

# PETROTECH-2003

Theme:

**Global Cooperation  
for Hydrocarbon Technology**  
**5<sup>TH</sup> INTERNATIONAL PETROLEUM  
CONFERENCE & EXHIBITION**

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**GOVERNMENT OF INDIA  
MINISTRY OF PETROLEUM & NATURAL GAS**

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*IndianOil and Indian Railways sign pact for use and production of Bio-diesel.*



Dividend Cheque presentation to Shri Ram Naik, Hon'ble Minister of Petroleum and Natural Gas by Shri Proshanto Banerjee, Chairman and Managing Director, GAIL, on February 6, 2003



Shri Ram Naik, Hon'ble Minister of Petroleum & Natural Gas, Govt. of India, receiving Indian Oil Corporation's dividend of Rs. 702.59 crore to the Government of India for the year 2001-02 from Shri M.S. Ramachandran, Chairman, IndianOil.

## CHAPTER I



## 1. INTRODUCTION

1.1. The Ministry of Petroleum & Natural Gas 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 and Shri Santosh Kumar Gangwar as Minister of State in the Ministry of Petroleum & Natural Gas during the year under report.

1.3. Shri B.K. Chaturvedi assumed the charge of Secretary, Petroleum & Natural Gas on 02.04.2002. Prior to him, Shri V.N. Kaul worked as Secretary, Petroleum & Natural Gas from 26.6.2001 to 14.3.2002.

### 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, consisting 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.

### Crude Oil & Natural Gas Production:

1.6 During 2001-02 crude oil production in the country was 32.03 million metric tonnes (MMT) and gas production was 29.71 billion cubic metres (BCM). The target for crude oil production has been set at 33.28 MMT and for natural gas at 30.11 BCM for the year 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. Approval 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 New Exploration Licensing Policy (NELP) provides an international class fiscal and contract framework for Exploration and Production of Hydrocarbons. In the first three rounds of NELP, 70 blocks covering 7.15 lakh sq. km. have been awarded and the area under exploration has almost tripled in the last three years. Today, as much as 67% of the area under Exploration and Production belongs to the NELP Blocks. The exploration investment in the three phases covering these 70 blocks is about Rs. 14,500 crore, which is expected to substantially increase in case of discoveries of hydrocarbons. While the Production Sharing Contracts (PSCs) under NELP-I were signed in April 2000, those under NELP-II were signed in July 2001 and under NELP-III in February 2003. Within such a short period, investment made on exploration exceeds Rs. 2,000 crore in NELP Blocks. What is more important is that seven discoveries have been made, out of which gas discovery in K.G. basin, announced in October 2002 is the most significant with an initial estimated availability of 7 trillion cubic feet. (198 BCM) of gas. Similar discoveries are expected in other NELP Blocks.



*Signing of production sharing contracts under third round of NELP*

1.9 ONGC-Videsh Limited (OVL) a wholly owned subsidiary of ONGC, continued its efforts in acquiring equity oil and gas abroad, besides developing acreages acquired earlier. The gas production from Lan Tay field in Vietnam Offshore started in December 2002. OVL is a partner in the consortium comprising British Petroleum (BP) and PetroVietnam since 1988 and only in the last few years the project work had picked up momentum. The development work in Sakhalin-I project in



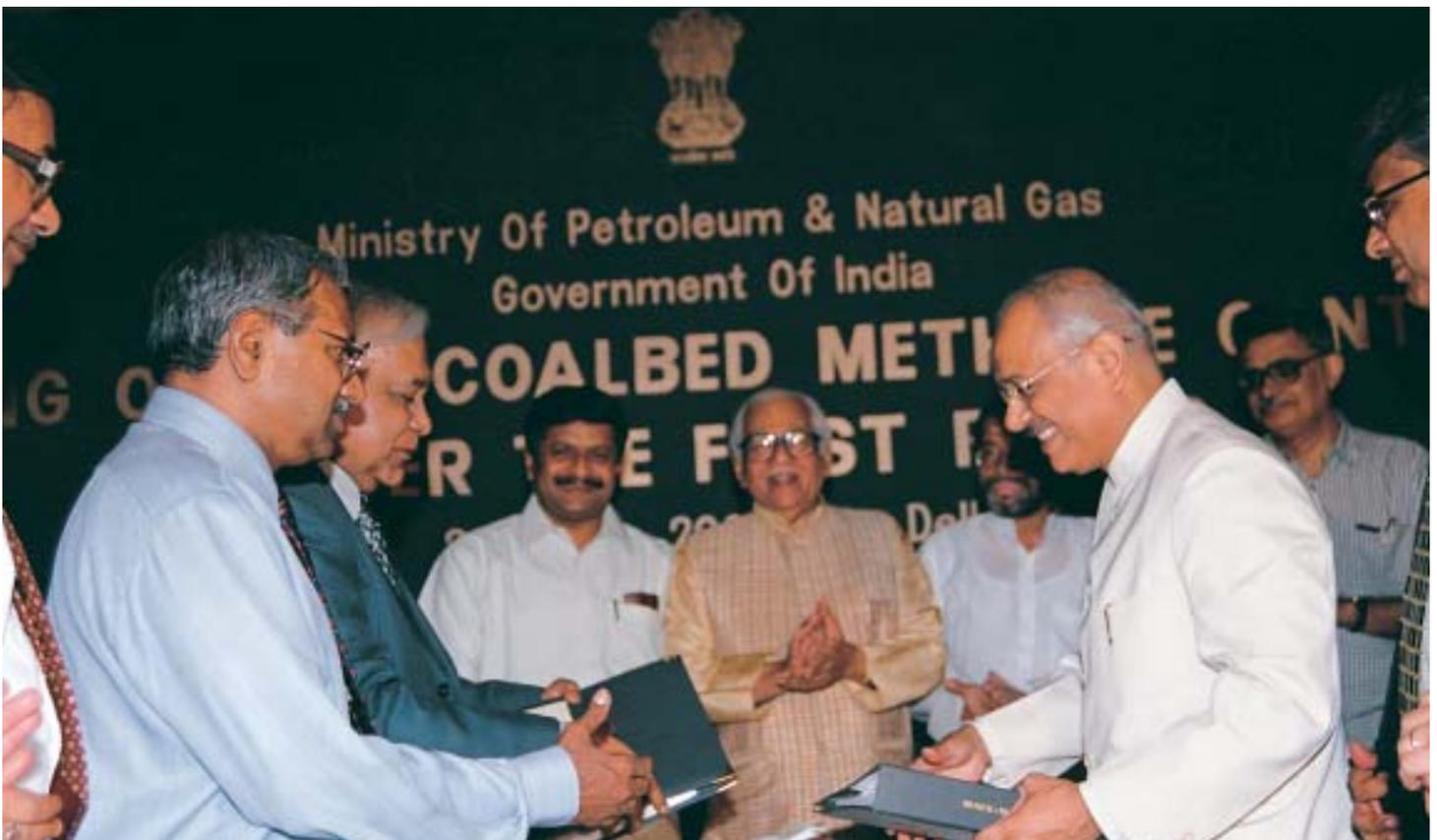
*Shri Ram Naik, Hon'ble Minister of Petroleum & Natural Gas, with Secretary P&NG BK Chaturvedi and C&MD, ONGC Subir Raha in front of India Pavilion in World Petroleum Congress in Brazil*

Russia where OVL is a partner in the consortium comprising ExxonMobil, Sodeco and Rosneft is proceeding apace. OVL has also acquired exploration acreages in USA, Libya and Syria. OVL

signed an agreement for acquiring 25% stakes from M/s Talisman Inc., Canada in Greater Nile Oil Project (GNOP), Sudan. The other partners of the consortium are the three National Oil Companies of China, Malaysia and Sudan. The oil production from the GNOP is more than 12 million tonnes per year and OVL's share will be around 3 million tonnes per year when the deal is concluded.

#### 1.10 Coal Bed Methane (CBM):

Coal Bed Methane is an environment friendly clean fuel similar to Natural Gas. The commercial production of CBM is a proven technology in only 3 or 4 countries in the world. DGH prepares information docket and data packages for CBM blocks. Five contracts were signed for CBM Blocks, two each in the States of Jharkhand and M.P and one in West Bengal, in July 2002. Two more contracts awarded on nomination basis to the consortium of ONGC and Coal India Ltd. have also been finalised and signed on 06.02.03, apart from the CBM Contract signed with Great Eastern Energy Corporation Limited (GEECL) in May 2001 in respect of South Raniganj area in West Bengal. There are 8 CBM Blocks from where a new environmental friendly source of energy is expected to come on stream.



*Joint Secretary Mr. JM Mauskar and ONGC's C&MD Mr. Subir Raha exchanging documents after signing contracts for Coal Bed Methane*

### 1.11 Imports & Exports:

The quantity of crude oil imported (including JVC / private companies) between April-November 2002 was 55.609 MMT, valued at Rs. 49,680 crore. Besides, 4.494 MMT of other petroleum products valued at Rs. 5,029 crore were also imported during this period. Exports of petroleum products were 6.607 MMT, valued at Rs. 6,364 crore during this period.

### 1.12 Refining :

The refining capacity as on 1.4.2002 was 116.07 Million Metric Tonnes Per Annum (MMTPA). Availability of petroleum products during 2002-03 from domestic refineries was adequate to meet the domestic demand except for Liquefied Petroleum Gas (LPG). The availability of petrol and diesel is in excess of domestic requirement and the surplus quantity was exported during the year.

### 1.13 Petrol & Diesel Quality Improvement:

Oil Companies have undertaken several measures in the recent past to combat air pollution. Auto fuel quality has been improved to enable the automobile industry to comply with the prescribed emission norms. Investment of over Rs.10,000 crore has been made by the PSU refineries during the last 5 years. In this regard Low sulphur diesel (0.25% maximum) and unleaded petrol are being supplied throughout the country with effect from 01.01.2000 and 01.02.2000 respectively. To improve the auto fuel quality in the country for reducing air pollution, supply of 0.05% maximum sulphur petrol and diesel is being made in the National Capital Territory of Delhi, National Capital Region, Mumbai Metropolitan area, Kolkata, Chennai and Hyderabad/Secunderabad. The Government have advised the oil companies to supply 0.05% maximum sulphur content petrol and diesel in the cities of Ahmedabad, Bangalore, Pune, Kanpur, Surat and Agra also w.e.f. 1.4.2003.

### 1.14 Dr. R.A. Mashelkar Committee on Auto Fuel Policy:

On 13.9.2001 Government of India had constituted a Committee of Experts of national repute, headed by Dr. R.A. Mashelkar, Director General, Council of Scientific & Industrial Research (CSIR) for recommending an 'Auto Fuel Policy' for the country, including major cities and other related issues. The Committee submitted its Interim Report on 1.1.2002. The Government accepted the recommendations contained in the Interim Report of the Committee. The Committee submitted its Final Report on 25<sup>th</sup> September, 2002.

### 1.15 Ethanol Blending in petrol:

After the successful completion of the three pilot projects launched earlier, the Government decided to expand the production & distribution of Gasohol to cover the entire country in two phases. In the first phase, 9 States and 4 Union Territories are proposed to be covered starting from 1<sup>st</sup> of January 2003 and extending upto 30.6.2003. The Government of India by a notification dated 26.12.2002 have permitted sale of only 5% ethanol blended petrol in the States of Andhra Pradesh, Maharashtra, Punjab, Uttar Pradesh, Tamil Nadu, Goa, Haryana, Gujarat, Karnataka and Union Territories of Pondicherry, Daman & Diu and Dadra & Nagar Haveli by 30.6.2003. The remaining States and Union Territories would be covered in the second phase for which dates are yet to be decided.

In addition, a Task Force constituted by the Ministry to consider, inter alia, raising the percentage of ethanol blend in petrol to 10% and blending of ethanol with diesel has made considerable progress in work on both the fronts through R&D Centre of IOC. The final report on various aspects of blending of ethanol with Motor Sprit (MS) to the extent of 10% has been submitted.

The Bureau of Indian Standards has been requested to amend the specifications/standards validating blending of ethanol to the extent of 10% in MS.

Ministry of Petroleum is also planning to set up a pilot project on blending of bio-diesel with diesel to the extent of 5% of which modalities are being worked out. Experiments have shown that the bio diesel - diesel blend is environment-friendly.

### 1.16 PLAN OUTLAY

The revised Plan Outlay of PSUs of Ministry of Petroleum & Natural Gas for the year 2002-03 is Rs. 21,100.44 crore and Budget Estimate for the year 2003-04 is Rs. 22,731.47 crore. These outlays will be met from internal and extra budgetary resources of the Public Sector Undertakings.

### 1.17 EARNING 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 2001-02 were Rs. 20,099.78 crore and Rs. 12,783.38 crore respectively. The corresponding figures anticipated for 2002-03 are Rs. 26,592.96 crore and Rs. 17,071.69 crore respectively, and for 2003-04 these are estimated at Rs. 20,242.64 crore and Rs.13,106.70 crore respectively.

## 1.18 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 the gap between demand of petroleum products and indigenous supply of crude oil. The continuing tension in the Middle East region which is the main source of our oil imports 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 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/equipment, technology, up-gradation 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 appliance 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-



Shri Ram Naik during promotion of Exploration Blocks under third round of New Exploration licensing policy at Houston (USA)



Shri Ram Naik, launching 5 kg LPG cylinder on 16th August 2002 at Shimla alongwith CM, Himachal Pradesh, Shri Prem Kumar Dhumal and Shri Santosh Gangwar

economic activities leading to increase in awareness on oil conservation.

### OTHER ACHIEVEMENTS:

#### 1.19 Introduction of 5 Kg. cylinder for domestic use

Public Sector Oil Marketing Companies (OMCs) have been marketing LPG in 14.2 Kg. cylinder for the domestic sector and in other larger packages in the non domestic segment. Government decided to allow OMCs to market domestic LPG in 5 KG. cylinder size also at affordable terms for the low income group living in rural, semi urban and hilly areas. This will help fulfill the demand of low income group in urban, semi –urban and rural pockets and also extend reach to hilly terrains and interior areas on account of its portability. It would also help reduce de-forestation, ensuring a pollution free, happy and healthy environment.

OMCs have started the marketing of 5 kgs. LPG cylinder since 16.8.2002 in select districts of 16 states in the first phase. About 13,000 connections have been released by OMCs in these States.

#### 1.20 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 460 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 439 cases so far.

**1.21 Allotment of dealerships/distributorships under the discretionary quota of the Government:**

A discretionary quota of retail outlet dealerships/ LPG distributorships / SKO-LDO dealerships has been earmarked by the Government for allotment on genuine compassionate grounds to deserving persons in the following two categories:

- (i) Dependants of Defence/Paramilitary/Police personnel, who are killed in action or persons permanently disabled while performing their duties and have not been suitably rehabilitated.

- (ii) Dependants of Central/State Government employees, who are killed or permanently disabled while performing their duties and have not been suitably rehabilitated.

Under the discretionary quota, allotment of retail outlet dealerships has so far been made by the Government to the dependants of nine security and other personnel who were killed in the terrorists' attack on Parliament on the 13<sup>th</sup> December, 2001.

## 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), apart from private and joint-venture (JV) 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 2001-02 was 27.891 Million Metric Tonnes (MMT) against the target of 28.65 MMT (98%). The crude production target for the year 2002-03 has been set at 29.300 MMT.

In addition, there was production of 4.141 MMT from the private and JV companies during 2001-02.

The gas production during the year 2001-02 was 25,660 million cubic metres (MMM<sup>3</sup>) from ONGC & OIL. The target for 2002-03 is 25,520 MMM<sup>3</sup>. The gas production by private and JV companies during 2001-02 was 4,054 MMM<sup>3</sup>.

**2.1.2** Several measures were taken to enhance hydrocarbon reserves and increase production are as follows:

- 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 under implementation in fields of 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 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, Government of India is encouraging participation of foreign and Indian companies in the exploration and development activities to supplement the efforts of NOCs 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 two rounds 73 blocks were offered, out of which 48 blocks have been awarded. Further, under the recently concluded NELP III round, a total of 27 blocks offered, of which 23 have been awarded.

### 2.2 STRATEGY OF 10<sup>TH</sup> PLAN (2002-2007)

**During the 10<sup>th</sup> 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 the order 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

### 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. ONGC-Videsh Ltd. (OVL), a wholly owned subsidiary of ONGC, is active in exploration and development activities of oil and gas in Vietnam. In February 2001, OVL has signed an agreement with M/s Rosneft of Russia to acquire 20% interest in the Sakhalin-1 offshore field in

Russia and the interest of the Russian parties stand transferred to OVL with effect from 31st July, 2001. Commerciality of the oil & gas field has been declared on 29th October, 2001 and oil production is expected to commence from year 2005. OVL has "participating interest" in an exploration block in Iraq. OVL has also been actively pursuing some other opportunities in countries like Iran, Iraq, Russia, Venezuela and Algeria to acquire exploration acreage and oil producing properties in these countries. OIL is also actively pursuing opportunities abroad for equity oil.

#### 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 three rounds of bidding under NELP. A total of 70 blocks have been awarded in these three rounds. The estimated investment in these blocks in three exploration phases would be about US \$ 3 billion (about Rs.14, 500 crore). Out of the total area of approx. 1 million sq. km. under exploration today, as much as 70% has been taken up in the last three years under NELP. 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, including a significant gas discovery made in the Krishna-Godavari basin.

In order to give a further push to its exploration efforts, Government is in process of finalising areas for offering under the fourth round of NELP sometime in the quarter of April-June, 2003.

#### 2.5 Coal Bed Methane (CBM) Policy

In order to explore and produce non-conventional 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 eight blocks in the States of Jharkhand, Madhya Pradesh and West Bengal for exploration and production of CBM, which is an environment friendly, non-conventional source of gas.

Additional CBM blocks are being identified for offering in the second round of CBM.

#### 2.6 Safety, Health & Environment

In terms of its corporate objective of 'commitment to environment', ONGC and OIL have 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 resources. 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.
- Occupational Health Centres are being set up at major plants and facilities, manned by specialists.

#### 2.7 Activities in North East

ONGC and OIL are actively pursuing the exploration activities in the North Eastern States viz Assam, Tripura, Nagaland etc. The exploration activities broadly relate:-

- to cover logistically difficult areas like Brahmaputra River Bed, hilly and boulder covered areas and other unexplored areas;
- to probe by exploratory drilling the identified prospects;
- to probe by exploratory drilling the geologically older formations at a deeper depth of the basin in the already discovered fields which is a new play;
- Exploration spread of proven plays to new sectors/areas, by integrating already available seismic, geological and drilling data to new areas;
- thrust for stratigraphic and subtle traps which needs better understanding of geological environment of deposition rather than easily identifiable structural traps;
- to explore the geologically complex thrust belt areas.

During the 9<sup>th</sup> Plan period (1997-2002), ONGC and OIL carried out 6,211 GLK of 2D seismic survey and 2,163 Sq.km. of 3D seismic survey and total exploratory & development drilling 11,169 thousand meters. The production during the period was 26.084 MMT of crude oil and 12,216.97 MMM<sup>3</sup> of natural gas. The actual expenditure in North East sector was Rs. 4,281 Crore, which covered the funds spent as exploration and production activities by ONGC and OIL.

In the 10<sup>th</sup> Plan (2002-07) outlay, ONGC and OIL have kept outlay for the North East Sector for Rs.7,699 Crore, which is nearly 10% of total domestic plan outlays. About 19.5% of the total exploration outlay of ONGC and 83% of OIL has been earmarked for prospects in the North East Region.

The following three Improved Oil Recovery (IOR) projects of ONGC (costing over Rs.100 Crore) with an investment of Rs. 850 Crore have been approved for execution during the next five years.

- i) IOR – Geleki                      Rs. 390.09 Crore
- ii) IOR – Rudrasagar              Rs. 113.90 Crore
- iii) IOR – Lakwa-Lakhmani Rs.345.10 Crore

## 2.8 OIL AND NATURAL GAS CORP. LTD. (ONGC)



Oil and Natural Gas Corporation Ltd. (ONGC), engaged in exploration and exploitation of oil and natural gas, was incorporated under Companies Act 1956 on June 23, 1993, pursuant to Government of India's decision to transform the statutory commission into a Public Limited Company, through Parliament Act for Oil & Natural Gas Commission (Transfer of Undertaking and Repeal Act, 1993). The authorized and paid up capital of ONGC as on 31.3.2002 are Rs. 15,000 Crore and Rs. 1,425.93 Crore respectively. ONGC Videsh Limited is its wholly owned subsidiary, of which the entire equity of Rs. 300 Crore as on 31.3.2002 is held by ONGC.

## 2.8.1 Highlights for the year 2002-03 (upto December 2002)

### 2.8.1(a) New Hydrocarbon Finds

- ❑ Exploratory efforts during the year 2002-03 resulted in a new hydrocarbon find viz. Banamali No. 4 in Assam, thus opening new area north/northwest of Lakwa producing field for further exploration.

### 2.8.1(b) Others :

- ❑ Total 37 exploration blocks awarded to ONGC by Government of India in NELP I, II and III bidding rounds, out of 79 blocks offered.
- ❑ Two out of 12 projects for augmenting recovery from onshore fields commissioned; total Rs. 2,130 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.8,842 Crore being invested to add 69 million tonnes producible reserves.
- ❑ Sagar Samrat – India's first offshore rig in service since 1974, completed 125<sup>th</sup> well - a world record.
- ❑ Sagar Sandhani – only Indian flag seismic survey vessel was comprehensively re-furbished and upgraded with state-of-the-art equipment.



A view of ONGC's BHN platform in Mumbai offshore

- ❑ Sagar Vijay, the company's deepwater drilling rig, completed testing of deepwater well G-1-10 and spudded well G-1-AG on 27<sup>th</sup> May 2002.
- ❑ In Frontier Basins, drilling in Himalyan Foothills at Sundernagar – SNR I well and Kharkhari-I undertaken. The drilling is continuing.
- ❑ ONGC and Coal India Ltd (CIL) have entered into a MOU for carrying out joint CBM activities. Joint application for grant of PEL for Jharia & Raniganj blocks has been submitted. The blocks have been awarded on nomination basis to the consortium.
- ❑ ONGC & IOC consortium were successful in getting 2 blocks awarded by Government of India viz. Bokaro and North Karanpura under first CBM bidding round.
- ❑ Production commenced at Vietnam Offshore Gas Project, Dec. 2002 where ONGC-VL has 45% equity share.
- ❑ 20% equity acquired in Myanmar Offshore gas exploration block A-I.
- ❑ "Commerciality" declared for Sakhalin-I Offshore Project in Russia; project progressing on schedule.
- ❑ Incorporation of Sakhalin India Inc. in Houston, USA as OVL's wholly owned subsidiary. Acquisition of 10% participating interest in Louisiana Exploration Block.

## 2.8.2 PHYSICAL PERFORMANCE DURING 2002-03

		2001-02 Actual	2002-03 BE/MOU	2002-03 Actual upto Dec. 2002	2002-03 Anticipated RE
<b>Seismic Survey</b>	Onland				
	2D (GLK)	3,164	3,130	2,482	3,440
	3D (Sq. kms.)	1,071	908	820	959
Off shore	2D (GLK)	29,810	12,005	16,252	25,765
	3D (Sq. Kms.)	7,005	5,648	4,308	11,819
Drilling	Exploratory Meterage ('000m)	389.09	418.81	264.10	401.08
	Wells (Nos.)	149	153	108	160
	Development Meterage ('000m)	309.74	406.26	315.65	404.67
	Wells (Nos.)	156	184	136	191
	Total (Expl.+Dev.) Meterage ('000m)	698.83	825.07	579.75	805.75
	Wells (Nos.)	305	337	244	351
Production					
Crude Oil	MMT	24.708	25.900	19.527	25.923
Natural Gas	MMM <sup>3</sup>	24,042	23,700	18,158	24,043
LPG	'000T	1,159	1,103	903	1,103
C2-C3	'000T	528	560	463	560
SKO	'000T	234	213	175	213
ARN/LAN	'000T	1,618	1,508	1,192	1,530
Others	'000T	98	116	135	94
TOTAL VAP	'000T	3,637	3,500	2,868	3,500

### 2.8.3 FINANCIAL PERFORMANCE DURING 2002-03

(Rs. Crore)

Parameters	2001-02 (Actual)	2002-03 (BE)	2002-03 (Actual) Upto Dec. 2002	2003-04 (Anticipated) (RE)
Plan Outlay	4,040.32	7,408.31	3,226.15	7,142.87
Total Income (Incl. Interest Income)	24,867.45	26,447.55	15,778.67*	33,660.54
Net Profit	6,197.87	6,304.65	4,257.39*	8,297.36

\* upto 30.9.2002

#### 2.8.4 Achievements:

- ONGC posted a profit of Rs. 4,257.39 Crore during 1st half of 2002-03 as compared to Rs. 3,143.00 Crore for the corresponding period of 2001-02 registering an increase of 35.46%. The Gross Revenue stood Rs. 15,778.67 Crore during the period, as compared to Rs. 11,801.63 crore for the corresponding period of 2001-02.
- Offshore ZA and HV Platforms made ready for Drilling (RFD) on schedule and within budget.
- 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 new wells absorbed and implemented an fast track. Engineering design audit introduced with significant cost savings.

#### 2.8.5 PROGRESS OF PROJECTS

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

Sl.No. No.	Name	Approved Cost Cost (Rs. in Crore)	Status/Anticipated Commissioning
1.	Additional Compressor at Heera	177.64	Completed 02.04.02
2.	Mumbai High North Dev	2,929.40	Dec. 2005
3.	Mumbai High South Redev	5,255.97	July 2007
4.	Improved Oil Recovery-Neelam	347.69	July 2003
5.	Add. Development Heera Part-I	309.08	Jan. 2004
6.	Improved Oil Recovery-Gandhar	692.23	Dec 2004
7.	Improved Oil Recovery-Rudrasagar	113.90	March 2006
8.	Improved Oil Recovery –Geleki	390.09	March 2007
9.	Improved Oil Recovery-Lakwa-Lakhmani	345.10	March 2007
10.	Mumbai High Bassein Pipeline Project	195.31	March 2004
11.	D-1 South Dev Field	310.32	March 2005(Phase I)

## 2.8.6 Major Initiatives

### i) Strategic Initiatives

- Comprehensive organizational restructuring – “Corporate Rejuvenation Campaign” (CRC) – conceptualized and launched across the entire organization changing for 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 : next two decades (2001-2020)

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

### iii) Infocom Projects

Comprehensive review of Information Technology and communication & Control Networks carried out. Plans finalized for modernization, expansion, integration of all Infocom systems over a 3 year period with investment of about Rs.600 Crore.

### iv) Terms and conditions for Purchase and Project Contracts rationalized to improve competitiveness and cost effectiveness

### v) HRD

- Intra-organizational Transparency and work ethics being enhanced through extensive internal communication.
- Effective measures taken to redress grievances of serving and retired employees.
- Climate creation achieved for thorough review of HR Policies & Procedures.

### vi) Conservation of Energy and Petroleum Products

ONGC is actively pursuing following energy conservation measures :

- Use of waste heat recovery equipment at all offshore platforms, rigs, LPG plants at Hazira and Uran.
- Use of energy efficient equipment & 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 Sagar Jyoti.
- 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 package AC units in KG project and installation of LT pumps in place of HT.

These measures have resulted in significant reduction of fuel consumption (HSD, Natural Gas and Electricity) valued Rs.155.98 Crore in the year 2001-02.

## 2.8.7 Coal Bed Methane

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

## 2.9 ONGC VIDESH LIMITED (ONGC-VL)

ONGC-VL, a wholly owned subsidiary company of Oil and Natural Gas Corporation Ltd., is responsible for bringing equity oil from overseas by acquiring development acreages or through exploration ventures. The Authorized and Paid-up Capital of the Company as on 31.3.2002 are Rs. 500 Crore and Rs. 300 Crore respectively. The company earned a profit of Rs. 23.68 Crore during 2001-02 as compared to Rs. 24.09 Crore in 2000-2001.

### 2.9.1 Activities during 2002-03:

ONGC Videsh Ltd. is presently a partner in the following joint venture overseas :

- 45% participation in an offshore gas field in Vietnam (Block 06.1). The other partners are British Petroleum (35%) and Petro Vietnam (20%). The development of the field is in progress and the offshore facilities are nearing completion. Production of gas from this field started in December 2002.  
ONGC-VL's share of the development capex is US \$228 million.
- 20% participation in the Sakhalin-1 Offshore Russia. The other partners are Exxon Mobil (30%), Sodeco (30%) and Rosneft( 20%). The project has been declared commercial and development activities initiated. Production of oil is expected to commence from end 2005.
- 20% participation in the offshore gas Block A-1 in Myanmar. The other partners are Daewoo (60%), GAIL (10%) and Kogas (10%). Seismic data in the block has been processed and is

currently under interpretation. The first exploratory well is scheduled to be drilled in Nov 2003.

- iv) Award of Exploration Block No.8 in Iraq Phase-I of the exploration period is presently under implementation.
- v) 10% participation in Exploration Block, Offshore Louisiana, USA. Second exploratory well on the prospect is under drilling.

ONGC-VL is also pursuing opportunities in Algeria, Oman, Libya, Kazakhstan, Indonesia, Vietnam, Venezuela, Iran, Nepal and Bangladesh which are in various stages of negotiation.

- i) ONGC-VL has signed an Agreement for 25% participating interest in Greater Nile Project in Sudan, and the deal is under finalisation.
- ii) ONGC-VL signed a 'Heads of Agreement' with SONATRACH, the National Oil Company of Algeria who have offered Block 242 in Algeria where oil and gas have already been discovered. Technical evaluation has been done at IRS and based on their recommendations, an expert opinion is being obtained from Schlumberger on exploration of tight sand gas reservoirs.
- iii) ONGC-VL with a share of 30% is participating jointly along with Reliance Industries Ltd. and SONATRACH of Algeria for the Tuba discovered field in Iraq. Technical/commercial aspects of the project are under finalisation.
- iv) ONGC-VL has signed farm-out agreement with TPOC for acquisition of 49% interest in 2 onland exploration blocks in Libya which is currently under processing by a National Oil Company of Libya.
- v) ONGC-VL along with Indian Oil Corporation and Oil India Ltd. have evaluated exploration blocks under offer in Iran for possible participation and have submitted a preliminary bid for one of the exploration blocks. Further discussions/negotiations are in progress with NIOC, Iran.

In addition to the above efforts, ONGC-VL has signed a MoU for joint participation in E&P activities in Venezuela with PDVSA, the national E&P company. Data review on three E&P opportunities in Venezuela is in progress for possible participation. ONGC VL has also signed a MoU with Pertamina, the national oil company of Indonesia, for undertaking E&P activities jointly in Indonesia.

## 2.10 OIL INDIA LIMITED

Oil India Limited (OIL), a national upstream oil Company, is engaged in exploration, production and transportation of crude oil and natural gas. OIL was incorporated on 18<sup>th</sup> February 1959 with two third share of Burmah Oil Company/Assam Oil Company and one-third share of Government of India. On 27<sup>th</sup> July 1961, OIL became a joint venture company with equal share of Government of India and Burmah Oil Company. On 14<sup>th</sup> October, 1981, OIL became a Government of India enterprise, a wholly owned Public Sector Undertaking.

OIL produces crude oil and natural gas from its oilfields in Assam and Arunachal Pradesh and natural gas from its gas fields in Rajasthan. Exploration is being carried out in the states of Assam, Arunachal Pradesh, Ganga basin, U.P./Uttaranchal, Saurashtra Offshore. OIL has also acquired 5 blocks under NELP I and II, out of which 2 are stand alone and 3 under consortium. The exploration activities in few of these blocks have already started. In addition to exploration and production, the crude oil produced in North East India is transported to 4 refineries in the region through OIL's cross country trunk pipeline. OIL also produces liquified petroleum gas at its LPG Recovery Plant at Duliagan, Assam. The authorised and paid up capital of OIL as on 31.3.2002 was Rs. 250 crore and Rs. 214 crore respectively.

### 2.10.1 New Hydrocarbon Finds

During the year 2002-03, upto December, 2002, OIL's exploratory efforts led to the discovery of crude oil in the Matimekhana structure in Assam. Presently, exploratory drilling in three new structures is in progress.



## 2.10.2 Physical Performance

Parameter	2001-02 Achievement	Target 2002-03	Achievement Upto 31/12/02 (2002-03)	Anticipated Achievement during 2002-03
<b>Seismic Survey</b>				
Onshore				
2D GLK	836.85	1,875	506.47	1,875
3D Sq.Km.	17.32	350	72.01	350
Offshore				
3D Sq.Km.	332	400	–	–
<b>Drilling</b>				
Exploratory				
Metreage ('000M)	39.556	58.00	32.390	55.00
Well Nos.	9	15	4	14
Development				
Metreage ('000M)	57.470	60.20	56.167	70.00
Well Nos.	15	17	13	19
Total (Exp+Dev)				
Meterage ('000M)	97.026	118.20	88.557	125.00
Well Nos.	24	32	17	33
Crude Oil Prod. (MMT)	3.183	3.40	2.240	3.00
Natural Gas (MMSCM)	1,618.505	1,820	1,289.134	1,800
LPG Production ('000 T)	50.95	50.00	40.790	50.00

## 2.10.3 Financial Performance (Rs. Crore)

Parameter	2001-02 Achievement	Target 2002-03	Achievement Upto 31/12/02 (2002-03)	Anticipated Achievement during 2002-03
Plan Outlay	475.40	900.00	411.27	775.00
Total Income	2,192.96	2,432.57	1,908.64	2,652.12
Net Profit	525.22	420.09	560.63	612.91

## 2.10.4 Other Achievements

- Formulation of Strategic and Corporate Plan was completed during the year with the help of internationally known consultant Price Waterhouse Cooper. OIL has initiated actions to implement the plan.
- Basin evaluation study for entire OIL's operational areas in Assam, Arunachal Pradesh and Rajasthan Basin was completed during the year.
- OIL signed an agreement with PDVSA Intevep Inc., Venezuela for technical collaboration for production of heavy oil/bitumen from its fields



Signing of Technical Agreement between OIL and PDVSA, Intevep, Venezuela by Mr. R.K. Dutta, CMD, OIL and Mr. Walter Martuez, Ambassador of Venezuela in the presence of Hon'ble Minister of Petroleum & Natural Gas, Shri Ram Naik, Hon'ble Minister of State for Petroleum & Natural Gas, Shri Santosh Kumar Gangwar and Secretary, Ministry of Petroleum & Natural Gas, Shri B.K. Chaturvedi

in the Bikaner Nagaur basin of Rajasthan on 29<sup>th</sup> November, 2002.

- 2D Seismic in the Boulder covered areas in Arunachal Foothills and in the hilly terrain in Uttaranchal carried out during the year utilising Shot Hole Drilling.

- OIL signed MoU with ONGC Videsh Ltd. on 12<sup>th</sup> July, 2002 for equity participation in the overseas exploration blocks in future.
- OIL with ONGC Videsh Ltd. and IOC signed exploration service contract for FARSI block in Iran with National Iranian Oil Company.

### 2.10.5 PROGRESS OF PROJECTS

OIL is carrying out the normal developmental activities in its operational areas in Assam and Arunachal Pradesh as part of its regular activities.

As far as exploration activities are concerned, in addition to continuation and enhancement of exploratory activities including that for deeper prospects in the South Bank of river Brahmaputra in Assam and Arunachal Pradesh, additional survey has been planned in Ganga Valley. OIL also expects to start its exploratory work in the new exploration block area in Mahanadi Onshore.

Following are the major projects of OIL, which are under various stages of implementation :-

Name of the Project/ Location	Approved Cost (Rs./ Crore)	Status
Exploitation of heavy oil in Rajasthan.	10.00	Agreement with PDVSA signed in November, 2002.
Replacement of Tele-Communication system of Pipeline with optic fibre communication link from Nahorkatiya to Barauni.	48.96	NIT for HDPE duct and OFC cable floated. Expected completion by September, 2004.
35,000 M3 capacity Tankfarm at Tengakhat with dehydration facility.	30.00	MECON is carrying out the entrusted for system design, material procurement, project implementation. Project to be completed by March, 2003.
Oil Collecting Station at Tengakhat	15.62	The project will be completed during the current year.
Oil Collecting Station at Makum	16.00	To be completed by December, 2003.
Development of non-associated gas field in Tengakhat & Deohal areas in Assam.	20.00	Completion will be synchronised with the completion of Gas Cracker Plant by RAPL.

### 2.10.6 INITIATIVES

- OIL submitted bid for five blocks under 3<sup>rd</sup> round of NELP, and has been awarded three blocks (Rj-ONN-2001/1, AA-ONN-2001/3 & CY-DWN-2001/1) in consortium.
- OIL signed MoU with ONGC Videsh Ltd. on 12<sup>th</sup> July, 2002 for equity participation in the overseas exploration blocks in future.
- OIL with ONGC Videsh Ltd. and IOC signed exploration service contract for FARSI block in Iran with National Iranian Oil Company.
- Strategic & Corporate Plan of OIL was formulated during the year and action initiated for implementation.
- As part of corporate governance, an audit committee comprising of two part time nominee

Directors and Director (Finance) of the Company was constituted.

### 2.10.7 Control of pollution and other environmental initiatives

- The following initiatives were taken/continued for control of pollution :-
  - Introduced "Drilling effluent recycling system" for better effluent management at Drilling sites.
  - The formation water is being disposed off into shallow disposal wells with continuous monitoring.
  - EIA study on formation water handling, drilling effluent management and crude oil sludge treatment was carried out by a Canadian firm. Additionally, experimental study with TERI for Bio-remediation of crude oil sludge has been

carried out. Results are encouraging and its applicability can be extended at selected field locations.

#### II. Ambient Air Quality Monitoring

The ambient air quality monitored on a regular basis in & around OIL's operations areas and other vulnerable places with the help of a mobile Air Quality Monitoring Van.

#### III. Abatement of Noise Pollution

Noise pollution in Gas Compressor Stations, Power Houses attenuated by providing noise dampers, barrier walls, including green belts around these installations. Noise survey of all noise prone installations was also carried out.

### 2.10.8 CONSERVATION OF PETROLEUM PRODUCTS

OIL is self radiant in meeting it's own energy requirement. Most of energy requirement is met with national gas and thereby, the consumption of liquid fuel is kept at bare minimal less than 5%. Because of the above, OIL is thus saving large quantity of petroleum products of the order of about 4 lakh tons of HSD equivalent.

Some of the measures adopted for conservation of petroleum products/energy conservation by OIL are as follows :-

- Use of gas engines as prime mover for industrial application.
- Reduction in gas flare.
- Adopting to cluster drilling wherever possible to save liquid fuel.
- Installation of Condensate Recovery Plant.
- Use of compressed air for water lifting.
- Induction of battery operated vehicle.
- Use of solar panel for VHF/UHF terminals.
- Power generation with gas turbines running on natural gas.
- Use of natural gas for domestic fuel.
- Use of SCADA for proper monitoring of gas utilisation.

The saving because of the energy conservation measures taken by OIL during 2002-03 is expected to be of the order of 1000 lakhs.



Natural Gas Pipeline Terminal at GAIL's compressor Station, Hazira, Gujarat

## 2.11 GAIL (INDIA) LIMITED



**2.11.1** GAIL (India) Limited (GAIL), set up in 1984, is the largest natural gas processing, transmission and distribution Company in India. The Company owns and operates a network of over 4,400 kilometers of pipeline in all the four regions of the country, supplying about 62 MMSCMD of gas per day as fuel to power plants for generation of about 4,500 MW of power, as feedstock for gas based fertiliser plants to produce about 10 MMTPA of urea. Gas transmission & distribution forms the bulk of GAIL business today followed by gas processing for LPG production & production of petrochemicals (HDPE & LLDPE).

### 2.11.2 LPG Production:

In the LPG area, GAIL has seven plants in production in various parts of the country with a total design capacity of over one million tones per annum. Total liquid hydrocarbon production including LPG in 2001-02 was 11,33,000 tonnes.

### 2.11.3 Jamnagar- Loni LPG Pipeline:

Jamnagar-Loni LPG Pipeline is 1240 K.M. long and is the world's longest exclusive LPG pipeline with a capacity to carry 1.75 MMTPA of LPG per annum

passing through Gujarat, Rajasthan, Haryana, Delhi and U.P. States.

### 2.11.4 Petrochemicals:

GAIL has set up a 300,000 TPA petrochemical complex in U.P. in North India. The plant commenced production in March'99 and the Company has initiated plans to expand the capacity to 4,40,000 TPA.

### 2.11.5 Telecom:

GAIL has entered the Telecom sector as a Category-II Infrastructure provider for leasing bandwidth to telecom operators. By March, 2003 GAILTEL network shall interconnect 73 cities in the northern, western and southern parts of the country.

GAIL has already commenced leasing out bandwidth capacity from its network. Further, it has signed MOUs with the major Telecom operators for leasing bandwidth capacity. These are Bharti Telesonics, BPL Broadband, Shyam Telecom and Escotel Mobiles.

### 2.11.6 CHANGE OF NAME OF THE COMPANY

During the year name of the Company was changed from Gas Authority of India Limited to GAIL (India) Limited



Panormic view of Gas Processing Unit-UPPC Pata

### 2.11.7 Exploration & Production:

GAIL has been awarded eight blocks under NELP - I and NELP - II. Of these, two blocks in Bengal and Orissa offshore were awarded under NELP - I and the remaining six blocks have been awarded in NELP - II.

For the first time, GAIL has taken equity in operations outside the country with the signing of the Amendment to Joint Operating Agreement for Block A1 in Myanmar offshore for taking up 10% participating interest along with Daewoo International Corporation, ONGC Videsh Limited and Korea Gas Corporation.

Another significant step was signing of the Deed of Assignment and Assumption for 25% participating interest in the Block CY-OS/2 with

Hardy Exploration and Production India (HEPI) in Cauvery Basin.

### 2.11.8 MAJOR PROJECTS UNDER IMPLEMENTATION

#### 2.11.8(a) Dahej-Vijaipur Pipeline Project:

The company is in the process of laying Dahej to Vijaipur pipeline with a capacity of 22.4 MMSCMD at an estimated capital expenditure of Rs.2936 crore. The pipeline will, therefore enhance the capacity of existing HBJ pipeline. The project is scheduled to be completed by 18.09.2004.

#### 2.11.8(b) Vizag-Secunderabad LPG Pipeline:

The company is laying 600 K.M.(approx.) long LPG pipeline from Vizag to Secunderabad at an estimated cost of Rs.490 crore. The throughput capacity of the pipeline will be 1.1 MMTPA and is scheduled to be completed by 18.09.2004.

### 2.11.9 PERFORMANCE OF GAIL AT A GLANCE FOR THE YEAR 2001-02 & 2002-03 (PROVISIONAL UP TO DECEMBER 2002 & PROJECTED FOR JANUARY'2003 TO MARCH'2003) IS GIVEN BELOW:

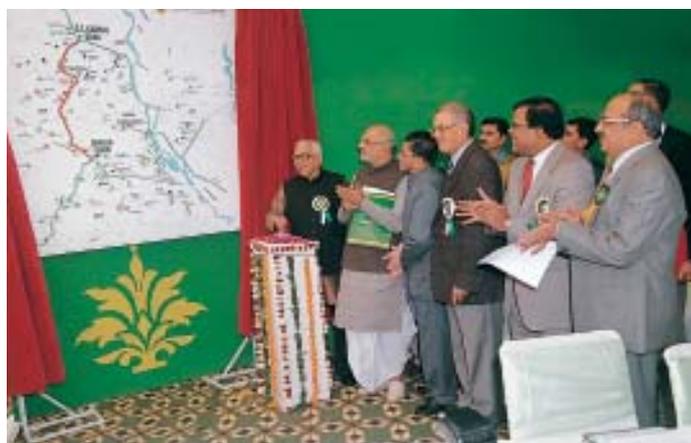
A) PHYSICAL:				
DESCRIPTION	UNIT	ACTUALS 2001-02	2002-03 (UPTO Dec.'03) (Provisional)	2002-03 (Jan'03 to Mar'03) (Projected)
Gas Sales	MMSCM	22,486	17,308	5,805
LPG /SBP/Others production	('000 MT)	1,133	808.17	262.64
Petrochemical production	('000 MT)	250.29	193.41	64.69
B) FINANCIAL:				
PROFIT AFTER TAX	Rs. Crore	1,186	1,072	238
GROSS INTERNAL GENERATION	Rs. Crore	1,779	1,550	393

2.11.10 GAIL has paid dividend of Rs.381 Crore for the year 2001-2002 against Rs.373 Crore (including Corporate Dividend Tax) paid for the previous year.

### 2.11.11 JOINT VENTURE COMPANIES:

Joint venture companies have been identified as one of the vehicles for growth and consolidation in existing business areas and diversification into related activities. Among the notable initiatives are:

- GAIL has taken notable initiatives in Joint Venture companies, namely, Mahanagar Gas Limited (JV with British Gas of U.K.) in Mumbai and Indraprastha Gas Limited (JV with Bharat Petroleum Corporation Limited) in Delhi for City Gas Distribution Schemes including CNG for the Transport Sector.



IGL's 23 KM Natural Gas Pipeline - Shri Ram Naik, Hon'ble Minister of Petroleum & Natural Gas, Government of India, inaugurating IGL's 23 KM Natural Gas Pipeline from Dhaula Kuan to G.T. Karnal Road, on December 11, 2002 at IGL's Shakurpur CNG Station

- Besides, GAIL has an equity participation with IOC, ONGC & BPCL in M/s Petronet LNG Limited for setting up LNG terminals at Dahej in Gujarat and Kochi in Kerala for import of LNG in the country.
- GAIL has joined a consortium, namely Gujarat State Energy Generation Limited (GSEG) of Gujarat State Enterprises and KRIBHCO for a 156 MW gas based power plant at Hazira in Gujarat. The power plant had been commissioned in December 2001.
- On 29<sup>th</sup> Nov 2002, GAIL entered into a Joint Venture agreement with HPCL to distribute CNG and Auto LPG in the state of Andhra Pradesh. The JV has been incorporated as Bhagyanagar Gas Ltd.



## 3. REFINING

### 3.1 Refining capacity

The refining capacity as on 1.4.2002 was 116.07 Million Metric Per Annum (MMTPA). Availability of petroleum products during 2002-03 from domestic refineries was adequate to meet the domestic demand except for Liquefied Petroleum Gas (LPG). The availability of petrol and diesel is in excess of domestic requirement and the surplus quantity was exported during the year.

At present, there are 18 refineries operating in the country, (16 in Public Sector, one in joint sector, and one in private sector). Out of the 16 Public Sector refineries, 7 are owned by Indian Oil Corporation Limited (IOCL), two by Chennai Petroleum Corporation Limited (subsidiary of IOCL), two by Hindustan Petroleum Corporation Limited (HPCL) and one each by Bharat Petroleum Corporation Limited (BPCL), Kochi Refineries Limited (KRL) (subsidiary of BPCL), Bongaigaon Refinery & Petrochemicals Limited (BRPL) (subsidiary of IOCL), Numaligarh Refineries Limited (NRL) (subsidiary of BPCL) and Oil and Natural Gas Corporation Limited (ONGC). There is one refinery in joint sector viz. Mangalore Refinery & Petrochemicals Limited (MRPL) and one refinery in private sector viz. Reliance Industries Limited (RPL).

### 3.2 Import and Exports

The quantity of crude oil imported (including JVC / private companies) between April-November 2002 was 55.609 MMT, valued Rs. 49,680 crore. Besides, 4.494 MMT of other petroleum products valued at Rs. 5,029 crore were also imported during the same period. Exports of petroleum products was 6.607 MMT, valued at Rs. 6,364 crore during the same period.

Import of crude oil has been made free with effect from 1<sup>st</sup> April, 2001. Further, Government decided in May, 2001 to allow public sector oil companies to exercise the option to import their crude oil requirement themselves under the actual user licensing policy or through IOCL. With a view to improve oil security, the oil companies made efforts towards diversification of crude oil sourcing during 2002-03.

During the year 2002-03, IOC had term contracts with the national oil companies of Saudi Arabia, Kuwait, Abu Dhabi, Malaysia, Libya & Nigeria. In addition, IOC had a term contract with the national oil company of Iran for supply of crude oil to MRPL. The balance requirements were procured through tenders.

BPCL entered into term contracts with the national companies of Kuwait, Saudi Arabia, Malaysia and Abu Dhabi during 2002-03 to import crude oil for its Mumbai refinery and KRL.

Besides this, BPCL purchased crude oil of Yemen, West Africa and Egypt origin on tender basis. BPCL are also in the process of developing other sources of crude oil from countries like Angola and Libya.

For its Mumbai and Visakhapatnam refineries, HPCL entered into term contracts during 2002-03 with the national oil companies of Saudi Arabia, Abu Dhabi and Libya.

Minister of Petroleum & Natural Gas attended the 8<sup>th</sup> International Energy Forum conference from 21<sup>st</sup> -23<sup>rd</sup> September, 2002 at Osaka, Japan. The conference was attended by the Oil and Gas Ministers of 65 countries and sector related 11 international associations, including Organization of Petroleum Exporting Countries (OPEC) and International Energy Agency (IEA). The general consensus at the conference was that stable oil prices at sustainable levels are in the interest of both the oil producing and consuming countries. The oil exporting countries, both OPEC and non-OPEC, assured the conference that the oil producers will utilize their extra production capacity to ensure that there is no shortfall in terms of physical supply of oil in situations of disruptions. Saudi Arabia, Kuwait, UAE and Iran were also requested to drop the "Asian Premiums" being charged by their national oil companies on supplies of crude oil to the Asian countries.

### 3.3 Refineries Pipeline :

Petronet India Limited (PIL) a non-PSU Company, has so far implemented Vadinar - Kandla pipeline and Kochi - Kurur pipeline projects. Mangalore - Bangalore pipeline project is at an advanced stage of implementation.

To match the post APM scenario, MoP&NG vide notification F.No. P-20012/5/99-PP dated 20.11.2002 has issued guidelines for laying petroleum product pipelines.

The new guidelines for grant of right of user (ROU) in land do not contemplate any restrictions or conditions for grant of ROU for crude oil pipelines. Product pipelines have been categorized as follows:

- (i) Pipelines originating from refineries, whether coastal or inland, upto a distance of around 300 kilometers from the refinery;
- (ii) Pipelines dedicated for supplying product to particular consumer, originating either from a refinery or from oil company's terminal; and

(iii) Pipelines originating from ports and pipelines originating from refineries exceeding 300 km in length, other than those specified in (i) & (ii) above.

As per the guidelines, companies and investors will have complete freedom in respect of the pipelines originating from refineries or meant for captive use of companies for which ROU will be unconditional. As per the notification, the pipelines exceeding 300 km in length and those originating from a port location, grant of ROU will be subject to fulfillment of certain conditions, some of which are:

- Oil companies/investors interested in laying a product pipeline originating from a refinery or a port would be required to publish the proposal inviting other interested companies to take capacity in the pipeline.
- Any oil company interested in sharing the capacity of the pipeline, will be able to do so on mutually agreed commercial terms and conditions. The proposer would then provide capacity for such interested party also.
- The proposer company applying for the grant of ROU in land would need to provide at least 25% extra capacity for others.
- The pipeline will be owned and operated by the proposer company.
- The pipeline tariff will be subject to the control orders or the regulations that may be issued by the Government under the appropriate law in force.

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.

### 3.4 CHENNAI PETROLEUM CORPORATION LIMITED



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. Recently Government of India has transferred its equity share of 51.81% to Indian Oil Corporation Limited.



CPCL - CBR Oil Jetty was inaugurated by Hon'ble Shri Ram Naik, Union Minister of Petroleum & Natural Gas at CPCL's Cauvery Basin Refinery, Panangudi near Nagapattinam

CPCL has two refineries with a combined refining capacity of 7.5 Million Tonnes Per Annum (MMTPA). The Manali refinery 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.

#### 3.4.1 Physical Performance

During the year 2001-02, the company processed 6.688 MMT of crude oil. The capacity utilisation was 95.54%. The lower thruput as compared to full capacity was mainly on account of acute water shortage experienced by Chennai City in general and Manali industries in particular during July and August 2001 leading to the shutdown of one of the units for a period of 33 days. The company achieved MoU Excellent rating for its overall performance during the year 2001-02.

#### 3.4.2 Financial Performance

During the year 2001-02, the company achieved the Turnover of Rs. 6,273.09 crore as against Rs. 7,132.62 crore in the previous year. Reduction in turnover was mainly due to lower international prices of products. The Gross Profit Before Interest, Depreciation and Tax has reduced from Rs. 381.66 crore during the previous year to Rs. 296.00 crore during the year. The Profit Before Tax has reduced from Rs. 147.44 crore to Rs. 88.89 crore.

#### 3.4.3 Project completed

The existing capacity of Cauvery Basin Refinery was enhanced from 0.5 MMTPA to 1.0 MMTPA through debottlenecking. Two numbers of crude tanks and seven numbers of product tanks were also added at a total cost of Rs.26 crore.

In order to meet the future specifications of 0.05% sulphur in diesel, a second diesel hydrotreater

desulphurisation unit was installed at a cost of Rs. 20 crore.

During the year CPCL commissioned a zero discharge project by which the refinery treated effluents were recycled into various process applications and water discharge from the refinery were negligible.

#### 3.4.4 Ongoing projects

CPCL is currently implementing a 3.0 MMTPA refinery expansion project at Manali, Chennai. The project involves setting up of new units alongwith matching secondary processing units for improved distillate yield and quality at a cost of Rs. 2,360.38 crore, including foreign exchange component of Rs. 338.82 crore.

Besides, the following projects are at various stages of implementation:-

- (i) Oil Jetty project at a cost of Rs.96 crore for supply of crude oil to Cauvery Basin refinery.
- (ii) Automatic Truck Loading facility at a cost of Rs.15.75 crore.
- (iii) Revamp of FCCU (Fluidised Catalytic Cracking Unit) at Manali for improving quality and quantity of LPG and gasoline yield.

#### 3.5 BONGAIGAON REFINERY & PETROCHEMICALS LIMITED



Bongaigaon Refinery & Petrochemicals Limited was incorporated on February 20, 1974 as an integrated Petroleum and Petrochemicals refinery. The installed capacity of the refinery was 1 MMTPA which was enhanced to 2.35 MMTPA in 1995-96. The company has become a subsidiary of Indian Oil Corporation with effect from 29.3.2001.

The refinery processed 1.475 million metric tonnes of crude oil during the year. Highest ever LPG production of 27,279 MT and MS production of 1,10,119 MT was achieved in the year 2001-02. Due to unfavourable market conditions, the petrochemical division of the company remained closed throughout the year.

The Company incurred loss of Rs.198.61 crore during the year.

#### 3.6 NUMALIGARH REFINERY LIMITED



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 Government of India in the historic "Assam Accord",



A long shot of NRL

signed on August 15, 1985 at an approved cost of Rs 2,724 Crore.

Numaligarh Refinery Limited was incorporated on 22<sup>nd</sup> April 1993. Presently, Bharat Petroleum Corporation Limited holds 51% of the Company's equity. The other equity holders are Government of Assam, Oil Industry Development Board and Oil India Limited with equity participation of 10% each. The balance 19% equity is earmarked for a Public Issue.

During the year 2001-02, the refinery processed 2.3 MMTPA of crude against installed capacity of 3 MMTPA. The lower processing was on account of inadequate availability of North East crude. Distillate yield of 85.39% achieved by NRL in 2001-02 was the highest in the industry.

In spite of product containment problem and lower crude availability, the refinery registered a net profit of Rs. 122.98 crore and a gross refining margin of Rs. 896 per MT against industry average of Rs. 727 per MT. The company paid dividend of 30% post tax profit.

#### 3.7 KOCHI REFINERIES LIMITED



Kochi Refineries Limited (KRL)'s installed capacity at the inception in September 1966 was 2.5 million metric tonnes per annum (MMTPA). The capacity of the Refinery has been expanded from time-to-time and at present, it is 7.5 MMTPA. The secondary processing facilities have also been expanded to 1.4 MMTPA.

##### 3.7.1 PERFORMANCE:

##### 3.7.1 (a) Physical Performance

During the year 2001-02, the Refinery processed 6.797 million metric tonnes (MMT) of crude oil. KRL set records in the manufacture of liquefied petroleum

gas (LPG), aviation turbine fuel (ATF), and mineral turpentine oil (MTO) during the year.

During the year 2002-03, 5.706 MMT crude oil was processed till 31.12.2002. Anticipated crude oil throughput for the year is 7.550 MMT.

The Company continued to follow its safety policy, which spells out its concern for its employees and

the community around it. The Company has invested substantially in automated safety and process control systems to ensure safe working conditions. International Safety Rating System is being implemented in KRL and the base line audit is planned by end of February 2003. This would lead to improving the overall safety standards in the Refinery.

### 3.7.1 (b) FINANCIAL PERFORMANCE:

#### Turnover and Profits:

During the year 2001-02, the Company achieved a turnover of Rs. 6,758 crore against Rs.8,070 crore during 2000-01. The profit before tax was Rs.118.58 crore as against Rs.102.46 crore in the previous year.

The overall financial performance for the year 2001-02 along with the figures for the previous year is highlighted below:

(Rs. in crore)

	2001-02	2000-01
Turnover	6,758.25	8,070.24
Profit before interest, depreciation and tax	343.90	313.85
Interest	114.79	109.93
Depreciation	110.53	101.46
Profit before tax	118.58	102.46
Tax provision (net) – current	31.00	(7.00)
Deferred tax liability	18.81	Nil
Profit after tax	68.77	109.46
Appropriation: Dividend: 22% (Dividend 2000-01: 21%)	30.53*	31.98**
General Reserve	6.88	10.95
Balance Carried to Profit & Loss Account	31.36	66.53

\* Includes dividend and dividend tax paid Rs.0.07 crore for the year 2000-01 in respect of additional shares issued to erstwhile Cochin Refineries Balmer Lawrie Limited Shareholders.

\*\* Including corporate dividend tax.

The Company contributed a sum of Rs. 1,609.84 crore to the exchequer by way of taxes, duties, etc. during the year, against Rs. 1,873.49 crore in 2000-01.

Performance under key financial parameters for the period upto the end of December 2002 together with forecast for the remaining three months of the financial year 2002-03 is given below:

(Rs. in crore)

	Actuals up to December 2002	January 2003 to March 2003 (Forecast)	2002-03 Estimated
Turnover	7,353.93	2,274.57	9,628.50
Profit before tax	256.85	18.15	275.00
Profit after tax (Deferred tax liability not considered)	191.85	13.15	205.00

### 3.7.2 PROJECTS:

#### 3.7.2 (a) Projects Completed:

- (i) Augmenting the Production Capacity of Natural Rubber Modified Bitumen (NRMB)

In 2001 the Government of Kerala had requested KRL to augment the production of natural rubber modified bitumen (NRMB). Accordingly, the production capacity of NRMB was augmented from 15,000 to 65,000 tonnes per year during this year. The project has a two-fold effect:

- (a) It helps to improve the quality of roads thereby reducing consumption of transportation fuels; and
- (b) It also helps to improve the demand-supply scenario for natural rubber which is a major agricultural produce of the state.
- (ii) Additional Reactor for DHDS unit

In order to reduce the sulphur content in high speed diesel (HSD) to 0.05 wt%, an additional HDS reactor and other connected facilities were provided in the DHDS unit. The project costing Rs.28.36 crore has been commissioned in June 2002.

#### 3.7.2 (b) Ongoing Projects:

- (i) Integrated Refinery Information System

The Company has ventured into establishment of an enterprise wide Integrated Refinery Information System christened as 'Project Mantra' with Mantra standing for 'Management Transformation'. This project ensures optimum utilisation of the available assets and resources by the implementation of an integrated software solution for all functional areas of the Company. Conceptual Design and Planning phase connected with Business Management System (BMS) areas is completed. Detailed Design and Implementation of the activities in the BMS areas was inaugurated by Union Minister for Petroleum & Natural Gas on January 14, 2003.

BMS cost around Rs. 26.15 crore and expected completion time is July 2003.

- (ii) Revamp of electrical distribution system

As a part of modernisation of the High Tension and Low Tension systems, three different revamp electrical jobs are planned for execution under this project. The project envisages the replacement of obsolete Main Receiving Station and few load centers, as spares for these are not available. The feeders of transformers in FCCU are also planned to be relocated to improve the plant reliability.

The project cost is about Rs. 25.6 crore and expected completion time is July 2003.

- (iii) LPG Bottling Plant

In view of the projected doubling of Bharat Petroleum Corporation Limited's share of LPG market in Kerala (from 65,000 TPA to around 1,40,000 TPA by the year 2005-06), an LPG Bottling plant is being set up by the Company. The plant envisages filling of around 70,000 tonnes of LPG per annum. The estimated capital cost of project is Rs. 18 crore. The project is scheduled for completion by July 2003.

#### 3.7.3. Project Proposals:

##### 3.7.3 (a) Refinery Capacity Expansion-Cum-Modernisation:

The project is planned to be implemented in two phases. Phase-I would cover setting up of facilities for auto fuels to meet BS-II norms, by January 2005. Quality upgradation of auto fuels to meet Euro-III norms, modernization measures and capacity expansion by 2.5 MMTPA would form part of phase-II activities which is targeted for completion by 2010. Detailed Feasibility Reports for the above are under preparation.

##### 3.7.3 (b) Crude Oil Receipt facilities:

In order to reduce the transportation cost of crude oil by bringing in larger tankers, the Company proposes to set up independent Crude oil Receipt Facilities consisting of a Single Buoy Mooring (SBM) in the offshore, a Storage Tank Farm (STF) on shore and pipelines from SBM to STF and STF to Refinery. Detailed Feasibility Report is being prepared.

## CHAPTER IV



## 4. MARKETING AND DISTRIBUTION

### 4.1. INDIAN OIL CORPORATION LIMITED (IndianOil)



- 4.1.1. Indian Oil Corporation Ltd. (IndianOil) is the largest commercial enterprise in India, and the only Indian presence in the Fortune magazine's "Global 500" listing of the world's largest corporations, with a ranking of 226 for fiscal 2001. In the 'Forbes International 500' list of the largest companies outside US for 2001, IndianOil is ranked 112 and tops the four Indian companies appearing in the list. In addition to being the largest National Oil Company in the Asia Pacific region, IndianOil has also been ranked "First" in Petroleum Trading among the 15 National oil companies in the Region in the 2001 Industry Perception Survey conducted by Applied Trading Systems, Singapore.
- 4.1.2 Indian Oil owns and operates seven of the 18 refineries in the country at Digboi, Guwahati, Barauni, Gujarat, Haldia, Mathura and Panipat with a combined installed capacity of 38.15 MMTPA (million tonnes per annum). In addition, its two subsidiaries, Chennai Petroleum Corporation Ltd. and Bongaigaon Refinery and Petrochemicals Ltd, add another 9.35 MMTPA to its refining capacity. The Corporation has the country's largest network of crude and product pipelines, with a combined length of 6,523 kms capacity of 43.45 MMTPA. An extensive network of over 22,000 sales points backed for supplies by 182 bulk storage points, 78 Indane Bottling Plants and 92 Aviation Fuel Stations. It has a world class R&D Centre. The authorised and paid-up capital of the Corporation as on 31.3.2002 were Rs.2, 500 crore and Rs.389.31 crore respectively. The Government of India holding in IndianOil is 82.03% as on 31.3.2002.
- 4.1.3 The refineries of IndianOil achieved a crude throughput of 33.76 MMT (million tones) during 2001-2002 as against 33.22 MMT during 2000-2001. The throughput achieved during the first three quarters of the year 2002-03 has been 25.96 MMT. IndianOil's pipelines achieved a throughput of 40.36

MMT during 2001-2002 as against 39.44 MMT during 2000-2001. The achievement during the year 2002-03, upto December 2002, has been 30.60 MMT.

- 4.1.4 The Corporation sold 47.17 MMT of petroleum products during the year 2001-02, and 34.97 during April-December 2002. As an innovative marketing concept, IndianOil launched compact 5 kg cylinders mainly for the benefit of the people in rural and hilly areas, besides introducing Auto LPG as an eco-friendly fuel in the cities. The Corporation also introduced four new products viz. Needle Coke (Guwahati Refinery), Microcrystalline Wax (Haldia Refinery), Polymer Grade Hexane and Butene-2 (Gujarat Refinery) in the market as import substitutes.
- 4.1.5 The Corporation achieved a turnover of Rs.1, 14, 864 crore in 2001-02 as against Rs.1, 17, 371 crore in 2000-2001. The profit before tax was Rs.4, 599 crore for the year 2001-02 and the profit after tax was Rs.2, 885 crore. The corresponding figures in the previous year (2000-01) were Rs.2, 962 crore and Rs.2,720 crore respectively. The Corporation declared a dividend of 110% amounting to Rs.857 crore for the year 2001-02.
- 4.1.6 The Corporation has also performed well during April-December 2002. The Net profit of the Corporation registered a growth of 147% for the first nine months of the year 2002-03 compared to the same period last year. This was due to higher price realisation on inventory of petroleum products, improvement in refining margins, reduction in borrowing costs, etc. While the Net profit was Rs.3, 915 cr. against Rs.1,587 cr., the Gross turnover was marginally lower at Rs. 87,106 cr. as against Rs. 87,335 cr. for the period April-December 2002 vis-à-vis the corresponding period last year.
- 4.1.7 During the year, the Digboi Refinery achieved the unique distinction of continuous operation for 100 years. The centenary celebrations included release of a Commemorative Centenary stamp by the Hon'ble Prime Minister of India, inauguration of an Oil Museum at Digboi by the Hon'ble Minister of Petroleum & Natural Gas and inauguration of Centenary Ecological Park by the Hon'ble Chief Minister of Assam.

## 4.1.8 PERFORMANCE

### 4.1.8.1 Physical & Financial

Parameter	Unit	2002-03 (Projected)	Apr.-Dec. 2002	2001-02
<b>Physical</b>				
Ref. Crude thruput	MMT	35.01	25.96	33.76
Pipeline thruput	MMT	39.07	30.60	40.36
Product sales	MMT	46.82	34.97	47.17
<b>Financial</b>				
Turnover	Crore	1,16,858	87,106	1,14,864
Net profit	Crore	4,643	3,915	2,885

### 4.1.8.2 Business Development

IndianOil, in pursuit of its Vision to evolve as a “major, diversified, transnational integrated energy company”, has taken a number of strategic initiatives.

### 4.1.8.3 Exploration & Production:

The Corporation in consortium with ONGC, Oil India Ltd.(OIL), GAIL and GSPL has been awarded eight exploration blocks in NELP-II, in addition to the two earlier awarded under NELP-I. Recently, the ONGC-IndianOil consortium has also been awarded a block in Mizoram under NELP-III. The Corporation has also bagged two blocks for exploration and production of Coal Bed Methane (CBM). Government has also approved the “Farm Out Agreement” with Premier Oil (NE India) BV and HOEC for acquiring 27% participating interest of HOEC in the exploration block in Arunachal Pradesh.

The Corporation alongwith alliance partner ONGC has been shortlisted to participate as non-operator in bidding round for development of North Kuwait Oil Fields.

The consortium of ONGC Videsh Ltd.- OIL-IndianOil has been awarded the Farsi block in Iran and the contract was signed on 25<sup>th</sup> December 2002. Alongwith ONGC Videsh Limited, IndianOil is also aggressively pursuing investment opportunity in other foreign countries. It is in the process of finalising the acquisition of interest in a major field in Sudan and also exploring opportunities for securing equity oil and gas in Qatar.

### 4.1.8.4 Petrochemicals:

The integrated PX/PTA Project at Panipat, approved by the Navratna Board of the Corporation, is under

implementation. A proposal for setting up a Linear Alkyl Benzene Project at Gujarat Refinery, has also been approved by the Board.

### 4.1.8.5 Liquefied Natural Gas (LNG):

The Corporation is a promoter of Petronet LNG Ltd. (PLL) alongwith ONGC, BPCL and GAIL. PLL is putting up terminals at Dahej in Gujarat and Kochi in Kerala. The Corporation will market 1.5 million metric tonnes of regasified LNG from Dahej and 0.5 million metric tonnes from Kochi. In addition, IndianOil through a JV, the Kakinada IndianOil LNG Consortium (KIOLC) is pursuing an LNG project at Kakinada to stimulate “gas-on-gas” competition in the market place. Government nominated IOC as the lead company in consortium with ONGC and GAIL for the Indo-Bangladesh Gas Pipeline Project.

### 4.1.9 Joint Ventures:

A number of Joint Ventures have been formed by the Corporation to gain access to new business. These include Lubrizol India Pvt. Ltd., Indian Oiltanking Ltd.; IndianOil Petronas Pvt. Ltd.; Avi-Oil (India) Pvt. Ltd., etc. The LPG import/export facility of IndianOil Petronas Pvt. Ltd. at Haldia has been commissioned and is terminalling LPG for public sector companies. Another company “ONGIO International Private Ltd.” with ONGC provides training and consultancy services in India and abroad.

### 4.1.10. Overseas Business:

Indian Oil's overseas offices at Dubai, Kuala Lumpur and Mauritius have been identifying and pursuing opportunities in overseas markets for the Corporation. Successful forays have been made into Bangladesh and the first LPG export materialised

in June 2002. Export of Lubricants and Bitumen to Bangladesh have also commenced. In Sri Lanka, IndianOil has incorporated a wholly owned subsidiary, Lanka IOC Pvt. Ltd., for carrying out retail marketing of petroleum products, undertaking aviation and bulk supply business, operating Trincomalee tank farm, etc. Lanka IOC is now in the process of commencing retailing of transport fuels through about 250 Retail Outlets. The Corporation is also studying the opportunities for entry into the South-East Asian countries of Thailand, Philippines and Indonesia.

#### 4.1.11. Subsidiaries of Indian Oil :

##### 4.1.11.1 Indian Oil Blending Limited

The Indian Oil Blending Ltd. (IOBL) is a wholly owned subsidiary of IndianOil, engaged in manufacturing of lubricants and greases. Though the industry showed a positive growth in 2001-02, the challenging market environment and shifting of volumes to the newly commissioned Plants of IndianOil at Asaoti and Taloja affected the capacity utilisation of IOBL Plants and production was lower by 5%. In 2001-02, IOBL registered a profit after tax of Rs. 686 lakhs.

##### 4.1.11.2 Chennai Petroleum Corporation Limited

The low differential between crude and petroleum products and their volatility affected the performance of the Corporation. The Company recorded a turnover of Rs. 6,273.09 crore in 2001-02 against Rs. 7,132.62 crore during the previous year. The total crude processed in the Refinery was 6.69 MMT in 2001-02 and Profit after Tax was Rs. 63.71 crore against throughput of 6.62 MMT and Profit after tax of Rs.122.43 crore in 2000-01. A dividend of 20% was paid by the company in 2001-02.

##### 4.1.11.3 Bongaigaon Refinery And Petrochemicals Limited

The stagnant production of crude oil from the NE oil fields, economic slowdown in the North-East and the sub-economic sizes of the Refinery and Petrochemical plants continued to be the major factors affecting the performance of the company in 2001-02. The refinery processed 1.47 MMT Crude Oil during 2001-02 against 1.48 MMT in the previous year. This included processing of 0.34 MMT of Low Sulphur Imported Crude Oil. The loss was Rs. 199 crore in 2001-02 against a loss of Rs. 57 crore in the previous year. Due to net loss in 2001-02, the Company did not propose any dividend for the year.

##### 4.1.11.4 IBP Co. Limited

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 and Government now hold 53.58% and 26% of equity respectively. Authorised capital is Rs.100 crore. Paid up capital as on 31.12.2002 was Rs.22.15 crore.

During 2001-02, the company recorded its highest ever turnover of Rs. 8,453 crore, a marginal increase over Rs. 8,393 crore in 2000-01. Profit after tax also increased from Rs. 54.22 crore in 2000-01 to Rs. 195.79 crore in 2001-02 – a growth of almost 374%. This was largely due to the finalisation of marketing margin by the Oil Co-ordination Committee and significant reduction in interest cost on account of pre-payment of debts.

It has now three distinct Business Groups i.e. Petroleum, Chemicals and Engineering.

The physical performance of the Company during 2001-02 in regard to sale of petroleum products to dealers/customers was 46,79,065 KL. The volume anticipated in 2002-03 is around 47,38,482 KL.

The anticipated turnover of the Company for the year 2002-03 is Rs.9,300 crore. The turnover in 2001-02 was Rs.8,452 crore. Profit after tax in the current year is expected to be Rs.100 crore as compared to Rs.195 crore in 2001-02. Profit after tax in 2001-02 was high mainly due to accounting arrear margins arising out of cost updation upto 2001-02.

The Company did not have any major projects in hand during 2001-02 as well as in the current year upto 31.12.2002.

##### 4.1.11.5 Indian Oil Mauritius Limited

Indian Oil has established IndianOil (Mauritius) Ltd. (IOML) as a wholly owned subsidiary in Mauritius, for implementing projects in that country. While engineering work for setting up a Bulk Petroleum terminal has commenced, IOML is in the process of acquiring land for setting up Retail Outlets and also pursuing the development of common facilities with other players at the International Airport.

#### 4.1.12 PROJECTS

##### 4.1.12.1 Major projects completed : (2001-2002)

1. Gas turbine alongwith Heat Recovery Steam Generator at Panipat Refinery
2. Fluidised Catalytic Cracker Unit at Haldia Refinery
3. Unleaded MS production facilities (ISOSIV process) at Guwahati Refinery
4. New Vacuum Distillation Unit at Haldia refinery
5. Barauni Refinery Expansion Project (commissioned in Dec. '02)



Inauguration of IndianOil Petroleum Complex at Amousi Lucknow by Hon'ble Prime Minister of India Shri Atal Bihari Vajpayee

6. Augmentation of Haldia-Barauni crude oil pipeline system from 4.2 to 7.5 MMTA (commissioned in Aug.-Sept. '02)
7. Augmentation of Kandla-Bhatinda Product pipeline to 8.8 MMTA
8. Branch pipeline to Lucknow from existing Barauni – Kanpur pipeline (commissioned in Oct. '02)
9. Mathura–Tundla product pipeline (commissioned in Dec. '02)
10. LPG bottling Plants of 108 thousand tones per annum capacity at five locations
11. Construction of 6 \* 12,000 kl MS Storage tanks at Gujarat Refinery
12. Hydrotreater Unit at Guwahati refinery (commissioned in Dec.'02)

#### 4.1.12.2 Major Projects approved:

1. MS Quality improvement facilities to meet future Euro emission norms at Gujarat, Haldia and Barauni refineries
2. FR for installation of facilities for improvement in Diesel quality and distillate yield at Haldia Refinery (OHCU) (DFR under preparation)

3. FR for Paradip-Haldia crude oil pipeline (DFR under preparation)
4. Branchline from Barauni-Kanpur Pipeline to Raxaul and further to Baitalpur
5. New product pipeline from Sidhpur to Sanganer and Panipat to Rewari

#### 4.1.12.3 Major Ongoing Projects:

1. Hydrotreater Unit at Digboi refinery
2. Catalytic Dewaxing Unit at Haldia Refinery
3. Linear Alkyl Benzene Unit at Gujarat Refinery
4. MS Quality Improvement and Diesel Hydrotreater Unit at Mathura Refinery
5. PX/PTA at Panipat Refinery
6. Panipat Refinery Expansion including conversion of Kandla Panipat pipeline to crude
7. Solvent Dewaxing Unit at Digboi Refinery
8. Indmax project at Guwahati Refinery
9. Koyali-Viramgam-Sidhpur Product Pipeline
10. Viramgam-Koyali crude pipeline
11. Koyali-Navgam product pipeline
12. Kurukshetra-Roorkee-Nazibabad branch product pipeline

13. Additional tankage of 27,918 kl at four Marketing locations

#### 4.1.13 Environment protection, safety and energy conservation

The Corporation is fully committed to environment protection and maintaining ecological balance. All refineries have Environmental Management system certified to ISO 14001 standard. The Corporation also has a well defined Safety, Health and Environment Policy. During the year, IndianOil has been continuing with its endeavour to achieve high standards of environmental performance. The Corporation also has a well defined Safety, Health and Environment Policy. The achievements of the Corporation in these areas are highlighted below.

#### 4.1.14 Environment protection

- Full compliance of effluent & emission standards at all refineries
- Treated effluent has been reused to the extent of 60% at the refineries. Panipat refinery has been maintaining zero discharge since commissioning.
- Bioremediation trials with OILIVOROUS-S – a more potent bacterial consortium developed by IOC (R&D) & TERI, for degradation of residual oily sludge at Barauni & Mathura refineries have been successfully completed.
- A booklet on Safety, Health & Environment, 2001-02 published on the occasion of World Environment Day, 2002.

#### 4.1.15 Safety

Great thrust is given to safety of plant and personnel through continuous upgradation of fire-fighting facilities and training of personnel. Gujarat Refinery achieved record accident free operation of 2,383 days equivalent to 43.09 million man-hours as on 31-3-2002- this being the longest accident –free spell achieved in the Indian refining sector. A number of awards have been won during the year by various Refinery and Marketing units.

- Gujarat Refinery won “National Safety Award” declared by DGFASLI (Directorate General Factory Advice Service and Labour Institutes) Ministry of Labour, Govt. of India for the year 2000:
  - Winner under scheme–I (for lowest average accident frequency rate)
  - Winner under scheme–II (for longest accident free period)
- Barauni Refinery has received ‘Vishwakarma Rashtriya Puraskar’ declared by DGFASLI (Directorate General Factory Advice Service

and Labour Institutes) Ministry of Labour, Govt. of India for the year 2000.

- Gujarat Refinery has received ‘Prashansha Patra’ for the year 1999 and ‘Shreshtha Suraksha Puraskar’ for the year 2000 from National Safety Council, India.
- Barauni and Mathura refineries have received ‘National Safety Award’ from British Safety Council, UK for the performance year 2001.
- Gujarat, Panipat and Mathura refineries have achieved the highest rating of 5 Star of British Safety Council.
- Barauni, Gujarat and Panipat refineries have been awarded prestigious ‘Sword of Honour’ by British Safety Council.
- Gujarat Refinery has received ‘Industrial Safety Gold Award’ from Greentech Foundation for the year 2001.
- Barauni Refinery has received Highly Commendation certificate in the Oil and Gas Industry Sector by RoSPA, UK (Royal Society for Prevention of Accidents) for the year 2002.

#### 4.1.16 Conservation of petroleum products: Energy & loss minimisation

IndianOil continues to place emphasis on energy conservation and reduction of hydrocarbon loss at its refineries.

The combined Energy & Loss of IOC refineries:

Actual for 2001-2002 = 116 MBTU/Bbl/NRGF

Actual for Apr-Dec’02 = 114 MBTU/Bbl/NRGF

During 2002-03

MOU target = 125 MBTU/Bbl/NRGF

Outlook = 117 MBTU/Bbl/NRGF

IndianOil 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 optimisation and hydrocarbon loss minimisation schemes are implemented at IndianOil refineries.

In IndianOil 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:

- Preheat Improvement in FPU-2 at Gujarat Refinery
- Improved insulation for reduction heat losses in HP steam line at Gujarat Refinery.

- ❑ Stabilised GT operation and improvement in Steam-power optimisation at Panipat Refinery.
- ❑ Recovery of flash steam condensate at Haldia Refinery.
- ❑ Steam trap management at Barauni Refinery
- ❑ Shutting down one air compressor after better control at Digboi Refinery.

With the implementation of various energy conservation measures, Energy consumption & Loss in the refineries, has reduced over the years as per details below:

(All figures in MBTU/Barrel/NRGF\*)

	1993-94	1999-00	2000-01	2001-02
Energy + Loss Performance of IOC Refineries	142.5 **	125.2	121	116

\* (MBTU/Bbl/NRGF is the unit for measuring energy consumption + loss in refinery sector adopted by Center for High Technology)

\*\* Does not include Panipat refinery operation (commissioned in Oct 98)

#### 4.1.17 Energy Conservation Awards

- ❑ Gujarat and Panipat Refineries received Special prize and First prize respectively of 'National Energy Conservation Award 2002' in refineries sector, instituted by Ministry of Power.
- ❑ Mathura and Panipat Refineries were adjudged the best and second best performing Refineries respectively in steam leaks amongst Indian Refineries based on a survey conducted during Oil Conservation Fortnight-2001 by the Centre for High Technology.
- ❑ Haldia and Gujarat Refineries were conferred the Best performance Award for Energy Conservation for the year 1998-99 and 1999-2000 respectively in the Jawaharlal Nehru Centenary awards for Energy Conservation in Refineries, while Barauni Refinery received the Award for Best Improvement in Energy Consumption for the year 1999-2000.
- ❑ Gujarat and Haldia Refineries have been declared as the Winners of 1<sup>st</sup> Prize and 3<sup>rd</sup> Prize respectively for Best performance in Energy consumption in the year 2000-01 in the Jawaharlal Nehru Centenary awards for Energy Conservation in Refineries.

## 4.2 HINDUSTAN PETROLEUM CORPORATION LIMITED



4.2.1.1 The 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 5.5MMTPA and the other in Visakhapatnam (East Coast) with the capacity of 7.5 MMTPA. The Corporation also operates the only joint-venture refinery in the country – Mangalore

Refinery & Petrochemicals Limited with a capacity of 9 MMTPA, in association with Aditya Birla Group of Companies, and is progressing towards setting up of a refinery in the state of Punjab. The Corporation owns and operates the largest Lube Refinery of 3,35,000 tonnes capacity production Lube Base Oils of international standards. The authorised and paid-up capital of the Corporation as on 31.3.2002 were Rs. 350 crore and Rs. 339.33 crore respectively. The Government of India holding in HPCL is 51.01%.

4.2.1.2 During the year 2001-02, the two refineries of the Corporation achieved a combined crude throughput of 12.33 MMT compared with 11.99 MMT in 2000-01. The throughput achieved upto December 2002 has been 9.65 MMT. The total sale of petroleum products during 2001-02 was 17.50 MMT, which is the same as was in 2000-01. Sales volume achieved upto December 2002 has been 13.51 MMT. The sales turnover was Rs. 45,562 crore in 2001-02 as compared to Rs. 47,644 crore in 2000-01 and the net profit was Rs. 788 crore during 2001-02 as compared to Rs. 1,088 crore during 2000-01. The Corporation declared a dividend of Rs. 339.33 crore for the year 2001-02 equivalent to 100% of the paid-up capital compared with Rs. 374 crore for the previous year. The sales turnover and the profit before tax of the Corporation during April-December 2002 have been Rs. 37,159 crore and Rs. 1,188 crore respectively.

4.2.1.3 During the year 2001-02, the Corporation commissioned 178 retail outlets and 210 LPG distributorships and released 17.42 lakh new LPG connections. During April-December, 2002 the Corporation commissioned 75 retail outlets and 43 LPG distributorships and released 13.40 lakhs new LPG connections.

**4.2.2 Major projects completed/scheduled to be completed during the year:**

#### 4.2.2.1 LPG PLANTS:

One LPG Bottling Plant at Kota, Rajasthan of capacity 44 TMTPA and capacity augmentation of six existing Plants (at Kondapally, Mysore, Palghat, Gummdipundi, Unnao, Jamshedpur) by a total of 138 TMTPA have been completed during 2002-'03 (till September '02) at a total cost of Rs. 36.82 crore. Construction work for augmentation of additional four LPG bottling plants by a total capacity of 142 TMTPA is in progress and scheduled to be completed during 2002-03.

#### 4.2.3 Major projects under implementation:

##### 4.2.3.1 Additional Tankages.

Construction is in progress for additional product tankage and allied facilities at Pedapalli, Hassan and Irumpanam with total tankage of 1,09,600 KL at an estimated cost Rs. 112.71 crore. These projects are scheduled to be completed in phase, during 2002-03.

#### 4.2.4 Initiatives:

##### 4.2.4.1 HP GAS : RASOI GHAR (COMMUNITY KITCHEN):

LPG marketing in India has been traditionally confined to domestic & non-domestic consumers in urban/semi urban markets. All efforts till date have been made 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. The following are the benefits of HP GAS Rasoi Ghar to the consumers:

- i. No one time investment on deposit, hot plate and utensils to individuals consumers.
- ii. Ready cooking place with affordable fuel.
- iii. Consumers to pay on the basis of the duration of usage.
- iv. Savings in time due to reduction in cooking time – LPG Vs Fire wood/Kerosene and because consumers need not have to search for/buy firewood daily
- v. Eco-friendly clean fuel.

With a view to understand/identify all the factors that can influence the effective and viable operation of HP GAS Rasoi Ghar and to develop a viable model, a pilot project was taken up at village Agwan, Tal. Palghar, District. Thane, by HPCL. Accordingly, the idea of a community kitchen (HP GAS Rasoi Ghar) was mooted to the Panchayat of the village. The pilot project was commissioned on 17.8.2002. A total of 49 Community Kitchens have now been

commissioned as of Nov. 2002, in different parts of the country.

##### 4.2.4.2 Club HP:

HPCL launched its new Retail Brand "CLUB HP" which assures high-quality personalized "Vehicle and Consumer Care" through a select set of outlets. The roll out of "Club HP" is in a phased manner providing a distinct set of basic and value added offering which includes "Fuel Quality and Quantity Assurance", "Efficient & Expert Services", "Quick Care Point", "Digital Air Towers," "Vehicles Finance and Insurance related services," Bill Payment facilities," "HPCL-ICICI Credit Cards", "Loyalty Programme" and a host of other consumer amenities. Total number of "Club HP" Outlets across the country as of Nov. '02 is 350.

##### 4.2.4.3 Auto LPG:

Launched commercial sales of AUTO LPG in May '2002; set up 7 ALDS (Auto LPG Dispensing Stations) in Mumbai and 4 in Delhi. More than 1200, 4-Wheelers and 200, 3-Wheelers converted to Auto LPG, as on Sept. '02.

##### 4.2.4.4 5 Kg. Cylinders:

Launched **5 KG CYLINDERS** in the states of Punjab, U.P. and J&K in the month of August '02.

##### 4.2.4.5 BRANDED FUEL:

Taking its Retail Branding initiative one step further, HPCL launched branded petrol as well as diesel in select markets in the country. 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. These have been launched at all Club HP retail outlets in Mumbai, Delhi and branded "Power" petrol launched at all Club HP retail outlets in Chandigarh, Jaipur & Bangalore.

#### 4.3 BHARAT PETROLEUM CORPORATION LIMITED

##### 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 is Rs. 300 crore. The Government of India holding in BPCL is 66.2%.

4.3.1.2 During the year 2001-02, BPCL refinery achieved a throughput of 8.77 MMT. The throughput achieved up to December 2002 has been 6.50 MMT.

4.3.1.3 The profit after tax during 2001-02 was Rs. 849.83 crore as against Rs. 820.12 crore during the previous year. For the year 2001-02, the Corporation declared a dividend of Rs. 330 crore equivalent to 110% of the paid up capital.

4.3.1.4 During the year 2001-02, the Corporation sold 19.15 MMT of petroleum products as against 19.35 MMT during the previous year. Although the market sales dropped marginally, yet this drop was much lower than the industry, thereby increasing the market share marginally. During the year 2001-02, the corporation commissioned 140 new retail outlets, 17 SKO dealerships and 313 new LPG distributorships. During the period April-December, 2002, 61 new retail outlet dealerships, 9 SKO dealerships and 75 LPG new LPG distributorships were commissioned. The Corporation released 15.68 lakh new LPG connections during the year 2001-02 and approximately 13.54 lakh new connections during April-December 2002.

#### 4.3.2 Major achievements

##### 4.3.2.1 Aviation

The Corporation has been awarded the Aviation Turbine Fuel supply business by Emirates Airlines at Kochi and Bangalore, Silk Air at Hyderabad Airport and Swiss International Airlines at Mumbai and Delhi.

##### 4.3.2.2 Retail

###### 4.3.2.2 (a) Enhanced Fuel Preposition (EFP) :

The programme 'Pure for Sure' has been launched in 49 cities and the number of outlets certified is 1,315. It is planned to certify 2,000 Retail Outlets by March 2003.

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.

###### 4.3.2.2 (b) 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.

###### 4.3.2.2 (c) Smart Fleet Card

The Smart Fleet Card programme is a comprehensive Fleet Management solution and is specially designed for Fleet Owners. The programme helps fleet owners by cashless transactions, both for the fuel and items from convenience stores, and consolidated billings. It also provides for tracking of vehicles. Monitoring of maintenance and operating cost by the customers becomes very easy as a consolidated monthly report giving total expenditure vehicle wise is being provided. As on 1.12.2002, the no. of vehicles enrolled is 2.25 lakhs.

###### 4.3.2.2 (d) New Generation Petrol Fuel : SPEED

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

After introducing SPEED in Mumbai in July 2002, it has been introduced in 12 cities in the country.



Launching of 'Speed', new generation petrol introduced by Bharat Petroleum Corporation Ltd. at New Delhi. Shri Ram Naik is being helped by Shri Jagmohan, Tourism Minister and Shri Santosh Gangwar

##### 4.3.2.3 INDUSTRIAL & COMMERCIAL

###### 4.3.2.3 (a) B2B Initiatives

BPCL has developed a secured B2B portal to cater to its Industrial customers who procure various fuels and other petrochemical raw materials. The ultimate objective of the portal is to create a community of Industrial houses and leverage this community for increase in percentage share of each customer's business, develop new business opportunities, reduce customer service costs. The portal provides facilities to the Industrial customers such as on-line order booking, order processing and integration with back-end ERP system to provide near real time information of use to customers.

Currently about 5,000 customers are registered users of corporation's B2B portal. These customers

transact business valued at approximately Rs. 20 crore per day with BPCL.

#### 4.3.2.3 (b) e-Banking

BPCL has extended its e-initiatives from indenting to payment by providing e-banking facility to its direct customers.

#### 4.3.2.4 LPG

##### 4.3.2.4 (a) e-Bharatgas

Bharatgas Online customer service is a B2C (Business to Consumer) initiative launched by BPCL in order to provide a direct channel for Bharatgas customers to interact with BPCL. The online customer service facility can be accessed through the corporation's web-site [www.ebharatgas.com](http://www.ebharatgas.com).

The online facility of booking Bharat gas cylinders is available presently in the cities of Kolkata, Chennai, Mumbai, Thane District, NCR Delhi (including Noida, Ghaziabad, Hapur, Meerut and Sardana) Hyderabad/Secunderabad, Bangalore, Pune, Jaipur, Alwar, Dausa, Bharatpur, Sikar, Lucknow and Nasik covering 5.2 million Bharat gas customers.

##### 4.3.2.4 (b) Introduction of 5 kg. cylinder in rural markets

BPCL, in August 2002 has launched 5 Kg. Cylinders at 33 selected Rural Markets in the State of Andhra Pradesh, Karnataka, Tamil Nadu, Punjab, Rajasthan, Maharashtra, Gujarat, Madhya Pradesh, & West Bengal.

##### 4.3.2.4 (c) Rural mobile vehicle

In order to reach the far - flung rural customer, BPCL have 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 20 RMVs during the year.

##### 4.3.2.4 (d) 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 a proposal to set up 42 LPG stations in various cities (including metros) in the country. BPCL has so far commissioned 8 Auto LPG dispensing stations and two are ready for commissioning.

#### 4.3.2.5 Lubricants

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

- 15 New product were introduced during the year meeting the stringent API – SJ specifications.
- 16 alternative cost effective formulations were also developed for existing grades.

- BPCL lubricant plant at Budge – Budge and Tondiarpet were certified with ISO 9002. Thus, all BPCL lubricant plants are accredited with ISO 9002.

BPCL achieved another Marketing innovation in the Lubricants market by establishing the concept of Co-branding. TELCO the largest commercial vehicle manufacturer and BPC would be marketing a range of co-branded Lubricants. The range would include, inter-alia gear oils, automotive transmission fluids, hub bearing grease and coolants. The products would be marketed through BPCL extensive Retail Network and Telco's distribution and service network.

#### 4.3.3 Development of New Products

During the year, the existing product portfolio has been augmented through the development of the following new grades:

- a) Exclusive SAE 20W-50 Engine Oil for 4-Stroke Engine 2 wheelers.
- b) Long Life Gear Oil.
- c) Two grades meeting Original Equipment Manufacturer (OEM) / Customer specific requirements.
- d) Multi-grade Engine oil for diesel engines of M/s. Motoren-und Turbinen - Union Friedrichshafen GmbH (MTU), Germany.
- e) High performance Gas Engine Oil meeting API CF-4, for mobile applications.
- f) Pneumatic Machine Tool Oil for Indian Railways.
- g) Exclusive three grades for Defence.

#### 4.3.4 Miscellaneous activities

Consequent upon winding up of the Oil Coordination Committee, the Ministry authorised the officers of Anti Adulteration Cell (AAC), as the authority to exercise the powers of search and seizure under various control orders administered by this Ministry.

Naphtha was exempted from obtaining import license under clause (b) of sub-rule (1) of rule 19 of part II of chapter II of the Petroleum Rules, 2002 w.e.f. 29.11.2002.

The Solvent, Raffinate and slop (Acquisition, Sale, Storage and Prevention of Use in Automobiles), Order 2000 was suitably amended for the convenience of Small Scale Industries.

The Petroleum (Berar Extension) Repeal Bill, 2002 was passed by the Rajya Sabha on 30<sup>th</sup> July, 2002 and by the Lok Sabha on 18<sup>th</sup> November, 2002. The Petroleum (Berar Extension) Act 1937 has been repealed on 27<sup>th</sup> November, 2002 after the assent of the President on Petroleum (Berar Extension) Repeal, Bill 2002.

## CHAPTER V



## 5. OTHER UNDERTAKINGS/ ORGANISATIONS

### 5.1 ENGINEERS INDIA LIMITED



Engineers India Limited (EIL) is a leading engineering and consultancy company in India. It has been serving the petroleum, petrochemicals and other process industries since its inception in 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. It has played a significant role in setting up a large number of process plants in India and abroad.

The authorised capital and paid-up capital of the company are Rs.100 crore and Rs.56.16 crore respectively. The Registered Office and Headquarters of the Company is in New Delhi. In addition, the Company has Regional Engineering Offices in Chennai and Vadodara; Branch Offices in Kolkata and Mumbai; Inspection/Procurement Offices at various locations all over India and London; and Project Offices at different locations both in India and abroad.

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

#### 5.1.2. Performance

##### a) Physical Performance:

During the year 2002-2003 (till December, 2002), EIL secured new business totalling Rs.580 crore. Important assignments in the fields of refineries, pipelines, onshore/offshore oil and gas, metallurgy and ports & terminals were secured.

The major refinery jobs secured include Panipat Refinery Expansion Project of IOCL on conventional mode, EPCM services for Low Cost Revamp of CDU at Mathura Refinery of IOCL, consultancy services for Revamp of Fluid Catalytic Cracking Unit (FCCU) of CPCL at Chennai, engineering services for Ph-II Changes in Slurry Oil Filter Circuit at Haldia Refinery of IOCL, DFR for Visakh Refinery Project of HPCL, revised DFR for Punjab Refinery Project of GGSRL, DFR for proposed Mumbai Modernisation Project of HPCL, DFRs for KRL's Capacity Expansion cum Modernisation Project, Adequacy Check and preparation of Process Design Package for Revamp of existing DHDS Unit at Vizag in association with Axens, France, Feasibility Report for Revamp of Kerosene Treating Unit with NMP Solvent at

Bongaigaon for BRPL, Adequacy study of existing Fire Water Facilities for Double Fire contingency at Guwahati Refinery of IOCL and study of Storm Water Drainage System at Mumbai Refinery of HPCL.

The major pipeline jobs secured include PMC services for Agra-Ferozabad Loopline Project of GAIL, consultancy services for re-routing of 4<sup>th</sup> NM Propane Pipeline of IPCL, DFR for Kochi-Mangalore-Bangalore Regassified LNG Distribution Pipeline Network of GAIL, DFR for proposed Bhatinda-Pathankot-Udhampur Pipeline Project of HPCL, technical study for Vijaywada Station Pumping Modification of VSPL Project of HPCL and project management services for repairs of crude oil pipeline of HPCL.

In the field of offshore oil & gas, EIL secured a turnkey contract for N-11 & N-12 Well Platforms Project of ONGC. Other jobs secured include supervision, quality control and certification of painting job at ONGC Offshore Platforms and supervision, inspection & consultancy for structural modifications on 9 Platforms at Mumbai High of ONGC. In the onshore oil & gas field, jobs secured include PMC services for CNG Expansion Programme (Phase-III) of Indraprastha Gas Limited, consultancy services for Revamp of Jhabua Compressor Station of GAIL, DFR for Gas Processing Unit at Dahej of GAIL and EPCM services for Expansion of UP Petrochemical Complex at Pata of GAIL.

In the metallurgy field, EIL bagged consultancy works for EIA/EMP report on 2<sup>nd</sup> Phase Expansion of NALCO's Integrated Complex, vetting of DFR for implementation of Gujarat Alumina Project of Gujarat Alumina and Bauxite Ltd. (GABL), DPRs for Mining and Processing of Uranium Ore at Domiasiat, Meghalaya and Lambapur-Peddagattu in Nalgonda, Andhra Pradesh for Uranium Corporation of India and Due Diligence study of NALCO Plant at Bhubaneswar.

The ports and terminals jobs including consultancy services for laying of offshore/onshore pipeline from single point mooring to crude oil terminal of BORL and consultancy services for Nitrogen Tank at JNPT of BPCL. In addition, 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 Highways & Bridges, Intelligent Buildings and related works.

Outside India, jobs secured include consultancy services for Modernisation of Obsolete Instrumentation in MAA Refinery of KNPC, Kuwait, Consultancy Services for New Compressor Station (CS-7) Project of BANAGAS, Bahrain, FEED for Ras Laffan Topsides Liquid Product Berths 1-A & 1-B of Qatar Petroleum, third party verification for QAFCO-4 Project, Thermal & Mechanical design of Heat Exchangers and Air Coolers for Halliburton Far East Pte. Ltd., Singapore, consultancy services for GG-II Debottlenecking study for ADMA-OPCO, Abu Dhabi, additional work for providing Technical Assistance for ZADCO, Abu Dhabi, Value Engineering for GIP for BUNDUQ, Abu Dhabi, engineering services to NPCC, Abu Dhabi for Takreer-ULG/ISGO Project-Umm-Al-Nar Refinery, and FEED services for Sulphur Sump of GASCO, Abu Dhabi. EIL services for Managing Contractor's Contracts of 9<sup>th</sup> Olefin Complex of Pars Petrochemical Company, Iran and Technical Assistance for Offsites & Utilities Project of Fajr Petrochemical Company, Iran were extended by one more year.

During the year, EIL had the distinction of receiving the topmost **MoU Excellence Award** for its achievement of MoU targets for the year 1999-2000 and emerged as one of the top ten performers amongst 108 PSUs.

The major domestic jobs likely to be awarded to EIL during January-March 2003, include process design package and consultancy services for Refinery Modernisation at Mumbai of HPCL, DFR for Refinery Modernisation at Vizag of HPCL, consultancy services for Dahej-Uran Pipeline Project of GAIL and in the overseas managing contractor's services for 4<sup>th</sup> Methanol Plant of Zagross Petrochemical Co., Iran.

During 2001-2002 project assignments valued at Rs. 1,331 crore were secured. This included Rs.882 crore for jobs to be executed on Lump sum Turnkey (LSTK) basis, namely, Mumbai High North Clamp-on Project and Water Injection-cum-Gas Compression Platform at Mumbai High of ONGC. The refinery sector jobs secured included consultancy services for Hydrocracker Unit and associated facilities for the BPCL Refinery Modernisation Project, Mumbai, Basic Design

Engineering package for Crude & Vacuum Units of GGSRL, Bhatinda, Basic Engineering & Process Design Package for integration of Sulphur Recovery Units at HPCL's Vizakh Refinery, and Process Design Package for revamp of Naphtha Splitter facilities at Guwahati Refinery of IOCL.

In the pipeline sector, major projects awarded by GAIL, include consultancy services for HBJ Upgradation, Kalol-Ramol pipeline, KG Basin (Phase-III) pipelines, and Dabhol-Hazira-Uran pipeline. The Company also secured contract for the engineering and project management services for Mundra-Bhatinda crude oil pipeline and SPM terminal of HPCL and Manmad-Manglaya pipeline project of BPCL. EIL also secured Tapti Field Development work from Enron (now BG Exploration and Production India Ltd.) Upgradation of Gas Plant (Phase-I) at Hazira of GSPC-Niko Resources Ltd. and engineering pipeline surveys for Lakshmi (Ph-I) Development project of Cairn Energy. Major onshore oil and gas jobs secured from ONGC include Improved Oil Recovery Scheme at Gandhar, construction GGS-IV at North Kadi, Mehsana and construction of Buffer Solution Tank at Uran.

In the petrochemicals sector, jobs secured include PMC services for the Integrated Para-Xylene/PTA Project at Panipat, while in the non-ferrous metallurgy area, consultancy work from INDAL for Hirakud Smelter Expansion Project in Orissa was secured.

Overseas business secured included development of engineering capabilities for SONATRACH, Algeria, Managing Contractor's services for 9<sup>th</sup> Olefin Complex of Pars Petrochemicals Company, Iran, Technical assistance to NPCC, Abu Dhabi, Technical support services for Ras Laffan Common Cooling Water Project and Ras Abu Aboud. Development Project of Qatar Petroleum, Qatar. Further, EIL set up Front-End Marketing and Engineering offices at Abu Dhabi and Qatar to service the oil and gas projects in the Gulf region.

## b) **Financial Performance**

The details of the financial performance of the company for 2001-2002 and 2002-2003 are given below:

(Rs. In Crore)

FINANCIAL RESULTS OF ENGINEERS INDIA LIMITED					
Description	Actuals 2001-02	B.E. 2002-03	R.E. 2002-03	Actual (Tentative) 04/'02 to 12/'02	Targets 01/'03 to 03/'03
Turnover	537.00	655.00	915.00	295.79	619.21
Other Income	75.20	36.75	40.00	31.93	8.07
Profit Before Tax	112.47	100.25	112.50	48.37	64.13
Profit After Tax	24.71	61.05	66.50	28.12	38.38

### 5.1.3 Policy Initiatives Undertaken

The salient policy initiatives taken by EIL includes 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 & water related projects.

#### Strategic Alliances

MOUs were entered with various organizations specializing in Infrastructure projects such as NTPC, BHEL, NBCC, Airport Authority of India, Tehri Hydropower, WAPCOS, Bridge & Roof, HUDCO, Power Finance Corporation and EPIL to synergise the strengths of respective organizations.

#### Turnkey Assignments

Major breakthrough was made in turnkey field by securing two large projects relating to MNW Offshore Platform and N11 & N12 Well Platform of ONGC.

#### Organisational Development

To establish a stronger presence in the evolving competitive business environment, two organizational studies relating to Customer Satisfaction and Benchmarking Corporate Performance were initiated during 2000-2001. As a follow up of these studies, an evaluation was undertaken during 2001-2002 and implementation was carried out in 2002-2003 identifying actions to be taken which have been initiated in the Company for enhancing customer satisfaction and improving corporate performance comparable to globally operating consultancy organizations.

### Human Resource Development

For updating the functional and technical skills of the employees, ninety training programmes were identified in the MOU for completion during 2002-2003. The HRD Plan was prepared by EIL and was vetted by IIM Lucknow. The final document entitled "Strategic Human Resource Management Plan for EIL" was approved by the management and is being implemented in EIL.

#### Voluntary Retirement Scheme (VRS)

It was endeavoured to reduce Company's manpower by introducing VRS at appropriate times as a result of which 218 persons took VRS during the year 2001-2002. Company's manpower as on 31.3.2002 was 3,250. During the period 1.4.2002 to 31.12.2002, the number of VRS cases has been 153. The manpower of EIL as on 31.12.2002 is 3,026.

### 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. The authorised capital, paid-up capital and reserves & surplus of the Company as on 31.3.2002 was Rs.30 crore, Rs.16.29 crore and Rs.153.17 crore respectively.



The Company is a diversified, medium sized company with operations spread throughout India and overseas. The main activities of the Company are classified into a number of Strategic Business Units (SBU) viz., (i) Industrial packaging (ii) Greases & Lubes (iii) Performance Chemicals (iv) Travel and Tours (v) Cargo (vi) Tea Exports (vii) Project Engineering and Consultancy

5.2.2 During the year 2002-03, the company is expected to manufacture 38 lakh barrels/drums against 35.76 lakh achieved in 2001-02. The company is expected to produce 31,000 MT of Greases/Lubricants during

2002-03 as against 35,000 MT in 2001-02. Production of leather chemicals is expected to be around 3,400 MT during the year 2002-03, as against 2,441 MT in 2001-02.

5.2.3 The total turnover of the company is anticipated to be Rs. 800 crore in the year 2002-03 as against Rs. 738.23 crore during the last year i.e. 2001-02. The company has achieved profit after tax of Rs. 8.01 crore during the year 2001-02, the anticipated profit after tax during the year 2002-03 is Rs. 13.60 crore.

### 5.3. BIECCO LAWRIE LIMITED (BLL),



5.3.1 Biecco Lawrie Limited, a Government of India Enterprise, was incorporated on 23<sup>rd</sup> 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.43.12 crore. During the same period, the company incurred a net loss of Rs. 10.89 crore, while the cash loss was to the tune of Rs. 10.12 crore. Net worth of the company as on 31.3.2002 was negative and stands at Rs. 10.93 crore.

5.3.2 The physical performance of the company, upto December 2002 with regard to sale of switch gear panel and spares was Rs. 18.64 crore as against Rs. 21.77 crore achieved in the preceding financial year. The Company's Electrical Projects Division has been able to garner a total Sales of Rs. 2.53 Crore as against Rs. 1.20 Crore achieved in the previous financial year, signifying a positive growth potential.

5.3.3 In last two financial years the Company has accumulated loss of Rs. 19.56 crore and the net worth of the Company became negative, as a result of which the Company became a sick and registered with the Board for Industrial and Financial Reconstruction (BIFR) on 29<sup>th</sup> August, 2002. Meanwhile, under Revival/Disinvestment plan, as considered by the Government, financial assistance to the tune of Rs. 18.52 crore as an interest free advance from OIBD has been approved.

5.3.4 The Company has also been referred to Ministry of Disinvestment for disinvestment. The final decision on disinvestment would be taken after the decision of BIFR.

### 5.4 OIL INDUSTRY DEVELOPMENT BOARD (OIBD)

#### 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 (OIBD) 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 OIBD 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. OIBD has, so far, received an amount of Rs.902 crore till date, from the cess collection. No amount has been allocated to OIBD 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 OIBD Fund. As on 31st March, 2002, an amount of Rs.7,067 crore (approx.) has accrued to the Oil Industry Development Fund. During 2001-02, internal resources contributed Rs.614 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 will now be levied w.e.f. 01.04.02.

#### 5.4.4 ASSISTANCE TO OIL INDUSTRY

The OIBD 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 OI DB's financial assistance for exploration work in high-risk areas carries 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 for projects in areas other than exploration carry an interest rate of 10% to 11.25% p.a. The interest rates for specific projects are also determined by the Board separately from time to time.

#### 5.4.5. DEPLOYMENT OF FUNDS

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

The OI DB has, up to 31<sup>st</sup> December, 2002, extended following financial assistance to the Oil industry.

#### Financial assistance since 1975

	Rs./crore
Loans	15,368
Grants	544
Total	15,912

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 OI DB, as on 31<sup>st</sup> December, 2002 is Rs.5, 525 crore approximately. Loans and grants given during 2002-03 upto 31.12.02 are Rs.1, 516 crore and Rs.65 crore (approx.) respectively.

#### Details of financial assistance given in last few years

Year	Loans	Grants	(Rs/crore) Total
1992-93	706.20	11.29	717.49
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*	1,515.50	64.63	1,580.13

\* Upto 31.12.02

**Disbursement of Loans/Grants during the year 2002-03  
(upto 31.12.2002)**

( Rs. in crore )

Sl. No	Name of the Organization Plan Projects Loans	Allocation of Funds (2002-03)	Funds released Upto 31.12.02
1.	BRPL	94.00	125.00
2.	BPCL	400.00	
3.	GAIL	250.00	
4.	CPCL	1,000.00	300.00
5.	Oil India Ltd.	240.00	
6.	IOCL	965.00	871.00
	<b>Total (A)</b>	<b>2,949.00</b>	<b>1,296.00</b>

<b>Other Assistance</b>			
7.	IGL	200.00	6.00
8.	NRL	200.00	200.00
9.	OVL	157.50	0.00
10.	Tripura Natural Gas Corpn. Ltd.	2.50	0.00
11.	Biecco Lawrie Ltd.	18.00	13.50
12.	Mahanagar Gas Ltd.,	62.00	0.00
13.	Exploration Activities	400.00	0.00
	<b>Total (B)</b>	<b>1,029.00</b>	<b>219.50</b>

□ Total Loan disbursed upto 31.12.2002 – Rs.1, 515.50 cr.

**Grant in aid (Regular Grantee Institutions)**

14.	CHT	10.15	4.88
15.	PCRA	19.22	10.40
16.	DGH	66.31	22.03
17.	OISD	4.00	2.25
	<b>Total</b>	<b>99.68</b>	<b>39.56</b>

**Grant-in-aid to Other Organisations**

18.	Anti-Adulteration Cell & PPAC	19.65	5.00
19.	Balmer Lawrie & Co. Ltd	1.96	1.00

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

20.	NGHP	14.91	7.45
21.	IIT, Delhi	2.15	0.20
22.	CIPET	3.00	0.00
23.	National Geophysical Research Institute	5.19	2.80

24.	Oil and Natural Gas Corporation Ltd.	35.54	8.21
25.	Oil India Ltd.	7.50	0.30
26.	RRL Jorhat	0.09	0.08
27.	Rajasthan Government (CBM)	3.62	0.00
28.	Delta Studies Institute, Andhra University	1.60	0.00
29.	Fuel Testing Laboratory (NCT)	0.85	0.00
30.	Biecco Lawrie Ltd.	4.00	0.00
31.	IOC	6.00	0.03
	<b>Total</b>	<b>106.06</b>	<b>25.07</b>

□ **Total grants disbursed upto 31.12.2002 - Rs.64.63 cr.**

#### 5.4.6 MAJOR PROJECTS FUNDED BY OIDB

##### 5.4.6.1 Loan to Oil India Limited (OIL)

Oil India Limited is primarily engaged in exploration and production of crude oil and natural gas, extraction and bottling of LPG and transportation of crude oil. The OIDB has been assisting OIL in its efforts by extending loan at a very nominal rate of interest for high risk exploration project. During the financial year under report, the OIDB provided a loan assistance of Rs.0.30 crore to OIL for its Saurashtra Exploration Project (offshore) and Gas Valley Exploration Project (Onshore).

##### 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, OIDB disbursed a loan of Rs.235 crore to the Company for its refinery expansion projects at Manali, Chennai and Manangudi. These projects on completion will improve product quality and reduce environmental emission.

##### 5.4.6.3 Bongaigaon Refinery & Petrochemicals Limited (BRPL)

BRPL established in 1984 is engaged in refining crude oil to produce light, medium and heavy distillates, production of petrochemical etc. The total investment on various projects of the Company since its inception and upto 31.03.02 is Rs.913 crore, out of which an approximate amount of Rs.279 crore was made available by OIDB. During the year 2001-02, a loan assistance of Rs.20 crore was given to BRPL for its various upgradation/diversification projects.

##### 5.4.6.4 Grant in aid for R&D Activities

Keeping in view the paramount need for attaining self-sufficiency in the production of crude oil, the

OIDB has been according highest priority to the programmes connected with exploration & production of crude oil and other alternative sources of energy. The OIDB has taken initiatives to fund various seismic surveys and R&D projects in upstream technology. The OIDB is also funding national gas hydrate programmes, exploration of coal bed methane in Rajasthan, oil and 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. During 2001-02, an amount of Rs.11 crore approx. was released by OIDB to ONGC, Government of Rajasthan, NGRI and GAIL for the projects related to the upstream sector.

In consonance with the policy of funding of R&D projects, a National Gas Hydrate Programme (NGHP) was formulated in 1997 for development of Gas Hydrates and GAIL was assigned the job of coordination in this regard. A grant of Rs.48.00 crore was sanctioned for implementation of the programme in two phases. Initially, an amount of Rs.10.00 crore was approved for phase-I. For this programme, an amount of Rs.2.47 crore was released by OIDB upto 2001-02. The data generated by GAIL, out of this programme will be used in Phase - II of the programme. So far results of the reprocessing have been very encouraging and would be useful for further investigations. However,

Ministry of Petroleum & Natural Gas has reconstituted the Implementation Mechanism for National Gas Hydrate Programme and six projects have been approved by OIBD under NGHP at a total cost of Rs.14.81 crore. Out of these, an amount of Rs.7.45 crore approx. has been released upto 31.12.02.

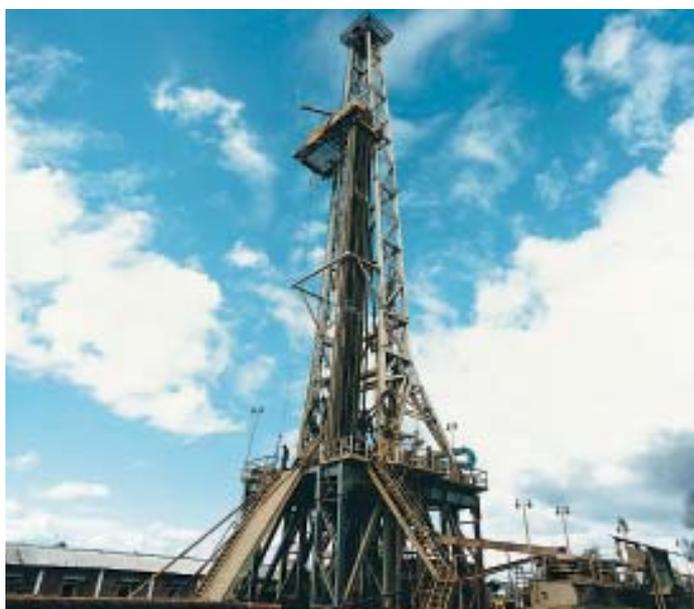
#### 5.4.6.5 Concessional Loans to North-East Region

The OIBD has given concessional loans in the North-East Region to M/s IOC amounting to Rs.871.00 crore for Digboi and Guwahati Refineries at an interest rate of 5% p.a. A soft loan of Rs.125.00 crore has also been disbursed to M/s BRPL for their refinery at Bongaigaon at an interest rate of 8.5% out of the sanctioned loan of Rs.200.00 crore.

#### 5.4.7. Dividend from NRL

OIBD has taken a stake of 10% in NRL's equity amounting to Rs.90.80 crore. NRL has paid a dividend of Rs.4.14 crore to OIBD towards its share of profit during the year under review.

### 5.5. DIRECTORATE GENERAL OF HYDROCARBONS



*Exploring for Hydrocarbons*

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 gas resources having a balanced regard for environment, safety, technological and economic aspects of the petroleum activity. In addition, DGH has been entrusted with certain responsibilities

concerning the Production Sharing Contracts for Discovered fields and Exploration blocks and monitoring of E&P activities including review of reservoir performance of major fields. In addition, DGH is also engaged in acquiring of data in new/unexplored areas with a view to prepare data packages and offer such areas under the bidding rounds. Details of the main activities undertaken by DGH during 2002-03 are as under:

#### 5.5.2. OPENING UP OF NEW AREAS FOR FUTURE EXPLORATION:

In its continued efforts to open up new areas for exploration, DGH acquired about 900 Ground Line Kilometer (GLK) of 2D seismic Data in the Eastern Part of Ganga basin, 12000 Line Kilometer of seismic and gravity magnetic data in Western Offshore Deep Water area. Geochemical surveys were also carried out in Chambal Valley area of Vindhyan basin covering about 20,000 Sq. Kms. During IV quarter of 2002-03, it is planned to acquire about 800 GLK of regional seismic data in Vindhyan basin and planned remaining acquisition of 500 GLK of seismic in Ganga Basin. It is also planned to commence GM survey in Amiriti feature in Madhya Pradesh so as to record 300 stations by March 2003. During IV quarter of 2002-03, it is planned to commence work for aeromagnetic surveys of about 2,00,000 Sq. kms. of area in Himalayan Foothills and Ganga Valley basin. The work is planned to be completed in two years period.

#### 5.5.3 NELP-III :

With a view to facilitate the prospective bidders for viewing data of 27 Exploration Blocks offered under NELP-III round, DGH opened Data Viewing Centres at Delhi, London and Houston and sold data worth US\$ 2.292 Million (About Rs.11 crore). By the bid closing date of 28.8.2002, a total of 42 companies viewed the data and 45 valid bids were received for 23 blocks out of total 27 blocks offered. Bids were evaluated at DGH expeditiously and recommendations were forwarded to Ministry for award of Blocks. Production Sharing Contracts (PSCs) for 23 blocks have been signed.

#### 5.5.4 NELP-IV :

The bids for NELP-IV are expected to be invited in April 2003.

#### 5.5.5. MONITORING OF PRODUCTION SHARING CONTRACTS:

Production Sharing Contracts between Government of India and Private/Joint Venture & National Oil

Companies in respect of 70 Blocks and 26 fields are currently under operation. DGH on behalf of the Government of India, through Management Committees, is monitoring execution and management of these Production Sharing Contracts. During 2002-03, (April-December, 2002) Private/Joint Venture produced about 3.12 MMT of Oil and 3.87 BCM Natural Gas against the set target of 2002-03 (RE) 3.98 MMT of Oil and 4.587 BCM of natural gas. During 2001-02, Private/Joint Venture Companies produced 12.9% and 13.6% of country's oil and gas respectively.

#### **5.5.6. MONITORING OF PETROLEUM EXPLORATION LICENSES HELD BY NOCs ON NOMINATION BASIS:**

DGH review the progress of exploration activities vis-à-vis minimum committed work programme in respect of 149 Petroleum Exploration Licenses held by NOCs (ONGC and OIL) on nomination basis on a half-yearly basis.

#### **5.5.7. FIELD DEVELOPMENT & RESERVOIR AND PRODUCTION MONITORING**

DGH is monitoring reservoir and production performance of Mumbai High field operated by ONGC and also fields like Ravva, Panna-Mukta, Mid & South Tapti, Hazira and 23 other fields operated by JV/private companies. The Redevelopment Plans of Mumbai High North and South of ONGC prepared alongwith the consultants GCA were reviewed by DGH. Technical recommendations of DGH were incorporated in the Redevelopment Plans. ONGC is implementing the Plan broadly as agreed with DGH. DGH is constantly monitoring the implementation of Redevelopment Plans and progress of G&G and other studies on regular basis.

#### **5.5.8. SAFETY & ENVIRONMENT:**

DGH is monitoring Safety and Environment related aspects of Private/Joint Venture fields through periodic safety audits/inspections. During April-December, 2002, DGH carried out safety audit/inspections in respect fields like Ravva, Panna-Mukta, PY-3, Hazira, Bhandut and Sabarmati. During the IV quarter of 2002-03, DGH plans to carry out safety audit/inspection for about ten more fields/rigs.

#### **5.5.9. 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 along-with peripherals and latest software were maintained. Important technical studies, such as, Reservoir simulation, log interpretation and loading of seismic and other

related technical data and seismic interpretation are being carried out by DGH on these work-stations.

#### **5.5.10. ESTABLISHMENT OF NATIONAL 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. The project consists of 3 phases. Phase-I of the project has been approved in principle by MOP&NG for implementation. The project will be implemented as an operational arm of DGH through an internationally reputed service provider for E&P database.

#### **5.5.11. NATIONAL GAS HYDRATE PROGRAMME (NGHP)**

Reconnaissance surveys carried out by DGH in the East Coast and Andaman Deepwater areas in 1997, deciphered the most promising areas for Gas Hydrate deposits. So far, based on seismic data acquisition and special processing carried out by DGH, presence of gas hydrates with free gas below gas hydrates has been established in Andaman area. Substantial progress has been made towards implementation of NGHP, after its reconstitution by MOP&NG in the year 2000. A roadmap has been prepared for the two identified "Model Laboratory Areas", one each in West Coast and East Coast for further R&D work.

Besides, NGHP is member of the International Consortium for Mallik Gas Hydrate well in Mackenzie delta in Canada and collaboration with Colorado School of Mines is in progress. Geo-scientific data acquisition by National Institute of Oceanography for NGHP in East and West Coasts of India is in progress. As a part of implementation strategy, an Indo-US workshop on Gas Hydrates was organized in April 2002. A Brain Storming Meeting was held in October 2002 with CSIR scientists at DGH for discussing various aspects of exploration and exploitation of gas hydrates as per NGHP Road Map.

#### **5.5.12. ESSENTIALITY CERTIFICATES:**

During 2002-03 (April, 2002 to December, 2002) DGH issued 3,310 number of Essentiality Certificates comprising of about 40,057 items worth Rs.6,406 crore enabling the NOCs and Private/JV Companies to import concessional/duty free goods for petroleum operations.

#### **5.5.13. WORK BY ADVISORY COUNCIL/COMMITTEES:**

The Advisory Council of DGH reviewed the progress of Mumbai High Redevelopment Plan, blocks awarded under NELP-I & II and Identification of Exploration Blocks for offer under NELP-IV and CBM-II. Advisory Council also reviewed the activities

of NGHP, co-ordinated by DGH, future surveys in Kutch Saurashtra Area and application of logging tools in aid of hydrocarbon discoveries and reservoir characterization as well as results of Geo-Chemical survey undertaken in Chambal valley and in Kutch onland.

## 5.6 OIL INDUSTRY SAFETY DIRECTORATE

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

locations i.e. POL terminal/ Depot, LPG plants, 84 E&P installations and 3700 km of cross country pipelines was carried out. Additionally, pre-commissioning safety audit of 10 new projects in refineries and acceptance committee inspection of 18 new locations in marketing i.e. POL/ LPG plants was carried out.

### 5.6.4 Safety Performance Evaluation

Safety performance of the organisations in the oil industry is being regularly evaluated through a Safety Award Scheme instituted by MOP&NG. Evaluation of performance is done by specially developed system based on total loss concept. Evaluation for the year 2001-2002 is under progress.

### 5.6.5 Training Programs/Workshops

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



*Proud Winners of Safety Awards with Shri Ram Naik, Hon'ble Minister of Petroleum & Natural Gas*

### 5.6.2 Standardisation.

OISD standards are generally reviewed every 4 years after first publication to incorporate the latest technological changes and experience gained in their implementation so as to update them in line with the current international practices. During the period, 6 new standards and amendments in 9 existing standards were approved by Safety Council.

### 5.6.3 External Safety Audits (ESA)

During the period, External Safety Audits (ESA) of 3 refineries, one LPG recovery plant, 33 marketing

of experiences etc. Further, case studies on major incidents are presented/ discussed to prevent recurrence of similar incidents. During the period, five workshops have been organised covering Refineries, Exploration & Production, Environment, Marketing and cross country pipelines.

## 5.7 CENTRE FOR HIGH TECHNOLOGY (CHT)

Centre for High Technology (CHT) established in 1987, a Registered Society



functioning under the Ministry of Petroleum & Natural Gas, Government of India, acts as a focal point of oil industry for co-ordinating and funding of research work in refining and marketing areas, exchange of information and experience, assessing technology requirements and getting them developed indigenously.

The organization sponsored the following R&D programmes financed by OIIB:

- (i) Studies on effect of gasoline composition (Benzene, aromatics & olefins) on exhaust emissions from 2-wheelers.
- (ii) Development of Regenerative Process for sulfur dioxide removal from Lean Gas Streams.
- (iii) Development of Synthetic Aviation Lubricants Technologies from renewable feedstocks.

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



- 5.8.1 Petroleum India International (PII) is a consortium of public sector companies operating in the Petroleum and Petrochemicals sectors. PII was established in 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.
- 5.8.2 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 on the basis of audited accounts during the last two years and estimates for 2002-2003 & 2003-2004 are given below:

**Rs. In Lacs**

Particulars	Audited		Approved Budget	Projected estimates
	2000-2001	2001-2002	2002-2003	2003-2004
Project Income	4,210	6,017	6,060	7,270
Profit before Tax	1,730	1,827	2,060	2,250
Profit after Tax	1,187	1,303	1,350	1,460

## 5.9 Petroleum Planning & Analysis Cell

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

Shri Ram Naik, Hon'ble Minister of Petroleum & Natural Gas inaugurated Petroleum Planning & Analysis Cell on 3<sup>rd</sup> April 2002.

PPAC would assist the Government in discharge of some of the functions earlier being performed by the erstwhile Oil coordination Committee.

The Oil Industry Development Board will fund 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 will also be utilized to wind up the Oil Pool Account.



# तेल संरक्षण परखवाड़ा - 2003 उद्घाटन समारोह

15 जनवरी 2003, नई दिल्ली

**डा. साहिब सिंह वर्मा**  
माननीय केन्द्रीय श्रम मंत्री  
मुख्य अतिथि

श्री बी. के. चतुर्वेदी

सचिव, भारत सरकार पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय  
अध्यक्ष पी. सी. आर.ए.



## तेल बचाये यह बहुमूल्य है। तेल संरक्षण परखवाड़ा - 2003

## 6. CONSERVATION OF PETROLEUM PRODUCTS

**6.1** A very high priority is attached by the Government of India to conservation of petroleum products in the view of the need to reduce gap between demand of petroleum products and indigenous supply of crude oil. The continuing tension in the Middle East region which is the source of our oil imports is a potent reason for continued emphasis on conservation & 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 driver training programmes, transport depot studies, promoting high performance lubes additives in transport sector; energy audits to improve fuel efficiency and specific fuel consumption, promotion of fuel – efficient practices/equipments, technology, up gradation projects in industrial sector; rectification, replacement of fuel efficient lift irrigation pump sets, foot valves in agricultural sector; promotion of fuel-efficient appliance 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 transport, industrial and agriculture sectors. 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.

### 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 6, 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 programs
- Driver instructor training programs
- Model depot studies

- Soft Loan for up gradation of garages
- Workshops/Clinics/Technical meets
- Emission check up & Awareness camps
- Educational Training programs
- Promoting high performance lube oil & Re-refining
- Action group meetings

### 6.3.2. INDUSTRIAL SECTOR

- Energy Audits (industries consuming fuel > 1000 Kls/Annum)
- Fuel Oil Diagnostic Studies (Industries consuming fuel < 250 Kls/Annum)
- Follow up studies
- Development of Energy Auditors and their empanelment
- Educational Training Programme for Industrial Manager/Engineers/Workers
- Organize seminars, Technical Meets, Workshops & Mass Awareness Programs
- Soft loan Schemes
- For purchase of energy audit instruments & Equipment
- For implementing energy audit recommendations
- Energy Audit subsidy scheme
- Action Group meetings

### 6.3.3. AGRICULTURAL SECTOR

- Promotion of BIS marked fuel-efficient lift irrigation pump-sets and foot valves by rectification/replacement.
- Soft loan for upgrading testing facilities to manufacturers of BIS foot valves.

### 6.3.4 EDUCATING FARMERS, RURAL AND SEMI URBAN USERS.

- Promotion through participation in Kisan melas/ Agricultural Workshops.
- Van Publicity
- Demonstration Centers
- Action group meetings

### 6.3.5 HOUSEHOLD SECTOR

- Educating on good cooking habits
- Education on good driving habits
- Youth programs.
- Development and promotion of fuel-efficient BIS marked Kerosene / LPG Stoves and lighting appliances

- Encouraging use of alternate sources of energy i.e., LPG, NG, BIOFUELS, SOLAR etc.,

## 6.4 ACTIVITIES UNDERTAKEN BY PETROLEUM CONSERVATION RESEARCH ASSOCIATION

The highlights of PCRA's activities undertaken during the year are as follows:

### 6.4.1 ENERGY STUDIES

During the year 2001-2002, 218 energy audit studies and 363 fuel oil utilization studies were undertaken. Between April – December 2002 total number of 128 energy audit studies, 221 fuel oil utilization studies, 389 small-scale industries and 1647 follow-up studies were conducted in the industries surveyed.

### 6.4.2. MODEL DEPOT PROJECTS

During 2001-2002, PCRA completed 244 model depot development studies in various States across the country. Further, 187 such studies have already been completed during the period April-December, 2002.

### 6.4.3 DRIVER TRAINING

605 driver training programmes have been completed during 2001-2002 and 419 DTPs have been completed between April-December 2002.

### 6.4.4. CLINICS – WORKSHOPS / EXHIBITIONS

During the year 2001-02, a total number of 2086 save fuel clinics/workshops and 66 exhibitions were completed. Further 1110 save fuel clinics/workshops and 51 exhibitions have been conducted between April-December 2002.

### 6.4.5. CONSUMER MEETS

During the year 2001-02, 24 consumer meets were organized by PCRA to bring together energy consumers, equipment manufacturers and energy consultants to solve the energy conservation problems and create awareness. During the period April-December 2002, PCRA has organized 7 such consumer meets

## 6.5 PROMOTIONAL SCHEMES

6.5.1. Six nos. of garages were upgraded during the year 2001-02 and three between April and December 2002

### 6.5.2 EDUCATIONAL FILMS/TV SPOTS/RADIO JINGLES

A new film titled ' Anmol Khajana' on handling of fuel oil in industrial sector has been made. Two TV spots (Filler) of 30 sec. each have also been made in Domestic and transport sectors and were screened on Discovery Channel. PCRA's existing films on agricultural & transport sectors were telecast on Jain TV. Radio Jingles were broadcast on All India Radio in Hindi, English and regional languages. PCRA has also started an informative

programme of one hour duration (every Monday between 9-10 AM) ' Boond Boond ki Baat ' in FM-2 channel of AIR, Delhi. PCRA has taken up a 10 minutes interactive segment in the popular programme ' Rail Road Watch ' on DD metro being telecast on Saturday between 5.30 – 6.00 PM During the segment, Quiz on Oil Conservation & Environment Protection is being conducted.

### 6.5.3. OUTDOOR PUBLICITY MEDIA

PCRA's catchy & meaningful conservation messages were displayed at prominent places across the country by using various outdoor publicity media like bus panels, bus queue shelters, kiosks, road safety railings, electronic display boards, Hoardings, glow signs etc.

### 6.5.4. PRESS CAMPAIGN AND DISTRIBUTION OF PRINTED LITERATURE

Sectoral advertisement on "save oil- it is precious" and specific event based creative advertisements like World Environment Day, Children's Day, World Energy day etc. were released in small/medium/leading publications throughout the country. Printed literature, posters, pamphlets and low cost leaflets developed by PCRA containing educative information and simple tips were also distributed across the country. Two publications – Active Conservation techniques (ACT) and Sanrakshan, former on technical articles & case studies on successful energy audits and latter on information about various activities are also published regularly.

### 6.5.5. OIL CONSERVATION FORTNIGHT

In January 1991, MOP&NG decided to lay due emphasis for improved awareness on conservation of petroleum products by involving the entire oil sector including their network of dealers and distributors. Accordingly, MOP&NG made firm plans for bringing oil conservation tips to the doorsteps of general public by observing Oil Conservation Week across the country. Inspired by the overwhelming response and enthusiasm from the Oil Industry, the duration was extended from week to a fortnight since 1997. Under the aegis of MOP&NG, the entire oil sector joined PCRA in making the 13<sup>th</sup> Oil Conservation Fortnight from 15-31 January 2003 a great success. The oil sector spared no efforts in organizing rallies, marathon, human chain, technical seminars, symposium, quiz, painting, debate competition etc. for the widespread propagation of oil conservation messages covering all the four sectors. The theme of OCF 2003 was " Save Oil – it is Precious". A special activity 'Two Wheeler Women Rally ' having objective of save oil with Women empowerment was organised at six places at Chandigarh, Ranchi, Vishakapatnam, Delhi, Lucknow and Patna. A series of advertisements

were published during Oil Conservation Fortnight to match and supplement the variety of events and activities of oil industry.

## 6.6. RESEARCH & DEVELOPMENT

PCRA continued its efforts toward sponsorship of new R&D projects on reputed R&D laboratories, technical institutes and CSIR labs etc. for design, development and deployment of new technologies, process, equipments appliances which helps in saving of petroleum products and reduction of environment pollution. The new technologies were transferred to interested entrepreneurs for commercialization in order to maximize the saving of petroleum products.

### 6.6.1. R&D PROJECTS UNDER PROCESS DURING THE YEAR 2002-03

- (a) Design & development of micro process based fuel efficiency monitor for fuel fired furnaces/boilers.
- (b) Design/development of re-heating furnaces in steel re-rolling mills for fuel economy and reduction of GHG emissions (Small and medium sector)
- (c) Design/development of offset burner type Kerosene Pressure Stoves having 60% plus thermal efficiency.
- (d) Design/development of energy efficient processes for recovery/recycling of waste lube oils.
- (e) Evaluation of SONA- Energy saving devices as per procedure specified in BIS standard nos. IS: 4246 & IS: 5117.

### 6.6.2. PROJECT TO BE SPONSORED

- (a) Design/development of low capacity LAP Burners for ceramic/pottery industry of Khurja by IIP, Dehradun and CGCRI, Khurja centre.
- (b) Design/development of energy efficient tunnel klin type furnace for ceramic/pottery industry at Khurja for fuel economy and reduction in GHG emission by RDCIS, SAIL, Ranchi.

## 6.7 ADDITIVES/ DEVICES EVALUATED

PCRA also undertakes evaluation of additives/ devices in the accredited labs to assess their potential for cost effective fuel economy and emissions reduction. During the year, one number of gasoline fuel additive on petrol engine driven passenger car was evaluated in accredited labs. In addition evaluation of one no. of gasoline fuel additive on 2 stroke 2 wheeler and one no. of gasoline fuel additive on petrol engine driven passenger car was taken up to assess their potential for cost effective fuel economy and emission reduction.

Further field trials of 15 nos. of gasoline fuel additives, 08 nos. of diesel fuel additives and 04 nos. of gasoline fuel devices continued during the year 2002-2003.



## 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 and the Ministry of Social Justice and Empowerment are being implemented in the Ministry of Petroleum & Natural Gas and the Public Sector Undertakings under its administrative control. The SC/ST Cell of this Ministry monitors the implementation of reservation policies in PSUs as well as in the Ministry. The PSUs have also constituted Implementation Cells under the supervision of their Liaison Officers to safeguard the interests of SCs/STs, OBCs and Physically Handicapped (P/H) employees and to redress their grievances. The Liaison Officers of the PSUs are responsible for ensuring implementation of the Presidential Directives as well as the various orders of the Government. Remedial action on the grievances of the SCs/STs, OBCs and P/H employees of PSUs received through Members of Parliament and the National Commission for SCs and STs are taken, wherever necessary.

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

### 7.2 SPECIAL COMPONENT PLAN (SCP) AND TRIBAL SUB 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 2002– 2003 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.
- (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 organising 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 fruit bearing trees, saplings and other plants etc.

### 7.3 Recruitment backlog position of SC/ST/OBC as on 31.12.2002

S. No.	Name of PSU	SC		ST		OBC	
		Excess	Shortfall	Excess	Shortfall	Excess	Shortfall
1.	ONGC	Nil	Nil	Nil	20	Nil	103
2.	IOCL	Nil	21	Nil	38	Nil	159
3.	HPCL	Nil	Nil	Nil	1	Nil	105
4.	BPCL	Nil	Nil	Nil	15	Nil	1,133
5.	GAIL(India) Limited	Nil	Nil	Nil	Nil	Nil	Nil
6.	EIL	Nil	1	Nil	3	Nil	7
7.	OIL	Nil	Nil	Nil	Nil	Nil	Nil
8.	CPCL	Nil	Nil	Nil	Nil	Nil	Nil
9.	KRL	Nil	Nil	Nil	Nil	Nil	Nil
10.	IBP	Nil	2	Nil	Nil	Nil	17
11.	BRPL	Nil	Nil	Nil	Nil	Nil	3
12.	Biecco Lawrie	Nil	18	Nil	30	Nil	26
13.	NRL	Nil	Nil	Nil	Nil	Nil	Nil
14.	Balmer Lawrie	Nil	63	Nil	91	Nil	109



Community development project undertaken by IndianOil in a village near Mathura Refinery

**7.4 Expenditure incurred by Public Sector Undertakings on the activities under Special Component Plan (SCP) and Tribal Sub-plan (TSP) upto 31-12-2002.**

(Rs. in Lakhs)

S.No.	Name of PSU	Expenditure incurred		Total
		SCP	TSP	
1.	ONGC	49.30	25.50	74.80
2.	IOCL	66.60	combined	66.60
3.	HPCL	175.00	combined	175.00
4.	BPCL	30.25	combined	30.25
5.	GAIL(India) Ltd.	Nil	Nil	Nil
6.	EIL	2.41	1.08	3.49
7.	OIL	76.80	9.00	85.80
8.	CPCL	29.00	combined	29.00
9.	KRL	19.60	combined	19.60
10.	IBP	9.36	3.63	12.99
11.	BRPL	15.00	combined	15.00
12.	Biecco Lawrie	Nil*	Nil*	Nil*
13.	NRL	5.30	combined	5.30
14.	Balmer Lawrie	1.20	combined	1.20

\* In last two financial years the Company has incurred a huge accumulative loss of Rs.19.56 crore and the net worth of the company became negative, as a result of which the Company became a sick industrial undertaking and accordingly it has been registered with the Board for Industrial and Financial Reconstruction (BIFR) on 29<sup>th</sup> August, 2002. 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 two years as well as in this year.

**Speed**  
Not just petrol



**CHAPTER VIII**

**BHARAT PETROLEUM CORPORATION LIMITED  
COMMEMORATES WOMAN POWER**

**ON INTERNATIONAL WOMEN'S DAY  
AND THE 1<sup>ST</sup> ANNIVERSARY OF BP SHANTIPATH  
8<sup>TH</sup> MARCH, 2003**



S. P. MATHUR

MONICA WIDHANI

P. M. SINGH

VIMLA MEHRA

S. S. BANGARU



BHARAT PETROLEUM CORPORATION LIMITED  
COMMEMORATES WOMAN POWER  
ON INTERNATIONAL WOMEN'S DAY  
AND THE 1<sup>ST</sup> ANNIVERSARY OF BP SHANTIPATH  
8<sup>TH</sup> MARCH, 2003

## 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 organized focusing on their professional development and welfare activities. These include external and in-house training, programmes on women health, sponsoring them to attend the National meet of the Forum of Women in Public Sector, etc.
- 8.2** Women Forums have been formed in the PSUs to look after 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 also, 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 a senior woman Officer.
- 8.4** As on 31.12.2002, against the total strength of 554 employees in the Ministry (Proper) and other organisations under its administration control, 75 women were in position.
- 8.5** The number of women employees vis-à-vis total number of employees as on 31.12.2002 in the oil PSUs is tabulated as below:

S.No	Name of PSU	Total No. of Employees	Total No. of Women Employees
1.	ONGC	39,827	1,993
2.	IOCL	31,647	2,418
3.	HPCL	11,270	696
4.	BPCL	12,543	1,112
5.	GAIL (India) Limited	3,385	159
6.	EIL	3,050	300
7.	OIL	9,651	337
8.	CPCL	1,694	72
9.	KRL	1,987	83
10.	IBP	2,196	158
11.	BRPL	1,785	78
12.	Biecco Lawrie	618	6
13.	NRL	660	24
14.	Balmer Lawrie	1,651	67

## 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 (SO<sub>2</sub>), is one of the major tasks of the refineries. The Government has prescribed limit for SO<sub>2</sub> emissions from three major processing units in the Refineries – in terms of SO<sub>2</sub> 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 SO<sub>2</sub>. Further an overall limit for SO<sub>2</sub> 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 extract 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission from the refinery.

#### 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 ISO - 14001 Environmental Management System.

The Expert Committee on *Auto Fuel Policy* set up by the Government under the Chairmanship of Dr R.A. Mashelkar, Director General, Council of Scientific & Industrial Research has 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,



A CNG filling station : a step towards pollution control

#### 9.5 FUEL QUALITY IMPROVEMENTS

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

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 1.4.2005.
- *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 1.4.2010.

- *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, MoP&NG has notified introduction of 5% volume Ethanol blending in petrol to be supplied in 9 states from January 2003.



## 10. DEVELOPMENT OF NORTH-EASTERN REGION

**10.1** The Ministry of Petroleum & Natural Gas has no budget allocation for implementation of Centrally sponsored schemes and programmes in any States including North-Eastern States in the Petroleum Sector. However, the oil PSUs, under the administrative control of this Ministry, 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

Under a well laid down Social Development Policy, ONGC has been undertaking a number of programmes for the Socio-economic development in the field of education, healthcare, infrastructure development, construction and improvement of roads and bridges in and around its operations.

ONGC has a well-equipped hospital at Sibsagar for its employees and this hospital is regularly organizing general multi-disciplinary and eye camps for the benefit of the rural poor and underprivileged persons in the NE region. In addition, ONGC hospital also organizes awareness programme e.g., AIDS awareness programmes through talks, rallies, hoardings and audio-visual shows. ONGC has been extending support to the NGOs carrying out welfare activities for physically handicapped and disabled children in the NE region.

### 10.1.2 OIL

OIL has always given top priority towards the upliftment of the less privileged sections of the society in area of its operation. It is this objective of business and social commitment that has prompted OIL to embark upon massive programmes of educational, medical and infrastructure development endeavours and attempt to invest technology with a human face. Today a well-charted social welfare programme and an effective Areas Development Scheme, covers the entire gamut of the company's Social Welfare endeavours. The 150 bedded modern hospital of OIL at Duliajan (Assam) caters not only to the needs of its employees and their dependents, but also provides services to common people in and around its operational areas from time to time. The OIL hospitals at Moran and Kharsang (Arunachal Pradesh) also provide similar services to the common people in and around its areas. OIL has

introduced Mobile Dispensary services, where its Medical team visits from time to time interior villages and provides essential free medical care and also during floods and other calamities to help prevent epidemics. OIL also provides financial assistance to various NGOs and for constructions of primary health centers and educational infrastructure in the villages for common people in and around its operational areas. OIL has sponsored the establishment of North-East India's first ever institute for spastic and mentally retarded children "Mono Vikash Kendra" at Guwahati and extended financial help towards running of "Prerona", a school for the disabled children at Jorhat.

OIL has an ongoing "Apprentice Trainee Scheme" whereby the vocational skills of students from the industrial training institutes of Assam are further sharpened. Under Oil India Rural Development Society to further the Company's policy of encouraging local unemployed youths to supply and produce materials and services for the Company's operational needs, OIL has introduced a programme of entrepreneurial skills to teach young people in and around its oilfield areas as to how start and maintain business ventures. Some of the major activities include:

- i) Handicraft Training and Production Centre, where a nine months stipendiary training is extended to 24 poor rural women per year in the crafts of weaving, tailoring, embroidery, cutting and knitting.
- ii) Agricultural project, where a village is adopted after systematic scrutiny to impart training in scientific approach to agriculture.
- iii) Environmental greening and tree plantation.
- iv) Bio Gas Plants.

### 10.1.3 GAIL

Every year, GAIL has been making contributions towards improving the quality of life in the areas around its LPG recovery plant at Lakwa through Special Component Plans and Tribal Sub Plans. GAIL also proposes to contribute to any joint participative endeavour of oil PSUs in the stated areas if such a scheme falls within the company's domain of operation.

### 10.1.4 HPCL

HPCL has been undertaking various welfare/developmental activities under various plans for the upliftment of SC/ST and Weaker Sections through its Regional Office in North-Eastern Region.

### 10.1.5 BPCL

Numaligarh Refinery Limited (NRL), a subsidiary of BPCL, as a good corporate endeavours towards meeting its social objectives through implementation of a structured 'Community Development Plan' covering a range of community welfare projects and activities.

These activities include self-employment generation schemes in Agri- Allied Sector, financial assistance for educational institutes, promotion of art, culture & sports, development of roads, drinking water, sanitation, regular medical camps etc.

### 10.2. Exploration work in North East by Private/Joint Ventures Companies

In addition to the exploration efforts of ONGC and OIL, Government of India has offered 23 Exploration blocks under various bidding rounds for exploration and production by Private, Joint Venture and National Oil Companies. Production Sharing Contracts (PSCs) were signed for five blocks and 2 discovered fields. Six of these contracts are under operation. PSC for one more block is to be signed shortly.

Further, under NELP-III, four blocks, namely, AA-ONN-2001/1, AA-ONN-2001/2, AA-ONN-2001/3 and AA-ONN-2001/4 have been awarded and PSCs have been signed. In addition, discovered fields have also been awarded to Pvt./JV companies, namely, Kharsang Oil field in Arunachal Pradesh and Amguri oil & gas field in Assam.

### 10.3 NORTH EAST REFINERIES

**10.3.1** 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.

### 10.3.2 Challenges before the North East refineries after deregulation

While during APM, the refineries received an assured return on their investments, the Post APM viability of NE refineries is threatened on account of the following factors:

- (i) **Sub-economic size**  
Refining activity has economics of scale. As per the norms, the minimum size of a viable refinery is around 9 MMTPA. Thus, all NE refineries are of sub-economic size. Smaller capacity leads to high operating costs compared to the large size refineries, with whom NE refineries have to compete.
- (ii) **Lower availability of NE crude**  
The present availability of NE crude at around 5 MMTPA is 2 MMTPA less than the combined installed capacity of 7 MMTPA of NE refineries. As a result, these refineries have been operating below their installed capacity. This tantamount to further increase in the per unit operating costs, which are otherwise high.
- (iii) **Lower local demand**  
The demand of petroleum products in NE region is quite less, thereby necessitating the evacuation outside the region of a substantial portion of the production of these refineries. Currently, the demand in the region is about 1.4 MMTPA. More than 3 MMTPA of products are moved out of the region. Thus, the additional costs of product evacuation are to be borne by these refineries.
- (iv) **Additional Investments for Quality Improvements**  
Euro-II equivalent emission norms and auto fuel specifications are proposed to be implemented throughout the country by April 2005, followed by Euro-III equivalent auto fuel specifications by April 2010. To be able to market their products in the country, NE refineries would also need to upgrade specifications of their petrol and diesel and would need to make additional investments for this purpose. As the amount realizable through the

quality premium on fuels would be much less than the costs of investments, this would further adversely affect the viability of these refineries.

### **10.3.3 Steps taken/being taken to improve the viability of NE refineries**

#### **(i) Fiscal benefits**

50 % excise duty exemption is available on the products of NE refineries effective from 1<sup>st</sup> March 2002.

#### **(ii) Measures to increase the crude oil production in the North East region**

With a view to increase the availability of NE crude so as to improve the capacity utilization of these refineries, the following measures are being taken:

- (a) To accelerate exploration through New Exploration Licensing Policy (NELP), which provides attractive fiscal package and contract terms to the investors.

- (b) To undertake Enhanced Oil Recovery (EOR) and Improved Oil Recovery (IOR) Projects to increase recovery factor and arrest decline of crude oil production from their producing fields.

- (c) To increase workover operations to improve production.

- (d) To improve Reservoir Management to optimize production from existing fields.

- (e) To address environmental and other operational issues to increase exploration and production efforts.

#### **(iii) Sourcing of additional crude from outside the region**

In addition to the aforesaid measures to increase the availability of NE crude, a proposal to pump in additional crude oil from outside the region into the NE region is also under the consideration of the Government.

**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.
- All communications to State Governments & Union Territory Administrations 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.
  - Replies to all incoming communication written in Hindi.
  - Reply to and 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 2002-03. 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 4 Stenographers and 5 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 13-27 September, 2002 and a number of competitions viz., Hindi essay writing competition, Hindi noting/drafting competition and competition in good hand-writing in Devanagari, Hindi typing and Stenography were organized.
- 11.1.6** The Parliamentary Committee on Official Language Committee inspected 40 offices of PSUs under the administrative control of the Ministry scattered throughout the country. 21 PSUs offices were entrusted upon with the coordination work also. The location in-charge and Officers 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 typing software during the year.
- 11.1.8** In order to undertake the Official Language implementation work effectively, an Official Language Implementation Committee (OLIC) is functioning in the Ministry under the chairmanship of Joint Secretary (Admn.). All the Public Sector Undertakings under the Ministry are members of the Committee. This Committee reviews the overall progress of implementation of the Official Language Policy in the Ministry and the Public Sector Undertakings, as also the progress of implementation of the Annual Programme circulated by Department of Official Language.
- 11.1.9** 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, 268 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 2002-03 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.

**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 Organisations and Methods**

With a view to ensuring smooth and systematic functioning of the Ministry various O&M programmes were carried out during 2002-03, which included the following:

1. Instructions relating to the compliance of various provisions of Manual of Office Procedure were issued from time to time.
2. A special drive was launched for recording, reviewing and weeding of old records during 1.7.2002 to 12.7.2002. The second special drive took place during 13.1.2003 to 24.1.2003.
3. O&M Inspection schedule of various Desks/ Sections was drawn and the inspecting officers were designated for the inspection work.
4. Action has been initiated for consolidation and compilation of Orders/instructions issued by different Divisions of the Ministry.

## **11.3 Grievances redressal**

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 & Natural Gas.

During the year 2002 the Public Grievances Cell of this Ministry received a total of 34 grievances, and resolved 27 cases.

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 Secretary, Ministry of Petroleum & Natural Gas or Head of the Organisation. He is empowered to communicate final decision to aggrieved parties. The computerised monitoring of public grievance redressal through on-line transmission facility provided by NIC for reporting the same to the Hon'ble Prime Minister's Office (PMO) and the Cabinet Secretariat is also being done by the Ministry.

## **11.4 Outstanding Audit Objections**

Audit had shown a total number of 25 objections as outstanding. Ministry had already furnished replies to the Audit. However, final reply from them is awaited.

## **11.5 Facilitation Counter**

The Ministry of Petroleum & Natural Gas set up the Information Facilitation Counter on 30<sup>th</sup> 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 the 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. During this year about 3700 members of the public have been benefited from this Counter by personally visiting this Counter and/or getting information on telephone.

Guidance to the visiting Public is also provided on how to avail of the information through this Ministry's Website – "Petroleum.nic.in" launched in January 2000. The e-mail address of this Counter is fc.png@sb.nic.in.

## 11.6 Information Technology Initiatives

The Ministry of Petroleum & Natural Gas and National Informatics Centre (NIC) have taken initiatives for implementing e-Governance with the aim of bringing transparency and efficiency in the working. Few of the initiatives taken so far are as follows.

- Procurement of Hardware (PCs Printers etc.) upto SO level.
- Procurement of Servers and Software.
- Upgradation of technical skills of the users.
- Web Site
- Extension of existing LAN.

Progress upto 2002 is as follows

- Around 105 PCs have been connected on LAN.
- Training on Windows, MS Office, OPA, Office-Soft has been imparted to the concerned users of the Department.
- Website has been launched.
- Publication like Auto Fuel Policy, Bid Documents for NELP-III, Details of Dealers Selection Board, Annual Report have been put on the web site.

Training

- Each staff member has been provided training on using MS-word, Internet/Email.
- Concerned users have been trained in using Public Grievances System.

Web Site

- Annual Reports for the year 1999-2000, 2000-2001 & 2001-2002 have been made available on web site

- Links for 'Auto Fuel Policy Report', 'Bid Documents for NELP-III' have been provided on the home page of the Ministry's website.
- Organisation chart along with name, telephone numbers and email addresses have been made available.
- Petroleum Statistics upto 2001-2002 updated.

Telecommunicating Services

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

## 11.7 Dismantling of Administered Pricing Mechanism in the Hydrocarbon Sector

11.7.1. The Government of India, Ministry of Petroleum & Natural Gas vide Resolution No.P-20012/29/97-PP dated 21<sup>st</sup> November 1997 had notified the details of phased programme of dismantling of administered pricing mechanism (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 1<sup>st</sup> April 1998. As a follow up of the aforesaid decision, the Government vide Ministry of Petroleum & Natural Gas Resolution No.P. 20018/2/2000-PP dated 30<sup>th</sup> March 2001 decontrolled the pricing of aviation turbine fuel (ATF) with effect from 1<sup>st</sup> April 2001.

Pursuant to the decisions contained in the aforesaid Resolution of November 1997, the Government dismantled the APM in the hydrocarbon sector with effect from 1<sup>st</sup> April 2002. As a result, the following has happened:

- (i) Consumer prices of motor spirit (MS) and high-speed diesel (HSD) have become market determined with effect from 1<sup>st</sup> April 2002. Consequently, the pricing of petroleum products, except for PDS kerosene and domestic LPG which continue to be subsidized products, have become market determined with effect from 1<sup>st</sup> April 2002.
- (ii) The subsidy on PDS Kerosene and domestic LPG and freight subsidy for far-flung areas on these products are borne by the Consolidated Fund of India from 1<sup>st</sup> April 2002. These subsidies are on a specified flat rate basis. These subsidies will be phased out in the next 3 to 5 years.
- (iii) The pricing of indigenous crude oil of Oil and Natural Gas Corporation Ltd. and Oil India Ltd. has become market determined with effect from 1<sup>st</sup> April 2002.

- (iv) The oil pool accounts have been wound up with effect from 1<sup>st</sup> April 2002.
- (v) The Oil Coordination Committee has been wound up with effect from 1<sup>st</sup> April 2002.
- (vi) A Cell, by the name "Petroleum Planning and Analysis Cell", has been created under the Ministry of Petroleum & Natural Gas effective 1<sup>st</sup> April 2002 to assist the Ministry.
- (vii) The new entrants, including private sector, are being allowed to market transportation fuels namely, motor spirit, high speed diesel and aviation turbine fuel as per the guidelines contained in the Ministry of Petroleum and Natural Gas Resolution No.P-23015/1/2001-Mkt. Dated 8<sup>th</sup> March 2002.

### 11.7.2 POST APM BUDGETARY SCHEMES

The administered pricing mechanism (APM) in the petroleum sector was dismantled with effect from 1<sup>st</sup> April 2002. During the APM period, the subsidy on PDS Kerosene and domestic LPG, freight subsidy for far-flung areas and compensation to the oil companies for their under-recoveries on account of irrecoverable state taxes were met through an oil pool account mechanism. While dismantling the APM, it was decided by the Government that the aforesaid subsidies/under recoveries to the oil companies shall be met from the Government budget. Accordingly, appropriate budget provisions have been made in the budget 2002-2003.

The following three schemes were finalized in consultation with the Ministry of Finance with a view to put in place a mechanism to provide to the oil companies from the Government budget- the post APM subsidy on PDS Kerosene and domestic LPG, freight subsidy for far-flung areas and compensation in lieu of the under recoveries met by them on account of irrecoverable taxes:

- (i) PDS Kerosene and domestic LPG Subsidy Scheme, 2002  
(Notified in Official Gazette vide No.P-20029/18/2001-PP dated 28.1.2002)
- (ii) Freight Subsidy (For Far-Flung Areas) Scheme, 2002  
(Notified in Official Gazette vide No.P-20029/18/2001-PP dated 28.1.2002)
- (iii) The Irrecoverable Taxes Compensation Scheme, 2002  
(Notified in Official Gazette vide No.P-20029/18/2001 dated 16.1.2003)

### 11.7.3 Post APM policy on laying Petroleum product pipelines

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 envisaged that the share of pipelines in product transportation in India may touch around 45% over the next 2-3 years.

To match the post APM scenario and with a view to quickly develop the network of petroleum product pipelines by attracting investments, the Government have laid down a new Petroleum Product Pipeline Policy for laying pipelines in the country on common carrier principle. The new guidelines for grant of right of user (ROU) in land do not contemplate any restrictions or conditions for grant of ROU for crude oil pipelines. The companies and investors will have complete freedom in respect of the pipelines originating from refineries or meant for captive use of companies for which the ROU will be unconditional.

Product pipelines have been categorized as follows:

- (i) Pipelines originating from refineries, whether coastal or inland, upto a distance of around 300 kilometers from the refinery;
- (ii) Pipelines dedicated for supplying product to particular consumer, originating either from a refinery or from oil company's terminal; and
- (iii) Pipelines originating from ports and pipelines originating from refineries exceeding 300 km in length, other than those specified in (i) & (ii) above.

The salient features of the new guidelines for petroleum product pipelines are as follows:

- ❑ Oil companies/investors interested in laying a product pipeline originating from a refinery or a port would be required to publish the proposal inviting other interested companies to take capacity in the pipeline.
- ❑ Any oil company interested in sharing the capacity of the pipeline, will be able to do so on mutually agreed commercial terms and conditions. The proposer would then provide capacity for such interested party also.
- ❑ The proposer company applying for the grant of ROU in land would need to provide atleast 25% extra capacity for others.
- ❑ The pipeline will be owned and operated by the proposer company.
- ❑ The pipeline tariff will be subject to the control orders or the regulations that may be issued by the Government under the appropriate law in force.

#### 11.7.4. STATEMENT SHOWING CUSTOM / EXCISE DUTY RATES (2002-03)

(Percentage)

<b>Custom Duty</b>		
PRODUCT		
CRUDE	10	
HSD/LDO	20	
MS	20	
ATF	20	
LPG	10	
FO/LSHS-General Use	20	
NAPHTHA/NGL-General Use	10	
KEROSENE (PDS)	10	
BUTUMEN	20	
OTHERS	20	
<b>EXCISE DUTY</b>		
PRODUCT		
MS	#32	*
LPG	16	
FO, NAPHTHA	16	
AND LSHS-GENERAL USE	16	
KEROSENE (PDS)	##16	**
HSD	16	
LDO	16	
ATF	16	
BITUMEN	16	
OTHERS	16	

Note:

\* Special additional duty of excise @ Rs.6/Ltr. plus additional duty Re.1/Ltr.

\*\* Additional duty @Re.1/Ltr.

# Reduced to 30% w.e.f. 4.6.2002

## Reduced to 14% w.e.f. 4.6.2002

#### 11.8. ANTI-ADULTERATION CELL (AAC)

AAC has been set up primarily to strengthen the vigilance machinery to check adulteration of Motor Spirit and High Speed Diesel at Retail Outlets. The functions of AAC are as follows: -

- Prevention of adulteration & other malpractices
- Enquiries into benami operations
- Coordination with State Governments, Oil Companies.

- Enquiries into complaints against Dealer Selection Boards

The mobile laboratories deployed to check adulteration of petroleum products have now been increased to 49 from 23 mobile labs in February 1999.

AAC has also launched web sites [www.antiadulterationcell.com](http://www.antiadulterationcell.com) and [www.aacindia.org](http://www.aacindia.org) for general public to send complaints/confidential information. The identity of the complainant would be kept confidential to avoid harassment.

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## APPENDICES



## 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 organisations 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.

## LIST OF PUBLIC SECTOR UNDERTAKINGS AND OTHER ORGANISATIONS UNDER THE ADMINISTRATIVE CONTROL OF THE MINISTRY OF PETROLEUM AND NATURAL GAS

### I Oil Companies in which Government of India have a share holding (as on 01.04.2002).

1. Oil & Natural Gas Corporation Limited.	84.10%
2. Indian Oil Corporation Limited.	82.03%
3. Hindustan Petroleum Corporation Limited.	51.01%
4. Bharat Petroleum Corporation Limited.	66.20%
5. GAIL (India) Limited.	67.35%
6. Engineers India Limited	90.39%
7. Oil India Limited	98.13%
8. IBP Co. Limited.	26.00%
9. Biecco Lawrie & Company Limited.	57.00%

### II. Subsidiaries and other Companies

1. O.N.G.C. Videsh Limited	-wholly owned by ONGC
2. Indian Oil Blending Limited	-wholly owned by IOC
3. Bongaigaon Refinery & Petrochemicals Ltd	- subsidiary of IOCL
4. Chennai Petroleum Corporation Limited	- subsidiary of IOCL
5. IBP Co. Ltd.	- subsidiary of IOCL
6. Indian Oil Mauritius Limited	- subsidiary of IOCL
7. Numaligarh Refineries Ltd.	- subsidiary of BPCL
8. Kochi Refineries Limited	- subsidiary of BPCL
9. Certification Engineers International Ltd	- wholly owned by EIL
10. EIL Asia Pacific Sdn BHD	- wholly owned by EIL
11. 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	1998-99	1999-00	2000-01	2001-02	2002-03* (Apr-Nov)
1	2	3	4	5	6	7	8
<b>1. CRUDE OIL PRODUCTION ++ (000' Tonnes)</b>							
(a) Onshore:							
Gujarat	6398	6362	5828	5665	5785	5972	4008
Assam/Nagaland	5076	5044	5080	4972	5199	5096	3204
Arunachal Pradesh	43	28	38	44	31	27	17
Tamil Nadu	302	374	364	377	436	440	264
Andhra Pradesh	11	44	85	146	263	283	199
<b>Total (a)</b>	<b>11830</b>	<b>11852</b>	<b>11395</b>	<b>11204</b>	<b>11714</b>	<b>11818</b>	<b>7692</b>
of which							
OIL	2649	2882	3295	3283	3286	3183	1990
ONGC	9181	8970	8100	7921	8428	8635	5702
(b) Offshore:							
ONGC	21191	22665	18285	16727	16629	16073	11622
(c) Private/JVCs	Nil	650	3042	4018	4083	4141	2779
<b>GRAND TOTAL (a+b+c)</b>	<b>33021</b>	<b>35167</b>	<b>32722</b>	<b>31949</b>	<b>32426</b>	<b>32032</b>	<b>22093</b>
<b>2. NATURAL GAS PRODUCTION</b>							
(Million Cubic Metres)							
(a) Onshore:							
Gujarat	1696	2878	3166	3096	2850	2550	1648
Assam/Nagaland	2011	1880	2055	2083	2204	1992	1365
Arunachal Pradesh	29	32	24	23	23	31	@
Tripura	70	131	306	353	376	416	280
Tamil Nadu	64	117	107	138	200	348	262
Andhra Pradesh	46	679	1218	1363	1604	1797	1368
Rajasthan	Nil	12	164	151	159	100	101
<b>Total (a)</b>	<b>3916</b>	<b>5729</b>	<b>7040</b>	<b>7207</b>	<b>7416</b>	<b>7234</b>	<b>5024</b>
of which							
OIL	1518	1433	1713	1729	1861	1619	1139
ONGC	2398	4296	5327	5478	5555	5615	3885
(b) Offshore:							
ONGC	14082	16579	17514	17774	18465	18426	12212
(c) Private/JVCs	Nil	331	2874	3465	3596	4054	3369
<b>GRAND TOTAL (a+b+c)</b>	<b>17998</b>	<b>22639</b>	<b>27428</b>	<b>28446</b>	<b>29477</b>	<b>29714</b>	<b>20605</b>

\* : Provisional

++: Includes condensates

@: Included in Assam.

Source: ONGC, OIL and DGH.

## REFINERY CRUDE THROUGHPUT

('000 Tonnes)

Refinery	Refinery Crude Throughput							
	1990-91	1995-96	1998-99	1999-00	2000-01	2001-02	2002-03* (Apr-Nov)	
	1	2	3	4	5	6	7	8
<b>(a) PUBLIC/JOINT SECTOR</b>	<b>51772</b>	<b>58741</b>	<b>68538</b>	<b>74052</b>	<b>77411</b>	<b>77620</b>	<b>53861</b>	
IOC, Guwahati	783	839	836	914	707	656	308	
IOC, Barauni	2416	2322	2204	3411	3122	2876	1647	
IOC, Gujarat	9334	10167	10935	11109	12006	11697	8007	
IOC, Haldia	2835	3416	4714	4105	3873	4026	2954	
IOC, Mathura	7808	8332	8909	8125	7133	8031	5290	
IOC, Digboi	566	559	553	603	678	653	406	
IOC, Panipat @@	0	0	2208	4153	5707	5822	4080	
BPCL, Mumbai	6957	7460	8878	8907	8683	8744	5694	
HPCL, Mumbai	5766	5965	5203	6007	5575	5641	3930	
HPCL, Vizag	3464	5037	3861	4555	6405	6706	4399	
KRL, Kerala	5006	7421	7770	7830	7520	6797	5304	
CPCL, Manali	5698	5599	6101	6377	6046	6123	4059	
CPCL, Narimanam	0	370	644	636	579	566	426	
BRPL, Assam	1139	1215	1653	1905	1488	1475	992	
NRL, Numaligarh #	0	0	0	215	1451	2307	1274	
ONGC, Tatipaka \$	0	0	0	0	0	13	61	
MRPL, Mangalore @	0	39	4069	5200	6438	5487	5030	
<b>(b) PRIVATE SECTOR</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11912</b>	<b>26033</b>	<b>29654</b>	<b>20358</b>	
RPL, Jamnagar ##	0	0	0	11912	26033	29654	20358	
<b>TOTAL (a+b)</b>	<b>51772</b>	<b>58741</b>	<b>68538</b>	<b>85964</b>	<b>103444</b>	<b>107274</b>	<b>74219</b>	

\* Provisional

@ 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 Tonnes)

PRODUCTS	1990-91	1995-96	1998-99	1999-00	2000-01	2001-02	2002-03* (Apr-Nov)
1	2	3	4	5	6	7	8
<b>(a) From Crude Oil</b>							
<b>1. Light Distillates</b>	<b>10023</b>	<b>12433</b>	<b>13776</b>	<b>18314</b>	<b>25048</b>	<b>26539</b>	<b>18721</b>
of which							
LPG	1221	1539	1724	2487	4088	4778	3246
Mogas	3552	4462	5573	6232	8070	9699	6897
Naphtha	4859	5975	6081	8170	9908	9180	6286
Others <sup>LD</sup>	391	457	398	1425	2982	2882	2292
<b>2. Middle Distillates</b>	<b>26344</b>	<b>29941</b>	<b>36168</b>	<b>44995</b>	<b>52445</b>	<b>54409</b>	<b>36859</b>
of which							
Kerosene	5471	5267	5341	5735	8714	9681	6846
ATF/RTF/Jet A-1	1801	2127	2289	2292	2513	2595	1811
HSD	17185	20661	26716	34793	39015	39773	26376
LDO	1509	1351	1336	1624	1481	1703	1375
Others <sup>MD</sup>	378	535	486	551	722	657	451
<b>3. Heavy Ends</b>	<b>12195</b>	<b>12707</b>	<b>14600</b>	<b>16102</b>	<b>18121</b>	<b>19056</b>	<b>12931</b>
of which							
Furnace Oil	4879	5351	6407	6559	6479	7488	5211
LSHS/HHS/RFO	4550	4228	4623	4793	4913	4739	3027
Lube Oils	561	633	586	728	684	651	434
Bitumen	1603	2032	2419	2485	2721	2561	1743
Petroleum Coke	229	256	286	465	2473	2784	1749
Paraffin Wax	49	43	40	47	51	45	25
Other Waxes	46	63	63	70	61	37	1
Others <sup>HE</sup>	278	101	176	955	739	751	741
<b>Total (1+2+3)</b>	<b>48562</b>	<b>55081</b>	<b>64544</b>	<b>79411</b>	<b>95614</b>	<b>100004</b>	<b>68511</b>
<b>(b) From Natural Gas</b>							
LPG	929	1715	1914	1986	2045	2205	1598

\* Provisional

LD Includes Propylene, C-3, Propane, Hexane, Special Boiling Point Spirit, Benzene, Toluene, Petroleum Hydro Carbon Solvent, Natural Heptane, Methyl Tertiary Butyl Ether, Poly Isobutene, PBFS and MEKFS.

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

HE Includes Carbon Black Feed Stock, Sulphur, Solar Oil, LARO and Extracts.

## CONSUMPTION OF PETROLEUM PRODUCTS

('000' Tonnes)

Products	1990-91	1995-96	1998-99	1999-00	2000-01	2001-02	2002-03* (Apr-Nov)	
1	2	3	4	5	6	7	8	
<b>1</b>	<b>Light Distillates</b>	<b>9801</b>	<b>13143</b>	<b>17958</b>	<b>20473</b>	<b>21770</b>	<b>22916</b>	<b>15481</b>
	of which							
	LPG	2415	3849	5041	6029	6613	7310	5203
	Mogas	3545	4679	5507	5909	6613	7011	5073
	Naphtha	3446	3669	6652	7970	8059	8128	4904
	NGL	0	0	330	91	6	27	10
	Others <sup>LD</sup>	395	946	428	474	479	440	291
<b>2</b>	<b>Middle Distillates</b>	<b>33106</b>	<b>45460</b>	<b>51686</b>	<b>54259</b>	<b>52854</b>	<b>50661</b>	<b>33734</b>
	of which							
	SKO	8423	9317	10599	10731	10714	10114	6464
	ATF	1677	2082	2112	2197	2249	2256	1504
	HSD	21139	32254	37217	39287	37938	36515	24406
	LDO	1506	1311	1278	1512	1399	1202	941
	Others <sup>MD</sup>	361	496	480	532	554	574	419
<b>3</b>	<b>Heavy Ends</b>	<b>12128</b>	<b>13915</b>	<b>15122</b>	<b>15919</b>	<b>15362</b>	<b>15515</b>	<b>10166</b>
	of which							
	Furnace Oil	4462	6496	6767	6816	6371	7085	4575
	LSHS/HHS	4524	4189	4537	4763	4989	4531	3055
	Lubes/Greases	892	712	885	915	797	819	589
	Bitumen	1581	2005	2412	2879	2618	2428	1594
	Petroleum Coke	290	319	315	328	414	367	212
	Paraffin Wax	70	76	36	53	43	45	33
	Other Waxes	47	57	76	89	62	51	3
	Others <sup>HE</sup>	262	61	94	76	68	189	105
	<b>Total (1+2+3) (Excl. RBF)</b>	<b>55035</b>	<b>72518</b>	<b>84766</b>	<b>90651</b>	<b>89986</b>	<b>89092</b>	<b>59381</b>
<b>4</b>	<b>Import by private parties</b>	<b>0</b>	<b>2313</b>	<b>5796</b>	<b>6435</b>	<b>10088</b>	<b>9462</b>	<b>8950</b>
	<b>Grand Total (1+2+3+4)</b>	<b>55035</b>	<b>74831</b>	<b>90562</b>	<b>97086</b>	<b>100074</b>	<b>98554</b>	<b>68331</b>

\* Provisional

LD Includes Benzene, Toluene, Hexane, Propylene, PBFS, MEKFS, C-3 and Special Boiling Point Spirit.

MD Includes Mineral Turpentine Oil, Jute Batching Oil, Wash Oil, Lomex, Aromex, Linear Alkyl Benzene Feed Stock.

HE Includes Carbon Black Feed Stock and Phenol Extract.

Source : Petroleum Planning &amp; Analysis Cell.

## IMPORTS / EXPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS

(Qty : '000' Tonnes)

(Value : Rs.Crores)

ITEM	1999-00		2000-01		2001-02		2002-03(Apr-Nov)*	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	2	3	4	5	6	7	8	9
<b>GROSS IMPORTS</b>								
<b>A. Crude Oil</b>	<b>57805</b>	<b>40028</b>	<b>74097</b>	<b>65932</b>	<b>78706</b>	<b>60397</b>	<b>55609</b>	<b>49680</b>
<b>B. Pol. Products</b>								
<b>I. Light Distillates</b>	<b>3504</b>	<b>3766</b>	<b>4018</b>	<b>5438</b>	<b>3967</b>	<b>4287</b>	<b>2141</b>	<b>2739</b>
1. LPG	1587	1801	853	1332	659	810	342	525
2. Naphtha	1917	1965	3165	4106	3308	3477	1799	2214
<b>II. Middle Distillates</b>	<b>11319</b>	<b>9260</b>	<b>1919</b>	<b>2389</b>	<b>424</b>	<b>425</b>	<b>371</b>	<b>405</b>
1.ATF	1	4	1	3	2	9	Neg.	4
2.SKO	6312	5543	1918	2386	391	388	355	384
3.HSD	5006	3713	0	0	31	28	16	17
<b>III. Heavy Ends</b>	<b>1785</b>	<b>1160</b>	<b>3330</b>	<b>4266</b>	<b>2618</b>	<b>2537</b>	<b>1982</b>	<b>1885</b>
1.FO / LSHS	1378	865	1728	1309	1425	1030	967	817
2.Lubes	407	295	1602	2957	326	588	266	397
3.LSWR	0	0	0	0	867	919	749	671
<b>TOTAL(B)</b>	<b>16608</b>	<b>14186</b>	<b>9267</b>	<b>12093</b>	<b>7009</b>	<b>7249</b>	<b>4494</b>	<b>5029</b>
<b>GRAND TOTAL(A+B)</b>	<b>74413</b>	<b>54214</b>	<b>83364</b>	<b>78025</b>	<b>85715</b>	<b>67646</b>	<b>60103</b>	<b>54709</b>
<b>EXPORTS</b>								
<b>Pol.Products</b>								
<b>I. Light Distillates</b>	<b>714</b>	<b>659</b>	<b>4084</b>	<b>4715</b>	<b>4941</b>	<b>4870</b>	<b>3187</b>	<b>3656</b>
1.Naphtha / NGL	583	520	2882	3273	2535	2300	1648	1796
2.Mogas	131	139	1202	1442	2406	2570	1539	1860
<b>II. Middle Distillates</b>	<b>0</b>	<b>0</b>	<b>1757</b>	<b>2046</b>	<b>3084</b>	<b>2747</b>	<b>1987</b>	<b>2043</b>
1.HSD/LDO	0	0	1597	1872	2890	2571	1743	1783
2.ATF	0	0	160	174	194	176	244	260
<b>III. Heavy Ends</b>	<b>32</b>	<b>39</b>	<b>2524</b>	<b>911</b>	<b>2060</b>	<b>668</b>	<b>1433</b>	<b>665</b>
1.FO/LSHS	0	0	508	320	482	255	788	565
2.Others <sup>HE</sup>	32	39	2016	591	1578	413	645	100
<b>TOTAL</b>	<b>746</b>	<b>698</b>	<b>8365</b>	<b>7672</b>	<b>10085</b>	<b>8285</b>	<b>6607</b>	<b>6364</b>
<b>NET IMPORTS</b>								
<b>A. Crude Oil</b>	<b>57805</b>	<b>40028</b>	<b>74097</b>	<b>65932</b>	<b>78706</b>	<b>60397</b>	<b>55609</b>	<b>49680</b>
<b>B. Pol.Products</b>	<b>15862</b>	<b>13488</b>	<b>902</b>	<b>4421</b>	<b>-3076</b>	<b>-1036</b>	<b>-2113</b>	<b>-1335</b>
<b>GRAND TOTAL</b>	<b>73667</b>	<b>53516</b>	<b>74999</b>	<b>70353</b>	<b>75630</b>	<b>59361</b>	<b>53496</b>	<b>48345</b>

Note Value of private imports is based on actual value of PSU imports.

\*Provisional.

HE Includes Coke, Vacuum Gas Oil and Tertiary Amyl Methyl Ether.

Source Petroleum Planning &amp; Analysis Cell, New Delhi.