

CHAPTER - I



1. INTRODUCTION

1.1 The Ministry of Petroleum & Natural Gas (MOP&NG) is concerned with exploration & production of oil & 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.

1.2 Shri Ram Naik continued to hold the charge as Minister of Petroleum & Natural Gas during the financial year 2003-04. Smt. Sumitra Mahajan assumed the charge of Minister of State for Petroleum & Natural Gas w.e.f 24.05.2003.

1.3 Shri B.K. Chaturvedi continued to hold the charge as Secretary, Ministry of Petroleum & Natural Gas.

1.4 PRINCIPAL ACHIEVEMENTS

The important statistical data relating to the physical performance of the oil & gas sector is given in Appendix - III.

1.5 INDIA HYDROCARBON VISION- 2025

The India Hydrocarbon Vision – 2025 Report, which encapsulates Government's long-term policy for this sector, was developed by a Group of Ministers constituted for this purpose, constituting of Ministers of Petroleum, Finance and External Affairs and Deputy Chairman, Planning Commission. The Report was presented to the Prime Minister in March, 2000 and also placed on the Table of both Houses of Parliament. The long-term policy enunciated therein covers exploration, refining, marketing infrastructure, gas and all other related matters in the hydrocarbon sector.

1.6 CRUDE OIL & NATURAL GAS PRODUCTION

During 2003-04 crude oil production in the country was 33.38 million metric tonnes (MMT) and gas production was 31.95 billion cubic metres (BCM) as against the production of 33.04 MMT of crude oil and 31.39 BCM of natural gas in 2002-03.

1.7 In last three years, the Government has undertaken concerted efforts for enhancing Energy Security. The X Plan formulated thereunder represented a paradigm shift over earlier plans in as much as exploration areas would be awarded

through international competitive biddings in a deregulated scenario. Appraisal of 35% of the total sedimentary basins is targeted together with acquisition of acreages abroad and induction of advanced technology. The results of the initiatives taken since 1999 have begun to unfold.

1.8 ONGC-Videsh Limited (OVL) a wholly owned subsidiary of ONGC is pursuing to acquire exploration acreage and oil/gas producing properties abroad. OVL has already acquired discovered/producing properties in Vietnam (gas field-45% share), Russia (oil & gas field – 20% share) and Sudan (oil field-25% share). The production from Vietnam and Sudan is around 7.54 Million Metric Standard Cubic meters per day (MMSCMD) of gas and 2,50,000 barrels of oil per day (BOPD) respectively. The first consignment of crude oil from Sudan project of OVL was received in May, 2003 by MRPL (Mangalore Refinery Petrochemicals Limited) in India. The Sakhalin-I project in Russia is under development stage. In addition to above, OVL is also having participating interests in one exploration block each in Iran, Myanmar, Iraq, Libya and Syria. In the Myanmar Project an exploratory well was drilled and natural gas has been discovered in January, 2004.



Lan Tay Platform in Vietnam

1.9 New Exploration Licensing Policy (NELP) provides an international class fiscal and contract framework for Exploration and Production of Hydrocarbons. In the first four rounds of NELP spanning 2000-2004, contracts for 90 blocks covering about 9.0 lakh sq. km. have been signed and the area under exploration has gone up to 12,40,000 sq. km. Today, as much as 74% of the area under Exploration and Production belongs to the NELP Blocks. The exploration investment in the three phases covering these 90 blocks is about



ORLAN Platform in Sakhalin

Rs. 19,050 crore, which is expected to substantially increase with discoveries of hydrocarbons. Within a short period, investment made on exploration has exceeded Rs. 2,980 crore in NELP blocks. What is more important is that 9 discoveries have been made, out of which gas discovery in Krishna Godavari (KG) basin, announced in October 2002 is the most significant with an initial estimated availability of 7 trillion cubic feet. (198 Billion Cubic Meters) of gas.

1.10 COAL BED METHANE (CBM)

Coal Bed Methane is an environment friendly clean fuel similar to Natural Gas. To give impetus to exploration & production, Government has formulated CBM policy. Contracts with PSUs/Pvt. Companies for 13 blocks under the two rounds of CBM policy and for 3 blocks on nomination basis have been signed for exploration & production of CBM. The estimated investment in these blocks is about Rs. 560 crore and estimated CBM resources are to the tune of 850 Billion Cubic Meters (BCM). Commercial production of CBM from some of these blocks is expected to start in 3-4 years.

1.11 IMPORTS AND EXPORTS

The quantity of crude oil imported during 2003-04 was 90.434 MMT (Million Metric Tonne), valued at Rs. 83,528 crore. 7.873 MMT of petroleum products, valued at Rs. 9,640 crore were imported and 14.620 MMT of petroleum

products, valued at Rs. 16,781 crore were exported during the period.

There was an increase of 10.3% in quantity and 9.6% in value of import of crude oil during 2003-04 over the preceeding year. Crude oil import during 2002-03 was to the tune of 81.989 MMT valued at Rs. 76,195 crore vis-à-vis 90.434 MMT valued at Rs. 83,528 crore respectively during the year 2003-04.

The product imports during 2003-04 was to the tune of 7,873 TMT valued at Rs. 9,640 crore as compared to 7,228 TMT valued at Rs. 8,847 crore respectively during the year 2002-03. The increase in imports of products during 2003-04 vis-à-vis the import during the preceding year was thus 8.9% higher in terms of quantity and 9.0% in terms of value of the products imported. In so far as export of petroleum products is concerned, this went up by 42.1% in terms of quantity and by 54.4% in terms of value during the year 2003-04 in comparison to the preceding period. The export of petroleum product went up to 14,620 TMT (valued at Rs. 16,781 crore) during 2003-04 as compared to 10,289 TMT (valued at Rs. 18,868 crore) in the year 2002-03.

Exports of petroleum products was made to several countries including USA, Singapore, Iran, Brazil, Malaysia, Mexico, Sri Lanka, Japan, etc.

During the year 2003-04, the public sector refineries purchased crude oil on term contract and spot basis. The countries from where term contract purchases were made included Saudi Arabia, Kuwait, UAE, Iran, etc.

1.12 STRATEGIC STORAGE OF CRUDE OIL

Availability of oil is vital for all countries. Oil security is of particular concern for the countries like India with high oil import dependency, presently around 69%. The gap between domestic crude availability and demand for crude indicates the vulnerability of the Indian economy to oil imports. Presently, about 67% of India's crude oil imports come from the Middle East region. The general political instability in this region is a further cause of anxiety from the oil supply security perspective.

Taking into account the oil security concern of India, the Government decided in January 2004 to set up 5 million metric tonne (MMT) of strategic crude oil storage at various locations in the country. This strategic storage would be in addition to the

existing storage 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 proposed facility would be managed by a Special Purpose Vehicle (SPV), 100% owned by one of the oil PSUs.

The oil importing member-countries of International Energy Agency (IEA) are committed to hold oil stocks equivalent to 90 days of net oil imports. Twenty-six member-countries of the Organization for Economic Cooperation & Development (OECD), including USA, Germany, Japan, etc., are members of IEA. India is not a member of IEA. After the setting up of the proposed Strategic Storage, India would also have a gross storage capacity roughly in line with IEA norms.

The proposed Strategic Crude Oil Storage would be in underground rock cavern/concrete structures and is projected to come up in a period of around four years. It is estimated that the total capital cost for construction may be around Rs. 1,650 crore and annual operating cost around Rs. 40 crore. Further, an amount of Rs. 5,000 crore may be required for purchasing 5 MMT of crude oil. The financing mechanism of the project is being finalized.

1.13 INTERNATIONAL ENERGY FORUM SECRETARIAT (IEFS)

India is a member of the International Energy Forum (IEF) which provides a platform for biennial meetings of the Ministers from the energy producing and consuming countries. This forum was earlier known as "Producer – Consumer Dialogue" between the oil producing and consuming Countries. The permanent secretariat of the IEF is in Riyadh. The mission of the secretariat is to further strengthen and enhance the process of global dialogue on energy at the political level. The Ministerial dialogue in the IEF has its focus on security of energy supply and demand, as well as on the links between energy, environment and economic development.

Presently, India is also a member of the Executive Board (EB) of IEF. The total membership of EB is 15 viz. 13 member countries, OPEC and IEA. Besides India, the other member countries are Saudi Arabia, Iran, United Arab Emirates, Norway, Russia, Mexico, Venezuela, France, Japan, The Netherlands, Italy and South Africa.

1.14 REFINING CAPACITY

The domestic refining capacity as on 1.4.2004 was 125.97 Million Metric Tonnes Per Annum (MMTPA). Availability of petroleum products during 2003-04 from domestic refineries and non-refineries was adequate to meet the domestic demand except for Liquefied Petroleum Gas (LPG). In fact, the availability of products like petrol, diesel and Aviation Turbine Fuel (ATF) was in excess of the domestic requirements and such products were exported during the year. As per current demand trends for 2004-05, the refining capacity is expected to be adequate to meet the domestic requirement.

1.15 NATIONAL AUTO FUEL POLICY

The Government announced a comprehensive National Auto Fuel Policy for the country on 3.10.2003. The major highlights of the Policy are :

(i) Vehicular Emission Norms : It is proposed to introduce Bharat Stage II standards in the entire country with effect from 1.4.2005 and Euro III equivalent with effect from 1.4.2010 for passenger cars, light commercial vehicles and heavy duty diesel vehicles. In respect of 2/3 wheelers, Bharat Stage II standards would be introduced in the entire country from 1.4.2005 and Bharat Stage III standards would be introduced preferably from 1.4.2008 but not later than 1.4.2010. For cities (Delhi/NCR, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur and Agra) facing serious pollution levels, a separate road map for quicker adoption of emission norms has been prescribed. For these identified cities, Bharat Stage II norms have been introduced with effect from 1.4.2003. Euro III equivalent norms would be introduced with effect from 1.4.2005 and Euro IV equivalent norms would be introduced with effect from 1.4.2010.

The schedules of introduction of Bharat Stage III for 2/3 wheelers and Euro IV equivalent for Passenger Cars, light commercial vehicles and heavy duty diesel vehicles for 11 major cities would be reviewed in the year 2006, when Bharat Stage II equivalent norms would have been implemented in the entire country and Euro-III equivalent norms would have been implemented in 11 major cities.

(ii) Auto fuels : The twin objectives of providing assured supply of auto fuels and meeting

environmental concerns would be achieved by following the below mentioned broad policy :

- (a) Liquid fuels would be the main auto fuels throughout the country by progressively upgrading the quality/specifications in line with vehicular emission norms.
- (b) The use of CNG/LPG would be encouraged in the cities affected by high vehicular pollution to enable the vehicles owners to have the choice of fuel and technology combination to meet the higher emission norms in such cities.
- (c) To accelerate the development of other alternative fuel vehicles including battery powered vehicles, hydrogen and fuel cell vehicles, a comprehensive programme of policy support, R&D support and other measures for zero emission vehicles would be drawn up.
- (d) Technologies for producing ethanol / bio-fuels from different renewable energy sources and vehicles to utilize these bio-fuels would be encouraged by providing R&D and other support through fiscal and financial measures.

(iii) **Reduction of Pollution from in-use vehicles :**
For reduction of pollution from in-use vehicles, the following measures are receiving attention :

- (a) New improved Pollution Under Control (PUC) checking system for vehicles.
- (b) Inspection & Maintenance (I&M) system for vehicles.
- (c) Performance checking system of catalytic converter and conversion kits for CNG/LPG.
- (d) Augmentation of city public transport system.
- (e) Compliance of emission norms by city public service vehicles and inter State vehicles.

1.16 HYDROGEN AS AN AUTO FUEL

Use of hydrogen (H_2) as an auto fuel has generated global interest. To reduce dependence on traditional fuel, the US has proposed \$ 1.2 billion for research for developing clean hydrogen powered automobiles and the European Union has committed \$ 3.56 billion. H_2 does not occur naturally in the free state in large quantities. It can be extracted from water through electrolysis. The economics of hydrogen fuel cell technology is a major hurdle to its commercialization.



A night view of BPCL's refinery modernisation project at Mumbai

To ensure that India does not lag in this field, in June 2003, Ministry of Petroleum decided that IOC(R&D) may constitute a dedicated team to work on hydrogen fuel inducing persons from other organisations to prepare a road map for 2 years for petroleum & gas sector covering work in identified areas such as production of hydrogen from various sources and its storage, organise large scale demonstration trials by 2008 in collaboration with vehicle manufacturers and to set up hydrogen dispensing stations.

The Ministry has constituted a Committee under the Additional Secretary, MOP&NG (involving the major oil companies) to draw up an action plan to operationalise use of hydrogen and is in the process of setting up a Hydrogen Corpus Fund of about Rs. 100 crore with contribution from them.

In July 2003, the Planning Commission constituted a Group on Hydrogen Energy under Member, Planning Commission involving the Prime Minister's Office, Ministries/ Departments of Non-conventional Energy Sources, Petroleum & Natural Gas, External Affairs, Science & Technology, Economic Affairs, TERI and Banaras Hindu University to examine steps for accelerating progress and compressing the time frame for achieving commercial viability of specific hydrogen energy applications, suggest areas of comparative advantage for India among the various end-uses of hydrogen and measures for research and commercial collaborations with recognized and established international work in this sector.

Four sub-groups were set up on hydrogen production; hydrogen storage and distribution; hydrogen applications; safety standards, security

and related policy issues. The draft report is under finalisation by the Government.

Concurrently, the M/o Non Conventional Energy Sources has constituted the National Hydrogen Board to prepare the road map to adopt hydrogen as an energy source.

The oil industry is enthusiastic about the new fuel and it organised an International Workshop on Hydrogen in December 2003 to assess the progress made in this regard by the International Committee and a team visited the USA and Sweden in April, 2004 to see their hydrogen installations and related facilities.

1.17 BIO-DIESEL

Bio-diesel is chemically treated vegetable oil/ animal fat which can be mixed with conventional diesel to be used as transport fuel. It is extracted from the seeds of the trees like Mahua, Karanja, Kusum, Dhupa, Undi, Simarouba, Sal, Pilu, Jojoba, Tumba, Nahor, Kokum, Rubber-seed, Cheura, Wild-Apricot, Tung, Neem, Mango Kernel and Jatropa. Many of these plants can be grown in waste and degraded lands.

The R&D studies indicated that a bio-diesel/diesel-blend results in a fuel that is non toxic, bio-degradable and non-flammable with a very high flash point. It enhances the life of the engine and also result in comparatively lesser pollution.

In view of the above and also keeping in view the fact that the consumption of diesel in India in transport sectors is about five to six times the consumption of gasoline, Ministry of Petroleum & Natural Gas have directed HPCL to set up a experimental project at Mumbai involving 25 BEST buses using blends of 5%, 10% and 20% of bio diesel in diesel. This has already begun functioning. Another pilot-project on use of 5% bio-diesel blended in diesel has been started at Rewari, Haryana, since April 6, 2004. In the initial phase, 10 buses have started plying on 5% bio-diesel blends from the Gurgaon Depot of Haryana Roadways, along with 10 reference buses on diesel fuel. It is planned to increase the trials of 5% bio-diesel blends gradually to 20 buses.

In addition to these pilot projects, IOC has already signed a MoU with Indian Railways for developing and undertaking a joint programme to produce bio-diesel from jatropa oil and to blend these with diesel and to test the blend in operating

diesel engines with a view to developing an optimum blend which can be used by Indian Railways as fuel for operating locomotive engines. 81 hectare of land was finalised at Surendranagar district for plantation and the job was awarded to M/s Global Agri System, New Delhi on 30 January, 2004. The site preparation was started at three places at Surendranagar and Than Chotila track. At the Surendranagar area, the site preparation is almost complete. However, at Than Chotila area, the local forest officials have stopped site preparation work, as they claimed that this site was handed over by Railways to forest department for plantation. This matter is under discussion with Railway officials.

BIS has amended the specifications of diesel to permit blending of bio-diesel in it. BIS is also working on the specifications of bio-diesel for use as auto-fuel.

The Planning Commission's Committee on Development of Bio-fuel has advocated launching of a National Mission on Bio-diesel such that by 2011-12, enough bio-diesel would be available in the country to enable its blending with diesel to the extent of 20%. Ministry of Rural Development as the nodal ministry has commenced preliminary activities beginning with the preparation of a detailed project report.

1.18 IMPLEMENTATION OF ETHANOL PROGRAMME

Encouraged by the success of the pilot projects and on the strength of the R&D studies and after discussions with all the concerned authorities including State Governments, Government of India issued a notification on 12th September, 2002 mandating supply of 5% ethanol blended petrol in the 9 sugar producing States of Andhra Pradesh, Goa, Gujarat, Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu and Uttar Pradesh and 4 contiguous Union Territories of Chandigarh, Dadra & Nagar Haveli, Daman & Diu and Pondichery with effect from 1st January, 2003. Out of the above 9 States and 4 Union territories, 7 States and 3 contiguous Union Territories are being supplied with 5% ethanol blended petrol. These are the States of Uttar Pradesh, Punjab, Haryana, Maharashtra, Gujarat, Goa, Karnataka and the Union Territories of Chandigarh, Dadra & Nagar Haveli and Daman & Diu.

In so far as the State of Andhra Pradesh is concerned, out of 23 districts, 21 districts have already been covered with the supply of 5% ethanol blended petrol. The remaining two districts are to be covered with the State of Tamil Nadu and Union territory of Pondicherry because they are closely linked with that State. The programme of sale of ethanol blended petrol did not take off in the State of Tamil Nadu, two districts of the State of Andhra Pradesh and Union territory of Pondicherry on account certain unresolved issues with the State Government. However after recent consultations with Government of Tamil Nadu, it has been decided to implement the programme (in a phased manner) by mid July, 2004 in the 9 districts of the State of Tamil Nadu due to limited availability of ethanol in the State.

In the second phase of implementation of the programme, the State of Uttaranchal has been covered w.e.f. the 1st of January, 2004.

1.19 CONSERVATION OF PETROLEUM PRODUCTS

A very high priority is attached by the Government of India to conservation of petroleum products in view of the need to reduce gap between demand of petroleum products and indigenous supply of crude oil. Sporadic tension in the Middle East region which is the main source of our oil imports as well as a heavy import bill is a potent reason for continued emphasis on conservation and sparing use of petroleum products. Accordingly, the Government persevere with the various measures initiated for conservation of petroleum products. These measures include creation of public awareness of conservation measures as well as sectoral programmes such as :

- (i) driver training programmes, transport depot studies, promoting high performance lubes additives in transport sector;
- (ii) energy audits to improve fuel efficiency and specific fuel consumption, promotion of fuel-efficient practices/equipments, technology upgradation projects in industrial sector;
- (iii) rectification, replacement of fuel efficient lift irrigation pump sets, foot valves in agricultural sector and
- (iv) promotion of fuel-efficient appliances like kerosene/ LPG stoves etc in domestic sector.

Action Group Meetings are also held to propagate awareness on oil conservation among the oil users. In addition educational / training

programmes / awareness campaigns are also conducted for farmers, housewives, school / college students and industrial workers. These activities are conducted through Petroleum Conservation Research Association (PCRA) and public sector oil companies. PCRA through its multifaceted programmes covers a large spectrum of socio-economic activities leading to increase in awareness on oil conservation.

1.20 PLAN OUTLAY

The revised Plan Outlay of PSUs of Ministry of Petroleum & Natural Gas for the year 2003-04 is Rs. 24,393.22 crore and Budget Estimate for the year 2004-05 is Rs. 25,000 crore. These outlays will be met from internal and extra budgetary resources of the Public Sector Undertakings.

1.21 EARNINGS OF OIL PUBLIC SECTOR UNDERTAKINGS

The profit before tax and the profit after tax made by the Public Sector Undertakings in the oil sector during 2002-03 were Rs. 34,223.93 crore and Rs. 22,846.83 crore respectively. The profit before tax and the profit after tax for 2003-04 was about Rs. 36,579.31 crore and Rs. 24,339.04 crore respectively.

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

Four Public Sector Oil Marketing Companies (OMCs) viz., Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited, Hindustan Petroleum Corporation Limited and IBP Co. Limited are engaged in marketing of LPG in the country. With increased availability of LPG, the number of LPG customers enrolled by them has also been increasing. The number of LPG customers served by them, as on 1.4.2004, was about 771 lakh.

Consequent upon liquidation of LPG waiting list in urban areas and availability of new LPG connections across the counter, in existing markets throughout the country, OMCs had set the target for release of about 65 lakh new LPG connections during financial year 2003-04 with a thrust on smaller towns / rural areas which were hitherto virgin markets. During the year, OMCs have commissioned 415 distributorships and released about 78 lakh new LPG connections.

1.23 PARALLEL MARKETING (PMS) OF LPG AND SKO

In order to increase the availability of LPG and Kerosene (SKO) and to foster competition, the private sector was allowed to participate in the scheme of parallel marketing of LPG and Kerosene in April 1993 - by decanalising imports of these petroleum products. Under the scheme, a private party can undertake import of LPG and Kerosene after obtaining a rating certificate from one of the approved rating agencies given in the LPG (Regulation of Supply and Distribution) Order, 2000 and Kerosene (Restriction on Use and Fixation of Ceiling Price) Order, 1993. These products are to be sold at market-determined prices by the private parties, through their own distribution network. During April 2003 to March 2004, 216 TMT of LPG have been imported by private sector companies under the scheme.

Presently, Oil PSUs are producing SKO in excess of PDS requirement and can meet demand of industrial customers as well. Therefore, the concept of importing SKO for parallel marketing has lost its relevance. Further, keeping in view the misuse / diversion for adulteration, the import of SKO by private parties was canalized through Public Sector Oil Marketing Companies in November, 2003. Cumulative SKO imports were 7938.7 TMT by 124 parties under PMS since 1993.

1.24 MARKETING OF 5 KG LPG CYLINDERS BY OMCs

PSU Oil Companies had launched 5 Kg LPG cylinders on 16th August 2002. The LPG connection with 5 Kg domestic cylinder in terms of deposit of Rs.350/- per cylinder and low cost of refills approximately Rs.90/- 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, ensuring a pollution free, happy and healthy environment.

During April 2003 – March 2004, OMCs have released approximately 1.17 lakh number of 5 Kg connections.

1.25 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 like Ahmedabad, Agra, Bangalore, Chennai, Hyderabad, Kanpur, Kolkata, Lucknow, Mumbai, Pune, Surat and Sholapur.

Public Sector Oil Companies 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 observation made by the Hon'ble Supreme Court, OMCs are now concentrating their activities for increasing the infrastructure of Auto LPG in above mentioned 13 cities. OMCs have commissioned 77 ALDS in 16 cities as on 1.4.2004 and are planning another 50 ALDS in a phased manner.

Auto LPG pricing is market determined and there is no subsidy on Auto LPG. At present about 13 manufacturers of Conversion kit for 4- Wheeler vehicle and about 11 manufacturers of Conversion kit for 3-Wheeler vehicle have been approved by various Testing Agencies like ARAI Pune, VRDE Ahmednagar & IIP Dehradun.

1.26 LPG PIPELINES

The second phase of 1,270 Km Jamnagar-Loni LPG pipeline was commissioned on 10.9.2003 at Jaipur through interconnection of Kandla-Samakhiali sector with the main LPG pipeline. The capacity of the World's Longest LPG Pipeline which was commissioned on 9.5.2001 at Loni (Uttar Pradesh) was also enhanced to 2.5 million tones per annum (MMTPA) from 1.7 MMTPA involving an investment of Rs.100 crore. The pipeline benefits whole of the Northern Region.

GAIL has completed 1.164 MMTPA Vizag-Secunderabad LPG pipeline in August 2003 at a capital cost of Rs.490.65 crore.

1.27 GAS - FUEL of 21st CENTURY

(i) Liquefied Natural Gas (LNG) Import to Enhance Gas Supply

There is a huge un-satiated demand of natural gas in the country, mainly for the core sectors of

Indian economy like power, fertilizer and steel. Apart from encouraging domestic gas production, the Government have taken initiative to import LNG through Petronet LNG Limited (PLL), which is a joint venture of IOC, ONGC, GAIL and BPCL. PLL's LNG terminal of 5 MMTPA at Dahej, Gujarat has been commissioned in February 2004. GAIL has laid a 610 Km. pipeline from Hazira to Vijaipur parallel to the existing Hazira-Vijaipur-Jagdishpur (HVJ) gas pipeline at a cost of Rs.2,600 crore, to supply this gas to the consumers in Gujarat, Madhya Pradesh, Rajasthan, Uttar Pradesh and Delhi. This pipeline has been commissioned, in March 2004. Another pipeline of 387 Km. length is being laid by GAIL from Dahej in Gujarat to Uran in Maharashtra at a cost of Rs.1,400 crore. Shell, a multinational oil company from the Netherlands, is also setting up a 2.5 MMTPA LNG plant at Hazira, Gujarat which is likely to be completed by end 2004. Completion of these projects will prove a catalyst in the industrial development of the country.

(ii) Synergising LNG import from Iran

A delegation led by Petroleum Minister visited Iran in May 2003 and successfully laid milestones for concretizing cooperation in hydrocarbon sector between the two countries. An in-principle agreement was reached for import of 5 million metric tonne per annum (MMTPA) LNG in phases, and in turn Iran agreed to provide participating interests to Indian Oil Public Sector Undertakings in a discovered and a semi-discovered oil and gas field. The areas of cooperation include upgrading Iranian refineries and petrochemicals plants etc. Dialogue between the two sides is in progress.

(iii) Draft Gas Pipeline Policy

With a view to provide a framework for future growth of the gas sector and to promote investment in gas pipeline as well as to provide interconnectivity between regions, consumers and producers, the Government in September 2003, announced a draft Policy for Development of Gas Pipeline Networks inviting comments/suggestions from various stakeholders and public. The suggestion/comments received by the Government are under examination. It is envisaged that the principles of third party open access on non-discriminatory basis will be followed for transportation of gas. The policy will facilitate faster development of gas pipeline networks linking

various sources of supplies to the emerging markets.

(iv) City Gas Distribution Project (CNG Projects)

In recent years, use of natural gas as a fuel is gaining popularity due to its environmentally benign nature, greater energy efficiency and cost effectiveness. Further, its use as Compressed Natural Gas (CNG) in the automotive sector has gained currency as a way to reduce the chronic vehicular pollution in big cities. Indraprastha Gas Limited (IGL) in Delhi and Mahanagar Gas Limited (MGL) in Mumbai are engaged in developing City Gas Distribution Projects for supply of CNG and Piped Natural Gas (PNG) in these cities.

IGL is catering to the need of over 90,000 vehicles of different categories through 121 CNG stations at present. Delhi has gained the distinction of having world's largest fleet of around 13,400 CNG buses which include around 4,500 mini buses. Delhi has been awarded the 'Clean Cities International Partner of the Year Award' by the Department of Energy, USA.

Similarly, MGL has also set up 75 CNG stations which caters to more than one lakh vehicles mainly three-wheelers and taxis. In the domestic sector, MGL has connected PNG to more than 1,95,000 households. MGL also supplies PNG to some commercial consumers as well as small scale industries in Mumbai.

Further, GAIL and Oil marketing companies (OMCs) are planning City Gas Distribution Projects in other polluted cities of the country to be implemented in a phased manner. In the first phase, it has been decided to take up projects in Thane, Navi Mumbai, Pune, Kanpur, Lucknow, Agra, Bareilly and Faridabad. Gas supplies in these cities will start in one to two years.

(v) National Gas Grid

GAIL is conceptualizing a national gas grid of high pressure gas transmission pipelines of about 7900 Km. at a cost of approx. Rs.20,000 crore to be implemented in a phased manner. The grid aims to link various gas supply sources to demand centres across the country.

(vi) Transnational Gas Pipelines

The Government have taken initiative to explore the possibilities of importing natural gas through

transnational gas pipelines from Iran and Myanmar. The feasibility study of Iran - India Gas pipeline is underway. The import of gas from Myanmar will depend on the volumes of gas from A-1 offshore block in which OVL and GAIL are equity holders along with Daewoo Corporation of Korea.

OTHER ACHIEVEMENTS

1.28 SPECIAL SCHEME FOR WIDOWS/NEXT OF KIN OF DEFENCE PERSONNEL KILLED IN ACTION IN 'OP VIJAY' (KARGIL).

Under the Special Scheme for allotment of retail outlet dealerships/ LPG distributorships to widows/ next of kin of Defence personnel killed in action in 'OP Vijay' (Kargil), recommendations in respect of 475 beneficiaries have been received from the Director General Resettlement (DGR), Ministry of Defence, of which one case has been kept in abeyance on the advice of the DGR. The Government has approved allotments in 454 cases so far.

1.29 NEW GUIDELINES FOR SELECTION OF DEALERS / DISTRIBUTORS FOR AWARD OF DEALERSHIPS / DISTRIBUTORSHIPS

After the dismantling of the Administered Pricing Mechanism (APM) in the petroleum sector with effect from 1.4.2002, the Oil Marketing Companies (OMCs) are authorized to select dealers/ distributors for retail outlet dealerships (petrol pumps), LPG distributorships and SKO-LDO dealerships on the basis of guidelines adopted by them. The Government have only advised the OMCs to observe certain broad parameters in the guidelines.

1.30 RETAIL OUTLET (RO) DEALERSHIPS / LPG DISTRIBUTORSHIPS/SKO-LDO DEALERSHIPS COMMISSIONED

The number of retail outlet dealerships (petrol pumps), LPG distributorships and SKO-LDO dealerships set up by the Oil Marketing Companies during the year 2003-04 were 3142, 426 and 32 respectively against 1,072 retail outlets, 431 LPG distributorships and 67 SKO-LDO dealerships established in the previous year, i.e., 2002-03.

CHAPTER - II



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 2003-04 was 29.07 MMT as against the production of 28.96 MMT of crude oil during 2002-03.

In addition, there was production of 4.31 MMT from the private and JV companies during 2003-04 as against the production of 4.09 MMT during 2002-03.

The gas production during the year 2003-04 was 31.95 BCM from ONGC, OIL and private/JV companies as against the gas production of 31.39 BCM during 2002-03. The gas production by private and JV companies during 2003-04 was 6.49 BCM as against the gas production of 5.41 BCM during 2002-03.

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).

After the operationalisation of NELP under the first three rounds, Production Sharing Contracts (PSCs) for 70 blocks had been signed. Further, under the recently concluded NELP-IV round, 24 blocks were offered, of which 21 have been awarded and PSCs for 20 blocks have been signed on 6th February, 2004.

2.2. STRATEGY OF X PLAN (2002-2007)

During the X Plan, the strategy identified for E&P activities includes :

- i) Optimisation of production of crude oil and natural gas from domestic basins and existing fields especially the Mumbai High field by ONGC.
- ii) An optimal mix of intensive exploration with main thrust in producing areas and extensive exploration in other areas including frontier areas and deep waters for increasing the reserve base.
- iii) Improvement of recovery factor by 3-4% in major fields.
- iv) Emphasis on quality of exploration for enhanced success.
- v) Laboratory studies and undertaking of EOR pilots in producing fields for further augmentation of recovery.
- vi) Acquisition of equity oil abroad.
- vii) Exploration of Coal Bed Methane (CBM).

2.3 ACQUISITION OF EQUITY OIL ABROAD

Considering the oil demand scenario vis-à-vis domestic production level, Government is encouraging oil sector PSUs to venture abroad to access exploration blocks and oil producing properties for equity oil-either on its own or through strategic alliances/joint ventures. OVL has already acquired discovered/producing properties in Vietnam (gas field-45% share), Russia (oil & gas field-20% share) and Sudan (oil field-25% share). The production from Vietnam and Sudan is around 7.54 Million Metric Standard Cubic meters per day (MMSCMD) of gas and 250,000 Barrels of Oil Per Day (BOPD) respectively. The first consignment of crude oil from Sudan project of OVL was received in May, 2003 by MRPL in India. The Sakhalin-1 project in Russia is under development stage. In addition to above, OVL is also having participating interests in one exploration block each in Iran (40% share), Myanmar (20% share), Iraq (100% share), Libya (49% share), and Syria (60%).

2.4 NEW EXPLORATION LICENSING POLICY

Government has formulated New Exploration Licensing Policy (NELP) to accelerate and expand exploration of oil and gas in the country. So far, Government has invited four rounds of bidding under NELP. A total of 91 blocks have been awarded in these rounds. Till September 2003, a total investment of about Rs. 3000 cores have been made by private/joint venture companies/NOCs under NELP. Within a period of 4 years, NELP has been able to achieve its objective of expanding and accelerating exploration specially in deepwater areas. Exploration under NELP has also started showing positive results with discoveries made in the Krishna-Godavari deepwater and in Cambay onland. In order to give a further push to its exploration efforts, Government is in process of finalising areas for offering under the 5th round of NELP sometime in 2004-05.

2.5 COAL BED METHANE (CBM) POLICY

In order to explore and produce new source of natural gas from coal bearing areas, Government had formulated a CBM Policy providing attractive fiscal and contractual framework for exploration and production of CBM in the country. Government has awarded 16 blocks in the States of Jharkhand,



New Exploration Licensing Policy (NELP-IV) & Coal Bed Methane (CBM-II)

Madhya Pradesh Chhattisgarh, Maharashtra, Rajasthan, Gujarat and West Bengal for exploration and production of Coal Bed Methane (CBM), which is an environment friendly gas. Additional CBM blocks are being identified for offering in the third round of CBM.

2.6 OIL AND NATURAL GAS CORP. Ltd. (ONGC)

Oil & Natural Gas Commission (The 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. As per the decision of the Government, 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%





ONGC's Offshore Platform in Mumbai High

of the equity shares of ONGC in March 2004 through public offer in the domestic capital market. After the above disinvestment, the shareholding of the Government in ONGC came down to around 74.15%. At present, the authorized share capital of ONGC is Rs. 15,000 crore and paid-up equity capital is around Rs. 1,426 crore.

2.6.1 Highlights for the Year 2003-04

2.6.1 (a) New hydrocarbon finds

Exploratory efforts during the year 2003-04 resulted in six new hydrocarbon finds (East Lakhbari in Assam, Sonamura in Tripura, Degam in Western onshore, Sitarampuram in Krishna-Godavari, NMT-2 in Western offshore and G-4 in East coast Deepwater).

2.6.1 (b) Others

- Project "Sagar Sammriddhi" for deepwater exploration was launched. First well G-4-2 is gas bearing.
- Total 37 exploration blocks were awarded to ONGC by Government of India in NELP I, II and III bidding rounds out of 79 blocks offered. ONGC & ONGC JVs obtained 15 out of the 21 blocks offered in NELP-IV.
- Four out of 12 Projects for augmenting recovery of oil & gas in onshore have been commissioned ; total Rs. 2130 Crore being invested to add over 44 million tonnes producible reserves.
- Four projects including Mumbai High under implementation in offshore for augmenting

recovery, total Rs. 8842 Crore being invested to add 69 million tonnes producible reserves. One project has been successfully completed.

- Sagar Vijay, the company's deepwater drilling rig, spudded first deepwater well G-4-2 on 26.09.2003 and declared gas producer.
- In Frontier Basins, drilling in Himalayan Foothills at Hamirpur - 1 is shortly to be undertaken.
- In Bengal Basin, drilling was taken up at location GBAA which has given gas indication.
- ONGC and Coal India Ltd. (CIL) have entered into a MOU for carrying out joint CBM activities. Two PEL blocks Jharia & Raniganj blocks have been awarded on nomination basis to the consortium.
- ONGC & IOC consortium were successful in getting 2 blocks viz, Bokaro and North Karanpura under first CBM bidding round awarded by Govt. of India
- ONGC received 5 Blocks in CBM-II round out of the 9 Blocks offered.
- Production commenced at Vietnam Offshore Gas Project, where ONGC-VL has 45% equity share.
- Acquired 25% stake in Great Nile Oil Project, a producing property. w.e.f. 01.09.2002
- 20% equity acquired in Myanmar Offshore gas exploration block A-1 where gas has been discovered in Jan'2004.
- Sakhalin-I Offshore Project in Russia progressing on schedule where OVL has 20% stake. Oil production is to start from 2005-06.
- Acquisition of 71.62% of MRPL's share making MRPL a subsidiary of ONGC w.e.f. 30.03.2003
- 23% equity at a cost of Rs 38.341 Crore acquired in Petronet Mangalore-Hassan-Bangalore pipeline.
- Promoter of Petronet LNG with 12.5% stake (Investment 100 Crore)
- C2-C3 & LPG recovery plant is being set up at Dahej at a cost of Rs 900.92 Crore

2.6.2 Physical Performance during 2003-04

		2002-03 Actual	2003-04 BE/MOU	2003-04 Actual*
Seismic Survey				
Onland Offshore	2D (GLK)	3,714	3,190	2,583.62
	3D (Sq. Kms.)	1,370	896	1,470.16
	2D (GLK)	17,344	11,500	3,407.35
	3D (Sq. Kms.)	7,269	13,888	18,421.07
Drilling	Exploratory Meterage ('000m)	348.19	491.85	324.797
	Wells (Nos.)	150	172	125
	Development Meterage ('000m)	425.33	431.45	412.72
	Wells (Nos.)	190	188	197
	Total (Expl. + Dev) Meterage ('000m)	763.52	923.30	737.51
	Wells (Nos.)	340	360	322
Production				
Crude Oil	MMT	26.005	26.387	26.057
Natural Gas	MMSCM	24,240	23,317	23,579
LPG	000'T	1,198	1,018	1,171.8
C2-C3	000'T	619	510	533.31
SKO	000'T	234	200	212.96
ARN/ LAN	000'T	1,646	1,387	1,547.17
Others	000'T	98	113	162.43
TOTAL VAP	000'T	3,795	3,228	3,627.67

2.6.3 Financial Performance during 2003-04

(Rs. Crore)

Parameters	2002-03 (Actual)	2003-04 (BE)	2003-04 (Actual)
Plan Outlay	6,063.39	10,265.12	6,851.98
Total Income (Incl. Interest Income)	36,718.94	30,176.45	34,045.31
Net Profit	10,529.32	6,534.56	8,664.43

2.6.4 Achievements

- ONGC posted a profit of Rs. 8,664 Crore during 2003-04 as compared to Rs. 10,529 Crore during 2002-03.
- CRINE (Cost Reduction Initiatives in New Era) concept proven in North Sea E&P Development, introduced in all major projects.

- Advanced drilling techniques for sidetracks, multilateral and extended reach wells absorbed and implemented on fast track. Engineering design audit introduced with significant cost savings.

2.6.5 Progress of Projects

The following major projects of ONGC are under various stages of implementation.

Sl. No.	Name	Approved Cost (Rs. in Crore)	Status/Anticipated Commissioning
1.	Mumbai High North Development	2,929.40	Dec 2005
2.	Mumbai High South Redevelopment	5,255.97	March 2007
3.	Improved Oil Recovery-Neelam	347.69	Oct 2004
4.	Add. Development Heera Part-1	309.08	Jan 2004, Completed
5.	Improved Oil Recovery-Gandhar	692.46	Dec 2004
6.	Improved Oil Recovery-Rudrasagar	113.90	March 2006
7.	Improved Oil Recovery-Geleki	390.09	March 2007
8.	Improved Oil Recovery – Lakwa-Lakhmani	345.10	March 2007
9.	D-1 Development	506.52	March 2005 (Ph - I)
10.	Bassein East Development	985.17	March 2006
11.	G-1 & GS-15 Development	429.82	March 2005
12.	Mumbai High Uran Trunk Pipeline	2,792.50	May 2005
13.	C2-C3 & LPG Plant, Dahej	900.92	June 2006

2.6.6 Major Initiatives

i) Strategic Initiatives

- Comprehensive organizational restructuring – “Corporate Rejuvenation Campaign” (CRC) – conceptualised and launched across the entire organization changing Business Groups 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.

ii) Strategic goals set for two decades 2001-2020

- Doubling Reserve Accretion to 12 billion Metric tonnes of oil & oil equivalent gas (O+OEG).
- Improving Recovery Factor to the order of 40%.
- Production of 20 MMTPA O+OEG equity oil and gas from acquisitions aboard.

iii) Infocom Projects

Comprehensive review of Information Technology and communication and Control Networks was carried out. Plans were finalized for modernization,

expansion and integration of all Infocom systems over a 3 year period with investment of the order of Rs. 600 Crore.

iv) Terms and conditions for Purchase & Project Contracts were rationalized to improve competitiveness and consequently cost effectiveness

v) Human Resource Development

- Intra-organizational Transparency and work ethics are being enhanced through extensive internal communication.
- Effective grievance redressal mechanism was put in place for serving as well as retired employees.
- Thorough review of HR Policies & Procedures was undertaken and system made transparent.
- School of Maintenance Practices (SMP) has been set up.
- “Unnati Prayas” & “Super Unnati Prayas” (Endeavour for Advancement) a qualification up-gradation programme were introduced.
- “Agrani Samman” a monthly ex-gratia benefit to former employees who do not receive pensionary benefits, was introduced w.e.f. 1.01.2003.

- Promotions based on merit and vacancy based.

2.6.7. CBM projects of ONGC

ONGC is carrying out CBM operation in West Bengal (Raniganj coalfield) and Jharkhand (Jharia coalfield).

ONGC signed MOU with Coal India Ltd. to undertake joint exploration in N. Raniganj (356 sq. km.) as well as Jharia (84.55 sq. km.). Govt. of India has awarded these blocks on nomination basis jointly to ONGC and CIL.

In the CBM Bidding Round-I, two blocks i.e. BK-CBM-2001/1 (Bokaro) and NK-CBM-2001/1 (N.Karanpura) have been awarded to a consortium of ONGC and IOC. The contracts have been signed with GOI. Final PEL grant from State of Jharkhand is awaited. Meanwhile pre-drilling EIA studies have been initiated.

In CBM-II, ONGC received 5 out of the 9 blocks awarded.

2.6.8 Health, Safety and Environment

In terms of its corporate objective of 'commitment to environment', ONGC has adopted the latest technologies for pollution control, effluent disposal to protect and maintain ecological balance around the operational areas.

- Several rounds of intensive Safety Audit have been carried out using in-house as well as external agencies. Besides the imperative for maintaining the best standards of safety, these initiatives have also restored the confidence among insurance underwriters.
- An external audit of Effluent Management systems at all locations is currently in progress. Employee awareness on environmental protection is being actively promoted.
- Efforts are being made to obtain various ISO & ISRS accreditations for institutes/ installations etc.
- Occupational Health Centres are being set up at major plants and facilities, manned by specialists.

2.6.9 Conservation of Energy and Petroleum Products

ONGC is actively pursuing energy conservation measures. These, interalia, include :

- Use of waste heat recovery equipment at all offshore platforms, rigs, LPG plants at Hazira and Uran.
- Use of energy efficient equipment and devices and turbo expander.
- Energy audit on regular basis.
- Using natural gas geysers at Mehsana.
- Harnessing solar energy by using solar water heaters/ photo-voltaic panels at various locations.
- Use of lubricating oil analysis kits.
- Use of top drive system for faster drilling operations at some of the on-land and offshore rigs.
- Using solar energy for cathodic protection system for oil and gas pipelines.
- Inter fuel substitution and proper capacity utilisation of equipments.

ONGC has also completed 3 schemes viz additional co-generation facility consisting of gas turbines along with one heat recovery steam generator at LPG Plant – Uran Installation of fuel efficient pumps.

To develop innovative ideas and technologies, ONGC presently has six institutes. These are: (i) Keshava Deva Malaviya Institute of Petroleum Exploration (KDMIPE) (ii) Institute of Drilling Technology (IDT). (iii) Institute of Oil & Gas production Technology (IOGPT) (iv) Institute of Engineering & Ocean Technology (IEOT) (v) Institute of Reservoir Studies (IRS) and (vi) Institute of Petroleum safety, Health and Environment Management (IPSHEM).

2.7 ONGC VIDESH LIMITED (OVL)

ONGC Videsh Limited (OVL) is a wholly owned subsidiary company of Oil and Natural Gas Corporation Ltd. The registered office is at 6th Floor, Kailash Bldg., 26 Kasturba Gandhi Marg, New Delhi-1. OVL has the mandate to undertake overseas projects for Exploration & Production of petroleum and other petroleum projects in order to augment the oil security of the country and to bring equity oil from it's overseas ventures. The Authorized and Paid-up Capital of the Company as on 31.3.2003 are Rs.500 Crore and Rs.300 Crore respectively. The company earned a profit of Rs.428.45 Crore during 2003-04 as compared to Rs.58.99 Core in 2002-2003.

OVL in 2002-03 has become the 1st Indian company to produce oil and gas overseas. It is also the 2nd largest Indian company in terms of its oil and gas reserve holdings and is the 3rd Indian PSU of the country to produce oil and gas from its ventures in Vietnam & Sudan. OVL presently has its operation in 8 countries.

OVL has already acquired discovered/producing properties in Vietnam, Russia and Sudan. The details of these have been mentioned in para 2.3.

2.8 OIL INDIA LIMITED (OIL)

A Government of India Enterprise, under the administrative set-up of the Ministry of Petroleum & Natural Gas is engaged in the business of exploration, production and transportation of crude oil and natural gas. OIL was incorporated in India in 1959 with two third share of Burmah Oil Company / Assam Oil Company and one third share of Government of India. In 1961, OIL became a joint venture company with equal share of Government of India and Burmah Oil Company. On 14th October, 1981, OIL became a Government of India Enterprise, a wholly owned Public Sector Undertaking.

The Company produces crude oil & natural gas from its oilfields in Assam and Arunachal Pradesh and natural gas from its fields in Western Rajasthan. The Company has presently operational areas in Assam, Arunachal Pradesh,

Western Rajasthan, Orissa onshore and Ganga Valley in U.P and Uttaranchal. OIL has also acquired nine exploration blocks under the three rounds of NELP bidding either independently or in consortium with other joint venture partners. In the fourth round of NELP bidding OIL has been awarded five blocks in consortium with ONGC and BPCL.

The Company operates a trunk crude oil transportation pipeline in the NorthEast for transportation of crude produced by both OIL and ONGCL in the region to feed Numaligarh, Guwahati & Bongaigaon refinery and a branch line to feed Digboi refinery. OIL has started reverse pumping of RAVVA crude to BRPL through its existing Barauni-Bongaigaon Trunk Pipeline since April, 2003. The natural gas produced in Assam is sold to different customers. viz. BVFCL, ASEB, NEEPCO, IOC(AOD), APL and nearby Tea gardens. In addition, a small quantity of non-associated gas produced in Rajasthan is sold to Rajasthan Rajya Vidyut Utpadan Nigam Limited. (RRVUNL). The Company also produces Liquefied Petroleum Gas (LPG) at its plant at Duliajan, Assam.

2.8.1 New Hydrocarbon finds

During the year 2003-04, major discovery of oil and gas was made in North Chandmari structure. For the first time, Eocene discovery has been made in Naharkatiya extension area (East Rajali). In addition, minor discoveries were also made in Bhogpara Mechaki, Sealkati etc.



OIL's drilling team ready for dragging the drill rig in Assam

2.8 .2 Physical Performance

Parameter	Unit	2002-03 Actual	Target 2003-04	2003-04 Actual
Seismic Survey				
Onshore	2D	1,949.59	2,585	2,088
	3D	349.50	350	352
Offshore	SQKM	NIL	400	NIL
3D				
Drilling				
Exploratory	('000Mtr.)	42.201	66.00	49.28
Well Nos.	No.	9	15	11
Development	('000Mtr.)	87.834	70.00	59.34
Well Nos.		20	17	14
Crude Oil Production	(MMT)	2.95	3.20	3.002
Natural Gas Production	MMSCM	1,743.31	1,955	1,886.74
Natural Gas Sale	MMSCM	1,237.30	1,430	1,376
LPG Production	'000 Tonnes	54.32	50.00	51.51

2.8.3 Financial Performance

Parameter	2002-03 Actual	Target 2003-04	2003-04 Actual
Plan Outlay (Rs./Crores)	606.90	1000.00	577.85
Total Income (Rs./Crores)	3,125.44	2,853.77	3,476.58
Net Profit (Rs./Crores)	916.73	512.76	949.70
Internal/Resource (Rs./Crores)	515.79	982.25	971.17

The company declared Rs 299.61 crore dividend to the Government for the year 2003-04 as compared to Rs. 278.21 crore for 2002-03.

2.8.4 Other Achievements

- In view of the changed scenario in the hydrocarbon sector and in order to meet the future challenges, OIL has recently formulated its Strategic & Corporate Plan with the help of reputed consultant. Strategic issues have been identified and are presently under implementation.
- Subsequent to signing of agreement on 29.11.2002 with PDVSA Intevap Inc.,



Pumping station along the Oil India's crude oil pipeline input pipeline feeding the four refineries of North-East India

Venezuela for technical collaboration for experimental pilot scale production of heavy oil/bitumen from its field in the Bikaner Nagaur basin of Rajasthan, the first phase of work is in progress now.

- In the boulder covered areas in Arunachal foothills and hilly terrain in Uttranchal, 2D seismic acquisition is in progress, utilising mechanized shot-hole drilling.

- In order to drill horizontal wells in four locations, actions have been initiated and the first horizontal well is planned to be spudded in October, 2004.
- Test run for Coal-only-Processing using M/s. AXEN's Catalytic Two Stage Liquefaction (CTSL) process was successfully completed in the pilot plant at Duliajan.

2.8.5 Progress of Projects

The following important projects related to regular E&P activities are at various stages of implementation:

Name of the Project/Location	Approved Cost (Rs./Crores)	Status
Exploitation of heavy oil in Rajasthan	10.00	Agreement with PDVSA signed on 29 th Nov'02 and now first phase of work is in progress.
Replacement of Telecommunication system of pipeline by installation of Optical Communication link from Naharkatiya to Barauni on OIL's Right of Way (ROW) in Assam, West Bengal and Bihar.	48.96	Laying work is in progress.
Intermediate Tank Farm at Tengakhat with 35.000 Kls capacity and de-hydration facilities.	30.00	Tendering is in progress.
Oil Collecting Station at Makum.	16.00	Construction is in progress.
Development of non-associated gas fields in Upper Assam to increase gas production to meet increased demand of gas.	20.00	Project plan being chalked out.
Replacement of Generating set at Pump Station 3 & 5 of Trunk Pipeline	19.00	Installation is in progress.
Replacement of 6 nos. of Mud Tank Systems with modern solid control equipment in drilling rigs	37.00	Procurement is in progress.

2.8.6 Initiative Taken by OIL

- (a) Strategic Corporate Plan of OIL was formulated in 2002-03 and action is on to implement few modules. Additionally, the plan is focused towards increasing production of crude oil to 7.0 MTPA from present level of 3.0 MTPA in next 7 years alongwith with selective presence of OIL in other value chain of petroleum sector.

- (b) Exploration of deep Eocene hydrocarbon focusing the complex stratigraphic/combination traps, intensification of EOR/ IOR, revitalization of old oil fields, development of marginal fields etc.
- (c) OIL bided for 6 blocks under the fourth round of NELP. Out of this OIL has been awarded 5 blocks in consortium with ONGC and BPCL. Out of these 2 blocks are in deep water,

where OIL has 20% Participating Interest (PI).

- (d) Acquisition of prospective exploration block and producing properties in India and abroad either alone or with consortium partners.
- (e) Preparation of EIA, DFR etc. necessary for PIB clearance is in progress with the help of consultant. For construction of product pipeline from Numaligarh to Siliguri
- (f) Rendering of E&P Services including oil/gas transportation pipeline in India and abroad.
- (g) Effort towards selected presence in hydrocarbon values chain i.e. refining and marketing of LPG and transportation fuel.

2.8.7 Control of Pollution and other environmental initiatives

Concerted efforts in protecting the environment have resulted in a clear and green environment in OIL's operational areas. The following initiatives were taken/continued for control of pollution:-

- (a) Recycling of drilling effluent pit water in drilling operations.
- (b) The formation water produced are disposed off into selected shallow disposal wells and the water samples from nearby portable water wells are regularly monitored. The produced

formation water after treatment is also re-injected into the reservoir for energy replenishment.

- (c) Deployment of low pressure booster compressor/jet compressors (ejectors) to reduce flaring of very low pressure gas.
- (d) Lifting of any spilled crude oil from drains and production sites.
- (e) Construction of Central Effluent Pits with compartments at strategic locations to abate possible pollution hazards.
- (f) Construction of formation water collection reservoir for the Central Tank Farm (CTF) to avoid pollution by over-flowing to open drain system in the Township.
- (g) Ambient air quality monitoring in & around OIL's operations areas and other vulnerable places with the help of a mobile Air Quality Monitoring Van procured by OIL.
- (h) Actions are in hand for ISO 9001/14000/18000 certifications of few of the installations like LPG plant, Central Power House, Trunk Pipeline and Tengakhath OCS Complex. ISO 9001 certification has already been obtained for LPG plant and Duliagan Central Power Station for QMS in 2003-2004.



Plant piping of gas compression station of Oil India Ltd. at Duliagan

2.8.8 Conservation of petroleum products

To meet the energy requirement of OIL's E&P activities, OIL is using natural gas as fuel for various operations like Oil Collecting Stations (OCSs), Tank Farms, Boilers, Prime mover engines of compressors/Pumps, Captive Power Generation, Domestic fuel etc. As a result of this, 95% requirement of energy of OIL is met with natural gas and this facilitates conservation of 0.37 MMT of HSD per annum. Liquid fuel (HSD and Petrol) is used in the semi-mobile/mobile equipment like drilling rigs, workover outfits, material handling equipment and transport fleet. Besides this following conservation measures are also adopted in OIL :

- Underground storage of natural gas.
- Recovery of condensate from natural gas using environment friendly refrigeration principle.
- Reduction of flare of natural gas by promptly installing gas evacuation facility, de-bottlenecking gas network, Surge control system etc.
- MART terminals with Solar photovoltaic panels.
- Solar power illuminations and energisation of Tanot gas gathering station at Rajasthan.

- Solar power hot water system.
- Use of energy efficient lamps and Sodium vapour lamps in industrial area and street lighting in Duliajan.

As result of all above, OIL is saving around 400 million kilowatt Energy equivalent worth Rs. 29 crore.

2.9 GAIL (INDIA) LIMITED

2.9.1

GAIL (India) Limited, a 'Navratna' enterprise, is primarily a Natural Gas company, focused on all aspects of the Gas value chain including exploration, production, transmission, extraction, processing, distribution and marketing of Natural Gas and its related processes, products & services.



The Authorized and Paid-up Capital of the Company is Rs.1000 Crore and Rs.845.65 Crore respectively. The current holding of Government of India in GAIL is 57.35% and others 42.65%.

GAIL supplies Gas as fuel to power plants for generation of power, to fertilizer plants as feed stock for production of urea and to several other industries as a clean alternative fuel. Natural Gas has crossed its customary boundaries of big industries and has reached the common man directly in the form of Piped Natural Gas to homes or Compressed Natural Gas for vehicles. GAIL's



Gas processing unit of GAIL

exclusive LPG pipeline has the capacity to serve over 20% of LPG consumed in the country. More than one-fifth of the polymers consumed in India are produced and marketed by GAIL. GAIL's Optical Fibre Cable network – the "Carriers' Carrier" – is the backbone to serve the fast growing telecom market in India. In E&P, GAIL is in consortium with other E&P companies like ONGC, OIL, GSPCL, Hardy, Gazprom and Daewoo International in 12 exploration blocks (10 NELP and 2 Farm-in), out of which 11 are in India and one in Myanmar.

The Company has achieved a turnover of Rs.11,981 Crore (excluding excise duty) in the year 2003-04 as against the previous year's Rs.11,351 Crore. Gross margin has increased to Rs.3,613 Crore in 2003-04 as compared to Rs.3,346 Crore in 2002-03. Net Profit after Tax was Rs.1,869 Crore in 2003-04 as against Rs.1,639 Crore in 2002-03, an increase of 14.03%. GAIL has declared a total of dividend of Rs.763.20 crore including Dividend Tax for the year 2003-04 as compared to Rs. 635.30 crore in the previous year.

GAIL's performance has been recognized in the global arena. According to the Global Platts Survey 2004 of top 250 energy companies, it has been rated as No.1 in terms of Return On Capital Invested among Global gas Utilities.

2.9.2 Joint Ventures Companies of GAIL

(a) Mahanagar Gas Limited (MGL) – Currently, MGL is supplying piped gas to over 1,95,000 domestic consumers, 612 small commercial and industrial consumers and supplying CNG to over 1,21,581 vehicles in Mumbai through 75 CNG outlets spread across the city.

(b) Indraprastha Gas Limited (IGL) – Presently, IGL is supplying piped gas to more than 13,085 domestic consumers, 112 small and large commercial consumers and CNG to over 90,000 vehicles including DTC buses through 121 CNG outlets spread over the city.

(c) Petronet LNG Limited (PLL) – A joint venture company with ONGC, BPCL, IOC and GAIL was formed for setting up of LNG import facilities. PLL has signed a long term LNG supply contract with Ras Gas, Qatar for import of 5 MMTPA at Dahej and 2.5 MMTPA at Kochi. Country's first 5 MMTPA LNG Terminal at Dahej was dedicated to the nation on 9.2.2004. Commercial supplies of R-LNG from Dahej terminal have commenced from March,

2004. This heralds country's foray into import of Liquefied Natural Gas.

(d) Participation in GSEG power project at Hazira - GAIL has a 12.85 % participating interest in 156 MW Project being developed by Gujarat State Electricity Generation Ltd. (GSEG) at Hazira in Gujarat.

(e) Bhagyanagar Gas Ltd. (BGL), Hyderabad – This JV has been formed in August 2003 with GAIL and HPCL as JV partners for distribution & marketing of CNG & Auto LPG as fuel for vehicles, Piped natural gas for domestic, commercial & industrial consumers in and around the cities in the state of Andhra Pradesh.

2.9.3 Major projects under implementation

GAIL has completed 1.164 MMTPA Vizag Secunderabad LPG pipeline at a capital cost of Rs.490.65 crore. GAIL has also taken up Dahej-Vijaipur Pipeline Project, which has been commissioned in March 2004 and Dahej-Hazira-Uran pipeline project which is scheduled to be completed by February 2006.

Further, GAIL has drawn up a plan to lay about 7900 kms. of gas pipelines at a cost of Rs.20,000 crore linking various sources of gas to demand centers in a phased manner.



A night view of GAIL's Petrochemicals Complex at Pata

2.9.4 Performance of GAIL (India) Limited at a glance for the year 2002-03 & 2003-04 is given below :

A) Physical :

		2002-03 ACTUALS	2003-04 ACTUALS
GAS SALES	MMSCM	23,141	22,999
LPG /SBP/OTHERS PRODUCTION	('000 MT)	1,303	1,363
PETROCHEMICAL PRODUCTION	('000 MT)	292	264

B) Financial :

DESCRIPTION	UNIT	2002-03	2003-04 ACTUALS
PROFIT AFTER TAX	Rs. Crore	1,639	1,869
GROSS INTERNAL GENERATION	Rs. Crore	2,281	2,530

2.9.5 Operations

GAIL has completed the 610 km 42" Dahej Vijaipur pipeline 19 months ahead of schedule. The first phase of the pipeline from Dahej to Vimar was completed on 29th February 2004.

During the fourth quarter, GAIL has commenced receiving Regasified LNG (RLNG) from 29th February 2004 from Petronet LNG Limited.

2.9.6 Commissioning of first LNG Terminal

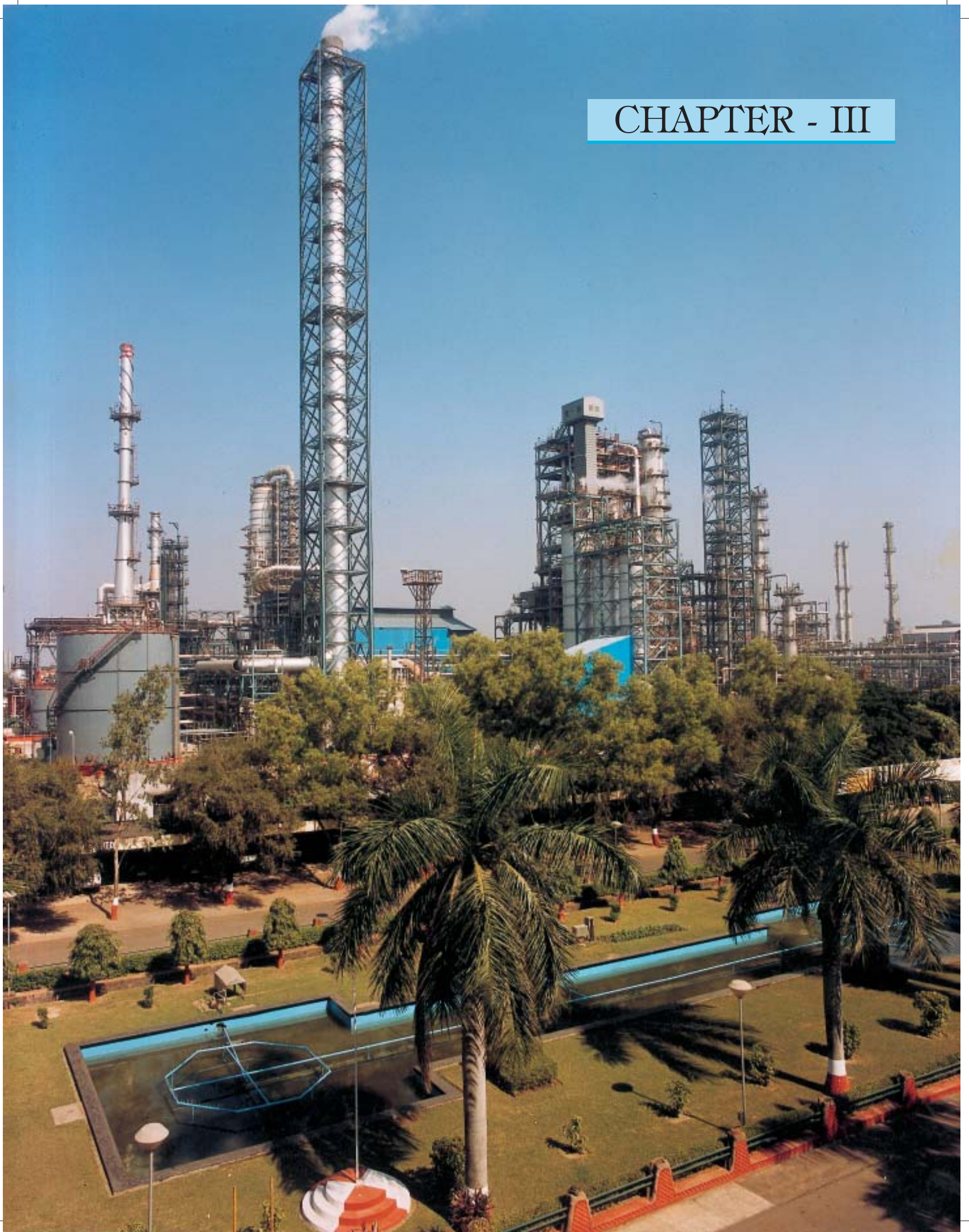
Country's first 5 MMTPA LNG Terminal at Dahej

was dedicated to the nation by on 9.2.2004. Dahej LNG Terminal have been set up by Petronet LNG Limited(PLL) a joint venture company promoted by GAIL, IOC, BPCL and ONGC. Commercial supplies of R-LNG from Dahej terminal have commenced from March, 2004. This heralds country's foray into import of Liquified Natural Gas and would help in bridging the wide gap in demand and supply of natural gas and will get some relief to consumers facing shortage of gas ex-Hazira and along HBJ.



LNG Project at Dahej

CHAPTER - III



3. REFINING

3.1 Refining capacity

The domestic refining capacity as on 1.4.2004 was 125.97 Million Metric Tonnes Per Annum (MMTPA). Availability of petroleum products during 2003-04 from domestic refineries and non-refineries was adequate to meet the domestic demand except for Liquefied Petroleum Gas (LPG). In fact, the availability of products like petrol, diesel and Aviation Turbine Fuel (ATF) was in excess of the domestic requirements and such products were exported during the year. As per current demand trends for 2004-05, the refining capacity is expected to be adequate to meet the domestic requirement.

At present, there are 18 refineries operating in the country (17 in Public Sector and 1 in Private Sector). Mangalore Refinery and Petrochemicals Limited (MRPL) which was a Joint Sector Company became a PSU subsequent upon acquisition of its majority shares by ONGC. Out of the 17 Public Sector refineries, 7 are owned by Indian Oil Corporation Limited, two each by Chennai Petroleum Corporation Limited (a subsidiary of IOCL), Hindustan Petroleum Corporation Limited, and Oil and Natural Gas Corporation (ONGC Limited), one each by Bharat Petroleum Corporation Limited, Kochi Refineries Limited (a subsidiary of BPCL), Numaligarh Refinery Limited (a subsidiary of Bharat Petroleum Corporation), and Bongaigaon Refineries and Petrochemicals (a subsidiary of IOCL). The private sector refinery belongs to Reliance Industries Limited.

3.2 Pipeline for product transportation

Internationally transportation of products by pipelines is preferred to other modes of transport for the reasons of safety, operational convenience and its environmental benefits. In most cases, transportation of products by pipelines is cheaper in comparison to other modes like rail and road. In developed countries, around 60% of the total petroleum products are transported by pipeline. In India this percentage is presently around 32%. It is estimated that the share of pipelines in product transportation may touch around 45% over the next 2-3 years.

The Government had issued guidelines for laying petroleum product pipelines in November, 2002.

Under the revised guidelines, the Government has called for Expression of Interest on behalf of GTCIL (a wholly owned subsidiary of Reliance Industries Limited), Hindustan Petroleum Corporation Limited and Essar Oil Limited for laying cross country pipelines.

3.3 CHENNAI PETROLEUM CORPN. LIMITED (CPCL)



Chennai Petroleum Corporation Limited (CPCL) (formerly known as Madras Refineries Limited) was formed as a joint venture of the Government of India (GOI), Amoco India Inc., U.S.A. and National Iranian Oil Company (NIOC), Iran in 1965. Amoco Inc. disinvested its equity holding in favour of GOI in 1985. The Government of India has transferred its equity share of 51.81% to Indian Oil Corporation Limited in March, 2001.

CPCL has two refineries, with a combined refining capacity of 7.5 million metric tonnes per annum (MMTPA). The Manali refinery in Chennai with a capacity of 6.5 MMTPA is one of the complex refineries with Fuel, Lube, Wax and Petrochemical feedstocks production facilities. The second refinery with a capacity of 1.0 MMTPA is located in Cauvery Basin.

3.3.1 Physical Performance

During the year 2003-04, the company processed 7.04 MMT of crude oil which included 0.108 MMT of trial run operation of 3 MMTPA expansion unit of Manali refinery. The capacity utilization for 2003-2004 was 92.4%. The company achieved MOU Excellent rating for its overall performance during the year 2003-04.

3.3.2 Financial Performance

During the year 2003-04, the company achieved the Turnover of Rs. 9430.45 crore as against Rs. 8636.52 crores in the previous year. During the year 2003-04, CPCL earned profit of Rs 572.26 crore before tax and Rs 400.05 crore after tax as compared to Rs 487.97 crore and Rs 302.89 crore respectively during the year, 2002-03.

3.3.3 Projects completed

In order to meet the Oil Industry Safety Directorate norms and also to facilitate loading of Carbon Black Feed stock Slack Wax, Fuel Oil and Sofo Oil, the company had completed implementation of Automatic Truck Loading Facilities at a cost of Rs. 17.24 crore with the state-of-art technology.



A view of CPCL's Rs. 2360 crore 3MMTPA capacity expansion and modernization project at Manali

The Oil Jetty Project, to make available the required quantity of crude to the Cauvery Basin Refinery at Nagapattinam, was completed and commissioned at a cost of Rs. 90.29 crore.

Major portion of the 3 MMTPA Expansion-cum-Modernization Project of Manali Refinery, one of the most prestigious projects of Company, was commissioned in March, 2004. The once-Through Hydro-Cracker Unit (OHCU) has been mechanically completed and is expected to be operational by July, 2004. The project is expected to be completed within the approved cost of Rs. 2360.38 crore.

With the commissioning of this project, the company would be ready to meet the Auto Fuel Quality Norms of Bharat Stage II and Euro III equivalent much ahead of the scheduled implementation date of April, 2005.

3.3.4 On going projects

FCCU Revamp Project

The existing Fluidised Catalytic Cracking Unit (FCCU) is being revamped at a cost of Rs. 91.45 crore. This will enable the Manali Refinery to process the bottoms of OHCU and will result in substantial increase in LPG and other light distillate yields. The project is expected to be completed by September, 2004.

TTP Revamp Project

A project to revamp the existing Tertiary Treatment Plant by replacing the chemical treating facilities with Ultra-Filtration Technology at a cost of Rs. 10.00 crore is in progress. The project is expected to be completed by September, 2004.

New Zero Discharge Project

A new "Zero Discharge" Project for treating the effluents from Refinery III and reusing the water is being set up at a cost of Rs. 10 crore. The engineering and procurement activities are in progress. The Project is expected to be completed by December, 2004. This project will significantly contribute for improved environmental conditions apart from improving the water availability position for Manali Refinery operations, particularly in the context of a severe water crisis situation faced by the company.

3.4 BONGAIGAON REFINERY & PETROCHEMICALS LIMITED (BRPL)



BRPL was incorporated on February 20, 1974 as an integrated Petroleum and Petrochemicals refinery. The installed capacity of the refinery was



PSF Plant of BRPL

1 MMTPA which was enhanced to 2.35 MMTPA in 1995-96. The Government of India has transferred its equity share of 74.46% to Indian Oil Corporation Limited in March, 2001 and hence BRPL has become the subsidiary Company of IOCL on 29th March, 2001.

The refinery processed 2.13 million metric tonnes of crude oil during the year 2003-04 which is the highest ever. The production of MS (195933 MT) and LPG (47751 MT) were also the highest ever. The Refinery achieved highest ever Distillate Yield of 85.8% and lowest ever fuel & loss of 5.60% during 2003-04. A new product LVFO (Low Viscosity Fuel Oil) was launched in January 2004 by upgrading LSHS, demand for which is shrinking.

The Petrochemicals and PSF plants have been restarted in December 2003 after being idle for about 2 years due to high input cost, higher

distribution cost and higher unit cost of production on account of sub-economic size of the units.

During the year, 2003-04, BRPL achieved record profit of Rs 439.87 crore before tax and Rs 303.74 crore after tax as compared to Rs 307.71 crore and Rs 178.45 crore respectively during the year, 2002-03. BRPL has declared a total dividend of Rs 153.85 crore excluding dividend tax during 2003-04 which is 77% of its paid up capital.

3.5 NUMALIGARH REFINERY LIMITED (NRL)

Numaligarh Refinery, popularly known as “Assam Accord Refinery” has been set up as a grass-root refinery at Numaligarh in the District of Golaghat (Assam) in fulfillment of the commitment made by Govt. of



A view of NRL's Refinery

India in the historic “Assam Accord”, signed on August 15, 1985 at an approved cost of Rs. 2724 Crores.

Numaligarh Refinery Limited was incorporated on 22nd April 1993 as a Public Limited Company. Presently, the Company is a subsidiary of Bharat Petroleum Corporation Limited.

During the year 2003-04, the crude throughput was 2200 TMT against installed capacity of 3 MMTPA. The crude throughput was low due to product containment problem. Crude throughput is estimated at 2500 TMT for the year 2004-05. Distillate yield of 85.43% was achieved by NRL during 2003-04 and the same is targeted at 85.45% for 2004-05.

During the year, 2003-04, NRL registered a profit of Rs 377.22 crore before tax and Rs 214.95 crore after tax as compared to Rs 316.99 crore and Rs 174.63 crore respectively during the year, 2002-03. NRL has declared dividend of Rs 64.74 crore for the year 2003-04 as compared to Rs 52.97 crore for 2002-03

3.6 KOCHI REFINERIES LTD. (KRL)

3.6.1 Kochi Refineries Limited (KRL)'s installed capacity at the inception in September 1966 was 2.5 million metric tones per annum (MMTPA). The capacity of the Refinery has been expanded from time-to-



A view of KRL's Refinery

time and at present, it is 7.5 MMTPA. The secondary processing facilities have also been expanded to 1.4 MMTPA.

3.6.2 Performance

3.6.2 (a) Physical performance

During the year 2003-04, the Refinery achieved an all time high record crude oil throughput of 7.85 million metric tones (MMT) of crude oil with record in processing of imported crude oil, about 5.62 MMT. KRL set records in the manufacture of liquefied petroleum gas (LPG), mineral turpentine oil (MTO), motor spirit, natural rubber modified bitumen (NRMB) and sulphur during the year. The anticipated crude oil throughput for the year 2004-05 is 7.45 MMT.

The Company has a proven record in the field of safety. During the year, refinery received Yogyata Pranam Patra for good performance in occupation health and safety during 1988-2000 from National Safety Council of India. The Company has made significant investment in safety and fire protection systems. KRL has been declared winner of ‘Gold Award’ in refinery sector for achievements in safety management during 2003-04 by Greentech Foundation.

The Performance of KRL for the year 2003-04 was adjudged as “Excellent” rating based on the Memorandum of Understanding (MoU) that KRL had signed with BPCL. This is the thirteenth time KRL was rated “Excellent” consecutively. Till

2002-03 KRL was signing MoU with Government of India and 2003-04 was the first year when KRL has signed the MoU with BPCL, presently its holding company.

The company continued to bestow utmost importance to conservation of energy, by regular monitoring and analysis of fuel and utilities consumption, optimizing plant operations and proper upkeep of plant and machinery.

3.6.2 (b) Financial performance

Turnover and Profits

During the year 2003-04, the company achieved a turnover (excluding excise duty) of Rs. 9,858.30 crore against Rs. 9,258.32 crore during 2002-03. The profit before tax was Rs. 909.76 crore as against Rs. 696.68 crore in the previous year. The profit after tax was Rs 555.09 crore during 2003-04 as compared to Rs 456.02 crore in the year 2002-03. The company has declared dividend of Rs 166 crore for 2003-04 which is 12% of its paid up capital.

3.6.3 (a) Major projects completed

(i) Revamp of Electrical Distribution System Phase-I

As a part of modernisation of the High Tension and Low Tension system, three different revamp electrical jobs were executed under this project. The obsolete Main Receiving Station and B4 & B5 load centers were replaced, as the spares for these were not available. The feeders of the transformers in FCCU were also relocated to improve the plant reliability. The project costing Rs. 25.6 crore is completed and has been commissioned in phases.

(ii) LPG Bottling Plant

In view of the projected doubling of BPCL's share of LPG market in Kerala, an LPG Bottling plant having a name plate capacity of 44,000 TPA on a single shift basis was set up by the Company. The project was commissioned in July 2003.

3.6.3 (b) Major projects approved

(i) Bitumen Emulsion Plant

KRL proposes to set up a Bitumen Emulsion Plant having capacity of 10 metric Tonnes per hour. This is to increase the market share of KRL's bituminous products and also to strengthen and

widen the product portfolio. The project is slated for completion by January 2005.

3.6.3 (c) Ongoing projects

(i) Project for quality upgradation

This project is for setting up facilities for quality upgradation of MS and HSD to meet the Bharat Stage II (BS II) emission norms. Approved project cost is Rs. 273 crore. Implementation of this project is progressing as per schedule to meet the completion date of December 2004. Overall progress of the project achieved as on 31.3.2004 was 42.36%.

(ii) Revamp of Electrical Distribution System Phase-II

The scope of this project is consolidation of Fluid Catalytic Cracking Unit (FCCU) loads and utility loads along with phasing out old and outdated electrical switch gears of FCCU and Crude Distillation Unit-I. Approved cost of the project is Rs.11 crore with approved completion date as March 2005. Overall physical progress achieved upto 31.3.2004 was 27.7%. Implementation of the project is on schedule for completion by March 2005.

3.7 MANGALORE REFINERY AND PETROCHEMICALS LIMITED (MRPL)



Mangalore Refinery and Petrochemicals Limited (MRPL), first joint venture company in India, was formed in 1987 jointly by Hindustan Petroleum Corporation Limited and Indian Rayon and Industries Limited (IRIL) and its associate companies (A.V.Birla Group). The project was commissioned in March, 1996 with an actual capacity of 3.69 MMTPA. Subsequently, the expansion project of MRPL, enhancing the capacity to 9.69 MMTPA, was commissioned in April, 2001. With the approval of the Government, ONGC had acquired the entire stake of Aditya Birla Group in MRPL for Rs. 59.43 crore on 03.03.2003 and had also infused additional Rs. 600 crore on 28.03.2003 as part of the approved debt restructuring plan. With this, ONGC had acquired 51% stake in equity of MRPL. Thus, MRPL became Government's company within the meaning of Section 617 of the companies Act,

1956, and also a subsidiary of ONGC. After successful execution of the debt restructuring plan including conversion of the debt into equity in MRPL and its subsequent transfer to ONGC. ONGC's holding in MRPL has increased to 71.63% in July, 2003. Paid-up capital of MRPL has increased from Rs. 974 crore to Rs. 1,753 crore.

3.7.1 Physical performance

- Gross crude processed during the year 2003-04 was 10.046 MMT, which is record highest processing for any year (103.9% of rated crude capacity).
- Ever highest product dispatch of 9.243 million metric tones and ever highest exports of 4.26 million metric tones.
- Fuel and loss for the year was 6.91% which is lowest achieved so far.
- 5-star safety award by British Safety Council for maintaining highest safety standards.
- Direct sales of HSD and MS was started to Essar Oil.
- LSHS was exported for the first time in March 2003.
- Extra premium grade MS(91) was given to IOC for the first time.
- HSD export to Sri Lanka through IOC on term contract was given for the first time in March 2004.

- Term contract was signed with Saudi Aramco for import of approx. 2 MMT Arab mix crude.
- Term contract between IOC and NIOC for import of 5 MMTPA Iran mix crude was assigned to MRPL in February, 2004.

3.7.2 Financial performance

MRPL registered a gross turnover of Rs 12,612 crore and Export turnover of Rs 4472 crore during 2003-04. It has declared net profit of Rs 459.42 crore during the year, 2003-04 as compared to a net loss of Rs 411.80 crore in the year, 2002-03.

3.7.3 Projects

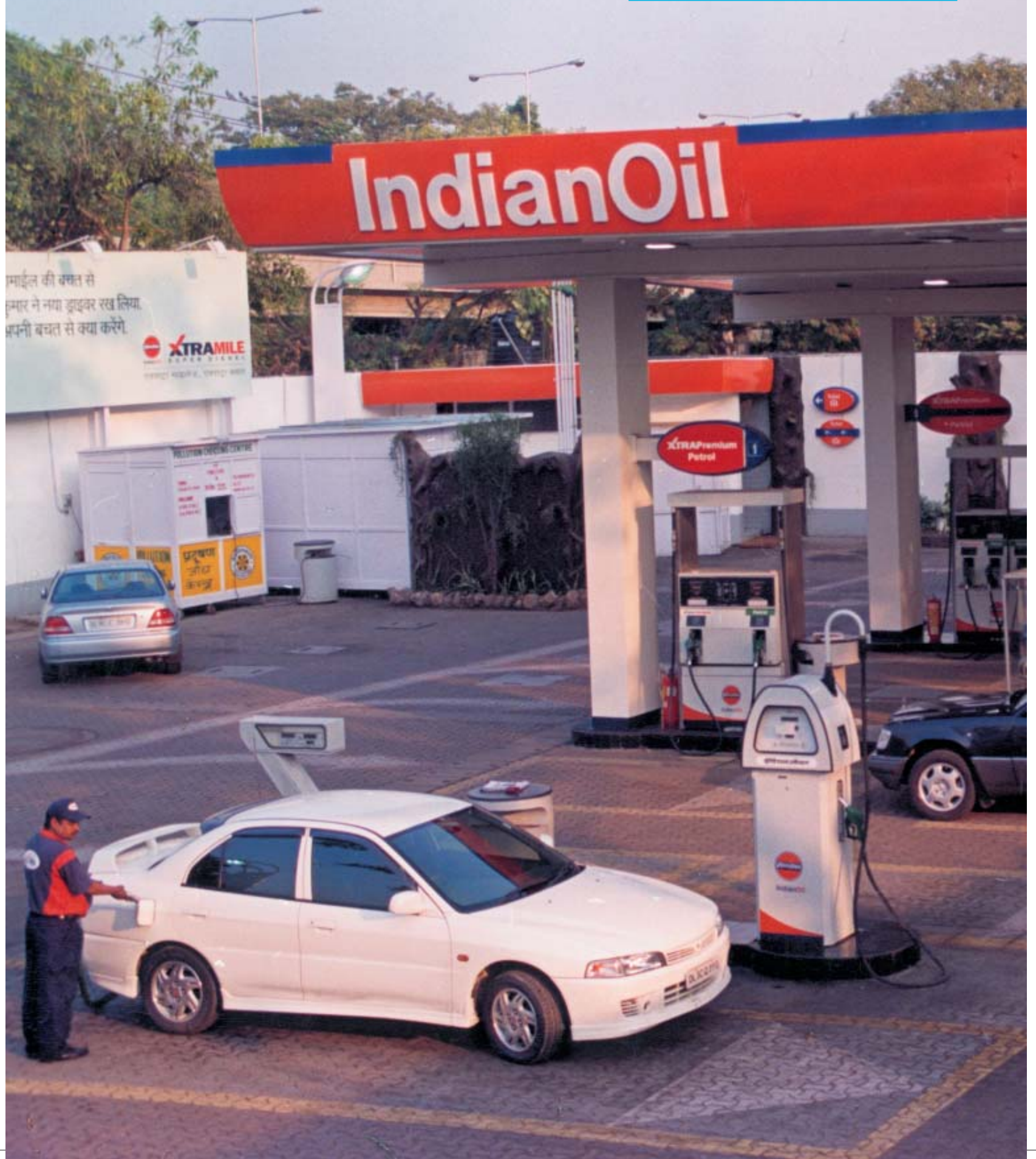
3.7.3 (a) Major Projects completed during the year

A study was awarded to UOP to recommend a suitable configuration of new units, to achieve Euro-III & IV grade of MS and HSD. The study was completed in October 2003.

3.7.3 (b) Major projects approved during the year

- i) Isomerisation Project to meet Euro-III & IV quality of MS.
- ii) Advanced Process Control implementation in CDU-I.
- iii) Variable speed drives for selected machines.

CHAPTER - IV



4. MARKETING AND DISTRIBUTION

4.1 INDIAN OIL CORPORATION LIMITED (IOC)



4.1.1 Indian Oil Corporation Limited (IndianOil) is the country's largest commercial enterprise, with a sales turnover of Rs. 1,19,848 crore (US \$ 25.22 billion) and net profits of Rs. 6,115 crore (US \$ 1,287 million) for fiscal 2002-03.

4.1.2 IndianOil is India's sole representative in *Fortune's* prestigious listing of the world's 500 largest corporations, ranked 191 for the year 2003 based on fiscal 2002 performance. It is also the 17th largest petroleum company in the world. IndianOil has been adjudged first in petroleum trading among the 15 national oil companies in the Asia-Pacific region, and is ranked 325th in the latest *Forbes'* "Global 500" listing of the largest public companies. Apart from the "Global 500", *Forbes* has also come up with their latest list "Forbes 2000" recently, where IndianOil is placed at 243rd position, and at the top of the 27 Indian firms listed. IOC also ranked among the top 10 Best Employers in India 2003 by *Business Today*, the leading Business Magazine of the country.



Lanka IOC's 1st Retail Outlet in Sri Lanka at Maligawatta, Mawatha

4.1.3 IndianOil controls 10 of India's 18 refineries with a current combined rated capacity of 49.80 million metric tonnes per annum (MMTPA) or one million barrels per day (bpd). These include subsidiaries Chennai Petroleum Corporation Ltd and Bongaigaon Refinery and Petrochemicals Ltd.

4.1.4 It owns and operates the country's largest network of cross-country crude oil and product pipelines of 7,575 KM, with a combined capacity of 56.85 MMTPA as on Mar'04. All the seven pipeline units and the Pipelines Head office were accredited

with the latest version of International Quality Management System of ISO 9001:2000 during the year.

4.1.5 IndianOil's countrywide network of about 22,000 sales points is backed for supplies by its extensive, well spread out marketing infrastructure comprising 168 bulk storage terminals, installations and depots, 94 aviation fuel stations and 79 LPG bottling plants. A record number of 1122 Retail Outlets have been added to the retailing network of the Company during the fiscal 2003-04. Its subsidiary, IBP Co. Ltd, is a stand-alone marketing company with a nationwide retail network of over 3,000 sales points.

4.1.6 For the year 2003-04, IndianOil sold 47.265 million tonnes of petroleum products (1.73 % growth), its seven own refineries achieved a throughput of 37.66 million tonnes (6.72 % increase), and the pipeline network transported 45.17 million tonnes (9.88% increase) of crude oil and petroleum products.

4.1.7. IndianOil reaches Indane cooking gas to the doorsteps of 37.5 million households in over 2,200 markets through the country's largest network of over 4,300 distributors. 5 Kg cylinders were introduced during the fiscal 2003-04 in 25 states across the country covering 1170 markets and over 73,000 customers enrolled.

4.1.8 Expanding Horizons

4.1.8.1 Diversification into Petrochemicals, Gas, E&P, Projects and Consultancy and other related areas both within the country and through overseas ventures are the few strategies adopted by the Company to develop it into a Transnational Energy Behemoth in keeping with its vision.

4.1.8.2 IOC have formed two wholly owned subsidiaries, which are already operational in Sri Lanka and



Mr. Paul R. Berenger, P.M. of Mauritius inaugurating IndianOil's Bulk Storage Terminals at Merovge Port in Mauritius

Mauritius. Besides, Regional offices at Dubai and Kuala Lumpur are coordinating expansion of business prospects in Middle East and Far East regions.

4.1.8.3 The Corporation has launched ten joint ventures in partnership with some of the most respected Corporates from India and abroad.

4.1.8.4 IndianOil has been lending its expertise for nearly two decades in several areas of Refining, Marketing, Transportation, Training and Research & Development to the countries viz. Sri Lanka, Kuwait, Bahrain, Iraq, Abu Dhabi, Tanzania, Ethiopia, Algeria, Nigeria, Nepal, Bhutan, Maldives, Malaysia and Zambia.

4.1.9 Corporate highlights

- With a view to strengthen its competitive position in the International markets, IOC has already established two foreign subsidiaries viz. IndianOil (Mauritius) Ltd. (IOML), Lanka IOC Pvt. Ltd. (LIOC).
- IndianOil Technologies Limited (ITL), a wholly owned subsidiary of IOC, under the aegis of the R&D Centre has been formed with an aim to commercialize the intellectual property rights of the Corporation through consultancy and licensing of in-house developed Hydrocarbon

Technologies both within the country and abroad.

- IOC declared the year 2003-04 as “Customer Care Year” and initiated a wide variety of activities during the period by launching branded fuel, specialty products tailored to Customers’ requirements, loyalty programmes in the retail segment, long term tie up arrangements with major customers to mention a few. To institutionalize the process, of Customer Care, the Company has also drawn up Policy and Pledge.
- A strategic investment to the tune of Rs 24,400 crore has been planned by IOC during the Xth Five year Plan period (2002-07), mainly in the areas of Refining and Pipelines capacity expansion, diversification into Petrochemicals, product quality up gradation and Retail Operations. This also envisages overseas expansion through equity participation in Hydro Carbon Value Chain.
- In the areas of IT re-engineering, IndianOil’s ambitious project “Manthan” crossed its milestone with over 250 locations covering all its divisions having gone “live” on SAP R/3, the leading ERP software package, as on date.

4.1.10 Performance

4.1.10.1 Physical

Parameter	Unit	2002-03	2003-04	Change (%)
Ref.Crude throughput	MMT	35.29	37.66	6.72
Pipeline throughput	MMT	41.11	45.17	9.88
Product sales (domestic)	MMT	46.46	46.80	0.73

Financial

IOCL registered a profit of Rs 9690.84 crore before tax and Rs 7004.82 crore after tax during 2003-04 as compared to Rs 8414 crore and Rs 6114.89 crore respectively during the year 2002-03.

IOCL has declared a total dividend of Rs 2452.83 crore during the year, 2003-04 as compared to Rs 2258.16 crore during 2002-03.

4.1.10.2 Business development

Vertical integration along the hydrocarbon value chain, coupled with horizontal expansion, is the chosen growth paradigm for all global oil & gas majors.

Accordingly, IndianOil is metamorphosing from a pure sectoral company with dominance in downstream in India to a vertically integrated, transnational energy behemoth through venturing in Exploration & Production, Petrochemicals and Gas. Besides this, the



IndianOil's Indane Gas reaches 37.5 million households in the country : Pic. shows Indane Gas Bullets

Corporation is strengthening its existing overseas marketing ventures and simultaneously scouting for new opportunities in marketing and export of petroleum products in foreign markets.

4.1.10.3 Exploration & Production

IOC is undergoing vertical integration through E&P initiatives to have its own equity oil so as to safeguard its business interest against the highly volatile oil market and to achieve greater stability of revenues/profits thereby protecting stakeholders interest.

IOC in consortium with ONGC was awarded two exploration blocks. In the second round of NELP, IOC has been awarded eight blocks in consortium with ONGC / OIL / GAIL / GSPCL. In the third round of NELP, IOC has been awarded one onshore block. Under CBM-I, IOC has been awarded 2 blocks.

IOC along with ONGC Videsh and Oil India, was awarded Farsi Exploration Block in Iran.

IOC in alliance with ONGC-Videsh had been qualified by Kuwait Petroleum Corporation (KPC) as one of the Non-Operators for their "Kuwait Project" for development of four Northern Kuwaiti oilfields.

IOC either independently or along with its alliance partners is scouting for opportunities for securing equity oil and gas from Qatar, Iran, Iraq, Angola, Sudan, Nigeria, Libya, Bangladesh, Myanmar and Indonesia.

4.1.10.4 Petrochemicals

IndianOil has developed a Petrochemicals master plan to emerge as a major player by integrating its core refining business with petrochemical activities. The projects identified under this master plan are in various stages of evaluation and implementation.

Under this plan, two major projects, namely production of 120 TMTA LAB at Gujarat refinery and integrated PX/PTA (paraxylene / purified terephthalic acid) at Panipat refinery (with capacities of 553 TMTA of PTA and 362 TMTA of intermediate PX) are currently under implementation. Construction jobs are already awarded for both the projects.

IndianOil has examined the techno-economic viability for setting up a naphtha cracker complex along with downstream polymers. Feasibility is also being examined for revamping of FCC units of Mathura, Panipat & Koyali refineries and setting up a polypropylene unit.

4.1.10.5 Business development (refineries & pipelines)

The Technical Services Agreement (TSA) between with Emirates National Oil Company (ENOC), Dubai has been renewed for the seventh consecutive year. The Manpower Secondment Agreement (MSA) with ENOC has also been renewed for the sixth consecutive time.

Oman Refinery Company has awarded the job for implementing their Integrated Management Systems to IOC, which is presently under implementation. The job is expected to be complete by the end of year 2004.

IOC has been aggressively pursuing business opportunities in Middle East and African countries related to major revamp / up gradation / product quality improvement projects in refineries, implementation of cross-country pipeline projects involving engineering, procurement, construction & commissioning and also equity participation in existing refineries including entering into long term contract for operation & maintenance of refineries.

IOC in consortium is actively pursuing EPCC bids, products upgrading/ turn around jobs in various overseas markets. The revenues accrued to IOC during the current fiscal on account of manpower secondment, has registered an increase of 32%, as compared to the same for last year.

Government of India have decided to create a Strategic Crude Oil Storage of 5 MMT for the country. The Government of India have also decided that an SPV, 100% owned by IOC, would be responsible for building and operating the proposed Strategic Crude Oil Storage.

4.1.11 Other collaborations

IndianOil has also provided catalyst advisory services to Petronas, Malaysia.

4.1.12 Joint Ventures

IndianOil has ten Joint Venture Companies (JVCs) with strategic partners to enter into high-potential synergetic business activities. This include Lubrizol India Pvt. Ltd., Avi-Oil India Pvt. Ltd., Indian Oiltanking Ltd., Petronet India Ltd., etc.

4. 1.13 Subsidiaries of IOC

(a) Indian Oil Blending Limited

The IndianOil Blending Ltd. (IOBL) is a wholly owned subsidiary of IndianOil, engaged in manufacturing of lubricants and greases.

(b) Indian Oil Mauritius Limited

IndianOil has established IndianOil (Mauritius) Ltd. (IOML) as a wholly owned subsidiary in Mauritius for implementing projects in that country. A state of the art terminal has been set up at Mer rouge in Mauritius by IOML and about 10 Retail Outlets are being set up in Phase – I.

(c) Lanka IOC (Pvt.) Limited

A wholly owned subsidiary, Lanka IOC has commenced commercial operations, with 150 retail outlets taken over from Ceylon Petroleum Company.

(d) IndianOil Technologies Ltd.

The new company 'IndianOil Technologies Ltd' a wholly-owned subsidiary of IndianOil, was launched on 8th August'2003 enabling IOC to join the select club of global providers of Hydrocarbon technology and process formulations.

(e) Chennai Petroleum Corporation Limited

Government of India has transferred its equity share of 51.8% in CPCL to IOCL in March, 2001. The performance of CPCL has been mentioned in para 3.3 in Chapter III of the Annual Report.

(f) Bongaigaon Refinery and Petrochemicals Limited

Government of India has transferred its 74.46% equity share in BRPL to IOCL in March, 2001. The performance of BRPL has been mentioned in para 3.4 in Chapter III of the Annual Report.

4.1.14 IBP Co. Limited

4.1.14.1

IBP was incorporated in 1909. It became a subsidiary of Indian Oil in 1970. Thereafter, it became an independent Government Company in 1972. It again became a subsidiary of IOC in 2002. IOC now holds 53.58% of equity. The 26% shareholding which was held by GOI has since been disinvested through book building process as per SEBI guidelines in the month



of March 2004 for a sum of Rs.350,65,51,980. Authorised Capital is Rs.100 Crores. Paid up capital as on 31.3.2004 was Rs.22.15 crore.

4.1.14.2 IBP has three distinct Business Groups i.e. Business Group (Petroleum), Business Group (Chemicals) and Business Group (Engineering).

4.1.14.3 The physical performance of the Company during 2002-03 in regard to sale of petroleum products to dealers/customers was 47, 02, 780 KL. The volume estimated in 2003-04 is around 48, 59,089 K.L. The Company has commissioned 688 ROs in the country during the year 2003-04.

4.1.14.4 The total sales value of production of the company was Rs 10,249.69 crore during 2003-04 as compared to Rs 8798.77 crore during 2002-03. The company registered a profit of Rs 332.60 crore before tax and Rs. 214.66 crore after tax during 2003-04 as compared to Rs 140.74 crore and Rs 87.75 crore respectively during 2002-03. The company has declared a total dividend of Rs 77.52 crore during the year, 2003-04.

4.1.15 Projects

4.1.15.1 Major projects completed during the year 2003-04

1. Solvent Dewaxing unit at Digboi Refinery.
2. Hydrotreater at Digboi Refinery.
3. Replacement of Barauni Patna section of Barauni- Kanpur product pipeline
4. Viramgam Koyali crudeOil pipeline
5. Koyali-Viramgam-Sidhpur product pipeline
6. Kuruksetra – Roorkee- Najibabad product pipeline
7. Bottling Plant at 6 locations viz. Una, Etawah, Gurgaon, Chengalpet, Coimbtore and Shimoga
8. Port Terminal at Mauritius.
9. New Depot at Gulbarga, Karnataka.
10. TOP at Roorkee, Uttaranchal
11. New pipeline from JNP terminal to Vashi terminal

4.1.15.2 Major Projects approved during the year 2003-04.

1. MS Quality Upgradation Facilities at Haldia: Approved in May'03 at an estimated cost of 359 crore.

2. MS Quality Upgradation Facilities at Gujarat: Approved in July'03 at an estimated cost of Rs. 390 crore.

3. Paradeep – Haldia crude oil pipeline system approved at an estimated cost of Rs 1178 crore.

4. Chennai-Trichy-Madurai product pipeline system-Approved at a cost of Rs 363.21 crore in July 2003.

4.1.15.3 Major Ongoing Projects

1. Linear Alkyl benzene (LAB) Project at Gujarat.
2. Diesel Hydrotreatment Facilities at Mathura
3. MS Quality Upgradation Facilities at Mathura.
4. Integrated Para-xylene /PTA at Panipat.
5. Panipat Refinery Expansion Project
6. MS Quality Upgradation Facilities at Haldia
7. MS Quality Upgradation Facilities at Gujarat
8. Panipat Refinery Expansion linked pipeline projects
9. Chennai-Trichy-Madurai Product Pipeline System
10. New depot at Pedapalli
11. Bottling Plant at Vasai

4.1.16 Environment protection

IOCL is fully committed to environment protection and maintaining ecological balance. The achievements during the year 2003-2004 were as under :

- Full compliance of effluent and emission norms at all refineries.
- Treated effluent has been reused to the extent of 60-65% at the refineries. Panipat refinery continues to maintain Zero discharge.
- Bioremediation trials with OILIVOROUS-A, an effective and potent bacterial consortium developed by IOC (R&D) & TERI, for degradation of acid tar sludge at Digboi Refinery have been successfully completed. Bioremediation of acid tar sludge with OILIVOROUS-A is in progress.
- Hydrogen Unit and Diesel Hydrotreater unit at Digboi Refinery commissioned in Oct. 2003 and Dec. 2003 respectively for reduction of sulphur content in Diesel.

- New Sulphur Recovery Unit (SRU-III) at Haldia Refinery commissioned in Oct. 2003 for reduction of Sulphur Dioxide emissions from the refinery.
- Under Auto LPG Implementation program, Auto LPG Dispensing Stations (ALDS) are being set up in the most polluted cities as per directive of Hon'ble Supreme Court of India.

ALDS commissioned: 28 (Delhi- 4, Mumbai- 5, Bangalore - 4, Hyderabad - 3, Chennai - 3, Kolkatta -1, Jaipur - 2, Chandigarh - 1, Lucknow - 1, Tirupati - 1, Ahmedabad - 1, Indore - 1, Bhopal - 1)

Use of LPG in automobiles will considerably reduce vehicular emissions thereby reducing the pollution levels in these cities.

- Lube Plant, Chennai has been accredited with ISO-14001.

An annual report showcasing the Safety, Health and Environment efforts of all the Divisions of the corporation for the year 2002-2003 was published on the occasion of World Environment Day 2003.

4.1.17 Safety, Health & Environment

IndianOil is committed to conducting business with a strong environment conscience ensuring sustainable development, safe workplaces and enrichment of quality of life of employees, customers and the community. A comprehensive safety, health & environment management system is in place in all operating units and installations under which the facilities are periodically reviewed and upgraded from time to time for better performance. Safety systems are regularly audited for continuous improvement. Environment management systems of all refineries and major marketing and pipelines installations are certified to ISO-14001 standards.

All IndianOil refineries fully comply with the prescribed environmental standards and incorporate state-of-the-art effluent treatment technologies. Sustained efforts are being made to further improve the existing standards and facilities.

IndianOil gives due importance to the man behind the machine and considers his health

and safety a valuable asset. Accordingly, Occupational Health of the employees is monitored across the Corporation. All Occupational Health centers are certified under Occupational Health and Safety Management System (OHSMS).

4.1.18 Conservation of petroleum products

4.1.18.1 Energy & loss minimization

Energy & loss

Indian Oil Corporation continues to place emphasis on energy conservation and reduction of hydrocarbon loss at its Refineries.

The energy index in terms of MBTU/BBL/NRGF of IOC Refineries in the year 2002-03 was 114. As a result of various energy conservation measures undertaken, the energy index has been brought down to 111.5 (to be reconciled) in the year 2003-04.

4.1.18.2 Conservation of petroleum products

Indian Oil Corporation Ltd. (IOC) continuously maintains thrust on oil conservation at all its seven operating refineries. Through continuous in-house process monitoring and study on latest technological developments, various energy optimization and hydrocarbon loss minimizing schemes are implemented at IOC refineries.

In IOC refineries, several energy conservation schemes have been implemented, resulting into recurring oil savings. This is in addition to continuous improvements brought about by operational changes and practices as well as increased awareness among its employees. The major schemes implemented during the year include the following :

- Stabilisation of the two Heat Recovery steam generators (HRSGs and the Gas Turbines (GTs) in Oct'03 at Barauni Refinery (GT-2 commissioned in Feb'03).
- Installation of high efficiency 1 x 50 T/hr boiler at Guwahati Refinery in Mar'04.
- Combined Naphtha re-run section for AU-1&2 of Gujarat Refinery in AU-1 by installing high performance trays in splitter columns.

- Conversion of old reciprocating steam driven air compressor to centrifugal compressor at Haldia and Mathura Refineries.
- Condensate recovery schemes at Haldia, Mathura, Guwahati and Digboi Refineries.
- Several other operational improvements for reduction of energy consumption and Hydrocarbon loss.
- Replacement of motor drive of cooling water pump at TPS cooling tower by steam turbine at Haldia.

With the implementation of various energy conservation measures, Energy consumption & Loss in the refineries, has reduced to 111.5 MBTU/Bbl/NGRF in 2003-04 as compared to 125 MBTU/Bbl/NGRF in 1999-00 :

*(MBTU/Bbl/NGRF is the unit for measuring energy consumption + loss in Refinery sector as per the guidelines of Center for High Technology)

4.1.19 Energy conservation awards

- IOC's three Refineries received National Energy Conservation Award 2003 in the Refining Sector, instituted by Ministry of Power on 14th Dec'03
- Gujarat: Special prize (second consecutive year)
- Panipat: First prize (Second consecutive year)
- Mathura: Certificate of Merit
- Gujarat Refinery won the prestigious "Jawaharlal Nehru Centenary" rolling trophy for best performance in Energy consumption for the year 2001-02 for the third consecutive year. Panipat Refinery received second prize.
- Panipat Refinery won the first position in "Jawaharlal Nehru Centenary Award – 2001-02" for the best improvement in energy consumption over past best performance.
- Mathura refinery received "National Award for Excellence in Energy Management" from Confederation of Indian Industries (CII). The Refinery also bagged the most useful presentation award in the same event based on audience poll.

Guwahati and Haldia Refineries received first and third prize respectively from MOP&NG for minimum steam leak during survey conducted by CHT team in Oil Conservation Fortnight-2003 for the year 2002-03.

4.1.20 Expenditure incurred under special component plan and tribal sub plan by all the four Divisions

During the year 2003-04, IOC has spent an amount of Rs 971.37 lakh towards Community Development Activities out of which an amount of Rs 150.35 lakh has been utilized towards SCP/TSP till 31st Mar, 2004; the amount exclusively spent for tribal sub plan is Rs 54.14 lakh.

4.1.21 Control of pollution and other environmental and safety initiatives

IndianOil while achieving excellence in business activities is consciously committed to achieve environmentally sustainable growth and has continued with this endeavour during the year 2003-2004.

4.2 HINDUSTAN PETROLEUM CORPN. LTD. (HPCL)



4.2.1.1

Hindustan Petroleum Corporation Limited (HPCL) is the second largest 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 the other in Visakhapatnam (East Coast) with capacity of 7.5 MMTPA. The Corporation holds 16.97% equity in Mangalore Refinery and Petrochemicals Limited having a capacity of 9 MMTPA, and is proposing to set up a refinery in the state of Punjab. The Corporation owns and operates the largest Lube Refinery of 3,35,000 Tonnes capacity for Lube Base Oils. The authorised and paid-up capital of the Corporation as on 31.3.2004 were Rs. 350 crore and Rs. 338.90 crore respectively. The Government of India holding in HPCL is 51.01%.

4.2.1.2

During the year 2003-04, the two refineries of the Corporation achieved a combined crude throughput of 13.70 MMT as compared to 12.93 MMT in 2002-03. The total sales (excluding export) of petroleum products during the period



HPCL's 1st E-Fuel Station at Visakh

2003-04 was 18.75 MMT as compared to 18.23 MMT during the year 2002-2003. During the year 2003-04, the sales turnover was Rs. 56,332 crore and net profit was Rs. 1903.94 crore as compared to Rs. 52,699 crore and Rs. 1537.36 crores during 2002-03. The Board of Directors has recommended a dividend of Rs. 843 crores (including an interim dividend of Rs.229 crores) for the year 2003-04 compared to Rs. 757 crores for the previous year.

4.2.1.3 During the year 2003-04, the Corporation commissioned 644 Retail Outlets and 95 LPG distributorships and released 21.15 lac new LPG connections as compared to 177 Retail Outlets, 76 LPG distributorships and 18.15 lac new LPG connections during the year 2002-03.

4.2.2 Major Projects Completed

POL: Project for construction of new terminal at Hassan on Managlore-Bangalore Pipeline with 65,500 KL tankage along with augmentation of tankage at Devengonthi by 10,000 KL was commissioned within the approved cost of Rs 76.24 crores. Resitement of Ernakulam terminal to Irumpanam with a tankage of 36,210 KL was completed within the approved cost of Rs 46.10 crores in December 2003.

4.2.3 Major Projects Approved

Clean Fuels Project to meet Euro-II norms for MS and HSD products at Visakh Refinery has

been approved by HPCL Board at a total cost of Rs. 1635.18 crores, during April' 03. Pre-project activities have been initiated.

4.2.4

On-Going Projects

- **Additional Tankages** : Total tankages amounting to 98,110 KL are currently under construction at four locations (Padepalli, Aonla, Haldia & Sewree-Wadala) at a total cost of Rs 70.31 crores.
- **LPG Plants** : Construction jobs of new bottling plants at Indore (44 TMTA) & Mahul (80 TMTA) have begun at a total cost of Rs 41.82 crores. Augmentation of capacity by 8 nos. bottling plants with a total of 178.5 TMTA at a cost of Rs 23.36 crores is in progress.
- **Punjab Refinery Project:** HPCL has initiated activities towards implementing a new grassroots Refinery at Phulokhari in Bathinda district of Punjab. The project received approval from GOI vide letter dated October 13, 2000 for implementation of the project through a 100% subsidiary company of HPCL. The Environmental clearance/no objection certificate for the Refinery Project have been received.

In view of the changes in the supply/demand scenario & requirement for change in product specification, the capacity and configuration of the refinery and pipeline sizes was reviewed in detail.

It is envisaged to phase out the implementation of 9 MMTPA Refinery by implementing the project initially as 6 MMTPA Refinery. Revised DFR for 6 MMTPA Refinery at an estimated cost of Rs. 8,336.45 crores was approved by HPCL Board on January 9, 2003.

- **Green Fuels & Emission Control Project** (Mumbai Refinery) :

The objectives of “Green Fuels and Emission Control Project” (GFECP) is to (i) meet future specifications Bharat Stage III (Euro III) for MS with a capability to make Euro-IV MS and Euro-III Diesel in line with the Auto Fuel Policy recommended by Mashelkar Committee, (ii) reduce Sulphur emission, (iii) debottlenecking of existing CDU, VDU & FCCU, (iv) maximise product yield and returns and (v) achieve crude processing capacity of 7.9 MMTPA. This project has been approved by the Board of Directors on October 16, 2002 at a capital outlay of Rs. 1152 crores. The scheduled date of completion of the project is 30 months from the date of approval by the Board i.e., April 15, 2005.

- **Visakh Refinery Clean Fuel Project** (Visakh Refinery) :

The objective of “Clean Fuels Project (CEP)” is to (i) meet future specifications Bharat Stage II/III (Euro II/Euro III) for MS & HSD in line with the Auto Fuel Policy recommended by Mashelkar Committee, (ii) reduce Sulphur Emissions, (iii) maximise Product yields and returns and (iv) achieve Crude processing capacity at 8.3 MMTPA. This project has been approved on 30.04.03 at a capital outlay of Rs. 1635 crores. The scheduled completion of the project is 30 months from the date of approval of Board i.e. by October 30, 2005.

4.2.5 Policy initiatives undertaken

HPCL is marching along a path of high growth in keeping with the national priorities. Its ambitious plans include furthering the synergies and participating in the oil industry's growth by vertically integrating in the upstream and downstream sectors. The policy initiatives

undertaken also include growth and diversification ventures in the following sectors:

Oil Exploration and Production

HPCL jointly with financial Institutions (ICICI & HDFC), formed a Company named M/s. Prize Petroleum Company Limited for exploration and production of oil and natural gas and activities related thereto, on 28th October, 1998. HPCL has 50% participation in the equity of the Company. HPCL plans to enter into the E&P sector directly or in consortium with leading majors, using the expertise of its Joint Venture Company to review, analyse and advise HPCL on prospects. Accordingly, HPCL had submitted joint bids for a few blocks under NELP – IV and has won an offshore block in the Gujarat Cambay Basin, in consortium with Gujarat Petroleum Corporation Limited and others.

HPCL has entered into an MOU with Oil & Natural Gas Corporation Limited (ONGC) for cooperation in the sector. Government of India has awarded two deep water blocks in the Kerala-Konkan coast to the HPCL - ONGC consortium.

Import and Handling of LPG

HPCL, in joint venture with M/s. Total Gas & Power India, a wholly owned subsidiary of M/s Totalfina Elf of France has formed a company named M/s South Asia LPG Co. (P) Ltd. on November 16, 1999 for construction of an underground cavern storage of 60,000 MT of LPG and associated receipt facilities at Visakhapatnam, Andhra Pradesh. This project, which is first of its kind in South East Asia, will enable import of large parcels as high as 40,000 MT against present parcel size of 13000 MT, which will result in freight savings. Total estimated cost of the project is approx. Rs. 333 crores. All statutory approvals have been received. The cavern is expected to be completed during the year 2006-07.

Bitumen Emulsions

Hindustan Colas Ltd. (HINCOL) is a joint venture between HPCL and M/s Colas, SA of France, with 50 % participation each, formed for manufacturing and marketing of Bitumen emulsions. The Company presently operates four plants in India and has plans for putting up additional plants and also for taking up

equity in an Asphalt Refinery Project abroad. The company holds over 50% market share for bitumen emulsions.

HPCL formed a joint venture Company with GAIL, viz., Bhagyanagar Gas Ltd., to distribute and market environment-friendly fuels such as natural gas, piped gas, Compressed Natural Gas (CNG), Auto LPG in and around Andhra Pradesh.

HP Gas : Rasoi Ghar (Community Kitchen)

LPG Marketing in India has traditionally been confined to domestic & non-domestic consumers in urban/semi urban markets and all efforts till date have been in meeting the demands of these markets. With the saturation of urban and semi urban markets and the adequate availability of LPG in India, there is a need to look for alternative markets. Rural India presents a big opportunity for growth of LPG in India. Accordingly, the idea of a community kitchen (HP GAS Rasoi Ghar) was mooted to the Panchayat of the village Agwan, Tal. Palghar, District, Thane and a pilot project was commissioned on 17.08.2002. HPCL carried forward this initiative and has commissioned 470 number of Community Kitchen as of March '04, covering 125 districts spread across 20 states, which benefits over 8700 families.

HPCL had launched its new Retail Brand "Club HP" which assures high-quality personalized "Vehicle and Consumer Care" through a select set of outlets during 2002-'03. The roll out of "Club HP" is in a phased manner providing a distinct set of basic and value added offering which include "Fuel Quality and Quantity Assurance", "Efficient & Expert Service", "Quick Care Point", "Digital Air Tower", "Vehicle Finance and Insurance related services", "Bill Payment facilities", "HPCL-ICICI Credit Cards", "Loyalty Programs" and a host of other consumer amenities, continued in 2003-'04 across the country. A total of 1280 Outlets have been upgraded to "Club HP" status, as of March 2004.

Branded Fuel

Taking its Retail Branding initiative one step further, HP CL had launched branded petrol as well as diesel in select markets in the country

during 2002-'03, The new branded products are aimed at the discerning customers in major cities across the country and carry the promise of enhanced performance and improved engine health. "POWER" is the Brand name for the new generation petrol that contains specially imported additives. The new diesel brand, "TURBOJET" has been formulated with specially imported additives to offer a solution for diesel engines. As of March '04, "Power" has been launched at 742 Outlets and "Turbojet" at 459 Outlets, across the country.

HPCL was first in the Industry to commission Mobile Retail Outlet at Ahmednagar District Maharashtra; Launched the first mobile petrol pump in Chhatisgarh.

4.3

BHARAT PETROLEUM CORPORATION LIMITED (BPCL)



4.3.1.1

BPCL is an integrated Oil Company in the downstream sector engaged in refining of crude oil and marketing of petroleum products. It has also diversified into the manufacture and marketing of petrochemical feedstock. The Corporation has an all India presence through its extensive marketing network. The authorised and paid-up share capital of the Corporation as on 31.3.2004 is Rs. 300 crores. The Government of India holding in BPCL is 66.2%.

4.3.1.2

During the year 1.4.2003 to 31.3.2004, BPCL refinery achieved a thuput of 8.76 MMT as compared to 8.71 MMT during 2002-03. The profit after tax during the period 1.4.2003 to 31.3.2004 was Rs. 1,694.57 crore as against Rs. 1,250.03 crore during 2002-03. For the year 2003-04, the proposed total dividend is Rs. 592 including Dividend tax crore.

4.3.1.3

During the year 1.4.2003 to 31.3.2004, the Corporation sold 20.37 MMT of petroleum products as against 19.86 MMT during the year 2002-03. During the period 1.4.2003 to 31.3.2004, the Corporation commissioned 676 new Retail Outlets, 7 SKO-LDO dealerships and 94 new LPG distributorships as against 143 new Retail Outlets, 11 SKO-LDO dealerships and 105 new LPG distributorships during 2002-03. The Corporation released 26.77 lac new LPG connections during the year 1.4.2003 to 31.3.2004 as against 19.15 lac connections during 2002-03.

4.3.2 Policy initiatives undertaken by BPCL

4.3.2.1 Product security

BPCL has acquired the Government of India's shareholding in Kochi Refineries Ltd. (KRL) and IBP's stake in Numaligarh Refinery Ltd. (NRL). With these acquisitions, the two companies KRL & NRL have become subsidiaries of BPCL.

Consequent to the above acquisition, BPCL's product availability from its own sources has gone up from 45% to 90% of its sales. In addition, BPCL has tied up with other Oil companies to cover its current deficit in the short term.

BPCL has also plans to set up grassroots refineries at Bina in Madhya Pradesh and at Lohagara in Uttar Pradesh for meeting its deficit in the Northern Region.

4.3.2.2 Entry in exploration and production of oil and gas

In order to have reasonable supply security, hedging of price risks and benefits of an integrated supply chain in the volatile oil market, it has become necessary for BPCL to explore avenues for securing its own equity crude by entering the upstream sector. Further in view of the recent trend of increasing displacement of liquid fuels by natural gas as an environment friendly product, it has also become imperative that the company enters the gas business to

maintain its share in the energy market in the country. With these objectives, BPCL proposes to enter the upstream sector, covering both oil as well as gas.

Since Exploration and Production (E&P) is a high risk, high return business involving typically three phases of operations viz. Exploration, Development and Production, BPCL proposes to balance the risk by looking into a mix of exposure to all the three phases with an E & P budget of Rs. 1000 -1500 crores over the next five years.

The Board of Directors of BPCL in its meeting held on 29.5.2003, has given an 'in-principle' go ahead for venturing into this new business by way of bidding for NELP – IV and/or bidding for 'farming-in' opportunities.

4.3.2.3. Refinery

Some of the Policy initiatives taken by the Refinery SBU are as under :

- Constant efforts to upgrade product quality in line with the trends worldwide.
- Optimizing costs in the entire value chain, from sourcing and transportation of crude, processing and optimization of products mix, and eventually realizing better margins.

4.3.3. Retail

● Enhanced Fuel Proposition (EFP)

The Pure for Sure (PFS) programme is an intense effort towards ensuring delivery of



BPCL's Modern Retail Outlet

pure fuel in the right quantity to the consumers, deliver courteous and professional service and increase speed and efficiency of fuelling. The programme involves delivering of products to retail outlets in modified tank lorries fitted with tamper proof locks, comprehensive sealing of dispensing units at the retail outlets, periodic and surprise checks by company personnel, monthly testing of product samples, periodic audits and re-certification once in six months.

The PFS programme has been well received by the consumers and most of the certified outlets have registered high growth compared to other outlets in the neighbouring area.

Presently, the company has 2669 Retail outlets under PFS. Approximately 65% of MS volumes and 55% of HSD volumes were sold through these outlets. This Programme has been very successful in gaining customers confidence and enhancing sales from PFS Outlets.

- **Petrocard**

The Corporation was the first to launch a comprehensive Customer Loyalty Programme which rewards the customer each time they buy any product from its Retail Outlets using the card. The programme is called PETROBONUS and is administered through a Petrocard which uses the state-of-art Smart Card Technology. The technology, in addition to facilitating easy operations for the customers helps in understanding customers fueling behavior comprehensively.

Petrocard was also voted as the 'Product of the Year' by a Smartcard Forum of India. Currently over 14 lakh customers have been enrolled, thus making the Petro Bonus programme as the largest customer loyalty programme in India.

- **Smart fleet card**

BPCL's Retail Highway Strategy has identified truck drivers as a large and valuable customer segment and to cater to their needs, two tier Upgraded Highway Network has been developed. The first tier consists of One Stop Truckers Shops

(which have been branded as **Ghars**), which are a network of strategically located sites, which are Company Owned and Company Operated (COCO).

The second tier consists of Fleet Card Retail Outlets (FCROs), a set of carefully selected Retail Outlets known for their high reputation in the market and having been certified as PFS. Smart Fleet Card, a unique programme for Fleet Owners and Corporates, has evoked enthusiastic response from Truck Fleet owners and is accepted in over 1600 Outlets and more than 4 lakhs vehicles have been enrolled.

- **New generation petrol fuel : speed**

Deregulation has opened avenues for marketing improved branded products. BPCL realised the opportunity by launching New Generation Petrol - SPEED.

SPEED has been produced with world class additives sourced from M/s Chevron Oronite Company, LLC, USA and offers advantages of maximum power, lower vehicle maintenance, increased mileage and reduced emission by effectively removing harmful carbon deposits.

After introducing SPEED in Mumbai in July 2002, 'SPEED' has been successfully launched in 26 territories across the country and is strategically marketed from 1171 'Pure for Sure' certified Retail Outlets. BPCL holds approx. 64% market share in the premium fuel sector. It is proposed to launch 'SPEED' in more cities in a phased manner, thus providing value added branded fuel to the customers.

4.3.4 LPG

With a view to achieving excellence in customer service, high standards of safety and operating practices, the following initiatives which have been taken are ensuring comfort, convenience and reliable service to the Bharatgas customers :

- Improved customer services at Territory offices, LPG distributorships with effective redressal of customer complaints and improved response at distributor's end.
- BPCL has launched a 24 hours service through a unique telephone no. 1712

- where the customer can order for Bharat Gas Cylinder or log a leakage call.
- iii. Improved inventory management at LPG distributorships.
 - iv. Ensure customer safety and enhanced customer awareness.
 - v. Training of LPG sales staff, distributors and their staff to improve their technical/behavioral skills.
 - vi. Computerization of the LPG distributorship network for on-line accounting

Pioneered 24 Hour Bharat gas Helpline which has been implemented in all major markets.

- **Introduction of 5 kg. Cylinder in rural markets**

Keeping in mind the lower income customers in rural, and hilly areas, and the need to penetrate extensively in rural markets, it was felt that there was a need to introduce a smaller size cylinder so as to reduce both initial deposit cost as well as the recurring refill cost.

BPCL, in August 2002 had launched 5 Kg. Cylinders at 33 selected Rural Market in the State of Andhra Pradesh, Karnataka, Tamil Nadu, Punjab, Rajasthan,

Maharashtra, Gujarat, Madhya Pradesh, & West Bengal.

- **Rural mobile vehicle**

In order to reach the far - flung rural customer, BPCL has introduced the Rural Mobile Vehicle (RMV) way back in 1999 in the state of Punjab. Encouraged by this novel method of reaching rural customers, BPCL has introduced 24 no. of RMVs during the year.

- **LPG as auto fuel**

LPG being a clean environmentally friendly fuel, BPCL was the first Oil Company to take up the initiative to set up Auto LPG Dispensing station to run vehicles on LPG as a pilot project in Delhi in October 1999. BPCL has commissioned 23 Auto LPG dispensing stations during **the year 2003-04.**

4.3.5

Lubricants

As a part of innovative strategies for growth, BPCL entered into co-branding arrangement with TELCO and launched co-branded gear oil grades, automatic transmission fuel and multi-purpose grease for all commercial vehicles. In addition to domestic market, BPCL is also looking into export market to sell lubricants.



BPCL's LPG Tanks

During the year, pilot exports were done to Nepal and Bangladesh and the same are expected to increase considerably during the years to come.

A major thrust has been given to Research and Development to support the Lubricant business initiatives.

Following new products were developed :

- i) **Speed** - Branded Premium Petrol
- ii) High Performance Engine Oil for Gasoline
- iii) Customer specific Rust Preventive Oils
- iv) Gas Engine Oil for stationary natural gas engines
- v) Exclusive grades for Defence
- vi) Original Equipment Manufacturer (OEM) specific Hydraulic Oils
- vii) Alternate formulations for existing grades

Investment in JVC : Indraprastha Gas Co. Ltd.

Indraprastha Gas Co. Limited, a joint venture between Gas Authority of India (GAIL), BPCL and the Government of National Capital Region of Delhi was incorporated on

23.12.1998 for implementing the Delhi City Gas Project with an Authorised Capital of Rs. 220 crores.

The equity of the company is Rs. 140 crores and BPCL's contribution towards equity works out to Rs. 31.50 crores @ 22.5% which has already been invested. IGL shares (Offer price Rs.48) were listed on BSE on 26.12.2003 at a price of Rs.120 on the day of listing. The Promoters are holding 31.5 crores shares each in IGL and Financial Institutions holding stands reduced to 21.43% (from 50%) equity after the IPO. The Company which went for an IPO received an overwhelming response with 5.14 lakh applications, the highest ever for any book-building offering till date. The issue was oversubscribed 35 times.

The JV has been formed for distribution of Natural Gas to the domestic consumers as well as commercial establishments through pipeline in the National Capital Region of Delhi and installation of CNG outlets to feed the automobile sector. Phase I of the project would cover 2.6 lakh domestic customers and cater to the CNG requirements of 40,000 vehicles and provide connections to a number of large and small commercials. The company is vigorously pursuing the gas distribution project in Delhi. As of March, 2004, IGL has commissioned over 117 CNG stations in Delhi. Number of CNG vehicles has crossed 88,440.

CHAPTER - V



5. OTHER UNDERTAKINGS/ ORGANISATIONS

5.1 ENGINEERS INDIA LIMITED (EIL)



5.1.1. Engineers India Limited is a leading engineering and consultancy company in India situated at New Delhi. It has been serving petroleum, petrochemicals and other process industries and the metallurgical industries since the mid-sixties. EIL provides a complete range of project services in these fields including process design, engineering, procurement, construction management, project management and supervisory assistance for commissioning and plant start-up. EIL also takes up such projects on LSTK basis. It has played a very significant role in setting up a large number of process plants in India and abroad.

The authorised and paid-up share capital of the company is Rs.100 crore and Rs.56.16 crore respectively.

The company has regional engineering offices in Chennai and Vadodara, branch office in Mumbai, zonal office in Kolkata, inspection/procurement offices at various locations all over India and also in London and construction offices at different project sites in India and abroad. EIL has engineering offices in Abu Dhabi (U.A.E.) and Doha (Qatar) and a marketing office in Australia.

EIL has a wholly owned subsidiary company in Malaysia named EIL Asia Pacific Sdn Bhd (EILAP) for executing projects and a subsidiary company in India - Certification Engineers International Ltd. for providing certification and inspection services. Total manpower strength of the company as on 31.3.2004 was 2,848.

EIL's quality management system conforms to ISO-9001:2000 version.

5.1.2 Performance

(a) Physical Performance-Important Assignments secured during 2003-2004

The company continued its extensive efforts to keep order book position healthy and

commensurate with the manpower availability inspite of the stiff competitive environment.

During the year 2003-04, EIL secured new business amounting to Rs.1,525 crore. Important assignments in the fields of refineries, pipelines, offshore oil & gas, metallurgy and ports & terminals were secured by EIL during the year.

Major jobs secured include the following :

- EPCM services for MS Quality Upgradation Project at Gujarat Refinery of IOC.
- Engineering consultancy services for Capacity Expansion-cum-Modernization Project Ph I of Kochi Refineries Ltd.
- Consultancy services for CRU Revamp Ph-I & II at Mumbai Refinery of BPCL.
- Preparation of process packages for non-licensed units under Ph-I of Visakh Refinery Clean Fuels Project of HPCL.
- Consultancy services for CDU Rationalization Project of BPCL.
- DFR for Port Sudan Refinery for ONGC, DFR for expansion of Panipat Refinery from 12 to 15 MMTPA (Ph-I) and scoping study for Panipat Refinery Expansion from 15 to 21 MMTPA (Ph-II) of IOC.
- Licensor selection, process package and DFR for FCCU Revamp Project at Mathura Refinery of IOC.
- Revamp study report and DFR for production of Euro-III Grade HSD at Numaligarh Refinery of NRL.
- Preparation of BDEP in association with Axens, France for Isomerisation and FCC Gasoline Treater Units under Green Fuel & Emission Control Project at Mumbai of HPCL.
- DFR for Strategic Crude Oil Storage for Ministry of Petroleum & Natural Gas.
- Lumpsum Turnkey (LSTK) assignments from IOC comprising of two EPCC Packages (PX1 & PX2) of the Integrated PX-PTA Project at Panipat of IOC.
- Consultancy services for preparation of DFR for Nephtha Cracker Project and downstream projects of IOC.
- PMC services for Blue Sky Project in the city of Lucknow and Kanpur of GAIL.
- Services for engineering and procurement for Hazira LNG Pvt. Ltd/Hazira Port and Harbour of HPCL.

- Feasibility study for Loni - Miraj - Solapur Multi - Product Country Pipeline.
- Consultancy services for MUT Pipeline Project at Mumbai High of ONGC.
- Consultancy services for Mora-Sajod Pipeline Project of Gujarat State Petronet Ltd.
- LSTK contract for D-1 Well and Water Injection Platform Project of ONGC.
- LSTK contract for laying/installation of Line Pipes for Three Pipelines Project in Mumbai High - North Field of ONGC/
- Third party inspection and quality surveillance services for Sardar Sarovar Narmada Canal works of Sardar Sarovar Narmada Nigam Ltd.
- Consultancy services for Pipeline Replacement Project in Western Offshore for development of Bassein East Oil Field of ONGC.
- Engineering consultancy services for 1.4 MMTPA capacity Greenfield Alumina Refinery at Lanjigarh (Orissa) of Sterlite Industries Ltd.
- Consultancy services for pre-project activities (Ph-I) for implementation of Uranium Processing Plant in Andhra Pradesh for Uranium Corporation of India Ltd.

In addition to above, EIL won a number of assignments for specialized services in the areas of environment engineering, risk analysis, advance control and optimization, heat and mass transfer, information technology, specialists maintenance and also new infrastructural industries related areas such as intelligent buildings, highways and related works.

Outside India, EIL was successful in securing following major jobs :

- FEED for Inter Refineries Pipelines Project of Takreer, Abu Dhabi/
- Consultancy services for Integrity Enhancement of Fire Protection System for Umm-Al-Nar Refinery to Takreer, Abu Dhabi.
- Engineering services for Azab and Sahil Oil Facilitation Modifications Project of ADNOC, Abu Dhabi.
- Supervision services for 9th Olefin Complex to Arya Sasol Polymer Co., Iran
- Managing contractors services for 9th Olefin Complex to Pars Petrochemical Co., Iran
- Technical services contract with OIEC/EIED, Iran
- Project Management Services for Utilities & Offsites Ph-II to Fajr Petrochemical Co., Iran.
- Detailed design engineering services for RSPPM Project of ONGC to Iranian Offshore Engg. & Construction Co., Tehran
- Engineering consultancy services for FEED for New Condensate Disposal Tank of NGL Plants, Mesaieed for Qatar Petroleum, Qatar
- Extension of running contracts for technical assistance with NPCC, Abu Dhabi, IRITEC, Iran, Pars Petrochemical, Iran, Bor Ali Sine Petrochemical Co., Iran, BANOCO, Bahrain and EILAP, Malaysia.

b) Financial Performance

EIL registered an income/receipt of Rs 1117.42 crore during the year 2003-04 as compared to Rs 859.28 crore during 2002-03. Its profit before tax was Rs 130.09 crore and profit after tax Rs 80.18 crore in 2003-04 as compared to Rs 111.15 crore and Rs 64.16 crore respectively during 2002-03. EIL has declared dividend of Rs 36.50 crore for the year, 2003-04, which is 65% of its paid up capital.

5.1.3 Policy initiatives undertaken

The salient policy initiatives taken by EIL include the following :

Diversification

In order to access business opportunities in the infrastructure and related sectors in the domestic market, EIL diversified into selected infrastructure sector areas including highways & bridges, airports, non-conventional/renewable energy sources, power projects, intelligent buildings, urban development, and water related projects.

Turnkey Assignments

After securing two large projects relating to MNW Offshore Platform and N11 & N12 Well Platform of ONGC on LSTK basis, EIL made a breakthrough in securing one large onshore project viz. PX1/PX2 of PX/PTA Project at Panipat on LSTK basis from IOC. In the offshore, EIL secured D-1 Well & Water Injection Platform Project and Three Pipelines Project of ONGC on LSTK basis.

Strategic Plan

EIL has recently prepared a Strategic Plan for the period 2003-08 and is preparing an Action Plan to implement the same. A number of strategic initiatives have been drawn up to achieve the targets.

Human Resource Development

For updating the functional and technical skills of the employees, 50 training programmes were identified in the MOU for completion during 2003-2004. The HRD Plan entitled "Strategic Human Resource Management Plan for EIL", as approved, is being implemented in EIL. Manpower rationalisation and multi-skill training have been implemented.

5.2 BALMER LAWRIE COMPANY LTD. (BL)



5.2.1 Balmer Lawrie (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 21, Netaji Subhas Road, Kolkata - 700 001. The authorised capital, paid-up capital and reserves & surplus of the Company as on 31.3.2004 was Rs. 30 crores, Rs. 16.29 crores and Rs. 147.69 crores respectively.

5.2.2. 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) Industrial Packaging (ii) Greases & Lubes (iii) Performance Chemicals (iv) Travel and Tours (v) Cargo (vi) Tea Exports (vii) Project Engineering and Consultancy.

5.2.3 During the year 2003-04, the company has manufactured 34.04 lakh barrels/drums against 37.13 lakh achieved in 2002-03. The company has produced 32,000 MT of Greases/ Lubricants during 2003-04, as against 31,000 MT in the year 2002-03. The Production of leather chemicals is around 3,627 MT during the year 2003-04, as against 3527 MT in 2002-03.

5.2.4 The total turnover of the company is about Rs. 985 crores in the year 2003-04 as against Rs. 869.40 crores during the last year. The company has achieved profit after tax of Rs. 18.58 crores during the year 2003-04, as against profit after tax of Rs 16.49 during the year 2002-03. The company has declared Rs. 5.70 crore as dividend for the year, 2003-04.

5.3

BIECCO LAWRIE LIMITED (BLL)



5.3.1 Biecco Lawrie Limited, a Government of India Enterprise, under the administrative control of the Ministry of Petroleum &

Natural Gas (MOP&NG), was incorporated on 23rd December, 1919. This is a medium sized Engineering Unit with diversified activities having two factories located at Kolkata. During the financial year under review, the company registered a total turnover of Rs. 31.25 crore. During the same period, the company incurred a net loss of Rs. 3.09 crore, while the cash loss was to the tune of Rs. 2.01 crores. Net Worth of the company as on 31.3.2004 was negative and stands at Rs. 23.22 crores.

5.3.2 The physical performance of the company, upto March, 2004 with regard to turnover of electrical operations inclusive of switchgears, electric repair jobs and electrical projects was Rs. 28.43 crore as against Rs. 21.55 crore achieved in the corresponding period of the preceding financial year, showing a positive trend in 2003-04.

5.3.3 In last two financial years, the Company incurred loss resulting in networth becoming negative by Rs. 23.22 crores. Meanwhile, a Revival/ Disinvestment plan as approved by the Board of Directors of the Company was submitted to Government for consideration. The Ministry has approved financial assistance to the tune of Rs. 18.52 crores as an interest free advance from OI DB.

5.3.4 The company has engaged ICRA Limited, an independent agency, to study restructuring of the company prior to disinvestment. ICRA has submitted its report suggesting restructuring of company prior to disinvestment. The report is under consideration of Government.

5.4 OIL INDUSTRY DEVELOPMENT BOARD (OIDB)

5.4.1 Objectives of Oil Industry (Development) Act, 1974

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.

5.4.2 Functions of the Board

The Oil Industry Development Board (OIDB) was set up in January, 1975 under the Oil Industry (Development) Act, 1974 to provide financial assistance for the development of Oil Industry. Its organisational 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.

5.4.3 Resources of the Board

The funds required for various activities, envisaged under the Act, are made available by the Central Government after due appropriation by Parliament from the proceeds of cess levied and collected on indigenous crude oil. The proceeds of this duty are credited to the Consolidated Fund of India and sums of monies, 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.1,800/- per tonne (w.e.f. 1 March, 2002) excepting on blocks in joint ventures under NELP. OIDB has, so far, received an amount of Rs.902 crore till date, from the cess collection. No amount has been allocated to OIDB out of cess generated during the years from 1983-84 to 1987-88 and 1992-93 onwards.

The internal resources generated by way of interest receipts on loans supplement the OIDB Fund. As on 31 March, 2003, an amount of Rs.7422 crore (approx.) has accrued to the Oil Industry Development Fund. During 2002-03, internal resources contributed Rs.355 crore approx. to the total resource availability. The Board was exempted from liability to pay tax on its income upto 31.03.02. However, Income Tax is now being levied w.e.f. 01.04.02 and an amount of Rupees 163.53 crore has been paid by OIDB during 2002-03 by way of Income Tax.

5.4.4 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 assistance by way of grant of loans for Projects, disbursements of grants for Research & Development programmes, refinancing of loans and funding expenditure of scientific advisory committees, study groups, task forces, etc. In order to encourage significant initiatives in the area of oil exploration, the OIDB's financial assistance for exploration work in high-risk areas carried an interest rate of 5% p.a. However, in the event of commercial discovery being made, usual interest, as on term loans, is charged. Funds made available by OIDB during 2002-03 for projects in areas other than exploration carried an interest rate of 5% to 11.25% p.a. depending upon the nature of the project being funded and the market conditions. During 2003-04, the rates of interest of OIDB loans varied between 5% to 9.25% depending upon the nature and location of the project. In March, 2004, these rates were again reviewed by OID Board and it was decided that interest rates on future OIDB General Term Loan for five years and ten years to Oil PSUs will be levied on the basis of last 12 month's average of Government Securities Rates plus 100 basis points on floating basis. These interest rates are required to be reviewed on 1st April of every financial year. As regards OIDB loans to Joint Ventures Companies, the Board approved that in case no promoter company takes guarantee for its JV, the request of Joint Venture Company will be considered by the Board at interest rate of 150 basis points over and above the interest rates applicable to General Project Loans given to Oil PSUs. The terms and conditions including interest rates for specific projects are determined by the Board separately from time to time.

5.4.5 DEPLOYMENT OF FUNDS

The OIDB has accorded highest priority to programmes connected with exploration, production, refining and storage of crude oil/ natural gas.

The OIDB has, up to 31st March, 2004, extended following financial assistance to the Oil industry.

Financial assistance since 1975

(Rs. in crore)

Loans	16,182
Grants	679
Total	16861

A major portion of the loan assistance has been utilized for meeting capital outlay on Plan Projects approved by Ministry of Petroleum & Natural Gas in consultation with Planning Commission and Ministry of Finance. The loan outstanding from oil companies to OIDB, as on 31st March, 2004 is Rs.4251 crore approximately. Loans and grants given during 2003-04 upto 31.03.04 are Rs.520 crore and Rs.77.21 crore approx. respectively.

Details of financial assistance given in last few years

(Rs. in crore)

Year	Loans	Grants	Total
1993-94	916.62	12.22	928.84
1994-95	276.27	26.15	302.42
1995-96	822.38	27.29	849.67
1996-97	1,428.21	44.24	1,472.45
1997-98	1,423.65	37.80	1,461.45
1998-99	1,107.15	51.24	1,158.39
1999-2000	980.32	45.41	1,025.73
2000-01	1,144.83	57.15	1,201.98
2001-02	1,504.25	96.51	1,600.76
2002-03	1,790.50	123.07	1,913.57
2003-04	520.00	77.21	597.21

Disbursement of Loans/Grants during the year 2003-04 (upto 31.03.2004)

(Rs. in crore)

Sl. No.	Name of the Organization Plan Projects Loans	Allocation of Funds (2003-04)	Funds released Upto 31.03.04
1	BPCL	250.00	0.00
2	GAIL	1,000.00	0.00
3	CPCL	715.00	515.00
4	ONGC	66.35	0.00
5	IOCL	948.00	0.00
	Total (A)	2,979.35	515.00
	Other Assistance		
6.	Indraprastha Gas Ltd.(IGL)	20.00	0.00
7.	Biecco Lawrie Ltd.	5.00	5.00
8.	Exploration Activities	1.00	0.00
	Total (B)	26.00	5.00

□ Total Loan disbursed upto 31.03.2004 – Rs. 520 crore

Grant in aid (Regular Grantee Institutions)

(Rs. in crore)

Sl. No.	Name of the Organization Plan Projects Loans	Allocation of Funds (2003-04)	Funds released Upto 31.03.04
9.	CHT	10.04	4.58
10.	PCRA	22.59	21.35
11.	DGH	44.20	31.47
12.	OISD	4.21	3.55
13.	PPAC	7.10	4.60
Total		88.14	65.55

Other R&D projects approved by OID Board/Central Government

(Rs. in crore)

		Allocation of Funds (2003-04)	
14.	NGHP	4.09	1.11
15.	IIT, Delhi	0.30	0.00
16.	National Geophysical Research Institute	2.10	2.10
17.	Oil and Natural Gas Corporation Ltd.	7.23	2.71
18.	Oil India Ltd.	4.61	0.00
19.	Rajasthan Government (CBM)	1.64	0.00
20.	IOC	4.01	4.01
21.	TERI	0.18	0.09
22.	Anti Adulteration Cell	1.64	1.64
Total		25.80	11.66

□ Total grants disbursed upto 31.03.2004 - Rs.77.21 crore

5.4.6 Major projects funded by OIDB during 2002-03.**5.4.6.1 Loan to Indian Oil Corporation Limited (IOCL)**

Indian Oil Corporation Limited, the only Indian company in the Fortune global 500 lists is the largest downstream oil company in India and engaged in the business of refining, marketing and transportation of petroleum products. During the year, OIDB approved financial assistance of Rs.871 crore at a concessional rate of interest of 5% p.a. for a period of 10 years to meet the requirement of investing in environment related projects in the North - East Region.

5.4.6.2 Chennai Petroleum Corporation Limited (CPCL)

M/s CPCL is engaged in refining and processing crude oil and other petroleum

products since 1996. During the year 2002-03, OIDB released a loan of Rs.500 crore to the Corporation for its refinery expansion projects at Manali, Chennai.

5.4.6.3 Numaligarh Refinery Limited (NRL)

Numaligarh Refinery Limited established in April, 1993 has set up a 3 MMTPA grass root refinery, popularly known as 'Assam Accord Refinery' and a Marketing Terminal at Numaligarh in Assam.

OIDB has extended loan assistance of Rs. 200 crores during 2002-03 for making partial pre-payment of costlier project loans availed from banks. Entire loan of Rs.200 cores were utilized for pre-payment of bank loans.

5.4.6.4 Bongaigaon Refinery & Petrochemicals Limited (BRPL)

BRPL established is a group company of Indian Oil Corporation Limited engaged in refining

crude oil and production of polyester staple fibre and petrochemicals like Xylene, DMT, Ceenine etc. OADB has been financially supporting BRPL's activities like Crude Oil Import (including related facilities) Steam/Power Flexibility-DG Set, LPG Bottling Plant and PSF product diversification etc. OADB also extended an amount of Rs.125 crores as short-term loan for financing of working capital requirements.

5.4.6.5 Grant in aid for R&D Activities

Keeping in view the paramount need for attaining self-sufficiency in the production of crude oil, the OADB has been according highest priority to the programmes connected with exploration & production of crude oil and other alternative sources of energy. The OADB has taken initiatives to fund various seismic surveys and R&D projects in upstream technology. The OADB is also funding national gas hydrate programmes, exploration of coal bed methane in Rajasthan, oil & gas production technology from deepwater and development of advanced geo-chemical techniques for petroleum exploration and exploitation of alternate energy sources.

The Board has set up a Sub-Committee to recommend the projects of interest of upstream sector. These projects are, in the first instance, examined by the Sub-Committee and if recommended, are placed before the Board for taking appropriate decision.

Since 1999, OADB has funded 52 projects out of which 20 projects have since been completed. During the year 2002-03, an amount of Rs.29 crore was released by OADB for various projects of ONGC, NGRI, GAIL and Govt. of Rajasthan for projects related to upstream sector. The benefits derived from the application will be enormous and impact significantly in the development of oil sector.

5.4.7 Major projects funded by OADB during 2003-04

5.4.7.1 Chennai Petroleum Corporation Limited (CPCL)

M/s CPCL is engaged in refining and processing crude oil and other petroleum products since 1966. During the year 2003-04, OADB provided a loan of Rs. 515 crore to the Corporation for its

quality upgradation project (3 MMTPA expansion, Rs. 325 crore) and 3 MMTPA expansion project (Rs. 190 crore).

5.4.7.2 Grant in aid for R&D activities

OADB has accorded top priority to the programme connected with exploration and production of crude oil and other alternative sources of energy such as gas hydrates, coal bed methane etc. The OADB has taken keen interest in funding various projects related to the above activities. The OADB has been funding National Gas Hydrate Programme set up by MOPNG, Exploration of Coal Bed Methane in Rajasthan and also the projects related to oil and gas production from Deep water and advanced geo chemical techniques for petroleum exploration and exploitation. For the purpose, the OADB has released an amount of Rs. 6 crore approximately to NGHP, NGRI and ONGC during the year 2003-04. The technologies once proved successful will have significant impact in the development of oil sector.

5.5 DIRECTORATE GENERAL OF HYDROCARBONS (DGH)



DGH's participation in Petrotech, New Delhi

5.5.1 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 Indian oil and natural resources having a balanced regard environment, safety, technological and economic aspects of the petroleum activity. In addition, DGH has been entrusted with certain responsibilities concerning the Production Sharing Contracts (PSCs) 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 2003-04 are as under:

5.5.2 Opening up of new areas for future exploration

With a view to open up new areas for exploration, DGH has carried out reconnaissance 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 round of New Exploration Licensing Policy(NELP). Following activities were conducted/planned to be conducted during 2003-04 :

5.5.3 Seismic survey in Eastern part of Ganga Basin

A quantum of 1135 GLK of seismic data was acquired in Ganga basin during 2002-03. Processing and interpretation of this data continued in 2003-04 and was completed in the first quarter of 2003-04. This survey upgraded geological information in Madhubani and Gandak depression leading to identification of blocks for offer under NELP. One block, viz., GV-ONN-2002/1 was offered under NELP-IV and awarded in 2003-04 to private companies for detailed exploration.

5.5.4 Seismic survey in Chambal valley area of Vindhyan Basin

About 805 GLK of 2D seismic data was acquired , processed and interpreted in the

unexplored areas of Chambal Valley falling in the western part of Madhya Pradesh and adjoining Rajasthan. A block has been identified in this unexplored area for the first time for offer under NELP-V round.

5.5.5 Seismic surveys in Arunachal Pradesh & Mizoram

2D seismic surveys are planned in parts of Arunachal Pradesh and Mizoram areas of North Eastern Region. A total of about 450-500 GLK of seismic data acquisition spread over 2 years period is planned to be acquired in these areas. Seismic survey service provider has been identified and order for the work has been placed for survey in these challenging areas.

5.5.6 Aeromagnetic surveys in Punjab, Himachal Pradesh, Uttaranchal, Uttar Pradesh & Bihar States by Government Agencies

DGH has initiated High Resolution Aeromagnetic Survey for the first time in India in the areas of Punjab, Himachal Pradesh, Uttaranchal , Uttar Pradesh & Bihar through National Remote Sensing Agency, Hyderabad (a Government Agency). Area of about 200,000 sq.kms is planned to be covered over 3 years period

5.5.7 Surface geochemical surveys in parts of Kutch Onland Basin

The Geochemical survey in parts of Kutch onland basin was initiated in Dec. 2002. A total of 301 soil samples were analyzed for adsorbed light hydrocarbon gases during Feb-May'03. Interpretation report finalized in August, 2003.

5.5.8 Geochemical survey in Chattisgarh Basin

Geochemical surveys for hydrocarbons in Chattisgarh basin were initiated in February 2004. About 350 soil samples were collected over an area of about 35,000 sq.km. The samples will be analyzed by gas chromatography for identifying hydrocarbon microseeps. The analytical work is expected to commence in April, 2004 and completed by June, 2004.

5.5.9 NELP-IV

With a view to facilitate the prospective bidders for viewing data of 24 exploration blocks offered

under NELP-IV round, DGH opened Data Viewing Centres at Delhi, London and Houston and sold data worth US \$ 3.485 Million (About 16.205 crores). A total of 44 valid bids were received for 21 blocks, out of total 24 blocks offered. Bids were evaluated at DGH expeditiously and based on recommendations, PSCs were signed for 20 blocks of NELP-IV on 6.2.2004. 13 blocks have been awarded to NOCs and 7 have been awarded to JVs+NOCs.

5.5.10 NELP-V

About 12-15 exploration blocks have tentatively been identified for NELP-V round. The data of these blocks is being reviewed to assess their potential.

Preparation of the basin information docket/data packages in hard copies as well as digital form is in progress.

Finalisation of Notice Inviting Offer (NIO) and printing of NIO and other related documents for NELP-V rounds is in progress.

Preparation of web portal material of technical data of identified exploration blocks.

Appointment of the Marketing Consultant for promotion of NELP-V acreages and creation of exclusive web site for worldwide dissemination of technical data and fiscal terms and conditions, etc. in progress.

Opening of Data Viewing Centers at New Delhi, London (UK) and Houston (USA) and approval thereof in progress.

5.5.11 Monitoring of Production Sharing Contracts (PSCs)

Government of India has signed contracts for 27 discovered fields, 16 CBM blocks and 117 blocks for exploration and development to Private / JV & NOCs. Out of this, contracts for 113 exploration blocks, 16 CBM block & 26 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 indepth review of annual work programme, project monitoring (especially with regard to time & cost over run), 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 \$ 2.57billion (Rs.11082 crores) investment has already been made by companies on Exploration & Production till March, 2003 and provisional investment during April,03-March,04 was of the order of US \$ 450 million (Rs.2099 crores). During 2002-03, Pvt./JV sector produced 4.088 MMT of oil and 5.407 BCM of natural gas. Crude oil produced by Pvt/JV in the year 2003-04 is 4.327 MMT (provisional) against a target of 3.907 MMT. Natural gas production in 2003-04 is 6.4 BCM (Provisional) against a target of 6.35 BCM.

5.5.12 Monitoring of the Petroleum Exploration Licences held by NOCs on nomination basis

DGH reviewed the progress of exploration activities in respect of 147 Petroleum Exploration Licences held by NOCs (ONGC and OIL) on nomination basis on a half-yearly basis vis-à-vis minimum committed work programme.

5.5.13 Field development, reservoir and production monitoring

DGH is monitoring reservoir and production performance of fields like Mumbai High, Ravva, Panna-Mukta, Mid & South Tapti, Kharsang, PY-3, Hazira and other small sized fields operated by Joint Ventures and private companies. Besides this the development/additional plans and commercial proposals for various fields under PSC were evaluated. Major activities carried out, inter-alia, include; Commerciality of Dhirubhai-1,2 and 3 & Saraswati; Development plans Kharsang oil field, CB-ON-7 block and Gauri field; Voidage management for Ravva and PY-3 fields; and production limit for Panna field.

5.5.14 Redevelopment plans of Mumbai High North and South

Redevelopment Plans of Mumbai High North and South are under implementation by ONGC. DGH is continuously monitoring the field performance based on Redevelopment Plans, Progress of EOR pilots, C&G and other studies. To analyze the field performance voluminous data of about 700 wells of Mumbai High field

were updated on a regular basis in DGH to perform various analysis. The data include well wise monthly oil, gas, water production and well wise injection data. Periodic meetings were held with ONGC to review the overall progress of the Redevelopment Plans.

5.5.15 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 18 fields (5 Offshore + 13 Onshore) namely, Ravva, Panna-Mukta, Tapti, PY-3, Lakshmi, Hazira, Bhandut, Cambay and Sabarmati, Dholka, Wavel Indora, Bakrol, Lohar, Baola, Asjol, Sanganpur and Kharsang. S&E audit of all the producing field was completed during April, 2003-March, 04.

5.5.16 Computer system for E&P activities

The interactive interpretation and monitoring system for Oil Exploration and Production activities comprising state-of-the-art Sun Workstations, Power Macintosh machine alongwith peripherals and latest software were maintained. Important technical studies, such as, Reservoir simulation, log interpretation are being carried out on these workstations.

5.5.17 Establishment of national E&P data base and archive system

In line with the strategy for improving archival practices for data management, detailed implementation Strategy report for National E&P Data Base and Archive System has been prepared by DGH.

5.5.18 Coal Bed Methane (CBM)

Government of India has awarded 8 CBM blocks for exploration and production of Coal Bed Methane in different coal fields of India. In addition, during 2003-04, 9 CBM blocks were offered under CBM Round-II in May, 2003. PSCs have been signed for 8 CBM blocks on 6.2.2004.

5.5.19 National Gas Hydrate Programme (NGHP)

National Gas Hydrate Programme was constituted in 1997 and subsequently on the recommendations of DGH it was decided by

the Government to reconstitute the implementing mechanism. As a result, Steering and Technical Committee of NGHP were reconstituted. Based upon the review of seismic data by the Technical Committee, two areas in Indian waters, one along East Coast & another on West Coast have been identified as "Model Laboratory Areas" for further R&D work. Road Map has been prepared for the two areas. Following activities were carried out/planned during 2003-04 :

- i) Monitoring of nine ongoing NGHP projects being implemented by NIO, ONGC, GAIL, OIL and NGRI and collaboration with National Resource Council, Canada and International Mallik well consortium was done on a regular basis.
- ii) As per the NGHP roadmap, the drilling for coring of gas hydrates in Indian offshore regions is likely to start by end 2004.
- iii) Review of new technical proposals submitted by Institute of Oil & Gas Production Technology and Institute of Engineering Ocean Technology of ONGC.
- iv) Loaded 2D seismic data pertaining to Andaman deepwaters on DGH workstation for finalisation of gas hydrate coring locations.
- v) The coring locations in the East & West Coasts and in Andaman deepwater area in coordination with ONGC, GAIL, NIO and DGH are also being finalised by the geo-science subgroup.

5.5.20 Essentiality certificates

During April, 2003 to March, 2004, DGH issued 6595 Essentiality Certificates comprising of about 90,377 items worth Rs. 10,257 crores enabling the NOCs and Private/JV companies to import concessional/duty free goods for petroleum operations.

5.5.21 Work by advisory Council/ Committees

The Advisory Council reviewed the progress of Mumbai High Redevelopment Plan, blocks awarded under NELP and CBM, and identified blocks for future rounds of NELP and CBM.

Advisory Council also reviewed the activities of NGHP, co-ordinated by DGH.

5.6 OIL INDUSTRY SAFETY DIRECTORATE (OISD)

The Oil Industry Safety Directorate (OISD) assists Safety Council under Ministry of Petroleum & Natural Gas (MOP&NG). The council is 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, DG, DGMS and the Director General of Factory Advice Service & Labour Institute etc. as members.

5.6.1 Standardisation

OISD develops safety standards for hydrocarbon industry. These standards are periodically reviewed to incorporate the latest technological changes and experience gained in their implementation so as to update them in line with the current international practices. Three new standards and amendments in six existing standards were approved by Safety Council in 2003-04. It is planned to develop three new standards and completely review five existing standards in 2004-2005.

5.6.2 External Safety Audits

External Safety Audit (ESA) are conducted periodically to check compliance with reference to implementation of safety standards. ESA of two refineries, four LPG recovery plants, 44 POL terminal/ LPG bottling plants, 94 Exploration & Production (E&P) installations and 748 km of cross country pipelines was carried out in 2003-04. Additionally, pre commissioning safety audit of 6 new projects in refineries, seven cross country pipeline and acceptance committee inspection of 18 POL terminals / LPG bottling plants was carried out in 2003-04. It is planned to conduct ESA of seven

refineries, three LPG recovery plants, 50 POL terminal/ LPG bottling plants, 55 E&P installations and 2750 km of cross country pipelines in 2004-05.

5.6.3 Training Programs / Workshops

Technical workshops covering entire oil industry are organised to discuss latest developments, sharing of experiences etc. Further, case studies on major incidents are presented/ discussed to prevent recurrence of similar incidents. During the period, five workshops one each on Gas Processing Plants, LPG Installations, POL terminals and cross country pipelines have been organized in 2003-04. OISD plans to conduct seven workshops in 2004-05.

5.7

CENTRE FOR HIGH TECHNOLOGY (CHT)



Centre for High Technology (CHT) was established in 1987 is an advisory body to implement scientific and technological programme for the oil sector. It acts as a forum for sharing of technical information amongst the refineries. During the year 2003-2004, CHT has funded following projects for research work, based on recommendation of the Scientific Advisory Committee (SAC) on hydrocarbons.



Environment Management Session organised by CHT

- “Multi Variable Predictive Control without Plant Test” by EIL-R&D Centre.

- “In situ Fibre reinforced Bitumen as a Binder for Flexible Pavements” by IIT, Delhi.
- Acute/sub-acute Toxicological Profile of Particulate Emissions from CNG and Diesel Fuelled Engine Exhaust – in vivo and in vitro Experimental Study” by ITRC, Lucknow and IOCL – R&D Centre.

CHT organized various seminar and workshops including :

- International level Question & Answer Session on “**Environment Management in Petroleum Refineries**” on 4-5th November, 2003 at Pune.
- Associated with “**Lovraj Kumar Memorial Trust**” & “**Indian Institute of Chemicals Engineers**” to organize National Workshop on “Energy Management & Conservation in Hydrocarbon Industry” on 11-12th November, 2003 at New Delhi.

Netherlands was organized on 9th March, 2004 at New Delhi.

In order to encourage energy conservation in refineries, CHT recommended awards for best performance in energy consumption, energy conservation over past performance, oil conservation awards in the area of furnace/ boiler thermal efficiency.

In order to disseminate information about latest developments / trends in petroleum refining, a quarterly journal entitled “Hydrocarbon Technology” is being published by CHT.

5.8

PETROLEUM INDIA INTERNATIONAL (PII)



5.8.1

Petroleum India International (PII), a consortium of public sector companies in the Petroleum and Petrochemicals and engineering sectors. PII was established in



Workshop of CHT in progress

- “**Crude Oil Sludge Treatment and Oil Recovery**” with presentations from overseas and indigenous vendors / technology suppliers in February, 2003 at New Delhi.
- “**Flare Gas Recovery**” along with Garo, Spa, Italy in February, 2003 at Mumbai.
- A Workshop on “**Information Technology in Petroleum Refining**” was organized on 23rd February, 2004 at New Delhi
- A one-day Seminar on “**Strategies for optimizing Bottomline Operation in Refineries**” in association with M/s. Shell Global Solutions International B.V.

5.8.2

1986 with the common objective of mobilizing the individual capabilities of its member companies into a joint endeavor for providing technical, managerial and other human resources on a global basis.

PII has provided Technical back-up Services, Management and Technical Consultancy, HRD & Training Services, Turnaround Maintenance of Refineries, Information Technology and Procurement Services to the oil and gas sector in Nigeria, Kuwait, France, UAE, Bahrain, Saudi Arabia, Mozambique, Japan, Thailand, Malaysia, Indonesia, Egypt, Qatar, Madagascar, USA, Bangladesh, Scotland and Oman.

5.8.3 The revenue generated and the profit of PII during the last two years and estimates for 2004-05 are given below :

Particulars	2002-03	2003-04	2004-05 (estimates)
Project Income	5,497	7,730	8,652
Profit before Tax	1,695	2,250	2,509
Profit after Tax	1,173	1,460	1,631

5.9 PETROLEUM PLANNING & ANALYSIS CELL (PPAC)

Subsequent to the dismantling of the Administered Pricing Mechanism (APM) in the petroleum sector with effect from 1st April 2002, Oil Coordination Committee was abolished and a new cell, Petroleum Planning & Analysis Cell (PPAC) was created effective 1st April 2002 under the Ministry of Petroleum & Natural Gas with its head Quarters in New Delhi.

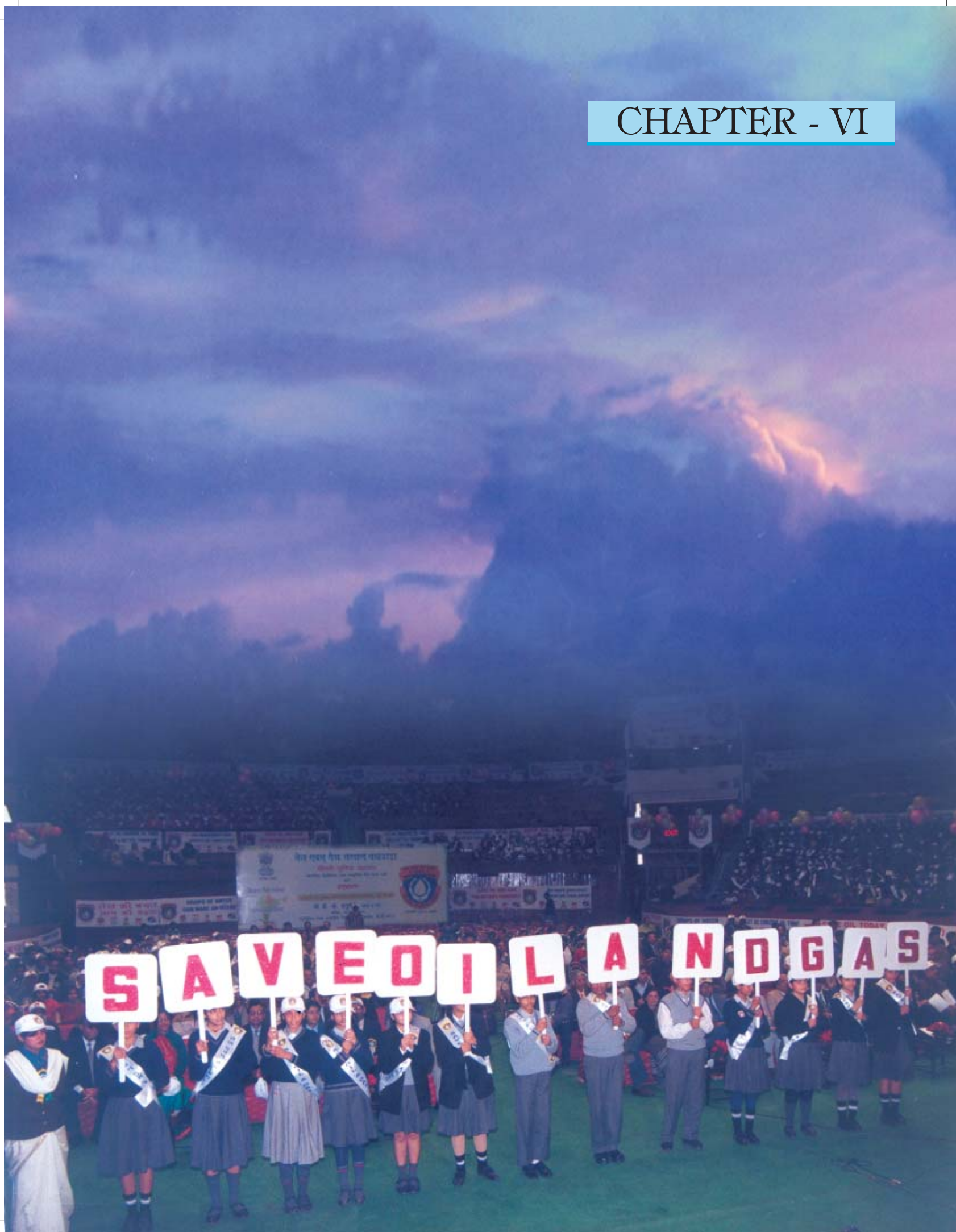
PPAC assists the Government in discharge of some of the functions earlier being performed by the erstwhile Oil Coordination Committee.

The Oil Industry Development Board funds the expenditure of PPAC.

The functions of the PPAC are mainly as follows :

- Administration of subsidy on PDS Kerosene and domestic LPG
- Administration of Freight subsidy for far flung areas.
- Maintenance of Information data bank and communication system to deal with emergencies and unforeseen circumstances.
- Analyzing the trends in the international oil market and domestic prices.
- Forecasting and evaluation of petroleum import and export trends.
- Operationalising the sector specific surcharge schemes, if any.
- The services of PPAC have been utilized for winding up the Oil Pool Account.

CHAPTER - VI



6. CONSERVATION OF PETROLEUM PRODUCTS

- 6.1 Government of India accords priority to demand management of petroleum products in view of



Conservation fortnightly valedictory function organised by PCRA

the need to reduce the gap between demand of petroleum products and indigenous supply of crude oil. Sporadic tension in the Middle East region which is the source of our oil imports and a growing import bill are potent reasons for continued emphasis on conservation & sparing use of petroleum products. Accordingly, the Government persevere with the various measures initiated for conservation of petroleum products. Many activities are conducted through Petroleum Conservation Research Association (PCRA) and public sector oil companies.

6.2 In-house conservation efforts

6.2.1 In upstream sector

Oil Sector Undertakings in the upstream sector adopt various effective and result oriented conservation methods including

- Reduction of gas flaring by re-injection of gas to underground reservoir,
- Installation of waste heat recovery systems,
- Use of dual fuel/natural gas engines to achieve substitution of diesel by low pressure associated natural gas,
- Use of solar power cathodic protection systems,

- Use of self loading types of skids for mounting rig equipment, etc

6.2.2 Refineries

The oil refineries have undertaken various schemes like :

- Revamping and replacing low efficiency furnaces and boilers,
- Saving steam in refinery operations,
- Installation of heat exchangers, economisers, recuperators & co-generation equipment,
- State of art equipment to arrest hydrocarbon leakage,
- Improved house keeping practices,
- Phased action plan to produce and sell high-grade lubricants,
- Constant up-gradation of lubricates in line with the international developments meeting EURO standards.

6.2.3 Transit

Ocean losses incurred during movement of the petroleum products by import tankers and coastal tankers over sea routes and at ports while unloading have been progressively reduced through various steps taken by the oil companies.

6.3 End use conservation efforts

These efforts are coordinated by PCRA under the aegis of the Ministry of Petroleum & Natural Gas. The need for conserving petroleum products by using them judiciously and efficiently has been felt since the first oil crisis in 1973. This led to the setting up of Petroleum Conservation Action Group (PCAG) on January 6th, 1976 which in August 1978 was registered with Registrar of Societies as "Petroleum Conservation Research Association (PCRA)".

The activities of PCRA encompass a whole gamut of efforts for promoting and propagating petroleum conservation in India including conduct of energy studies; research & development; creating awareness and educating public on the importance, methods and benefits of conservation. PCRA also undertakes demonstration projects, training & educational efforts and has promotional soft loan schemes to help improve energy efficiency. Activities that are mainly technical are organized on a sectoral basis. Energy

efficiency measures are ultimately carried out at the level of the end user; industrial and commercial enterprises, local communities, government services, transportation firms and households. Sector wise programmes are as below :

6.3.1 Transport Sector

Driver Training

Under this specially designed three-day training programme, 871 drivers belonging from SRTCs, Indian Army, Border Security Force, oil companies and private transport operators were trained during April 2003 to March 2004.

Follow-up Programme with Trained Drivers

Follow-up programmes with previously trained drivers were organised by all the four regions of PCRA through get-togethers to obtain feedback on the effectiveness of their training.

Model Depot Studies

These studies were aimed at streamlining the existing systems and maintenance practices at the depots/workshops of STRC's. A total number of 241 such studies were conducted during April 2003 till March 2004, resulting in substantial saving of diesel.

Emission Awareness Programmes

Emission checks and awareness programmes were conducted at 224 locations during April 2003 till March 2004 to sensitize motorists on the adverse effects of automotive emissions on the environment. Free literature on the subject was distributed to the people covered under this programme.

6.3.2 Industrial Sector

Energy Audits

PCRA conducted 239 energy audits, 233 fuel oil studies and 377 SSI studies during April 2003 till March 2004 to identify possible areas of improvement in energy utilization and to promote fuel-efficient practices, equipment and technology in industries. Follow-ups on 722 audits conducted earlier were also completed.

Institutional Training

348 institutional training programmes organised at the premises of various industries in different parts of the country during April 2003 till March 2004. Each of these programmes covers 20-30 executives, supervisors and technicians.

Empanelment of Energy Auditors

PCRA is the nodal agency for energy auditors for industries in the country. Its expertise in

energy audit is also sought by major industries for training their engineers in energy audit.

Seminars/Workshops

These programmes are organised at various places to provide a common platform for industrial consumers of petroleum products to share their ideas, experience and problems related to energy use. PCRA organised 21 such technical meets during April 2003 till March 2004. In addition, 33 consumer meets were also organised at different places.

6.3.3 Agricultural Sector

Rectification of Lift Irrigation Pumps

Rectification of lift irrigation pump sets by using BIS marked equipment is undertaken to demonstrate diesel saving methods to the farms. A total of 246 pumps were rectified during April 2003 till March 2004.

Kisan Melas

Kisan Melas (agricultural fairs) provide an ideal forum to educate farmers to the need and benefits of oil conservation. PCRA participated in 50 Melas during April 2003 till March 2004.

6.3.4 Household Sector

Special Programme of Industry-Residential Complexes

These are five-day intensive programme on oil conservation conducted at large industrial-residential complexes to sensitize the residents on the need and importance of oil conservation. 11 such programmes were organised during the year up to March 2004 at selected complexes in different states.

Youth Programmes

Youth-oriented programmes on conservation include quiz, essay, debate and painting competitions on the theme of oil conservation. A record number of 1,419 programmes were organised during April 2003 till March 2004 across all regions.

6.3.5 Educations and mass awareness campaigns

PCRA reaches out to millions of consumers of petroleum products in the major consuming sectors and the masses with its messages on conservation through various media and involving women and youth wherever feasible. Given below are some of the major campaigns undertaken during the year.

- 'Khel Khel Mein Badlo Duniya' is an infotainment TV programme developed by PCRA for the youth.

- PCRA has established linkage with the Lifeline Foundation, a Gujarat based NGO, and is associated with their Highway Rescue Project, which is devoted to rescuing highway accident victims.
- A number of short films, radio jingles, TV spots and filters have been developed and aired on different channels throughout the year to retain and sustain listeners' interest in petroleum conservation.
- Apart from the electronic media, well-timed newspaper advertisements, press campaigns, hoardings, bus panels, passenger shelters, kiosks, road safety barriers, electronic display boards etc. were extensively used to spread the message of oil conservation.
- Printed literature including posters, pamphlets, folders and low-cost handbills containing technical and general information on efficient utilization of petroleum products, tips on conservation and other information were distributed throughout the country.

6.3.6 Research & Development

R&D is a crucial to PCRA's objectives of developing process and product technologies, which will improve energy efficiency, reduce fuel consumption and protect the environment. With this in view, PCRA keeps a close watch on the latest technology trends, identifies and evaluates relevant projects for sponsoring them to competent agencies for development. While many major projects have been successfully completed, its current areas of interest include bio-diesel and other bio-fuels.

6.4 Oil and Gas Conservation Fortnight (OGCF)

Oil Conservation Fortnight (OCF) is being organised throughout the country during January 15-31 since 1991 to create and spread mass awareness on the importance and benefits of oil conservation. Taking into account the growing application of natural gas in various sectors and the emerging need to conserve this resource, OCF was renamed as OGCF in 2004.

6.5 Action group meetings

Action group meetings are organised in various states to facilitate interaction amongst various categories of oil consumers and the concerned



Conservation fortnightly event organised by PCRA in Nehru Stadium

State Governments to discuss issues connected with energy supply and consumption- nine meetings took place during April 2003 till March 2004.

6.6 Exhibitions

PCRA organised/participated in 82 exhibitions at various locations and conducted 786 van publicity campaigns to create and spread conservation awareness amongst all sections of people.

6.7 New thrust areas

For the first time, PCRA has turned its attention to total energy demand management under which programmes for solid waste management, energy efficient traffic system, energy efficient buildings etc. is undertaken. The impact of speed breakers, zebra crossings, badly designed road dividers, bad roads etc. is also being looked into to reduce wastage of transport fuels.

School children are being involved in new programmes such as agricultural surveys and science exhibitions in selected districts. A new social dimension was added to PCRA's national role by organising women's two wheeler rallies during OCF with the dual purpose of sensitizing them about oil conservation and women empowerment.

For energy conservation programmes to be successful, effective coordination amongst various government agencies is essential. With this in view, PCRA has been able to enlist the support of the Ministries of Water Resource, Environment & Forests, MNES, BIS and the Census Commissioner to spread the message of conservation.

CHAPTER - VII



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

7.1 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 are taken on the grievances of the SCs/STs, OBCs and P/H employees of PSUs received through various sources including Members of Parliament, National Commission for SCs and STs, National Commission for Scheduled Area & Schedule Tribe and others.

The status of appointment of SCs/STs/OBCs/Physically Handicapped persons is monitored by the Ministry through Quarterly report furnished by PSUs separately.

7.2 SPECIAL COMPONENT PLAN (SCP) AND TRIBAL PLAN (TSP)

In accordance with the Government policy, all Public Sector Undertakings under the administrative control of the Ministry have made allocation in their Annual Plan for the year 2003– 2004 for various

activities related to the welfare and socio-economic development of Scheduled Castes, Scheduled Tribes and people of weaker sections residing in the neighbourhood of project locations through Special Component Plan and Tribal Sub-Plan which are as follows :

- i) Construction of community latrines on the lines of Sulabh Shouchalaya etc., in villages inhabited mainly by SCs/STs and weaker sections of the society.



Tilklers for distribution under credit disbursement program of Oil India Ltd. & State Industrial Rural Development (SIRD) in Assam

- ii) Construction of school/college buildings, scholarships, adult education, distribution of teaching materials, establishing library and other aid to SC/ST students.
- iii) Financial assistance to SC/ST women through co-operative societies for providing facilities of handlooms, weaving, etc., so as to enable them to have self employment.
- iv) Provision of drinking water facility to nearby villages through ring wells/tube wells etc.
- v) Provision of community health facilities, free medical services, medicines through medical camp and family planning camps etc.
- vi) Financial assistance to Physically Handicapped persons for their rehabilitation.
- vii) Economic development /self employment by organizing entrepreneurship development training programmes.
- viii) Vocational training/guidance to enable the SC/ST persons to become self-reliant under the scheme “Earn While You Learn”. Training

programmes are arranged in various trades, like basket making, weaving, coir rope making, sewing, poultry training, fishing, tailoring, typing, motor driving as well as supply of necessary tools, machines, etc.

- ix) Welfare programmes such as distribution of seeds and fertilizers free of cost to SC/ST

farmers, distribution of smoke-less chulhas and solar cookers to SC/ST women and construction of approach roads and adoption of villages.

- x) Social forestry schemes like distribution of seeds of fruit bearing trees, saplings and other plants etc.



HPCL's 'Rasoi Ghar' concept for the under privileged in rural areas

7.3 RECRUITMENT BACKLOG POSITION OF SC/ST/OBC AS ON 31.03.2004

S.No.	Name of PSU	SC		ST		OBC	
		Excess	Shortfall	Excess	Shortfall	Excess	Shortfall
1.	ONGC	Nil	Nil	Nil	Nil	Nil	119
2.	IOCL	Nil	20	Nil	44	Nil	175
3.	HPCL	401	Nil	55	Nil	Nil	127
4.	BPCL	350	5	Nil	34	Nil	1114
5.	GAIL (India) Ltd.	Nil	14	Nil	23	Nil	74
6.	EIL	13	1	2	Nil	5	6
7.	OIL	41	26	48	22	162	Nil
8.	CPCL	Nil	Nil	Nil	Nil	Nil	2
9.	KRL	Nil	Nil	Nil	Nil	Nil	Nil
10.	IBP	1	Nil	Nil	4	Nil	14
11.	BRPL	Nil	Nil	Nil	Nil	Nil	3
12.	Biecco Lawrie	Nil	13	Nil	27	Nil	20
13.	NRL	3	18	10	Nil	8	16
14.	Balmer Lawrie	9	73	Nil	94	8	18

The Expenditure incurred by Public Sector Undertakings on the activities under Special Component Plan (SCP) and Tribal Sub-plan (TSP) upto 31.03.2004 is as under :

S.No.	Name of PSU	Expenditure incurred (Rs. in Lakhs)		Rs. in Lakh Total
1.	ONGC	58.80	29.20	88.00
2.	IOCL	96.21	54.14	150.35
3.	HPCL	453.25	combined	453.25
4.	BPCL	58.34	combined	58.34
5.	GAIL(India) Ltd.	334.00	89.14	423.14
6.	EIL	7.28	combined	7.28
7.	OIL	139.05	combined	139.05
8.	CPCL	4.45	combined	4.45
9.	KRL	20.5	combined	20.5
10.	IBP	20.00	combined	20.00
11.	BRPL	34.50	46.50	81.00 (Prov)
12.	Biecco Lawrie	Nil*	Nil*	Nil*
13.	NRL	20.35	combined	20.35
14.	Balmer Lawrie	Nil	Nil	Nil

*In last three financial years, the Company has incurred a accumulative loss of Rs.28.76 crores and the net worth of the company became negative. Due to the above reason the Company is not able to spend any money on Special Component Plan (SCP) and Tribal Sub-plan (TSP) in last three years as well as in 2003-04.

CHAPTER - VIII



8. WELFARE, DEVELOPMENT AND EMPOWERMENT OF WOMEN

8.1 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.

8.2 Women Forums 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'.

8.3 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 complaints of sexual harassment, if any. 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 senior woman officer.

8.4 As on 31.03.2004, against the total strength of 270 employees in the Ministry (Proper), 45 women were in position.

8.5 The number of women employees vis-à-vis total number of employees as on 31.03.2004 in the oil PSUs is tabulated as below :

S.No	Name of PSU	Total No. of Employees	Total No. of Women Employees
1.	ONGC	38,002	1,992
2.	IOCL	30,714	2,405
3.	HPCL	11,088	696
4.	BPCL	12,442	1,107
5.	GAIL (India) Limited	3,374	157
6.	EIL	2,855	289
7.	OIL	8,702	324
8.	CPCL	1,713	69
9.	KRL	1,947	83
10.	IBP	2,198	187
11.	BRPL	1,761	77
12.	Biecco Lawrie	542	6
13.	NRL	656	21
14.	Balmer Lawrie	1,444	78

CHAPTER - IX



9. POLLUTION CONTROL

9.1 The Refining industry has been classified as one of the major pollutant industries in the country. The compliance with prescribed standards in respect of liquid effluents and gaseous emissions is, therefore, a statutory requirement. All the refineries in the country are fully equipped with adequate pollution control facilities to meet the prescribed environmental standards. Pollution abatement measures are accorded the top most priority by the refinery management.

9.2 Effluent generated in the Refineries can be classified under 3 categories (i) liquid effluents (ii) gaseous emissions and (iii) Solid Waste.

9.2.1 Liquid effluents

The water used in the refining process gets contaminated with oil and other pollutants and has to be treated before discharging from the refineries. The Government has prescribed Minimal National Standards (MINAS) for discharge of effluents from refineries with respect to critical parameters, viz., oil and grease, phenols, sulphides, Biochemical Oxygen Demand (BOD), total suspended solids (TSS). The standards also specify the quantum limits for discharge of these pollutants in terms of crude throughput. All the Refineries in the country are equipped with full – fledged Effluent Treatment Plants, comprising physical, chemical and biological treatment facilities for removal / control of pollutants from waste water. The treated water fully meets the prescribed stringent MINAS standards in all the Refineries.

9.2.2 Effluent Reuse

Keeping in view the growing shortage of fresh water, all refineries have accorded importance for maximizing the reuse of treated effluent within their plants and thereby conserving fresh water. With this objective, refineries have implemented various schemes to reuse part of treated effluent within their plants in cooling towers, fire water network, coke cutting operations, service water, development of green belts etc. IOCL, Panipat & CPCL, Manali are recycling / reusing entire quantity of liquid effluents generated in their refineries. Further treated effluents from Mathura Refinery and treated domestic effluents from Gujarat

Refinery Township are being gainfully used by local farmers.

9.2.3 Gaseous emissions

Controlling of gaseous emissions, particularly with respect to Sulphur dioxide (SO₂), is one of the major tasks of the refineries. The Government has prescribed limit for SO₂ emissions from three major processing units in the Refineries – in terms of SO₂ emission per tonne of feed stock processed – as well as for the boilers in the Captive Power Plants. The stipulation for boilers is in terms of minimum stack height requirements, so as to minimize ground level concentration of SO₂. Further an overall limit for SO₂ emission from Refineries is also stipulated by the State Pollution Control Boards / MOE&F.

9.2.4 Solid waste management

Oily sludge is the main hazardous solid waste generated in the refineries. Treatment / disposal of oily sludge generated during the refining operations is of major concern to the refineries. Refineries have adopted various methods like installation of improved mixers for reducing formation of sludge in the crude storage tanks and use of hot gas oil circulation / use of chemicals for recovery of oil from tank bottom sludge. The refineries use melting pits to further exact oil from the sludge before its disposal. The treated sludge after gas oil treatment / melting pit is either stored in lined pits or disposed of through land fill in low-lying areas inside the Refineries. Some of the refineries viz. Mathura, Barauni and BPCL etc. have successfully tried Bio-remediation Method developed by TERI for disposal of oily sludge using “Oilzapper”, which is a consortium of microbes suitable for degradation of oily sludge. This was further improved by IOCL, R&D jointly with TERI to develop “Oilivorous – S”.

The oily sludge is sometimes sold to micro-crystalline wax manufacturers, approved by the Technical Evaluation Committee of MOP&NG, by BPCL, HPCL & KRL.

9.3 Monitoring facilities

All the refineries have full-fledged environmental cell to monitor quality of effluents and emissions. Continuous ambient air monitoring stations / High

Volume Samplers have been provided in and around Refineries to monitor SO₂ level and it has been observed that the emissions are well within the stipulated limits.

Mathura Refinery, located in the Taj Trapezium area, has considerably reduced the SO₂ emissions over the years and has put up a Once-through Hydrocracker unit to increase the yield of middle distillates as well as to reduce SO₂ emission from the refinery.

past few years. Major improvements have been made in the refineries to supply petrol and diesel in the Metros meeting Bharat Stage-II specification and BIS 2000 specification in the other part of the country. The refineries are implementing projects to extend Bharat Stage-II specification in other part of the country as well as Euro-III equivalent petrol and diesel in the 4 Metros and 7 major cities.

The Expert Committee on Auto Fuel Policy set up by the Government under the Chairmanship of



A CNG filling station : a step towards pollution control

9.4 Certification with ISO-14001 environmental management system

All Public Sector Undertaking Refineries, except the mini-refinery of Oil & Natural Gas Corporation at Tatipaka which was commissioned only in 2001, have been certified with 14001 Environmental Management System.

9.5 Fuel quality improvements

Refineries have implemented major programmes for up-gradation of petrol and diesel quality in the

Dr R.A.Mashelkar, Director General, Council of Scientific & Industrial Research submitted their final report in September 2002. The highlight of recommendations in respect of fuel quality for meeting emission norms and road map for implementation are :

- *Bharat Stage II* emission norms already implemented in 4 Metros (Delhi, Mumbai, Kolkata and Chennai) in the year 2000 & 2001

- *Bharat Stage II* emission norms to be implemented in Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur & Agra from 1.4.2003.
- *Bharat Stage II* emission norms to be implemented in the rest of the country from 1.04.2005
- *Euro III* equivalent emission norms to be implemented in Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur & Agra from 1.4.2005

- *Euro III* equivalent emission norms to be implemented in the rest of the country from 1.04.2010
- *Euro IV* equivalent emission norms to be implemented in Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur & Agra from 1.4.2010

In addition, the Government has notified introduction of 5% volume Ethanol blending in petrol to be supplied in 9 states from January 2003.

CHAPTER - X



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 the States including North-Eastern States in the Petroleum Sector. However, the oil PSUs, under the administrative control of this Ministry, of 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 ONGC

ONGC has been actively pursuing the exploration activities in the North East Sector viz., Assam, Tripura and Nagaland. During the 9th Plan period (1997-2002), the actual expenditure in the North East Sector was Rs. 2463 crore, on exploration and production activities by ONGC.

In the Xth Plan (2002-07), the outlay for the North East Sector has been planned at Rs. 3015 crore, which is nearly 10% of ONGC's total domestic plan outlay. About 19.5% of the total exploration outlay of ONGC has been earmarked for prospects in the North East Region. The Improved Oil Recovery (IOR) projects with an investment of Rs. 850 crore has been approved for execution during the next five years.

10.1.2 OIL

An idea of a collective initiative for rural development work was first mooted by OIL in 1962 to promote good practices in corporate citizenship and sustainable development. It has today an established rural development network in its operational areas whose main objective is self-sufficiency. In Assam and Arunachal Pradesh alone the company caters to the developmental needs of more than 1200 villages, connecting them to the mainland and providing realistic opportunities to strive for a fulfilling future.

OIL has evolved strategies to enhance the value of education, health care and sanitation, potable drinking water, agriculture extension and irrigation facilities, socio-economic programmes and vocational training programmes and also social awareness programmes which cover sensitive areas like environmental protection, oil conservation and safety awareness.

Agro-based industries are being prompted through the creation of Self Help Groups (SHGs) under Swarnajayanti Gram Swarozgar Yojana (SGSY) in the Company's operational areas with the support of the State Institute of Rural development (SIRD), Assam.

In order to tackle the problem of growing unemployment, OIL has taken an initiative to invest in projects, which can help the unemployed youths to find alternate employment. OIL has undertaken a new initiative to develop agro-based industries like bamboo cultivation, floriculture, fishery, sericulture, organic farming etc. In this context OIL has signed a MoU on 8th September'2003 with the State Institute of Rural Development, Assam (apex centre for research and training in rural development) which has successfully implemented similar projects in various areas in lower Assam. In X Plan (2202-07), OIL has a plan outlay of Rs. 5000 cores mainly in Assam & Arunachal Pradesh

10.1.3 Bongaigaon Refinery & Petrochemicals Ltd.

Bongaigaon Refinery & Petrochemicals Limited has made a gross investment of Rs. 924 crores up to 31st March 2004 in putting up various plants and associated manufacturing facilities at Dhaligaon, Bongaigaon and Assam. During the year 2004-05 a further capital investment of Rs.20 crores is envisaged against various projects.

The Refinery business of BRPL has been in operation since 1979. The Petrochemicals and Polyester Staple Fibre plants were phase wise added later on. These units, particularly the Petrochemicals & PSF plants, have a vital role in providing business to few ancillary units of the North Eastern region, both in the Govt. sector and the private sector, who supply packing materials, raw material, etc. to BRPL. Similarly,

some of the products from BRPL like Petroleum Coke, DMT, PSF, etc. constitute the raw materials for some of the down-stream industries in the region. Thus BRPL has been contributing a lot to the industrial and economic development of the region.

Further BRPL has been taking up various social upliftment schemes from time to time in its neighborhood 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 2003-04, the company has spent Rs.83 lakhs for socio-economic upliftment under the Special Component Plan and Tribal Sub- Plan in the region. The targeted expenditure for the year 2004-05 is Rs.1 crore.

BRPL has been giving priority to persons from the North East regarding employment in BRPL. Out of a total of about 1763 employees, over 92% belong to this region. While about 78% officers are from this area, almost the entire workmen strength (98%) belong to the North Eastern region.

10.1.4 Numaligarh Refinery Limited (NRL)

NRL has received authorization from Government of India to set up 510 MS/HSD Retail Outlets in Eastern Region and parts of Northern and Southern Region. This would benefit people in the area.

In order to improve the quality of Motor Spirit in line with requirement of Auto Fuel Policy, NRL has undertaken the MS project. The Project is scheduled for completion by the end of year 2005-06.

Techno-Economic Feasibility Report has been completed. Marketing survey on demand/supply of paraffin and micro-crystalline wax and future sales projection is being carried out.

The DFR for the proposed product pipeline from Numaligarh to Siliguri is under finalization. The project will be implemented jointly by BPCL, OIL and NRL.

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 a subsidiary of IOC and NRL is a subsidiary of Bharat Petroleum Corporation (BPC). These refineries mostly refine crude produced by ONGC and OIL. 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 north east 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.

The following benefits have been extended to the North East refineries so as to improve their economic viability Post APM :

- The products of all four North East refineries have an excise duty exemption of 50% effective 01.03.2002.
- As per the post APM crude oil supply agreement between these refineries and OIL/ONGC, the domestic crude available to these refineries is priced on FOB basis instead of import parity basis thereby benefiting them.
- 1.5 MMTPA of Ravva crude has been made available to BRPL effective 01.04.2003. This increases the availability of total domestic crude to North East refineries and the benefit of increase in overall availability of crude oil is shared by all the four North East refineries thereby improving their capacity Utilization.

A comparison of profit after tax of NPL and BRPL for the years 2001-02, 2002-03 for 2003-04 is given

below. As can be seen , these refineries have progressively performed better and as compared to 2001-02.

(Rs. in Crore)

Name of the Refinery	Profit after Tax		
	2001-02	2002-03	2003-04
NRL	123.0	174.6	214.95
BRPL	(-)199.0	178.5	303.74

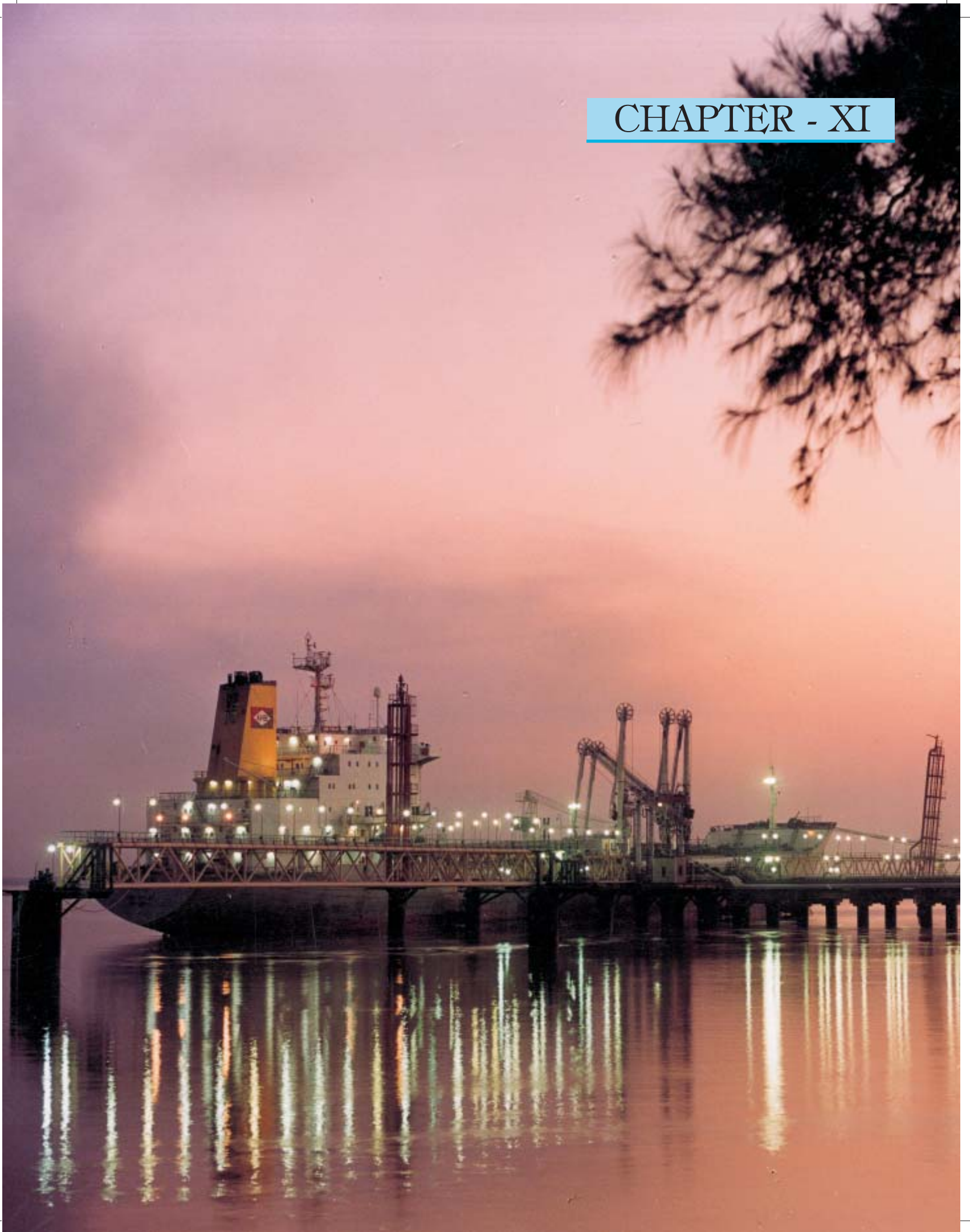
10.3 Exploration work in North East by Private/Joint Ventures Companies

In addition to the E&P activities of ONGC and OIL, Government of India has been offering exploration blocks in North East region under various rounds of biddings to private companies/ Joint Ventures. A total of 17 blocks in North-East Region were offered. Out of five signed blocks, contract for one block was terminated due to non-fulfillment of Production Sharing Contract (PSC) terms by the contractor. In the four exploration blocks for which Production Sharing

Contracts are effective, private companies have reprocessed 685 Line Kilometer (LKM) of existing 2D data and acquired about 334 LKM new 2D seismic data as on 31st March, 2004. Further exploration work is in progress.

Under the New Exploration Licensing Policy (NELP), implemented by Government of India in 1999, exploration blocks are offered to companies including National Oil Companies viz., ONGC and OIL for submission of bids. The exploration blocks are awarded based on the bidding. Ten blocks in the North Eastern Region have been offered in first four rounds of NELP so far, out of which PSCs have been signed for eight blocks. Out of eight signed blocks, two are with private companies/JVs while rest are with NOCs. The exploration work in five of these blocks have been initiated while PELs are yet to be issued by State Governments in three blocks. In addition, discovered fields have also been awarded to Private/JV companies, namely Kharsang oil field in Arunachal Pradesh and Amguri gas field in Assam.

CHAPTER - XI



11. GENERAL

11.1 Progressive use of Hindi

11.1.1 The Ministry of Petroleum & Natural Gas is implementing provisions of the Official Language Act, 1963 and Rules framed thereunder. It is also responsible for the implementation of Official Language Policy in various Offices of Public Sector Undertakings under its administrative control.

11.1.2 This Ministry has been notified under Rule 10(4) of the Official Language (Use for Official Purpose of the Union) Rules, 1976. Three sections of the Ministry viz. Administration Section, Library and SC/ST Cell have been identified under Rule 8(4) for doing their entire work in Hindi. The Establishment Section is also required to do entire work in Hindi in respect of group 'C' and 'D' employees. Eleven type of works have been identified under the aforesaid Rule for doing in Hindi only. Further, instructions have been issued, under the said Rules to all Officers/employees of the Ministry who are proficient in Hindi, to prepare and submit drafts etc. of following categories of communications in Hindi language only :

- a) All communications to State Government & Union Territory Administration in Region 'A' and Region 'B' and all offices, Undertakings, etc. of Central Government situated in these Regions or to any person in these Regions.
- b) Replies to all incoming communication written in Hindi.
- c) Reply to application, appeal or representation written or signed by an employee in Hindi.

11.1.3 The Ministry has prepared a time-bound programme to impart in-service training to all its employees who do not possess working knowledge of Hindi. Under this programme, 3 employees were nominated for Probodh class under Hindi Teaching Scheme during 2003-04. 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 2 Stenographers and 3 LDCs were nominated for training.

11.1.4 The first working day of every month is observed as Hindi Divas in the Ministry. All the Officers/employees are expected to undertake official work only in Hindi on that day. Similarly, the PSUs under the Ministry have also been advised to observe Hindi Divas every month in their offices.

11.1.5 The 'Hindi Fortnight' was celebrated in the Ministry during 12 – 26 September, 2003 and a number of competitions viz., Hindi essay writing competition, Hindi noting/drafting competition etc. were organised. 6 participants were given cash awards.

11.1.6 The Parliamentary Committee on official Language Committee inspected 35 offices of PSUs under the administrative control of the Ministry scattered throughout the country. 21 PSU offices were entrusted upon with the coordination work also. The location in-charge and offices of official language actively participated in the inspections. All the PSUs were made aware of findings of the Committee and orders were issued for removing short comings.

11.1.7 Most of the computers were provided with Hindi software during the year.

11.1.8 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.

11.1.9 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.

11.1.10 So far, 295 offices of the Public Sector Undertakings, in which 80 percent staff acquired working knowledge of Hindi, have been notified and 1 office was denotified in pursuance of Rule 10 (4) of the Official Language (Use for Official Purposes of the Union) Rules, 1976.

The Public Sector Undertakings have been advised to conduct survey of their offices with a view to ascertain the number and percentage of employees who have acquired working knowledge of Hindi.

11.1.11 The Annual Programme for the financial year 2003-04 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.

11.1.12 Books, magazines 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.

11.1.13 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. 5 offices in region "A" have been inspected in 2003-04.

11.1.14 The Hon'ble Prime Minister's Guidelines, as the Chairman of Kendriya Hindi Samiti were brought to the notice of all officers of the Ministry and PSUs under its administrative control and they were requested to ensure implementation of these guidelines.

11.2 PUBLIC GRIEVANCE CELL

The Public Grievance Cell is working in the Ministry for attending to grievances of members of public in respect of services rendered by the Ministry or Public Sector Oil Companies under its control. In order to give proper attention to the public grievances, Grievance Officers have been nominated in all the Public Sector Oil Companies, who attend to public grievances in an efficient manner. Disposal of public grievances is monitored regularly. A separate grievance cell for redressal of the grievances of members of staff of the Ministry is also functioning under the charge of Director (Administration). The jurisdiction of Directorate of the Public Grievances setup in the Cabinet Secretariat has already been extended to Ministry of Petroleum and Natural Gas.

During the year 2003-2004, the Public Grievance Cell of this Ministry received a total of 129 grievances and the pendency of the grievances as on 31st March, 2003 was 139 grievances. During the year 2003-2004, 191 grievances were settled/disposed off which comes to more than 78%.

The Director of Public Grievances in the Ministry is empowered to call for files/papers of the documents connected with grievances pending for more than 3 months in the Ministry and with Oil Sector Public Undertakings and to take a decision thereon with approval of the Secretary, Ministry of Petroleum and Natural Gas or Head of the Organization. He is empowered to communicate final decision to aggrieved parties.

11.3

INFORMATION FACILITATION COUNTER

The Ministry of Petroleum & Natural Gas set up the Information Facilitation Counter on 30th June, 1997. During the year 2002-03, Information Facilitation Counter has been engaged in projecting transparency in the working of the Government of India in the Ministry of Petroleum & Natural Gas and provided information on all aspects of Oil Industry. The Citizen's Charter drafted by the Experts of the Oil Industry under the aegis 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, 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.

Material published by the Petroleum Conservation Research Association captioned as 'SAVE OIL', 'SAVE DIESEL – Tips on Operation and Maintenance of Tractors', 'petrol saving tips for motorists' and "All about oil" is prominently displayed at the Counter and supplied to the visitors on demand.

Due publicity was given in regard to the Control Orders issued by the Ministry of Petroleum & Natural Gas. These are Naphtha (Acquisition, Sale, Storage and Prevention of Use in Automobiles) Order, 2000 and The Solvent, Raffinate and Slop (Acquisition, Sale, Storage and Prevention of Use in Automobiles) Order, 2001 to check adulteration of automobile fuels, viz., Motor Spirit and High Speed Diesel Oil by adulteration Naphtha, Solvents, Raffinate and Slop and The Liquefied Petroleum Gas (Regulation of Use in Motor Vehicles) Order, 2001 to use LPG as automotive fuel.

In addition to above, information on Dismantling of Administered Pricing Mechanism (APM), Guidelines for Laying Petroleum Product Pipelines, National Exploration Licensing Policy (NELP) were provided to the visiting public.

Ministry of Petroleum & Natural Gas has brought out a Booklet on Auto Fuel Policy. The policy provides a clear cut road-map for changes in vehicular technology and corresponding fuel quality for the whole country. Measures are also proposed to reduce emissions from in-use vehicles. In developing the Policy, social cost has been optimized. The Booklet is available at the Information Facilitation Counter of the Ministry and is being distributed to the public on demand for information and guidance.

The Citizens Charter of this Ministry originally brought out during the year 1997 is under updation, incorporating many new developments in the Petroleum Sector during the period 1997 to 2003. The Citizens Charter is under reprinting and will be ready shortly. The reprinted version of the Citizens Charter of this Ministry will be sent to the Hon'ble Members of the parliament as soon as it is ready.

During 2003-04, 3500 members of the public have been benefited from the Information Facilitation Counter.

11.4 INFORMATION TECHNOLOGY INITIATIVES

National Informatics Centre (NIC) is providing the necessary data processing and analysis support to the ministry of Petroleum & Natural

Gas. It is also responsible for development, implementation and maintenance of various e-governance systems/applications for decision support and office automation with the aim of bringing transparency and efficiency in the working. It has taken initiatives in creating awareness and promotion of use of information and communication technologies (ICT) in the ministry. The Local Area Network (LAN) has been established by connecting around 100 nodes of the ministry and another 140-150 nodes would be connected next year.

11.4.1 Web Site

To provide world wide information about the ministry, its functioning and policies, ministry's website (<http://petroleum.nic.in>) is being maintained by NIC. The home page of the ministry contains links to different sectors like Organisational setup, Petroleum Statistics, Exploration & Production, Natural Gas, Refining, Marketing Finance, Conservation of Petroleum Products and Environmental Issues, Investment Opportunities, Laws, Rules and Regulations, Citizen Charter, Tender Notices and Annual Reports. This page also provides links to other important reports like 'Auto Fuel Policy Report' etc.

11.4.2 IntraWeb Portal

A local intranet site has also been created and maintained to facilitate the users within the Ministry. Only authenticated users of the Ministry have been given permission to enter the intranet and access the relevant information. This intranet site provides **Help Desk** which includes information like Telephone Directory and E-mail directory of the Ministry, Forms related to administration/establishment and a database link to enter LAN related and General complaints. **Notice Board** Section has been designed to put notices of the Ministry. **Cash & Admin** section contains the facility of monthly payslips of each employee. Another sections include **Links to Important Web Sites** and **Latest From Newspapers**. **MIS** section on the intraweb portal contains links to database oriented information.

11.4.3 Training

An advanced training on MS-Office for about 20 officials of the ministry has been provided.

11.4.4 Telecommuting Services

All officers of the level of Joint Secretary and above have been provided NICNET/INTERNET services from their residence on dialup connection.

11.5 OUTSTANDING AUDIT OBJECTIONS

Audit had shown a total number of 51 objections as outstanding in its report submitted to the Ministry in 2003-04. Attempts have been made to settle the outstanding audit observations.

11.6 C & AG'S REPORT

Paras of C&AG's Report No. 3 of 2003 (Commercial) are at Appendix VIII.

11.7 POST APM SCENARIO

11.7.1 The Government of India, Ministry of Petroleum and Natural Gas vide its order no. P-20029/21/94-PP dated January 18, 1995 had appointed a Strategic Planning Group on Restructuring of the Oil Industry ('R' Group) comprising of eminent experts from the Public Sector & Private Sector, distinguished Energy Experts and academicians to make recommendations to meet the policy objectives and initiatives required for restructuring the oil industry. The 'R' Group had recommended the gradual phasing out of Administered Pricing Mechanism (APM) in the hydrocarbon sector and introduction of free marketing mechanism.

Based on the recommendations of the 'R' Group and the 'Expert Technical Group' set up by the Government in June 1996 to examine the impact on various sectors at different levels of duty structure in case of dismantling of APM, the Government of India, Ministry of Petroleum & Natural Gas vide Resolution No. P-20012/29/97-PP dated 21st November 1997 had notified the details of phased programme of dismantling of APM. As a result, the consumer prices of all products except motor spirit (MS), high speed diesel (HSD), aviation turbine fuel (ATF), kerosene for public distribution (PDS kerosene) and LPG used for domestic cooking (domestic LPG) were decontrolled with effect from 1st April, 1998. As a follow up the aforesaid decision, the Government vide Ministry of Petroleum & Natural Gas Resolution No.20018/2/2000-PP dated 30th March 2001 decontrolled the pricing of aviation turbine fuel (ATF) with effect from 1st April 2001.

Pursuant to the decisions contained in the aforesaid Resolution of November 1997, the Government decided to dismantle the APM in the hydrocarbon sector with effect from 1st April, 2002. The details of the decisions taken are contained in Resolution No. P-20029/22/2001-PP dated 28th March 2002.

The post APM pricing, supply/distribution and marketing scenario have been discussed in the following paragraphs.

11.7.2 Post APM pricing scenario

With the dismantling of APM effective 1.4.2002, the pricing of all petroleum products, except for PDS Kerosene and Domestic LPG, has been decontrolled.

As regards the pricing of petrol and diesel, the OMCs entered into agreements with the refineries post APM as per which the former pay to the latter the import parity prices of petrol and diesel, revised on fortnightly basis, taking into account the international prices of these products. The OMCs, in turn, review the domestic consumer prices fortnightly.

PDS Kerosene and Domestic LPG continue to be subsidized products post APM. The budgetary subsidy on these products is on a flat rate basis effective 1st April 2002 and is to be phased out in 3 to 5 years. Post APM i.e. after 1.4.02, the international oil prices have remained quite high. In case, the OMCs were to pass on the post APM volatility in the international prices in the domestic prices of these products after taking into account the flat rate of Government subsidy, the consumer prices would have become quite high. Considering the sensitive nature of these domestic fuels of mass consumption and with a view to facilitate a smooth transition to the post APM period, the Government reviewed the position in September 2003 and decided that the selling prices of these products would not be increased upto 31.3.04 and the resultant under-recoveries of OMCs would be absorbed/shared amongst the oil companies.

In addition to the subsidy on PDS Kerosene and Domestic LPG, there is also freight subsidy for supplies of these products to the far-flung

areas. This subsidy is also to be phased out in a period of 3-5 year effective 1.4.2002.

11.7.3 Budgetary allocation under subsidy schemes and expenditure during 2003-04

The position is depicted in the following table :

(Rupees in crore)

Name of the scheme	Allocation	Expenditure
"The PDS Kerosene and Domestic LPG Scheme, 2002"	6300	6292.44
"The Freight Subsidy (For Far-flung Areas) Scheme, 2002"	246	79.32

11.7.4 Post APM supply/distribution scenario

During the APM, supply of retail products namely petrol, diesel, PDS Kerosene and domestic LPG was coordinated by the Oil Coordination Committee through the monthly supply plan meetings. With a view to ensure uninterrupted supply of petroleum products in various parts of the country post APM and a smooth transition to a free market scenario, the oil companies entered into product exchange/

infrastructure sharing agreements for the period 1.4.2002 to 31.3.2004. The supply/distribution position of petroleum products post APM has been smooth/satisfactory.

11.7.5 Post APM marketing scenario

During APM, only the public sector oil PSUs namely IOC, BPC, HPC and IBP had the rights for marketing the transportation fuels namely, motor spirit, high speed diesel and aviation turbine fuel. The Government vide resolution of the Ministry of Petroleum and Natural Gas No. P-23015/1/2001-Mkt. Dated 8th March 2002, decided to grant authorization to market transportation fuels to the new entrants including from the private sector as per the guidelines contained therein. As per these guidelines, apart from asking the aspirants for marketing rights to make the threshold investment in the eligible activities in the hydrocarbon sector, with a view to ensure level playing field and supply of products to the remote locations, the guidelines inter-alia contain provisions to impose conditions in public interest such as servicing the remote areas and low service areas as may be declared by the Government from time to time. So far, four new companies viz. RIL, Essar, ONGC and NRL have been granted authorization to market transportation fuels.



HPCL's 1st Mobile Dispensing Unit

11.7.6 STATEMENT SHOWING EXISTING TARIFFS (2003-04)

(in percentage unless otherwise specified)

	Current Duty Rates	
	Customs	Excise
Crude	10	Cess @ Rs. 1800/- MT plus
	Plus Rs. 50/MT National Calamity	* Rs.50/MT National Calamity
	Contingent Duty	Contingency Duty
HSD	20	14
		Plus Rs. 1.50/litre addl.duty
LDO	20	16
		Plus Rs.1.50/litre
MS	20	30#
		Plus Rs.6/- per litre Special
		Additional Excise Duty +
		Rs.1.50/- Litre additional duty
ATF	20	8
LPG	10	16
FO/LSHS		
-For Fertilizer Use	0	0
-Others	20	16
Naphtha		
-For Fertilizer Use	0	0
-Others	10	16
SKO		
-PDS for import by Indian Oil	10	16
-Kerosene for parallel Marketing	20	16
-Kerosene for use in manufacture of LAB/N paraffin	5	16
Bitumen	20	16
Others	20	16

Notes:*Crude oil produced in the PSC fields and blocks covered by NELP shall be exempt from this levy.# MS intended for use in manufacture of 5% ethanol doped petrol – 30% + Rs. 5.70/Litre special additional excise duty + Rs.1.50/ litre additional duty. Petroleum Products produced by refineries in North East–NRL, BRPL, Guwahati and Digboi attract 50% of effective Excise Duty Rates.

11.8 ANTI-ADULTERATION CELL (AAC)

AAC was set up primarily to strengthen the vigilance machinery to check adulteration of Motor Spirit and High Speed Diesel at Retail Outlets. AAC was assigned the following functions :

- Prevention of adulteration & other malpractices
- Enquires into benami operation
- Coordination with State Governments, Oil Companies
- Enquiries into companies against Dealer Selection Boards.



APPENDICES

Appendix – I

WORK ALLOCATED TO MINISTRY OF PETROLEUM AND NATURAL GAS

1. Exploration for, and exploitation of petroleum resources, including natural gas and Coal Bed Methane.
2. Production, supply, distribution, marketing and pricing of petroleum, including natural gas, Coal Bed Methane and petroleum products.
3. Oil refineries including Lube Plants.
4. Additives for petroleum and petroleum products.
5. Lube Blending and greases.
6. Planning, development and control, of and assistance to all industries dealt with by the Ministry.
7. All attached or subordinate offices or other organizations concerned with any of the subjects specified in the list.
8. Planning, development and regulation of oilfield services.
9. Public sector projects falling under the subject included in this list. Engineers India Limited and IBP Company, together with its subsidiaries, except such projects as are specifically allotted to any other Ministry/Department.
10. The Oil Fields (Regulation and Development) Act, 1948 (53 of 1948).
11. The Oil and Natural Gas Commission Act, 1959 (43 of 1959).
12. The Petroleum & Minerals Pipelines (Acquisition of right of User in Land) Act, 1962 (50 of 1962).
13. The Esso (Acquisition of Undertakings in India) Act, 1974 (4 of 1974).
14. The Oil Industry (Development) Act, 1974 (47 of 1974).
15. The Burmah-Shell (Acquisition of Undertakings in India) Act, 1976 (2 of 1976).
16. The Caltex (Acquisition of Shares of Caltex Oil Refining (India) Limited and of the Undertakings in India of Caltex (India) Limited Act, 1977.
17. Administration of the Petroleum Act, 1934 (30 of 1934) and the rules made thereunder.

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 (31.03.2004)

1. Oil & Natural Gas Corporation Ltd.	74.15%
2. Indian Oil Corporation Ltd.	82.03%
3. Hindustan Petroleum Corporation Ltd.	51.01%
4. Bharat Petroleum Corporation Ltd.	66.20%
5. GAIL (India) Ltd.	57.35%
6. Engineers India Ltd.	90.39%
7. Oil India Ltd.	98.13%
8. Biecco Lawrie & Co. Ltd.	57.00%

II. Subsidiaries and other Companies

1. ONGC Videsh Limited	– wholly owned by ONGC
2. Mangalore Refinery & Petrochemicals Limited	– subsidiary of ONGC
3. Indian Oil Blending Limited	– wholly owned by IOC
4. Bongaigaon Refinery & Petrochemicals Limited	– subsidiary of IOC
5. IBP Co. Ltd.	– subsidiary of IOC
6. Chennai Petroleum Corporation Limited	– subsidiary of IOC
7. Indian Oil Mauritius Ltd	– subsidiary of IOC
8. Numaligarh Refineries Limited	– subsidiary of BPCL
9. Kochi Refineries Limited	– subsidiary of BPCL
10. Certification Engineers International Limited	– wholly owned by EIL
11. EIL Asia Pacific Sdn BHD	– wholly owned by EIL
12. Balmer Lawrie & Co. Ltd.	

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.

PRODUCTION OF CRUDE OIL AND NATURAL GAS

ITEM	1990-91	1995-96	1999-00	2000-01	2001-02	2002-03	2003-04*
1	2	3	4	5	6	7	8
1. CRUDE OIL PRODUCTION ++ ('000' Tonnes)							
(a) Onshore :							
Gujarat	6398	6385	5703	5815	6001	6042	6135
Assam/Nagaland	5076	5044	4972	5199	5096	4659	4589
Arunachal Pradesh	43	31	100	78	69	74	80
Tamil Nadu	302	374	377	436	440	395	375
Andhra Pradesh	11	44	146	263	283	300	281
Total (a)	11830	11878	11298	11791	11889	11470	11460
of which							
OIL	2649	2882	3283	3286	3183	2950	3002
ONGC	9181	8970	7921	8428	8635	8445	8384
JVC/Private	0	26	94	77	71	75	74
(b) Offshore :							
ONGC	21191	22665	16727	16629	16073	17559	17681
JVC/Private	Nil	624	3924	4006	4070	4013	4240
Total (b)	21191	23289	20651	20635	20143	21572	21921
Grand Total (a+b)	33021	35167	31949	32426	32032	33042	33381
2. NATURAL GAS PRODUCTION							
(Million Cubic Metres)							
(a) Onshore :							
Gujarat	1696	2887	3271	3149	3171	3531	3515
Assam/Nagaland	2011	1880	2083	2204	1992	2047	2241
Arunachal Pradesh	29	32	45	33	34	36	\$
Tripura	70	131	353	376	416	446	509
Tamil Nadu	64	117	138	200	348	466	605
Andhra Pradesh	46	679	1363	1604	1797	2038	1928
Rajasthan	Nil	12	151	159	100	162	168
Total (a)	3916	5738	7404	7725	7858	8726	8966
of which							
OIL	1518	1433	1729	1861	1619	1744	1880
ONGC	2398	4296	5478	5555	5615	5871	5779
JVC/Private	0	9	197	309	624	1111	1307
(b) Offshore:							
ONGC	14082	16579	17774	18465	18426	18373	17805
JVC/Private	0	322	3268	3287	3430	4296	5184
Total (b)	14082	16901	21042	21752	21856	22669	22989
Grand Total (a+b)	17998	22639	28446	29477	29714	31395	31955

* : Provisional
Source : ONGC, OIL and DGH.

++ : Includes condensates
\$: Included in Assam.

REFINERY CRUDE THROUGHPUT

('000 Tonne)

REFINERY		Refinery Crude Throughput							
		1990-91	1995-96	1999-00	2000-01	2001-02	2002-03	2003-04*	
		1	2	3	4	5	6	7	8
(a)	PUBLIC SECTOR	51772	58741	74052	77411	77620	82015	89496	
	IOC, Guwahati	783	839	914	707	656	458	891	
	IOC, Barauni	2416	2322	3411	3122	2876	2994	4304	
	IOC, Gujarat	9334	10167	11109	12006	11697	12434	12758	
	IOC, Haldia	2835	3416	4105	3873	4026	4513	4518	
	IOC,Mathura	7808	8332	8125	7133	8031	8207	8248	
	IOC,Digboi	566	559	603	678	653	581	602	
	IOC, Panipat @@	0	0	4153	5707	5822	6101	6338	
	Total IOC	23742	25635	32420	33226	33761	35288	37659	
	BPCL, Mumbai	6957	7460	8907	8683	8744	8711	8757	
	HPCL, Mumbai	5766	5965	6007	5575	5641	6078	6108	
	HPCL,Visakh	3464	5037	4555	6405	6706	6851	7592	
	Total HPCL	9230	11002	10562	11980	12347	12929	13700	
	KRL,Kerala	5006	7421	7830	7520	6797	7580	7854	
	CPCL,Manali	5698	5599	6377	6046	6123	6176	6387	
	CPCL, Narimanam	0	370	636	579	566	643	653	
	Total CPCL	5698	5969	7013	6625	6689	6819	7040	
	BRPL, Assam	1139	1215	1905	1488	1475	1463	2126	
	NRL, Numaligarh #	0	0	215	1451	2307	1879	2200	
	ONGC, Tatipaka \$	0	0	0	0	13	93	91	
	MRPL, Mangalore @	0	39	5200	6438	5487	7253	10069	
(b)	PRIVATE SECTOR	0	0	11912	26033	29654	30544	32345	
	RPL, Jamnagar ##	0	0	11912	26033	29654	30544	32345	
	Total (a+b)	51772	58741	85964	103444	107274	112559	121841	

* : Provisional Source : Public Sector Undertakings / Private Company

@ : Commenced production from 25.3.1996

@ @ : Commenced production from May 1998

: Commenced production from April 1999

: Commenced production from July 1999

\$: Commenced production from January 2002

PRODUCTION OF PETROLEUM PRODUCTS

('000 Tonne)

PRODUCTS	1990-91	1995-96	1999-00	2000-01	2001-02	2002-03	2003-04*
1	2	3	4	5	6	7	8
(a) From Crude Oil							
1. Light Distillates	10023	12433	18314	25048	26539	28619	31971
of which							
LPG	1221	1539	2487	4088	4778	4903	5348
Mogas	3552	4462	6232	8070	9699	10361	10999
Naphtha	4859	5975	8170	9908	9180	9650	11317
Others ^{LD}	391	457	1425	2982	2882	3705	4307
2. Middle Distillates	26344	29941	44995	52445	54409	55937	60018
of which							
Kerosene	5471	5267	5735	8714	9681	10028	10187
ATF/RTF/Jet A-1	1801	2127	2292	2513	2595	3053	4289
HSD	17185	20661	34793	39052	39899	40207	43316
LDO	1509	1351	1624	1481	1703	2079	1659
Others ^{MD}	378	535	551	685	531	570	567
3. Heavy Ends	12195	12707	16102	18121	19056	19584	21474
of which							
Furnace Oil	4879	5351	6559	6479	7488	7529	8737
LSHS/HHS/RFO	4550	4228	4793	4913	4739	4638	4635
Lube Oils	561	633	728	684	651	684	666
Bitumen	1603	2032	2485	2721	2561	2941	3397
Petroleum Coke	229	256	465	2473	2784	2659	2743
Paraffin Wax	49	43	47	51	45	42	53
Others Waxes	46	63	70	61	37	3	Neg.
Others ^{HE}	278	101	955	739	751	1088	1243
Total (1+2+3)	48562	55081	79411	95614	100004	104140	113463
(b) From Natural Gas							
LPG	929	1715	1986	2045	2205	2370	2320

*: Provisional

Source: Public Sector Undertakings / Private Company.

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 Butadine Feed Stock and Methyl Ethyl Keetone Feed Stock.

MD : Includes Mineral Turpentine Oil, JP-5, Linear Alkyl Benzene Feed Stock, Aromex, Jute Batching Oil, Solvent 1425, Low Sulphur Heavy Fuel HSD, Desulphurisation Hydrocracker Bottom and Special Kerosene.

HE : Includes Carbon Black Feed Stock, Sulphur, Solar Oil, Light Aluminium Rolling Oil and Extracts.

CONSUMPTION OF PETROLEUM PRODUCTS

(000' Tonnes)

PRODUCTS		1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04 [R]
1		2	3	4	5	6	7	8	9	10
A. PUBLIC SECTOR										
1	Light Distillates	13143	14384	15742	17958	20473	21770	22916	23567	24739
	LPG	3849	4184	4581	5041	6029	6613	7310	8143	9092
	Mogas	4679	4955	5182	5507	5909	6613	7011	7570	7921
	Naphtha	3669	4015	4716	6652	7970	8059	8128	7284	7072
	NGL	0	682	768	330	91	6	27	32	35
	Others	946	548	495	428	474	479	440	538	619
2	Middle Distillates	45460	48544	49716	51686	54259	52854	50661	50555	50213
	SKO	9317	9646	9878	10599	10731	10714	10114	9707	9403
	ATF	2082	2154	2108	2112	2197	2249	2256	2269	2473
	HSDO	32254	35019	36071	37217	39287	37938	36515	36534	36625
	LDO	1311	1223	1235	1278	1512	1399	1202	1413	1145
	Others	496	502	424	480	532	554	574	632	567
3	Heavy Ends	13915	14296	14380	15122	15919	15362	15515	16002	15964
	FO/LSHS	10685	10847	10974	11304	11579	11360	11616	11652	11385
	Lubes/Greases	712	705	835	885	915	797	819	938	904
	Bitumen	2005	2273	2178	2412	2879	2618	2428	2847	3114
	Petroleum Coke	319	276	227	315	328	414	367	335	308
	Paraffin Wax	76	58	28	36	53	43	45	41	43
	Other Waxes	57	57	45	76	89	62	51	13	20
	Others	61	80	93	94	76	68	189	176	190
Total (A) (Excl. RBF)		72518	77224	79838	84766	90651	89986	89092	90124	90916
B. PRIVATE SECTOR										
1	Light Distillates	558	160	2124	2573	4058	7544	6702	8188	9172
	LPG	73	83	222	311	392	403	418	208	216
	MS			0	0	0	0	0	0	2
	Naphtha / NGL	485	15	1874	2239	2831	3614	3600	4645	4628
	Benzene	0	0	0	23	33	8	0	0	0
	Reformate								2061	2618
	Others	0	62	28	0	802	3519\$	2684\$	1274	1708
2	Middle Distillates	622	507	1187	1644	1175	613	778	1510	1521
	SKO	615	507	1187	1644	1167	593	318	698	804
	HSDO	7	0	0	0	8	20	31	110	245
	LDO	0	0	0	0	0	0	390	650	438
	Others	0	0	0	0	0	0	39	52	34
3	Heavy Ends	1133	1277	1141	1579	1202	1931	3860	4304	4944
	Furnace Oil / LSHS	475	660	517	1206	874	1293	1366	1086	1088
	Lubes/Greases	244	308	246	212	328	246	318	312	577
	Bitumen	0	0	0	0	0	96	156	139	6
	Raw Petroleum Coke	0	0	0	78	0	34	1431	2228	2569
	CBFS	0	0	0	83	0	230	75	74	177
	Others	414	309	378	0	0	32	514	465	527
Total (B)		2313	1944	4452	5796	6435	10088	11340	14002	15637
TOTAL (A+B)		74831	79168	84290	90562	97086	100074	100432	104126	106553

R: Revised. \$: Includes reformate also.

Source: Petroleum Planning & Analysis Cell.

IMPORTS / EXPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS

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

ITEM	2000-01		2001-02		2002-03		2003-04 [R]	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	2	3	4	5	6	7	8	9
GROSS IMPORTS								
A. Crude Oil	74097	65932	78706	60397	81989	76195	90434	83528
B. Petroleum Products								
I. Light Distillates	4018	5438	3967	4287	3366	4777	4553	6071
1. LPG	853	1332	659	810	1073	1867	2182	3187
2. Naphtha	3165	4106	3308	3477	2293	2910	2371	2884
II. Middle Distillates	1919	2389	424	425	806	934	902	1012
1. ATF	1	3	2	9	2	7	2	9
2. SKO	1918	2386	391	388	698	808	804	890
3. HSD	0	0	31	28	106	119	96	113
4. Others	0	0	0	0	0	0	0	0
III. Heavy Ends	3330	4266	2618	2537	2565	2495	2442	2594
1. FO / LSHS	1728	1309	1425	1030	1256	1084	924	786
2. Lubes / Others ^{HEI}	1602	2957	1193	1507	1309	1411	1518	1808
Total(B)	9267	12093	7009	7249	6737	8206	7897	9677
Grand Total(A+B)	83364	78025	85715	67646	88726	84401	98331	93205
EXPORTS								
Petroleum Products								
I. Light Distillates	4221	4935	5008	4927	4493	5475	5448	7100
1. Naphtha	2882	3273	2515	2234	2067	2325	2176	2653
2. MS	1202	1442	2406	2570	2336	3011	2979	4021
3. TAME	137	220	87	123	90	139	83	117
4. Reformate	0	0	0	0	0	0	210	309
II. Middle Distillates	1757	2046	3084	2747	3875	4337	7841	8713
1. HSD/LDO	1597	1872	2890	2571	3178	3547	6181	6763
2. ATF	160	174	194	176	697	790	1660	195
III. Heavy Ends	2387	691	1973	545	1921	1056	1331	968
1. FO/LSHS	508	320	482	255	1120	902	1310	928
2. VGO/Lubes	1879	371	272	211	101	109	17	36
3. Coke/Bitumen	0	0	1219	79	700	45	4	4
Total	8365	7672	10065	8219	10289	10868	14620	16781
NET IMPORTS								
A. Crude Oil	74097	65932	78706	60397	81989	76195	90434	83528
B. Pol.Products	902	4421	-3056	-970	-3552	-2662	-6723	-7104
Grand Total	74999	70353	75650	59427	78437	73533	83711	76424

R : Revised TAME : Tertiary Amyl Methyl Ether.

HEI : Includes Bitumen, Lube Oil Base Stock, Low Sulphur Waxy Residue, Carbon Black Feed Stock and Rubber Processing Oil.

Source : Petroleum Planning & Analysis Cell, New Delhi.

IMPORTANT PARAS OF C&AG'S REPORT NO. 3 OF 2003 (COMMERCIAL)

1. Failure of the Hindustan Petroleum Corporation Limited to utilise newly constructed black oil pipeline from Mumbai Refinery to Vashi resulted in infructuous expenditure of Rs. 42.30 crore from April 1998 to March 2001.

(Para 17.4.1 of Report No. 3 of 2003)

Commercial

2. IOC constructed in September 2001 a terminal at a cost of Rs. 31.07 crore to supply fuel to Independent Power Producers without waiting for their financial closure. This resulted in facilities remaining idle.

(Para 17.6.2 of Report No. 3 of 2003)

Commercial

3. For replacing the conventional logging equipment with Electro-logging one (a new technology) in two wild-cat exploratory well, ONGC mobilised the equipment in June 1998. Due to non-availability of scope of work in identified wells, the equipment was finally used, as a fait accompli, in various other wells before demobilisation. This resulted in avoidable loss of Rs. 26.03 crore as the data obtained was not found useful.

(Para 17.7.3 of Report No. 3 of 2003)

Commercial