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. 20 offices in region "A", "B" and "C" have been inspected in 2007-08.
- 11.1.15** A workshop was organised for the employees of the Ministry to address the difficulties faced by them in use of Official Language. 10 employees participated in this workshop.

11.2 PUBLIC GRIEVANCE 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.

During the year 2007-08 (upto 31st December, 2007), the Public Grievance Cell of this Ministry received 2,567 grievances out of which 2,309 grievances have been redressed. The pendency of the grievances as on 31st March, 2007 was 258 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 2007-08, about 2,978 members of the public have benefited from the Information Facilitation Counter.

11.4 e-GOVERNANCE INITIATIVES

e-Governance has now become a buzz word in the Government Sector. In the past when most of e-Governance projects were conceptualized and designed, availability of services was hardly on priority list but now it is required round the clock. Keeping in view the fast delivery of services, NIC has conceptualized, developed and implemented a large number of projects for the Ministry.

The following are some of the key e-Governance Initiatives/Applications taken up in the ministry.

- (i) **Overseas Project Information System:** A web based application to monitor the physical and financial progress of overseas projects related to Exploration & Production (R&P), Refinery & Pipelines (R&P), Marketing, and Gas taken up by the Oil Sector PSUs has been developed and under implementation. The application has been hosted on temporary server and User ids and Passwords have been provided to PSUs for providing monthly status of the projects.
- (ii) **O&M Pendency monitoring System:** O&M Matters on various activities of different divisions/sections are being reviewed by Secretary, MOPNG on monthly basis. The compilation of number of pendencies with each section and then consolidation at division level takes much time and most often is prone to errors giving incorrect results. A web based software with proper integration with IntraPetro Portal where each section officer has been given permission to enter the pendencies of their section for each month and year has been developed and implemented. Report permissions have been given to the senior officers where they can access reports Section - wise, Activity - wise and Division - wise without depending on the concerned General Section.
- (iii) **Board level Incumbency Monitoring System:** A web based system on Board Level

Incumbency Monitoring System has been developed and implemented to monitor the status of vacant posts at PSU level.

- (iv) **Telephone Bills Payment & Monitoring System:** Telephone Bills Payment & Monitoring System is operational in the Ministry for the last three years. This software facilitates in collection of residence/office bills, compilation of bills and timely release of payments to service providers. Monthly as well as Annual expenditure on each telephone can be generated through this software.
- (v) **Diary Management Information System (OPA):** An online File/Receipt Tracking and Monitoring System is functional in the Ministry for the last three years. Exploration Division and few sections of other divisions are diarizing the receipts through this software. Time to time necessary training has been provided to the officials of the Ministry.
- (vi) **Composite Payroll System:** Client-Server based software developed by NIC is operational in the Ministry to facilitate Cash Section. In addition to generation of Salary Payslips, DA Arrears, Income Tax, Honorarium, OTA, and Bonus, Form 24Q and Form 27A are also being generated for Income Tax purpose with the help of this software.
- (vii) **Personnel Information System:** A web based application has been developed, implemented and integrated with IntraPetro portal of the Ministry which provides employees to see their online Payslips, Annual Income Tax Statement, Incometax Calculation sheet, birthday and superannuation messages.
- (viii) **Notices/Bulletin Board Services:** A web based application has been developed and implemented to upload and display notices, circulars, events and meeting information by each section of the Ministry.
- (ix) **RTI Request and Appeal Management Information System:** A web based software developed by NIC has been implemented to track the RTI requests and appeals. All reports



required by Central Information Commission (CIC) are being generated with the help of this software. Necessary training has been provided to the concerned officials of the Ministry.

Networking

The computer centre is equipped with two servers, six clients, printer, scanner and UPS. LAN with around 130 nodes with OFC backbone supported by L2 & L3 manageable switches has been extended to Ministry officials. NIC is also extending cyber security to the ICT infrastructure of the Ministry with firewall, anti patch server and a dedicated team of engineers.

Website

Efforts are on to revamp the website of the Ministry with dynamic and interactive contents. A separate section has been opened for placing speeches, press releases, statements etc of the Hon'ble Cabinet Minister and Minister of State, Secretary. Latest and upcoming events in oil sector are being flashed on the front page of the website.

IntraPetro Portal

IntraPetro, an Intranet portal of the Ministry has been developed and implemented to offer G2G and G2E services through the single window access system in authorized manner.

Trainings

In order to build capacity, officers as well as staff are being provided regular training by NIC in appropriate computer skills.

11.5 OUTSTANDING AUDIT OBJECTIONS

Audit had shown a total number of 53 objections as outstanding in its Inspection Report for the year 2006-07 submitted to the Ministry. 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 2007-08 are at Appendix VIII.

11.7 RECENT CHANGES IN PRICING AND TAXATION OF PETROLEUM PRODUCTS

The global prices of crude oil and petroleum products have remained high and volatile. The phenomenal increase in price of crude oil and petroleum products in the International market has assumed alarming proportions. The Indian Basket crude oil touched an all time high of \$ 94.62 per barrel on 03.01.2008. The average price of Indian Basket of crude oil, during the period April-Dec'07(1-27) has been \$ 74.39 per barrel. This steep increase in prices is having major impact on the oil marketing companies (OMCs) and the Indian economy, as India imports about 79% of crude oil requirement of refineries.



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 and 2007-08 (upto 21.01.2008) is depicted below:

Trends in International oil prices & domestic prices

Period	Crude oil (Indian Basket) \$/bbl	Petrol \$/bbl	Diesel \$/bbl	Kerosene \$/bbl	LPG \$/ MT
March 2002	23.31	26.43	23.27	23.65	194.00
2002-03	26.66	30.15	28.93	29.33	280.40
2003-04	27.96	35.03	30.48	31.19	278.45
2004-05	39.22	49.01	46.91	49.50	368.52
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 (upto 21.1.2008)	75.61	87.39	88.15	89.97	650.07

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 61.4 and 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

Despite the increase in the international oil prices, the selling prices of petrol and diesel were not revised by the Public Sector Oil Marketing Companies (OMCs) in tune with the international oil prices. The prices

of Petrol and Diesel have been reduced by Rs.2 per litre and Re.1 per litre respectively with effect from 16.02.2007. Similarly, the basic prices of domestic LPG and PDS kerosene were not revised despite steep increase in the international oil prices. The retail selling prices of LPG (Domestic) has not been revised since Nov'2004 and the price of Kerosene (PDS) has not been revised since March'2002.

While passing on the entire impact of the steep increase in the oil prices to the consumers would have resulted in steep increase in the domestic prices, the Government took certain measures in favour of vulnerable sections of society and vulnerable segments of the economy, by ensuring that the burden was shared by all the stakeholders, namely, the Government, the oil companies and the consumers. Accordingly, an appropriate mechanism for sharing the under-recoveries of OMCs was put in operation to ensure that the burden was shared by all the stakeholders, namely:

- Government through Issue of Oil Bonds
- Oil companies through Upstream / Refinery Discounts



- Consumers through Minimal Price Increase
- Balance of the under-recoveries would be borne by the OMCs

The Government has decided to issue Oil Bonds towards 42.7% of the total under-recoveries for the current financial year i.e. 2007-08 to OMCs.

11.7.2 Reduction/Changes in Central Taxes

The excise duties on petrol were scaled down from 30% to 26%, on diesel from 14% to 11% and on LPG from 16% to 8% effective June 16th 2004.

Effective 19th August 2004, further reduction in excise duties on refined products was given effect to. The applicable excise duty on petrol was lowered from 26% to 23% and that on diesel brought down from 11% to 8%. This was combined with reduction in the customs duty on petrol and diesel from 20% to 15%. Similarly, excise duty on PDS kerosene was scaled down from 16% to 12% and customs duty on LPG and Kerosene from 10% to 5%.

Effective 1st March 2005, the customs and excise duty on PDS Kerosene and LPG for domestic use were reduced to zero.

Effective 1st March 2005, the customs duty on petrol and diesel were reduced from 15% to 10% and that on crude oil brought down from 10% to 5%. The customs duty on aviation turbine fuel (ATF), furnace oil (FO) [for general use], low sulphur heavy stock

(LSHS) [for general use] and bitumen were reduced from 20% to 10%. Customs duty on Naphtha, FO and LSHS for fertilizer use continued to remain NIL. The resultant loss of tax revenue was neutralised by way of increase in the excise duties on petrol and diesel. Accordingly, the excise duty on petrol was revised from 23% plus Rs.7.50 per litre to 8% plus Rs.13.00 per litre (from Rs.12.07 per litre to Rs.14.59 per litre) and on diesel from 8% plus Rs.1.50 per litre to 8% plus Rs.3.25 per litre (from Rs.3.15 per litre to Rs.4.80 per litre).

Consequent to enactment of Finance Bill 2006, LPG (Domestic) becomes "Declared Goods" under CST Act and the maximum sales tax/VAT rate is 4% effective 19/4/06 across all States/Union Territories. This will reduce the sales tax levied by States to 4% as against VAT rate of 12.5% levied by most of the States currently. This is also expected to marginally reduce the under-recoveries of oil marketing companies without revising retail-selling prices of domestic LPG.

Effective 16/06/2006 Government has reduced Customs Duty on Petrol and Diesel from 10 per cent to 7.5 per cent in line with recommendations made by Rangarajan Committee.

Effective 1st March, 2007, the ad-valorem rates of excise duty on petrol and diesel have been revised from 8% to 6%. However, effective 1/3/07, education cess has been revised from 2% to 3%.



Appendix – I

WORK ALLOCATED TO MINISTRY OF PETROLEUM & 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. The Petroleum and 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 (31.03.2008)

1. Oil & Natural Gas Corporation Limited	74.14%
2. Indian Oil Corporation Limited	82.03%
3. Hindustan Petroleum Corporation Limited	51.01%
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. Ltd.	57.37%
9. Balmer Lawrie & Co. Ltd.	61.80%

II. Subsidiaries and Other Companies.

1. ONGC Videsh Limited	- wholly owned by ONGC
2. Mangalore Refinery & Petrochemicals Limited	- subsidiary of ONGC
3. Bongaigaon Refinery & Petrochemicals Limited	- subsidiary of IOC
4. Chennai Petroleum Corporation Limited	- subsidiary of IOC
5. Numaligarh Refineries Limited	- subsidiary of BPCL
6. Certification Engineers International Limited	- wholly owned by EIL
7. 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	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08* (Apr-Nov)
1	2	3	4	5	6	7	8
I. CRUDE OIL PRODUCTION ++ ('000' Tonnes)							
(a) Onshore:							
Gujarat	6002	6042	6131	6187	6251	6212	4125
Assam/Nagaland	5095	4660	4592	4703	4474	4400	2854
Arunachal Pradesh	69	74	77	83	104	109	71
Tamil Nadu	440	395	375	391	385	353	201
Andhra Pradesh	283	300	281	226	216	252	178
Total (a)	11889	11471	11456	11590	11430	11326	7428
of which							
OIL	3182	2951	3002	3196	3234	3107	2016
ONGC	8636	8445	8380	8320	8095	8058	5281
JVC/Private	71	75	74	74	101	161	131
(b) Offshore:							
ONGC							
JVC/Private	4069	4013	4240	4226	4451	4669	3272
Total (b)	20143	21573	21917	22391	20760	22662	15259
Grand Total (a+b)	32032	33044	33373	33981	32190	33988	22687
2. NATURAL GAS PRODUCTION							
(Million Cubic Metres)							
(a) Onshore:							
Gujarat	3280	3531	3517	3710	3831	3294	1989
Assam/Nagaland	1992	2047	2204	2249	2408	2526	1736
Arunachal Pradesh	32	36	44	40	48	35	20
Tripura	416	446	508	497	480	520	352
Tamil Nadu	349	466	605	678	906	1130	780
Andhra Pradesh	1797	2038	1927	1707	1663	1525	1042
Rajasthan	101	162	168	213	242	242	164
Total (a)	7967	8726	8973	9094	9578	9272	6083
of which							
OIL	1618	1744	1887	2010	2270	2265	1558
ONGC	5725	5871	5779	5658	5751	5876	3915
JVC/Private	624	1111	1307	1426	1557	1131	610
(b) Offshore:							
ONGC (Mumbai High)	18317	18367	17805	17313	16823	16567	11007
JVC/Private	3430	4296	5184	5356	5801	5908	4263
Total (b)	21747	22663	22989	22669	22624	22475	15270
Grand Total (a+b)	29714	31389	31962	31763	32202	31747	21353

*: Provisional

++: Includes condensates.

Note: Exploration activities were suspended by ONGC in Nagaland w.e.f. 5th May 1994.

Source: ONGC, OIL and DGH.



Appendix-IV

REFINERY CRUDE THROUGHPUT

('000' Tonne)

Refinery / Location	Refinery Crude Throughput						
	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08* (Apr-Nov)
1	2	3	4	5	6	7	8
(a) PUBLIC SECTOR	77620	82015	89495	93107	96946	108172	74556
IOC, Guwahati, Assam	656	458	891	1002	864	839	593
IOC, Barauni, Bihar	2876	2994	4304	5082	5553	5469	3805
IOC, Koyali, Gujarat	11697	12434	12758	11698	11543	12953	8838
IOC, Haldia, West Bengal	4026	4513	4518	5418	5502	5836	3728
IOC, Mathura, Uttar Pradesh	8031	8207	8248	6387	7938	8883	4830
IOC, Digboi, Assam	653	581	602	651	615	586	368
IOC, Panipat, Haryana	5822	6101	6338	6390	6507	9435	8714
Total IOC	33761	35288	37659	36628	38522	44001	30876
BPCL, Mumbai, Maharashtra	8744	8711	8757	9138	10298	12030	8702
BPCL, Kochi, Kerala	6797	7580	7854	7924	6939	7742	5474
Total BPCL	15541	16291	16611	17062	17237	19772	14176
HPCL, Mumbai, Maharashtra	5641	6078	6108	6118	6249	7419	4843
HPCL, Visakh, Andhra Pradesh	6706	6851	7591	8121	7980	9377	6232
Total HPCL	12347	12929	13699	14239	14229	16796	11075
CPCL, Manali, Tamil Nadu	6123	6176	6387	8181	9680	9784	6643
CPCL, Narimanam, Tamil Nadu	566	643	653	742	682	618	305
Total CPCL	6689	6819	7040	8923	10362	10402	6948
BRPL, Bongaigaon, Assam	1475	1463	2126	2311	2356	2067	1342
NRL, Numaligarh, Assam	2307	1879	2200	2042	2133	2504	1666
ONGC, Tatipaka, Andhra Pradesh	13	93	91	93	93	94	45
MRPL, Mangalore, Karnataka	5487	7253	10069	11809	12014	12536	8428
(b) PRIVATE SECTOR	29654	30544	32345	34309	33163	38379	28496
RPL, Jamnagar, Gujarat	29654	30544	32345	34309	33163	36616	24560
ESSAR Oil Ltd. Vadinar						1763	3936
Total (a+b)	107274	112559	121840	127416	130109	146551	103052

*: Provisional

Note:

- 1) CPCL and BRPL are subsidiaries of IOC.
- 2) KRL and NRL are subsidiaries of BPCL.
- 3) MRPL is subsidiary of ONGC.



Appendix-V

PRODUCTION OF PETROLEUM PRODUCTS

('000' Tonne)

PRODUCTS	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08* (Apr-Nov)
1	2	3	4	5	6	7	8
(a) From Crude Oil							
1. Light Distillates	26539	28619	31971	32865	32427	38104	26461
of which							
LPG	4778	4903	5348	5570	5525	6315	4372
Mogas	9699	10361	10999	11057	10502	12539	9003
Naphtha	9180	9650	11317	14100	14509	16660	11226
Others ^{LD}	2882	3705	4307	2138	1891	2590	1860
2. Middle Distillates	54409	55937	60018	62509	64432	71225	50287
of which							
Kerosene	9681	10028	10187	9298	9078	8491	5297
ATF/RTF/Jet A-I	2595	3053	4289	5201	6196	7805	6016
HSD	39899	40207	43316	45903	47572	53465	38075
LDO	1703	2079	1659	1546	923	803	392
Others ^{MD}	531	570	567	561	663	661	507
3. Heavy Ends	19056	19584	21474	23205	22891	25931	18368
of which							
Furnace Oil	7488	7529	8737	10560	10320	12325	8562
LSHS/HHS/RFO	4739	4638	4635	4410	3985	3372	2079
Lube Oils	651	684	666	646	677	825	560
Bitumen	2561	2941	3397	3349	3576	3891	2669
Petroleum Coke	2784	2659	2743	3162	3182	3779	2672
Paraffin Wax	45	42	53	64	63	63	41
Others Waxes	37	3	0	4	3	-2	-1
Others ^{HE}	751	1088	1243	1010	1085	1676	1786
Total (1+2+3)	100004	104140	113463	118579	119750	135260	95116

(b) From Natural Gas

LPG	2205	2370	2320	2240	2185	2093	1357
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*: 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 Isobutene, Poly Butadiene 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	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07*	2007-08* (Apr-Nov)
I Light Distillates	29618	31755	34335	35204	33662	36878	21568
of which							
LPG	7728	8351	9305	10245	10456	10854	7264
Mogas	7011	7570	7897	8251	8647	9286	6802
Naphtha	11728	11929	11868	13993	12194	12739	5724
NGL	27	32	0	0	0	0	0
Others	3124	3873	5265	2715	2365	3999	1778
2 Middle Distillates	51439	52065	52023	53906	54423	57559	40346
of which							
SKO	10432	10405	10230	9395	9541	9505	6236
ATF	2256	2269	2484	2811	3296	3975	2910
HSDO	36546	36644	37074	39651	40191	42866	30442
LDO	1592	2063	1619	1476	883	720	429
Others	613	684	616	573	512	493	329
3 Heavy Ends	19375	20306	21393	22524	25129	25117	14601
of which							
Furnace Oil @	8451	8027	8312	9136	8921	9269	5630
LSHS/HHS	4531	4711	4633	4404	3907	3361	2148
Lubes/Greases	1137	1250	1427	1347	2081	1766	732
Bitumen	2584	2986	3373	3337	3508	3829	2583
Petroleum Coke	1798	2563	2877	3129	4928	4864	2736
Paraffin Wax	45	41	41	60	268	189	47
Other Waxes	51	13	20	20	105	58	2
Others	775	715	710	1090	1411	1781	723
TOTAL	100432	104126	107751	111634	113213	119554	76515
Refinery Fuel	7273	7650	8240	8537	9141	10920	7685
Grand Total	107705	111776	115991	120171	122354	130474	84200

* 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.



Appendix-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
I	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/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 / Others ^{HEI}	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
EXPORTS								
Petroleum Products								
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	1219	79	700	45	4	4	56	72
White Oil/Paraffin								
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 and Paraffin Wax.

Cont...



Appendix-VII

IMPORTS / EXPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS

(Qty : '000' Tonne, Value : Rs.Crore)

ITEM	2005-06		2006-07		2007-08	
	Qty.	Value	Qty.	Value	Qty.	Value
I	10	11	12	13	14	15
GROSS IMPORTS						
A. Crude Oil	99409	171702	110858	219991	79738	165189
B. Petroleum Products						
I. Light Distillates	6074	14514	8651	23097	6504	18339
1. LPG	2719	6579	2288	5782	1715	4604
2. MS	485	1283	421	1326	77	250
3. Naphtha	2473	5735	5474	14870	4339	12571
4. Propane/MTBE	397	917	468	1119	373	914
II. Middle Distillates	1615	3948	2344	6814	3295	10014
1. ATF	2	11	2	17	2	12
2. SKO	881	2214	1424	4250	1813	5875
3. HSD	732	1723	918	2547	1481	4127
III. Heavy Ends	3988	7113	5971	10478	2911	5413
1. FO / LSHS	789	1099	986	1487	912	1484
2. Lubes / Others ^{HEI}	3199	6014	4985	8991	1999	3929
Total(B)	11677	25575	16966	40389	12710	33765
Grand Total(A+B)	111086	197277	127824	260380	92448	198954
EXPORTS						
Petroleum Products	7565	17032	12296	32647	9780	28029
I. Light Distillates	53	164	86	287	53	174
1. LPG	2273	5579	3696	10538	2505	7569
2. MS	4996	10674	8308	21205	7065	19859
3. Naphtha	10	25	0	0	0	0
4. TAME	233	590	206	617	157	427
5. Reformate/Benzene/Hexane						
II. Middle Distillates	11366	26152	15457	40883	12642	33784
1. SKO	121	371	150	541	80	264
2. HSD/LDO	8464	18798	11645	30045	9523	25011
3. ATF	2781	6983	3662	10297	3039	8509
III. Heavy Ends	2576	3536	4641	6642	4188	7167
1. FO/LSHS	1801	2246	3759	4988	2806	4292
2. VGO/Lubes	701	1205	295	600	1034	2208
3. Coke/Bitumen/CBFS	74	85	587	1054	348	667
White Oil/Paraffin						
Total	21507	46720	32394	80172	26610	68980
NET IMPORTS						
A. Crude Oil	99409	171702	110858	219991	79738	16518
B. Pol.Products	-9830	-21145	-15428	-39783	-13900	-35214
Grand Total	89579	150557	95430	180208	65838	129975

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 and Paraffin Wax.



APPENDIX - VIII

C & AG'S REPORT

AUDIT REPORT NO. 9 OF 2007

INDIAN OIL CORPORATION LIMITED

Solvent Dewaxing Unit (SDU) of Digboi Refinery and Microcrystalline Wax (MCW) Plant of Haldia Refinery SDU of Digboi Refinery

Indian Oil Corporation Limited (IOC) company set up a solvent dewaxing and de-oiling unit at its Digboi Refinery in May 2003 to process Heavy Waxy distillates (HWD) for production of Micro Crystalline Wax (MCW). Initial tests of HWD indicated that it was hard to de-oil and process into MCW and the same was also indicated in the test conducted by the process licensor selected to set up the Unit. Still the company went ahead with the project. The process licensor to whom the contract was awarded did not have proven technical credentials. Consequently, even after mechanical completion of the Unit, modifications in two phases had to be conducted at a cost of Rs. 6.86 crore which could not be recovered from the contractor. Processing of HWD in the unit resulted in clogging up the filters and could be used for this purpose only for 16 days after commissioning. Thereafter the Unit was primarily used only for processing Pressable Waxy distillates (PWD). The capacity utilisation ranged from 49% to 72% during 2003-04 to 2005-06. The paraffin wax produced from processing PWD also did not meet the quality norms and could be used for production of lower value products resulting in a loss of revenue of Rs. 8.33 crore.

MCW Plan of Haldia Refinery

The availability of input for MCW was not considered for fixation of capacity of MCW plant of Haldia Refinery resulting in oversizing of the plant with an additional capital investment of Rs. 5 crore. The capacity utilisation of MCW plant was only 1.8% to 6.1% during the period from 2001-02 to 2005-06. The Bright Neutral slack wax not processed for production of MCW was diverted to other unit for production of low value products resulting in loss of revenue of Rs. 25.06 crore.

(Chapter VI)

Oil and Natural Gas Corporation Limited

Performance of offshore rigs in shallow water areas

Exploration of hydrocarbon reserves in the blocks awarded by the Directorate General of Hydrocarbon (DGH) and development of proved reserves for production by drilling exploratory and development wells are the two main activities of Oil and Natural Gas Corporation Limited (ONGC). To carry out drilling in shallow water areas, the company deployed owned as well as hired rigs.

In addition to owned rigs, the ONGC also deployed charter hired rigs which were often hired at higher rates due to lack of advance planning and delay in tender finalisation. Rig requirement was also not assessed correctly.

ONGC did not plan adequate number of exploratory wells to achieve the target of reserve accretion during the 10th Five Year Plan. Even the planned exploratory wells were not drilled. DGH had also raised a demand for liquidated damages for shortfalls/delays in the Minimum Work Programme and extension sought in respect of five blocks under New Exploration Licensing Policy (NELP) – I to III. Advance planning and coordination was lacking in providing support services resulting in idling of rigs. ONGC had not hired adequate number of modular rigs to carry out work-over jobs. Instead, costlier jack up rigs were used.

ONGC had not laid down the dry dock policy for owned jack up rigs due to which dry dock repairs were delayed resulting in higher cost of repairs, condition of class and non-availability.

Four major Exploratory and Production (E&P) projects with drilling of 183 wells were started during the period 2002-03 to 2005-06 without obtaining mandatory environmental clearance from the Government of India, Ministry of Environment and Forests. Monitoring and internal control system was not adequate for effective planning, charter hiring, deployment and dry dock repairs of rigs.

(Chapter-VII)



C & AG'S REPORT

AUDIT REPORT NO. 10 OF 2007 (Regularity Audit)

HINDUSTAN PETROLEUM CORPORATION LIMITED

Inventory Management System in Enterprise Resource Planning Environment

Hindustan Petroleum Corporation Limited (HPCL) procured JD Edwards One World XE (JD Edwards) software with licenses for all modules viz., Sales and distribution, manufacturing, procurement and project, finance and human resources in April 2000 for Enterprise Resource Planning (ERP) with the objectives, inter-alia, of adopting industry best practices; providing on-line, timely and accurate information for improved decision making; improving integration across functions and processes with reduced date cycles and improving external reconciliation; and working capital management – inventory, credit control and cash flows. The system started generating data from April, 2003.

Study and analysis of the Inventory Management module of the system in audit revealed that there was delay in formulating business continuity plan, setting up of disaster recovery site and deployment of the equipment purchased for the purpose which could cause serious disruption to the business. The system had design deficiencies such as lack of referential integrity, customization, input controls and validation checks leading to presentation of inaccurate status of the transactions. Over-riding input controls resulted in supplies to the customers beyond the credit limit. Internal control mechanism was also not effective enough to ensure the completeness of data leading to generation of unreliable information. The company was not utilising the features available in the system for valuation of stock and generation of MIS reports leading to under-utilisation of the system.

(Chapter-V)

Oil and Natural Gas Corporation Limited

IT Audit of Material Management

In October 2003, Oil and Natural Gas Corporation Limited (ONGC) implemented a generic Enterprise Resource Planning (ERP) package, the SAP-mySAP Financials and Logistics under project Information

Consolidation for Efficiency (ICE). All ten modules of ICE were utilised along with mySAP Oil & Gas Upstream Solutions consisting of joint venture accounting, production sharing agreement and offshore logistic management. The existing data in the Integrated Materials Management System was migrated into the ERP System. ICE went live across the company in phases from October 2003 to January 2005.

Performance of material management module in the ERP System was reviewed in audit. It was observed that inadequacy of input controls resulted in wrong valuation of material and consequently in wrong material accounting, lack of data integrity and incorrect MIS. Stock receipts and issues were not being captured accurately and timely due to deficient internal control mechanism resulting in wrong material accounting. Inherent design defects resulted in generation of incorrect reports. Legacy data was loaded into the ERP System without adequate data cleaning resulting in incomplete and incorrect data. Even after implementation of the ERP, checks for material requirement planning were being carried out manually.

(Chapter-VI)

AUDIT REPORT NO. 11 OF 2007 (Regularity Audit)

Balmer Lawrie and Company Limited stood guarantor for a loan taken by Balmer Lawrie Freight Containers Limited and suffered a loss of Rs. 2.61 crore in addition to being burdened with an undischarged liability of Rs. 19.32 crore.

(Para 13.1.1)

Improper estimation and inability to enforce contracted terms by Chennai Petroleum Corporation Limited resulted in extra expenditure of Rs. 82.70 lakh.

(Para 13.2.1)

GAIL (India) Limited purchased land at Vadodra in June 2000 but could not decide upon its utilisation resulting in loss of interest of Rs. 3.56 crore on the blocked funds of Rs. 9.36 crore apart from wasteful expenditure of Rs. 89 lakh on construction, lease rent and miscellaneous activities.

(Para 13.3.1)

Hindustan Petroleum Corporation Limited failure to recover compensation towards shortfall in lifting of the



Minimum Guaranteed Offtake as per the terms and conditions of the Fuel Supply Agreement resulted in loss of Rs. 3.77 crore.

(Para 13.4.1)

Misinterpretation by Indian Oil Corporation Limited about the leviability of additional sales tax resulted in avoidable loss of Rs. 13.44 crore to Oil Marketing Companies (OMCs).

(Para 13.5.1)

Despite information from Oil Co-ordination Committee in July 1998 about the non-availability of Assam crude consequent on commissioning of Numaligarh Refinery Limited, Indian Oil Corporation Limited retrofitted 10 chillers in the Solvent Dewaxing Unit (SDU) plant for production of wax at a cost of Rs. 12.76 crore. The operation of the SDU was stopped in November 2001 due to non-availability of Assam crude, making the investment infructuous.

(Para 13.5.2)

Indian Oil Corporation Limited supplied product from Haldia Refinery to Raxaul Depot via Rajbandh Terminal instead of from Barauni Refinery and thereby incurred additional transportation cost of Rs. 7.52 crore.

(Para 13.5.3)

Due to lack of proper planning, Indian Oil Corporation Limited was using two parallel pipelines connecting the same stations, leading to underutilisation of both and entailing wasteful expenditure of Rs. 5.13 crore.

(Para 13.5.4)

Despite sufficient tankage to meet the projected demand upto 2006-07, Indian Oil Corporation Limited invested Rs. 3.34 crore in construction of two tanks.

(Para 13.5.5)

Indian Oil Corporation Limited failure to implement the orders issued by the excise authority in time led to loss of Rs. 2.07 crore and unnecessary litigation.

(Para 13.5.6)

Due to delay in closure of Jodhpur depot, Indian Oil Corporation Limited incurred avoidable expenditure of Rs. 2 crore from April 2001 to March 2006.

(Para 13.5.7)

Misinterpretation of free period for storage of imported crude at bonded ware houses and consequent delay in payment of customs duty by Indian Oil Corporation Limited led to loss of Rs. 1.02 crore.

(Para 13.5.8)

By extending cheque facility to bulk consumers without any security and in contravention of its own policy, Indian Oil Corporation Limited suffered a loss of Rs. 76.82 lakh.

(Para 13.5.9)

Indian Oil Corporation Limited could not recover dues of Rs. 50.87 lakh due to its failure to adhere to contractual terms of periodical reconciliation and due to allowing credit sales in excess of the ad-hoc amount received from the Party.

(Para 13.5.10)

Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited (BPCL) and BPCL Kochi Refinery calculated incorrectly the advance income tax payable, resulting in payment of interest of Rs. 165.75 crore.

(Para 13.6.1)

Numali Refinery Limited raised invoices at Refinery Gate Price and paid excise duty on that basis. Oil Marketing Companies (OMCs) reimbursed the excise duty on the basis of reduced RGP after deducting notional rail freight from refinery point to New Jalpaiguri as per agreement. This resulted in under recovery of excise duty of Rs. 9.98 crore.

(Para 13.7.1)

Delay in award of contract by Oil and Natural Gas Corporation Limited resulted in re-tendering and award of the contract at a cost higher by Rs. 235.51 crore.

(Para 13.8.1)



Barytes being an insurance item, Oil and Natural Gas Corporation Limited is required to maintain a buffer stock of 5,000 Metric Tonne (MT) and a minimum stock holding of 100 MT to 150 MT in a rig to meet any exigencies. However, delay in awarding a tender for procurement of baytes resulted in suspension of rig operations and consequent loss to the extent of Rs. 37.18 crore.

(Para 13.8.2)

Non-availability of left hand drill pipes of required specifications for resolving complications faced in production testing of an exploratory well led to unproductive expenditure of Rs. 27.14 crore by Oil and Natural Gas Corporation Limited.

(Para 13.8.3)

Oil and Natural Gas Corporation Limited incurred a wasteful expenditure of Rs. 26.02 crore by ignoring past experience and the recommendations of its drilling section and the Institute of Drilling Technology for vertical drilling of an exploratory well.

(Para 13.8.4)

Lapse on the part of Oil and Natural Gas Corporation Limited in awarding civil works to a contractor on land not belonging to it led to extra expenditure of Rs. 16.04 crore due to termination of the contract followed by retendering.

(Para 13.8.5)

Oil and Natural Gas Corporation Limited ignored the results of pilot study and unduly favoured contractors whose technology had either failed in the pilot study or had not been tested at all. ONGC also delayed identification of wells for the use of the technology which resulted in the use of shelf-expired chemicals.

(Para 13.8.6)

By not inviting tenders for procurement of Oil Well Cement on International Competitive Bidding (ICB) basis in time and because of subsequent delay in processing the ICB tenders, Oil and Natural Gas

Corporation Limited could not avail of Deemed Export Benefit that led to avoidable expenditure of Rs. 1.35 crore.

(Para 13.8.7)

During test check in Audit, several cases relating to non billing, non receipt, short recovery, excess payment, undue benefit to private parties etc, in case of Central PSUs were pointed. In 21 such cases pertaining to 13 PSUs (including ONGC and HPCL) where Audit pointed out an amount of Rs. 22 crore for recovery, the Management of the PSUs recovered an amount of Rs. 15.52 crore during 2005-06.

(Para 15.1.1.)