

INDIAN
PETROLEUM & PETRO-CHEMICALS
STATISTICS

1981-82

ECONOMICS & STATISTICS DIVISION
DEPARTMENT OF PETROLEUM
MINISTRY OF PETROLEUM, CHEMICALS & FERTILISERS
GOVERNMENT OF INDIA
NEW DELHI

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P R E F A C E

The present publication is the sixteenth of the annual series brought out by Economics & Statistics Division which attempts to present a statistical over-view of developments in the field of national and international Oil Industry. As in previous years, some basic national petroleum statistics have also been presented both on financial as well as on calendar year basis, the former to meet the requirements of national planning & administration and the latter to meet our various obligations to U.N. and other international bodies and for purposes of maintaining historical continuity.

2. In this publication, apart from adding a table on Indian Petroleum Industry At-A-Glanace 1970-71 to 1981-82, we have added new tables relating to (i) Trends in retail selling prices of petroleum products in Metropolitan towns in India; (ii) Direct payment of sales tax on crude oil, natural gas and petroleum products made by oil companies to State Governments/Union Territories' Governments during the years 1978-79 to 1981-82; and (iii) Freight paid on imports of crude oil/POL products transported by Indian/foreign tankers during the years 1978 to 1981. On international petroleum statistics, we have added a table relating to crude oil imports from OPEC member countries by region. It is hoped that officers and executives of various Ministries of the Government of India, Planning Commission, Oil Coordination Committee and other Organizations associated with the development of Oil Industry would find this publication useful.

3. While we have taken all possible care to ensure accuracy in presentation of data contained in various tables, we would welcome suggestions from users for rectifications of any error or omission noticed by them.

August, 1982

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CONTENTS

Sec.No.	Subject	Page No.
	PART - I	
	PETROLEUM STATISTICS	
I.	HIGH LIGHTS OF INDIAN PETROLEUM INDUSTRY - 1981-82.	1-2
II.	CHRONOLOGY OF SOME IMPORTANT EVENTS IN THE HISTORY OF PETROLEUM INDUSTRY IN INDIA.	3-43
III.	INDIA'S PETROLEUM INDUSTRY AT-A GLANCE (1970-71 - 1981-82).	44
IV.	Growth of Petroleum Industry in India Calendar/Financial Years.	45-46
V.	PETROLEUM ENERGY IN INDIA : 1976 TO 1981 AND 1976-77 TO 1981-82.	47-48
VI.	EXPLORATION AND PRODUCTION	
1.	Reserves of Crude Oil and Natural Gas in India.	49
2.	Number of deep drilling rigs in the country.	50
3.	Number of wells and metreage drilled by ONGC and OIL - 1970-71 to 1981-82.	50
4.	Status of wells as on 1st April of each year.	51
5.	State-wise achievements of geological field Parties since inception upto March, 1982.	52
6.	State-wise achievements of geophysical field Parties since inception upto March, 1982.	53
7.	State-wise achievements of drilling since inception upto March, 1982.	54
8.	Company-wise production of Crude Oil on calendar years.	55
9.	Company-wise production of Crude Oil on financial years.	56
10.	State-wise production of Crude Oil in India on calendar/financial year basis.	57
11.	State-wise gross production of Natural Gas in India on calendar/financial year basis.	58
12.	State-wise utilisation of Natural Gas in India on calendar/financial years.	59
VII.	REFINING	
1.	Petroleum Refining Capacity as on 1.4.1982.	60
2.	Refinery Crude Throughput and Production of Petroleum Products on calendar/financial years.	61
3.	Refinery-wise crude charged and total production of Petroleum Products.	62-63

.../-

Sec.No.	Subject	Page No.
	4. Refinery production and pattern of refinery production in India on calendar/financial years.	64-65
VIII.	CONSUMPTION / SALES	
	1. All-India total consumption of Petroleum Products from 1948/1948-49 to 1981/1981-82.	66
	2. Product-wise consumption of Petroleum Products during the years 1977-1980(calendar years) and 1977-78 to 1980-81(financial years).	67-68
	3. Seasonal indices of the sales/consumption of major Petroleum Products in India.	69
	4. Sales/consumption and market participation of oil companies from 1960-61 to 1965-66 and 1970-71 to 1981-82.	70
	5. Deliveries made to international/coastal bunkers from 1970-71 to 1981-82.	71
	6. State-wise sales of selected petroleum products during 1981-82(including international bunkers).	72
	7. Estimated State-wise per capita sales/consumption of major petroleum products (excluding International bunkers).	73
	8. Estimated per capita consumption of selected petroleum products.	73
	9. Estimated sector-wise consumption of selected petroleum products - 1978-79 and 1980-81.	74-76
	10. Consumption of Diesel Oil in Indian Railways from 1960-61 to 1981-82.	77
	11. Industry-wise consumption of Naphtha from 1979 to 1981 and 1979-80 to 1981-82.	78
	12. Plant/customer-wise offtakes of LSHS/HHS from 1977-78 to 1981-82.	79
	13. Fuel consumption on Gas Turbine & Diesel Power Stations in India - 1979-80.	80
	14. Fuel consumption in Steam Power Stations - 1979-80.	81
IX.	FOREIGN TRADE	
	1. Imports of Crude Oil and Petroleum Products from 1960 to 1981 and 1960-61 to 1981-82.	82
	2. Imports of Crude Oil and Petroleum Products (product-wise) from 1979 to 1981 and 1979-80 to 1981-82.	83
	3. Total exports of crude oil and petroleum products from 1955 to 1981 and 1955-56 to 1981-82.	84
	4. Exports/re-exports of petroleum products from 1978 to 1981 and 1978-79 to 1981-82.	85

.../-

Sec.No.	Subject	Page No.
	5. Export earnings during 1978-79 to 1981-82	86
	6. India's Revenues from HIL Crude.	86
	7. Trend in India's overall trade balance and trade balance with OPEC countries.	87
	8. India's foreign exchange reserves - 1970-71 to 1981-82.	88
	9. India's POL imports as a proportion of its total exports - 1970-71 to 1980-81.	88
X.	MANPOWER EMPLOYED	
	1. Manpower employed in the Petroleum Industry in India.	89
	2. Category-wise manpower employed in the Petroleum Industry in India.	89
	3. Category-wise manpower employed in various sectors of Petroleum Industry in India.	90
XI.	PRICES	
	1. Index number of Wholesale Prices of Petroleum Products, Petro-based industries and other energy items in India.	91
	2. Price of indigenous onshore and offshore crude oil in India.	92
	3. Basic ceiling selling prices (ex-storage) of petroleum products as on 11.7.1981.	93
	4. Retail prices of selected petroleum products in major cities as on 1.4.1982.	94-97
	5. Trend in retail selling prices of petroleum products in Metropolitan Towns in India.	98
	6. Rates of dealers commission for MS, HSDO & LPG in India.	99
XII.	EXCISE/CUSTOM DUTIES AND SALES TAX	
	1. Realisation of excise and custom duties from crude oil and petroleum products.	100
	2. Percentage share of Central excise on POL to total Central excise and to Net National Products.	101
	3. Composite incidence of excise/custom duties on petroleum products.	102
	4. Royalty and Oil Development Cess realised from Oil Companies since 1969-70 - 1982-83.	102
	5. Central excise duty on Petroleum Products as on 1.3.1979, 17.8.1979, 11.9.1979, [illegible], 8.6.1980, 13.1.1981 and 11.7.1981.	103

.../-

Sec.No.	Subject	Page No.
	6. Excise & custom duties in the basic ceiling selling prices(BCSP) ex-storage point effective 11.7.1981.	104
	7. Sales tax rates applicable on Crude Oil and petroleum products in different States as on 1.4.1982.	105-110
	8. Direct payments of sales tax on crude oil, natural gas and petroleum products made by the oil companies to States/Union Territory Governments during the years 1978-79 to 1981-82.	111
XIII.	TANKER AND FREIGHT RATES	
	1. Tonnage of Indian tanker fleet - 1970 to 1981.	112
	2. Indian tanker fleet as on 1.1.1982.	113
	3. Share of traffic in petroleum products in the total traffic handled at major ports.	114-115
	4. Estimated freight paid on Imports of Crude Oil/ POL products transported by Indian/Foreign Tankers during the years 1978 to 1981.	116
	5. Coastal movements of Petroleum Products - 1968 to 1981.	116
	6. Average freight rates from Ras Tanura to Indian ports.	117
XIV.	GENERAL	
	1. Retail outlets in India as on 1st January of each year - 1968 to 1982.	118
	2. State-wise distribution of retail outlets, multi-purpose/farm fuel centres, LDO/SKO, dealers and LPG distributors as on 1.1.1982.	119
	3. State-wise number of LPG Domestic consumers as on 1.4.1982.	120
	4. Crude oil and product pipelines in India as on 1.4.1982.	121-122
	5. Gross production of energy by various sources in India - 1960-61, 1965-66 and 1970-71 to 1981-82.	123
	6. Movement of POL Traffic on Railways since 1970-71.	124
	7. Rail freight rates in respect of Petroleum Products (Dangerous & Non-Dangerous) as on 1.4.80, 1.4.81, 14.8.1981 and 1.1.1982.	124
XV.	INTERNATIONAL PETROLEUM STATISTICS	
	1. Estimated world crude oil and gas reserves as on 1.1.1982.	125
	2. World estimated crude oil production - 1979-1981.	126-127
	3. World net production of natural gas - 1971 to 1981.	128

.../-

Sec.No.	Subject	Page No.
4.	Crude oil production in OPEC member countries - 1970-1981.	129
5.	Crude oil exports by OPEC member countries - 1970-1980.	129
6.	Productivity of producing wells in selected fields in the world - 1981.	130
7.	World oil refining capacities at end 1981 and 1980.	131
8.	World natural gas consumption - 1971-1981.	132
9.	World oil consumption - 1971-1981.	133
10.	Main product consumption(including bunkers) - 1971-1981.	134
11.	World oil production, consumption and relative deficit/surplus in each region/country during 1981/1973.	135
12.	Country-wise imports and exports of crude oil & POL products - 1981.	136
13.	Crude oil imports from OPEC Member Countries by Regions - 1960-1980.	137
14.	Country-wise exports of crude oil by main OPEC producers - 1980.	138
15.	Oil revenue of main OPEC members - 1972-1981.	139
16.	Official Development assessment from OECD and OPEC members - 1978/1982.	140
17.	Loan Assistance from OPEC and other oil supplying nations - 1974-75 to 1980-81.	141
18.	Key crude oil price postings around the world since 1970.	142-145
19.	Official selling prices of key OPEC Crudes since 1974.	146-149
20.	OPEC weighted average official selling and spot assessment prices of crude oil - June, 1980 to April, 1982.	150-151
21.	Lowest posted prices of POL products at Bandar Mahshar - 1968 to 1982.	152
22.	Retail prices of petroleum products in neighbouring and industrially advanced countries during January-June, 1982.	153
23.	Posted airfield prices of Jet A-1 fuel at major international airports.	154
24.	World development of average freight rate assessment (AFRA).	155
25.	World tanker fleet at end 1981 by flag ownership	156

.../-

Sec.No.	Subject	Page No.
26.	World Tanker Fleet by size - 1971 to 1981.	156
27.	Inter-Area Total Oil Movements - 1981.	157
28.	World primary energy consumption - 1981.	158
29.	Estimated per capita primary energy consumption - Some International comparison - 1981.	159
30.	Commercial primary energy production and consumption by country groups - 1970/1980/1990.	160

PART - II

PETROCHEMICAL STATISTICS

I.	CHRONOLOGY OF IMPORTANT EVENTS IN PETRO-CHEMICALS INDUSTRY IN INDIA.	161-217
II.	CAPACITY AND PRODUCTION	
1.	Annual installed capacity and production of Petro-chemicals in India during the years 1970, 1975, 1980 and 1981.	218-219
2.	Production of Petro-chemicals in India from 1970-71, 1975-76 and 1979-80 to 1981-82.	220
III.	SALES/CONSUMPTION	
1.	Estimated consumption of selected Petro-chemicals.	221
2.	Estimated end-use sales/consumption of U.F. & M.F. Moulding Powders in different industries.	222
3.	Estimated end-use sales/consumption of C.A. Moulding Powder in different industries.	222
4.	Estimated end-use sales/consumption of Polyethylene L.D. in different industries.	223
5.	Estimated end-use sales/consumption of Polyethylene H.D. in different industries.	223
6.	Estimated end-use sales/consumption of Polystyrene in different industries.	224
7.	Estimated end-use sales/consumption of PVC Resins in different industries.	224
8.	Estimated end-use sales/consumption of selected organic chemicals.	225-226
9.	Sales/consumption of SBR by end-products.	227
IV.	PRICES	
1.	Trend in ex-factory prices of Caprolactum, DMT & Monoethylene Glycol.	228
2.	Ex-works prices (bulk, excluding excise duty) of selected petro-chemicals.	229-230
3.	Average Bombay market price quotations of Synthetic fibre/yarns.	231

.../-

Sec.No.	Subject	Page No.
	V. EXCISE AND CUSTOM DUTIES	
	1. Realisation of Excise and Custom duties on Petro-chemicals during the years 1977-78, 1978-79, 1979-80, 1980-81 and R.E. for 1981-82 and B.E. for 1982-83.	232
	2. Rates of excise duties on Synthetic fibres/ yarn and raw materials effective 1.4.1982.	233
	3. Rates of import duties(standard) on man-made fibres/raw materials effective 1.4.1982.	233
VI.	IMPORTS / EXPORTS	
	1. Imports of selected Petro-chemicals from 1970-71 to 1980-81.	234
	2. Exports of selected Petro-chemicals from 1970-71 to 1980-81.	235
VII.	INTERNATIONAL STATISTICS	
	1. World Production of Textile Fibres.	236
	2. World Production of Non-cellulosic filament fibres - 1971 to 1978.	237
	3. Production of plastics and resins in selected countries of the world - 1971 to 1978.	238-240
	4. Production of synthetic and re-claimed rubber in selected countries of the world - 1971 to 1978.	241
	5. Production of basic organic chemicals in selected countries of the world - 1971 to 1978.	242-244
	PART - III	
	PLAN STATISTICS	
	1. Undertaking-wise Sixth Five Year Plan outlay for the Petroleum and Petro-chemical industries.	245
	2. Annual plan outlay/expenditure of the undertakings under the purview of Department of Petroleum.	246
	3. Capacity and production estimates for Petroleum and selected Petro-chemicals for 1979-80 and 1984-85.	247
	4. i) Plan targets of domestic crude production - 1980-81/1984-85.	248
	ii) Material balance crude petroleum - 1979-80/1984-85.	248
	iii) Material Balance : Petroleum products - 1979-80/1984-85.	248

.../-

S.No.	Subject	Page No.

PART - IV

FINANCIAL PERFORMANCE / STRUCTURES

1.	Review of financial structures - 1980-81 and Quick Review - 1981-82.	249-258
2.	Consolidated financial structure - 1981-82 (Quick Review).	259
3.	Consolidated financial structure - 1980-81 (All Undertakings and Categories).	260
4.	Consolidated financial structure - 1979-80 (All Undertakings & Categories).	261
5.	Consolidated financial structure - 1978-79 (All Undertakings & Categories).	262
6.	Consolidated financial structure - 1978-79 to 1980-81 (Exploration & Production).	263
7.	Financial structure - Oil & Natural Gas Commission - 1978-79 to 1980-81.	264
8.	Financial structure - Hydrocarbons India Ltd. - 1978-79 to 1980-81.	265
9.	Financial structure - Oil India Ltd. - 1978 to 1980.	266
10.	Consolidated financial structure - 1978-79 to 1980-81 (Refining & Marketing).	267
11.	Financial structure - Indian Oil Corporation Ltd. - 1978-79 to 1980-81.	268
12.	Financial structure - Bharat Petroleum Corporation Ltd.- 1978-79 to 1980-81.	269
13.	Financial structure - Hindustan Petroleum Corporation Ltd. - 1978-79 to 1980-81.	270
14.	Financial structure - Cochin Refineries Ltd. - 1978-79 to 1980-81.	271
15.	Financial structure - Madras Refineries Ltd. - 1978-79 to 1980-81.	272
16.	Financial structure - Indo-Burma Petroleum Co. Ltd. - 1978-79 to 1980-81.	273
17.	Financial structure - Lubrizol India Ltd. - 1978-79 to 1980-81.	274
18.	Financial structure - Balmer Lawrie & Co.Ltd. - 1978-79 to 1980-81.	275
19.	Financial structure - Biecco Lawrie Ltd. - 1978-79 to 1980-81.	276
20.	Financial structure - Bridge & Roof Co.(India) Ltd. - 1978-79 to 1980-81.	277

..../-

S.No.	Subject	Page No.
21.	Financial structure - Indian Oil Blending Co.Ltd. - 1978-79 to 1980-81.	278
22.	Consolidated financial structure - 1978-79 to 1980-81. (Petro-chemicals and other Down Stream Units).	279
23.	Financial structure - Indian Petro-chemicals Corporation Ltd. - 1978-79 to 1980-81.	280
24.	Financial structure - Petrofils Cooperative Ltd. - 1978-79 to 1980-81.	281
25.	Financial structure - Bongaigaon Refinery & Petro-chemicals Ltd. - 1979-80 to 1980-81.	282
26.	Financial structure - Engineers India Ltd. - 1978-79 to 1980-81.	283
27.	Petrochemical Financial Structure Tables -	
	Private Sector :	
	i) Combined financial structure - All categories - 1978-79 to 1980-81.	284
	ii) Consolidated financial structure - Synthetic Fibre - 1978-79 to 1980-81.	285
	iii) Consolidated financial structure - Plastics - 1978-79 to 1980-81.	286
	iv) Consolidated financial structure - Chemicals - 1978-79 to 1980-81.	287
	v) Consolidated financial structure - Synthetics & Chemicals Ltd. - 1978-79 to 1980-81.	288
28.	i) Capital investment in public/joint sector undertakings as on 1.4.1982.	289
	ii) Capital investment in public/joint sector undertakings as on 1st April of 1980, 1981 and 1982.	290
29.	Glossary of terms used for tables on Financial Statistics.	291
	APPENDIX	I TO XIII

PART - I

PETROLEUM STATISTICS

PART - I

PETROLEUM STATISTICS

9. With effect from 14th October 1981, Government took-over the 50% shares held by Burmah Oil Company Limited in Oil India Limited and the Indian assets and liabilities of Assam Oil Company Limited and the Burmah Oil Company (India Trading) Limited. With the take-over of the Oil India Limited became a wholly Government owned Company and the entire Petroleum Industry in India came under the ambit of public control.

After the take-over of the Assam Oil Company, the Exploration Division of the said Company, a vertically integrated Company engaged in exploration/production of crude oil/gas and refining & marketing of petroleum products in India, was vested in Oil India Limited and the refining and marketing activities were vested in Indian Oil Corporation Limited with effect from 14th October, 1981 in which Burmah Oil Company (India Trading) Limited was also vested.

10. The Government decided in principle to set up a gas cracker complex in Maharashtra and an aromatics complex in U.P. Two separate Task Forces - one for Maharashtra Gas Cracker Complex and the other for Aromatics Complex in U.P. were also constituted by the Government for initiating preliminary action for setting up of above plants.

11. In November 1981, ONGC's third jack-up rig 'Sagar Pragati' was commissioned in Bombay-High.

12. In January 1982, a new drilling unit SEDCO-445 chartered by ONGC, spudded its first well in Godavari offshore area.

13. On 18th January 1982, the trial production at Mathura Refinery was commenced.

14. On 26th March 1982, an agreement was signed between Government, ONGC and Chevron of USA for award of Saurashtra Offshore Block II.

II. CHRONOLOGY OF SOME IMPORTANT EVENTS IN THE HISTORY OF PETROLEUM INDUSTRY IN INDIA

(A) EXPLORATION AND PRODUCTION

(i) Assam Oil Company

1825: The earliest recorded reference of oil in India is found in the diaries of early explorers who penetrated into the thick jungles of upper Assam.

1866: Mr. Goodenough, a member of the Calcutta firm of Mckilliop Steward & Co., took notice of oil shows in Assam and in November secured rights over a large tract of land on both sides of the Buri Dihing river and came to upper Assam to begin systematic drilling.

1867: On 26th March, Mr. Goodenough struck oil at Makum near Margherita at a depth of 118 ft. (36 metres).

1889: In September, the Assam Railways and Trading Company began drilling for oil near their station at Borbhil and in 1890 discovered oil at a depth of 662 ft. (202 metres). This field came to be known as Digboi.

1899: Drilling for oil in Digboi proved to be successful and the A.R.&T., Company formed a new Company to look after their oil interest which was named as the Assam Oil Company Ltd. The Burmah Oil Company, who were exploring for oil in Burma and in Assam since 1915 acquired the oil interests of the Budarpore Oil Company. This Company produced small quantities of oil from Budarpur in the Surma Valley of Assam. Maximum production was one thousand barrels per day in 1920 which dropped to 170 barrels per day (23.6 tonnes per day) in 1931. The field was abandoned in 1933.

1921: The Burmah Oil Company took over control of the Assam Oil Company which was then producing about 400 barrels per day (55 tonnes per day) of crude oil. It brought in much needed technical know-how, financial backing and upto-date equipment. As a result, the production improved to 1000 barrels per day (138.9 tonnes per day) by 1925 and to 3000 barrels per day (416.7 tonnes per day) by 1930.

1938: The Burmah Oil Company carried out seismic surveys at Nahorkatiya in Upper Assam to locate the best suitable site for drilling.

1948: Oil was struck in the eastern sector at Digboi.

1952: A site for drilling was selected on the banks of the Buri Dihing river at Nahorkatiya in Upper Assam.

1953: First trial water injection was carried out in the Digboi field.

1956: A site for drilling was selected near Moranhat in Sibsagar District. The well was drilled to 4190 metres which struck oil.

1957: Gas Injection (Secondary Recovery Scheme) was started in Digboi Oilfield.

1966: Formation Fracturing was carried out, for the first time in India, in Digboi fields.

1969: In December, drilling of wells was again started in Digboi oilfield.

1970: Feasibility studies using Thermal Recovery Techniques were made for the Digboi oilfield.

1971: The drilling of wells started in 1969 was completed with 14 wells in Digboi oilfield.

1972: Water Injection (Secondary Recovery Scheme) was successfully used in the Digboi oilfield.

1981: The Company was taken over by the Govt. of India with effect from 14.10.1981. Refinery & Marketing operations of the Company were vested in Indian Oil Corporation Ltd. and the exploration of crude oil/natural gas activities were handed over to Oil India Ltd., with effect from the same date.

(ii) Oil India Limited

1959: In February, Oil India was incorporated as Oil India Private Ltd. with 66 2/3 per cent Burmah Oil Company and 33 1/3 per cent Government of India participation.

1961: On 27th July, the Second Supplemental Agreement was signed by which it became a joint venture in equal partnership between the Government of India and the Burmah Oil Company.

1962: On 1st January, a separate organisation with head-quarter at Duliajan was set up.

On 7th March, the 16 inch sector of pipeline system was commissioned.

On 26th April, pumping of regular supplies of crude oil to the Gauhati Refinery started.

On 13th October, a dual completion well first of its kind in India, was completed at Nahorkatiya.

1963: On 8th March, seismic surveys in the Dum Duma petroleum exploration licence area commenced.

In February, the 14 inch sector of pipeline from Gauhati to Barauni was operationally ready.

In April, crude oil conditioning plant, first of its kind in the world, was commissioned at Duliajan.

1963: (Contd.) On 14th February, the first deviated well was drilled by the Company.

The first two exploratory wells in the Dum Duma petroleum exploration licence area were spudded in.

1964: On 30th June, crude oil deliveries to the Barauni Refinery were commenced.

1965: Gas supplies to the thermal plant of the Assam State Electricity Board were started.

Pressure maintenance operations commenced with crestal gas injection into the gascap of a major oil pool in Nahorkatiya.

1966: Water injection was started in Nahorkatiya for pressure maintenance.

Digital computers were pressed into service for solving problems connected with underground reservoirs.

1967: All arrangements for starting drilling operations in NEFA were finalised.

1968: Drilling started in Ningru Petroleum Exploration Licence areas in NEFA.

1969: Kusijan well No. 2 was completed as an oil producer in Dum Duma area.

1970: Kusijan Well No. 3 was completed as a gas producer in Dum Duma. Regular oil production commenced from Jusijan well No. 2.

Gas injection for pressure maintenace was started at Moran field.

One of the steam drilling outfits commissioned in 1953, crossed its million foot mark of drilling.

1971: Reservoir Engineering capability of the organisation was increased by the acquirement of a 3 Dimension 3 Phase reservoir simulation computer programme from Mc Cord Associates Inc. of U.S.A.

Installation of 29 gas compressors under the Integrated Gas scheme was completed at Nahorkatiya and Moran oilfields.

Oil was struck at Jorajan in the Dum Duma Mining Lease area.

The Memorandum of Association of the Company was amended to enable it to undertake extraction and scale of Liquified Petroleum Gas (LPG) from natural gas produced from its fields.

1972: Oil was discovered in a new structure at Tarajan and Jorajan well No.1 was completed as a successful oil producer.

1973: Jorajan wells 2 and 3 were completed as successful oil producers.

1973: (Contd.) Commercial gas accumulation was discovered in Eocene beds of Tengakhat area.

Oil was discovered in a new area at the eastern edge of Hugrijan Mining Lease (NHK well 262 in Nagajan).

1974: Jorajan well Nos. 4 & 5 were completed as successful oil producers.

Exploratory drilling in Arunachal Pradesh was intensified through the commencement of drilling at Kharsang well No.2 and statisfactory progress of preparatory work for drilling at Manabum well No.1. A new deep drilling rig was acquired for intensification of drilling deep exploratory wells in Arunachal Pradesh.

Steps were taken in hand to expand, in stages, the capacity of Oil's pipeline to transport more of ONGC crude oil (upto 2.25 m.t.) to the Eastern sector refineries.

1975: First aerial ropo-way across the Noa Dihing River in Arunachal Pradesh was commissioned.

Pilot polymer flood project was initiated.

Reservoir engineering (logninterpretation) consultancy service in Kuwait was successfully executed.

Pipeline consultancy agreement with Engineering Projects India Limited was entered into.

Work on Pipeline expansion Project Phase III-A was commenced.

Construction work started on the new 30 MV power station at Duliajan to meet the power requirements of new projects undertaken/contemplated.

1976: "Kharsang 3, a shallow well drilled near Kharsang 2 was the first successful well in Arunachal Pradesh.

On 2nd April, Manabum-I was spudded in difficult hill country across the Noa Dihing River.

1977: A Project for recovery of higher hydrocarbons from Associated Natural Gas was successfully commissioned.

Digital Field System V, an advanced seismic equipment was purchased for carrying geophysical survey work.

The two 14.45 mega watt gas turbine Generating sets were erected and commissioned successfully at Duliajan.

The 212 Km. long main pipeline loops between Jorhat and Bongaigaon was completed.

1978: Oil India launched their first offshore exploration project in Mahanadi area.

1979-80: Started pumping crude oil to the Bongaigaon and Petro-Chemicals Ltd. (BRPL).

1979-80: (Contd.) Bay Exploration Project (BEP) was set up in Bhubaneshwar, Orissa to coordinate all offshore and onshore exploration matters in Mahanadi Basin, and arrangements were made for the requisite contractual services including charter-hire of an offshore drilling rig.

Spudded in the first of the 3-wells in the Company's maiden (Rs.27 crores) offshore exploration programme in the Mahanadi Basin, Bay of Bengal, on January 30, 1980.

In June, the quantity of power offtake from OIL's captive gas turbines to Assam State Electricity Board (ASEB) was increased to 8000 kilowatts and met the entire power requirements of the area under ASEB's Bordubi, Digboi and Margherita sub-stations.

Kumchai well No.1 in Arunachal Pradesh in the Company's 551 sq.kms. of Petroleum Exploration Licence Area was drilled to a depth of 5459.6 metres (17,912 ft) and thus became Oil India's deepest well. At this depth, however, a multiplicity of downhole problems made further drilling impossible.

An agreement for setting up a liquefied petroleum gas(LPG) plant at Duliajan was signed in March 1980, with M/s Industrial Consulting Bureau Ltd. (ICBL).

Oil India (OIL) acquired a sophisticated Mega seismic Computer from a reputed American firm for the processing of its seismic data.

1980-81: Completed 2 offshore wells in the Mahanadi Basin of the Orissa Coast.

In January, civil work for the LPG plant at Duliajan was started.

1981-82: With effect from 14th October, 1981, Government took over the 50% shares held by Burmah Oil Company Ltd. in Oil India Ltd. With this take-over, the Oil India Ltd. became a wholly Government owned Company. After the take-over of Assam Oil Company with effect from the same date, the Exploration and Production Division of the said Company was vested in Oil India Ltd.

A diesel electric rig manufactured in India by Bharat Heavy Electricals Ltd. was commissioned in Nahorkatiya oilfield.

(iii) Oil & Natural Gas Commission

1947-1953: Reconnaissance and detailed geological mapping were done in parts of Punjab, Himachal Pradesh, Kutch, Andaman and Nicobar Islands and Cambay by the Geological Survey of India.

1955: In September-October, a delegation visited the USSR and other European countries to study the Oil Industry.

1955: (Contd.) In October, the Oil & Natural Gas Directorate was formed under the Ministry of Natural Resources and Scientific Research.

In December, Soviet Oil experts in exploration arrived in India.

1956: During April and May, airborne magnetic surveys of parts of Western Rajasthan and the Indo-Gangatic Plains were made by the Canadian experts under the Colombo Plan.

In August, the Oil & Natural Gas Commission was set up.

1957: In April, first well was spudded in.

1958: In May, gas was struck at Jwalamukhi.

In July, first well at Cambay was spudded in.

In September, Oil was struck in Cambay.

1959: In October, ONGC attained the status of a statutory body.

1960: In May, oil was struck at Ankleshwar and drilling was commenced in Assam.

In December, oil was discovered at Rudrasagar structure in Assam.

1961: In June, oil was struck in Kalol.

In September, trial production of crude oil from the Ankleshwar oilfield was started. An agreement was signed with the French Petroleum Institute for exploration in Rajasthan.

1962: The first special train of oil tank wagons left Ankleshwar for Bombay.

In December, a contract was concluded with SNAM of ENI group of Italy for drilling wells in Uttar Pradesh.

1963: In January, offshore seismic surveys started in the Gulf of Cambay.

Drilling commenced in two structures, in Gujarat and Assam.

A contract was concluded with the C.G.G. of France for carrying out seismic exploration in Jaisalmer, oil was struck in Sanand in Gujarat.

Oil was struck in 'Nawagam' in Gujarat.

The contract was concluded with RUDIS, a mining and industrial association of Yugoslavia for drilling wells in Assam. Another contract was signed with SNAM of ENI Group of Italy for drilling wells in Punjab area.

1964: In February, a contract was entered into with a French Company FORASCL for carrying out structural drilling operations in Jaisalmer.

By March, ONGC completed drilling of 200 wells.

In June, two contracts were signed for carrying out offshore seismic surveys with the help of the specially equipped Soviet Ship Akadomic Arkhangelskiy in the Gulf of Cambay and off the Madras coasts and other areas.

In August, E.N.I. started drilling at Mohand in Uttar Pradesh and oil was discovered in 'Lakwa' structure in Assam.

In September, the Soviet ship started its operations.

In October, SNAM started drilling at Janauri in Punjab.

In December, production and supply of gas from Cambay to the Dhuwaran Thermal Power Station was commenced and drilling of a new structure, in Assam was started.

1965: By March, the ONGC completed drilling of 300 wells.

In September, supply of associated gas from Ankleshwar to Uttran Thermal Power Station was started.

In October, oil was struck at Kathana in Gujarat.

Drilling commenced on six structures in Gujarat during the year.

1966: Traces of oil and gas were found in Karaikal. Two structures in Gujarat and one in West Bengal were spudded in.

1967: In January, supplies of crude oil from Kalol oilfield in Gujarat were sent to Koyali Refinery in Gujarat.

In March, the first phase of trial production at Nawagam oilfield in Gujarat was inaugurated.

In May, the Water Injection Scheme for Ankleshwar oilfield in Gujarat started functioning.

By August, the ONGC completed drilling of 500 wells.

In November, the ONGC completed the drilling of one million metres.

One structure each in Tamil Nadu and Assam was spudded in.

1968: In January, trial production of crude from Kosamba field in Gujarat was started.

In March, the National Iranian Oil Company, declared the oil find in the Rostam structure in the Persian Gulf as a commercial discovery, ONGC's share was one-sixth of the crude produced.

In April, oil was discovered at Goleki, a new structure in Assam.

In June, oil was struck in Kadi and Bakrol structures in Gujarat.

1968: (Contd.) In July, the 17.5 Kms. cross country crude oil pipeline connecting the Lakwa oil field of the Commission with the Oil India Pipeline at Moran was commissioned and regular production from the Lakwa oilfield was started. The first indigenous seismic unit was commissioned and the Commission also designed and fabricated a seismic amplifier, with about 98 per cent indigenous components.

Trial production from Kadi oil field in Gujarat was started.

In August, the rate of production from Kalol and Nawagam oil fields in Gujarat was stepped up.

By September, ONGC completed the drilling of 600 wells.

In October, rate of oil production from Ankleshwar and Nawagam oilfields of Gujarat was stepped up. Trial production from Dholka oilfield in Gujarat was started.

In November, trial production from Kathana oilfield in Gujarat was started.

Drilling at nine structures in Gujarat, three in Assam and one in Tamil Nadu was started.

1969: In March, the 15 Kms. Kalol-Sabarmati pipeline was commissioned.

Six structures in Gujarat and one in Nagaland were spudded in.

By June, ONGC completed drilling of 700 wells.

In August, production from Rostam field in the Persian Gulf was commenced. (The first of the seven blocks of the fixed platform meant for drilling India's first offshore well was launched.

1970: Drilling of fourteen new structures in Gujarat four in Assam and one each in J&K, Cauvery Basin and Gulf of Cambay (Aliabet Island) was started.

In March, oil was struck at Borholla in Assam and in April ONGC completed drilling of 800 wells.

In October, gas was struck at Dabka, a new structure in Gujarat.

1971: An agreement to supply gas from Kalol to M/s Mahendra Mills and M/s Navjivan Mills was finalised.

Drilling of India's first offshore well on shallow-waters was also completed.

A contract for procurement of a mobile self-elevating self-propelled jack-up type platform was signed. The first offshore well drilled at Aliabet, showed the presence of oil. An agreement to supply gas to the IFFCO was signed.

In April/May, service contract with the OISA for the drilling in Bombay areas was signed.

1971: (Contd.) On 12th May, Nawagam-Koyali sector of the Kalol-Nawagam-Koyali Pipeline was commissioned. An agreement for supply of associated gas from Kalol to M/s Metro Woods and Engineering works was signed.

On 16th June, supply of gas to Naharhabi Tea Estate from Lakwa field was commenced.

By July, ONGC completed drilling of 900 deep wells. A high power committee headed by Shri K.D.Malaviya, former Minister of Mines & Fuel was set up by Govt. of India to look into the functions and organisation of ONGC and suggest the ways and means to improve its functioning.

In August, Kalol-Nawagam Sector of the Kalol-Nawagam Koyali Pipeline was inaugurated. Oil was discovered in new structure "Amguri" in Assam.

In September, gas was discovered in Baola, a new structure in Gujarat.

In November, oil was discovered in Santhol, a new structure in Gujarat.

In December, oil was discovered in Indrora, a new structure in Gujarat.

Eight new structures in Gujarat and three in Tamil Nadu were taken up for drilling during the year.

1972: In February, gas was struck in North Kalol in North Gujarat and oil in Dabka structure in Baroch district in Gujarat.

In March, supply of associated gas from Kalol field to M/s Navjeevan Mills was commenced.

In July, Petro-graphic and Geochemical Laboratories were commissioned at Madras. Oil was struck at Linch in Gujarat. Supply of associated gas to M/s Mahindra Mills Kalol from Kalol field and to Baroda Municipal Corporation from Ankleswar field was commenced. Water injection in Horizon-XII in Lakwa was commissioned. A bronze Shield, an award of the Invention and Promotion Board was presented by the President of India to ONGC for indigenously developing Air-Tube-Clutch assembly, in collaboration with M/s Banket and Brake lining and Engineering firm of Dehra Dun.

In September, supply of associated gas to three private firms, viz. M/s Metro Wood Works, M/s Melamine and Fibres and M/s Calico Printing Company from Kalol field was commenced.

Drilling at ten new structure in Gujarat and one in Tripura was started during the year.

1973: In January, ONGC completed drilling of 1000th deep well.

On 17th February, an agreement was signed by ONGC with M/s Geophysical Service International, S.A.Dallas, Taxas, USA for conducting about 2800 kms. of offshore seismic reflection work.

1973: (Contd.) On 24th February, a protocol was signed by Mr. D.A.Takeov, Dy. Minister for Oil, USSR and Secretary to the Govt. of India, Ministry of P&C, on development of oil industries in the public sector in India for 1973-78 and forecast for the period 1978-83.

In March, the self-propelled, self-elevating jack-up type of mobile drilling platform "Sagar Samrat" got made to order in Japan was handed over to ONGC at Hiroshima, Japan.

On 8th April, a draft for service contract awarded by the Iraq National Oil Company (INOC) to the ONGC was signed by Dr.Abdullah Sayyas, Vice-President of INOC and Chairman, ONGC. Under the terms and conditions, the ONGC will render technical and commercial services to the INOC as a general contractor.

In June, at Baramura well in Tripura, a good flow of gas was observed during an open hole drill stem testing. Supply of associated gas from Kalol field to M/s Bharat Vijay Mills was commenced.

In July, the presence of oil was observed in a well on the Charali structure in Assam during an open hole drill stem test.

In October, drilling was commenced on the first offshore deep well of Tarapur structure in the Arabian sea adjoining the Gulf of Cambay.

One of ONGC's Diesel Mechanic working in Central Workshop at Baroda, was awarded Rs.3000/- as a National Award declared by the Govt. of India for developing valve lapping machine for lapping the valve and of Internal Combustion engines. It was the second highest award given to any inventory on the occasion of Independence Day.

Drilling was started at five new structures in Gujarat, three in Assam and one in Tamil Nadu during the year.

1974: During March, 'Geoflex' was introduced as energy source for the first time by seismic crew in Iraq operations. On 24th March, the supply of gas to IFFCO was started for purging the line and test run.

During June, a new structure, viz. Asjol was declared as oil bearing and well head installation at Santhol-4 were commissioned.

In July, ONGC completed drilling of 1100th well.

In August, regular production from Goleki oilfield, Assam was commenced. The Sanand-GGS and gas line from Sanand GGS to Kalol CTF were also commissioned.

Sanand GGS, Kalol CTF oil pipeline was commissioned and well head installation at Linch was commissioned.

In October, precision gravity surveys were introduced for the first time.

1974: (Contd.) Drilling operations were commenced at three new structures in Gujarat during the year.

1975: In January, North Kadi GGS-cum-CTF was commissioned.

During February, Kalol in Gujarat was put on sustained production. Oil was struck in a well drilled on Sanad Khurad structure in Gujarat.

During March, pipeline to carry oil from Sobhasan, North Kadi and South Kadi fields to Koyali Refinery was commissioned. Gas supplies to Bhabha Atomic Research Centre was commenced.

Central workshop, Baroda, completed manufacture of a prototype work over rig of 28-tonnes capacity, which was hitherto imported.

During June, gas was struck at Baramura in Tripura. New workover rig Azinamash was commissioned in Ahmedabad.

In July, gas supplies from Geleki oilfield to Geleki Tea estate was commenced.

During August, gas supplies from Geleki oilfield to Sibbari Tea estate was commenced.

During September, gas supplies from Geleki field to Barshilla Tea Estate was commenced. Two drilling ships spudded wells in Bombay High main offshore structure in the Arabian sea.

In October, gas supplies to Mehsana Dairy was commenced. Sobhasan GGS-cum-CTF and Lakwa CTF were commissioned.

In December, presence of oil was indicated in a well drilled on Nandasan structure in Gujarat. Drilling was commenced on one new structure in Meghalaya, four in Assam, three in Gujarat and one in J & K.

1976: In January, gas supplies to M/s Gujarat Glass Factory from Kosamba field were commenced.

In February, oil was struck in a well drilled on Bhandut structure in Gujarat.

Gas supplies were commenced to Gujarat Industrial Development Corporation from Nawagam fields.

'Shenandhoah' a jack up drilling unit commenced drilling operations in offshore areas in the Arabian Sea.

Production was started from two wells of Bombay-High (Main) offshore structure.

Rudrasagar-Lakwa oil pipeline was commissioned.

Drilling was started at Songo-Songo Islands in Tanzania by ONGC under a contract.

In July, oil was discovered in a well drilled at North Kathana structure in Gujarat.

1976: (Contd.) In September, Geleki-Dikhu Junction oil pipeline was commissioned.

The approval of the Government for Rs.4.82 crores was received for setting up of an Institute of Reservoir Studies at Ahmedabad to perform general research and development work, to conduct necessary amount of basic research and reservoir studies, to design and supervise actual field pilot tests, and also to render advice to operations personnel in reservoir engineering and related studies.

Gettysburg, a new drilling unit chartered by ONGC spudded its first well in the Arabian sea.

Two new Group Gathering Stations were commissioned in Assam.

Presence of oil was indicated in a well drilled at Domulgaon structure in Assam.

Drilling was commenced on six new structures in Gujarat, one each in Assam, Rajasthan, J&K, Pondicherry, West Bengal and five structures in offshore area in the Arabian Sea.

1977: In January, a new Rumanian rig 3 DH-2 spudded its first well at Charali structure in Assam. Well platform 'D' in Bombay-High(Main) offshore field was commissioned.

In February, a new Rumanian rig 4DH-1 spudded the first well at Ramshahr structure in Himachal Pradesh.

Oil was struck at Padra in Gujarat in the month of March and gas supplies to Macheypore Tea Estate in Assam were commenced from Geleki field.

In April, a new Rumanian rig (third in the series) 3DH-3 spudded the first well at Lakhmani structure in Assam. Oil trunk pipeline between Sanand-15 to SIP-34 in Gujarat was commissioned.

In May, gas was discovered in Motwan structure in Gujarat.

In July, a new 4DH-2 Rumanian rig spudded its first well on Chargola structure of Cachar district of Assam.

In September, GGS-4 at Rudrasagar, GGS-2 and CTF at Geleki in Assam were commissioned.

New workover rig P-80-3 commissioned in Assam. Well-head installation at Jhalora in Gujarat was commissioned.

Oil production from wells of platform 'C' in Bombay-High (Main) was started.

In October, a new American Aimco-1320-M spudded its first well on a new structure known as Diamond Harbour in West Bengal.

Oil trunk pipeline between Geleki and Jorhat commissioned.

Oil discovered in Jotana structure in Gujarat.

A new Rumanian rig 3DH-4 was commissioned by spudding a well at Geleki structure in Assam.

1977: (Contd.) Drilling was commenced on nine structures in Gujarat, two in Assam, one each in Himachal Pradesh, West Bengal, and twelve in offshore area of Arabian Sea.

1978: In January, platform 'B' wells in Bombay High(main) started producing oil. Gas was discovered in Sisodra structure in Gujarat during the same month.

In February, gas was discovered in C-2 structure in Bombay offshore.

In March, oil was discovered in 'Viraj' structure in Gujarat. GGS-V at Lakwa in Assam was commissioned.

In April, new rig E-2000 was commissioned at Narasapur in Andhra Pradesh. A trunk line from Lakwa GGS-V to junction point of Rudrasagar-Lakwa trunk line was commissioned.

In May, oil was discovered in West Sobhasan structure in Gujarat.

In June, gas was discovered in Walner Structure in Gujarat.

Platform 'F' at Bombay High (Main) was commissioned. Gas trunk line of 26" dia between platform 'F' at Bombay High(Main) and Uran Shore terminal was commissioned. Oil trunk line of 30" dia between platform 'F' at Bombay (Main) field to Uran Shore terminal for a total length of 203 kms. was commissioned.

In July, gas supply was commenced from offshore Bombay to Tata Thermal Power Station (TEC) Trombay. Oil feeder line from Uran Terminal to Trombay was commissioned.

In August, gas was discovered on new structures Gajera and West Matwan both in Gujarat.

Gas supply from Bombay-High field was commenced to Rashtriya Chemicals and Fertilizers Ltd., Bombay.

In October, supplies of gas from Nawagam field were commenced to M/s Calico Dyeing and Printing Company.

In November, an electrical new American rig 1320-UE-2 was deployed at Gojalia.

In December, Platform 'B' in Bombay High was commissioned. Oil production from Offshore Bombay touched a level of one lakh barrels per day on 31st December. Gas was struck in B-55 structure in offshore Bombay.

Drilling was commenced on eight structures in Gujarat, one each in Uttar Pradesh, Andhra Pradesh, Assam & Tripura, nine structures in offshore area of Arabian Sea, two in offshore Madras coast and one in offshore Kerala coast.

1979: Drilling at four new structures in Gujarat, four in Assam, one in West Bengal and nine in offshore was started.

In March, oil was discovered in a new structure in offshore at the first well drilled on this structure.

In April, oil was discovered at 'Pansar' in Gujarat and in a new structure in Offshore areas. Also oil production was commenced from Charali field in Assam.

1979: (Contd.) In June, oil production was commenced from Amguri field in Assam.

In September, oil production was commenced from Motwan field in Gujarat.

In November, drillship 'Pelerin' chartered on hire commenced drilling operations in offshore areas.

In December, a new rig BU-80-4 was commissioned.

1980: In February, Diamond Harbour well in West Bengal was drilled down to a record depth of 5555 metres in this country and oil production from Siswa field of Gujarat was commenced.

In March, another drillship 'Frodrick Burg' chartered on hire commenced drilling operation in offshore.

In May, oil was discovered in the Ratnagiri offshore structure.

In June, gas was found in Shelf of Andaman Island. Oil was also discovered in the Godavari Offshore structure during the same month. A new offshore Planform was commissioned.

In July, Portonova offshore structure showed presence of oil. The production of oil was commenced from Jotana and Viraj structure.

In September, gas was found in Dahej structure in Gujarat.

In October, 2 new offshore plantforms were commissioned.

In 1980, eight new offshore and eight new onshore structures were taken up for drilling.

1981: In February, ONGC's second old Jack-up rig 'Sagar Vikas' was commissioned. Oil was discovered in Lahar structure in Gujarat.

In March, LPG unit at Uran and gas system of BHN platform were commissioned.

During January-March, drilling at one new offshore structure and six new onshore structures were taken up.

1981-82: During the year, drilling was taken up in 7 new structures in Gujarat, 2 each in Assam & West Bengal, one in Rajasthan and 4 in the offshore areas.

In April, gas was discovered at Kudara a new structure in Ankleshvar project . Oil was also struck at Sisodra in the same project.

Flow of Oil and gas was observed in three structures Viz- Napamua in Assam (in August), a new structure in Bombay High area (in August) and in Longhnaj in Gujarat (in November). Oil was also struck in a well in the North Palk Strait in the offshore Cauvory basin in South India. Eight production platforms were commissioned in the Bombay High area.

1981-82 (Contd.) In November, ONGC's third jack-up rig 'Sagar Pragti' was commissioned in Bombay High.

In January, 1982, a new drilling unit SEDCO-445 Chartered by ONGC, spoded its first well in Godavari offshore area.

(iv) Hydrocarbons India Limited

1964: ONGC obtained a concession from the Govt. of Iran for prospecting and producing oil in Persian Gulf.

1965: An agreement dated 17th January 1965 was entered into between National Iranian Oil Company, ONGC (India), PPCC(USA) and AGIP of Italy. Incorporated as a Private Limited Company, wholly owned subsidiary of ONGC. ONGC assigned its right and liabilities under this agreement.

1969: Oil struck in 'R' structure and commerciality of field declared in that structure called Rostam field.

In September, first Rostam crude oil tanker containing India's share was loaded and sold to Spain.

1970: Another field called Rakhsh field was discovered and commercial production commenced.

1975: Became a Public Company by virtue of Section 43A(1A) of the Company Act, 1956, and name changed to Hydrocarbons India Limited. Assigned ONGC's rights, interests and liabilities in the contract dated 22nd August, 1973 entered into with Iraq National Oil Company.

1976: The assignment of the contract with Iraq National Oil Company for exploratory drilling in Iraq in favour of HIL was annualled ab-initio by ONGC.

1977: An agreement on Tax, Additional Payment and royalty, stipulating payment if income tax and additional payment at the rate of 55% and 30% respectively on net profit arrived at after allowing a discount of 7% on posted price and payment of Royalty @ 20% on the posted price of crude oil exported, was signed.

A $ 40 million project for water injection of Rakhsh field to step up production from secondary recovery was cleared by the parties of Joint Venture.

1978: Work on Rakhsh Water Injection Scheme was started. Decision regarding Water Injection in Rostam field was also taken.

During October-December, there was some dislocation in production/despatches due to strikes and political situation in Iran.

1979: The Company along with other Secondary Party partners was not permitted to lift its share of oil during the year. The Second Party decided to initiate discussions with the First Party, i.e. National Iranian Oil Company regarding terms for cancellation of the Joint Structure Agreement.

1980: The Government of Iran declared the Joint Structure Agreement null and void.

1981: The issue of compensation for declaring the Joint Structure Agreement as null and void was taken up with the Government of Iran.

(v) Indo-Stanvac Oil Exploration Project

1954: In April, the Indo-Stanvac Oil Exploration Project started exploration activities in partnership with the Government of India on a 75 : 25 basis covering a concession area of 10,000 sq. miles in West Bengal.

1959: The exploration project was abandoned after drilling 10 wells in the West Bengal basin all of which proved dry.

(E) REFINERIES

(i) The Digboi Refinery, Digboi

1893: The Assam Railways and Trading Company erected a small refinery at Margherita to refine the crude oil found at Makum and Digboi. This refinery was the first of its kind in the Indian sub-continent and operated for a few years. It has since changed its venue from Margherita to Digboi in its subsequent expansion and growth.

1900: The construction of a new refinery at Digboi was started by the Assam Oil Company Ltd.,

1901: The Digboi Refinery went on stream.

1923: The entire refinery was rebuilt, and the refinery capacity was also enlarged.

1926: Two product pipelines were laid between Digboi and Tinsukia.

1932: An Edeleanu plant for giving Sulphur Dioxide treatment to Kerosene was installed and brought into commissioned.

A Dubbs plant for " Cracking" process was installed.

1934: Foster Wheeler Crude Oil distillation unit was installed.

1938: Bitumen plant was installed

1940: Lummus-Crude oil distillation unit was installed.

1950: A plant for fabrication of steel barrels was installed.

1953: Gasoline extraction plant was commissioned.

1954: Foster Wheeler, Lube Oil Distillation unit was installed, which was the first of its kind to be installed in India.

Refinery was linked up with two pipelines for the receipt of crude oil and gas from Naharkatiya oilfield.

1956: A new pipeline for the pumping of white oils to Tinsukia installed; one of the oil lines was replaced by a new one.

1970: Improvements in process techniques were introduced for the out turn of better quality lubricating oils.

1971: First phase of the project for the improvement in refrigeration capacity of wax treating plant and the rejuvenation of Edeleanu plant for increasing production of Superior Kerosene were completed.

1972: To supplement the cooling water demand of the refinery a three cell induced draught RCC cooling tower was commissioned.

The Red oil line No.1 for pumping furnace oil from Digboi to Tinsukia was replaced by a new 6" line.

1973: For increasing the production of Superior Kerosene, an additional electric power driven SO2 Compressor was installed in the Edeleanu plant.

1975: To supplement the cooling waster demand of the refinery an additional three cell induced draught RCC cooling tower was commissioned.

1976: Two new J.T. Boilers were commissioned for improving stream generation.

1977: A new product-carbon black feed-stock was introduced.

1981: The Assam Oil Company was taken over by the Government with effect from 14.10.1981 and its Refining and Marketing Operations were vested in Indian Oil Corporation Ltd from the same date.

(ii) Burmah-Shell Refineries Ltd./Bharat Petroleum Corporation Limited, Bombay

1903: The Asiatic Petroleum Company entered the Indian market.

1921: The Burmah Oil Company entered the Indian market.

1928: On 6th January, Burmah-Shell came into existence.

1951: Refinery agreement was signed towards the end of this year.

1953: In February, site development was commenced.

1955: On 30th January, Refinery came on stream and processed 1.8 million tonnes of crude in the year.

In June, Bitumen production was commenced.

1956: Commenced production of LPG and Motor Spirit MT-80.

Duty protection on Motor Gasoline was surrendered with effect from 1st October.

1957: In February, Aviation Turbine Fuel production was started.

In September, platforming unit was commissioned.

1959: Duty protection on High Speed Diesel, Light Diesel Oil, Furnace Oil and Bitumen was surrendered from 1st July.

1961: Regular production of Jute Batching oil commenced from February.

1962: Processing of Ankleshwar crude together with Iranian Light crude was started.

1963: MT-80 Sub-zero and Inferior Kerosene were also added to the range of products.

1965: In March, SBP Unit was commissioned to produce SBP 55/115.

In August, gas supply by pipeline to FCI was commenced.

In September, 93 Octane Motor Spirit was manufactured for the first time.

1966: Commenced production of CBFS, Mineral Turpentine and Hexane.

1967: In March, production of Avgas 100/130 was started.

1968: In March, 6 pipeline for delivery of naphtha to NOCIL was commissioned.

In May, Ankleshwar crude receipts were stopped.

1969: Achieved a refinery capability of 5.25 million tonnes per annum.

1970: Pioneered the formation of the " Technical Development Committee for Indigenous Materials " for the Petroleum, Petro-Chemicals and fertilizers industries in the country.

1973: Processing of Government crude was commenced.

1974: In May," Export House", status was accorded .

Established a Fuel Advisory Cell for promoting fuel economy by users.

1976: On 24th January, the refinery company was taken over by the Government of India and the assest of Burmah-Shell in India were merged with those of the nationalised company to form Bharat Refineries Limited.

1976: (Contd) Set up centre for technology(centech) to serve the development needs of BRL and HPCL refineries initially.

1977: Commenced production of Low Sulphur Heavy Stock(LSHS).

In August, the company was given its permanent name, Bharat Petroleum Corporation Ltd.(BPCL).

1978: In July, the refinery started receiving Bombay High crude by pipelines.

1979-80: Processed eleven different crudes, the highest in any year.

1980-81: Processed thirteen different curdes, the highest in any year so far.

Packed production of brandless 80/100 bitumen was started.

1981-82: Processed ten different types of crude oil.

(iii) Esso Standard Eastern Inc./Hindustan Petroleum Corporation Ltd(Fuel Refinery)

1951: In November, an agreement was signed between Government of India and the Standard Vacuum Oil Company to set up an oil refinery at Trombay, Bombay.

1952: In July, the Standard- Vacuum Refining Company of India Ltd., was incorporated.

1954: On 29th July, the Stanvac refinery went on stream.

1956: Stanvac exported Motor Gasoline.

1957: The duty protection on Motor Gasoline was given up by the Company. Stanvac started HHS fuel supplies to the adjoining Tata Trombay Thermal Power Station.

1958: Stanvac started manufacturing LPG and JBO.

1959: Stanvac started manufacturing asphalt and cooperated in setting up the Standard Barrels manufacturing factory which started supplying asphalt drums to refinery.

1960: In September, Stanvac started exporting Indian expertise and 4 employees were sent to Philippines as set-up Advisers to new refinery.

In November, duty protection on other petroleum products was also surrendered.

1961: Stanvac exported Asphalt.

1962: In April, Corporate name was changed to Esso Standard Refining Company of India Ltd.

On 16th November, processing of indigenous Ankleshwar crude was commenced. Esso Standard manufactured for the first time in India SBP Spirit and Hexane.

1964: Started exports of Naphtha.

1965: Started manufacturing for the first time in India-FDA grade JBO Mineral Turpentine.

Started supplying raw material naphtha to enable starting of new Trombay Fertilizer plant of FCI.

1966: Started raw material naphtha feedstock supplies to the new petrochemicals plant of Carbide Chemicals Company.

1967: Started manufacturing Industrial Asphalts.

1968: Started manufacturing for the first time in India, speciality products (OS-330) and petroleum Ether to substitute imports.

1969: Started supplying feedstocks to the new Lube India Ltd. Refinery.

1970: Started manufacturing, for the first time in India, of Propane.

Staff was completely Indianized in October after departure of the last expatriate.

Manufactured Carbon Black Feedstock.

1973: Pontone & Rubber processing oil were manufactured and IOC crude was processed on refinery processing fee basis.

1974: On 15th March, the Govt. of India acquired the entire Marketing assets of Esso Eastern Inc. in India and 74% interest in Esso Standard Refining Company of India Ltd. and Lube India Ltd. On 15th July, the market assets were vested in Esso Standard Refining Company and the two companies were merged to form Hindustan Petroleum Corporation Ltd.

1975: In August, lightering operations were commissioned for the first time in India for better utilisation of 87,000 DWT tankers.

Successfully handled LPG spiked crude to maximise LPG production.

Commenced reprocessing of LSHS for Koyali Bottoms increasing middle distillates production.

Completed a record 2.6 million manhours without a disabling injury.

1976: On 1st October, Govt. of India acquired the balance 26% equity shares held by Esso and thus HPCL became a fully owned Government Company.

Produced a trial batch of Heptance for IPCL.

Produced for the first time 'Insectol' which is a Carrier for insecticides. Earlier, this was being brought in Bombay region from Assam Oil Refineries.

Set up a centre for technology (CENTECH) in collaboration with Bharat Refineries Ltd. to serve the interests of refineries in the allied fields. Research & Development, design and operations.

Facilities for VPS/Cat debottlenecking project being installed.

In view of Bombay High crude processing at Bharat Refineries Ltd. installation of number of facilities for integration of operation at HPCL and BRL were commenced.

1977: Number of facilities installed for integration of operations with BPCL were commissioned.

1978: On 18th January, Secondary Processing facilities to match fractionating capacity of 3.5 million tonnes per annum were commissioned.

1979: In August, commercial processing of Waxy distillates from Bharat Petroleum Corporation's refinery was started.

1980: In February, for the first time a consignment of 1000 tonnes of imported LPG was received in the refinery.

Lube refinery expansion envisaging additional production of 74,000 t.p.a. of HVI Lube base stock was in progress.

Civil survey work and process design of MEA section of the Sulphur Recovery Project was completed.

(iv) Caltex Oil Refining (India) Ltd./Hindustan Petroleum Corporation Ltd., Visakhapatnam

1953: In March, an agreement was reached between the Govt. of India and Caltex (India) Ltd. to establish a refinery on the East Coast of Vizag.

1955: In February, the Caltex Oil Refining (India) Ltd. was incorporated.

1957: In April, the refinery went on stream at Visakhpatnam. Exports of Mogas and Fuel oil were undertaken in the same year.

1959: In October, the duty protection on Motor Gasoline was surrendered.

1963: In April, duty protection on other products was surrendered.
In May, manufacturing of LPG commenced.

1964: Started export of Naphtha.

1969: Exported Asphalt.

1973: During November-December, processing of IOC crude on processing fee basis was commenced.

1975: In June, purchase of crude oil from IOC was commenced. The crude oil was transported by World Bank Tankers and transhipped into smaller vessels for discharge into Refinery storage tanks.

1976: In November, the first trial cargo of Bombay High crude was processed.

On 30th December, the Govt. of India acquired 100% shares of Caltex Oil Refining (India) Ltd.

1977: The modification of the refinery to permit processing of 0.5 MTPA of Bombay High crude was started.

1978: On 9th May, Caltex Oil Refining Company was amalgamated with Hindustan Petroleum Corporation Ltd.

1979: Refinery expansion project for increasing crude processing capacity to 4.5 million tonnes per annum was submitted to the Government.

1980: In December, Government's approval for expansion of refinery capacity from 1.5 MTPA to 4.5 MTPA was received.

1982: Feasibility report with revised cost estimates for expansion project was approved by the Government.

(v) Indian Oil Corporation (Refinery Division)

(a) Barauni Refinery, Barauni, Bihar

1961: In June, a contract was signed with M/s Tiajpromexport, Moscow for the design and supply of equipment and the supervision of erection and operation of the Barauni Refinery.

1964: In July, the first unit of the Barauni Refinery went on stream.

1966: In February, the second stage was commissioned.

1967: In November, the third stage comprising of Lube Oil complex was completed.

1969: On 21st January, the expansion of refinery was completed. Construction of the coke calcination plants started.

1971: In June, Government approval for revamping of Barauni Refinery for processing of imported crude and expansion of refinery capacity was obtained.

In November, the erection of coke calcination plant was completed and test review was conducted.

Sale of Phenol extract and slack wax was started.

1972: In December, processing of imported crude was started.

1974: In July, trial production of rubber extender Oil (hitherto imported) was started and two wagon load of the same were despatched for the first time to M/s Synthetics & Chemicals Ltd., Bareilly, for evaluation and plant trials at their end.

In September, Naphtha pipeline to FCI was commenced.

1975: In view of expected idling of dewaxing unit due to decrease in sale of 800 pale lube oil ex-Barauni, an important scheme of producing middle distillates components in dewaxing unit was introduced.

1977: In February, the movement of LSHS for consumption of Haldia Refinery was started.

1979: From 27th December, crude supplies were stopped due to agitations in Assam.

1980-81: Regular supplies of crude oil from Assam, which were suspended from 27th Dec. 1979, due to Assam agitations were commenced from 28th January, 1981.

On 29th Jan. 1981 the process units of the refinery were restarted, after a lapse of 13 months.

In February'81, new Cooling Towers were commissioned.

In March'81, new white oil tank truck loading gandry was commissioned.

(b) Gauhati Refinery, Gauhati, Assam

1962: On 1st January, the Gauhati Refinery went on stream.

1964: In October, Gauhati-Siliguri pipeline was commissioned.

1969: In November, production of ATF was commenced.

1971: In March, production of LPG was started.

1976: Naphtha production and offtake were started during April.

1977: In March, regular despatches of LSHS to Chandrapura Thermal Power Station of Assam State Electricity Board was started.

In May-June, major modifications repair jobs to the main fractionating column of the coking unit were taken up after 15 years of operation.

1979-80: Refinery suffered frequent interruptions in its operations towards the end of the year due to disturbed conditions in the Eastern Region.

1980-81: Refinery operations were affected adversely due to agitiations in Assam.

(c) Gujarat Refinery, Jawahar Nagar, Gujarat

1963: The technical report on setting up of the Gujarat Refinery was accepted and an agreement for supply of equipment from USSR was signed.

1965: In October, the first one million tonne unit was commissioned.

1966: In May, the second million tonne unit was commissioned.

1967: On 28th September, the third million tonne unit for the expansion of refinery capacity from 2 to 3 million tonne was commissioned.

1968: On the 17th December, the Udex Plant was commissioned at the Gujarat Refinery for the extraction of Benzene and Toluene from reformed Naphtha.

1969: In July, a pilot plant was set up and commissioned at the Gujarat Refinery by the IIP to conduct investigations for the extraction of protein from petroleum.

1974: In October, two new 10,000 crude oil tanks were commissioned.

1975: LSHS despatches to HPCL were started on 8th June and are continuing on regular basis.

Facility for loading of LSHS in trucks was commissioned during July.

Horton sphere for LPG was commissioned on 18th August, this has helped in increasing the storage capacity for this product.

1977: In January, the despatches of LSHS to Bassain - a newly set-up installations were started.

In July, the first supply of Naphtha to IPCL's cracker plant was made.

In October-November, Atmosphoric Distillation Unit (AU-IV), Visbreaker, Naphtha and Kero Merox Units put up under the project.

"Gujarat Refinery expansion facilities", were started.

1978: In March, supplies of special cut kerosene, i.e. LABFS as a feedstock to IPCL, Baroda were started.

1979: In February, Vacuum distillation Unit and Bitumen Unit were started under the expansion scheme.

In September, processing of Bombay High crude was started.

1980: In order to optimise the processing capacity of old distillation units, processing of imported crude was undertaken in February for a short period.

(d) Haldia Refinery, Haldia, West Bengal

1967: In September, the decision to set up a refinery with French and Rumanian collaboration under the charge of Indian Oil Corporation was taken up by the Govt. of India.

1969: Contracts for design supplies and rendering of technical assistance were executed separately with M/s Technip/Ensa of France and M/s Industrial expert of Rumania.

1970: Contract for fabrication and erection of all welded storage tanks awarded and work commenced in June.

In November, construction work on first phase of Refinery Township was commenced.

1971: During January, the construction of Process Unit foundation and other civil works were started.

During November, work of erection of equipment, machinery, piping and structures for the fuel part of the refinery was commenced.

1972: In February, construction of Refinery Township- second phase was started.

In March, work of erection of equipment, machinery, piping and steel structures for the lube was taken up.

In May, electrical works in power plant process unit and off-sites was commenced.

During October, instrumentation work for fuel part of the refinery was started.

In December, LPG, SK and ATF upliftments were started.

1974: In August, crude distillation unit went on trial runs.

In December, naphtha pretreater Catalytic reforming and kero hydrodesulphurisation units were commissioned.

In October, HSD and FO despatches were started.

1975: The refinery went into commercial production on 1st January. Visbreaking unit was commissioned on 8th October. Production of JBO and MTO products was started.

1st Naphtha export parcel of 17 thousand tonnes was loaded in the tanker on 22nd May.

1976: Vaccum distillation and Bitumen units were put on stream during June.

Furfural Extraction Unit was commissioned in July.

Propane Deasphalting Unit was commissioned in August.

Bitumen drum filling station was commissioned and drum filling was commissioned during October.

1977: In January, solvent dewaxing and Hydrofinishing Units were started.

In March, despatches of Lube Base Stocks including bright stocks premium grade lube oil hitherto imported were commenced.

In July, FBASBO production was started.

1979: In October, pipeline for supply of feedstock to Haldia Fertilizers and F.O. to bunkering installations at Haldia were commissioned.

1980: In June, despatches of Carbon Black Feedstock by rail were started for the first time.

(e) Mathura Refinery, Mathura

1973: In July, a Protocol on economic and technical cooperation between India and USSR in the construction of Mathura Refinery was signed.

In September, a contract for deputation of Soviet specialists for preparing Memorandum of Instructions was signed between Indian Oil Corporation and NEFTECHIMPROMEXPORT, Moscow.

In December, a contract for preparation of Detailed Project Report Analysis of crude oil, supply of equipment/material deputation of Soviet Specialists for rendering technical assistance in setting up the refinery was signed.

On 2nd October, the foundation stone was laid.

1974: In January, process design engineering agreement was signed with UOP for fluid catalytic cracker and five Merox Units.

In May, process design engineering agreement signed with IIP/IFP for Diesel, HSD and catalytic reformer with pretreater units.

In March, a letter of intent was issued to M/s BHEL for design, supply and erection of the power plant on a turn key basis.

In November, an agreement was signed for pollution control studies with M/s Technneco of Italy.

1975: On 19th April, a team of Soviet Specialists arrived for review/scrutiny of the detailed project report.

On completion of DPR discussions, a DPR Acceptance Protocol was signed between IOC and Neftechimpromexport.

Government decision regarding the revised Schedule for Mathura Refinery, i.e. Mechnical Completion by December, 1979 and commissioning by April, 1980 received.

A contract for supply of equipment and materials and technical assistance was signed in Moscow with M/s NEFTECHIMPROMEXPORT.

1976: The first shipment of USSR equipment was received in June.

Contracts for stage A of the first phase of Township awarded in January.

Contract awarded in respect of construction of Radial well in Yamuna river for water supply in April.

In July, contract awarded for site grading, roads and storage tank foundations.

In November, contracts awarded for civil and Structural works for power plant building.

1977: A number of contracts for different jobs were awarded during the year.

In December, a detailed project report and the revised cost estimates were submitted to the Government for approval, Government's approval for selection of the Sulphur Recovery Unit was also received during that month. The Expert Committee constituted by Government to advise IOC on environmental (impact) of Mathura Refinery submitted its report to the Government in the month of December.

1978: In May, the detailed Project Report and Revised Cost estimates were approved by the Government.

1979-80: Upto the end of March, the project achieved overall progress of 81%.

1980-81: Overall cumulative progress of 92% was achieved upto 28th February, 1981.

1981-82: On 18th January, crude distillation unit was commissioned.

On 20th February, Visbreaker unit was commissioned.

(vi) Cochin Refineries Ltd., Cochin

1963: On 27th April, the formation agreement was entered into between the Govt. of India, Phillips Petroleum Co. of U.S.A. and Duncan Brothers & Company Limited, Calcutta for setting up a Refinery in the South.

On 6th September, Cochin Refineries Ltd. was registered.

1966: On 23rd September, the Refinery was inaugurated.

1968: The Formation Agreement of 27th April, 1963 was modified and expansion of the Refinery capacity was agreed to.

1969: In February, the modification of Formation Agreement was executed.

1973: In August, expansion programme of the Refinery was completed.

1979: On 5th December, Govt. of India approved the Secondary Processing Scheme for CRL.

1981: On 3rd January, the Refinery completed fourth, one million man-hours without a loss time accident.

On 18th September, Govt. of India approved the expansion of Refining Capacity to 4.5 million tonnes per annum.

(vii) Madras Refineries Ltd., Manali, Madras

1965: In December, the Madras Refineries Ltd. was incorporated as a joint venture of the Govt. of India, the National Iranian Oil Company and AMOCO.

1966: In November, a contract for construction of the refinery was awarded to M/s Snam Progetti.

1967: In January, the ground breaking ceremony took place.

In April, the construction and erection of the refinery was started.

1969: First crude oil tanker was arrived.

In June, the first batch of products were delivered to IOC.

In September, the refinery was formally inaugurated.

1972: In September, New Oil Jetty for bearthing tankers in fair weather was available.

1973: The Refinery received the first prize under Shram Vir National Safety Awards for highest reduction in accident frequency ratio among Petroleum Refineries.

New products like Rubber Processing Oils, Ink Oil and Axle Oil were developed.

Asphalt was exported to Indonesia for the first time.

Exported lubricating oil base stock to Bangladesh for the first time.

All the three prizes under Shram Vir National Awards in Accident Prevention among Refineries were awarded.

Achieved ninth position in All India ranking amongs public sector undertakings on the basis of value of sales.

1975: Fuel consumption was reduced by 10% which resulted in annual saving of about one crore rupees.

1977: MRL was declared the Runner up for National Shram Vir Award Scheme for the longest Accident for record for 1976 amongst Petroleum Refineries in India.

1978: In November, licence and engineering services agreements for paraffin wax plant were executed with M/s Union Oil Company of California, U.S.A.

1980: On 20th March, Union Cabinet decided to double Madras Refinery capacity from its present 2.8 million tonnes per annum to 5.6 million tonnes per annum with matching facilities for secondary processing.

1981: On 26th February, an agreement with M/s Engineers India Ltd., Management Contractors was signed.

The expansion work for the 2.8 million tonnes per annum additional refining capacity was in progress.

1982: Projects for additional refining capacity of 2.8 million tonnes per year, Paraffin wax were progressing satisfactorily.

(viii) Bongaigaon Refinery & Petro-chemicals Ltd., Assam

1971: Feasibility report was prepared by IOC and IPCL.

1972: Investment approval for the complex was given by the Government.

1974: On 20th February, the Company was registered under Companies Act, 1956 in the State of Assam, with an authorised capital of Rs.50 crores.

1975: Government approval for 4 units was obtained.

1977: Civil work was started.

In November, the authorised capital of the Company was increased to Rs.100 crores.

1978: In April, mechanical completion of crude distillation unit was over.

1979: In January, first Module of Power Plant was commissioned.

In February, Crude Distillation Unit went on stream.

On 2nd March, first Rake Carrying Petroleum Products rolled out of the refinery.

1979-80: The commercial production of Crude Distillation Unit (CDU) was commenced from 1st April, 1979.

In December, Mechnical Completion of Kerosene Treating Unit (KUT) was over.

The first module of Captive Power Plant was inaugurated.

1980-81: The refinery operations were affected during the period December 1980 to March 1981 due to agitations in Assam.

1981-82: Normal activities were resumed after the suspension of agitation.

(C) MARKETING

(i) Burmah-Shell/Bharat Petroleum Corporation Ltd., Bombay

1901: The Asiatic Petroleum Company entered in Indian market.

1921: The Burmah Oil Company entered the Indian market.

1928: On 6th January, Burmah-Shell came into existence.

1956: Burmah-Shell started the use of special tank-wagons for transportation of Bitumen. In May, Indian flag vessel Desh Sewak was chartered.

1965: Burmah Shell started use of special tank wagons for transportation of LPG.

1968: Burmah Shell introduced locally developed HDPE containers for packing lubricants.

1972: Burmah Shell commissioned a prototype aluminium alloy tank lorry for MS/HSD delivery to retail outlets.

1974: Burmah Shell established a Fuel Advisory Cell for promoting fuel economy through expert advice to fuel users.

1976: On 24th January, the Burmah Shell Refineries Ltd. was taken over by the Govt. of India and the Indian assets and liabilities of Burmah-Shell were merged with those of the nationalised Company to form Bharat Refineries Ltd.

1977: In August, the nationalised Company was given its permanent name Bharat Petroleum Corporation Ltd.

1980: In February, LPG was imported for the first time in tankers. Wax was also imported for the first time at Bombay.

1980-81: On 15th August, a new LPG filling plant, the largest in India, alongwith storage/pumping/loading facilities was commissioned.

1981-82: Another LPG filling plant was commissioned.

(ii) Esso Standard Eastern Inc./Hindustan Petroleum Corporation Limited (Marketing Operations)

1882: Esso's predecessor Company in India, Standard Oil Company of New York, commenced supply of Kerosene.

1931: Standard Vacuum Oil Company was formed with the merger of Standard Oil Company of New York and Vaccum Oil Company.

1933: On 7th September, Standard Vaccum Oil Company started operations in India.

1958: Marketing of LPG for domestic use was started in Bombay.

1962: On April 1, Esso came to India. Standard Vaccum Oil Company was reorganised and named as Esso Standard Eastern Inc. which is solely owned by the Standard Oil Company, New Jersey.

1965: On 15th September, an agreement was signed between the Government of India and Esso Standard Eastern on a 50:50 partnership for the construction of a jointly owned lubricating base oil refinery at Bombay.

1970: On 11th February, Lube India Limited was formally commenced for producing lubricating oil base stocks from feedstock supplied by ESRC.

1971: On 1st January, corporate name was changed to Esso Eastern Inc.

1974: On 15th March, the Government of India acquired the entire market assets of Esso Eastern Inc. in India and 74% interest in Esso Standard Refining Company of India Ltd. and the Lube India Ltd.

On 15th July, the market assets were vested in Esso Standard Refining Company and the two companies were merged to form Hindustan Petroleum Corporation Ltd.

The Fuel Refinery completed 20 years in July. Foreign exchange saved since 1954 has been more than Rs.175 crores.

1975: For the first time in India, in August lightering operations were commissioned to better utilise the 87,000 DWT tankers owned by the Shipping Corporation of India.

Started sale of Vijai De-lume scooters manufactured by Scooters India Ltd. through company-owned service stations at Bombay, Madras and New Delhi.

Axle oil handling facilities installed at Mahul Terminal began supplies of Axle oil medium and heavy to railways in bulk and 205 litre drums.

1976: On 1st October, Government of India acquired the balance 26% equity shares held by Esso and thus HPCL became a fully owned Government Company with effect from 1st October.

Marketing of turbine oil blends and rubber processing oil (heavy) commenced.

1977: Under the rural marketing programme, the total number of Multi-purpose distribution centres moved upto 89 and those of Farm Fuel Centres to 20.

1978: On 9th May, an order for amalgamating Caltex Oil Refining (India) Ltd. with Hindustan Petroleum Corporation Ltd. was issued by the Company Law Board.

1979: On 31st March, Cat Debottlenecking Project was completed.

On May 26, the Govt. of India acquired the undertaking of Kosangas Company. On the same day, the Government vested the right, title and interest and liabilities of the undertaking of Kosangas to HPCL. The Government also took-over the management of the Undertakings of the Parcel Investments and Trading Company Private Ltd., and the Domestic Gas Private Ltd. and appointed HPCL as 'Custodian' of these undertakings with the acquisition of these undertakings, HPCL assumed the direct responsibility of serving nearly eight lakh LPG consumers in the country.

1980: Retail outlets in rural areas were extensively utilised to promote National Family Welfare Programme.

1981: ATF pipeline between Bombay Fuel Refinery and Bombay Airport was commissioned.

1982: Work on Bombay-Pune Pipeline project was commissioned.

(iii) Caltex (India) Limited/Hindustan Petroleum Corporation Limited, Visakhapattanam.

1937: Caltex started its operations in India by taking over the business of Texas Company (India) Ltd.

1959: In October, Caltex chartered an Indian Flag tanker 'Desh Bandhu' for crude service. Desh Deep for offshore movement of its products.

1964: In April, Caltex chartered the Indian Flag tanker 'Desh Bandhu' for crude service.

1972: In response to a request from Government of India, 'Desh Bandhi' was initially surrendered by Caltex for a period of one year.

1973: The release of 'Desh Bandhu' was extended.

1974: The release of 'Desh Bandhu' was further extended to cover the balance period under charter to Caltex.

1976: On 22nd November, an agreement was signed between Govt. of India and the principals of Caltex for purchase of 100% shares of Caltex Oil Refining (India) Ltd. and acquisition of assets & liabilities of Caltex (India) Ltd. in relation to its undertakings in India. This was made effective by promulgamation of an Ordinance on 30th December transferring 100% shares of CORIL and assets and liabilities of Caltex (India) Ltd. to a new Government Company.

1977: Three multi-purpose distribution centres were commissioned during the year and marketing of 'Exide' batteries and 'Nutan Stove' (In Delhi Region only) was commenced through retail outlets.

1978: On 9th May, Caltex Oil Refining Company of India Ltd. was amalgamated with Hindustan Petroleum Corporation Limited.

(iv) Indian Oil Corporation Ltd. (Marketing Division)

1959: On the 30th June, the Indian Oil Company Ltd. was formed. Agreements were signed with Sojuenefteexport, the Soviet Oil Export Organisation for importing Keorsene and HSD.

1960: In July, first import tanker was received from USSR at Bombay installation.

1961: In October, first retail outlet at Cochin was commissioned.

1962: In February, first shipment of petroleum products to Bhutan was made.

In May, first inland installation at Siliguri to receive products directly from the Gauhati Refinery by product pipeline was commissioned.

1963: Indian Oil Blending Ltd., a joint venture of the erstwhile Indian Oil Company and Mobil Corpn.Inc. on 50:50 basis was registered on 22nd March to carry on the business of blending, manufacturing lubricating oils and greases.

In April, first shipment of petroleum products to Nepal was made.

1964: On 1st September, the Indian Oil Corporation Ltd. was formed with the merger of the Indian Refineries Ltd. and the Indian Oil Company.

In October, supplies to defence commenced.

Indian Oil Blending Ltd. became a wholly owned subsidary of Indian Oil Corporation Ltd., as a result of purchase of 50% shares of Mobil Corporation Ltd.

1965: During May, bunker fuel oil supplies to the Indian Navy started.

During November, supplies to first civil customer in field of civil aviation were made.

On 22nd October, introduced LPG from Barauni Refinery under the trade name of INDANE in Calcutta market.

1967: On 6th January, exported Motor Gasoline to Thailand.

During July, first INDANE distributorship was offered under rehabilitation programme for ex-servicemen.

1968: On 6th May, bitumen to Ceylon was exported for the first time.

In September, first LPG bottling plant at Shakurbasti was established.

During October, first tanker at the new port of Haldia was loaded.

1969: On 30th April, LPG was introduced in Assam.

On 25th August, LPG was introduced in Southern India.

LPG to an industrial consumer at Ernakulam was supplied.

In August, first LDO barrel outlet was commissioned at an interior location namely Mehmedabad, for ensuring adequate and timely supplies of fuel at controlled prices for diesel engines for agricultural operation. As at the end of 1971, IOC increased this facility to 280 barrel outlets and 2 pump outlets spread all over the country.

Two new products, viz. Benzene and Toluene were added to the marketing list of POL products of IOC.

On 24th October, a Subsidiary Company of IOC under the name of India Oil International Ltd. was incorporated at New Delhi which will be trading in Nepal also.

Handled more than 50% of the total petroleum trade of the country.

In July, marketing of products from Madras Refinery were commenced.

1970: On 12th January, majority interest in IBP was acquired by purchasing 60% equity.

On 4th April, Indian Oil's new blending plant at Madras was commissioned with all modern facilities to produce quality lubricants for the entire industry demand in the Southern Region. This is the largest plant in the country (140,000 tonnes/year capacity) and is entirely owned by IOC.

On 5th July, the first retail outlet was commissioned at Coimbatore under the scheme of employment to unemployed graduates.

1970: (Contd.) In October, first Indane dealership was offered at Chingelpet, Tamil Nadu under the scheme of offering employment to unemployed graduates.

1971: During April, a gaint 45 Kl. Avnrefueller, which was designed and developed by IOC and fabricated indigenously was commissioned.

Lube Oil imports on an industry basis were channelised exclusively through IOC.

In December, first export shipment of petroleum products to Bangla Desh was made.

1972: In January, scheme for the award of dealerships to rehabilitate-war affected defence personnel was introduced.

During March, supplies of crude oil to the Chittagong Refinery of Bangla Desh were arranged and offloading of the crude tanker in mid stream by lighters at Chittagong was done.

In April, drum plant at Madras started production of barrels for lubes and drums for bitumen.

In August, majority interest of IBP was sold to the President of India in accordance with the Presidential directive. As such, IBP ceased to be a subsidiary Company of IOC.

During September, premium grade lube with indigenous formulations under the brand name 'SERVO' were introduced.

1973: In July, marketing of LPG produced at Cochin Refinery commenced bulk bitumen sales from Madras Refineries were commenced by deliveries to Tamil Nadu Highways Department.

In August, Petroleum business of Indian Oil International was taken over by the Nepal Oil Corporation as per orders of the Government of India.

1974: In July, agreement with MOBIL in blending/marketing of premium lubricants of MOBIL brands terminated and was replaced by range of premium servo brands of lubricants.

During August, a liquidator of India Oil International Ltd. a wholly owned subsidiary was appointed and the Company is under shareholders voluntary liquidation.

A programme for educating the consumers towards improving fuel efficiency in their respective plant was launched. A group of IOC officers were trained in collaboration with the National Productivity Council and the Energy Conservation Division of DGTD.

During December, two new products were added in products range by marketing Jute Batching Oil and Rubber Extender Oil.

1975: In August, LPG Bottling Plant at Kanpur was commissioned.

In November, eighty retail outlets were developed as Multi-purpose distribution centres.

1975: (Contd.) Besides, petroleum products essential commodities for farmers are made available in these centres.

The entire requirements of Axle oils was met by indigenous production. Till 1974, this was being imported.

1976: Laid stress in fulfilling social objectives such as fuel conservation studies to save foreign exchange, developing multipurpose distribution centres in the rural areas. Concentrated in the development of customer services and exports. Exported bitumen to new markets such as Vietnam, Burma and Dubai.

Commissioned a retail outlet at Leh at an altitude of 125,000 feet, perhaps the highest located retail outlet in the world.

In February, IOC and Castrol, U.K. entered into a technical assistance and collaboration agreement.

Refuelling systems for Jumbo Jets in Calcutta commissioned.

During January-June, IOC introduced LPG in the States of Manipur, Tripura, Orissa, Mizoram and Nagaland.

In November, Indian Oil International was dissolved.

Launched a unique one month crash programme at Jamkhed, Ahmednagar district for the training of twenty Gram Savikas in First Aid Family Planning, Immunisation, Safe Drinking Water Projects, Village Health Centre, Cattle Breading Safety, precautions at homes (proper use of lanterns, stoves, deeyas) basic hygiene and sanitation, child care & nutrition & prohibition as a part of services to the rural population.

In December, pipe-line facilities at Goa Port commissioned.

1977: On 14th February, IOC's paid up capital was increased from Rs.71.18 crores to Rs.82.18 crores. Further, on 22nd February, the authorised capital of the company increased from Rs.85 crores to Rs.150 crores.

With the export of 16,000 MT of HVI base stock to Sri Lanka in May 1977 and 45 MT to Sharjah IOC successfully penetrated the international lube oil market which was the monopoly of major international oil companies.

Several new multi-purpose distribution centres were opened by IOC for the benefit of the rural sector. A rural market survey was also undertaken to identify and meet the needs of the farmers in rural areas.

LPG Bottling Plant at Kanpur was completed.

An improved kerosene wick stove 'Nutan' developed by Indian Oil's Research & Development Centre, was put out for sale.

1978: A lube godown, the first of its kind in the country, was opened at Pimpri to ensure easy availability of products to the growing number of industries in the industrial belt near Puno.

1978: (Contd.) In March, a new depot at Kapri near Nagpur was commissioned. Future growth of retail outlets companywise was also rationalised and the New Sales Plan came to be adopted.

In April, Centralised use of BPC's computer for processing of Industry's Consumption Zone studies was introduced.

In May, one more Divisional Office at Raipur was opened.

In September, Government's approval was received for Hydrant Refuelling system at the new international airport in Bombay and the work on the project was commenced.

Resitement of Bangalore depot was taken on hand, and construction of the new depot was nearing completion.

LSHS supply to Koradi power house near Nagpur was commenced.

For the first time, a study was undertaken on HSD consumption by the Railways and several conservation measures were suggested, which would result in a huge saving.

IOC signed an agreement with Chevoran International Oil Co., USA for reciprocal arrangements for the supply of Marine Lubricants meeting international specifications to Indian and foreign flag vessels at Indian and foreign ports.

Containerised service for major consumers was introduced to avoid pilferage and contamination of products.

1979: In February, feasibility report for marketing of LPG during 1978-79 to 1982-83 was approved by the Government. According to this proposal 17.54 lakh customers will be enrolled during the same period, and the sale of LPG is expected to increase from 201,000 M.T. to 462,000 M.T. Further, in order to ensure availability of Kerosene at fair price in remote and far flung hilly areas, IOC launched a scheme of opening Taluka Kerosene Depots. The first such depot was opened at Rishikesh in U.P. Marketing of products from Bongaigaon Refinery and Bitumen ex-Cochin Refinery (after a lapse of almost 4 years) was commenced during the month of February.

In March, the dealership policy was oriented to rehabilitate physically handicapped persons, by offering dealerships to such persons. The first retail outlet under this scheme was commissioned. Marketing of Bitumen, produced for the first time by Gujarat Refinery, was also commenced during the same month.

In November, as part of import substitution efforts, arrangements for manufacture of certain proprietory brands of greases for cement plants were made.

1980: In February, the project report for pipeline installations at Delhi, Ambala and Jullundur, a part of Mathura-Jullundur Pipeline Project, was approved by the Government.

A mini-bottling plant for LPG marketing was commissioned at Bangalore.

1981: Chartering of crude vessels was undertaken for lifting crude oil from Venezuela.

A bottling plant at Jullundur was commissioned to enable additional availability of cylinders planned by the Industry in the N.W.Area.

For the first time, FO/LSHS was supplied to Gujarat Narmada Valley Fertilizer Corporation Ltd. as feedstock/fuel.

1982: In January, IOC commenced export of Bombay High crude oil under the swap deal finalised with a foreign oil company.

(D) LUBE PLANTS

(i) Lube India Limited/Hindustan Petroleum Corporation Limited (Lube Refinery).

1965: On 15th September, lube refinery agreement was signed by the President of India and Esso Eastern Inc. on a 50:50 partnership for construction of a jointly owned lubricating base oil refinery at Bombay.

1966: On 4th April, the Company was incorporated.

1969: Refinery went on stream and the first shipment of lubricating oil base stocks was made on 31st December to Esso and Indian Oil Corporation Ltd.

1973: Company obtained an industrial licence for manufacture of carbon black feed-stock.

CBFS licence was enhanced to 110 thousand tonnes.

Company made experimental batches of 150 turbine oil base stock.

1974: Axle oil to substitute imports was manufactured for the first time.

In March, Govt. of India acquired 74% interest in this company.

On 15th July, the Company was merged to form Hindustan Petroleum Corporation Ltd.

1975: The Lube Refinery commenced commercial production of Rubber Process Oil.

Turbine oil base stocks (10,000 MT/p.a.) produced on a commercial scale.

1977: During October-November, crude pre-heat optmization project was completed during turn around. This project improved the crude pre-heat recovery, resulting in fuel saving.

Completed four years of safe operations without a lost time injury - a record in the history of lube refinery.

1979: Expansion project envisaging additional production of 74,000 M.T. of high viscosity index lube base stock was under way.

(ii) Lubrizol India Limited

1965: On 2nd December, the Formation Agreement was signed between the Govt. of India and the Lubrizol Corporation of U.S.A.

1966: On 20th July, Lubrizol India Ltd. was registered in the state of Maharashtra.

1967: In eary 1967 land was acquired and in the month of October construction work was started.

1968: On 20th November, the plant was mechanically commissioned and production was commenced.

1969: On 16th January, the plant was formally inaugurated.

1971: On 26th March, entire management including the Managing Director was Indianised.

1972: In February, the ground breaking for construction of the new plant (Phase II Stage I) was started.

1973: On 31st October, the plant (Stage I of Phase II) was commissioned.

1974: In December, work on execution of new plants (Stage II and III of Phase II) was started.

1976: In September, Industrial licence for increasing licenced capacity for Chemical Additives from 6000 tonnes to 10,000 tonnes per annum was granted by the Government.

1977: In March, Stage II of Phase II was commissioned.

In May, Stage III of Phase II was commissioned.

On 21st May, the plants were formally inaugurated.

1978: In March, industrial licences for enhancement of the licenced capacities for chemical additives from 10,000 tonnes to 15,000 tonnes and Engine Oil Dispersant Intermediate Components from 4000 tonnes to 6000 tonnes per annum were issued by the Government.

1979: On August 25, a new Technology Transfer Agreement and Trade Marks Agreement were signed between the Lubrizol Corporation, USA and Lubrizol India Limited, replacing the earlier Technical Service Agreement and Trade Marks Agreement which formed a part of the Formation Agreement of December 1965. Under the new Technology Transfer Agreement, which is for an initial term of 8 years, Lubrizol Corporation will provide formulation technology as also R&D assistance for the manufacture of Chemical Additives. As a consequence the Formation Agreement has also been suitably modified.

1980: On January 25, the foreign equity participation was brought down from 49 to 40% and Government of India's holding was raised from 51 to 60%.

On 16th May, bonus shares amounting to Rs.420/- lakhs were allotted to existing shareholders in the ratio of 7 equity of Rs.100/- each fully paid for every one equity share held by capitalisation of reserves, thus the paid-up capital of the company was raised to Rs.480/- lakhs.

1981: In July, an Industrial Licence for increasing the manufacturing capacity of Chemical Additives from 15000 M.T.P.A. to 20,000 M.T.P.A. was received. A letter of intent for manufacture of 6700 M.T.P.A. of Neutral/Over based Thio Phenate Intermediate Compound used for diesel engine oil formulation was also received during the month.

(iii) Indian Oil Blending Limited

1962: On 16th November, distributorship agreement was signed between Indian Oil Corporation Ltd., Bombay and Mobil Petroleum Co.Inc., New York, as a result of which Indian Oil Blending Ltd. was estabblished for manufacturing lubricating oils of Mobil and other Brands, with financial participation in the new company by Mobil Petroleum Co.Inc.

1963: On 25th March, Indian Oil Blending Ltd. was incorporated as a Public Limited Company under the Companies Act, 1956 at Bombay, with an authorised capital of Rs.20 lakhs, out of which 10 lakhs were contributed by Indian Oil Corporation Ltd. and Rs.10 lakhs by Mobil Petroleum Co.Inc. in USA dollars.

1964: In May, two plants at Bombay and Calcutta were commissioned and trial runs were started with the installed capacities of 64,000 KLS for Bombay and 32,000 KLS for Calcutta plants per annum of Lubricating oils.

1966: On 1st November, a supplementary agreement was signed between Indian Oil Corporation Ltd. and Mobil Petroleum Co.Inc. for the construction of Grease Manufacturing Plant attached to the lube plant at Bombay. The authorised capital was increased to Rs.40 lakhs from Rs.20 lakhs and the increase of Rs.20 lakhs was also contributed equally by Indian Oil Corporation Ltd. and Mobil Petroleum Co.Inc. the capital contributed by Mobil Petroleum Co.Inc. being in U.S.A dollars.

1967: On 7th May, the Grease Plant was commissioned with an installed capacity of 5 million Pounds per annum.

1968: On 19th July, a Supplemental and Amedatory Agreement was signed between Indian Oil Corporation Ltd. and Mobil Petroleum Co.Inc. for technical assistance by Indian Oil Blending Ltd. for operating a Lube Blending Plant at Madras to be set up by Indian Oil Corporation Ltd.

1971: During the year 1971-72, the Company imported and installed at Bombay Laboratory one 900 Model Perkin Elmer Gas Chromatograph and one 290-B, Atomic - Abrorption Spectrophotometer.

1972: The licenced capacities were enhanced to 150 thousand Kls. and 10 million pounds of grease for Bombay Plant and 100 thousand Kls. of lubes for Calcutta Plant.

1974: The collaboration agreements between Indian Oil Corporation Ltd. and Mobil Petroleum Co.Inc. of New York, were terminated with effect from 19.7.74 and the 50% of shareholdings of Mobil in Indian Oil Blending Limited, were taken over by Indian Oil Corporation Ltd., as a result of which, Indian Oil Blending Limited, became a wholly-owned subsidiary of Indian Oil Corporation Ltd.

1975: A Clay Treatment Plant was put on trial runs at Calcutta to process critical bearing lubricants with high demulsibility characteristics for steel mills.

1978: Facilities for manufacturing Hydraulic Brake Fluids at Bombay Plant were put up and a Diesel Generating Set was installed at Calcutta to overcome frequent power problems.

1982: Additional Small Can Filling Facilities with overhead tanks for gravity filling were installed at Calcutta Plant to increase capacity for small can filling.

III. GROWTH OF INDIAN PETROLEUM INDUSTRY

India's Petroleum Industry At-A-Glance (1970-71 - 1981-82)

Year	Crude oil balance recoverable reserves	Consumption (excl. RBF)	Crude oil production	Imports		Refinery throughput	Refinery production	Value of POL imports	India's total exports	% of POL imports to India's exports	CIF Unit values of crude imports	Central excise & customs Duties on POL
				Crude oil	POL							
		(M.M.T.)						(Rs. Crores)			(Rs/MT)	(Rs/crores)
1	2	3	4	5	6	7	8	9	10	11	12	13
1970-71	128	17.91	6.82	11.68	1.09	18.38	17.11	137	1535	8.9%	91	638
1971-72	114	20.07	7.30	12.95	2.15	20.04	18.64	194	1608	12.1%	114	772
1972-73	125	21.72	7.32	12.08	3.53	19.33	17.83	207	1971	10.5%	121	853
1973-74	127	22.35	7.19	13.87	3.55	20.96	19.50	541	2523	21.4%	300	970
1974-75	125	22.11	7.68	14.02	2.65	21.09	19.60	1112	3329	33.4%	654	1106
1975-76	144	22.45	8.45	13.62	2.22	22.28	20.83	1256	4043	31.1%	772	1155
1976-77	275	24.10	8.90	14.05	2.62	23.00	21.43	1424	5146	27.7%	837	1222
1977-78	303	25.54	10.76	14.51	2.88	24.90	23.22	1552	5404	28.7%	859	1279
1978-79	347	28.24	11.63	14.66	3.88	25.97	24.20	1681	5726	29.4%	854	1480
1979-80	354	29.88	11.77	16.12	4.72	27.47	25.79	3270	6459	50.7%	1357	1620
1980-81	366	30.89	10.51	16.25	7.29	25.84	24.12	5266	6710 (P)	78.5%	2061	1512
1981-82(P)	468	32.33	16.19	15.36	4.97	30.14	28.18	5185	7557	68.6%	2417	1614

(P) = Provisional.

IV Growth of Petroleum Industry in India

('000 Tonnes)

Year	Crude Oil		Petroleum Products	
	Production	Refineries Crude Charged	Production	Consumption*
1960	451	6091	5747	7964
1961	513	6440	6090	8570
1962	1078	7003	6584	9536
1963	1652	8183	7650	10387
1964	2212	8932	8428	11478
1965	3022	9754	9113	12356
1966	4647	12030	11283	12990
1967	5667	14430	13452	14133
1968	5853	16096	14923	15871
1969	6723	17495	16239	17371
1970	6809	18459	17172	18816
1971	7185	19588	18225	20706
1972	7373	19672	18198	22675
1973	7198	20518	19089	23726
1974	7490	20783	19241	23023
1975	8283	21835	20368	23541
1976	8659	22762	21188	24897
1977	10185	24430	22795	26570
1978	11271	25626	23877	28894
1979	12839	28153	26360	31306
1980	9398	25075	23597	31633
1981	14925	29528	27576	35930 (P)

Rs./Crores Contd....

Year	IMPORTS			EXPORTS
	Crude Oil	Products	Total	Re-Exports
1960	40.6	41.0	81.6	4.61
1961	39.3	47.6	86.9	3.76
1962	38.7	51.5	90.2	3.85
1963	41.8	54.8	96.6	5.50
1964	42.6	53.8	96.4	4.84
1965	40.4	44.7	85.1	3.92
1966	56.1	52.0	108.1	8.76
1967	79.6	39.0	118.6	14.23
1968	93.9	40.7	134.6	8.25
1969	94.0	38.2	132.2	10.77
1970	102.4	30.5	132.9	5.72
1971	139.9	43.5	183.4	2.55
1972	144.2	56.7	200.9	8.94
1973	244.6	88.0	332.6	5.77
1974	899.4	209.9	1109.3	19.37
1975	992.0	199.5	1191.5	13.83
1976	1145.6	219.7	1365.3	7.60
1977	1258.9	273.0	1531.9	6.50
1978	1243.9	414.1	1658.0	4.20
1979	1787.4	727.5	2514.9 (R)	14.94
1980	3038.7	1788.2	4826.9 (R)	17.98
1981 (P)	3759.4	1658.5	5417.9 (R)	15.13

* Including Refinery Fuel. (P) = Provisional.
(R) = Revised figures but still subject to firming up by the oil companies



INDIAN
PETROLEUM & PETRO-CHEMICALS
STATISTICS

1981-82

ECONOMICS & STATISTICS DIVISION
DEPARTMENT OF PETROLEUM
MINISTRY OF PETROLEUM, CHEMICALS & FERTILISERS
GOVERNMENT OF INDIA
NEW DELHI

PETROLEUM ENERGY IN INDIA - 1976 - 1981
(Calendar Years)

PRODUCTS	1976	1977	1978	1979	1980	1981(P)
AVAILABILITY						
IN ORIGINAL UNITS (MILLION TONNES)						
Kerosene	3.26	3.50	4.03	4.04	4.28	4.86
ATF	0.97	1.02	1.17	1.19	1.07	1.06
HSD	6.87	7.61	8.36	9.72	10.15	11.18
LDO	1.09	1.19	1.24	1.28	1.24	1.07
Fuel Oils	5.55	5.99	6.31	7.19	7.19	7.47
Others*	2.99	3.17	3.44	3.49	3.23	3.69
Total	20.73	22.48	24.55	26.91	27.16	29.33
IN MILLION TONNES OF COAL EQUIVALENT UNITS						
Kerosene	6.52	7.00	8.06	8.08	8.56	9.72
ATF	1.94	2.04	2.34	2.38	2.14	2.12
HSD	13.74	15.22	16.72	19.44	20.30	22.36
LDO	2.18	2.38	2.48	2.56	2.48	2.14
Fuel Oils	11.10	11.98	12.62	14.38	14.38	14.94
Others*	5.98	6.34	6.88	6.98	6.46	7.38
Total	41.46	44.96	49.10	53.82	54.32	58.66
IN MILLION TONNES OF COAL REPLACEMENT UNITS						
Kerosene	26.08	28.00	32.24	32.32	34.24	38.88
ATF	7.29	7.65	8.74	8.93	8.03	7.95
HSD	61.79	68.52	75.23	87.48	91.35	100.62
LDO	9.81	10.69	11.18	11.52	11.16	9.63
Fuel Oils	11.10	11.97	12.62	14.38	14.38	14.94
Others*	15.46	16.26	17.85	18.18	17.18	19.35
Total	131.53	143.09	157.86	172.81	176.34	191.37

PRODUCTS	1976	1977	1978	1979	1980	1981(P)
CONSUMPTION						
IN ORIGINAL UNITS (MILLION TONNES)						
Kerosene	3.28	3.52	3.92	3.88	4.09	4.57
ATF	0.94	1.02	1.13	1.15	1.14	1.11
HSD	6.96	7.58	8.32	9.61	10.16	10.70
LDO	1.03	1.15	1.22	1.27	1.19	1.02
Fuel Oils	5.66	5.84	6.37	7.08	7.35	7.40
Others*	3.00	3.19	3.39	3.42	3.28	3.61
Total	20.87	22.30	24.35	26.41	27.21	28.41
IN MILLION TONNES OF COAL EQUIVALENT UNITS						
Kerosene	6.56	7.04	7.84	7.76	8.18	9.14
ATF	1.88	2.04	2.26	2.30	2.28	2.22
HSD	13.92	15.16	16.64	19.22	20.32	21.40
LDO	2.06	2.30	2.44	2.54	2.38	2.04
Fuel Oils	11.32	11.68	12.74	14.16	14.70	14.80
Others*	6.00	6.38	6.78	6.84	6.56	7.22
Total	41.74	44.60	48.70	52.82	54.18	56.82
IN MILLION TONNES OF COAL REPLACEMENT UNITS						
Kerosene	26.24	28.16	31.36	31.04	32.72	36.56
ATF	7.05	7.65	8.48	8.62	8.55	8.33
HSD	62.64	68.22	74.88	86.49	91.44	96.30
LDO	9.27	10.35	10.98	11.43	10.71	9.18
Fuel Oils	11.32	11.68	12.74	14.16	14.70	14.80
Others*	15.52	16.36	17.45	17.72	17.44	18.81
Total	132.04	142.42	155.89	169.46	175.56	183.98

(P) = Provisional. * Includes LPG, Gasolines, Refinery Gas and Refinery Fuel
@ Based on conversion factors adopted by FPC, 1974.

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V. EXPLORATION AND PRODUCTION

Reservers of Crude Oil and Natural Gas in India*

Crude Oil - Million Tonnes

Natural Gas - Million Cubic Metres

Year.	ON - SHORE								OFF-SHORE		GRAND TOTAL	
	Gujarat		Assam		Rajasthan		Total		Bombay-High			
	Crude Oil.	Natural Gas	Crude Oil	Natural Gas.	Crude Oil.	Natural Gas.	Crude Oil.	Natural Gas.	Crude Oil.	Natural Gas.	Crude Oil .	Natural Gas.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12	13.
1966	62.73	23.09	90.27	40.05	-	-	153.00	63.15	-	-	153.00	63.15
1967	65.88	24.65	88.96	42.60	-	-	154.84	67.25	-	-	154.84	67.25
1968	64.92	21.80	76.08	41.54	-	-	141.00	63.34	-	-	141.00	63.34
1969	59.80	22.90	72.51	42.70	-	-	132.31	65.60	-	-	132.31	65.60
1970	56.38	19.66	71.46	42.82	-	-	127.84	62.48	-	-	127.84	62.48
1971	51.08	18.84	62.70	43.45	-	-	113.78	62.29	-	-	113.78	62.29
1972	52.28	16.88	72.90	45.25	-	0.38	125.18	62.51	-	-	125.18	62.51
1973	49.45	16.35	77.87	49.71	-	0.38	127.32	66.44	-	-	127.32	66.44
1974	48.45	16.18	76.05	51.30	-	0.38	124.50	67.86	-	-	124.50	67.86
1975	45.72	15.72	84.41	65.24	-	0.43	130.13	81.39	13.77	6.28	143.90	87.67
1976	45.79	16.41	81.99	61.41	-	0.44	127.78	78.26	147.68	106.62	275.46	184.88
1977	45.62	16.20	82.28	63.75	-	0.44	127.90	80.39	175.28	148.08	303.18	228.47
1978	47.49	15.66	78.50	63.62	-	0.43	125.99	79.71	221.04	186.15	347.03	265.86
1979	45.34	15.80	82.81	63.65	-	0.43	128.15	79.58	226.29	264.64	354.44	344.22
1980	52.73	16.39	82.65	64.09	-	0.47	135.38	80.95	230.95	270.96	366.33	351.91
1981	51.48	15.99	88.36	64.02	-	0.43	140.16@	81.57@@	328.29	329.04	468.45	410.61

*-Proved and Indicated balance recoverable reserves. @-Includes 0.32 MMT of crude oil reserves in Nagaland.

@@-Includes 1.13 Billion Cubic Metres reserves of Natural Gas in Tripura & Nagaland.

Note:-For AOC and OIL the figures relate to Ist January of each year but in the case of ONGC the data pertains to Ist. October upto the year 1973 and there after to Ist January of each year.

NUMBER OF DEEP DRILLING RIGS IN THE COUNTRY

(Numbers)

Year	ONGC		OIL	AOC	TOTAL
	Onshore	Offshore			
1960-61	10	-	4	-	14
1961-62	23	-	4	-	27
1962-63	31	-	4	-	35
1963-64	43	-	4	-	47
1964-65	43	-	4	-	47
1965-66	46	-	4	-	50
1966-67	50	-	4	-	54
1967-68	50	-	4	-	54
1968-69	50	-	4	1	55
1969-70	50	-	4	1	55
1970-71	55	-	4	1	60
1971-72	55	-	4	-	59
1972-73	55	-	4	-	59
1973-74	55	1	4	-	60
1974-75	55	1	4	-	60
1975-76	56	3	3	-	62
1976-77	59	5	4	-	68
1977-78	65	3	4	-	72
1978-79	65	4	4	-	73
1979-80	69	5	4	-	78
1980-81	74	7	4	-	85
1981-82	77	7	5	-	89

NUMBER OF WELLS AND METREAGE DRILLED BY ONGC AND OIL FROM 1970-71 TO 1981-82

Year	ONGC				OIL @		TOTAL	
	ONSHORE		OFFSHORE		Wells (Nos)	Metres drilled ('000)	Wells (Nos.)	Metres drilled ('000)
	Wells (Nos)	Metres drilled ('000)	Wells (Nos)	Metres drilled ('000)				
1	2	3	4	5	6	7	8	9
1970-71	89	168	-	4	14	48	103	217
1971-72	61	131	1	-	12	46	74	177
1972-73	61	115	-	-	13	41	74	156
1973-74	64	140	1	4	12	43	77	187
1974-75	96	191	3	4	10	31	109	226
1975-76	106	229	15	28	13	36	134	293
1976-77	100	206	24	59	8	32	132	297
1977-78	87	175	35	67	19	73	141	315
1978-79	67	159	16	43	17	62	100	264
1979-80	69	138	28	59	15	48	112	245
1980-81	72	134	33	78	14*	39*	119	251
1981-82	98	211	46	111	19	64	163	386

* Includes 2 wells/6000 metreage drilled by OIL in offshore areas.

@ Excluding wells/metreage drilled by erstwhile AOC.

STATUS OF WELLS (AS ON 1ST APRIL OF EACH YEAR)

(Numbers)

Company/ Year	OIL	GAS	DRY	UNDER TEST	INJE-CTION	OTHERS	TOTAL
1	2	3	4	5	6	7	8
A. Assam Oil Company							
1970	380	19	-	-	10	588	997
1971	377	7	-	-	8	606	998
1972	381	7	-	-	4	609	1001
1973	367	7	-	-	5	622	1001
1974	370	7	-	-	5	619	1001
1975	377	7	-	-	5	612	1001
1976	380	6	-	-	5	610	1001
1977	404	8	-	-	6	583	1001
1978	415	10	-	-	6	570	1001
1979	416	10	-	-	6	569	1001
1980	417	10	-	-	6	568	1001
1981	418	9	-	-	6	568	1001
1982	418	9	-	-	6	568	1001
B. Oil India Ltd.							
1970	216	12	29	24	7	-	288
1971	229	14	29	21	9	-	302
1972	233	15	31	22	13	-	314
1973	239	17	32	24	15	-	327
1974	247	18	33	23	18	-	339
1975	250	18	34	27	20	-	349
1976	251	20	34	32	25	-	362
1977	250	21	36	37	26	-	370
1978	264	21	37	40	27	-	389
1979	266	23	39	47	31	-	406
1980	273	26	40	48	34	-	421
1981	283	27	42	48	35	-	435
1982	291	34	42	20	37	30	454
C. Oil & Natural Gas Commission							
1970	442	63	191	76	20	-	792
1971	488	63	225	84	22	-	882
1972	516	72	255	83	22	-	948
1973	528	74	275	104	28	-	1009
1974	555	78	298	115	28	-	1074
1975	605	79	320	141	28	-	1173
1976	695	85	334	152	29	-	1295
1977	763	91	378	158	29	-	1419
1978	844	101	422	140	29	-	1536
1979	886	111	461	135	30	-	1623
1980	951	123	487	125	32	-	1718
1981	1008	133	508	137	38	-	1824
1982	1116	140	530	139	41	-	1966
TOTAL (A+B+C)							
1970	1033	94	220	100	37	588	2077
1971	1094	84	254	105	39	606	2182
1972	1130	94	286	105	39	609	2263
1973	1134	98	307	128	48	622	2337
1974	1172	103	331	138	51	619	2414
1975	1282	104	354	168	53	612	2523
1976	1326	111	368	184	59	610	2658
1977	1417	120	414	195	61	583	2790
1978	1523	132	459	180	62	570	2926
1979	1568	144	500	182	67	569	3030
1980	1641	159	527	173	72	568	3140
1981	1709	169	550	185	79	568	3260
1982	1825	183	572	159	84	598	3421

State-wise achievement of Geological field parties since inception upto March, 1982 (Provisional)

STATE	Geological Surveys: Detailed (Sq. Kms.)	Semi-detailed (Sq. Kms.)	Traversing (Line Kms.)	Reconnaissance mapping (Sq.Km)	Special studies (Sq.Km)	Geo-Neotechtonic Survey (Sq.Km)	Reconnatory traversing (Line Kms.)
1.	2.	3.	4.	5.	6.	7.	8.
Andhra Pradesh (including Tamil Nadu & Kerala)	3879	+10750GCH 20089 (CH=13300)	1193	26904	-	396035	3300
Andaman & Nicobar.	608	3066	619	2281	-	-	-
Assam(including Tripura, Mizoram Arunachal Pradesh & Meghalaya)	8032	21862 640	9303	4657			650
Gujarat(including Kutch/Maharashtra & Madhya Pradesh	8258	41955	2952	13048	2926	-	-
Bihar	-	1259	93	-	-	-	-
Himachal Pradesh	-	1320+ RM 200	-	-	-	-	-
Jammu & Kashmir	1764	8687 +CH 372	1837	6548	70	-	-
Orissa	-	-	-	-	-	-	-
Punjab(including H.P.)	9710	9239	4863	4568	1489	-	382
Uttar Pradesh	4658	10738	2089	1213	4170	-	-
West Bengal	912	4302	477	2397	-	5400	-
Rajasthan	3584	25110	1734	17890	-	-	-
Nepal	194	8446	1087	-	-	-	-
Pondicherry	-	-	-	-	-	-	-
Nagaland	25	345	706	-	-	-	167
Bhutan		1821	95	290	-	-	-
TOTAL ONGC	41624	158239 +CH= 13672 RM= 200 CW= 640 GCH= 10750	27048	79796	8655	401435	4499

Abbreviations: CW= compilation work, RM = Road Mapping
CH= checking GCH= Ground checking.

Shallow Drilling: 41 party years of shallow drilling have been deployed, Since inception to March,82. These parties drilled 45885 metres. with 239 wells completion.

In case of Oil India Ltd., No geological surveys were

State-wise achievement of geophysical field parties since inception upto March,1982

(Provisional)

State	Departmental		Contract
	Reflection and refraction (conventional & CDP)	surveys	Line Kms.
	Line Kms.	SLK	
1.	2.	3.	4.
A. ON LAND			
1. Andhra Pradesh	7015	2522	
2. Assam(including Tripura,Mizoram Arunachal Pradesh & Meghalaya)	14585 (982.26)	999	(2708)
3. Gujarat	43197	4612	
4. Bihar	2431	342	
5. Himahcla Pradesh	755		
6. Jammu & Kashmir	1937		
7. Tamil Nadu	9695	1175	39(199)
8. Orissa	1631		
9. Punjab & Himachal Pradesh	4725		
10. Uttar Pradesh	12190	422	
11. West Bengal	14407	2554	
12 Rajasthan	3442	308	2106
TOTAL ON LAND :	116011 (982.26)	12934	2145 (2907)
B. OFF SHORE	93591		82632
Orissa(BEP)			(3178)
GRAND TOTAL (A+B)	209602 (982.26)	12934	84777 (6085)

SLK = Standard Line Kms.
Figures in parenthesis relates to OIL.

State-wise achievement of drilling since inception upto March,1982

STATE	Drilling (000 Metres) Departmental Wells	Departmental Metreage	Contract Wells	Contract Metreage
A. ON LAND				
1. Andhra Pradesh (including Kerala)	1	12	-	-
2. Assam, Andaman& Nicobar (including Tripura, Mizoram, Andhra Pradesh, Meghalaya, West Bengal and Nagaland	393 (452 + 4P)	1324 (1488)		
3. Gujarat(including Kutch, Maharashtra and Madhya Pradesh	1318	2188	-	-
4. Bihar	1	3	1	5
5. Himachal Pradesh (including Punjab)	8	23	2	10
6. Tamil Nadu & Pondicherry	18	41	-	-
7. Jammu & Kashmir	3	7	-	-
8. Orissa	-	-	-	-
9. Uttar Pradesh	3	9	1	5
10. Rajasthan	10	13	6	11
B. OFFSHORE				
1. Bombay High	103	211	-	-
2. Aliabat West	1	1.5	-	-
C. OTHERS				
Off the Coromandal Coast, Gulf of Cambay, Kutch Off/ Strait, Arabian sea, Mouth of ganges and Mahanadi Gulf of Mannar/Off the Kerala Coast/Bay of Bengal Godavari/Andaman Offshore	97	243	(2)	(6.4)
GRAND TOTAL(A+B+C)	1956 + (452 + 4 P)	4075 * (1488)	10 + * (2)	31 (6.4)

Figures in perenthesis relates to OIL.

COMPAY WISE PRODUCTION OF CRUDE OIL IN INDIA
(CALENDAR YEARS)

('000'Tonnes)

YEAR	ON - SHORE				OFFSHORE	Grand	Cumulative
	AOC	OIL	ONGC	TOTAL	ONGC	Total	Production.
1.	2.	3.	4.	5.	6.	7.	8.
Upto 1947	5826	--	--	5826	--	5826	5826
1948	255	--	--	255	--	255	6081
1949	258	--	--	258	--	258	6339
1950	259	--	--	259	--	259	6598
1951	269	--	--	269	--	269	6867
1952	263	--	--	263	--	263	7130
1953	269	3	--	272	--	272	7402
1954	278	30	--	308	--	308	7710
1955	272	75	--	347	--	347	8057
1956	307	89	--	396	--	396	8453
1957	277	163	--	440	--	440	8893
1958	214	226	--	440	--	440	9333
1959	202	248	--	450	--	450	9783
1960	179	272	--	451	--	451	10234
1961	184	319	10	513	--	513	10747
1962	188	556	334	1078	--	1078	11825
1963	184	805	663	1652	--	1652	13477
1964	170	1274	768	2212	--	2212	15689
1965	158	1742	1122	3022	--	3022	18711
1966	149	2143	2355	4647	--	4647	23358
1967	134	2752	2781	5667	--	5667	29025
1968	117	2771	2965	5853	--	5853	34878
1969	112	3074	3537	6723	--	6723	41601
1970	107	3070	3632	6809	--	6809	48410
1971	98	3146	3941	7185	--	7185	55595
1972	93	3183	4097	7373	--	7373	62968
1973	84	3102	4012	7198	--	7198	70166
1974	72	3080	4338	7490	--	7490	77656
1975	68	3087	5128	8283	--	8283	85939
1976	63	3092	5276	8431	228	8659	94598
1977	58	3120	5569	8747	1338	10185	104783
1978	55	2697	5551	8303	2968	11271	116054
1979	47	2848	5537	8432	4407	12839	128893
1980	41	796	4033	4870	4529	9399	138292
1981 (e)	33	2803	5083	1949	7006	14925	153217

(e) = After take-over of AOC by Govt. in Oct.1981, its production wing was merged with OIL. So the production figures shown under AOC are upto 14th Oct.'81, thereafter the same have been merged with OIL.

COMPANYWISE PRODUCTION OF CRUDE OIL IN INDIA

(FINANCIAL YEARS)

('000 Tonnes)

Year	Onshore				Offshore	Grand Total	Cumulative production since inception
	AOC	OIL	ONGC	Total	ONGC		
1	2	3	4	5	6	7	8
1965-66	151	1895	1427	3473	-	3473	19915
1966-67	148	2217	2538	4903	-	4903	24818
1967-68	128	2836	2821	5785	-	5785	30603
1968-69	117	2848	3084	6059	-	6059	36662
1969-70	112	3079	3627	6819	-	6819	43481
1970-71	104	3084	3634	6822	-	6822	50303
1971-72	97	3159	4003	7299	-	7299	57602
1972-73	90	3131	4100	7321	-	7321	64923
1973-74	82	3079	4028	7189	-	7189	72112
1974-75	71	3079	4534	7684	-	7684	79796
1975-76	66	3103	5279	8448	-	8448	88244
1976-77	62	3085	5345	8492	406	8898	97142
1977-78	57	3113	5519	8689	2074	10763	107905
1978-79	53	2671	5599	8323	3310	11633	119538
1979-80	40	2215	5089	7344	4422	11766	131304
1980-81	48	1243	4231	5522	4985	10507	141811
1981-82(P)	23(e)	2995(e)	5201	8219	7975	16194	158005

(P) = Provisional.

(e) After take-over of AOC by Govt. in Oct. 1981, its production wing was merged with OIL. So the production figures shown under AOC are upto 14th Oct. '81 thereafter the same have been merged with OIL.

STATEWISE PRODUCTION OF CRUDE OIL IN INDIA

('000' Tonnes)

YEAR	ON SHORE				Off-Shore	GRAND TOTAL
	Arunachal Pradesh	Assam	Gujarat	Total		
1.	2.	3.	4.	5.	6.	7.
			CALENDAR YEARS			
1960	-	451	-	451	-	451
1965	-	2900	1122	3022	-	3022
1970	-	3359	3450	6809	-	6809
1971	-	3542	3643	7185	-	7185
1972	-	3653	3720	7373	-	7373
1973	-	3594	3604	7198	-	7198
1974	-	3735	3755	7490	-	7490
1975	-	4189	4094	8283	-	8283
1976	-	4267	4164	8431	228	8659
1977	-	4510	4237	8747	1438	10185
1978	-	4076	4227	8303	2968	11271
1979	-	4563	3869	8432	4407	12839
1980	2	1056	3812	4870	4529	9399
1981	2	4373	3544	7919	7006	14925
			FINANCIAL YEARS			
1960-61	-	448	-	448	-	448
1965-66	-	2046	1427	3473	-	3473
1970-71	-	3367	3455	6822	-	6822
1971-72	-	3630	3669	7299	-	7299
1972-73	-	3609	3712	7321	-	7321
1973-74	-	3589	3600	7189	-	7189
1974-75	-	3814	3870	7684	-	7684
1975-76	-	4300	4148	8448	-	8448
1976-77	-	4305	4187	8492	406	8898
1977-78	-	4534	4155	8689	2074	10763
1978-79	-	4005	4230	8323	3310	11633
1979-80	-	3578	3766	7344	4422	11766
1980-81	2	1712	3808	5522	4985	10507
1981-82	2	4795	3422	8219	7975	16194

STATE-WISE GROSS PRODUCTION OF NATURAL GAS IN INDIA

(Million Cubic Metres)

YEAR	ON SHORE			OFF SHORE	GRAND TOTAL
	Assam	Gujarat	Total		
1.	2.	3.	4.	5.	6.
		CALENDAR YEARS			
1970	966	458	1424	-	1424
1971	993	516	1509	-	1509
1972	1031	533	1564	-	1564
1973	1155	519	1674	-	1674
1974	1328	590	1918	-	1918
1975	1550	760	2310	-	2310
1976	1595	815	2410	28	2438
1977	1677	888	2565	161	2726
1978	1527	903	2430	340	2770
1979	1709	843	2552	532	3084
1980	621	868	1489	588	2077
1981	1605	761	2366	1120	3486
		FINANCIAL YEARS			
1970-71	980	465	1445	-	1445
1971-72	1012	523	1535	-	1535
1972-73	1034	531	1565	-	1565
1973-74	1195	518	1713	-	1713
1974-75	1388	653	2041	-	2041
1975-76	1595	773	2368	-	2368
1976-77	1558	822	2380	48	2428
1977-78	1717	893	2610	229	2839
1978-79	1518	908	2425	386	2811
1979-80	1385	840	2225	542	2767
1980-81	843	842	1685	673	2358
1981-82(P)	1744	764	2508	1345	3853

(P) = Provisional.

STATE-WISE UTILISATION OF NATURAL GAS IN INDIA

(Million Cubic Metres)

Year	Assam			Gujarat			Total Onshore	OFFSHORE			GRAND TOTAL
	AGC	Others	Total	UPH/ JPM/ DPH	GSFC + BI etc.	Total		TEC	RCFC	Total	
1	2	3	4	5	6	7	8	9	10	11	12
CALENDAR YEARS											
1970	157	204	361	142	174	316	677	-	-	-	677
1971	171	214	385	181	198	379	764	-	-	-	764
1972	189	307	496	214	216	430	926	-	-	-	926
1973	199	316	515	188	209	397	912	-	-	-	912
1974	221	311	532	198	273	471	1003	-	-	-	1003
1975	254	357	611	202	430	632	1243	-	-	-	1243
1976	444	392	836	171	496	667	1503	-	-	-	1503
1977	470	423	893	188	540	728	1621	-	-	-	1621
1978	493	385	878	180	540	720	1598	109	14	123	1721
1979	510	423	933	166	479	645	1578	197	140	337	1915
1980	202	253	455	153	542	695	1150	171	141	312	1462
1981	482	419	901	137	511	648	1549	182	266	448	1997
FINANCIAL YEARS											
1970-71	163	212	375	147	184	331	706	-	-	-	706
1971-72	176	223	399	192	203	395	794	-	-	-	794
1972-73	189	325	514	210	220	430	944	-	-	-	944
1973-74	199	303	502	184	199	383	855	-	-	-	855
1974-75	227	328	555	203	335	538	1093	-	-	-	1093
1975-76	290	361	651	217	418	635	1286	-	-	-	1286
1976-77	466	399	865	173	506	679	1544	-	-	-	1544
1977-78	467	413	880	186	537	723	1603	-	-	-	1603
1978-79	508	392	900	177	548	725	1625	168	28	196	1821
1979-80	407	352	759	163	480	643	1402	190	173	363	1765
1980-81	275	306	581	148	529	677	1258	147	146	293	1551
1981-82(P)	525	444	969	133	530	663	1632	198	317	515	2147

(P) = Provisional. Figures rounded off to nearest million cubic metres.

@ = Excluding the quantity of natural gas used by ONGC for field oporations and othor internal purposos, including production of LPG.

(1) = AGC - Assam Gas Company. (2) = UPH - Uttaran Powor Houso. (3) = JPM - Jayant Papor Mills.
(4) = DPH - Dhuwaran Powor Houso. (5) GSFC - Gujarat Stato Forts.Company. (6) = BI - Baroda Industrios.
(7) = TEC - Tata Electric Company. (8) = RCFL - Rasthriya Chomicals & Fortilizors Ltd.

VI. R E F I N I N G

PETROLEUM REFINING CAPACITY IN INDIA

(Million Tonnes Per Annum)

Refinery	Year of commissioning	Capacity as on 1.4.1982	Capacity after expansion under implementation	Likely date of completion
A. Refineries in Operation				
i) Public Sector				
1. AOD, Digboi	1901	0.50	-	
2. BPCL, Bombay	1955	5.25	-	
3. HPCL, Bombay	1954	3.50	-	
4. HPCL, Vizag.	1957	1.50	-	
5. IOC, Gauhati	1962	0.85	-	
6. IOC, Barauni	1964	3.30	-	
7. IOC, Koyali	1965	7.30	-	
8. IOC, Haldia	1974	2.50	-	
9. IOC, Mathura	1982	4.86 @	-	
10. CRL, Cochin	1966	3.30	-	
11. MRL, Madras	1969	2.80	-	
12. BRPL, Assam	1979	1.00	-	
Total :		36.66		
B. Refineries under expansion				
1. BPCL, Bombay		5.25	6.00	Oct. 1984
2. HPCL, Vizag.		1.50	4.50	Oct. 1984
3. MRL, Madras		2.80	5.60	July 1984
4. CRL, Cochin		3.30	4.50	June 1984

@ Capacity would increase to 6.00 million tonnes when fully commissioned in Oct./Nov. 1982.

REFINERY CRUDE THROUGH-PUT AND PRODUCTION OF PETROLEUM PRODUCTS

('000' Tonnes)

YEAR	CRUDE THROUGHPUT			PRODUCTION		
	Public Sector	Private Sector	Total (2+3)	Public Sector	Private Sector	TOTAL (5+6)
1.	2.	3.	4.	5.	6.	7.
			C A L E N D A R Y E A R S			
1960	-	6091	6091	-	5747	5747
1961	-	6440	6440	-	6090	6090
1962	241	6762	7003	193	6391	6584
1963	470	7668	8138	407	7243	7650
1964	911	8021	8932	778	7650	8428
1965	1549	8205	9754	1328	7785	9113
1966	3476	8554	12030	3186	8097	11283
1967	6359	8071	14430	5814	7638	13452
1968	7707	8389	16096	7085	7818	14903
1969	9514	7981	17495	8736	7503	16239
1970	10994	7469	18459	10132	7040	17172
1971	11198	8390	19588	10293	7932	18225
1972	11838	7834	19672	10835	8567	19089
1973	11484	9034	20518	10522	5306	19241
1974	15107	5676	20783	13955	4766	20368
1975	16723	5112	21835	15602	1519	21188
1976	21163	1599	22762	19669	498	22795
1977	23903	527	24430	22297	505	23877
1978	25096	530	25626	23372	486	26360
1979	27649	504	28153	25874	384	23597
1980	24668	407	25075	23213	382	27575
1981	29128	406	29528	27193		
			F I N A N C I A L Y E A R S			
1960-61	-	6130	6130	-	5777	5777
1961-62	60	6524	6584	11	6184	6195
1962-63	300	6964	7264	274	6627	6901
1963-64	554	7920	8474	493	7492	7985
1964-65	1005	8005	9010	842	7636	8478
1965-66	1966	8267	10233	1733	7828	9561
1966-67	4166	8547	12713	3741	8141	11882
1967-68	6783	8022	14805	6257	7512	13769
1968-69	8088	8459	16547	7457	7932	15389
1969-70	10087	7825	17912	9250	7342	16592
1970-71	10820	7559	18379	9965	7145	17110
1971-72	11575	8467	20042	10623	8016	18639
1972-73	11565	7763	19328	10575	7255	17830
1973-74	11616	9342	20958	10647	8848	19495
1974-75	15572	5522	21094	11572	8031	19603
1975-76	17045	5238	22283	15895	4934	20829
1976-77	21694	1301	22995	20203	1229	21432
1977-78	24364	534	24898	22712	507	23219
1978-79	25450	524	25974	23692	501	24193
1979-80	27066	408	27474	25403	391	25794
1980-81	25333	503	25836	23646	477	24123
1981-82	29909	234	30143	27948	251	28199

Refinery-wise Crude Run And Total Production(NET)
Of Pol Products

('000' Tonnes)

YEAR	AOC/AOD	BSR/ BPCL	ESSO/ HPCL	CORIL/ HPC(VMU)	GAUHATI	BARAUNI
	1.	2.	3.	4.	5.	6.
1960-61						
Total Production	416	2731	1772	858	-	-
Crude Run	446	2879	1904	901	-	-
1965-66						
Total Production	479	3743	2552	1053	721	613
Crude Run	488	3989	2672	1118	804	753
1970-71						
Total Production	452	3333	2275	1085	631	1996
Crude Run	476	3541	2367	1175	686	2191
1975-76						
Total Production	489	3438	2635	1007	762	2722
Crude Run	527	3630	2830	1081	827	2949
1977-78						
Total Production	507	4285	2702	1208	748	2857
Crude Run	534	4512	2897	1304	817	3060
1978-79						
Total Production	501	4472	2624	1221	745	2474
Crude Run	524	4693	2800	1329	825	2661
1979-80						
Total Production	391	4615	2926	1000	606	2144
Crude Run	408	4821	3130	1100	646	2285
1980-81						
Total Production	477	4629	2907	1208	577	432
Crude Run	503	4901	3113	1319	639	504
1981-82						
Total Production	474	4765	3253	1067	666	2776
Crude Run	496	4995	3483	1178	746	3030

Refinery-wise Crude Run And Total Production(NET) Of Pol Products

('000'Tonnes)

YEAR	GUJARAT	HALDIA	MATHURA	CRL	MRL	BRPL	TOTAL
1960-61							
Total Production	-	-	-	-	-	-	3777
Crude Run	-	-	-	-	-	-	6130
1965-66							
Total Production	400	-	-	-	-	-	9561
Crude Run	409	-	-	-	-	-	10233
1970-71							
Total Production	3208	-	-	2346	1784	-	17110
Crude Run	3463	-	-	2398	1982	-	18379
1975-76							
Total Production	3859	1295	-	2187	2435	-	20829
Crude Run	4145	1348	-	2294	2690	-	22283
1977-78							
Total Production	3896	1853	-	2894	2359	-	23219
Crude Run	4129	2096	-	2933	2616	-	24898
1978-79							
Total Production	4937	1967	-	2719	2496	37	24193
Crude Run	5251	2213	-	2882	2759	57	25974
1979-80							
Total Production	6350	2313	-	2731	2564	154	25794
Crude Run	6714	2492	-	2866	2822	190	27474
1980-81							
Total Production	6629	2056	-	2795	2376	37	24123
Crude Run	6974	2308	-	2912	2611	52	25836
1981-82							
Total Production	6709	2067	475	2998	2570	381	28199
Crude Run	7043	2277	520	3120	2801	454	30143

Refinery [illegible]

('000' Tonnes)

Product	PRODUCTION 1978	1979	1980	1981	% Variation 1980/1979	1981/1980
1.	2.	3.	4.	5.	6.	7.
1-Light Distillates	4210	4645	3953	5008	-14.9	+26.7
of which						
L.P. Gas	401	416	367	411@	-11.8	+12.0
Naphtha	2162	2533	2037	2865	-20.4	+42.0
Mogas	1526	1569	1459	1629	- 7.0	+11.7
SBPS/Hexane	47	55	46	47	-16.4	+2.2
2.Middle Distillates	12316	13564	11722	13933	-13.6	+18.9
of which						
ATF/Jet A-1	1166	1176	1010	981	-14.1	-2. 9
Kerosene	2414	2651	2343	2844	-11.6	+21.4
M.T.O.	99	101	109	98	+7.9	-10.1
H.S.D.	7283	8261	6991	8904	-15.4	+27.4
L.D.O.	1242	1258	1141	961	-9.3	-15.8
J.B.O.	77	75	92	90	+22.7	-2.2
3. Heavy Ends	7351	8151	7922	8634	-2.8	+ 9.0
of which						
F.O.	3359	3922	4184	3825	+6.7	- 8.6
LSHS/HHS	2137	2364	1929	2818	-18.4	+46.1
TOTAL Fuel Oils	5496	6286	6113	6643	-2.7	+ 8.7
Lube Oils	488	481	439	416	-8.7	- 5.2
Bitumen	1025	1027	1102	1285	+7.3	+16.6
Pet.Coke*	128	129	94	126	-27.1	+34.0
Wax	55	69	32	52	-53.6	+62.5
4.TOTAL PRODUCTION	23877	26360	23597	27575 @	-10.5	+16.9
5.Crude Run	25626	28153	25075	29528	-10.9	+17.8

* Includes Production of Calcined Petroleum Coke.
@ Excludes 45 thousand tonnes of LPG Production from LPG fractionation plant.

PATTERN OF REFINERY PRODUCTION (Percentages)

Products	1960	1965	1970	1975	1980	1981
Light Distillates@	17.2	17.0	16.4	16.1	15.8	17.0
Middle Distillates	42.4	42.2	46.2	48.2	46.7	47.2
Heavy Fuel Oils	27.0	26.8	23.0	22.8	24 .4	22.5
Bitumens	6.6	5.6	4.1	3.2	4.4	4.4
Lubes	0.4	0.4	1.3	1.6	1.8	1.4
Others	0.8	1.4	2.1	1.4	1.0	0.9
Total Production	94.4	93.4	93.1	93.3	94.1	93.4
RBF & Losses/ Inventories	5.6	6.6	6.9	6.7	5.9	6.6
Crude thoughput	100	100	100	100	100	100
@ Includes Gases	0.1	1.1	1.0	1.5	1.5	-

REFINERY PRODUCTION DURING 1978-79 TO 1981-82

('000' Tonnes)

Products	Production 1978-79	1979-80	1980-81	1981-82 (P)	% Variation 1978-79 / 1979-80	1980-81 / 1981-82
1. LIGHT DISTILLATES	4293	4459	4101	5138	-8.0	+25.3
of which						
L.P.Gas	403	406	366	410@	- 9.8	+12.0
Naphtha	2262	2415	2115	3005	-12.4	+42.1
Mogas	1515	1512	1519	1612	+ 0.5	+ 6.1
SBPS/Hexane	43	56	45	48	-19.6	+ 6.7
2. MIDDLE DISTILLATES	12476	13080	12115	14138	-7.4	+16.7
of which						
ATF/Jet A-1	1177	1104	1001	1010	- 9.4	+ 0.9
Kerosene	2514	2539	2396	2907	- 5.6	+21.3
MTO	97	112	106	84	- 5.4	-20.8
HSD	7350	7975	7371	9045	- 7.6	+22.7
LDO	1227	1230	1108	949	- 9.8	-14.4
JBO	75	80	91	87	+13.8	- 4.4
3. HEAVY ENDS	7422	8255	7907	8923	- 4.2	+12.8
of which						
F.O.	3425	4086	4041	4014	- 1.1	- 0.7
LSHS	2131	2252	2081	2939	- 7.6	+41.2
HHS	88	13	2	-	-84.6	-
Total Fuel Oils	5644	6351	6120	6953	- 3.6	+13.6
Lube Oils	490	487	426	407	-12.5	- 4.5
Bitumen	962	1103	1082	1293	- 2.0	+19.5
Petr. Coke*	122	99	86	142	-14.1	+55.1
Wax	57	54	43	54	-20.4	+25.6
4. Total Production	24193	25794	24123	28199	- 6.5	+16.9
5. Crude Run	25974	27474	25836	30148	- 6.0	+16.7

(P) = Provisional * Includes calcined Petroleum Coke
@ Excludes 73 Thousand Tonnes of LPG Production from LPG Fractionation Plant.

PATTERN OF REFINERY PRODUCTION

(Percentages)

Products	1960-61	1965-66	1970-71	1975-76	1980-81	1981-82
Light Distillates@	17.1	17.3	16.4	16.3	15.9	17.0
Middle Distillates	42.3	42.4	46.6	48.3	46.9	46.9
Heavy Fuel Oils	26.8	26.5	22.3	22.8	23.7	23.1
Bitumens	6.9	5.5	4.4	3.1	4.2	4.3
Lubes	0.4	0.4	1.3	1.6	1.7	1.4
Others	0.7	1.3	2.1	1.4	1.0	0.9
Total Production	94.2	93.4	93.1	93.5	93.4	93.6
RBF/Losses/Inventories	5.8	6.6	6.9	6.5	6.6	6.4
Crude Throughput	100	100	100	100	100	100
@ Includes Gases	0.1	1.1	1.0	1.6	1.4	-

VII. CONSUMPTION/SALES

TOTAL CONSUMPTION OF PETROLEUM PRODUCTS

(Incl. Sales to Nepal*, Sikkim, Bhutan and Bunkers/ International Air Lines)

Qty. 000 Tonnes

Year	Total Consumption.	% age Growth	Year	Total consumption.	% age Growth
	CALENDAR YEARS			FINANCIAL YEARS	
1948	2657	- 2.9	1948-49	2774e	+ 2.1
1949	3125	+ 17.6	1949-50	3174e	+ 14.4
1950	3319	+ 6.2	1950-51	3485e	+ 9.8
1951	3888	+ 17.1	1951-52	3851e	+ 10.5
1952	3741	- 3.8	1952-53	3785(e)	- 1.7
1953	3916	+ 4.7	1953-54	3948e	+ 4.3
1954	4089	+ 4.4	1954-55	4270e	+ 8.2
1955	4817	+ 17.8	1955-56	4920e	+ 15.2
1956	5229	+ 8.6	1956-57	5376e	+ 9.3
1957	5819	+ 11.3	1957-58	5894e	+ 9.6
1958	6117	+ 5.1	1958-59	6291e	+ 6.7
1959	6812	+ 11.4	1959-60	7100e	+ 12.9
1960	7964	+ 16.9	1960-61	8285	+ 16.7
1961	8570	+ 7.6	1961-62	8724	+ 5,3
1962	9536	+ 11.3	1962-63	9832	+ 12.7
1963	10387	+ 8.9	1963-64	10671	+ 18.5
1964	11478	+ 10.5	1964-65	11700	+ 9.7
1965	12356	+ 7.6	1965-66	12437	+ 6.3
1966	12990	+ 5.1	1966-67	13348	+ 7.3
1967	14133	+ 8.8	1967-68	14397	+ 7.9
1968	15871	+ 12.3	1968-69	16305	+ 13.3
1969	17371	+ 9.3	1969-70	17797	+ 9.2
1970	18816	+ 8.3	1970-71	19135	+ 7.5
1971	20706	+ 10.0	1971-72	21299	+ 11.3
1972	22675	+ 9.5	1972-73	22978	+ 11.3
1973	23726	+ 4.6	1973-74	23574	+ 2.6
1974	23023	+ 3.0	1974-75	23302	+ 1.2
1975	23541	+ 2.2	1975-76	23673	+ 1.6
1976	24897	+ 5.8	1976-77	25396	+ 7.3
1977	26570	+ 6.7	1977-78	26990	+ 6.3
1978	28894	+ 8.7	1978-79	29719	+ 10.1
1979	31306	+ 8.3	1979-80	31323	+ 5.4
1980	31633	+ 1.0	1980-81	32261	+ 3.0
1981(P)	33930	+ 7.3	1981-82(P)	33869	+ 5.0

Note:- Includes Refinery fuel from 1960/1960-61 onwards. Prior to that Refinery fuel consumption is not available.

* - Excludes Sales to Nepal from 1975/1975-76 onwards.

P - Provisional. e- Estimated.

PRODUCT - WISE CONSUMPTION SALES OF PETROLEUM PRODUCTS DURING THE YEARS 1978,1979,1980,1981

Qty '000' Tonnes

Product	1978	1979	1980	1981P	%Variation 4/3	%Variation 5/4
1.	2.	3.	4.	5.	6.	7.
1. Light Distillate	4419	4596	4227	5092	- 8.8	+20.5
L.P.Gas	402	419	400	467	- 4.5	+16.8
Naphtha	2388	2529	2162	2928	-14.5	+35.4
Mogas	1472	1495	1522	1574	+ 1.8	+ 3.4
SBP/Hexane	47	52	50	57	- 3.8	+14.0
Others	110	101	93	66	- 7.9	+53.5
2. Middle Distillates	14791	16141	16810	17633	+ 4.1	+ 4.9
Kerosene	3912	3880	4092	4573	+ 5.5	+11.8
ATF/Jet A-1	1129	1151	1142	1111	- 0.8	- 2.7
HSD	8316	9613	10159	10701	+ 5.7	+ 5.3
LDO/MDO	1219	1267	1189	1019	- 6.2	-14.3
JBO	78	77	84	77	+ 9.1	- 8.3
MTO	94	100	102	93	+ 2.0	- 8.8
Others	43	53	42	59	-20.8	+40.5
3. Heavy Ends	8202	9085	9262	9654	+ 1.9	+ 4.2
a) Fuel Oils(Total)	6372	7080	7354	7396	+ 3.9	+0.6
FO/TDO	4202	4693	5395	4608	+15.0	-14.6
LSHS	2079	2368	1958	2788	-17.3	+42.4
HHS	89	19	1	-	-94.7	-
b) Lubes & Greases	518	569	572	618	+ 0.5	+ 8.0
c) Bitumen/Asphalt	986	1030	1036	1308	+ 0.6	+26.3
d) Petroleum Coke	145	193	123	174	-36.3	+41.5
e) Wax	54	75	46	66	-38.7	+43.5
f) Others	127	138	131	92	- 5.1	-29.8
Total (1 + 2 + 3)	27412	29822	30299	32379	+ 1.6	+ 6.9
Refinery Fuel*	1482	1484	1334	1551	-10,0	+16.3
Grand Total	28894	31306	31633	33930	+ 1.0	+ 7.3

* - RBF, Lube Refinery Fuel & TPS Fuel.

P - Provisional.

PRODUCT-WISE CONSUMPTION/SALES OF PETROLEUM PRODUCTS DURING THE YEARS 1978-79, 1979-80, 1980-81 & 1981-82.

Qty.'000'Tonnes

PRODUCTS	1978-79	1979-80	1980-81	1981-82 (P)	%Variation Col.4 Col.3	%Variation Col.5 Col.4
1.	2.	3.	4.	5.	6.	7.
1. LIGHT DISTILLATES	4583	4460	4388	5144	- 1.6	+ 17.2
L.P.Gas	408	410	405	491	- 1.2	+ 21.2
Naphtha	2515	2413	2325	2932	- 3.6	+ 26.1
Mogas	1499	1490	1522	1599	+ 2.1	+ 5 .1
SBP/Hexane	48	53	46	46	-13.2	—
Others	113	94	90	76	- 4.3	- 15.6
2. MIDDLE DISTILLATES	15172	16321	17056	17787	+ 4.5	+ 4.3
Kerosene	3952	3872	4228	4703	+ 9.2	+ 11.2
A.T.F./Jet-I	1154	1144	1125	1122	- 1.7	- 0.3
HS.D.	8638	9801	10345	10739	+ 5.6	+ 3.8
L.D.O./M.D.O.	1216	1266	1122	1030	-11.4	- 8.2
J.B.O.	70	85	85	72	-	- 15.3
M.T.O.	94	105	112	90	+ 6.7	- 19.6
Others	48	48	39	122	-18.7	+212.8
3. HEAVY ENDS.	8486	9102	9452	9394	+ 3.8	- 0.6
a) Fuel Oils (Total)	6668	7081	7473	7198	+ 5.5	- 3.7
F.O./T.D.O.	4395	4796	5406	4301	+12.7	- 20.4
L.S.H.S.	2189	2268	2065	2897	- 9.0	+ 40.3
H.H.S.	84	17	2	--	-88.2	—
b) Lubes & Greases	544	566	593	597	+ 4.8	+ 0.7
c) Bitumen/Asphalt	943	1069	1064	1302	- 0.5	+ 22.4
d) Petroleum Coke	155	185	137	152	-25.9	+ 10.9
e) Wax	56	68	47	62	-30.9	+ 31.9
f) Others	120	133	138	83	+ 3.8	- 39.9
TOTAL (1+2+3)	28241	29883	30896	32325	+ 3,4	+ 4.6
Refinery Fuel @	1478	1440	1365	1544	- 5.2	+ 13.1
Grand Total :	29719	31323	32261	33869	+ 3.0	+ 5.0

(P) = Provisional.

@ = R.B.F.Lube Refinery Fuel & T.P.S.Fuel.

* Seasonal Indices of the Sales/Consumption of Major Petroleum Products in India

MONTH	M.S.	A.T.F.	Kerosene	H.S.D.	L.D.O.
April	8.17	8.29	7.59	8.41	8.39
May	9.08	8.12	7.66	8.86	8.19
June	8.50	7.77	7.65	8.09	7.16
Quarter Total	25.75	24.18	22.90	25.36	23.74
July	8.12	7.88	7.88	7.51	6.56
August	7.66	7.97	8.16	7.05	6.70
September	7.82	8.01	8.27	7.48	7.29
Quarter Total	23.60	23.86	24.31	22.04	20.55
October	8.05	8.70	8.54	8.10	8.69
November	8.15	8.36	8.81	8.61	9.88
December	8.81	8.70	9.34	9.20	9.99
Quarter Total	25.01	25.76	26.69	25.91	28.56
January	8.44	8.70	9.14	8.91	9.73
February	8.51	8.37	8.35	8.43	8.29
March	8.69	9.13	8.61	9.35	9.13
Quarter Total	25.64	26.20	26.10	26.69	27.15
TOTAL	100.00	100.00	100.00	100.00	100.00

Note : Based on sales/consumption data from 1974-75 to 1979-80.

SALES/CONSUMPTION AND MARKET PARTICIPATION OF OIL COMPANIES IN INDIA

Qty.'000' Tonnes

YEAR		I.O.C.	B-Shell/ BPCL	Esso/ HPCL	Caltex/ HPCL(VMU)	Others	Total
1.		2.	3.	4.	5.	6.	7.
1960-61 (E)	S/C	38	3722	2302	1270	653	7985
	%	0.5	46.6	28.8	15.9	8.2	100
1965-66 (E)	S/C	2812	4270	2816	1390	629	11917
	%	23.6	35.8	23.6	11.7	5.3	100
1970-71	S/C	9212	4219	2538	1279	644	17912
	%	51.4	23.6	14.2	7.1	3.7	100
1971-72	S/C	10959	4153	2717	1316	926	20071
	%	54.6	20.7	13.5	6.6	4.6	100
1972-73	S/C	12788	4085	2620	1185	1038	21716
	%	58.9	18.8	12.1	5.4	4.8	100
1973-74	S/C	13745	3985	2392	1095	1129	22346
	%	61.5	17.8	10.7	4.9	5.1	100
1974-75	S/C	14363	3184	2510	972	1076	22105
	%	65.0	14.4	11.4	4.4	4.8	100
1975-76	S/C	14525	3151	2647	932	1192	22447
	%	64.7	14.0	11.8	4.2	5.3	100
1976-77	S/C	15321	3775	2809	974	1222	24101
	%	63.6	15.7	11.6	4.0	5.1	100
1977-78	S/C	15721	4217	3083	1146	1372	25539
	%	61.5	16.5	12.1	4.5	5.4	100
1978-79	S/C	17223	4601	3488	1348	1581	28241
	%	61.	16.3	12.3	4.8	5.6	100
1979-80	S/C	18136	4968	3768	1393	1618	29883
	%	60.7	16.6	12.6	4.7	5.4	100
1980-81	S/C	18293	5297	5596	-	1710	30896
	%	59.2	17.1	18.1	-	5.6	100
1981-82 (P)	S/C	19544	5317	5687	-	1777	32325
	%	60.5	16.4	17.6	-	5.5	100

S/C = Sales/Consumption

P = PROVISIONAL E = ESTIMATED

Deliveries* made to International/Coastal Bunkers from 1970-71 and 1975-76 & 1978-79 to 1981-82

(Qty. '000 Tonnes)

Products	1970-71	1975-76	1978-79	1979-80	1980-81 (R)	1981-82 (P)
Shipping International Bunkers						
F.O.	207.9	137.2	110.1	135.8	148.7	67.1
H.S.D.	6.4	11.4	26.5	17.7	15.4	16.8
L.D.O.	20.0	39.5	53.8	63.1	50.4	52.3
Total :	234.3	188.1	190.4	216.6	214.5	136.2
Coastal Bunkers						
F.O.	196.9	178.3	128.2	126.4	128.9	149.6
H.S.D.	22.4	25.9	43.7	41.9	42.0	61.4
L.D.O.	21.6	28.1	26.2	28.4	32.5	36.8
Total :	240.9	232.3	198.1	196.7	204.3	247.8
Total Bunkers						
F.O.	404.8	315.5	238.3	262.2	277.6	216.7
H.S.D.	28.8	37.3	70.2	59.6	58.3	78.2
L.D.O.	41.6	67.6	80.0	91.5	82.9	89.1
Total :	475.2	420.4	388.5	413.3	418.8	384.0

* = Excluding sales to foreign bunkers on KNPC account by IOC.

(R) = Revised.

STATE-WISE CONSUMPTION OF BULK PETROLEUM PRODUCTS - 1981-82 @

('000 Tonnes)

State/Union Territory	ATF	MS	SKO	HSD	LDO	F.O. (Reg.)	LSHS/ HHS	NAPH-THA	LPG	BITU-MEN	OTH-ERS*	TOTAL*
A. STATES												
Andhra	37	80	337	882	22	199	-	73	39	71	16	1756
Assam	38	33	134	192	12	47	nog.	-	3	26	53	538
Bihar	7	63	254	525	85	168	302	119	10	90	18	1641
Gujarat	26	125	442	735	245	393	1086	499	41	122	98	3812
Haryana	22	37	81	373	30	230	182	-	10	41	5	1011
H.Pradosh	-	5	19	48	1	3	-	-	1	7	nog.	84
J & K	10	14	33	82	6	3	nog.	-	2	11	2	163
Karnataka	21	103	256	540	14	171	-	153	22	40	8	1328
Kerala	20	93	137	354	11	184	84	188	8	43	5	1127
M.Pradosh	4	57	214	620	7	167	-	8	17	82	23	1199
Maharashtra	418	294	878	1472	202	863	687	406	162	171	114	5667
Manipur	-	5	12	16	4	-	-	-	nog.	9	nog.	46
Meghalaya	-	6	8	13	-	nog.	-	-	nog.	1	nog.	28
Nagaland	-	5	5	10	-	-	-	-	nog.	3	1	24
Orissa	7	23	83	190	8	121	71	98	3	26	11	641
Punjab	46	92	180	647	36	185	349	-	9	57	9	1610
Rajasthan	24	48	143	596	39	55	-	142	7	75	4	1133
Sikkim	-	2	3	3	-	nog.	-	-	nog.	nog.	nog.	8
Tamil Nadu	43	114	384	1025	48	737	nog.	449	40	99	25	2964
Tripura	2	3	12	14	nog.	nog.	-	-	nog.	3	1	35
Uttar Pradosh	49	122	462	1201	109	232	1	561	36	130	58	2961
West Bengal	86	103	435	718	106	316	89	124	21	83	201	2282
TOTAL(A)	860	1427	4512	10256	985	4074	2851	2820	431	1190	652	30058
Adjustment	-9	-	+10	-66	-5	-4	+46	-55	-2	+32	-89	-142
B. UNION TERRITORIES												
A&N Islands	1	1	1	14	1	1	-	-	-	nog.	nog.	19
Arunachal	nog.	2	4	6	-	-	-	-	-	2	nog.	14
Chandigarh	17	10	10	21	3	4	-	-	4	28	1	98
Delhi	248	141	137	372	42	119	-	-	55	38	16	1168
Dadhra & Nagar,Haveli	-	nog.	nog.	3	-	nog.	-	-	-	-	-	3
Goa,Daman & Diu	5	9	16	87	3	105	-	167	2	8	32	434
Lakshadoop/ Mizoram	-	3	4	7	-	-	-	-	nog.	2	nog.	16
Pondicherry	-	4	8	27	1	2	-	-	1	2	nog.	45
TOTAL(B)	272	170	180	537	50	231	-	167	62	80	49	1797
C. OUTSIDE TERRITORIES												
Bhutan	nog.	2	1	12	nog.	-	-	-	nog.	-	nog.	15
GRAND TOTAL (A+B+C)	1122	1599	4703	10739	1030	4301	2897	2932	491	1302	612	31728

Note : Figures represent despatches from depots situated in various States.
@ Provisional, including international bunkers.
* Excluding Lubes & Greases.

Estimated State-wise per capita Sales/Consumption of POL Products (excluding International Bunkers)

(Kgs.)

States/ Territories	1977-78	1978-79	1979-80	1980-81	1981-82
1.	2.	3.	4.	5.	6.
A. STATES					
Andhra Pradesh	30.2	31.6	33.7	33.3	32.7
Assam	26.6	27.2	23.0	26.6	27.0
Bihar	18.7	19.0	19.3	20.5	23.5
Gujarat	86.9	107.2	116.1	114.6	112.3
Haryana	50.2	52.8	59.1	64.7	78.7
Himachal Pradesh	16.8	18.2	19.1	19.9	19.8
Jammu & Kashmir	24.3	24.8	28.6	27.7	27.3
Karnataka	29.8	36.4	36.4	34.1	35.9
Kerala	51.3	40.3	43.0	44.9	44.4
Madhya Pradesh	18.5	19.9	20.5	21.6	23.0
Maharashtra	85.7	89.6	88.7	92.4	90.0
Manipur	24.0	26.0	22.5	29.2	32.6
Meghalaya	21.1	23.3	21.5	20.2	21.1
Nagaland	35.6	36.8	30.0	28.4	31.2
Orissa	16.2	17.8	20.1	20.5	24.4
Punjab	67.2	73.6	79.5	84.0	96.5
Rajasthan	29.6	32.5	31.7	31.8	33.2
Sikkim	42.4	37.5	32.4	36.7	25.8
Tamil Nadu	45.7	56.7	63.3	66.8	60.8
Tripura	15.4	14.6	11.1	13.1	17.1
Uttar Pradesh	21.9	23.3	23.1	23.1	26.7
West Bengal	32.3	33.4	36.2	39.8	41.6
B. OTHER AREAS					
Chandigarh	260.4	218.4	177.6	209.3	217.8
Delhi	162.2	178.9	184.4	187.6	188.4
Goa(incl.Daman & Diu Dadra & Nagar Haveli)	378.8	377.1	416.7	290.6	401.8
Others	83.2	119.7	82.1	52.0	54.6
TOTAL ALL-INDIA @	43.1	46.7	47.9	48.2	49.5

Estimated per capita consumption of selected petroleum products - 1977-78 to 1980-81.

Product	1977-78	1978-79	1979-80	1980-81	1981-82
Naphtha	3.7	4.0	3.7	3.5	4.3
M.S.	2.2	2.4	2.3	2.3	2.3
S.K.O.	5.9	6.2	5.9	6.3	6.9
H.S.D.	12.4	13.6	15.0	15.5	15.7
L.D.O.	1.8	1.9	1.9	1.7	1.5
F.O.(Regular)	6.1	6.9	7.3	8.1	6.3
LSHS/HHS	3.0	3.6	3.5	3.1	4.2
TOTAL ALL-INDIA @ SALES CONSUMPTION	43.1	46.9	47.9	48.2	49.5

Note: Based on Expert Committee's population projections as on 1st July each year and projection on 1971 Census basis.

* Includes Mogas, Kerosene, ATF, HSD, LDO, Fuel Oils, LPG, Naphtha and Bitumen for 1977-78 to 1979-80 and all products except(lubricants) for 1980-81. @ All-India actual consumption of all products incl.Ref.Fuel.

ESTIMATED SECTOR-WISE CONSUMPTION OF SELECTED PETROLEUM PRODUCTS.

(Qty. '000 Tonnes)

SECTOR	1979 - 80 Consumption ('000 Tonnes)	% to Total	1980 - 81 Consumption ('000 Tonnes)	% to Total
1.	2.	3.	4.	5.
NAPHTHA				
1. Fertilizers	1914	79.3	1718	73.9
2. Petrochemicals	494	20.5	595	25.6
3. Others	5	0.2	12	0.5
TOTAL	2413	100	2325	100
L. P. G.				
1. Domestic	332	81.0	327	80.7
2. Commercial	21	5.1	20	4.9
3. Industry	56	13.7	57	14.1
4. Others	1	0.2	1	0.3
TOTAL	410	100	405	100
REFINERY GAS.				
1. Industry	-	-	1.3	100
2. Power Generation	-	-	-	-
3. Others	-	-	-	-
TOTAL	-	-	1.3	100
LSHS / HHS				
1. Iron & Steel	243	10.6	545	26.4
2. Power Generation (Utilities)	1708	74.8	1182	57.2
3. Others	334	14.6	340	16.4
TOTAL	2285	100	2067	100
H. S. D. O.				
1. State Transport (Incl. Municipal Transport)	1037	10.6	1093	10.6
2. Other Road Transport (Incl. Agr. Retail Trade)	6728	68.6	7140	69.0
3. Railways	879	9.0	759	7.3
4. Bunkers	60	0.6	58	0.6
5. Miscellaneous	1097	11.2	1295	12.5
TOTAL	9801	100	10345	100
L. D. O.				
1. Power	71	5.6	158	14.1
2. Bunkers	92	7.3	83	7.4
3. Rest Incl. Agr. & Small Scale Industries	1103	87.1	881	78.5
TOTAL	1266	100	1122	100

Contd./-

ESTIMATED SECTOR-WISE CONSUMPTION OF SELECTED PETROLEUM PRODUCTS (Contd.)

(Qty.'000' Tonnes)

SECTOR	1979 - 80 Qty.	% to Total	1980 - 81 Qty.	% to total
1.	2.	3.	4.	5.
	FURNACE OIL (REGULAR)			
1. TRANSPORT				
i) Railways	40	0.8	54	1.0
ii) Waterways	262	5.5	278	5.1
a) Coastal & Inland Bunkars	126	2.6	129	2.4
b) International Bunkars	136	2.9	149	2.7
iii) Others	29	0.6	9	0.2
TOTAL TRANSPORT.	331	6.9	341	6.3
2. Agricultural/ Plantation	144	3.0	198	3.7
3. Power Generation (Utilities)	425	8.9	903	16.7
4. Iron & Steel	188	3.9	366	6.8
5. Textile & Fibre	430	9.0	471	8.7
6. Cement	154	3.2	158	2.9
7. Ceramics & Glass	185	3.8	204	3.8
8. Chemicals & Allied	811	16.9	931	17.2
9. Alumunium	122	2.6	113	2.1
10. Sugar	41	0.9	36	0.7
11. Mining & Quarrying	268	5.6	275	5.1
12. Engineering	250	5.2	212	3.9
13. Fertilizers.	755	15.7	585	10.8
14. Others (Incl. DGS &D)	691	14.4	613	11.3
TOTAL	4796	100	5406	100

Estimated sector-wise consumption of selected petroleum products (Contd.)

Sector	1979-80 Consumption ('000 tonnes)	1979-80 % to total	1980-81 Consumption ('000 tonnes)	1980-81 % to total
	WAX			
1. Candle manufacturing	19.8	29.1	20.8	43.8
2. Water proofing	7.1	10.4	4.1	8.6
3. Match industry	5.0	7.4	5.6	11.8
4. Paper waxing	4.6	6.8	3.5	7.4
5. Hand board	0.3	0.4	0.3	0.6
6. Miscellaneous	31.2	45.9	13.2	27.8
TOTAL	67.9	100	47.5	100

Grade-wise consumption / sales of Lubes

Sector	1979-80 Consumption ('000 tonnes)	1979-80 % to total	1980-81 Consumption ('000 tonnes)	1980-81 % to total
TOTAL LUBE OILS	308.4	56.5	320.7	54.0
(a) Automotive Oils	307.4	56.3	319.5	53.8
HVI	1.0	0.2	1.1	0.2
LVI	-	-	-	-
2. Industrial Oils	237.2	43.5	249.2	46.0
Total	545.6	100	569.9	100
(b) Industrial Oil				
1. Spindle Oil	3.8	1.6	4.2	1.7
2. Transformer oil	0.3	0.1	0.3	0.1
3. Ply/other Axle oil	10.2	4.3	14.3	5.7
4. Cylinder oil	11.4	4.8	14.4	5.8
5. Turbine/Hydraulic	38.3	16.2	50.3	20.2
6. Other spl. oil	91.2	38.4	165.7	66.5
7. Misc. grades	82.0	34.6		
TOTAL	237.2	100	249.2	100

R = Revised.

CONSUMPTION OF DIESEL OIL IN INDIAN RAILWAYS DURING 1960-61 TO 1981-82.

Year	No. of Diesel Locomotives Nos.	Consumption of Diesel Oil (In Kls.)	Consumption per Diesel Locomotive (In Kls.)
1	2	3	4
1960-61	181	62771	346.8
1961-62	228	59444	260.7
1962-63	349	98481	282.2
1963-64	486	182328	375.2
1964-65	621	245633	395.5
1965-66	727	310813	427.5
1966-67	776	365582	471.1
1967-68	892	427126	478.8
1968-69	996	486084	488.0
1969-70	1091	536301	491.6
1970-71	1169	569025	486.8
1971-72	1288	626983	486.8
1972 73	1431	667414	466.4
1973-74	1610	683140	424.3
1974-75	1702	720047	423.1
1975-76	1731	797610	460.8
1976-77	1903	867330	455.8
1977-78	2025	949077	468.7
1978-79	2126	960545	451.8
1979-80	2238	992060	443.3
1980-81	2304	1102820	478.7
1981-82	2517 *	1148000	456.1

* Provisional.

Source: For Col. 2& 3 Indian Railways Annual Statistical Statement -1979-80

INDUSTRY / PLANT-WISE OFFTAKES OF NAPHTHA

(Qty. '000 Tonnes)

Category and Plant	Calendar year 1979	1980	1981(P)	Financial year 1979-80	1980-81	1981-82(P)
I. Fertilizer Plants						
Madras Forts.Ltd.	217.2	207.6	231.4	189.5	235.9	217.9
FCI, Durgapur	110.8	99.0	121.6	114.5	86.4	124.4
FCI, Gorakhpur	91.7	61.6	80.6	74.7	76.4	82.7
FCI, Sindri	3.4	-	-	2.8	-	-
FCI, Barauni	94.9	58.1	125.0	78.4	86.6	118.5
FCI, Nangal	-	-	-	-	-	-
FCI, Patna	-	-	-	4.2	-	-
SFC, Kota	130.6	118.0	126.8	127.9	115.6	135.5
IEL, Kanpur	202.5	115.0	240.7	169.3	133.5	227.0
HSL, Rourkela	57.7	56.9	94.8	65.9	58.9	97.8
GSFC, Baroda	97.5	106.9	102.8	95.4	106.7	103.4
FACT, Cochin	127.4	124.0	126.0	119.5	126.7	131.3
ZAC, Goa	192.6	107.1	145.0	195.5	62.1	183.7
IFFCO, Phulpur	6.4	37.3	187.4	16.6	55.8	219.3
IFFCO, Kalol	58.0	65.2	55.8	55.2	59.0	58.0
MCFL, Mangalore	155.4	98.9	161.6	139.3	103.6	152.6
SPIC, Tuticorin	201.1	207.8	258.7	232.0	217.2	229.7
EID Parry Ltd., Madras	8.1	7.1	7.1	7.4	6.9	7.9
GNFC, Bharuch	-	-	0.5	-	6.9	0.6
FACT, Alwaye	73.3	65.4	65.2	74.7	64.4	57.0
FCI, Bombay	30.7	35.7	46.1	23.1	37.4	56.4
Coromandal Forts., Vizag.	70.1	62.3	72.2	62.5	69.2	74.5
Sub-Total(Forts.)	1930.0	1633.9	2213.3	1848.4	1702.3	2278.2
II. Petro-chemical Plants						
PRC, Sahupuram	-	-	-	1.9	-	-
HOC, Rae Bareli	3.0	3.1	3.2	1.3	3.1	3.2
IPCL, Baroda	279.0	265.4	355.8	250.3	305.8	352.1
NOCIL, Bombay	232.1	189.3	241.1	228.1	208.2	210.0
FCI, Bombay (Methanol)	13.8	13.9	14.0	12.2	16.1	13.2
UCIL, Bombay	61.8	71.7	73.4	62.7	76.4	68.2
Sub-Total(Petro-Chem.)	589.7	543.4	687.5	556.5	609.6	646.7
III. Others						
HSL, Bhilai	9.0	11.0	9.0	7.7	11.6	7.8
Sub-Total(Others)	9.0	11.0	9.0	7.7	11.6	7.8
IV. Adjustment	-	—	+10.2	-	+2.0	- 0.4
GRAND TOTAL (I+II+III)	2528.7	2178.0	2928.0	2412.6	2325.5	2932.3

(P) = Provisional.

Source : IOC's Industry Performance Review.

PLANTS/CUSTOMER-WISE OFFTAKES OF LSHS/HHS

('000 Tonnes)

Plants/Customer	1977-78	1978-79	1979-80	1980-81	1981-82(P)
1.	2.	3.	4.	5.	6.
1. POWER					
ASEB, Chandrapura	34.4	39.5	26.3	27.3	-
DTPS, Barauni	43.8	34.5	32.1	3.5	21.1
G.E.B., Gandhinagar	56.3	96.2	49.6	25.7	14.9
GEB, Ukai	38.4	70.4	86.9	81.4	66.4
GEB, Dhuwaran	661.0	661.0	633.6	617.5	615.6
GEB, Kalol	-	1.3	1.3	-	-
MSEB, Koradi	-	1.0	-	-	-
Tata Thermal, Bombay	455.0	448.2	601.3	397.6	382.1
AEC, Ahmedabad	2.6	45.3	57.3	29.2	24.8
Sub-Total	1291.5	1397.4	1488.4	1182.2	1124.9
2. FERTILIZERS/PETROCHEMICALS					
FCI, Nangal	19.0	82.4	113.2	127.1	219.2
NFL, Bhatinda	1.0	9.9	8.7	76.4	158.8
FCI, Sindri	-	-	31.1	15.1	202.0
HFC, Barauni	2.0	7.6	7.6	0.7	16.1
IFFCO, Kalol	36.0	39.6	31.5	41.7	42.6
IPCL, Baroda(GA&GO)	27.4	64.4	87.6	99.4	157.4
GSFC, Baroda	13.8	17.9	20.0	36.0	72.5
RCF, Bombay	22.3	20.7	4.8	-	-
NFL, Panipat	-	1.1	-	32.6	191.8
FACT, Cochin Divn.	-	8.8	51.9	68.3	65.5
GNFC, Bharuch	-	-	-	-	16.1
Sub-Total	121.5	252.4	356.4	497.4	1142.0
3. STEEL PLANTS					
TISCO, Jamshedpur	79.8	99.9	62.1	17.4	63.7
HSL, Rourkela	99.4	107.2	83.0	6.1	74.8
DSP, Durgapur	84.6	105.4	96.1	23.9	89.1
Sub-Total	263.8	312.5	241.2	47.4	227.6
4. OTHERS(GEN. TRADE)	204.2	310.9	198.4	352.0	402.5
GRAND TOTAL(1+2+3+4)	1881.0	2273.2	2284.4	2078.9	2897.0

(P) = Provisional.

STATEWISE FUEL CONSUMPTION IN GAS TURBINE AND DIESEL POWER STATIONS IN INDIA- 1979-80

STATE	GAS TURBINE AND DIESEL POWER STATIONS		
	Oil Consumption (KL)	Generation (GWH)	Average-oil consumed Lt/KWH
(1)	(2)	(3)	(4)
1. Assam	(152.39)	(317.96)	--
2. Bihar	650	1.86	0.35
3. Gujarat	(30.86)+ 20	(75.79)+ 0.06	0.33
4. Haryana	18	0.06	0.80
5. Himachel Pradesh	11	0.03	0.36
6. Jammu & Kashmir	180	0.70	0.28
7. Madhya Pradesh	--	—	—
8. Manipur	4200	14.05	0.30
9. Meghalaya	470	1.00	0.47
10. Nagaland	327	0.59	0.55
11. Punjab	850	2.54	0.38
12. Rajasthan	227	0.49	0.46
13. Sikkim	280	0.80	0.35
14. Tripura	100	0.29	0.34
15. Uttar Pradesh	1117 (e)	3.73 (e)	--
16. West Bengal	{ 6905 { 44069	{ 19.89 { 102.49	0.35
UNION TERRITORIES:			
17. A & N Islands	2200	5.66	0.39
18. Arunachel Pradesh	575	1.22	0.47
19. Chandigarh	20	0.06	0.33
20. Delhi	424	1.36	0.31
21. Lakshadwip	550	1.10	0.50
22. Mizoram	550	1.56	0.35
Total All India	(190.25+)18557 45186	53.32 499.97	0.35

(e) = Estimated

( ) = Figure in parenthesis relates to natural gas consumed in gas turbine stations in Million Cubic Metres.

STATEWISE FUEL CONSUMPTION IN STEAM POWER STATIONS IN INDIA - 1979-80.

STATE	STEAM POWER STATIONS					
	Coal (Tonnes)	Furnace OIL(KL)	L.D.O. (KL)	Heat input(K. cal x10^9)	Gross generation (GWH)	Av.heat input (K.cal/ Kwh)
1.	2.	3.	4.	5.	6.	7.
1. Andhra Pradesh	2444208	67893	6162	10769.20	3267.60	3296
2. Assam	--	--	(d)28.80 159 (c)37.26	638.39	194.46	3283
3. Bihar	1822717	54934	13960	8659.60	2561.55	3381
4. Gujarat	2507910 (a)22197	859012	(d)126.32 14524 (c)51716	23805.64	7569.73	3145
5. Haryana	369939	18227	5087	2286.52.	531.53	4302
6. Jammu & Kashmir	10053	--	2316	63.37	12.06	5255
7. Madhya Pradesh	4297711	41146	373	16712.65	5614.22	2977
8. Maharashtra	4871686	53740	12713 (c)391189 (e)184945	27576.93	9555,23	2886
9. Meghalaya	--	--	--	--	--	--
10. Orissa	519352	--	1277	2412.38	697.70	3458
11. Punjab	777941	26640	5568	3570.76	1140.52	3131
12. Rajasthan	36566	--	--	209.38	25.30	8276
13. Tamil Nadu	1295099	90092	40756	7003.08	2040.42	3432
14. Uttar Pradesh	5093063	80295	58531	25870.75	6854.31	3774
15. West Bengal	3416790	11276	31481	18961.57	5238.88	3619
16. D.V.C.	2725707	42494	30156	13661.84	4429.18	3084
17. Central Govt. projects.	1187927 (a)2427110	244206	--	14504.89	4154.75	12653
UNION TERRITORIES:						
18. A & N Islands	(b)13968	--	--	36.75	1.03	35680
19. Delhi.	1209446	27461	1809	6931-66	1831.31	3785
ALL INDIA :	3286115 (a)2449307	1617416 (b)13968	(e)184945 251872 (c)479931 (d) 195.62	183675.41	55719.83	3296

Note: (a) Related to Lignite Coal (MT), (b) Woodfuel (MT), (C)LSHS/HHS(MT)
(d) Natural Gas (MCM) (e) Refinery Gas (MT) consumed by steam power stations.

Source : Central Electricity Authority.

VIII. FOREIGN TRADE

IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS

(Qty. '000 Tonnes ; Value : Rs. Crores)

Year	Products		Crude Oil		Total	
	Qty.	Value	Qty.	Value	Qty.	Value
Calendar Years						
1960	2032	41.0	5723	40.6	7755	81.6
1965	2880	44.7	6811	40.4	9691	85.1
1970	970	30.5	11565	102.4	12635	132.9
1971	1932	43.5	12688	139.9	14620	183.4
1972	3257	56.7	12310	144.2	15567	200.9
1973	3735	88.0	13443	244.6	17178	332.6
1974	2949	209.9	13973	899.4	16922	1109.3
1975	2291	199.5	13600	992.0	15891	1191.5
1976	2293	219.7	13883	1145.6	16176	1365.3
1977	2664	273.0	14548	1258.9	17212	1531.9
1978	3916	414.1	14892	1243.9	18808	1658.0
1979(R)	4019	727.5	15382	1787.4	19401	2514.9
1980(R)	6800	1788.2	15976	3038.7	22776	4826.9
1981(P)	5785	1658.5	15552	3759.4	21337	5417.9
Financial Years						
1960-61	2217	39.8	5709	39.2	7926	79.0
1965-66	2537	40.7	6844	39.6	9381	80.3
1970-71	1084	29.9	11683	106.7	12767	136.6
1971-72	2147	46.9	12951	147.0	15098	193.9
1972-73	3525	60.6	12084	146.4	15609	207.0
1973-74	3548	124.5	13873	416.4	17421	540.9
1974-75	2648	195.0	14016	917.0	16664	1112.0
1975-76	2218	204.3	13624	1051.8	15842	1256.1
1976-77	2624	248.2	14048	1175.9	16672	1424.1
1977-78	2879	305.3	14507	1246.2	17386	1551.5
1978-79	3878	430.0	14657	1251.2	18535	1681.2
1979-80(R)	4724	1082.4	16121	2187.5	20845	3269.9
1980-81(R)	7289	1917.5	16248	3349.0	23537	5266.5
1981-82(P)	4973	1472.4	15361	3712.8	20334	5185.2

(R) = Revised figures but still subject to firming up by the Oil Companies.
(P) = Provisional.

IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS DURING 1979/1979-80 TO 1981/1981-82

(Qty. : '000 Tonnes - Value : Rs. Crores)

Item	1979 *		1980 *		1981 *	
	Qty.	Value	Qty.	Value	Qty.	Value
A. Crude Oil	15382	1787.4	15976	3038.7	15552	3759.4
B. Petroleum Products						
I. Light Distillates	171	37.5	262	80.2	275	86.8
1. Naphtha	149	28.8	169	43.7	223	63.8
2. Others	22	8.7	93	36.5	52	23.0
II. Middle Distillates	2885	570.5	5261	1467.2	4484	1320.5
1. ATF	14	4.0	60	15.3	78	25.0
2. SKO @	1392	272.5	1934	549.7	2017	615.5
3. HSD @	1456	291.5	3163	873.9	2277	647.9
4. LDO	23	2.5	104	28.3	112	32.1
III. Heavy Ends	963	119.5	1277	240.8	1026	251.2
1. Furnace oil	900	95.9	1081	165.7	829	161.9
2. Lubes	52	17.4	146	61.8	119	64.2
3. Waxes	11	6.2	10	7.5	19	15.0
4. Others	-	-	40	5.9	59	10.1
Total (B)	4019	727.5	6800	1788.2	5785	1658.5
GRAND TOTAL(A+B)	19401	2514.9	22776	4826.9	21337	5417.9
@ Includes Imports on NOC Account	92	18.7	55	15.0	109	30.9

Item	1979-80 *		1980-81 *		1981-82 *	
	Qty.	Value	Qty.	Value	Qty.	Value
A. Crude Oil	16121	2187.5	16248	3349.0	15361	3712.8
B. Petroleum Products						
I. Light Distillates	191	51.2	321	97.4	160	52.7
1. Naphtha	154	35.2	231	62.9	114	31.5
2. Others	37	16.0	90	34.5	46	21.2
II. Middle Distillates	3675	909.3	5384	1503.2	4089	1236.3
1. ATF	42	11.5	32	7.8	110	36.3
2. SKO @	1546	379.7	2065	591.7	1969	606.6
3. HSD @	2010	496.7	3219	885.3	1927	568.7
4. LDO	77	21.4	68	18.4	83	24.7
III. Heavy Ends	858	121.9	1584	316.9	724	183.4
1. Furnace Oil	793	93.7	1336	219.5	527	103.2
2. Lubes	52	20.0	182	79.2	91	52.2
3. Waxes	13	8.2	13	10.0	15	11.6
4. Others	-	-	53	8.1	91	16.4
Total (B)	4724	1082.4	7289	1917.5	4973	1472.4
Grand Total(A+B)	20845	3269.9	23537	5266.5	20334	5185.2
@ Includes imports on NOC Account	87	21.2	60	16.8	109	30.2

* Provisional/revised figures but still subject to firming up by the oil companies.

TOTAL EXPORTS OF CRUDE OIL & PETROLEUM PRODUCTS SINCE 1955/1956 -56

Qty - Tonnes.
Value (f.o.b.) Rs./ Crores.

YEAR	QUANTITY CALENDAR YEAR	VALUE	YEAR	QUANTITY FINANCIAL YEAR	VALUE
1.	2.	3.	4.	5-	6.
1955	215967	3.55	1955-56	255808	3.94
1960	225061	4.61	1960-61	221790	4.40
1965	344680	3.92	1965- 66	403274	4.39
1966	729704	8.76	1966-67	759585	9.42
1967	1057000	14.23	1967-68	1050030	14.59
1968	558166	8.25	1968-69	633941	8.95
1969	738867	10.77	1969-70	625769	9.26
1970	412209	5.72	1970-71	322425	4.67
1971	151631	2.55	1971-72	138799	3.91
1972	109313	8.94	1972-73	125773	8.16
1973	154990	5.35	1973-74	161210	8.05
1974	202409	19.37	1974-75	174850	17.46
1975	165669	13.83	1975-76	169815	13.96
1976	81764	7.60	1976-77	73582	6.89
1977	59223	6.50	1977-78	47440	5.69
1978	42949	4.20	1978-79	44300	4.11
1979	58694	14.94	1979-80	88290	24.02
1980	70375	17.98	1980-81	36070	8.41
1981	54720	15.13	1981-82	892433	211.36

EXPORTS/RE-EXPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS FROM 1977 TO 1981 & 1977-78 TO 1981-82

(Quantity : '000 Tonnes)
(Value(FOB): Rs. Crores)

Product	1977		1978		1979		1980		1981	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	2	3	4	5	6	7	8	9	10	11
A. Crude Oil	-	-	-	-	-	-	-	-	-	-
B. Petroleum Products										
I. Light Ends	-	-	36.2	3.30	54.0	14.44	70.4	17.98	54.7	15.13
Naphtha	-	-	36.2	3.30	54.0	14.42	70.3	17.91	54.7	15.13
Others	-	-	-	-	neg.	0.02	0.1	0.07	-	-
II. Others	59.2	6.50	6.8	0.90	4.7	0.50	-	-	-	-
Base oil	9.7	1.67	3.4	0.59	-	-	-	-	-	-
Asphalt/ Bitumen	49.5	4.83	3.4	0.31	4.7	0.50	-	-	-	-
TOTAL(B)	59.2	6.50	43.0	4.20	58.7	14.94	70.4	17.98	54.7	15.13
TOTAL(A+B)	59.2	6.50	43.0	4.20	58.7	14.94	70.4	17.98	54.7	15.13

Product	1977-78		1978-79		1979-80		1980-81		1981-82	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	2	3	4	5	6	7	8	9	10	11
A. Crude Oil	-	-	-	-	-	-	-	-	837.7	196.23
B. Petroleum Products										
I. Light Ends	-	-	36.2	3.30	88.3	24.02	36.1	8.41	54.7	15.13
Naphtha	-	-	36.2	3.30	88.3	24.00	36.0	8.34	54.7	15.13
Others	-	-	-	-	neg.	0.02	0.1	0.07	-	-
II. Others	47.4	5.69	8.1	0.81	-	-	-	-	-	-
Base oil	13.1	2.27	-	-	-	-	-	-	-	-
Asphalt/ Bitumen	34.3	3.42	8.1	0.81	-	-	-	-	-	-
TOTAL(B)	47.4	5.69	44.3	4.11	88.3	24.02	36.1	8.41	54.7	15.13
TOTAL(A+B)	47.4	5.69	44.3	4.11	88.3	24.02	36.1	8.41	892.4	211.36

@ Excludes supplies of POL products to Nepal and those exported directly from Aden Refinery.

EXPORT EARNINGS DURING THE YEARS 1978-79 TO 1981-82

Qty : '000 Tonnes
Value: Rs. Crores

Category/Product	1978-79 Qty.	1978-79 Value	1979-80 Qty.	1979-80 Value	1980-81 Qty.	1980-81 Value	1981-82(P) Qty.	1981-82(P) Value
1. SALES TO BUNKERS								
(a) Shipping Bunkers								
International F/V	75	6.58	71	13.74	67	15.16	49	14.23
International I/V	115	10.87	146	26.06	148	30.10	87	22.87
Coastal F/V	6	0.65	26	3.10	31	6.63	21	5.68
Total(a)*	196	18.10	243	42.90	246	51.89	157	42.78
(b) International Airlines (excl. Air India)	510	85.62	474	181.28	435	182.85	394	179.39
Total (1)	706	103.72	717	224.18	681	234.74	551	222.17
2. EXPORTS OF POL PRODUCTS/CRUDE OIL								
(i) Exports of POL Products :								
Naphtha	36	3.30	88	24.00	36	8.34	55	15.13
Asphalt/Bitumen	-8	0.81	-	-	-	-	-	-
Other products	-	-	nog.	0.02	nog.	0.07	-	-
Total(i)	44	4.11	88	24.02	36	8.41	55	15.13
(ii) Crude Oil	-	-	-	-	-	-	838	196.23
Total(2) **	44	4.11	88	24.02	36	8.41	893	211.36
GRAND TOTAL(1+2)	750	107.83	805	248.20	717	243.15	1444	433.53

* Excluding sales of Marine Lubricants.
** Excluding supplies of POL products to Nepal and those exported directly from Aden Refinery. (P) = Provisional.
F/V = Foreign Flag Vessels. I/V = Indian Flag Vessels.

INDIA'S REVENUES FROM HIL CRUDE

Year	Quantity ('000 tonnes)	Value (Rs. Crores)
1974	654	38.59
1975	567	41.96
1976	410	32.14
1977	465	38.26
1978	371	29.36

Note : No liftings since October/November, 1978.

TREND IN INDIA'S OVERALL TRADE BALANCE AND TRADE BALANCE WITH OPEC COUNTRIES

(Rs. Crores)

Year	India's Overall Trade					India's Trade with OPEC Countries					% of India's trade with OPEC to India's Total Trade	
	Exports	Imports	Balance of Trade	% variation over preceding year		Exports	Imports	Balance of Trade	% variation over preceding year			
				Exports	Imports				Exports	Imports	Exports	Imports
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1970-71	1535	1634	- 99	8.6	3.3.	99	126	- 27	-	-	6.4	7.7
1971-72	1608	1825	-217	4.8	11.3	76	182	-106	-23.2	44.4	4.7	10.0
1972-73	1971	1867	+104	22.6	2.3	94	200	-106	23.7	9.9	4.8	10.7
1973-74	2523	2955	-432	28.0	58.3	187	532	-345	98.9	166.0	7.4	18.0
1974-75	3329	4519	-1188	32.0	52.9	467	1100	- 633	149.7	106.8	14.0	24.3
1975-76	4043	5265	-1222	21.4	16.5	633	1166	533	35.6	6.0	15.7	22.1
1976-77	5142	5074	+ 72	27.2	- 3.6	707	1296	589	11.7	11.2	13.8	25.5
1977-78	5408	6020	-612	5.2	18.6	674	1340	666	4.7	3.4	12.5	22.3
1978-79	5726	6814	-1088	5.9	13.2	733	1382	649	8.8	3.1	12.8	20.3
1979-80	6459	9022	-2563	12.8	32.4	717	2410	1693	2.2	74.4	11.1	26.7
1980-81	6709	12465	-5756	3.9	38.2	750	3437	-2687	+ 4.6	42.6	11.2	27.6

* Provisional.

% = Of variation over the corresponding period in the preceding year.

Source: Ministry of Commerce/Economic Survey.

INDIA'S FOREIGN EXCHANGE RESERVES
(1970-71 to 1981-82)

Year	S.D.R.s Million	GOLD (Rs.Crores)	Foreign Exchanage (Rs. Crores)
1.	2.	3.	4.
1970-71	148.9	182.53	438.53
1971-72	247.7	182.53	480.38
1972-73	246.5	182.53	478.90
1973-74	244.9	182.53	580.78
1974-75	234.9	182.53	610.50
1975-76	202.8	182.53	1491.70
1976-77	187.4	187.80	2862.99
1977-78	161.6	193.09	4499.75
1978-79	364.9	219.50	5219.86
1979-80	529.1	224.71	5163.66
1980-81	490.5	225.60	4822.12
1981-82(P)	425.1	224.60	3354.50

Source: R.B.I. Bulletin.

INDIA'S POL IMPORTS AS A PROPORTION OF ITS TOTAL EXPORTS

(Rs/Crores)

Year	P.O.L. Imports	INDIA'S Total Exports	% of P.O.L. Imports to Total Exports
1.	2.	3.	4.
1970-71	137	1535	8.9%
1971-72	194	1608	12.1%
1972-73	207	1971	10.5%
1973-74	541	2523	21.4%
1974-75	1112	3329	33.4%
1975-76	1256	4043	31.1%
1976-77	1424	5146	27.7%
1977-78	1552	5404	28.7%
1978-79	1681	5726	29.4%
1979-80	3270	6459	50.7%
1980-81 (P)	5266	6710	78.5%

(P)= Provisional.

Source for Exports data: Bulletin of Industrial Statistics, brought out by the Ministry of Industry.

IX. MAN-POWER EMPLOYED

MANPOWER EMPLOYED IN THE PETROLEUM INDUSTRY IN INDIA

Number

CATEGORY	1970	1975	1980	1981	1982
1	2	3	4	5	6
1. Exploration and Production	26051	27067	31413	33278	36089
2. Refining*	10715	12327	15334	16213	18359
3. Marketing	20362	19072	19920	20943	22858
4. Others:-					
1. IOC(Pipeline)	487	724	1312	1376	1445
2. ONGC(Pipeline)	346	233	411	425	203
3. OIL(Pipeline)	443	431	492	476	490
4. I.I.P.	588	676	754	743	744
5. E.I.L.	N.A.	1940	2661	2922	3176
TOTAL	1864	4004	5630	5942	6058
GRAND TOTAL	58992	62470	72297	76376	83364

CATEGORY-WISE MANPOWER EMPLOYED IN THE PETROLEUM INDUSTRY IN INDIA

(Numbers)

CATEGORY	1970	1975	1980	1981	1982
1	2	3	4	5	6
1. Exccutive/ Managerial	4793	6461	9311	11844	13627
2. Supervisory	6205	6659	6512	6639	7388
3. Clerical	11457	11723	12403	16109	13921
4. Workmen	36437	37611	44057	41723	48969
5. TOTAL	58892	62454	72283	76315	83305
6. Expatriates/ Foreign Experts	100	16	14	61	59
GRAND TOTAL	58992	62470	72297	76376	83364

Note:- 1. Staff Employed as on 1st April of each yeaf.

2. Total does not include staff Employed on contract basis.

3.* Including IOC Head Office, Regional Office and R&D Centre.

CATEGORY WISE MANPOWER EMPLOYED@ IN VARIOUS SECTOR OF PETROLEUM INDUSTRY IN INDIA

(Number)

CATEGORY	1970	1975	1980	1981	1982
1	2	3	4	5	6
EXPLORATION AND PRODUCTION					
1. Executive/ Managerial	1765	1967	3394	4193	4896
2. Supervisory	2774	3538	1994	2957	3068
3. Clerical	3764	3538	3795	7267	4405
4. Workmen	17704	18013	22216	18815	23683
5. TOTAL	26007	17056	31399	33232	36052
6. Expatriates/ Foreign Experts	44	11	14	46	37
GRAND TOTAL	26051	27067	31413	33278	36089
PETROLEUM REFINING *					
1-Excutive/ Managerical	258	818	2055	2690	2825
2. Supervisory	1076	1313	1050	696	956
3. Clerical	1219	1568	1791	1803	2277
4. Workmen	7857	8626	10438	11013	12279
5. TOTAL	10677	12325	15334	16202	18337
6. Expatriates/ Foreign Experts	38	2	-	11	22
GRAND TOTAL	10745	12327	15334	16213	18359
M A R K E T I N G					
1. Executive/ Managerial	2367	3519	3318	4330	4632
2. Supervisory	2081	910	1591	860	1049
3. Clerical	6220	5870	5820	6003	6183
4. Workmen	9680	8770	9191	9750	10994
5. TOTAL	20348	19069	19920	20943	22858
6. Expatriates/ Foreign Experts	14	3	-	-	-
GRAND TOTAL	20362	19072	19920	20943	22858

@ = Data relates to the number of persons directly employed by various oil companies as on 1st April of each year Staff Employed on contract basis is not covered.

* = Includes IOC's Head Office, Regional office and R&D Centre.

X. PRICES.

WHOLESALE PRICE INDICES OF Petroleum Products, Petro-based Industries and Other Energy Items.

(1970 - 71 = 100)

ITEMS	1972-73	1973-74	1974-75	1978-79	1979-80	1980-81	1981-8
1. Petroleum Products.							
Petrol	121.6	178.6	272.1	299.1	361.3	430.7	519.0
Diesel Oil	105.9	119.5	194.3	HSD:164.0	186.5	279.6	385.9
				LDO:269.1	329.8	548.1	755.2
Kerosene	114.9	113.1	187.7	235.0	266.1	277.3	324.3
F. O.	113.3	150.7	308.4	432.6	529.9	880.1	1179.5
Aviation Spirit	125.4	173.9	288.4	309.6	431.7	581.8	593.4
Petroleum Crude & Natural Gas.	142.0	317.1	686.5	802.9	1384.0	2041.8	2006.4
II. Petro-Based Industries.							
Lubricating Oil	99.0	135.8	311.7	309.6	319.6	373.6	420.4
Nylon & Terene Mixed Cloth	98.9	104.7	125.1	110.4	131.6	139.7	148.2
Benzene	106.1	125.7	440.7	388.2	480.3	709.0	769.5
Nitrogenous Fertilizers	104.7	109.5	191.4	178.6	171.7	254.7	283.1
Insecticides	111.6	131.6	200.3	236.9	272.2	328.6	361.2
Syn.Detergents	105.2	105.7	161.0	177.2	230.5	274.8	294.2
Polystyrene	101.0	121.8	262.1	252.4	349.8	425.8	464.8
Polyethylene Moulding Powder	105.4	122.8	184.2	192.6	228.9	291.9	288.8
PVC Compounds	104.3	132.2	136.4	184.1	222.6	309.1	323.3
PVC Sheets	98.2	129.8	187.7	163.6	196.0	224.9	239.4
Syn.Resins (nes)	99.8	121.3	177.2	179.0	199.8	219.0	249.4
Syn.Fibre	101.4	106.2	154.1	132.5	150.2	157.4	168.4
Syn. Rubber	100.0	100.0	100.0	109.6	138.3	174.4	185.0
Polythene Films	108.8	131.2	216.7	203.1	248.6	296.7	301.9
Carbon Black	99.6	99.6	242.8	268.2	347.4	532,7	692.8
Plasticizers	104.6	103.1.	240.1	200.1	269.5	314.9	313.2
III. Other Energy Items.							
Electricity	105.7	111.3	137.2	209.1	225.6	239.0	290.4
Coke	134.7	136.4	182.1	224.3	262.8	291.7	432.1
Coal	110.8	121.7	143.8	212.2	299.5	347.6	382.8
IV. All Commodity Index.							
All Commodities.	116.2	139.7	174.9	185.8	217.6	257.2	276.4

Source :- Monthly Bulletins of Index Numbers of Wholesale Price Indices brought out by the office of the Economic Advisor, Ministry of Industry.

*= Provisional.

Prices of Indigenous Onshore and Offshore Crude Oil of 34^0 API Gravity

Item	Unit	Price effective from 14.7.75	8.9.76	16.12.77	1.4.81 @	11.7.81 @@
	(i) Onshore Crude Oil					
1. Base Price as fixed by the Govt.	Rs.Bbl	36.64*	33.30**	27.60	27.60	138.54
2. Conversion factor	Bbl/MT	7.37	7.37	7.37	7.37	7.37
3. Base price	Rs/MT	270.04*	245.42**	203.41	203.41	1021.00
4. Oil Development Cess	Rs/MT	@	60.00	60.00	60.00	100.00
5. Royalty	Rs/MT	@	@	42.00	61.00	61.00
6. Total price including cess & royalty	Rs/MT	270.04	305.41	305.41	324.41	1182.00
	(ii) Offshore Crude Oil					
1. Base price as fixed by the Govt.	Rs./Bbl.			45.00	45.00	138.54
2. Conversion factor	Bbl/MT			7.37	7.37	7.37
3. Base price	Rs/MT			331.65	331.65	1021.00
4. Oil Development Cess	Rs/MT			60.00	60.00	100.00
5. Royalty	Rs/MT			42.00	61.00	61.00
6. Total price including cess & royalty	Rs/MT			433.65	452.65	1182.00

* Inclusive of royalty @ Rs.15/MT and Oil Development Cess @ Rs.60/MT.

**Inclusive of royalty @Rs. 42/MT.

@ Already included in the base price of the crude oil.

@@The Govt. revised the price of onshore and offshore Crude Oil to Rs.1182/M.T. inclusive of royalty @Rs.61/MT and Oil Development Cess @Rs.100/MT.

Note: 1. The above prices are for 34^0 API gravity crude oil Ex-central tank farm of the producer and are subject to gravity escalation @Rs.0.16 per degree API upto 45^0 API, no limit for downward escalation has been laid down.

2. The prices are inclusive of sales tax which is the liability of the producer.

Basic Ceiling Selling Prices (Ex-storage point) of Petroleum Products w.e.f. 11.7.1981

(Rs./Selling Unit)

Product	Selling Unit	Bombay/ Koyali	Cochin	Madras	Vizag.	Brauni/ Haldia Gauhati Digboi	Calcutta	Kandla	Okha	Goa
1. ATF	KL	3871.85	-	3891.21	3884.64	3890.04	3890.04	3869.45	3874.48	3871.71
2. MS 83	KL	5438.07	5435.09	5446.90	5439.47	5461.11	5461.11	5437.37	-	5433.12
3. MS 93	KL	5593.48	5590.36	5602.27	5594.84	5616.94	5616.94	5592.63	-	5588.45
4. HSDO	KL	2649.55	2648.93	2660.98	2654.69	2661.75	2683.68	2688.41	2698.84	2682.58
5. SKO	KL	1544.93	1547.45	1555.34	1552.73	1559.51	1580.32	1579.31	1591.73	1575.49
6. LDO	KL	2505.97	2505.33	2520.46	2511.19	2518.57	2518.57	2507.24	-	2504.54
7. MLO	KL	2719.41	2718.72	2735.06	2725.05	2733.02	2733.02	2720.78	-	2717.86
8. F.O.(non-forts.)	KL	2424.06	2423.33	2438.78	2430.39	2437.81	2462.12	2466.16	2478.87	2461.37
9. F.O.(for forts.)	KL	1274.06	1273.33	1288.78	1280.39	1287.81	1312.12	1316.16	1328.87	1311.37
10. Bitumen St.Gd. Packed	MT	2607.91	2607.91	2607.91	2607.91	2607.91	2635.41	2671.23	2676.11	2694.36
11. Bitumen St.Gd.Bulk	MT	2322.85	2322.85	2322.85	2322.85	2322.85	2347.85	-	-	-
12. Naphtha(Non-forts)*	MT	2792.00	2792.00	2792.00	2792.00	2792.00	2834.22	2845.87	2854.13	2852.47
13. Naphtha(Forts.)*	MT	1723.31	1722.11	1739.48	1729.63	1738.36	1780.58	1777.92	1785.83	1781.57
14. JBO *	MT	2358.42	2358.42	2358.42	2358.42	2358.42	2384.68	-	-	-
15. SBPS 55/115 *	KL	3453.56	3453.56	3453.56	3453.56	3453.56	3482.72	3490.38	3496.48	3485.51
16. Solvent 1425 *	KL	3453.56	3453.56	3453.56	3453.56	3453.56	3482.72	3490.38	3496.48	3485.51
17. SBPS 64/69*	KL	3629.36	3629.36	3629.36	3629.36	3629.36	3657.40	3664.76	3670.62	3660.08
18. Hexane *	KL	3629.36	3629.36	3629.36	3629.36	3629.36	3657.40	3664.76	3670.62	3660.08
19. MTO 140/205*	KL	2348.26	2348.26	2348.26	2348.26	2348.26	2368.42	2382.17	2394.42	2378.40
20. MTO Laws*	KL	2429.96	2429.96	2429.96	2429.96	2429.96	2450.13	2463.89	2476.15	2460.12
21. LPG(Domestic)	MT	2633.98	2637.48	2648.16	2644.80	2653.00	-	-	-	-
22. LPG(Industrial)	MT	2928.31	2928.31	2928.31	2928.31	2928.31	-	-	-	-
23. LPG(Packed)(Bulk)	MT	3110.81	3110.81	3110.81	3110.81	3110.81	-	-	-	-

* Exclusive of excise/custom duties which will be charged extra at applicable rates.

PRICE BUILD-UP OF SELECTED PETROLEUM PRODUCTS
AS ON 1.4.1982

(Rs/KL)

	Bombay	Calcutta	Delhi	Madras	Kanpur
	MOTOR SPIRIT 83 ON				
1. Ex MI Rate/BCSP	5438.07	5461.11	5594.17	5446.90	5438.07
2. State Surcharge		10.11		35.00	25.00
3. RPO Charges	11.36	11.36	11.36	11.36	11.36
4. Delivery Charges beyond Free Delivery zone	-	2.88	-	-	-
5. RPC Surcharge	15.00	15.00	15.00	15.00	15.00
6. Bombay Octroi Surcharge	28.50	-	-	-	30.00
7. Entry tax etc.	-	20.00(a)	-	-	162.55(b)
8. Total	5492.93	5520.35	5620.53	5508.26	5681.98
9. Sales tax	604.22	552.04	393.44	605.91	454.56
10. Dealers Commission	50.00	50.00	50.00	50.00	50.00
11. Gross Retail Selling Price	6147.15	6122.39	6063.97	6164.17	6186.54
12. Retail Selling Price (Rs/Litre)	6.15	6.13	6.07	6.17	6.19
	HIGH SPEED DIESEL OIL				
1. Ex MI Rate/BCSP	2649.55	2683.68	2768.02	2660.98	2649.55
2. State Surcharge		1.00		35.00	-
3. RPO Charges	7.27	7.27	7.27	7.27	7.27
Notional Rly. Freight	-	-	-	-	49.59
4. Delivery Charged beyond free Delivery zone		2.88	-	-	-
5. RPO Surcharge	20.00	20.00	20.00	20.00	20.00
6. Bombay Octroi Surcharge	18.50	-	-	-	32.20
7. Entry tax	-	20.00	-	-	-
8. Total	2695.32	2734.83	2795.29	2723.25	2758.61
9. Sales tax	242.58	246.13	195.67	299.56	331.03
10. Dealers Commission	20.00	20.00	20.00	20.00	20.00
11. Gross Retail Selling Prices	2957.90	3000.96	3010.96	3042.81	3109.64
12. Retail Selling Price (Rs/Litre)	2.96	3.01	3.02	3.05	3.11

(a) = Entry tax. (b) Notional Rly. freight.

Price build up Selected Petroleum Products as on 1.4.1982

(Rs./K.L.)

	Bombay	Calcutta	Delhi	Madras	Kanpur
		SUPERIOR KEROSENE OIL			
1. Ex-storage point price	1544.93	1580.32	1667.89	1590.35	1616.20
2. Sales tax	-	79.02	50.04	63.61	129.30
3. Dealers commission	24.00	24.00	7.70	8.00	8.00
4. Transportation charges	37.33	15.00	28.92	19.70	90.00
5. Leakage				16.54	
6. Handling charges				2.00	
7. Godown rent/Bank commission				2.00	
8. Barrel depreciation				2.00	
9. Octroi	13.50				
10. Total	1619.76	1698.34	1754.55	1704.20	1843.50
11. Retailers commission	31.00	101.66	55.45	75.80	50.00
12. Total(Rs.KL)	1650.76	1800.00	1810.00	1780.00	1893.50
13. Retail selling price(Rs/litre)	1.66	1.80	1.81	1.78	1.89
		FURNACE OIL			
1. Ex-MI Rate	2424.06	2462.12	2686.56	2438.78	No
2. Bombay octroi	18.47	-	-	-	retail
3. Extra tax	-	20.00	-	-	price
4. Sales tax	97.70	148.93	188.06	197.90	in
5. State surcharge		-	-	35.00	Kanpur
6. Surcharge on sales-tax	-	-	-	9.90	
7. Total wholesale price (Rs./KL)	2540.23	2631.05	2874.62	2681.58	

Price build up of Selected Petroleum Products as on 1.4.1982

(Rs./K.L.)

	Bombay	Calcutta	Delhi	Madras	Kanpur
LIGHT DIESEL OIL					
1. Ex MI Rate	2505.97	2518.57	2627.75	2520.46	2505.97
2. State surcharge	-	-	-	35.00	
3. Sales tax	100.78	228.47	183.94	281.10	317.74
4. Dealers commission	-	-	6.60	6.00	
5. Handling charges	-	-	3.75	3.00	
6. Godown rent	-	-	-	3.50	
7. Barrel depreciation	-	-	-	5.00	
8. Leakage allowance 1%	-	-	28.12	28.36	
9. Transportation charges	-	-	24.89	25.00	121.86
10. BDA	-	-	4.95	-	
11. Octroi charges	13.50	-	-	-	20.00
12. Entry tax	-	20.00	-	-	
13. Total (Rs./KL)	2620.25	2767.04	2880.00	2907.42	2965.57
14. Retail selling price (Rs/litre)	No retail sale of LDO				
LIQUIFIED PETROLEUM GAS (Rs./Cylinder @ 15 KG)					
1. Ex-Refinery price	38.17	39.81	39.52	39.72	39.81
2. Freight	0.44	4.15	5.37	-	4.30
3. Terminal tax	-	-	0.20	-	0.60
4. Under/over recovery	-	+0.33	0.24	+1.61	-
5. Local delivery charges	-	-	0.30	-	-
6. Total	38.61	44.29	45.15	41.33	44.71
7. Sales tax	1.54	6.64	2.26	3.31	3.58
8. Surcharge on sales-tax	-	-	-	0.17	-
9. Addl. surcharge on sales-tax	-	-	-	0.17	-
10. Billable rate to distributor	40.15	50.93	47.41	44.98	48.29
11. Octroi	-	0.54	-	0.39	-
12. Distributors commission	3.37	3.37	3.37	3.37	3.37
13. Retail selling price	43.52	54.84	50.78	48.74	51.66

@ Price for Bombay relates to cylinder containing 14.2 K.G. of LPG.

Price build up of Selected Petroleum Products as on 1.4.1982

(Rs./K.L.)

	Bombay	Calcutta	Delhi	Madras	Kanpur
A.T.F. (DOMESTIC AIRLINES)					
Ex-MI price	3871.85	3890.04	3891.21	3871.85	3871.85
Railway freight	-	-	-	218.43	227.28
Local levies	13.50	20.00	-	15.00	10.00
Airfield charges	24.44	24.44	24.44	24.44	41.94
Total	3909.79	3934.48	3915.65	4129.72	4151.07
Sales tax	135.76*	983.62	287.81	289.08	332.09
Total (Rs./KL)	4045.55	4918.10	4203.46	4418.80	4483.16
A.T.F. (INTERNATIONAL AIRLINES)					
Ex-MI Price	3871.85	3890.04	3891.21	3871.85	
Less : Excise duty	333.52	333.52	333.52	333.52	
Duty free price	3538.33	3556.52	3557.69	3538.33	
Railway freight	-	-	-	218.43	
Local levies	13.50	-	-	15.00	
Total	3551.83	3556.52	3557.69	3771.76	
+ Applicable concessional duty w.e.f. 18.8.1979	24.60	24.60	24.60	24.60	
Airfield charges/PPA surcharge	24.44	24.44	24.44	24.44	
Total	3600.87	3605.56	3606.73	3820.80	
Adhoc surcharge	(135.00)	(135.00)	(135.00)	(135.00)	
Total (Rs./KL)	3465.87	3470.56	3471.73	3685.80	

* Sales tax included in the price build up is at concessional rates for supplies to Indian Airlines flights only in Maharashtra State.

Note : For scheduled airlines payment of sales tax is exempted except in the case of Madras.

Trends in Retail Selling Prices of Selected Petroleum Products in Metropolitan Towns in India.

Prices as on	Bombay	Calcutta	Delhi	Madras	Kanpur
	MOTOR SPIRIT 83 (Rs/litre)				
1.1.1971	1.16	1.23	1.19	1.16	1.24
1.1.1972	1.42	1.46	1.43	1.39	1.46
1.1.1973	1.43	1.46	1.44	1.41	1.47
1.1.1974	2.82	2.81	2.78	2.69	2.73
1.1.1975	3.26	3.27	3.27	3.19	3.35
1.1.1976	3.36	3.39	3.39	3.30	3.47
1.1.1977	3.39	3.38	3.39	3.29	3.48
1.1.1978	3.38	3.38	3.39	3.29	3.48
1.4.1979	4.04	4.04	4.04	4.90	4.14
17.8.1979	4.43	4.42	4.41	4.25	4.52
8.6.1980	5.15	5.14	5.11	4.90	5.22
13.1.1981	5.56	5.54	5.50	5.29	5.62
11.7.1981(To-date)	6.15	6.13	6.07	6.17	6.19
	HIGH SPEED DIESEL OIL (Rs/litre)				
1.1.1971	0.79	0.86	0.83	0.82	0.85
1.1.1972	0.83	0.90	0.86	0.87	0.88
1.1.1973	0.83	0.90	0.86	0.87	0.88
1.1.1974	0.81	0.87	0.84	0.88	0.87
1.1.1975	1.06	1.10	1.11	1.15	1.15
1.1.1976	1.28	1.35	1.36	1.36	1.32
1.1.1977	1.27	1.36	1.34	1.35	1.33
1.1.1978	1.27	1.36	1.34	1.35	1.33
1.4.1979	1.39	1.49	1.47	1.49	1.50
17.8.1979	1.58	1.68	1.66	1.66	1.69
11.9.1979	1.50	1.60	1.58	1.59	1.61
8.6.1980	2.21	2.25	2.28	2.24	2.34
13.1.1981	2.61	2.66	2.67	2.66	2.76
11.7.1981(To-date)	2.96	3.01	3.02	3.05	3.11
	SUPERIOR KEROSENE (Rs/litre)				
1.1.1971	0.54	0.58	0.58	0.56	0.65
1.1.1972	0.57	0.61	0.61	0.57	0.69
1.1.1973	0.61	0.65	0.65	0.65	0.74
1.1.1974	0.82	0.84	0.82	0.85	0.86
1.1.1975	1.04	1.05	1.08	1.10	1.25
1.1.1976	1.21	1.25	1.29	1.31	1.39
1.1.1977	1.21	1.24	1.30	1.31	1.34
1.1.1978	1.18	1.24	1.30	1.31	1.34
1.4.1979	1.29	1.38	1.43	1.43	1.47
17.8.1979	1.46	1.56	1.61	1.62	1.66
11.9.1979	1.39	1.49	1.54	1.55	1.59
8.6.1980	1.39	1.49	1.54	1.55	1.59
13.1.1981	1.49	1.60	1.65	1.67	1.70
11.7.1981	1.60	1.76	1.81	1.84	1.90
1.4.1982	1.66	1.80	1.81	1.78	1.90
	LIQUIFIED PETROLEUM GAS (Rs/Cylinders)				
	14.2 Kg.cyl.	15 Kg.cyl.	15 Kg.cyl.	15Kg.cyl.	15 Kg.cyl.
1.1.1971	-	23.33	22.01	23.96	22.49
1.1.1974	20.01	25.28	25.20	21.60	25.13
1.1.1975	22.10	27.79	27.36	23.94	27.61
1.1.1976	26.75@	33.31	32.61	29.36	32.85
1.4.1979	26.94@	37.06	34.98	31.90	35.42
17.8.1979	33.96@	42.93	40.23	37.32	40.82
8.6.1980	33.96@	42.93	40.23	37.81	40.82
13.1.1981	38.94@	49.09	45.53	-	46.26
11.7.1981(To-date)	43.52@	54.84	50.78	48.74	53.06

@ For 14.2 Kg. cylindor.

Rates of Dealers Commission for MS, HSDO and LPG in India

Slab of Annual Volumes of Sales (KL/Annum)	Dealers Commission effective from 1.4.77	15.7.80	1.3.81	16.8.81	1.7.82
1.	2.	3.	4.	5.	6.
MOTOR SPIRIT (Rs./KL)					
Prior to 1.7.1982					
0 - 480	80*	100	107	114	
481 - 1080	50*	70	75	82	
Over 1080	35*	50	55	61	
Effective from 1.7.1982					
0 - 360					134
361 - 600					98
601 - 1080					86
Above 1080					69
HIGH SPEED DIESEL OIL (RS./KL)					
Prior to 1.7.1982					
0 - 600	50	55	58	60	
601 - 1200	25	30	33	35	
Above 1200	20	25	28	30	
Effective from 1.7.1982					
0 - 360					79
361 - 600					58
601 - 1080					42
Above 1080					36

L.P.G. (RS./CYLINDER)

	Prior to 1st March 1982	Effective from 1.3.1982
Per Cylinder	3.37	3.62

* The minimum rate of commission was Rs.50/KL.

Note : The rates of dealership commission fixed at 3 Annas per imperial gallon for MS in 1954 and at 1 Anna and 3 paise per imperial gallon for HSDO in 1955 continued upto 30th June 1976. The revised commission rates effective 1.7.1976 were as follows :

Sales per Annum (Combined MS/HSDO Sales)	Rs./K.L. MS	HSDO
Upto 360	80	50
361 to 720	35	15
721 and above	25	10

XI. EXCISE/CUSTOMS DUTIES AND SALES TAX.

Realization of Excise & Custom Duties From crude oil and Petroleum Products.

....

(Rs. in Crores)

Products	ACTUALS					1981-82 (RE)	1982-83 (BE)
	1970-71	1975-76	1978-79	1979-80	1980-81		
A. Excise Duties							
1. Mogas	173	404	496	558	493	516	519
2. Kerosene Oil	121	161	159	165	124	151	183
3. Refined Diesel Oil & Vap.Oil	232	300	367	387	280	362	425
4. Diesel oil (Nos)	23	21	22	24	20	20	20
5. Furnace oil	33	49	39	43	45	44	44
6. Asphalt/Tar	9	11	14	18	16	20	24
7. Blended or compounded Lubes & Greases	-	45	-	-	-	-	-
8. Pet Products (others)	17	46	191	208	175	202	259
9. Calcined Pet. Coke	-	3	2	4	5	7	8
TOTAL (A)	608	1040	1290	1407	1158	1322	1482
B. Customs Duties							
1. Petroleum Crude	-	13	12	17	16	15	14
2. Mogas	5	9	9	7	8	9	7
3. Kerosene Oil	10	37	78	70	83	84	67
4. Batching Lubricating &other Mineral oils	9	21	24	30	103	92	97
5. HSD & Vap.Oil	1	26	57	80	127	83	37
6. Indl.Fuel Oil	5	9	10	9	17	9	19
TOTAL (B)	30	115	190	213	354	292	241
GRAND TOTAL	638	1155	1480	1620	1512	1614	1723

Figures rounded to nearest crore.

SOURCE:- Budget papers of the Central Government.

Percentage share of Central Excise on POL to Total Central Excise and to Net National Products

Year	Net National Product (.....Rs. Crores.....)	Central Excise	Central Excise on Pol (....)	Central Excise as % of NNP(%)	Central Excise on POL as % of NNP(%)	Central Excise on POL as % of Total Central excise %
1.	2.	3.	4.	5.	6.	7.
1960-61	13263	416	101	3.1	0.8	24.3
1965-66	20637	898	261	4.4	1.3	29.1
1970-71	34235	1759	608	5.1	1.8	34.6
1971-72	36573	2061	708	5.6	1.9	34.4
1972-73	40270	2324	767	5.8	1.9	33.0
1973-74	50424	2602	874	5.2	1.7	33.6
1974-75	59446	3231	1011	5.4	1.7	31.3
1975-76	62069	3845	1040	6.2	1.7	27.1
1976-77	67083	4221	1110	6.3	1.7	26.3
1977-78	75935	4448	1152	5.9	1.5	25.9
1978-79	80992	5194	1290	6.4	1.6	24.0
1979-80	87253	6148	1407	7.0	1.6	22.9
1980-81	104201	6479	1158	6.2	1.1	17.9

SOURCE :- i) Government of India, Economic Survey for N.N.P

ii) Budget paper of Central Government.

COMPOSITE INCIDENCE OF EXCISE AND CUSTOM DUTIES ON PETROLEUM PRODUCTS

YEAR	Consumption of POL PRODUCTS (Excl. RBF) ('000' MTS)	Central Excise Duty realisation Rs./Crores	Customs Duties realisation Rs./crores	Total Central Excise & Customs duties Rs.crores	Composite Incidence of excise & Customs duties Rs/MT
1	2	3	4	5	6
1960-61	7985	101.07	22.32	123.94	155.22
1965-66	11917	261.18	83.00	344.18	288.81
1970-71	17912	608.18	29.73	637.91	356.14
1971-72	20071	708.39	63.37	771.76	384.51
1972-73	21715	767.42	86.01	853.43	393.01
1973-74	22346	873.85	96.03	969.88	434.03
1974-75	22105	1010.57	95.86	1106.43	500.53
1975-76	22447	1039.51	115.49	1155.00	514.55
1976-77	24101	1110 .00	112.00	1222.00	507.05
1977-78	25539	1152.00	127-00	1279.00	500.80
1978-79	28241	1290.00	190.00	1480.00	524.06
1979-80	29883	1407.00	213.00	1620.00	542.10
1980-81	30896	1158.00	354.00	1512.00	509.06

Revised Royalty and Oil Development Cess Paid by the Oil Companies since 1969-70 (Rs./Lakhs)

Year	Royalty@@ Onshore Gujrat	Onshore Assam*	Offshore	Total	Oil Development Cess@
1969-70	457	340	-	797	
1970-71	501	352	-	853	
1971-72	439	372	-	811	
1972-73	581	570	-	1151	
1973-74	560	558	-	1118	
1974-75	611	566	-	1177	3081
1975-76	658	649	-	1307	5007
1976-77	1325	1097	156	2578	5289
1977-78	1791	1903	1008	4702	6375
1978-79	1832	1716	1335	4883	6859
1979-80	1610	1793	1357	4760	6778
1980-81	1884	567	2424	4875	5932
1981-82	2106	2761	3118	7985	14500
1982-83	NA	NA	NA	NA	20500

* Royalty in respect of OIL and Assam included under this column pertain to calendar year. @@ Revised.

@ Oil Development cess was levied w.e.f. 23.7.1974.

** As per Explanatory Memorandum of the Budget of the Central Government for 1982-83.

Excise Duty Element Included in selling prices of Bulk Refined Petroleum Products.

(In Rupees)

Products	Unit	w.e.f. 1.3.79	w.e.f. 17.8.79	w-e.f. 11.9.79	w.e.f. 8.6.80	w.e.f. 13.1.81	w.e.f. 11.7.81
Avgas 100/130	KL	2702.43	2214.89	2214.89	2214.89	2214.89	2214.89
Avgas 115/145	KL	2700.50	2213.32	2213.32	2213.32	2213.32	2213.32
Avgas 73	KL	2701.60	2214.21	2214.21	2214.21	2214.21	2214.21
MS - 83	KL	2703.25	2215.56	2215.56	2215.56	2215.56	2215.56
MS - 93	KL	2704.90	2216.92	2216.92	2216.92	2216.92	2216.92
A.T.F.	KL	493.10	402.56	402.56	333.52@	333.52	333.52
S.K.O.	KL	493.20	402.63	333.59	333.59@	333.59	333.59
H.S.D.O.	KL	493.95	399.15	330.00	330.00@	330.00	330.00
L.D.O.	KL	74.15*	153.96	153.96	153.96	153.96	153.96
F.O.(Fert.Use)	KL	125.82	125.82	125.82	125.82	125.82	125.82
F.O.(Non-Fert. use)	KL	125.82	125.82	125.82	125.82	125.82	125.82
Bitumen (Bulk)	MT	157.55	110.30	110.30	110.30	110.30	110.30
Bitumen(Packed)	MT	157.55	157.55	157.55	157.55	157.55	157.55
LPG(Domestic)	MT	400.00	262.50	262.50	262.50	262.50	262.50
LPG(Industrial	MT	400.00	262.50	262.50	262.50	262.50	262.50
Naphtha**(Fert. use)	KL	4.50	4.50	4.36	4.36	4.36	4.40
Naphtha**(For non Fert. use)	KL	26.50	26.50	26.50	26.50	26.50	26.50

* Concession of Excise Duty on LDO was withdrawn w.e.f. 17.3.79 and duty became Rs.153.96 per KL from that date.

** Duty at 15°C

w.e.f. = with effect from

@ Revision effective from 11.9.1979.

EXCISE AND CUSTOM DUTIES IN THE BASIC CEILING SELLING PRICES (BCSP) EX-STORAGE POINT EFFECTIVE 11. 7. 1981.

PRODUCT	Selling Unit	Ex-Storage Point (Bombay) (Rs.)	Excise/ Custom Duties (Rs.)	Col.4 as % of Col.3
1.	2.	3.	4.	5.
A.T.F.	KL	3871.85	333.52	8.61
Motor Spirit 83	KL	5438.07	2215.56	40.74
Motor Spirit 93	KL	5593.48	2216,92	39.63
H.S.D.O.	KL	2649.55	330.00	12.45
S.K.O.	KL	1544.93	333.59	21.59
L.D.O.	KL	2505.97	153.96	6.14
F.O.(Non-fertilizers)	KL	2424.06	125.82	5.19
F.O.(Fertilizers)	KL	1274.06	125.82	9.88
Bitumen St. Grade(Bulk)	MT	2322.85	110.30	4.75
Bitumen St.Grade(Packed)	MT	2607.91	157.55	6.04
Naphtha for non-ferts.*	MT	2792.00	-	
Naphtha for ferts.*	MT	1723.31	-	
J.B.O.*	MT	2358.42	-	
SRP Spirit 55/115*	KL	3453,56	-	
SRP Spirit 64/69*	KL	3629.36	-	
Solvent 1425*	KL	3453.56	-	
Hexane*	KL	3629.36	-	
M.T.O.140/205*	KL	2348.26	-	
M.T.C. (Laws)*	KL	2429.96	-	
L.P.G.(Domestic)(Packed)	MT	2633.98	262.50	9.97
L.P.G.(Indstl.)(Packed)	MT	3110.81	262.50	8.44
L.P.G.(Industrial) Bulk	MT	2928.31	262.50	8.96

* Prices shown against these products are exclusive of Custom/Excise duties chargeable extra at applicable rates.

SALES TAX RATES FOR CRUDE OIL, NATURAL GAS AND PETROLEUM PRODUCTS AS ON 1-4-1982.

S.No.	Products	Andhra Pradesh	Assam	Bihar	Chandigarh.	Delhi	Goa, D & Dam
1.	2.	3.	4.	5.	6.	7.	8.
A.	Crude Oil and Natural Gas.						
1.	Crude Oil	4.00%	4%	4%	-	-	-
2.	Natural Gas		7%				
B.	Petroleum Products.						
3.	Aviation Spirit	16%	30 P/L	16%	15 P/L	7%	12%
4.	A.T.F.	13.1%	30 P/L	16%	15 P/L	7%	12%
5.	Motor Spirit Spirit	14.5%	30 P/L	9%	15 P/L	7%	12%
6.	H. S. D.	13.1%	11 P/L	10%	10 P/L	7%	12%
7.	L.D.O.	13.1%	11 P/L	14%	6%	7%	12%
8.	M. L. O.	13.1%	7%	9%	6%	7%	6%
9.	S. K. O.	5.2%	3 P/L	7%	6%	3%	4%
10.	I. K. O.	5.2%	2 P/L	5%	6%	3%	4%
11.	F. O.	5.2%	7%	7%	6%	7%	12%
12.	M. T. O.	5.2%	7%	9%	6%	7%	6%
13.	Lubes	7.7%	10 P/L	9%	6%	7%	6%
14.	Greases	7.7%	11PP/Kg.	9%	6%	7%	6 %
15.	Petroleum Naphtha	7.7%	7%	9%	6%	7%	6%
16.	Bitumen	5.2%	7%	9%	6%	7%	6%
17.	Petroleum Coke	4.00%	4%	4%	-	4%	4%
18.	Indane(LPG)	6.5%	7%	9%	6%	5%	12%
19.	Transformer Oil.	5.2%	7%	9%	6%	7%	6%
20.	Drum & Conta-	5.2%	6%	9%	6%	7%	6%
21.	H.B.Fluid	5.2%	10 P/L	9%	6%	7%	6%

SALES TAX RATES FOR CRUDE OIL, NATURAL GAS AND PETROLEUM PRODUCTS AS ON 1-4-82

S.No.	Products	Gujarat	Haryana	Himachal Pradesh	Jammu & Kashmir	Kerala	Madhya Pradesh
1.	2.	3.	4.	5.	6.	7.	8.
A.	Crude Oil & Natural Gas.						
	Crude Oil	1.4%	4%	4%	-	4%	4%
	Natural Gas	10%+10%SC on ST					
B.	Petroleum Product.						
3.	Aviation Spirit	Bonded 20% D.Paid 9%	12PPL	7PPL	12PPL	12%	12%
4.	A. T. F.	20%	12PPL	7PPL	8%	8%	12%
5.	Motor	12%	15PPL	7PPL	4%	15%	13.50%
6.	H. S. D.	12%	12PPL	7PPL	8%	20%	13.50%
7.	L. D. O.	5%	7%	7%	8%	20%	13.50%
8.	M. L. O.	5%	7%	7%	8%	4%	10%
9.	S. K. O.	3%	7%	7%	2%	4%	3%
10.	I. K. O.	3%	7%	7%	2%	4%	3%
11.	F. O.	4%	7%	7%	8%	5%	12.00%
12.	M. T. O.	5%	7%	7%	8%	4%	10%
13.	Lubes	6%	7%	7%	8%	7%	10.00%
14.	Greases	6%	7%	7%	8%	7%	10.00%
15.	Petroleum Naphtha	5%	7%	7%	8%	5%	10%
16.	Bitumen	5%	7%	7%	5%	4%	10%
17.	Petroleum Coke	4%	4%	4%	-	4%	4%
18.	Indane (LPG)	12% (Packed) 5% (Bulk)	7%	7%	Exempted	15%	12%
19.	Transformer Oil	5%	7%	7%	8%	7%	10%
20.	Tins & Containers	4%	7%	7%	8%	4%	10%
21.	H.B. Fluid	9%	7%	7%	8%	7%	10%

SALES TAX RATES FOR CRUDE OIL, NATURAL GAS AND PETROLEUM PRODUCTS AS ON 1-4-1982.

S.No.	Products	Maha-rashtra	Karna-taka	Manipur	Nagaland	Orissa	Pondi-cherry.
1.	2.	3.	4.	5.	6.	7.	8.
A.	Crude Oil & Natural Gas.						
1.	Crude Oil	-	4%	2 PPL	4%	4%	3%
2.	Natural Gas						
B.	Petroleum Products.						
3.	Aviation Spirit	Bonded 23% D.Paid 9%	12.5%	20PPL	8 PPL	16.%	3%
4.	A. T. F.	Bonded 30% D.Paid 23%	15%	20PPL	8 PPL	10%	3%
5.	Motor Spirit	11%	12.5%	20PPL	8 PPL	10%	4%*
6.	H. S. D.	9%	15%	15PPL	7 PPL	13%	4%*
7.	L. D. O.	4%	15%	15PPL	7 PPL	13%	3%
8.	M. L. O.	4%	5%	6%	5%	7%	2%
9.	S. K. O.	Exempted	4%*	3%	3 PPL	8%	Abolished
10.	I. K. O.	Exempted	4%*	3%	2 PPL	Exempt	Abolished
11.	F. O.	4%	8%	6%	5%	8%	3%
12.	M. T. O.	4%	-	6%	-	7%	-
13.	Lubes	6%	8%	15PPL	9 PPL	12%	3%
14.	Greases	6%	8%	15PPL	9 PPL	12%	3%
15.	Petroleum Naphtha	4%	5%	6%	-	7%	-
16.	Bitumen	4%	8%	6%	5%	7%	-
17.	Petroleum Coke	4%	4%	4%	4%	4%	3%
18.	Indane(LPG)	4%	8%	6%	5%	8%	-
19.	Transformer Oil	6%	8%	-	-	-	-
20.	Tins & Con-tainers	8%	5%	-	5%	7%	-
21.	H.B. Fluid	8%	8%	-	-	-	-

SALES TAX RATES FOR CRUDE OIL, NATURAL GAS AND PETROLEUM PRODUCTS AS ON 1-4-1982.

S.No.	Products	Panjab	Rajasthan	Tamilnadu	Uttar Pradesh	West Bengal
1.	2.	3.	4.	5.	6.	7.
A.	Crude Oil & Natural Gas.					
1.	Crude Oil	4%	4%	4%	4%	4%
2.	Natural Gas					
B.	Petroleum Products					
3.	Aviation Spirit	15 PPL	12%	7%	8%	9%
4.	A. T. F.	7.14%	12%	7%	8%	25%
5.	Motor Sprit	15 PPL	15%	11%	8%	9.9%
6.	H. S. D.	10 PPL	12½%	11%	12%	9%
7.	L. D. O.	6.12%	12½%	11%	12%	9%
8.	M. L. O.	7.14%	8%	8%	4%	8.02%
9.	S. K. O.	6.12%	8%	4%	8%	5%
10.	I. K. O.	6.12%	8%	4%	8%	Exempted
11.	F. O.	7.14%	8%	8%	4%	6%
12.	M. T. O.	7.14%	8%	8%	4%	8.04%
13.	Lubes	6.12%	8%	8%	8%	8.04%
14.	Greases	6.12%	8%	8%	8%	8.04%
15.	Petroleum Naphtha	7.14%	8%	8%	8%	8.02%
16.	Bitumen	7.14%	8%	8%	8%	8.02%
17.	Petroleum Coke	4%	4%	4%	4%	4%
18.	Indane (LPG)	6.12%	8%	8%	8%	15%
19.	Transformer Oil	7.14%	8%	4%	8%	8.02%
20.	Tins & Containers	6.12%	8%	5%	8%	8.02%
21.	H. B. Fluid	7.14%	8%	8%	8%	8.04%

SALES TAX RATES FOR CRUDE OIL, NATURAL GAS AND PETROLEUM PRODUCTS AS ON 1.4.1982.

(Rs/KL)

S.No.	Products	Arunachal Pradesh	Maghalaya	Mizoram	Tripura
1.	2.	3.	4.	5.	6.
A.	CRUDE OIL & NATURAL GAS.				
1.	Crude Oil	-	-	-	3%
3.	Natural Gas	-	-	-	5%
B.	PETROLEUM PRODUCTS				
3.	Aviation Spirit	-	202	70	8%
4.	A. T. F.	-	30	-	5%
5.	Motor Spirit	-	202	70	8%
6.	H. S. D.	-	111	50	5%
7	L. D. O.	-	111	50	5%
8	M. L. O.	-	-	-	-
9	S. K. O.	-	30	-	5%
10	I. K. O.	-	-	-	-
11	F. O.	-	-	-	5%
12.	M. T. O.	-	-	-	5%
13	Lubes	-	-	-	8%
14	Greases	-	-	-	5%
15	Petroleum Naphtha	-	-	-	8%
16	Bitumen	-	-	-	5%
17	Petroleum Coke	-	-	-	5%
18	Indane(LPG)	-	-	-	5%
19	Transforme3 Oil	-	-	-	5%
20.	Tine & Con tainers	-	-	-	5%
21.	H.B.Fluid	-	-	-	-

IN ADDITION TO THE SALES TAX PAYABLE THE FOLLOWING TAX AMOUNTS ARE ALSO PAYABLE/RECOVERABLE

1. Haryana : Surcharge at 2% on Sales Tax on all products undersales Tax Act is payable. This is recoverable.

2. Madhya Pradesh : The Sales Tax rates are inclusive of turnover tax levies.

3. Punjab : Addl. Tax at 2% of the sales tax on products under General Sales Tax Act is payable and is recoverable. (This has already been included in S.T. rate shown in enclosed list)

4. West Bengal : Turnover Tax @ 1% of the gross turnover of the bill is payable. This is non-recoverable.

5. Kerala : Surcharge at 8% of sales tax is payable, but the same is not recoverable from the market. Addl.S.Tax @ 10% of S.Tax is also payable which is recoverable on our sales.

6. Jammu & Kashmir : Surcharge at 5% of sales tax is payable and the same is recoverable from the market. This does not apply to MST products.

7. Maharashtra : Addl. Sales tax @ 6% of tax is payable under the Sales Tax Act but the same is not recoverable from the market. This does not apply to kerosene and declared goods.

8. Karnataka : Surcharge at 10% on tax (recoverable on the Invoice) is also payable w.e.f. 1.4.79.).5% turnover ta x on value of oil is non recoverable w.e.f. 1.4.82. Entry tax @ 1% on oil value of Pet. Products under " the Karnataka Tax on entry of goods into local areas for consumption use or sale therein 1979" (Not applicable for LPG,Kero,Naptha for use in manufacturer of fertilizers).

9. Tamil Nadu : Surcharge at 5.0% on tax is payable on all products which is recoverable, in specified area. Addl. Turnover tax at 0.7% on taxable turnover under Sales Tax Act is also payable which has to be borne by seller. Additional S/C @ 5% on tax is payable but not applicable for Petrol,HSD, SKO,LDO effective 10.6.81. Applies to Sales within Madras City and its sub-urban area within 32 Kms.

10. Gujarat : Addl. Sales At 10% on sales tax in respect of products under Gujarat Sales Tax Act, and on MST product is also payable. This is recoverable.

11. Orissa : Addl. Sales Tax at ½% of invoice value is payable on all products. This is recoverable effective 1.4.79.

12. Goa,Daman & Dieu : Addl. S.Tax @ 10% of Sales tax is payable which is not recoverable on our sales.

13. Andhra Pradesh : Surcharge at ½% per rupee of taxable turnover. This applies to all products. This is included in the sales tax rates indicated and it is recoverable.

14. Bihar : 10% surcharge on tax with effect from 15.1.1981. This is non-recoverable. 1% Addl.Tax on gross turnover-recoverable (Not on MS,ATF,AVN Sprit,HSD,LDO SKO etc.) eff. 1.11.81.

16. Himachal - Pradesh : 10% surcharge recoverable under GST Act.

Direct Sales Tax Payments (inclusive of MST and CST) on Crude Oil, Natural Gas and Petroleum Products made by the Oil Companies to State/Union Territory Governments during the years 1979-80 to 1980-81.

(Rs. in Lakhs)

State	1978-79	1979-80	1980-81	1981-82*
1. Crude Oil				
Assam	458.71	395.64	193.06	1707.04
Gujarat	523.25	470.57	475.89	1228.22
Arunachal Pradesh	-	-	0.58	0.44
Total (1)	981.96	866.21	669.53	2935.70
2. Natural Gas				
Assam	84.37	69.44	55.69	83.83
Gujarat	155.74	184.97	214.09	226.74
Arunachal Pradesh	-	-	-	-
Total (2)	240.11	254.41	269.78	310.57
3. POL Products				
(a) States				
Andhra Pradesh	2220.87	2831.17	4727.07	5865.17
Assam	956.95	720.35	797.82	965.01
Bihar	2155.44	2143.42	2992.45	4701.75
Gujarat	3156.35	4798.25	7253.80	9323.03
Haryana	560.63	590.06	678.39	869.86
Himachal Pradesh	26.58	16.43	20.44	22.03
Jammu & Kashmir	119.82	188.57	264.53	335.63
Karnataka	2147.19	2711.34	4033.84	4651.62
Kerala	2867.92	3465.74	4853.87	6409.59
Madhya Pradesh	1291.31	1699.86	2760.05	3013.90
Maharashtra	4996.71	6383.16	9341.66	11672.04
Manipur	33.46	32.95	28.82	31.57
Meghalaya	0.57	0.39	0.54	0.89
Nagaland	0.13	0.10	0.12	0.00
Orissa	373.16	527.96	748.11	1026.79
Punjab	992.21	1084.68	1219.67	1383.52
Rajasthan	1339.40	1666.09	2243.95	3054.80
Tamil Nadu	7133.75	8397.88	8406.62	10292.17
Tripura	24.26	21.33	37.94	61.11
Uttar Pradesh	2948.22	3584.25	4637.06	6641.04
West Bengal	3624.45	3473.55	4365.65	5459.42
(b) Union Territories				
Arunachal Pradesh				
Chandigarh	20.40	34.00	34.41	32.42
Delhi	1032.08	1290.47	1859.17	2242.61
Goa	365.05	501.93	558.44	886.68
Total(3)	38386.91	46163.93	61864.42	78943.38
GRAND TOTAL	39608.98	47284.55	62803.73	82189.65

* Provisional.

XII. TANKERS AND FREIGHT RATES

Tonnage of Indian Tankers Fleet(DWT in '000').

YEAR*	Oil Tanker		Ore/Oil Carrier		Total	
	No. of Tankers	DW tonnage	No. of Ships	DW Tonnage	No. of Ships	DW Tonnage
1.	2.	3.	4.	5.	6.	7.
			(A) Coastal Tankers			
1970	5	74.1	-	-	5	74.1
1971	5	74.1	-	-	5	74.1
1972	4	58.0	-	-	4	58.0
1973	3	47.9	-	-	3	47.9
1974	5	80.7	-	-	5	80.7
1975	9	137.6	-	-	9	137.6
1976@	9	137.6	-	-	9	137.6
1977@	9	137.2	-	-	9	137.2
1978@	8	126.8	-	-	8	126.8
1979@	9	132.9	-	-	9	132.9
1980@	10	158.5	-	-	10	158.5
1981@	16	247.7	-	-	16	247.7
			(B) Overseas Tankers			
1970	7	409.9	9	381.5	16	791.4
1971	7	409.9	10	467.0	17	876.9
1972	8	427.6	10	467.0	18	894.6
1973	9	449.7	10	659.7	19	1109.4
1974	14	826.8	12	952.2	26	1779.0
1975	20	1542.8	11	877.2	31	2420.0
1976	22	1840.6	14	1237.4	36	3078.0
1977@	23	1871.1	14	1237.8	37	3108.9
1978@	23	1871.1	17	1573.4	40	3444.5
1979@	22	1850.6	17	1573.4	39	3424.0
1980@	22	1850.6	16	1484.7	38	3335.3
1981@	23	1879.3	16	1484.7	39	3364.0
			(C) All Tankers			
1970	12	484.0	9	381.5	21	865.5
1971	12	484.0	10	467.0	22	951.0
1972	12	485.6	10	467.0	22	952.6
1973	12	497.6	10	659.7	22	1157.3
1974	19	907.5	12	952.2	31	1859.7
1975	29	1680.4	11	877.2	40	2557.6
1976	31	1978.2	14	1237.8	45	3215.6
1977@	32	2008.3	14	1237.8	46	3246.1
1978@	31	1997.9	17	1573.4	48	3571.3
1979@	31	1983.5	17	1573.4	48	3556.9
1980@	32	2009.1	16	1484.7	48	3493.8
1981@	39	2127.0	16	1484.7	55	3611.7

* As on 31st December of each year
@ DWT in Metric Tonnes
Source:- Ministry of Shipping and Transport.

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INDIAN TANKER FLEET AS ON 31.12.1981

Owner	Name of the Ship	DWT Tonnes (M.Tonnes)	Year of Built
1.	2.	3.	4.
1. Shipping Corporation of India(36)	1. Maharashi Dayanand*	123450	1978
	2. Vishvesvaraya	16450	1973
	3 Sarojini Naidu	16440	1975
	4. Bhagat Singh	16540	1974
	5. Rafi Ahmed Kidwai	24439	1975
	6. Jai Narayan Vyas	24529	1975
	7. Aurobindo	24411	1975
	8. Kolandia	24490	1976
	9. Desh Bandhu	36790	1964
	10. Lajpat Rai	49337	1965
	11. Gargi	58739	1963
	12. Jawaharlal Nehru	87170	1969
	13. Lal Bahadur Shastri	87170	1970
	14. Satyamurti	89351	1975
	15. Vivekanada	89371	1974
	16. Netaji Subhash Bose	89392	1973
	17. Lokmanya Tilak	89411	1975
	18. B.R. Ambedkar	89454	1974
	19. Chhatra pati Shivaji	89490	1975
	20. Rajendra Prasad	115723	1975
	21. Zakir Hussain	115853	1975
	22. Kanchanjunga	276755	1975
	23. Koyali	276800	1976
	24. Dadabhai Naoroji	24400	1977
	25. Bhaskara*	21941	1965
	26. Chanakya*	21962	1965
	27. Loelavati*	21962	1965
	28. Bailadila*	86890	1971
	29. Bellary*	86959	1970
	30. Barauni*	87200	1970
	31. Vallabhabhai Patel*	113920	1977
	32. Moti Lal Nehru*	114086	1973
	33. Vallathol*	114152	1976
	34. Abul Kalam Azad*	114340	1974
	35. Maharashi Karve*	123450	1978
	36. C.V. Raman	41123	1981
2. Great Easter Shipping Co.(7)	37. Jag Leadki*	103124	1972
	38. Jag Laxmi*	121423	1976
	39. Jag Leela	125083	1976
	40. Jag Jyoti	17892	1968
	41. Jag Prakash	25480	1974
	42. Jag Priya	32878	1975
	43. Jag Preeti	28679	1981
3. Varun Shipping Co.Ltd.(3)	44. Arya Doot	20968	1980
	45. Meghdoot	6102	1973
	46. Premdoot	6145	1972
4. Eassar Bulk CarriersLtd(4)	47. Nand Kala	6703	1972
	48. Nand Kavita	25604	1970
	49. Nand Kishore	19500	1981
	50. Nand Hari	19604	1981
5. Sagar Line Pvt(1)	51 Sagar Tarni	712	1965
6. Scindia Steam Nav.Co.Ltd.(1)	52. Wal Chand*	104750	1973
7. Ratnakar Shipping Co.(1)	53. Ratna Jayashree	60252	1966
8. Raj Lines Ltd. Calcutta(2).	54. Raj Sevak	1356	1966
	55. Raj Lok	1446	1966

* Ore/Oil Bulk Carriers Source :- Ministry of Shipping and Transport.

SHARE OF TRAFFIC IN PETROLEUM PRODUCTS IN THE-TOTAL TRAFFIC HANDLED AT MAJOR PORTS DURING 1965-66 TO 1981-82

(Million Tonnes)

Name of the Port	Year	Total Traffic	POL Traffic	POL as %age of total traffic at the port
1	2	3	4	5
Calcutta/ Haldia	1965-66	9.84	1.53	15.6
	1969-70	6.89	1.55	22.5
	1973-74	6.33	1.97	31.1
	1977-78	7.55	3.41	42.2
	1978-79	7.98	3.92	49.1
	1979-80	8.56	4.58	53.5
	1980-81	9.29	5.15	55.4
	1981-82	9.68	4.51	46.6
Bombay	1965-66	18.12	9.35	51.6
	1969-70	15.04	8.60	57.2
	1973-74	18.46	11.05	59.9
	1977-78	16.90	9.86	58.3
	1978-79	15.60	7.83	50.2
	1979-80	17.57	8.31	47.3
	1980-81	17.57	9.00	51.2
	1981-82	18.69	9.45	50.6
Madras	1965-66	4.87	0.93	19.1
	1969-70	6.44	2.24	34.8
	1973-74	7.75	3.47	44.8
	1977-78	8.07	3.47	43.0
	1978-79	9.57	3.63	37.9
	1979-80	9.99	3.73	37.3
	1980-81	10.38	4.53	43.6
	1981-82	11.76	4.79	40.7
Cochin	1965-66	2.87	1.04	36.2
	1969-70	4.79	3.56	74.3
	1973-74	3.72	2.50	67.2
	1977-78	5.17	3.81	73.7
	1978-79	5.47	3.84	70.2
	1979-80	5.47	3.87	70.8
	1980-81	5.23	3.96	75.7
	1981-82	5.51	4.18	75.9
Kandla	1965-66	2.51	0.93	37.1
	1969-70	2.11	0.98	46.4
	1973-74	3.12	1.50	51.3
	1977-78	3.82	2.75	72.0
	1978-79	5.87	4.37	74.4
	1979-80	7.27	5.45	75.0
	1980-81	8.82	7.21	81.7
	1981-82*	9.53	7.63	80.1

...Continued/-

* Includes POL crude handled at Vadinar.

SHARE OF TRAFFIC IN PETROLEUM PRODUCTS IN THE TOTAL TRAFFIC HANDLED AT MAJOR PORTS DURING 1965-66 TO 1981-82

(Million Tonnes)

Name of the Port	Year	Total Traffic	POL Traffic	POL as %age of total traffic at the Port
1.	2.	3.	4.	5.
Vishakapatnam	1965-66	4.38	2.01	45.9
	1969-70	8.30	1.94	23.4
	1973-74	7.95	1.93	24.3
	1977-78	9.69	1.74	18.0
	1978-79	10.09	1.94	19.3
	1979-80	10.23	1.94	19.0
	1980-81	10.26	2.39	23.3
	1981-82	10.85	2.11	19.4
Marmugao	1965-66	7.86	0.09	1.1
	1969-70	9.03	0.15	1.1
	1973-74	14.34	0.55	4.5
	1977-78	11.28	0.62	5.5
	1978-79	10.80	0.64	5.9
	1979-80	14.80	0.73	4.9
	1980-81	13.95	0.59	4.2
	1981-82	14.89	0.66	4.4
Paradeip	1965-66	-	-	-
	1969-70	1.75	-	-
	1973-74	2.29	-	-
	1977-78	2.74	-	-
	1978-79	2.17	-	-
	1979-80	2.31	-	-
	1980-81	2.29	-	-
	1981-82	2.17	-	-
Port of Tuticorin	1977-78	0.63	0.35	55.6
	1978-79	1.06	0.32	30.2
	1979-80	2.41	0.44	18.3
	1980-81	2.56	0.44	17.2
	1981-82	2.69	0.47	17.5
New Mangalore	1977-78	0.38	0.20	52.6
	1978-79	0.87	0.19	21.8
	1979-80	0.90	0.21	23.3
	1980-81	0.96	0.31	32.3
	1981-82	1.64	0.36	22.0
GRAND TOTAL	1965-66	50.46	15.88	31.5
	1969-70	54.35	19.02	35.0
	1973-74	63.96	23.07	36.1
	1977-78	66.23	26.21	39.6
	1978-79	69.44	26.68	38.4
	1979-80	78.49	28.78	36.7
	1980-81	81.32	33.58	41.3
	1981-82	87.41	34.16	39.1

Source : Ministry of Shipping & Transport.

ESTIMATED FREIGHT PAID ON IMPORTS @ OF CRUDE OIL/POL PRODUCTS TRANSPORTED BY INDIAN/FOREIGN FLAG TANKERS DURING THE YEARS 1978 TO 1981

(Quantity : Million Tonnes)
(Value : Rs. Crores)

Products/Tankers	1978 Qty.	1978 Value	1979 Qty.	1979 Value	1980 Qty.	1980 Value	1981 Qty.	1981 Value
A. Crude Oil								
Indian tankers	11.67	56.24	8.64	44.83	9.49	54.03	8.11	61.20
Foreign tankers	3.61	19.74	4.63	24.51	5.75	31.89	6.31	49.65
Total (A)	15.28	75.98	13.27	69.34	15.24	85.92	14.42	110.85
B. POL Products								
Indian tankers	1.72	14.73	1.37	8.46	1.17	19.70	1.01	21.49
Foreign tankers	2.27	8.08	2.73	21.07	5.57	29.16	4.20	24.05
Total (B)	3.99	22.81	4.10	29.53	6.74	48.86	5.21	45.54
C. Crude Oil/POL Products								
Indian tankers	13.39	70.97	10.01	53.29	10.66	73.73	9.12	82.69
Foreign tankers	5.88	27.82	7.36	45.58	11.32	61.05	10.51	73.70
Total (C)	19.27	98.79	17.37	98.87	21.98	134.78	19.63	156.39

@ As perBill of lading quantity.

COASTAL MOVEMENT OF PETROLEUM PRODUCTS
(Qty. moved to Indian ports)

('000 Tonnes)

Year	I/F	F/F	Total	Estimated freight* paid (Rs.Million)
1968	754.71	2442.61	3197.32	60.04
1969	1089.76	1941.68	3031.44	54.20
1970	1131.23	1695.36	2826.59	65.79
1971	1190.04	1656.50	2846.54	82.79
1972	1452.89	1138.18	2591.07	75.50
1973	1477.73	1168.25	2645.98	86.97
1974	1640.71	1055.65	2696.35	136.59
1975	2191.35	177.62	2368.97	117.52
1976	2060.77	20.65	2081.42	84.63
1977	2342.19	-	2342.19	101.37
1978	2823.67	-	2823.67	146.06
1979	2889.00	-	2889.00	194.61
1980	2713.78	-	2713.78	254.60
1981	2979.24	-	2979.24	290.29

N.B.: I/F = Indian Flag vessels. F/F = Foreign Flag vessels.

* Includes freight paid on demurrage and dead freight paid.

AVERAGE FREIGHT RATES FROM RAS-TANURA TO INDIAN PORTS
(WORLD SCALE FLAT RATES ADJUSTED TO AFRA VARIATIONS)

($ /Long Ton)

Annual Average	General Purpose 16500-24999 dwt.	Medium Range 25000-44999 dwt.	L.R.I. 45000-79999 dwt.	L.R.II 80000-159999 dwt.	VLCC* 160000-319999 dwt.	ULCC 320000-549999 dwt.
1.	2.	3.	4.	5.	6.	7.
			RASTANURA TO BOMBAY			
1972	1.93	1.71	1.35	1.16	-	-
1973	3.00	2.60	1.94	1.60	-	-
1974	3.78	3.21	2.16	1.74	1.41	-
1975	3.20	2.86	1.91	1.44	1.30	-
1976	3.46	3.07	2.01	1.49	1.31	-
1977	4.02	3.04	1.98	1.45	1.27	-
1978	4.35	3.26	2.02	1.50	1.26	-
1979	7.50	5.89	3.66	2.37	1.54	1.44
1980	8.12	6.37	3.74	2.52	1.63	1.38
1981	9.17	6.94	4.01	2.81	1.94	1.66
			RASTANURA TO MADRAS			
1972	3.03	2.67	2.11	1.82	-	-
1973	4.64	4.03	2.98	2.67	-	-
1974	5.72	4.86	3.27	2.63	2.13	-
1975	5.14	4.59	3.06	2.31	2.09	-
1976	6.44	4.82	3.16	2.34	2.06	-
1977	6.54	4.94	3.22	2.36	2.06	-
1978	7.10	5.33	3.30	2.45	2.05	-
1979	12.38	9.72	6.04	3.90	2.54	2.38
1980	13.46	10.55	6.20	4.17	2.70	2.28
1981	15.45	11.68	6.75	4.73	3.26	2.78
			RASTANURA TO CALCUTTA			
1972	3.72	3.28	2.59	2.24	-	-
1973	5.72	4.96	3.68	3.29	-	-
1974	7.03	5.97	4.02	3.23	2.62	-
1975	6.31	5.64	3.76	2.83	2.57	-
1976	6.97	6.17	4.05	2.99	2.64	-
1977	8.10	6.13	3.99	2.93	2.56	-
1978	8.77	6.57	4.08	3.02	2.59	-
1979	14.98	11.76	7.31	4.73	3.08	2.88
1980	16.41	12.86	7.56	5.08	3.29	2.78
1981	19.12	14.46	8.35	5.86	4.04	3.45

Retail Outlets in India as on 1st January of each year

(Number)

Year	Nos.	B/Shell/ BPCL	Esso/ HPCL	Caltex/ HPCL(VMU)	IOC	IBP	ACC	TOTAL
1.	2.	3.	4.	5.	6.	7.	8.	9.
1968	Nos.	3683	1955	1437	1516	229	119	8939
	%	41.2	21.9	16.1	16.9	2.6	1.3	100
1969	Nos.	3700	1948	1396	2131	223	124	9522
	%	38.8	20.5	14.7	22.4	2.3	1.3	100
1970	Nos.	3577	1922	1392	2655	233	129	9908
	%	36.1	19.3	14.0	26.8	2.4	1.4	100
1971	Nos.	3583	1928	1384	2967	249	144	10255
	%	35.0	18.8	13.5	28.9	2.4	1.4	100
1972	Nos.	3535	1923	1384	3129	297	150	10418
	%	33.9	18.5	13.3	30.0	2.9	1.4	100
1973	Nos.	3478	1920	1372	3274	440	155	10639
	%	32.7	18.0	12.9	30.8	4.1	1.5	100
1974	Nos.	3262	1887	1359	3349	487	164	10508
	%	31.0	18.0	12.9	31.9	4.6	1.6	100
1975	Nos.	3173	1867	1206	3546	525	163	10480
	%	30.3	17.8	11.5	33.8	5.0	1.6	100
1976	Nos.	3157	1872	1201	3583	619	164	10596
	%	29.8	17.7	11.3	33.8	5.8	1.6	100
1977	Nos.	3183	1916	1200	3804	717	166	10986
	%	29.0	17.5	10.9	34.6	6.5	1.5	100
1978	Nos.	3241	1965	1198	4051	850	168	11473
	%	28.3	17.1	10.4	35.3	7.4	1.5	100
1979	Nos.	3288	1966	1201	4150	998	173	11806
	%	27.8	16.9	10.2	35.2	8.4	1.5	100
1980	Nos.	3296	3198@		4231	975	173	11873
	%	27.8	26.9		35.6	8.2	1.5	100
1981	Nos.	3308	3225@		4333	1001	175	12042
	%	27.5	26.8		36.0	8.3	1.4	100
1982	Nos.	3314	3247@		4413	1019	178	12171
	%	27.2	26.7		36.2	8.4	1.5	100

Note : 1. % = Percentage . 2. The data excludes consumers retail outlets
@ Includes HPCL(VMU) retail outlets.

STATE-WISE DISTRIBUTION OF RETAIL OUTLETS, MULTI-PURPOSE/FARM FUEL CENTRES, LDO/SKO DEALERS AND LPG DISTRIBUTORS AS ON 1.1.1982.

(Numbers)

State/Union Territory	Retail Outlets	Multi-Purpose Distribution Centre/Farm Fuel Centre	LDO/SKO dealers	LPG Distributors
1	2	3	4	5
1. Andhra Pradesh	958	51	530	96
2. Assam	245	1	361	10
3. Bihar	689	36	248	34
4. Gujarat	800	39	324	123
5. Haryana	396	29	122	18
6. Himachal Pradesh	47	2	17	3
7. Jammu & Kashmir	95	1	20	19
8. Karnataka	772	23	262	71
9. Kerala	595	13	233	22
10. Madhya Pradesh	720	43	300	55
11. Maharashtra	1299	67	470	311
12. Manipur	10	1	22	1
13. Meghalaya	29	2	22	2
14. Nagaland	14	1	11	2
15. Orissa	246	20	172	21
16. Punjab	799	35	217	14
17. Rajasthan	626	44	209	14
18. Sikkim	7	-	7	1
19. Tamil Nadu	1094	48	417	14
20. Tripura	22	1	39	74
21. Uttar Pradesh	1509	111	556	72
22. West Bengal	848	28	379	93
23. A.N. Islands	1		1	-
24. Arunachal Pradesh	11	2	10	-
25. Chandigarh	16		9	6
26. D.N. Haveli	1	-	-	-
27. Delhi.	230	2	61	89
28. Goa, Daman & Diu.	62		15	14
29. Mizoram	4	1	9	1
30. Pondichery	19		7	2
31. Bhutan	7		2	
Total	12171	601	5052	1169

Statewise Number of Domestic Consumers of LPG as on 1.4.1982.

(Numbers)

State/Union Territory	BPCL	HPCL	IOC	Total
17	2	3	4	5
1 Andhra Pradesh	19714	191963	105156	316833
2-Assam	-	-	34350	34350
3. Bihar	-	5575	125532	131107
4. Gujarat	75882	70774	288077	434733
5. Haryana	3503	1807	66197	71507
6. Himachal Pradesh	-	-	11782	11782
7. Jammu & Kashmir	-	23693	-	23693
8. Karnataka	20297	100218	112758	233273
9. Kerala	-	-	80224	80224
10. Madhya Pradesh	13601	84945	124184	222730
11. Maharashtra	612189	518135	-	1130324
12. Manipur	-	-	2378	2378
13. Meghalaya	-	-	4379	4379
14. Nagaland	-	-	4063	4063
15. Orissa	-	25516	29851	55367
16. Punjab	-	8009	60713	68722
17. Rajasthan	6656	11911	59229	77796
18. Sikkim	-	-	2103	2103
19. Tamil Nadu	325	1433	322922	324680
20. Tripura	-	-	2494	2494
21. Uttar Pradesh	-	-	368019	368019
22. West Bengal	-	36400	190597	226997
23. A.N.Islands	-	-	-	-
24. Arunachal Pradesh	-	-	-	-
25. Chandigarh	-	5500	27431	32931
26. D.N.Haveli	-	-	-	-
27. Delhi	66626	29640	315927	412193
28. Goa, Daman & Diu	3677	13482	-	17159
29. Mizoram	-	-	1421	1421
30. Pondicherry	-	-	8483	8483
31. Bhutan	-	-	-	-
Total	822470	1129001	2348270	4299741

Crude Oil and Products Pipelines in India as on 1.4.1982

Pipelines	Owned by	Length in Kms.	Diametre in inches
I. CRUDE PIPELINES (ONSHORE)			
Ankleshwor - Koyali	ONGC	94.80	16"
Kalol - Nawagam	ONGC	48.90	12"
Nawagam - Koyali	ONGC	77.63	14"
Sanand - Kalol	ONGC	12.52	8"
Sobhashan - North Kadi	ONGC	20.53	8"
North Kadi - Kalol	ONGC	39.59	12"
Jhalora - Sanand	ONGC	9.43	8"
Lakwa - Moran	ONGC	17.5	12"
Nadrasagar - Lakwa	ONGC	38.0	8"
Goleki - Dikhow	ONGC	18.5	8"
Goleki - Jorhat	ONGC	48.4	14"
Charali to Dikhow - Goleki	ONGC	6.0	4"
Amguri to Goleki - Jorhat	ONGC	6.0	6"
Digboi oilfield - Digboi Refinery	OIL	12.5	6"
Digboi oilfield - Digboi Refinery	OIL	10.4	4"
Nahorkatiya - Digboi	OIL	35.0	8"
Nahorkatiya - Gauhati	OIL	504.0	16"
Gauhati - Barauni	OIL	754.0	14"
Gauhati - Barauni Looplino	OIL	112.0	16"
SBM to Salaya Tank Farm	IOC	11.0	42"
Salaya - Viramgam	IOC	275.0	28"
Viramgam - Koyali	IOC	141.0	18"
Viramgam - Mathura	IOC	803.0	24"
Total Onshore (I)		3091.70	
II. CRUDE PIPELINE (OFFSHORE)			
Platform 'F' to Uran	ONGC	202.3	30"
Uran - Trombay	ONGC	22.8	36"
Trombay - Butchor	ONGC	4.4	36"
Total Offshore (II)		229.5	
Total Crude Pipelines(I+II)		3321.20	

.../-

Pipelines	Owned by	Length in Kms.	Diametre in inches
III. PRODUCT PIPELINES			
Digboi Refinery - Tinsukia	IOC	34	6"
Digboi Refinery - Tinsukia	IOC	39	6"
Digboi Refinery - Tinsukia	IOC	34	4"
Gauhati - Siliguri	IOC	425.85	8-5/8"
Barauni - Kanpur	IOC	668.78	12-3/4"
Koyali - Ahmedabad	IOC	115.70	8-5/8"
Haldia - Mourigam - Rajbandhu	IOC	268.58	12-3/4"
Haldia - Barauni	IOC	524.83	12-3/4"
Total Products Pipeline(III)		1995.04	
IV. GAS PIPELINES (ONSHORE)			
Cambay - Dhuwaran	ONGC	25.00	14"
Ankleshwer - Uttaran	ONGC	37.47	16"
Ankleshwer - Baroda	ONGC	96.55	14"
Nawagam - Calico Mills	ONGC	24.55	8"
Sanand - Kalol	ONGC	12.67	6"
Kalol - IFFCO (FG)	ONGC	2.51	8"
Kalol - IFFCO (AG)	ONGC	2.52	12"
Sobhashan - Dudh Sagar	ONGC	9.20	8"
ASEB - Gas Pipeline	ONGC	16.25	12"
Total Gas Pipelines(Onshore)		226.72	
V. GAS PIPELINES (OFFSHORE)			
Platform 'F' to Uran	ONGC	202.0	26"
Uran to Trombay	ONGC	26.5	18"
Uran to Trombay	ONGC	24.6	8"
Total Offshore (V)		253.1	
Total Gas Pipelines(IV+V)		479.82	
GRAND TOTAL (I TO V)		5796.06	

Excludes feeders/collectors pipelines owned by Companies.

CROSS PRODUCTION OF ENERGY BY VARIOUS SOURCES IN INDIA

Year	Coal & Lignite			Hydro-carbon			Power(Million(KH)			
	Coal (M.T.)	Lignite (M.T.)	Total (M.T.)	Natural Gas (Mn.cum.)	Crude Petro-leum. ('000'MT)	Total domes-tic@ Petroleum ('000'MT)	Thermal	Hydel	Nuc-lear	Total
1	2	3	4	5	6	7	8	9	10	11
1960-61	55.67	0.05	55.72	-	448	6077	9100	7837	-	16937
1965-66	67.73	2.57	70.30	507	3473	10381	19641	16734	-	36375
1970-71	72.95	3.39	76.34	1445	6822	18333	28162	25248	2417	55827
1972-72	72.42	3.72	76.14	1535	7290	19867	31713	28024	1189	60926
1972-73	77.22	2.89	80.11	1565	7321	19092	36217	27196	1133	64546
1973-74	78.17	3.32	81.49	1713	7189	20724	35321	28972	2396	66689
1974-75	88-41	2.94	91.35	20416	7684	20800	40109	27875	2206	70190
1975.76	99.66	3.05	102.71	2367	8448	22055	43303	33302	2626	79231
1976.77	104.02	4.01	105.03	2428	8898	22732	50245	34836	3252	88333
1977.78	101.00	3.59	104.59	2639	10763	24670	52495	37961	1740	92196
1978.79	101.97	3.27	105.24	2811	11633	25671	53420	47138	2770	103328
1979.80	103.87	2.92	106.79	2767	11766	27258	57155	45494	2876	105525
1980.81	113.98	4.81	118.79	2358	10507	25492	62031	46532	3009	111572
1981.82*	124.92	5.88	130.80	3853	16194	30141	70346	49558	3021	122925

@ = Includes R.B.F., * = Provisional

Source:- i) Central Electricity Authority and Economic Survey.

ii) Coal Statistics - Coal Controller's Organisation, Department of Energy.

XIII. Movement of POL Traffic on Railways since-1970-71.

YEAR	Tonnes Originating ('000'MTS)	Earnings ('000' Rs.)	Average lead(Kms.)	Earnings (Paise/Tonne Kms)	Average Frei (Col.3 ÷ 2) (Rs./Tonnes)
1.	2.	3.	4.	5.	6.
1970-71	8857	464081	594	9.1	52.40
1971-72	10063	523049	593	8.8	51.98
1972-73	10181	550982	614	8.8	54.12
1973-74	9994	555560	638	8.7	55.59
1974-75	10751	723192	642	10.5	67.27
1975-76	11663	860925	605	12.2	73.82
1976-77	12395	1038462	609	13.8	83.78
1977-78	13062	1120693	631	13.6	85.80
1978-79	14301	1324332	698	13.3	92.60
1979-80	14266	1497510	729	14.4	104.97
1980-81	14954	1835693	780	15.7	122.76

XIV. Rail Freight in respect of Petroleum Products (Dangerous & Non-dangereus) as on 1.4.80,1.4.81 and 1.1.1982.

Distance. Kms.	1-4-1980		1-4-1981		14-8-1981		1-1-1982 @	
	Non-dangerous POL	Dangerous POL	Non-dangerous POL	Dangerous POL	Non-dangerous POL	Dangerous POL	Non-dangerous POL	Dangerous POL
1.	2.	3.	4.	5.	6.	7.	8.	9.
100	24.40	38.20	34.30	56.60	42.40	64.90	46.60	71.40
300	47.70	76.20	67.20	113.40	83.80	130.30	92.20	143.30
500	68.50	110.10	96.70	164.00	121.30	188.70	133.40	207.60
800	111.80	181.10	158.10	270.00	198.70	310.60	228.50	357.20
1000	132.90	215.50	187.80	321.40	236.40	370.00	271.90	425.50
1500	181.60	295.50	257.10	441.10	323.80	508.20	372.40	584.40
2000	223.50	364.40	316.60	544.20	399.40	627.10	459.30	721.20
2500	256.30	418.30	362.70	624.60	457.90	720.09	526.60	828.00

@ = Proposed in the Budget.

Non-dangerous POL :- include HSDO, LDO and other Petroleum and hydro-carbons oil (Except Kerosene oil)

Dangerous POL : include Motor Spirit, Benzene and other dangerous mineral oils.

Source :- Railway Board Memorandum explaining the proposals for adjustment in freight rates to be effective from 1.4.1982.

XIV. INTERNATIONAL PETROLEUM STATISTICS

Estimated World Crude Oil and Gas Reserves (As on 1.1.1982)

Country	Crude Oil (10^9 Tonnes)	% of Total	Natural Gas (10^{12} Cubic feet)	% of Total
1.				
1. TOTAL WESTERN HEMISPHERE	16.7	18.2	464.2	15.9
of which: U.S.A.	4.1	4.5	198.0	6.8
Venezuela	2.8	3.0	47.0	1.6
Ecuador	0.1	0.1	4.3	0.2
Canada	1.0	1.1	89.9	3.1
Mexico	7,8	8.5	74.4	2.6
Argentina	0.4	0.4	23.4	0.8
2. TOTAL AFRICA	7:7	8:4	211:7	7:3
of which: Libya	3:1	3:4	23:2	0:8
Algeria	1:1	1:2	130:9	4:5
Nigeria	2.3	2.5	40:5	1:4
Egypt	0.4	0.4	3.0	0.1
Gabon	0.07	0.08	0.5	0.02
Tunisia	0.2	0.2	5.4	0.2
3. TOTAL MIDDLE EAST	49.7	54.1	762.5	26.2
of which: Saudi Arabia	22.6	24.6	114.0	3.9
Kuwait	8.8	9.6	30.5	1.1
Iran	7.8	8.5	484.0	16.6
Iraq	4.1	4.5	27.3	0.9
Neutral Zone	0.9	1.0	8.3	0.3
Abu Dhabi	4.2	4.6	19.5	0.7
4. TOTAL EUROPE	3.4	3.7	150.6	5:2
of which: West Germany	0.05	0.05	8.2	0.2
United Kingdom	2.03	2.2	26.0	0.9
Netherlands	0.05	0.05	55.7	1.9
Italy & Sicily	0.09	0.1	3.7	0.1
Norway	1.04	1.1	49.4	1.7
5. TOTAL ASIA & PACIFIC	2.6	2.9	127.6	4.4
of which: Indonesia	1.34	1.5	27.4	0.9
Australia	0.23	0.3	18.7	0.6
India*	0.47	0.5	14.5	0.5
Pakistan	0.03	0.03	16.4	0.6
Brunei	0.22	0.2	7.1	0.2
Malaysia	0.38	0.4	19.0	0.7
6. TOTAL FREE WORLD	80.1	87.3	1716.6	59.0
7. TOTAL COMMUNIST WORLD	11.7	12.7	1194.7	41.0
of which :Russia	8.6	9.4	1160.0	39.8
China	2.7	2.9	24.4	0.8
Others	0.4	0.4	10.3@	0.4
TOTAL WORLD	91.8	100.0	2911.3	100.0

Source : Oil & Gas Journal, December, 29,1981. * As on 1.1.1981.
1 Tonne = 7.3 per barrel. Neg =
@= Includes Albania, Bulgeria Cuba, Czechoslovakia, Est Germany Hungry, Mongolia, North Koraa, Poland, Rumania, Viet Nam and Yugoslavia.

WORLD ESTIMATED CRUDE OIL PRODUCTION 1979 - 1981.

(Million Tonnes)

Country	1979	1980 (Revised)	1981 (Estd)	%change 1981-80	%Share 1980	1981
1.	2.	3.	4.	5.	6.	7.
North America	561.8	565.2	552.0	- 2.3	18.5	19.3
U.S.A.	478.6	482.2	477.0	- 1.1	15.8	16.7
Canada	83.2	83.0	75.0	- 9.6	2.7	2.6
Caribbean Area	221.3	237.5	252.9	+ 6.5	7.8	8.8
of which: Venezuela*	122.8	112.9	115.0	+ 1.9	3.7	4.0
Mexico	80.8	106.8	120.0	+12.4	3.5	4.2
Trinided	11.1	11.0	10.5	- 4.4	0.4	0.4
Colombia	6.4	6.5	7.0	+ 7.5	0.2	0.2
Other Latin America	54.6	57.6	58.8	+ 2.1	1.9	2.1
Argentina	23.9	52.2	25.5	+ 1.2	0.8	0.9
Ecuador*	10.5	10.8	10.2	- 1.6	0.4	0.4
Brazil	8.5	9.4	11.0	-17.5	0.3	0.4
Peru	9.4	9.5	9.4	- 1.6	0.3	0.3
Belivia	1.4	1.1	0.9	-20.7	Neg.	Neg.
Chile	0.9	1.6	1.8	+15.4	0.1	0.1
Middle East	1091.9	947.4	811.8	-14.3	31.0	28.4
of which:						
Saudi Arabia* b)	475.2	496.4	490.0	- 1.3	16.2	17
Iran *	151.4	76.6	65.0	-15.1	2.5	2.3
Iraq *	168.0	130.0	44.0	-66.1	4.2	1.5
Kuwait * b)	127.2	81.4	58.0	-28.8	2.7	2.0
Abu Dhabi *	71.1	64.5	55.0	-14.9	2.1	1.9
Egypt	26.0	30.1	32.5	+8.0	1.0	1.1
Qatar *	24.4	22 .8	19.5	-14.4	0.7	0.7
Dubai*	17.7	17.5	18.0	+ 2.7	0.6	0.6
Oman	14.6	14.0	16,0	+14.2	0.5	0.6
Syria	8.5	8.5	8.5	-	0.3	0.3
Baharain	2.5	2.4	2.3	- 4.7	0.1	0.1
Turkey	2.9	2.6	2.5	- 5.7	0.1	0.1
Sharjah	0.7	0.5	0.5	-	Neg	Neg
Africa of which	293.3	267.8	192.8	-28.0	8.7	6.7
Nigeria *	113.5	101.8	68.0	-32.2	3.3	2.4
Libya *	98.9	85.9	55.0	-35.9	2.8	1.9
Algeria *	53.2	51.5	40.0	-22.4	1.7	1.4
Gabon	10.3	8.9	8.0	- 9.6	0.3	0.3
Angola/Cabinda	6.7	7.4	7.0	- 5.8	0.2	0.2
Tunisia	5.5	5.6	5.7	- 1.3	0.2	0.2
Congo	2.6	2.6	3.5	+32.3	0.1	0.1
Zaire	1.0	1.0	1.1	+ 2.6	Neg.	Neg.

Contd./-

WORLD ESTIMATED CRUDE OIL PRODUCTION 1979-1981.

(Million Tonnes)

Courtry	1979	1980 (Revised)	1981 (Estd)	%Change 1981-80	%Share 1980	%Share 1981
1.						
West Europe	108.9	117.6	124.7	+ 6.0	3.8	4.4
U. K.	77.9	80.5	89.0	+10.6	2.6	3.1
Norway	18.3	24.0	23.0	- 5.7	0.8	0.8
West Germany	4.8	4.6	4.5	- 4.5	0.2	0.2
Austria	1.7	1.5	1.3	-11.9	neg	neg
Netherland	1.6	1.6	1.5	- 4.3	neg	neg
Italy	1.8	1.8	1.5	-17.8	0.1	0.1
France	1.2	1.4	1.7	+20.2	neg	0.1
Spain	1.2	1.6	1.4	-12.3	0.1	0.1
Denmark	0.4	0.3	0.8	+168.5	neg	neg
Far East:- of which	142.7	134.9	135.0	+ 0.1	4.4	4.7
Indonesia *	79.1	78.5	79.0	+ 0.6	2.6	2.8
Australia	20.6	18.0	18.4	- 2.0	0.6	0.6
India	12.8	9.4	15.0	+59.5	0.3	0.5
Malaysia	13.4	13.2	11.0	-16.4	0.4	0.4
Brunei	12.0	12.5	9.0	-27.9	0.4	0.3
Burma	2.0	1.4	1.2	-14.0	neg	neg
Japan	0.5	0.43	0.39	- 9.3	neg	neg
Pakistan	0.5	0.5	0.5	- 3.8	neg	neg
Taiwan	0.2	0.2	0.2	-	neg	neg
Non-Communist Area	2473.0	2328.0	2128.0	- 8.6	76.1	74.4
Western Hemisphere	837.7	860.3	863.5	+10.4	28.1	30.2
Eastern Homisphere	1637.3	1467.7	1264.4	-13.8	48.0	44.2
of which OPEC Countries.	1524.0	1340.0	1125.2	-16.0	43.8	39.4
USSR & East Europe	608.3	625.0	630.9	+ 0.9	20.4	22.1
USSR	586.0	603.0	609.0	+ 1.0	19.7	21.3
Rumania	12.3	11.5	11.0	- 4.3	0.4	0.4
Yugoslavia	4.1	4.2	4.3	- 1.3	0.1	0.2
Hungary	2.0	2.0	2.0	-	0.1	0.1
Albania	3.0	3.5	3.8	+ 8.6	0.1	0.1
Poland	0.4	0.3	0.3	-	neg	neg
East Germany	0.1	0.1	0.1	-	neg	neg
Bulgaria	0.3	0.3	0.3	-	neg	neg
Czechoslovakia	0.1	0.1	0.1	-	neg	neg
China	106.2	106.0	100.0	- 5.7	3.5	3.5
Cuba	0.1	0.1	0.1	-	neg	neg
WORLD T O T A L	3189.1	3059.1	2859.0	- 6.5	100	100

* = OPEC Members.

a)= Crude Oil plus gas condensates where known. Figures for USA, Canada and Mexico include substential quantities of natural Gas.

b)= Including share of production from partitioned Zone (formerly neutral Zone).

Source:- Petroleum Economist, January, 1982.

WORLD NATURAL GAS PRODUCTION 1971 TO 1981.

(Million Tonnes) of Oil Equivalent.

COUNTRY/AREA	1971	1976	1980	1981	Percentage Change 1981 over 1980	Percentage Share 1981.
1.	2.	3.	4.	5.	6.	7.
U. S. A.	560.6	487.2	493.6	499.2	+ 1.1	36.2
Canada	58.1	69.3	69.1	68.0	- 1.6	4.9
Total North America	618.7	556.5	562.7	567.2	+ 0.8	41.1
Latin America						
Argentina	5.9	6.6	7.0	7.2	+ 1.0	0.5
Bolivia	0.1	1.6	2.1	2.4	+15.0	0.2
Chile	3.2	3.6	2.5	3.2	+24.2	0.2
Mexico	12.2	14.7	27.2	32.1	+18.1	2.3
Trinidad	1.7	2.0	2.2	2.2	+ 3.0	0.2
Venezuela	9.4	12.2	15.0	15.5	+ 2.9	1.1
Other Latin America	2.1	3.3	4.3	3.7	-14.1	0.3
Total Latin America	34.6	44.0	60.4	66.3	+ 9.6	4.8
Total Western Hemisphere.	653.3	600.5	623.1	633.5	+ 1.7	45.9
Western Europe						
France	6.7	6.6	7.0	6.6	- 5.7	0.5
Italy	11.4	15.6	10.3	11.6	+12.1	0.8
Netherland	33.1	73.6	68.9	65.0	- 5.7	4.7
Norway	-	0.3	23.5	22.7	- 3.5	1.7
United Kingdom	16.1	33.7	32.0	31.9	- 0.5	2.3
West Germany	11.5	14.1	14.1	16.7	+17.9	1.2
Other Western Europe	2.8	3.6	3.5	3.1	-11.8	0.2
Total Western Europe	81.6	147.5	159.3	157.6	- 1.2	11.4
Middle East.						
Abu Dhabi	0.9	1.2	5.2	5.4	+ 3.9	0.4
Iran	14.1	19.4	7.5	5.7	-23.6	0.4
Kuwait	5.6	5.0	6.2	5.2	-16.3	0.4
Saudi Arabia	2.4	6.1	13.2	13.2	+ 0.2	1.0
Other Middle East	2.8	6.0	9.9	8.5	-14.7	0.6
Total Middle East	25.8	37.7	42.0	38.0	- 9.5	2.8
Africa.						
Algeria	2.7	8.9	19.3	19.6	+ 1.7	1.4
Libya	0.6	3.4	4.7	2.9	-37.4	0.2
Nigeria	0.2	0.6	1.0	0.7	-29.6	0.1
Other Africa	0.2	0.8	1.8	1.8	+ 4.3	0.1
Total Africa	3.7	13.7	26.8	25.0	- 6.1	1.8
South Asia.						
Of which India	1.4	2.2	1.9	3.1	+63.2	3.2
Pakistan	2.7	4.7	6.2	6.1	- 1.4	0.5
Other South Asia	2.1	2.4	4.6	3.9	-15.2	0.3
Total South Asia	6.2	9.3	12.7	13.1	+ 3.0	1.0
South East Asia.						
Indonesia	3.1	2.1	16.7	16.9	+ 1.1	1.2
Other SouthEast Asia	1.2	9.9	10.7	10.9	+ 1.9	0.8
Total South East Asia	4.3	12.0	27.4	27.8	+ 1.4	2.0
Japan	2.4	2.2	2.0	1.8	-11.5	0.1
Australasia	2.5	7.0	10.9	12.0	+10.2	0.9
U.S.S.R.	194.3	289.2	380.2	411.8	+ 8.3	29.9
Eastern Europe	34.0	46.7	45.2	46.3	+ 2.4	3.4
China	4.4	10.0	12.2	11.6	- 4.9	0.8
Total Estern Hemisphere.	356.2	575.3	718.7	745.0	+ 3.7	4.1
World(excl. USSR,E.Europe & China)	779.8	829.9	904.2	908.8	+ 0.5	65.9
Of which OPEC			95.9	91.5	- 2.7	6.6
WORLD WORLD	1009.5	1175.8	1341.8	1378.5	- 2.7	100.0

CRUDE OIL PRODUCTION* IN OPEC MEMBER COUNTRIES

(Million Tonnes)

OPEC COUNTRIES	1970	1973	1975	1978	1979 r)	1980 r)	1981
1.	2.	3.	4.	5.	6.	7.	
Algeria	49	51	48	59	56	48	46
Eduador	Neg.	10	8	10	11	10	11
Gabon	5	8	11	10	10	9	8
Indonesia	42	66	65	82	79	79	79
Iran	191	293	268	261	158	74	66
Iraq	77	99	111	129	171	130	44
Kuwait	139	138	94	109	113	71	48
Libya	160	105	71	96	101	86	54
Nizeria	53	100	89	94	114	102	71
Qatar	18	27	21	23	25	23	20
Saudi Arabia	178	365	344	422	470	493	492
U.A.E.	37	74	82	90	89	83	73
Vanezuela	195	179	125	116	125	116	112
TOTAL	1144	1515	1337	1501	1522	1324	1124

Source: B.P.Statistical Review/OPEC Annual Statistical Bulletins

r: Revised.

CRUDE OIL EXPORTS*BY OPEC MEMBER COUNTRIES

(Million Tonnes)

OPEC COUNTRIES	1970	1973	1975	1978	1979	1980
1.	2.	3.	4.	5.	6.	7.
Algeria	48.7	49.7	43.9	50.2	48.0	35.8
Ecuador	Neg.	9.8	7.3	6.1	6.1	5.5
Gabon	4.2	6.0	10.3	8.7	8.2	7.6
Indonesia	31.3	50.6	49.7	63.4	56.2	51.7
Iran	165.5	263.8	233.5	222.4	120.3r)	39.8
Iraq	74.8	96.3	102.9	119.2	163.8	122.9
Kuwait	129.0	132.1	90.2	88.1	104.2	64.8
Libya	165.6	108.7	71.6	92.7	98.3	84.5
Nigeria	52.5	98.9	85.7	91.4	110.5	98.0
Qatar	18.1	28.5	21.4	24.0	24.7	23.3
Saudi Arabia	160-8	350.7	330.0	385.3	440.9	461.2
U.A.E.	34.7	76.1	83.1	90.9	90.3r)	84.9
Venezuela	121.7	106.2	73.6	62.2	70.4r)	64.4
TOTAL	1006.9	1377.4	1203.2	1304.5	1341.9r)	1144.4

Source: OPEC Annual Statistical Bulletin - 1974 & 1980

* Conversion: = I Mn.Tonnes/Year = 20,000 bbl/day

r)= Revised.

PRODUCTIVITY OF PRODUCING WELLS IN SELECTED FIELDS IN THE WORLD -1981

Country/ Field	Discovery date	Depth (Metres)	Wells		Daily average first six months 1981 ('000 bbls.)	API° - gravity	t/w/d
			Flowing	Pumping			
Algeria							
All fields since	1956	458-3834	-	-	1049	43.3[a]	n.a.
Libya							
Gialo	1961	671-1922	-	206	174	35.7	113
Waha	1960	2013	-	45	70	36.0	209
BU Attifel	1968	4362	16	-	119	41.0	967
Intisar D	1967	2867	16	-	60	39.0	494
Defa	1969	1647-1800	-	92	207	35.6	302
Nasser	1959	1678-2318	4	93	62	38.0	85
Iran@							
Onshore	1923	488-3721	n.a.	n.a.	1517	32.0[a]	n.a.
Offshore	1960	2288-3355					
Iraq@							
All Fields	1909	854-3813	280	-	800	33.6[a]	389
Kuwait @							
All Fields	1938	1464-3050	-	744*	1106	32.2[a]	204
Saudi Arabia							
Onshore							
Abqaic	1940	2040	52	-	652	37.0	1671
Ghawar	1948	2111	322	-	5694	33.0[a]	2398
Offshore							
Berri	1964	2532	37	-	504	34.0	1858
Safaniyah	1951	1556	208	-	1544	27.0	1051
Zuluf	1965	1769	40	-	658	32.0	2257
Burma@							
All Fields	1902	30-2135	170	275	30	37.2	9
India							
Onshore (total)	1890	92-3902	1600*		290	35.0[a]	25
Offshore(total)	1974	1302-1412					
Indonesia							
Onshore	1928	458	517	3060	1060	35.0[a]	40
Offshore	1970	726-3401	424	76	557	31.5[a]	153

t/w/d = Tonne/Wells/Day. @ Estimated. a = Average API°
n.a. = Not available.
* = Flowing, pumping and shut in wells including wells used for injection purposes.

Source : Oil & Gas Journal, December 29, 1981.

WORLD OIL REFINING CAPACITIES AT END 1981 AND 1980.

(Million Tonnes per Annum)

COUNTRY/ AREA.	Refining Capacities 1981	Refining Capacities 1980	% Share of Total 1981	Percentage Change Over 1981-80	Percentage Change Annual Average 1976/81
1.	2.	3.	4.	5.	6.
U. S. A.	911	909	23.3	+ 0.2	+ 2.2
Canada	107	107	2.6	+ 0.3	- 0.4
Total North America	1018	1016	24.9	+ 0.2	+ 1.9
Latin America					
Argentina	34	34	0.8	-	- 0.4
Brazil	72	68	1.8	+ 4.8	+ 7.2
Mexico	69	69	1.7	-	+ 9.0
Netherlands Antilles	42	42	1.0	-	+ 0.8
Trinidad	23	23	0.6	-	- 0.3
Venezuela	71	71	1.7	+ 0.6	- 0.2
Other Latin America	137	136	3.4	+ 0.7	+ 2.1
TOTAL LATIN AMERICA	448	443	11.0	+ 1.1	+ 2.9
TOTAL WESTERN HEMISPHERE	1466	1459	35.9	+ 0.5	+ 2.2
Western Europe.					
Belgium	50	51	1.2	- 2.3	- 1.5
France	161	165	4.0	- 2.3	- 1.5
Italy	204	206	5.0	- 0.9	- 1.1
Netherlands	85	88	2.1	- 3.5	- 2.5
Spain	77	71	1.9	+ 8.6	+ 3.9
United Kingdom	123	123	3.0	-	- 3.0
West Germany	147	154	3.6	- 4.4	- 1.0
Other Western Europe	166	161	4.1	+ 3.2	+ 3.0
TOTAL WESTERN EUROPE	1013	1019	24.9	- 0.6	- 0.6
Middle East.					
Bahrain	12	12	0.3	-	-
Iran	32	61	0.8	-47.8	- 2.2
Iraq	13	15	0.3	-	+ 7.3
Kuwait	29	29	0.7	-	-
Neutral Zone	4	4	0.1	-	-
Saudi Arabia	29	25	0.7	+18.0	- 1.4
Southern Yemen	7	7	0.2	-	- 2.2
Other Middle East	34	27	0.8	+29.4	+14.2
TOTAL MIDDLE EAST	160	178	3.9	- 9.5	+ 1.8
Africa	108	104	2.6	+ 3.8	+ 9.4
South Asia	44	44	1.1	+1.6	+ 4.0
Of which India	32	32	0.8	-	+ 3.1
South East Asia	-	-	-		
Indonesia	26	26	0.6	-	- 0.5
Singapore	51	51	1.2	-	- 0.4
Other South East Asia	98	96	2.4	+ 2.4	+ 8.8
TOTAL SOUTH EAST ASIA	175	173	4.2	+ 1.3	+ 4.2
Japan	282	282	6.9	-	+ 1.4
Australasia	41	40	1.0	+ 1.2	+ 1.6
USSR, E.Europe & China	796	742	19.5	+ 7.3	+ 4.2
TOTAL EASTERN HEMISPHERE	2619	2582	61.1	+ 1.5	+ 1.9
World(Excl.USSR, E.Europe & China	3289	3299	80.5	- 0.2	+ 1.5
W O R L D	4085	4041	100.0	+ 1.1	+ 2.0

SOURCE :- BP Statistical Review of World Energy-1981.

World Natural Gas Consumption

(Million Tonnes Oil Equivalent)

Country/Area	1971	1976	1980	1981	% change 1981 over 1980	%age share 1981
USA	584.2	510.0	516.5	509.4	- 1.4	38.2
Canada	34.9	46.1	49.3	48.1	- 2.4	3.6
Total North America	619.1	556.1	565.8	557.5	- 1.5	41.8
Latin America	32.6	40.5	53.0	54.4	+ 2.6	4.1
Total Western Hemisphere	651.7	596.6	618.8	611.9	- 1.1	45.9
Western Europe						
Austria	2.9	4.1	4.2	4.0	- 4.8	0.3
Belgium & Luxembourg	5.8	10.3	10.3	9.5	- 7.8	0.7
Denmark	-	-	-	-	-	-
Finland	-	0.8	0.8	0.6	-25.0	neg.
France	11.1	19.0	23.6	24.7	+-4.7	1.8
Greece	-	-	-	-	-	-
Iceland	-	-	-	-	-	-
Republic of Ireland	-	-	0.5	0.9	+80.0	0.1
Italy	12.5	22.0	22.9	22.8	- 0.4	1.7
Netherlands	24.6	33.0	30.3	28.8	-5.0	2.2
Norway	-	-	-	-	-	-
Portugal	-	-	-	-	-	-
Spain	0.4	1.5	1.8	1.9	+-5.6	0.1
Sweden	-	-	-	-	-	-
Switzerland	neg.	0.5	0.8	0.8	-	0.1
Turkey	-	-	-	-	-	-
United Kingdom	18.1	34.6	41.4	42.0	+ 1.4	3.2
West Germany	16.9	36.3	44.4	41.2	- 7.2	3.1
Yugoslavia	1.1	1.5	3.4	3.7	+-8.8	0.3
Cyprus/Gibraltar/Malta	-	-	-	-	-	-
Total Western Europe	93.4	163.6	184.4	180.9	- 1.9	13.6
Middle East	19.0	26.9	34.1	35.3	+ 3.5	2.6
Africa	1.7	5.1	17.5	18.4	+ 5.1	1.4
South Asia	6.0	8.8	7.3	8.9	+21.9	0.7
South East Asia	2.3	4.2	7.1	7.3	+ 2.8	0.5
Of which India	0.7	1.1	1.1	1.5	+36.8	0.1
Japan	3.8	9.3	23.4	24.2	+ 3.4	1.8
Australasia	2.2	6.1	9.8	11.6	+18.4	0.9
USSR	173.8	253.1	328.0	353.7	+ 7.8	26.6
Eastern Europe	38.5	57.5	64.0	69.4	+ 8.4	5.2
China	4.3	9.8	11.7	10.4	-11.1	0.8
Total Eastern Hemisphere	345.0	544.4	687.3	720.1	+ 4.8	54.1
WORLD(excl.USSR, E.Europe & China)	780.1	820.6	902.4	898.5	- 0.4	67.4
WORLD	996.7	1141.0	1306.1	1332.0	+ 2.0	100

Source : B.P. Statistical Review - 1981. neg. = Negligible.

WORLD OIL CONSUMPTION

(Million Tonnes)

COUNTRY/AREA.	1971	1976	1980	1981	Percentage Yearly Change 1981 Over 1980	Percentage Yearly Change 1981 Over 1976	Share of Total 1981.
1.	2.	3.	4.	5.	6.	7.	8.
U. S. A.	719.3	822.4	794.1	743.2	-6.4	-2.0	-25.6
Canada	75.8	85.9	87.6	81.6	-6.8	-0.1	+ 2.8
Total North-America	795.1	908.3	881.7	824.8	-6.5	-1.9	28.4
Latin America	143.5	181.6	228.8	227.8	+2.2	+4.6	7.8
Total Western-Hemisphere	938.6	1089.9	1104.5	1052.6	-4.7	-0.7	36.2
Western Europe Austria	10.1	11.6	12.2	10.9	-10.7	-1.3	0.4
Belgium &-Luxembourg	28.4	28.0	26.6	25.6	-4.1	-1.8	0.9
Denmark	18.4	16.7	13.6	11.7	-13.6	-6.9	0.4
Finland	11.1	12.8	12.8	12.0	-6.5	-1.4	0.4
France	102.8	119.2	109.9	99.3	-9.6	-3.6	3.4
Greece	7.4	10.6	12.4	11.9	-3.9	+2.4	0.4
Iceland	0.5	0.6	0.6	0.5	-2.5	-1.8	neg.
Republic Ireland	4.5	5.3	5.9	5.4	-7.9	+0.4	0.2
Italy	93.8	98.8	97.9	95.5	-2.4	-0.7	3.3
Netherlands	36.0	39.2	38.5	35.2	-8.6	-2.1	1.2
Norway	8.2	9.0	7.9	7.5	-5.4	-3.5	0.3
Portugal	5.4	7.1	8.5	8.9	+5.4	+4.6	0.3
Spain	30.9	48.3	52.2	48.0	-8.0	-0.1	1.7
Sweden	28.2	29.6	25.0	21.8	-12.6	-6.0	0.8
Switzerland	13.3	13.0	12.8	11.9	-7.6	-1.8	0.4
Turkey	9.0	15.4	14.8	15.4	+3.5	-0.1	0.5
United Kingdom	104.3	91.4	80.8	74.6	-7.7	-4.0	2.6
West Germany	133.5	138.9	131.1	117.6	-10.3	-3.3	4.1
Yugoslavia	9.0	13.2	15.1	14.4	-4.9	+1.6	0.5
Cyprus/Gibraltar/Malta.	1.2	1.3	1.5	1.4	-2.9	+2.2	neg.
Total Western Europe	656.0	710.3	680.1	629.5	-7.4	-2.4	21.8
Middle East	54.0	74.7	82.0	84.7	+3.3	+2.6	2.9
Africa	44.4	56.9	71.9	75.9	+5.4	+5.9	2.6
South Asia	25.9	32.6	40.4	43.4	+7.3	+5.8	1.5
Of which India	20.7	24.9	31.6	33.9	+7.3	+6.4	1.2
South East Asia	69.9	98.7	121.9	123.7	+1.5	+6.9	4.3
Japan	219.7	253.5	237.7	224.3	-5.6	-2.4	7.7
Australasia	31.3	36.5	36.4	36.3	-0.2	-0.1	1.3
U.S.S.R.	279.2	384.9	436.0	444.1	+1.9	+2.9	15.3
Easter Europe	61.3	89.7	102.6	102.4	-0.2	+2.7	3.5
China	36.7	76.9	88.0	84.8	-3.6	+2.0	2.9
Total Eastern-Hemisphere	1474.4	1804.7	1897.0	1849.1	-2.5	+0.5	63.8
World(excl.U.S.S.R. E.Europe &China	2035.8	2343.1	2374.9	2270.4	-4.4	-0.6	78.3
World	2413.0	2894.6	3001.5	2901.7	-3.3	neg.	100.0

Source - BP Statistical Review of World Energy -1981.

MAIN PRODUCT CONSUMPTION (INCLUDING BUNKERS)

(Million Tonnes)

COUNTRY/AREA	1971	1976	1980	1981	Average Yearly Percent Change 1981 Over 1971	Percent Change 1981 Over 1976
1.	2.	3.	4.	5.	6.	7.
U. S. A.						
Gasolines	283:5	320:4	305:7	299:3	+0:5	-1:4
Middle Distillates	177:5	206:3	207:9	199:2	+1:2	-0:7
Fuel Oil	120:3	146:8	133:0	109:0	-1:0	-5:8
Others	138:0	148:9	147:5	135:7	-0:2	-1:8
T O T A L	719.3	822.4	794.1	743.2	+0.3	-2.0
CANADA						
Gasolines	23:1	29:6	32:2	31:6	+3.2	+1:3
Middle Distillates	23:7	27:3	27:5	25:9	+0:9	-1:1
Fuel Oil	16:7	17:1	14:2	11:5	-3:6	-7:6
Others	12:3	11:9	13:7	12:6	+0:2	+1:3
T O T A L	75.8	85.9	87.6	81.6	+0.7	-1.0
WESTERN EUROPE						
Gasolines	114:3	134:4	142:4	139:1	+2:0	+0:7
Middle Distillatew	214:6	242:0	234:0	218:9	+0:2	-2:0
Fuel Oil	241:9	244:3	211:7	184:7	-2:7	-5:4
Others	85:2	89:6	92:0	86:8	+0:2	-3:6
T O T A L	656.0	710.3	680.1	629.5	-0.4	-2.4
JAPAN.						
Gasolines	34:8	43:6	42:1	39:8	+1:3	-1:8
Middle Distillates	36:4	54:2	59:9	60:3	+5:2	+2:2
Fuel Oil	120:2	125:7	103:5	92:4	-2:6	-6:0
Others	28:3	30:0	32:2	31:8	+1:2	+1:1
T O T A L	219.7	253.5	237.7	224.3	+0.2	-2.4
AUSTRALASIA.						
Gasolines	10:0	12:5	13:4	13:6	+3:1	+1:7
Middle Distillates	8:0	10:2	10:4	10:4	+2:6	+0:4
Fuel Oil	8:8	9:0	7:9	7:6	-1:4	-3:2
Others	4:5	4:8	4:7	4:7	+0:5	-0:8
T O T A L	31.3	36.5	36.4	36.3	+1.5	-0.1
REST OF WORLD(excl. U.S.S.R.,E.EUROPE & CHINA.						
Gasolines	57:5	76:8	97:8	101:8	+5:9	+5:8
Middle Distillates	99:7	142:5	174:9	182;0	+6:2	+5:0
Fuel Oil	129:9	154:4	192:9	195:9	+4:2	+4:9
Others	46:6	60:8	73:4	75:8	+5:0	+4:5
T O T A L	333.7	434.5	539.0	555.5	+5.2	+5.0
WORLD(excl.U.S.S.R., E.EUROPE & CHINA)						
Gasolines	523:2	617:3	633:6	625:2	+1:8	+0:3
Middle Distillates	559:9	682:5	714:6	696:7	+2:2	+0:4
Fuel Oil	637:8	697:3	663:2	601:1	-0:6	-2:9
Others	314:9	346:0	363:5	347:4	+1:0	+0:1
T O T A L	2035.8	2343.1	2374.9	2270.4	+1.1	-0.6

SOURCE :- B.P. Statistical Review of World Energy - 1981.

WORLD OIL PRODUCTION, CONSUMPTION AND RELATIVE DEFICIT/SURPLUS IN EACH REGION/COUNTRY DURING 1981 & 1973

(Million Tonnes)

Country/Region.	1981 Production	1981 Consumption.	Deficit-Surplus.+	% extent of dependence.	1973 Production	1973 Consumption.	Deficit-Surplus+	% extent of dependence
1	2	3	4	5	6	7	8	9
North America (including Canada)	555.3	824.8	269.5	- 32.7	621.3	901.7	-280.4	- 31.1
Latin America	318.9	227.8	+ 91.1	40.0	272.1	168.3	+103.8	61.7
West Europe	134.0	629.5	-495.5	- 78.7	22.6	748.9	-726.3	- 97.0
Middle East	788.0	84.7	+703.3	830.3	1052.5	62.2	+990.3	1592.1
Africa	233.3	75.9	+157.4	207.4	290.0	49.5	+240.5	485.9
South & South East Asia (excluding India)	98.1	133.2	- 35.1	-26.4	83.6	85.2	- 1.6	- 1.9
India	15.3	33.9	- 18.6	-54.9	7.4	23.7	-16.3	-68.9
Japan	0.4	224.3	-223.9	-99.8	0.7	269.1	-268.4	-99.7
Australasia	19.8	36.3	- 16.5	-45.5	18.5	34.8	- 16.3	46.8
U.S.S.R	609.0	444.1	+164.9	37.1	429.0	325.7	+103.3	31.7
Eastern Europe	17.2	102.4	- 85.2	-83.2	19.2	75.1	- 55.9	-74.4
China	101.0	84.8	+ 16.2	19.1	54.8	53.8	+ 1.0	1.9
T O T A L	2890.3	2901.7	- 11.4	- 0.4	2871.7	2798.0	+73.7	2.6

Source :- B.P. Statistical Review on World Oil Industry -1981.

Country-wise Imports & Exports of Crude Oil & P.O.L. Products - 1981.

(Million Tonnes)

Country/ Area.	IMPORTS		EXPORTS	
	Crude	Products	Crude	Products
1.	2.	3.	4.	5.
U. S. A.	218.3	75.6	11.3	19.5
Canada	27.6	3.4	8.1	14.4
Latin America	110.4	9.7	116.6	101.1
Western Europe	441.8	71.6	25.8	11.8
Middle East	5.8	12.4	695.1	30.3
North Africa	1.7	2.7	98.8	9.1
West Africa	0.2	5.1	84.1	1.8
Eastand South Africa	21.9	1.3	-	0.8
South Asia	23.8	6.8	-	2.2
Of which India	16.6	5.8	-	-
South East Asia	85.5	17.5	63.9	18.6
Japan	196.5	23.5	-	0.4
Australasia	10.5	5.1	-	0.6
U.S.S.R., E. Europe- & China.	10.5	8.2	60.7	48.1
Destination not known*	9.9	15.3	-	-
T O T A L :-	1164.4	258.7	1164.4	258.7

Source :- B.P. Statistical Review of World Energy - 1981.
Figures for India inserted.

CRUDE OIL IMPORTS FROM OPEC MEMBER COUNTRIES BY REGIONS 1960-1980

(Million Tonnes)

Import Region	1960	1965	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980
North America	61.0	65.9	68.5	121.5	149.1	160.4	171.0	220.4	274.9	279.8	279.5	213.6
of which USA	43.9	49.6	46.7	93.9	120.3	128.9	136.3	181.8	253.5	255.6	255.9	190.7
Latin America	55.9	71.5	96.8	117.1	149.4	156.0	145.2	187.0	171.5	128.7	136.9	115.3
Western Europe	157.5	315.1	564.6	625.1	683.9	651.9	519.2	577.1	531.0	517.8	521.3	454.5
of which France	31.8	63.2	107.3	124.6	135.9	138.0	104.6	122.3	108.5	109.0	114.5	100.2
Germany	21.2	45.5	69.0	62.6	64.1	69.0	62.6	73.2	75.0	64.6	74.7	66.1
Italy	24.8	59.9	109.5	107.3	122.4	106.1	87.0	86.9	90.4	92.9	94.7	67.8
Netherland	14.7	27.7	72.4	90.2	105.5	69.6	76.2	92.2	74.3	78.5	64.9	53.7
Spain	7.2	13.1	28.7	32.6	37.8	42.1	39.6	46.2	47.2	45.4	44.0	40.8
UK	43.1	74.4	107.4	139.5	146.4	150.0	80.0	81.3	63.4	56.0	33.9	34.6
Eastern Europe	-	-	2.4	14.9	21.5	13.0	15.2	20.8	20.1	19.7	23.9	17.2
Middle East	17.0	16.7	20.3	17.4	17.8	19.3	15.6	21.4	25.2	18.9	21.2	21.9
Africa	1.5	13.0	23.8	24.1	32.8	31.9	31.4	28.9	28.3	22.7	18.7	16.2
Asia and Fas East	34.4	88.6	215.5	273.1	312.2	307.2	280.0	298.1	314.0	306.5	310.7	288.6
of which Japan	24.4	66.4	162.6	204.4	229.3	226.2	199.9	206.8	205.6	196.7	196.4	179.0
Oceania	10.1	15.4	15.2	10.7	10.7	9.4	8.9	10.2	11.3	10.3	10.8	10.8
Unspecified	-	2.2	4.1	-	-	13.8	16.7	9.2	5.8	Neg.	18.9	6.3
Total World.	337.4	588.4	1011.2	1203.9	1377.4	1362.9	1203.2	1373.1	1382.1	1304.4	1341.9	1144.4

Source :- OPEC Annual Statistical Bulletin-1980
(Figures Converted to million Tonnes using the conversion factor:20,000 bbl/ day= 1 million tonnes/year.

Country-wise Export of Crude Oil by Main OPEC Producers - 1980

(Tonnes)

Country	Alge-ria	Indo-nesia	Iran	Iraq	Kuw-ait	Libya	Nige-ria	Qat-ar	Saudi Arabia	UAE *	Vene-zuela
NORTH AMERICA	20.7	15.6	1.1	2.7	1.8	29.9	27.6	0.4	84.6	6.7	15.7
Of which :											
Canada	-	-	neg.	1.0	0.8	0.3	-	-	12.2	-	8.2
U.S.A.	20.7	15.6	1.1	1.7	1.0	29.6	27.6	0.4	72.4	6.7	7.5
LATIN AMERICA	0.7	4.4	2.8	13.5	4.5	6.6	22.7	1.9	17.4	5.4	28.2
Of which :											
Argentina											0.1
Brazil	0.3				3.2			0.9			3.1
Chile											0.9
Netherlands								0.5			21.2
Jamaica											0.8
Puerto Rico											1.8
Panama											0.2
Trinidad & Tobago		3.4									
WESTERN EUROPE	13.6	0.2	18.2	65.4	21.9	40.8	44.7	10.4	195.7	22.6	11.4
Of which :											
Austria						1.1					
Belgium	0.1					0.2	0.6				0.7
France	5.0	0.1	1.2	23.8	3.1	1.9	13.2	2.6	39.1	7.8	1.2
Germany(FR)	4.8		5.7	3.0	0.5	15.5	6.4	0.1	24.7	3.7	0.8
Ireland					0.6						
Italy	0.8	0.1	0.9	12.0	0.2	12.6	4.4	1.5	29.5	2.0	3.3
Netherlands	0.4	-	0.6	0.7	10.2	0.6	14.0	4.0	19.5	3.0	0.5
Spain	1.1		3.1	6.3	1.0	4.3			14.9		3.4
U.K.	0.2		1.2	4.0	6.2		0.1	0.6	19.0	2.3	0.9
Switzerland						1.1					
Norway							0.4				
Sweden							2.2	0.1			0.5
EASTERN EUROPE	0.4	-	0.5	12.1	0.6	2.5	-	-	-	0.1	0.1
MIDDLE EAST	-	-	0.4	2.0	0.7	3.5	-	-	13.5	1.8	-
Yeman					0.2					1.8	
AFRICA	0.3	-	0.2	4.0	0.6	0.1	2.0	0.8	5.9	1.4	0.8
ASIA & FAREAST	0.1	30.1	16.4	22.4	33.9	1.2	1.0	9.5	137.7	28.1	1.9
Of which :											
Japan		28.2	13.4	16.2	11.6	1.1	0.6	6.8	69.0	23.9	1.9
Malaysia/Singapore		0.6			6.6						
Phillippines		0.9			1.1						
Taiwan					7.6						
Thailand								2.1			
Koroa					6.8						
OCEANIA	-	1.4	0.2	0.9	0.8	-	-	0.3	6.4	0.8	-
Of which:Australia	-	1.3	0.05	0.8	0.5				5.2	0.8	
Newzealand					0.3						
Unspecified											6.3
GRAND TOTAL	35.8	51.7	39.8	122.9	64.8	84.6	98.0	23.3	461.2	66.9	64.4

* Abu Dhabi. Source : OPEC Annual Statistical Bullotin, 1981.

*

OIL REVENUES OF OPEC MEMBER COUNTRIES : 1972-80

(Billion US $)

OPEC MEMBER COUNTRIES	1972	1974	1977	1978	1979	1980
Algeria	0.91	3.30	4.25	4.59	7.52	10.79
Ecuador	0.03	0.41	0.50	0.50	0.80	1.20
Gabon	0.02	0.17	0.60	0.60	0.90	1.60
Indonesia	0.50	1.37	4.69	5.20	8.10	10.50
Iran	2.40	17.82	21.21	19.30	20.50	11.60
Iraq	0.58	5.70	9.63	10.20	21.29	25.98
Kuwait	1.40	6.54	7.52	7.70	16.86	18.02
Libya	1.56	6.00	8.85	8.40	15.22	22.53
Nigeria	1.12	6.66	9.60	7.90	15.90	20.00
Qatar	0.26	1.85	1.99	2.20	3.64	5.38
Soudi Arabia	2.74	22.57	36.54	32.23	57.52	102.21
UAE	0.55	5.54	9.03	8.20	12.86	19.34
Venezuela	1.90	9.27	8.11	7.32	11.65	14.88
TOTAL OPEC	13.67	87.20	122.52	114.34	192.76	264.03

REVENUES PER BARREL OF EXPORTS

($ /bbl)

OPEC MEMBER COUNTRIES	1972	1974	1977	1978	1979	1980
Algeria	1.69	10.10	11.27	12.54	21.43	41.30
Ecuador	1.18	6.91	9.90	11.16	17.88	29.83
Gabon	0.47	2.62	9.12	9.47	14.96	28.99
Indonesia	1.70	3.61	9.70	11.23	19.76	27.81
Iran	1.46	9.09	11.94	11.89	23.33	39.89
Iraq	1.10	8.45	12.17	11.72	17.81	28.95
Kuwait	1.31	8.14	12.67	11.98	22.18	38.07
Libya	1.93	11.03	12.48	12.41	21.21	38.49
Nigeria	1.74	8.37	12.96	11.85	19.71	27.95
Qatar	1.74	9.91	13.31	12.56	20.16	31.63
Saudi Arabia	1.38	7.81	11.63	11.46	17.87	30.36
UAE	1.26	8.98	12.43	12.37	19.52	31.22
Venezuela	2.44	14.36	16.81	16.11	22.66	31.67
TOTAL	1.56	8.76	12.14	12.01	19.68	31.60

* = Revised.

Source : OPEC Annual Statistical Bulletin-1980

OFFICIAL DEVELOPMENT ASSISTANCE FROM
OECD and OPEC MEMBERS - 1978 - 1980

	Amount (Million of U.S. $ . .)			As percentage of G.N.P.		
	1978	1979	1980*	1978	1979	1980
OECD						
Italy	375	279	600	0.14	0.09	0.15
New Zealand	55	62	63	0.34	0.30	0.27
United Kingdom	1456	2067	1766	0.48	0.52	0.34
Finland	55	86	106	0.17	0.21	0.22
Austria	166	127	174	0.29	0.19	0.22
Japan	2215	2638	3300	0.23	0.26	0.32
Australia	588	620	653	0.54	0.52	0.47
Canada	1060	1042	1035	0.52	0.47	0.42
France	2705	3358	4041	0.57	0.59	0.62
Netherlands	1074	1404	1577	0.82	0.93	0.99
United States	5664	4567	7091	0.27	0.19	0.27
Norway	355	428	472	0.90	0.93	0.82
Belgium	536	631	575	0.55	0.56	0.48
Germany, Fed.Rep.	2347	3350	3512	0.37	0.44	0.43
Denmark	388	448	464	0.75	0.75	0.72
Swedon	783	956	928	0.90	0.94	0.76
Switzerland	173	205	246	0.20	0.21	0.24
Total	19994	22267	26603	0.35	0.34	0.37
OPEC						
Nigeria	38	31	42	0.06	0.04	0.05
Algeria	44	272	83	0.18	0.87	0.21
Iran	278	21	29	0.37	0.03	0.03
Venezuela	109	82	130	0.27	0.17	0.23
Iraq	172	868	854	0.76	2.60	2.19
Saudi Arabia	1470	2298	3033	2.27	3.01	2.60
Libya	169	108	281	0.99	0.46	0.92
Kuwait	1268	1053	1186	7.36	4.08	3.87
U.A.E.	684	1113*	1062	4.82	6.17	3.96
Qatar	106	277	299	3.56	5.89	4.50
Total OAPEC	3913	5989	6798	2.39	2.80	2.34
Total OPEC	4338	6123	6999	1.29	1.49	1.36

* Estimated.

Source : World Development Report - 1981.

LOAN ASSISTANCE FROM OPEC AND OTHER OIL SUPPLYING NATIONS - 1974-75 TO 1980-81

(Rs. Crores)

		1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
I. U.S.S.R. :	Authorisation	-	-	-	208.3	-	-	485.7
	Utilisation	148.9	26.9	26.3	25.7	22.0	34.4	35.4
II. OPEC								
1. Abu Dhabi :	Authorisation	-	-	-	-	-	-	-
	Utilisation	-	-	-	-	-	6.5	2.0
2. OPEC :	Authorisation	184.0	1020.5	125.6	12.1	-	16.3	39.8
	Utilisation	160.9	401.9	245.6	208.1	11.5	-	3.4
3. Saudi Arabian Fund for Development	Authorisation	-	-	-	86.4	-	-	-
	Utilisation	-	-	-	-	3.2	41.1	13.1
4. Kuwait Fund for Arab Economic Development	Authorisation	-	-	-	-	29.0	-	-
	Utilisation	-	-	-	-	12.3	-	8.6
5. International Fund for Agricultural Development	Authorisation	-	-	-	-	-	85.6	13.9
	Utilisation	-	-	-	-	-	-	-
6. Iraq	Authorisation	-	-	-	-	-	-	82.9
	Utilisation	-	-	-	-	3.8	1.4	0.7
7. Iran	Authorisation	-	-	-	-	-	-	-
	Utilisation	-	-	-	-	70.1	12.6	17.3
GRAND TOTAL	Authorisation	184.0	1020.5	125.6	306.8	29.0	101.9	622.3
	Utilisation	309.8	428.8	271.9	233.8	122.9	96.0	80.5

KEY CRUDE OIL PRICE POSTINGS AROUND THE WORLD ($/Barrel)

Crude	Gravity	1970 Pre-Nov. 14	1970 Nov. 14	1971 Feb. 15	1971 June 1	1971 July 1	1971 Oct. 1	1972 Jan. 20	1972 March 18	1972 April 1	1972 July 1	1973 Jan. 1	1973 April 1	1973 June 1
Arab. Light	34	1.80	1.80	2.180	2.285			2.479				2.591	2.742	2.898
Arab. Berri	39			2.255	2.360			2.554				2.666	2.817	2.973
Arab. Medium	31	1.590	1.680	2.085	2.187			2.373				2.482	2.626	2.776
Arab. Heavy	27	1.470	1.560	1.960	2.064			2.239				2.345	2.481	2.623
Iran. Light	34	1.790	1.790	2.170	2.274			2.467				2.579	2.729	2.884
Iran. Heavy	31	1.630	1.720	2.125	2.228			2.417				2.527	2.674	2.826
Iran. Darius	34	1.630	1.630	2.160	2.264			2.456				2.567	2.716	2.871
Kuwait	31	1.590	1.680	2.085	2.187			2.373 b)				2.482	2.626	2.776
Abu Dhabi -														
Umm Shaif	37	1.860	1.860	2.225	2.331			2.529				2.642	2.796	2.955
Murban	39	1.880	1.880	2.235	2.341			2.540				2.654	2.823	2.968
Zakum	40											2.687		
Iraq - Basrah	35	1.720	1.720	2.155	2.259			2.451				2.562	2.711	2.865
Qatar - Marine	36	1.830	1.830	2.200	2.305			2.501				2.614	2.766	2.923
Qatar - Dukhan	40	1.930	1.930	2.280	2.387			2.590				2.705	2.862	3.025
Oman	34											2.634		
MEDITERRANEAN & AFRICAN CRUDES														
Iraq Kirkuk	36	2.410	2.410		3.211 d)	3.188	3.166	3.136 a)	3.402 g)	3.373	3.353	3.484	3.712	3.921
Libyan Light	40	2.530	2.530		3.447 d)	3.423	3.399	3.386 a)	3.673 g)	3.642	3.620	3.777	4.024	4.252
Nigerian Medium	26	2.280	2.280		3.104 d)	3.087	3.070	3.068 a)	3.328 g)	3.306	3.291	3.440	3.659	3.868
Nigerian Light	37	2.420	2.420		3.212 d)	3.195	3.178	3.176 a)	3.446 g)	3.424	3.409	3.561	3.787	4.003
VENEZUELAN CRUDES														
Tia Tuana	26	2.0114	2.0114	2.0164 a)	2.590 c)			2.901 a)				3.0596	3.355 f)	
Tia Juana	31	2.193	2.193	2.1984 a)	2.665 c)			2.035 a)				3.215	3.575 f)	
Officina	35	2.339	2.339	2.344 a)	2.725 c)			3.211 a)				3.362	3.768 f)	

a) Effective Jan. 1.
b) Effective Jan. 2.
c) Effective March, 18.
d) Effective March, 20.
e) Effective Feb. 15.
f) Effective March, 13.
g) Effective Jan. 20.

KEY CRUDE OIL PRICE POSTINGS AROUND THE WORLD ($/Barrel)

Crude	Gravity	1973 July 1	Aug. 1	Oct. 1	Oct. 16	Nov. 1	Dec. 1	1974 Jan. 1	Nov. 1
Saudi Arabia									
Arab Light	34	2.955	3.066	3.011	5.119	5.176	5.036	11.651	11.251
Arab Berri	39	3.030	3.141	3.086	5.682	5.741	5.596	12.351	11.951
Arab Medium	31	2.830	2.936	2.884	4.903	4.957	4.822	11.561	11.161
Arab Heavy	27	2.674	2.755	2.725	4.633	4.684	4.557	11.441	11.041
Iran									
Iran. Light	34	2.940	3.050	2.995	5.341	5.401	5.254	11.875	11.475
Iran. Heavy	31	2.881	2.989	2.936	4.991	5.046	5.006	11.635	11.235
Iran. Darius	34	2.927	3.037	2.983	5.071	5.127	4.988	11.616	11.216
Kuwait									
Kuwait	31	2.830	2.936	2.884	4.903	4.957	4.822	11.545	11.145
Abu Dhabi									
Umm Shaif	37	3.013	3.126	3.110	5.537	5.599	5.446	12.086	11.686
Murban	39	3.026	3.140	3.144	6.045	6.113	5.944	12.636	12.236
Zakum	40			3.185	5.965	6.031	5.864	12.566	12.165
Iraq Basrah	35	2.921	3.031	2.977	5.061	5.117	4.978	11.672	11.272
Qatar									
Marine	36	2.980	3.092	3.037	5.503	5.563	5.412	12.013	11.613
Dukhan	40	3.084	3.200	3.143	5.834	5.899	5.737	12.414	12.014
Oman : Oman	34			3.058	5.738			12.298	12.298
MEDITERRANEAN & AFRICAN CRUDES									
Iraq Kirkuk	36	4.070	4.223	4.243	7.213	7.293	7.096		
Libyan Light	40	4.416	4.582	4.604	8.925	9.061		15.768	14.600
Nigerian Medium	26	3.997	4.148	4.147	8.072c)	8.163		14.481	11.453
Nigerian Light	37	4.135	4.291	4.287	8.310c)	8.404		14.691	11.663
VENEZUELAN CRUDES									
Tia Juana	26		3.7667	4.095a)	4.2332b)	6.5693	6.7697	11.797	12.333 d)
Tia Juana	31		4.0137	4.3635a)	4.5108b)	6.8712	7.0700	12.097	12.647 d)
Oficina	35		4.2306	4.5993a)	4.7546b)	7.1105	7.3124	12.337	12.898 d)

a) Effective Sept. 1.
c) Effective Oct. 1.
c) Effective Oct. 20.
d) W.o.f. July 1.

KEY CRUDE OIL PRICE POSTINGS AROUND THE WORLD ($/Barrel)

Crude	Gravity	1975 Jan. 1	1975 Oct. 1	1976 July 1	1976 Oct. 1	1977 Jan. 1	1977 July 1	1978 Jan. 1	1978 May 1
Arab Light	34		12.376			13.000	13.660		
Arab Berri	39		12.768			13.420	14.220		
Arab Medium	31		12.184	12.179 c)		12.570	13.250		
Arab Heavy	27		11.978	11.871 c)		12.230	12.920		
Iran. Light	34		12.495			13.774			
Iran. Heavy	31		12.360	12.258 b)	12.183d)	13.430			
Iran. Darius	34		12.344						
Kuwait	31		12.151			13.301			
Abu Dhabi -									
Umm Shaif	37	11.446	12.575			13.200	14.020		
Murban	39	11.686	12.815			13.440	14.260		
Zakum	40	11.586	12.715			13.340	14.160		
Iraq - Basrah	35		12.400 a)				13.624		
Qatar Marine	36		12.540			13.979			
Qatar Dukhan	40		12.740			14.183			
Oman	34						13.677 e)		
MEDITERRANEAN & AFRICAN CRUDES									
Iraq Kirkuk	36								
Libyan Light	40		16.060	16.350		18.250	17.780	18.340	18.170
Nigerian Medium	26		13.499	13.610	13.780	14.609	14.534f)	14.443	14.318 f)
Nigerian Light	37		13.709	13.820	13.990	15.291	15.523f)	15.182	14.943 f)
VENEZUELAN CRUDES									
Tia Zuana	26		13.436	13.185					
Tia Zuana	31		14.091	13.828					
Oficina	35	14.402	14.402	14.133					

a) Notional price.
b) Effective Feb. 14.
c) Effective June, 1.
d) Effective June, 9.
e) Effective Feb. 1.
f) Effective April, 1.

KEY CRUDE OIL PRICE POSTINGS AROUND THE WORLD

($/Barrel)

Crude	Gravity	1979 Jan. 1	Feb. 21	April 1	May 17	June 1	July 1	Nov. 1	Dec. 17	1980 Jan. 1
Arab. Light	34	14.343		15.461		19.355		25.806		27.957
Arab. Berri	39	15.118		17.710	19.215 b)	22.929		26.582		29.591
Arab. Medium	31	13.856		15.110		18.868		25.319		27.370
Arab. Heavy	27	13.453		14.670		18.465		24.916		26.882
Iran. Light	34	14.462								
Iran. Heavy	31	14.043								
Iran. Darius	34									
Kuwait	31									
Abu Dhabi :										
Umm Shaif	37	14.820	15.720a)	18.151	19.011		22.968	29.419		31.570
Murban	39	15.160	16.258a)	18.387	19.247		23.183	29.634		31.785
Zakum	40	15.060	16.161a)	18.290	19.151		23.075	29.527		31.677
Iraq Basrah	34									
Qatar Marine	36	14.806								
Qatar Dukhan	40	15.086								
Oman	34									
MEDITERRANEAN & AFRICAN CRUDES										
Iraq Kirkuk										
Libyan Light	40	19.250	20.210	21.200h) 24.280	25.280c)	25.830d)	31.620	35.530e)	40.800g)	47.470
Nigerian Medium	26	15.073								
Nigerian Light	37	15.732		19.926	22.722c)		25.574	28.722f)	32.960	32.960

a) Effective Feb. 15.
b) Effective May, 15.
c) Effective Oct. 15.
h) Effective March, 3.
c) Effective May, 16.
g) Effective Dec. 13.
d) Effective May, 27.
f) Effective Nov. 6.

OFFICIAL SELLING PRICES OF KEY OPEC CRUDES ($/Barrel)

Crude	Grav-ity	Effective Dates										
		1974	1975		1976				1977		1978	
		Nov. 1	Jan. 1	Oct. 1	Feb. 14	June 1	July 1	Oct. 1	Jan. 1	July 1	Jan. 1	April 1
Arab. Light	34.	10.463		11.510					12.090	12.704		
Arab. Berri	39	11.114		11.874					12.480	13.225		
Arab. Medium	31	10.380		11.331		11.280			11.690	12.323		
Arab. Heavy	27	10.268		11.140		11.040			11.370	12.016		
Iran. Light	34	10.67		11.62					12.87			
Iran. Heavy	31	10.45		11.49	11.40	11.33 b)			12.49			
Kuwait	31	10.365		11.300		11.230			12.370		12.270	
Abu Dhabi -												
Umm Shaif	37	10.868	10.645	11.695					12.280	13.040		
Murban	39	11.379	10.868	11.918					12.500	13.260		
Zakum	40	11.313	10.775	11.825					12.410	13.170		
Iraq Basrah	35	10.48		11.53			11.43		12.58			
Qatar Marine	36	10.80		11.66					13.00			
Qatar Dukhan	40	11.17		11.85					13.19			
MEDITERRANEAN & AFRICAN CRUDES												
Iraq Kirkuk	36						11.65		12.77			
Libyan Light	40			12.32			12.62		13.92	14.20	13.97	13.85
Nigerian Light	37			12.70			13.10	13.25	14.31	14.61c)	14.31	14.10
Nigerian Medium	26						12.55	12.52	13.71		13.66	13.55
Sumatra Light	34	12.60		12.80					13.55			
VENEZUELAN CRUDES												
Tia Zuana	26				11.12a)	11.22c)	11.32	11.65	12.72	12.82c)		12.70
Tia Zuana	31				12.30a)			12.35	13.54			
Oficina	35				12.80a)				13.99			

a) Effective Jan. 1.
b) Effective June, 9.
c) Effective Oct. 1.
c) Effective April, 1.

OFFICIAL SELLING PRICES OF KEY OPEC CRUDES ($/Barrel)

Crude	Gravity	(Effective Dates) 1 9 7 9 Jan. 1	Feb. 15	March 3	April 1	May 17	June 1	July 1	Oct. 20	Nov. 1	Dec. 17
Arab. Light	34	13.339			14.546		18.000			24.000	
Arab. Berri	39	14.060			16.470	17.870d)	21.324			24.721	
Arab. Medium	31	12.886			14.052		17.547			23.547	
Arab. Heavy	27	12.511			13.643		17.172			23.172	
Iran. Light	34	13.45			16.57	17.17d)	18.47	22.00	23.50i)		28.50m)
Iran. Heavy	31	13.06			16.04	16.64d)	17.74	19.90	22.77i)		27.77m)
Kuwait	31	12.830	14.030a)		15.800	16.40d)		19.490	21.43i)	25.500	
Abu Dhabi –											
Umm Shaif	37	13.780	14.620		16.880	17.68		21.360		27.360	
Murban	39	14.100	15.120		17.100	17.90		21.560		27.560	
Zakum	40	14.010	15.030		17.010	17.81		21.460		27.460	
Iraq Basrah	35	13.21			15.60	16.20c)	16.94	19.96	21.96	23.96	25.96m)
Qatar Marine	36	13.77	14.71		16.85	17.65		21.23		27.23	
Qatar Dukhan	40	14.03	15.05		17.04	17.84		21.42		27.42	
Oman	34	13.94									
			MEDITERRANEAN CRUDES								
Iraq Kirkuk	36	13.41			15.82	16.42c)	17.16	22.00	22.18	24.18	26.18m)
Libyan Light	40	14.69	(15.37)b) (16.07)m)		18.25	18.95e)	21.26f)	23.45	26.22j)		29.95n)
Nigerian Light	37	14.80			18.50	20.96e)		23.47		26.24k)	29.97
Nigerian Medium	26	14.23			17.50	20.00e)		22.00		24.77k)	28.70
			INDONESIAN CRUDE								
Sumatra Light	34	13.90			15.65	16.15e)	18.25g)	21.12		23.50 l)	25.50
			VENEZUELAN CRUDES								
Tia Zuana	26	13.36			15.76	16.36e)		19.31	19.48i)		23.48p)
Tia Zuana	31	14.22			16.70	17.30e)		20.90			24.90p)
Oficina	34	14.69			17.21	17.81		22.45			26.75p)

a) Effective Feb. 20.
b) Effective Feb. 21.
c) Effective May, 1.
d) Effective May, 15.
e) Effective May, 16.
f) Effective May, 27.
g) Effective June, 15.
h) Effective July, 15.
i) Effective Oct. 1.
j) Effective Oct. 15.
k) Effective Nov. 6.
l) Effective Nov. 17.
m) Effective Dec. 1.
n) Effective Dec. 13.
p) Effective Dec. 14.

OFFICIAL SELLING PRICES OF KEY OPEC CRUDES ($/Barrel)

Crude	Type	(Effective Dates) 1980 Jan. 1	Feb. 1	April 1	May 1	July 1	Aug. 1	Sept. 1	Nov. 1
Arab. Light	34	26.000		28.00			30.00		32.00
Arab. Berri	39	27.520		29.52			31.52		33.52
Arab. Medium	31	25.454		27.454			29.454		31.454
Arab. Heavy	27	25.000		27.00			29.00		31.00
Iran. Light	34	30.00	31.00	35.00					
Iran. Heavy	31	29.27	30.27	34.00					
Kuwait	31	27.500			29.50	31.50			
Abu Dhabi -									
Umm Shaif	37	29.360			31.36			33.36	
Murban	39	29.560			31.56			33.56	
Zakum	40	29.460			31.46			33.46	
Iraq Basrah	35	27.96			29.96	31.96			
Qatar Marine	36	29.23			31.23	33.23			
Qatar Dukhan	40	29.42			31.42	33.42			
Oman	34					32.20 c)	33.40		
MEDITERRANEAN & AFRICAN CRUDES									
Iraq Kirkuk	36	28.18				32.18			
Libyan Light	40	34.67			36.67	37.00			
Nigerian Light	37	29.97		34.69	36.69 b)	37.00			
Nigerian Medium	26	28.70		33.42	35.42 b)	35.73			
INDONESIAN CRUDE									
Sumatra Light	34	27.50			31.50 d)				
VENEZUELAN CRUDES									
Tia Zuana	26	25.20	26.78 a)			29.88			
Tia Zuana	31	26.90	28.90 a)			33.00			
Oficina	35	28.75	30.75 a)			34.85			

a) Effective Feb. 6. b) Effective May, 22. c) Effective June, 30.

d) Effective May, 20.

OFFICIAL SELLING PRICES OF KEY OPEC CRUDES ($/Barrel)

Crude	Type	(Effective Dates) 1981 Jan. 1	July 1	Oct. 1	Nov. 1	1982 Jan. 1	Feb. 12	Feb. 23	March 20	April 1	July 1
Arab. Light	34			34.00		34.00			34.00		
Arab. Berri	39			35.60		35.40			34.52		
Arab. Medium	31			33.00		32.40			32.40		
Arab. Heavy	27			31.50		31.00			31.00		
Iran. Light	34	37.00			34.60	34.20	32.20	30.20			31.20
Iran. Heavy	31	36.00			33.40	32.30	30.30	28.30			29.30
Kuwait	31	35.50			33.00	32.30					
Abu Dhabi -											
Umm Shaif	37	36.36			35.50	35.30			34.36		
Murban	39	36.56			35.70	35.50			34.56		
Zakum	40	36.46			35.60	35.40			34.46		
Iraq Basrah	35	35.96			34.71	34.21			34.21		
Qatar Marine	36	37.23			35.50	35.30			34.30		
Qatar Dukhan	40	37.42			35.65	35.45			34.49		
Oman	34	39.50	35.50-36.00*	34.00-34.50*		35.00		32.00 e)	34.30		
MEDITERRANEAN & AFRICAN CRUDES											
Iraq Kirkuk	36	36.18				34.18			34.18		
Libyan Light	40	40.00	39.90		37.50	37.00				35.50	
Nigerian Light	37	40.00			36.50	36.50			35.50		
Nigerian Medium	26	38.70			35.20	33.75			33.50		
INDONESIAN CRUDE											
Sumatra Light	34	35.00									
VENEZUELAN CRUDES											
Tia Zuana	26	32.88			32.88						
Tia Zuana	31	36.00			35.00						
Oficina	35	38.06			37.06						

* Lower price is for buy-back crude, higher is GSP for equity crude.

e) Effective March, 1.

OPEC'S WEIGHTED* AVERAGE PRICES OF CRUDE OIL

Short-term trend in weighted average Official Prices of OPEC Crude Vs. their Spot Assesment since June 1980

Week ending ..	OPEC'S Weighted Average Official Price	OPEC'S Weighted Average Spot Assessment	Difference (+) Premium (-) Discount
19.6.80	30.83	34.80	+3.97
26.6.80	30.83	34.80	+3.97
3.7.80	31.30	34.34	+3.04
2.10.80	31.97	31.32	+1.15
9.10.80	31.97	35.27	+3.30
30.10.80	31.76	37.62	+5. 86
7.11.80	31.76	38.78	+7.02
14.11.80	31.96	39.77	+7.98
21.11.80	31.79	41.46	+9.67
28.11.80	31.79	40.07	+8.28
19.12.80	32.65	38.62	+5.97
25.12,80	32.65	39.06	+6.41
9. 1.81	34.26	38.93	+4.67
16. 1.81	34.34	38.92	+4.28
23. 1.81	34.80	38.49	+3.69
30. 1.81	34.83	37.55	+2.72
6. 2.81	34.83	37.02	+2.19
13. 2.81	34.83	36.27	+1.44
20. 2.81	34.83	36.27	+1.44
27. 2.81	34.83	36.72	+1.89
6. 3.81	34.83	36.72	+1.89
13. 3.81	34.82	36.58	+1.76
20. 3.81	34.83	36.34	+1.51
27. 3.81	34.83	36.19	+1.31
3. 4.81	34.83	35.90	+1.07
10. 4.81	34.82	35.84	+1.02
17. 4.81	34.82	35.43	+0.61
24. 4.81	34.82	34.34	-0.48
1. 5.81	34.82	33.90	-0.92
8. 5.81	34.80	32.69	-2.11
15. 5.81	34.80	32.68	-2.12
22. 5.81	34.80	33.14	-1.66
29. 5.81	34.80	32.75	-2.05

*The weightings given are based on each nation's production relative to OPEC total.

OPEC'S WEIGHTED* AVERAGE PRICE

Short-term trend in weighted average Official Prices of OPEC Crude Vs. their Spot Assessment during 1981-82

($/Barrel)

Week ending	OPEC's weighted average Official Prices		Spot Assessment	Difference (+)Premium (-)Discount
5. 6.81	34.75		31.84	-2.91
12. 6.81	34.77		31.61	-3.16
19.6. 81	34.77		31.21	-3.56
26. 6.81	34.77		31.07	-3.70
2. 7.81	34.77		31.04	-3.73
10. 7.81	34.77		31.23	-3.54
17. 7.81	34.62		31.66	-2.96
24. 7.81	34.62		31.40	-3.22
28. 8.81	34.66	(34.32)	31.60	-3.06
4. 9.81	34.66	(34.32)	31.48	-3.18
11. 9.81	34.64	(34.32)	31.48	-3.16
18. 9.81	34.64	(34.32)	31.50	-3.14
24. 9.81	34.64	(34.32)	31.67	-2.97
2.10.81	34.64	(34.32)	31.58	-3.06
9.10.81	33.94	(33.79)	31.45	-2.49
16.10.81	33.94	(33.79)	31.75	-2.19
23.10.81	33.94	(33.73)	31.97	-1.97
30.10.81	33.95		32.60	-1.35
6.11.81	33.95		32.88	-1.11
13.11.81	33.95		33.32	-0.63
20.11.81	33.96		33.32	-0.64
25.11.81	33.96		33.15	-0.81
4.12.81	33.96		33.12	-0.84
11.12.81	33.80		33.07	-0.73
18.12.81	33.84		33.16	-0.68
23.12.81	33.80		33.12	-0.68
31.12.81	33.78		33.15	-0.63
8. 1.82	33.74		33.28	-0.46
15. 1.82	33.74		33.33	-0.41
22. 1.82	33.74		32.96	-0.78
29. 1.82	33.69		32.44	-1.25
5. 2.82	33.68		30.74	-2.94
12. 2.82	33.62		29.56	-4.06
18. 2.82	33.53		28.48	-5.07
26. 2.82	33.43		28.85	-4.58
5. 3.82	33.36		28.69	-4.67
19. 3.82	33.36		27.85	-5.51
26. 3.82	33.24		27.96	-5.28
2. 4.82	33.24		27.92	-5.32
8. 4.82	33.20		29.24	-3.96
15. 4.82	33.10		29.58	-3.51
23. 4.82	33.10		29.58	-3.51
30. 4.82	33.10		31.84	-1.25

(Figures in brackets are after allowing discounts on official selling prices by Nigeria).

*The weightings given are based on each nation's production relative to OPEC total.

DEVELOPMENTS OF LOWEST POSTED PRICES OF POL PRODUCTS AT BANDAR MAHSHR

PRICE AS ON	Light Distillates (US$/ US Gallon)				
	Avgas 115/145	Avgas 100/130	Avgas 73	Octane 93	Octane 83
1.1.68	16.0	14.7	12.7	9.3	7.3
1.1.69	"	"	"	"	"
1.1.70	"	"	"	9.0	7.1
1.1.71	"	"	"	"	"
1.1.72	16.9	15.6	13.7	9.9	8.0
1.1.73	17.2	15.9	14.1	10.2	8.3
1.1.74	24.3	23.0	21.0	17.3	15.4
1.1.75	50.6	48.6	47.5	35.9	34.0
1.1.76	53.0	51.3	51.0	38.3	36.4
1.1.77	53.0	51.0	48.0	"	"
1.1.78	58.5	56.5	53.5	41.2	39.0
1.1.79	64.0	61.0	-	44.0	40.5
1.1.80	-	-	-	79.3	76.0
1.1.81	-	-	-	106.3	102.5
1.1.82	-	-	-	109.8	104.0
18.2.82	-	-	-	107.8	104.0
23.2.82	-	-	-	104.3	100.5
14.4.82	-	-	-	"	"

No change upto 22.6.1982

Price as on	Middle Distillates (US$/ US Gallon)				
	Turbine Fuel 58F	Kerosene	Diesel Index	Indl.Diesel ($ /bbl)	Others Light Fuel ($/bbl.)
1.1.68	9.5	8.9	6.8	2.70	1.52
1.1.69	"	"	"	"	1.50
1.1.70	"	"	6.6	2.62	1.42
1.1.71	"	"	"	2.70	1.50
1.1.72	10.4	9.8	7.5	3.20	1.95
1.1.73	10.7	10.1	7.8	3.32	2.07
1.1.74	18.6	18.3	15.7	6.16	3.75
1.1.75	33.7	33.4	30.8	12.11	10.05
1.1.76	36.7	36.4	33.6	12.86	10.80
1.1.77	"	"	"	"	10.50
1.1.78	39.6	39.2	36.5	14.35	11.85
1.1.79	43.5	42.5	40.5	-	13.15
1.1.80	77.5	76.5	73.0	-	22.35
1.1.81	110.0	105.5	102.0	-	31.00
1.1.82	112.5	110.0	104.5	-	32.95
18.2.82	112.5	110.0	104.5	-	31.75
23.2.82	"	"	"	-	"
14.4.82	109.5	107.0	100.0	-	"

No change upto 22.6.1982

Consumer Prices of major Petroleum Products in various Countries during January - June, 1982.

(Rs./litre)

	Reference Period	M.S. (Regular)	HSDO	LDO	SKO	F.O.	LPG (Rs./kg)	Exchange Rate Used.
SOUTH AMERICA								
Argentina	Jan.,82	3.01	2.28	-	2.28	0.88	4.10	1 US $=Rs.9.12
Brazil	May, 82	9.16	5.49	5.49	5.57	2.33	3.74	1 Rupee=13.65 Cruzerias
AUSTRALASIA								
Australia	March, 82	3.44	3.48	3.95	2.97	2.37	2.10	1 Australian $=Rs.9.43
Newzealand	June, 82	4.85	3.64		5.98	2.61	8.79	1N.Z. $=Rs.7.5757
NORTH AMERICA								
U.S.A.	March, 82	2.42	2.41		2.44	2.30	-	1 US $=Rs.9.276
Canada	June, 82	3.46	2.62		2.06	2.06	-	1Canadian $=Rs.7.72
Europe								
U.K.	Feb.,82	6.11	6.11	3.22	3.50	2.59	4.11	1UK £=Rs.17.12
Yugeslavia	Jan.,82	6.81	6.25	2.31	4.74	2.12	3.52	1Rupee=3.52ND
France	Jan, 82	6.69	5.15		-	3.79	7.00	1F.France=Rs.1.636
W.Germany	Jan.,82	5.48	5.23		-	1.94	4.91	1D.Mark=Rs.3.98
AFRICA.								
Tanzania	May,82	7.79	4.63	4.18	4.68	2.97	8.38	Rs.=0.9812 shs.
SOUTH EAST ASIA.								
India (New Delhi)	Jan.-July'82	6.07	3.02	2.88	1.81	2.87	3.39	
Pakistan	June,82	4.53	2.86	-	2.74	8.29	-	1Re.=1.204Pak.Rs.
Bangla Desh	Jan., 82	5.18	2.41	2.34	2.40	1.74	2.16	1Rs=2.22 Taka
Srilanka	Dec-Jan,82	4.52	2.68	2.57	1.76	2.00	3.13	1Re.=2.21 S.L.Rupee
Malaysia	Jan-June 82	4.00	1.82	-	1.88	2.19	5.85	1M $ =Rs.3.921
Japan	Apl.,82	6.69	4.59	-	3.83	3.01	9.74	1 Yen=0.0396 Rs.
Philippines	June,82	5.43	3.34	-	3.35	-	5.81	1Rs.= 90.93 Peso

POSTED AIRFIELD PRICES OF JAT-A.I FUEL AT MAJOR INTERNATIONAL AIRPORTS AS ON 1.12.79,1.6.80, 1.12.80,1.6.81,1.12.81,13.82 and 1.6.82.

(U.S. S/U.S.Gallon)

Countres/Port	Prices of Jet A-*1 Fuel					
	1.6.80	1.12.80	1.6.80	1.1281	1.3.82	1.6.82
Austraila						
Perth	121.05	132.42	138.49	146.86	142.39	140.73
Sydney	121.05	132.42	138.49	146.86	142.39	140.73
Bahrain	159.35	159.35	167.68	165.03	165.03	160.13
Belgium						
Brussels	164.00	169.00	174.00	174.00	174.00	174.00
Egypt						
Cairo	155.20	155.20	162.77	162.77	162.77	143.87
Ethopia						
Addisababa	156.06	172.48*	182.24	183.41	183.41	183.41
France						
Paris	151.33	147.14	150.00	145.00	145.00	145.00
Germany						
Frankfurt	157.30	146.15	153.50	154.18	141.88	146.50
Holland						
Amsterdam	143.20	165.00	159.80	153.80	153.80	138.00
Italy						
Rome	165.00	155.00	145.00	145.00	145.00	145.00
Kenya						
Nairobi	144.00	167.00	175.00	180.00	180.00	180.00
Lebonon						
Beirut	185.00	185.00	185.00	185.00	185.00	185.00
Malaysia						
Kualalumpur	137.00	136.72	155.00	145.00	145.00	145.00
Mauritius						
Plaisance	140.00	145.00	150.00	150.00	150.00	145.00
Singapore						
Paya lebar	137.00	137.00	152.50	151.00	151.00	151.00
Switzerland						
Geneva	155.60	155.87	153.36	155.51	155.51	143.65
U.A.E.						
Abu Dhabi	161.74	163.97	172.08	169.35	164.59	159.66
Sharjah	161.74	163.97	172.08	169.35	164.59	159.66
United Kingdom						
London(H)	168.02	177.97	167.27	187.12	177.52	169.33
Kerachi	120.64	13092	137.86	133.05	133.05	132.60
Kuwait	112.00	91.12	108.21	102.70	97.50	96.90
New York	137.89	137.89	140.74	122.13	122.13	122.13
Teheran (1)						
Tokyo						
Narita	127.01	127.01	127.50	130.05	130.05	128.05
Bombay	153.46	151.43	155.45	144.33	141.52	140.77
Delhi						
Palam	158.74	157.37	162.28	152.30	150.50	152.06

*= Less rebate 2.00 ¢ USG.
(1)- Monopoly Price.
(2) Air India Contract Price.

WORLD DEVELOPMENT OF AVERAGE FREIGHT RATE ASSESSMENT (AFRA)

(Percentage)

PERIOD		General purpose 16500-24999dwt	Medium range 25000-44999dwt	IR I 45000-79999dwt	IR 2 80000-159999 dwt.	VLCC 160000 dwt above	ULCC 320000-549999 dwt
1.		2.	3.	4.	5.	6.	7.
Average	1974	211.2	179.4	120.6	97.0	78.6	
"	1975	139.5	124.8	83.2	62.7	56.9	
"	1976	132.7	117.6	77.1	57.0	50.3	
"	1977	151.7	114.7	74.7	54.8	47.9	
"	1978	155.5	116.5	72.2	53.5	44.8	
"	1979	255.2	200.4	124.5	80.5	52.4	49.0
"	1980	233.9	184.8	108.7	72.6	46.7	39.4
1981							
January		218,2	188,1	112,9	72,2	46.0	39.9
February		229.0	189.4	118.9	77.7	47.0	39.2
March		225.3	169.9	103.0	71.6	46.6	40.9
April		225.0	167.0	97.7	67.0	44.7	39.6
May		220.0	158.0	91.1	65.2	44.0	40.8
June		214.4	150.9	89.1	63.8	43.9	36.7
July		176.2	137.4	74.9	52.8	37.1	31.0
August		170.8	126.6	71.0	50.5	36.7	30.2
September		168.6	119.0	68.0	49.0	36.2	30.4
October		161.4	122.6	67.6	48.5	36.3	31.8
November		167.6	120.5	66.4	49.6	36.6	31.1
December		162.4	122.8	67.0	50.5	36.4	30.0
Average	1981	194.9	147.7	85,6	59.9	41.0	35.1
1982							
January		180.6	137.1	76.1	54.2	39.5	32.5
February		184.8	138.3	77.9	54.8	39.6	32.0
March		177.6	130.7	73.2	51.8	39.0	32.5
April		169.5	130.9	71.1	49.8	38.4	29.3
May		169.2	125.7	69.9	49.3	38.7	28.8
June		164.8	125.2	69.2	50.7	38.0	30.6

WORLD TANKER FLEET BY FLAG 1971 TO 1981.

(Million Tdwt)

FLAG	1971	1976	1979	1980	1981
1.	2.	3.	4.	5.	6.
U. S. A.	9.5	11.6	15.7	16.2	16.4
United Kingdom	25.0	30.8	24.8	24.8	21.3
Norway	18.9	29.6	24.4	24.0	24.5
Other Western Europe	38.9	71.2	76.8	74.9	76.8
Convenience	46.6	109.8	114.2	112.5	106.0
Japan	18.0	32.4	30.0	30.0	29.7
Rest of World	12.0	35.3	42.0	42.4	45.6
T O T A L :	170.9	320.7	327.9	324.8	320.2

SOURCE :-

WORLD TANKER FLEET BY SIZE 1971 TO 1981.

(Million dwt)

SIZE OF TANKER	1971	1976	1979	1980	1981
1.	2.	3.	4.	5.	6.
10-25 000 dwt	24.1	17.5	14.2	14.1	13.8
25-45 000 dwt	28.0	27.3	24.2	24.6	26.0
45-65 000 dwt	22.6	19.9	15.3	16.1	16.6
65-125 000 dwt	39.4	54.4	51.2	52.5	55.4
125-205 000 dwt	12.0	28.7	33.4	33.0	31.2
205-285 000 dwt	42.5	138.8	142.2	139.1	131.2
285 000 dwt and over	2.3	34.1	47.4	45.4	46.0
T O T A L :	170.9	320.7	327.9	324.8	320.2

SOURCE :-

INTER - AREA TOTAL OIL MOVEMENTS - 1981.

(Million Tonnes)

FROM TO	U.S.A.	Canada	Latin America	Western Europe	Africa	South East Asia
1.	2.	3.	4.	5.	6.	7.
U. S. A.	-	4.6	13.1	7.2	0.2	2.1
Canada	21.2	-	0.1	0.7	0.2	-
Latin America	96.2	14.9	10.8	44.3	5.4	-
Western Europe	26.1	0.1	-	-	5.2	0.5
Middle East	61.5	9.8	69.2	289.7	19.0	87.3
North Africa	32.5	1.4	3.5	67.0	-	-
West Africa	35.8	0.2	14.2	32.6	2.0	-
East & South Africa	-	-	-	-	0.4	0.3
South Asia	-	-	-	-	-	0.1
South East Asia	19.6	-	-	2.4	1.0	-
Japan	-	-	-	-	-	0.3
Australasia	0.1	-	-	-	-	0.5
U.S.S.R., E.Europe & China	0.9	-	9.2	69.5	-	11.9
TOTAL IMPORTS	293.9	31.0	120.1	513.4	33.4	103.0

Contd.

FROM TO	Japan	Australasia	Other Eastern Hemisphare	Destination not Known	Total Exports
8.	9.	10.	11.	12.	13.
U. S. A.	2.1	0.4	0.6	0.5	30.8
Canada	-	-	-	0.3	22.5
Latin America	7.6	1.2	18.7	18.6	217.7
Western Europe	0.3	-	5.4	-	37.6
Middle East	148.2	9.1	25.8	5.8	725.4
North Afroca	3.5	-	-	-	107.9
West Africa	1.1	-	-	-	85.9
East & South Africa	0.1	-	-	-	0.8
South Asia	0.3	0.1	1.7	-	2.2
South East Asis	47.3	4.7	7.5	-	82.5
Japan	-	0.1	-	-	0.4
Australasia	-	-	-	-	0.6
U.S.S.R., E. Europe & China	9.5	-	7.8	-	108.8
TOTAL IMPORTS.	220.0	15.6	67.5	25.2	1423.1

SOURCE :- BP Statistical Review of the World Energy - 1981.

WORLD PRIMARY ENERGY CONSUMPTION - 1981
(Million Tonnes Oil Equivalent)

Country/Area	Oil	Natural Gas	Coal	Water Power	Nuclear Energy	Total
USA	743.2	509.4	406.3	74.0	73.3	1806.2
Canada	81.6	48.1	22.9	59.2	9.7	221.5
Total North America	824.8	557.5	429.2	133.2	83.0	2027.7
Western Europe						
Austria	10.9	4.0	3.1	6.8	-	24.8
Belgium & Luxembourg	25.6	9.5	10.3	0.1	2.8	48.3
Denmark	11.7	-	5.4	-	-	17.1
Finland	12.0	0.6	1.8	3.4	3.5	21.3
France	99.3	24.7	26.2	15.8	22.1	188.1
Greece	11.9	-	3.9	0.9	-	16.7
Iceland	0.5	-	-	1.3	-	1.8
Republic of Ireland	5.4	0.9	1.7	0.2	-	8.2
Italy	95.5	22.8	13.5	10.7	1.3	143.8
Netherlands	35.2	28.8	4.3	-	1.0	69.3
Norway	7.5	-	0.5	20.6	-	28.6
Portugal	8.9	-	0.4	2.3	-	11.6
Spain	48.0	1.9	16.4	6.2	1.8	74.3
Sweden	21.8	-	1.4	9.9	6.3	39.4
Switzerland	11.9	0.8	0.7	9.3	3.7	26.4
Turkey	15.4	-	7.8	2.2	-	25.4
United Kingdom	74.6	42.0	69.7	1.3	8.1	195.7
West Germany	117.6	41.2	82.7	5.8	11.9	259.2
Yugoslavia	14.4	3.7	14.6	7.3	-	40.0
Cyprus/Gibraltar/ Malta	1.4	-	+	-	-	1.4
Total Western Europe	629.5	180.2	264.4	104.1	62.5	1241.4
Middle East	84.7	35.3	+	1.0	-	121.0
Africa	75.9	18.4	67.1	13.7	-	175.1
South Asia	43.4	8.9	88.7	12.8	0.9	154.7
South East Asia	123.7	7.3	57.2	8.6	3.5	200.3
Japan	224.3	24.2	63.2	20.7	21.2	353.6
Australasia	36.3	11.6	31.5	9.6	-	89.0
USSR	441.1	353.7	336.8	48.5	15.0	1198.1
Eastern Europe	102.4	69.4	258.0	5.8	4.2	439.8
China	84.8	10.4	394.2	10.2	-	499.6
Total Eastern Hemisphere	1849.1	720.1	1561.1	235.0	107.3	4472.6
WORLD (excluding USSR, E.Europe & China)	2270.4	898.5	1018.2	352.3	171.9	4711.3
WORLD	2901.7	1332.0	2007.2	416.8	191.1	6848.8

+ Less than 0.05 million tonnes oil equivalent.

Source : BP Statistical Review - 1981.

Estimated per capita Primary Energy Consumption - Some International Comparison (1981).

(In Kgm. Oil Equivalents)

Country/Area	Oil	Natural Gas	Coal	Water Power	Nuclear Energy	TOTAL
1. Western Hemisphere : Of which	1688	981	715	292	134	3810
North America	3246	2195	1690	524	327	7982
U.S.A.	3234	2217	1768	322	319	7860
Canada	3370	1987	946	2445	401	9149
2. Eastern Hemisphere						
a) Western Europe						
Of which :						
Austria	1451	533	413	905	-	3302
Belgium & Luxembourg	2502	929	1007	10	274	4722
Italy	1670	398	236	187	23	2514
Netherlands	2472	2022	302	-	70	4866
Norway	1829	-	122	5024	-	6975
Portugal	888	-	40	230	-	1158
Spain	1278	51	437	165	48	1979
Sweden	2620	-	168	1190	757	4735
Switzerland	1865	125	110	1458	580	4138
Turkey	332	-	168	47	-	547
U.K.	1336	752	1249	23	145	3505
Germany West	1907	668	1341	94	193	4203
b) Middle East	566	236	nog.	7	-	809
c) Africa	160	39	142	29	-	370
d) South Asia, of which	47	9	96	14	1	167
India	42	3	125		5	175
e) South East Asia	134	8	62	9	4	217
f) Japan	1923	207	542	177	182	3031
g) Australasia	1721	550	1494	455	-	4220
h) U.S.S.R.	1645	1310	1248	180	56	4439
i) Eastern Europe	897	608	2261	51	37	3854
j) China	86	10	397	10	-	503
3. WORLD(Excl.USSR, E.Europe & China)	730	289	327	113	55	1514
4. WORLD(Incl.USSR, E.Europe & China)	646	297	447	93	43	1526

Source : i) B.P. Statistical Review of the World Oil Industry - 1981.

ii) World Development Report, 1981 and International Financial Statistics, July 1982 for population.

Commercial primary energy production and consumption by country groups - 1970-1990

(Million b/d of oil equivalent)

Country	1970 Production	1970 Consumption	1980 Production	1980 Consumption	1990 Production	1990 Consumption
I. Industrial Market Economics	43.2	60.6	50.6	72.4	64.3	87.0
Petroleum	12.7	29.9	14.5	35.0	16.4	37.4
Natural gas	13.0	12.8	13.8	15.0	13.2	16.2
Solid fuels	13.0	13.3	13.9	14.0	20.4	19.1
Primary electricity	4.5	4.6	8.4	8.4	14.3	14.3
II. Non-Market Industrial Economics	28.8	27.6	45.2	43.0	63.4	62.1
Petroleum	8.0	7.2	13.7	13.1	17.9	17.3
Natural gas	3.8	3.8	7.7	7.0	12.6	12.3
Solid fuels	16.1	15.7	21.8	20.9	29.8	29.4
Primary electricity	0.9	0.9	2.0	2.0	3.1	3.1
III. Capital surplus Oil Exporters	12.8	0.3	18.6	0.9	21.7	1.7
Petroleum	12.7	0.2	18.3	0.7	20.4	1.1
Natural gas	0.1	0.1	0.3	0.2	1.3	0.6
Solid fuels	-	-	-	-	-	-
Primary electricity	-	-	-	-	-	-
IV. Developing Countries						
i) Oil Exporters	13.7	2.8	16.7	5.5	25.2	10.0
Petroleum	12.7	1.8	14.2	3.6	18.3	5.5
Natural gas	0.7	0.7	2.0	1.4	5.9	3.5
Solid fuels	0.1	0.1	0.1	0.1	0.3	0.3
Primary electricity	0.2	0.2	0.4	0.4	0.7	0.7
ii) Oil Importers	4.7	7.8	7.5	13.7	15.1	24.3
Petroleum	1.2	4.2	1.5	7.3	2.8	11.2
Natural gas	0.3	0.3	0.5	0.7	1.6	1.6
Solid fuels	2.3	2.4	3.5	3.7	5.6	6.4
Primary electricity	0.9	0.9	2.0	2.0	5.1	5.1
TOTAL WORLD	103.2	99.1	138.6	135.5	189.7	185.1
Petroleum	47.3	43.3	62.2	59.7	75.8	72.5
Natural gas	17.9	17.7	24.3	24.3	34.6	34.2
Solid fuels	31.5	31.5	39.3	38.7	56.1	55.2
Primary electricity	6.5	6.6	12.8	12.8	23.2	23.2
Bunkers & others		2.9		3.1		4.6

Average annual growth rate of world supplies (%)

	1970-1980	1980-1990
Total World	3.0	3.2
Petroleum	2.8	2.0
Natural gas	3.1	3.6
Solid fuels	2.2	3.6
Primary electricity	7.0	6.1

Source : World Bank Development Report - 1981.

PART - II

PETRO-CHEMICALS
STATISTICS

CHRONOLOGY OF SOME IMPORTANT EVENTS IN THE PETRO-CHEMICALS INDUSTRY IN INDIA

(A) ORGANIC INTERMEDIATES

(i) Durgapur Project Limited

1955: A State-sponsored Enterprise entitled 'THE DURGAPUR INDUSTRIES BOARD' was constituted with a view to develop an industrial complex at Durgapur under the State Control.

1959: In February, the Second Battery of the Coke Oven Plant was commissioned.

1960: In March, the first Battery of the Coke Oven Plant was commissioned. In June, the first two power generating units were commissioned.

1961: On 6th September, the Durgapur Project Ltd. was incorporated as a Private Limited Company. From 15th September, the Company took over the complex managed previously under departmental control of the Durgapur Industries Board.

1962: The Tar Distillation Plant with the capacity of 100 M.T. Cr. Coal Tar Distillation per day was commissioned in May.

1963: With a view to minimise the smoke nuisense at Calcutta, a Gas-Grid along with a gas Compression & Gas Purification Plant was commissioned in July.

1964: In order to meet the increasing demand of power, the Power Station was expanded, two more unit each with the capacity of 75 M.W. were commissioned.

1966: The fifth Power generating unit was commissioned.

1967: The third battery was commissioned on 17th April. To make economic use of high grade coking coal which is scarce in the country, a cyclone type Washery was built and commissioned.

1972: The fourth battery of the Coke Oven Plant was commissioned on 26th April.

1975: The construction of an additional power generating unit with the capacity of 110 M.W. was planned and necessary clearance from the Government was obtained for inclusion of the same in the Fifth Five Year Plan Period.

1976: Alum plant was commissioned on 13th January.

1977: In October, an all time record generation of about 105,000 M.W. HRS was achieved.

1978: In September, many equipments had severe demage due to flood.

1979: In July, construction of the 6th power generating unit of 110 M.W. capacity was started.

1980: Attempts were made for replacement of coke-oven Battery No.5 under DPL.

1982: Letter of intent was issued by the company to M/s Atto India (P) Ltd. for installation of Coke-oven Battery No.5 consising of 40 ovens.

(ii) Durgapur Chemcals Limited

1963: The Company was incorporated on 31st July and Certificate of Commencement of Business was issued.

The assets and liabilities of this project were taken over by the Company with effect from 1st September.

A technical Consultancy Agreement was entered into with Krebs & CIE, Paris, Consulting engineers of international repute for providing technical know-how. Another contract was entered into with them for supply of foreign equipments and machinery under the Indo-French Credit Terms. An agreement with M/s. Krebs & CID India(P) Ltd., a Company sponsored by M/s. Krebs & CID Paris, was also entered into for procurement of equipment in India and engineering of utility services.

The construction work of the factory buildings at Durgapur was started.

1966: The construction work of the factory buildings was completed.

1968: In January, Phthalic Anhydride Plant was commissioned.

In April, Caustic Soda/Chlorine Plant was commissioned.

1969: In June, Pentachlorophenol Plant was commissioned.

1970: In May, Phenol Plant was finally commissioned after repeated failures of guarantee test.

(iii) Herdillia Chemicals Limited

1963: On 1st July, the Company was incorporated.

1964: Agreement was finalised to lease about 300 acres of land at Thana-Balapur Road, Thana(Maharashtra) from Maharashtra Industrial Development Corporation.

1965: An industrial licence for manufacture of various organic chemicals was received.

Agreements were signed with the Distillers Co. Ltd.(now BP Chemicals International Ltd., U.K.) for provision of technical know-how, patent licence fee and engineering services including services as engineering consultants in respect of construction.

Contracts for engineering, technical services and construction of the factory were placed with the Lummus Co., London and the Lummus Co., India.

In October, grading and levelling of the grounds at site was commenced.

1966: Agreements were entered into with Universal Oil Products Company, USA for obtaining exclusive non-transferable licence to use a U.O.P. catalytic condensation process for the manufacture of Cumene. The same was guaranteed by U.O.P.

1968: On 18th February, the plant was inaugurated, Commercial production of phenol, acetone, diacotone alcohol, phthalic anhydride and phthalates was also commenced.

1972: In November, the licenced capacity of Phthalates was increased to 5000 M.T per annum.

1973: In January, there was a major fire in the reactor of Phthalic Anhydride plant causing extensive damage.

In December, a new reactor was fabricated indigenously in place of the earlier reactor which was imported and the plant was re-started.

Commenced recovery of crude acetophenone from Phenol Plant for sale.

1974: Through progressive debottlenacking the installed capacity of the phenol plant was increased to 14000 tonnes per annum.

The installed capacity of the Phthalates plants was fully established at 5000 tonnes per annum by installing minor balancing equipment.

1975: Phenolic tar was previously burnt in open pit. The operation was hazardous and pollutive. After prolonged research and development wrok, phenolic tar in a blend with other by-product streams, was used as a boiler fuel resulting in saving of approximately 1200 tonnes of fuel oil per year.

The Effluent treatment system was modified for effective removal of free oil and reduction in phenol content. Propane gas which was partly flared was wholly utilised for the burner of hot oil furnace.

The installed capacity of phenol plant was again increased from 14000 M.T. year to 14300 M.T/year by installation of balancing equipment.

1976: As a result of successful laboratory scale trials, Phenol content in the effluent was further reduced by dephenolation of waste streams.

A 750 KVA diesel generating set was installed to augment power supply.

1977: A second 730 KVA diesel generating set was installed to augment power supply.

R&D Laboratory was recognised by Department of Science & Technology.

1978: A stand-by 250 pisg package type boiler, 5000 KVA, 22/11 KV stand-by transformer and 75 tonnes refrigeration stand-by units were installed.

1979: A third oxidiser in the Phenol plant was commissioned.

In September, a letter of intent was received for the manufacture of Alpha Methyl Styrene(900 M.T), Acetophenone (500 M.T) and Cumyl Phenols (900 M.T.). A pilot scale plant for manufacture of Alpha Methyl Styrene was also sucessfully commissioned.

1980: Based on Company's R&D process, apilot plant for the production of 30 TPA of Diallyl phthalate was commissioned.

1981: The original industrial licence of the Company was endorsed for the manufacture of 900 TPA Alpha Methyl Styrene, 500 TPA Acetophenone, 900 TPA Cumyl Phenols and 360 TPA Fumaric Acid.

A letter of intent for the manufacture of 2000 TPA capacitor fluids and 6250 TPA Phthalates was received.

1980-81: Phenol plant was moderned and renovated to increase the installed capacity to match with the licensed capacity of 15240 MTPA.

(iv) Hindustan Polymers Limited

1961: The Company obtained industrial licence for the manufacutre of alcohol and styrene, polystyrene and its co-polymers.

Technical collaboration agreements was finalised for the styrene monomer plant with M/s. Universal Oil Products.

1962: Incorporated as Hindustan Polymers Limited.

1964: Collaboration agreements between the Company and BS Plastics Ltd., London for the supply of technical information for the manufacture of polystrene and its co-polymers were executed.

1965: Detailed contracts with Power Gas Corporation Ltd., U.K and France for febrication procurement and supply of plant and equipment (imported) for distillary, styrene monomer and polystyrene plants and supervision of erection and commissioning of styrene monomer and polystyrene plants were executed.

Construction of buildings at factory site was commenced.

1967: Alcohol distilla — menced production.

1969: Polystyrene pla — nced production.

1972: The management — Company was taken over by Delhi Cloth & — Mills.

1973: Styrene Plant — issioned. But the capacity utilisation — e to technical problems on account of bad and u — chnology for alcohol to ethylene manufacture.

1975: Improved al — thylene technology partially with own resour —

1978: Technical — bottlenecking were accomplished by own st — any foreign help and plant production capacit — aff w — y impro —

The management of the Company was taken over by McDowell & Company.

1981: The Company commi ssione d a heat recovery scheme by installing imported conection Box.

A collaboration agreement was signed with a France Company for process technology modernisation to reduch production cost .

Company received letter of intent for expandable polystyrene plant.

: Technical collaboration Agreement for process technology for expandable polystyrene plant was signed.

1982: Collaboration Agreement for process technology modernisation of another section of Styrene plant was signed with the existing American Collaborator.

(w) Indian Organic Chemicals Limited

1960: The Company was incorporated.

1962: Commercial production of Acetic Acid was started.

1964: Ester Solvent Plant with own know-how started Commercial production.

1969: Started indigenously fabricated plant for manufacture of Plasticizers.

Commenced production of Benzyl Chloride and Benzyl Acetate.

1970: Plasticizers Plant was expanded to its full licensed capacity of 10,000 M.T. per annum.

1971: Commenced production of Monochloro Acetic Acid.

1974: Exported Chemicals worth Rs. 43 lakhs.

1975: Expanded Benzyl Chloride c to 1,000 M.T per annum.

1976: Acetic Anhydride Plant was ted. Exported Ethyl Acetate worth Rs. 28 lakhs.

1977: Acetic Anhydride Plant was oned.

1979: Letter of intent for Mic: o llaries was received.

1981: Received Industrial Licenc facture of Microbial Auxiliaries.

1982: Commercial production of D oxy Methyl Cellulose and cinnamaldhyd iced.

(vi) Indian Petroche Corporation Ltd.:

1950: Towards late 1950s Gover nment evinced keen interest in the development of t ne Petro-chemicals Industry.

1960: A Committee headed by Prof. G.P. Kane submitted its report to Government setting out the main targets for chemical products for the Third and Fourth Plan Periods.

1963: Mr. V.E. Henney submitted his Report to the Government. A Planning Group on Petrochemicals Industries to recommend specific steps for implementation of petrochemical project was appointed by the Government.

The Petrochemicals Division was created as a part of the Oil &Natural Gas Commission to take follow-up action on the recommendations of the Planning Group.

1967: In March, the Petrochemicals Division of ONGC submitted a detailed project report regarding the Gujarat Aromatics Project(GAP) to Government. Based on this Report, investment approval for the Project was obtained.

1968: Collaboration agreements for Aromatics Project were concluded between Govt. of India and Fried Krupp GNBH Chemieanlagenbau of West Germany.

1969: In March, IPCL was incorprated and the Government assigned the agreements in respect of GAP to IPCL.

1970: On 24th January, foundation stone for Gujarat Aromatics Project was laid.

In May, detailed project Report for Gujarat Olefins Project was submitted to the Government.

Foreign collaboration agreement for Naphtha Cracker Unit was signed with M/s. Lummus Company Ltd., U.K.

In June, detailed Project Report in respect of Acrylonitrile Project was submitted to the Government.

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1976: In January, mechanical erection of equipment and piping for Low Density Polyethlene Plant commenced.

In February, mechanical erection in the Detergent Alkylate Plant commenced.

Bridge leading to the radial well constructed in the Mahi river bed at Khandi launched.

The first phase of railway siding for handling the inconing machinery and equipment for various project was declared open.

In March, mechanical erection work of BBH Units of Olefins project commenced.

Civil works for R&D Centre completed.

Mechnical erection of the Polybutadiene Rubber Plant commenced in April.

Mechanical erection of equipment and piping work for the Polypropylene Project was also commenced.

Production of DMT in the Aromatics Plant reached its pro-rata installed/licensed capacity in April.

Mechanical erection work for Polybutadiene Rubber and Ethylene Glycol Plants commenced.

33 KV and 6.6 KV Power distibution system for the Olefins and seven downstream projects was commissioned in June.

Construction of radial well No.1 at Mahi river completed with its connecting bridge and commissioned in June.

In September, mechanical erection of Acrylonitrile Plant commenced.

Instrumentation erection for Low Density Polyethylene Plant was inaugurated.

Erection of cold box for Air Separation Plant of the Integrated Offsites Project completed.

The textile equipment erection work started in Acrylic Fibre Project in November.

All the three chains of DM Water treatment plant in the Integrated Offsites Project commission in November.

Mechanical erection work for Acrylic Fibre Plant commenced.

In December, work on neutralisation facility for Polypropylene Project commenced by M/s. Paramount.

Boiler No.1 for PER Project completed and commissioned.

Construction of raw water reservoir and sump in UB-II completed service water system of UB-II commissioned for Polybutadiene Rubber Project.

Instrumentation erection for the Polypropylene Project commenced.

In December, mechanical erection of Refrigeration Plant for the Polybutadiene Rubber and Acrylic Fibre Plants Commenced.

1977: In January, the vertical turbine aerator of the Central Water Treatment Plant and Rs.20 crores Water Systems Project for various plants of IPCL were commissioned.

Flushing and testing of charge gassystem, regeneration gas system, cooling water systems of Naphtha Cracker Plant and civil works, for low Density Polyethylene Project was also completed during the month.

In February, letter of intent for DMT Expansion Project was received. Utility Block No.2 of ICP(all the three recirculating cooling water pumps and colling tower) was commissioned. Trial runs of main DEMAG Air compressor of O2/N2 plant and the DRESSER Air compresser High Purity Nitrogen Plant in ICP were also successfully completed.

In March, propylene compresser of polypropylene Project was erected and instrument erection work for Acrylonitrile and for Acrylic Fibre Project were awarded. N2/O2 Plant of Integrated Offsites Project was commissioned and trial run completed.

In April, the Gujarat State Safety Award was awarded to IPCL, Civil foundation for all the pumps in BPR Project and construction of cooling tower for Acrylonitrile Project was completed. Insulation work for LAB Project was also started and tender for LAB Plant laboratory building was issued. Air-conditioning of LAB control room building Pro-commissioning activities, checking out systems, indentification and hydrotesting of piping loops for LAB Project were taken up.

In May, Tehcnical auditing of the Polybutadiene Rubber Plant was started in association with M/s Polysar's representative, erection of polymer dryer for Acrylic Fibre Project was completed and Caustic line unloading distribution system and DM Water distribution system was commissioned in ICP.

In June, pre-commissioning activities on all system relating to the solvent recovery and storage sections in Polypropylene project and on utility system except stream condensate and the D.M. water system in Polypropylene Project were completed.

Air-conditioning plant for control room building in Polypropylene Project and High Purity Nitrogen Plant for Integrated Offsites Project were commissioned. Technical audit of the Process area in Polybutadiene Rubber Project was also completed. Acid Prooflining work in Acrylic Fibre Project started.

Trial run of DM Water Treatment Plant to test its full lead capacity was started in IOP and Process Water Treatment Plant in Integrated Offsite Project were mechanically completed.

In July, work on cooling tower in Ethylene Glycol Project. Tray erection work in all the three towers of Polybutadiene Rubber Plant, Control room building air-conditioning system in PBR Project, cooling water recirulation line and instrument air line from ICP to Linear Alkyl Benzene Plant and Jalampura radial well for water supply started.

GHH air compressor erection work for Acrylic Fibre Project, Erection and alighnment of instrumentation control panel for AF Project and process water treatment plant under ICP Integrated offsite Project commissioned.

In August, letter of intent for manufacture of 5500 TPA of Polyvinyl chloride was received. Engineering work for EG main plant as well as for ethylene oxide storage area and for Linear Alkyl Benzene were generally completed.

In September, the Rs.1 crore refrigeration plant for Polybutadiene Rubber Plant was inaugurated. Engineering work and BBH units and Polypropylene Pronect was completed. Ground floor air-conditioning plant in Acrylonitrile Project completed and was commissioned. Besides this phosphate dosing pump for LAB/EG cooling water treatment plant under Integrated Offsites Project and fire Water Pump in ICP were commissioned.

In October, in-take of low Sulphur Heavy Stock(LSHS) for the IPCL boilers from Gujarat Refinery commenced. Detailed engineering performance guarantee run of DM plant and LAB/EG hydraulic testing of chemicals design system in ICP, cooling tower for PE/PP was also mechanically completed and the fire fighting system in ICP was commissioned.

In November, the Rs.3 crores refrigeration system of Integrated Offsites Project was inaugurated. All civil and structural works including addtional work for Ethylene Glycol Project completed. Detailed engineering work for Polybutadiene Rubber Project, Acrylic Fibre Project, Linear Alkyl Benzene(LAB) Project, all structual steel work in LAB Project and cooling tower for PP/LDPE were completed.

In December, all process systems except one of PGH, Benzene and Butadiene units flushed and tested. Low pressure Steam, Cooling water, instrument air, plant air and N2 flushed and commissioned. Contracts for chemicals cleaning for BHH units awarded and preparation for chemical cleaning in Benzene unit was started. Works like underground piping, equipment erection, aluminium piping and chemical cleaning for LDPE Project was completed. Trial run for extruder with imported Polyethylene and for Hypor Compressor with Nitrogen in LDPE Project was also successfully completed. Investment approval for Polyvinyl Chloride, Acrylate and DMT Expansion Project was received from Government of India.

1978: In February, the call room of the hydrogen plant in propylene Plant battery was commissioned and power sub-station for the Acrylic Fibre Plant was inaugurated.

In March, olefins plant was commissioned and critical power supply shcene for IPCL from Gujarat Refinery was started.

Pyrolysis Gasoline & Hydrogenation Unit was commissioned in April and the Butadiene Extraction unit of olefins complex was commissioned in May.

In June, the first consignment of carbon balck feed-stock was despatched to Gujarat Carbon Ltd., by road tankers.

In July, Ethylene Glycol, Polybutadiene Rubber, Low Density Polyethylene and Polypropylene Plants were commissioned.

In August, Benzene Extraction unit of Olefins complex was started.

In October, two major products, viz. 'Indothene'(Low Density Polyethylene) and 'Koylene'(Polypropylene) were released for sale. The first consignment of Benzene was also despatched to M/s. Polychem Ltd., Bombay.

In December, construction work in respect of Acrylonitrile and Acrylic Fibre projects was completed and commissioning activities were started in the Acrylonitrile plant. Foreign collaboration for setting up a Methyl Acrylate Plant was also approved by the Government during the same month.

1979: In January, Nitrogen plant was started and the Acrylonitrile plant was commissioned on 16th January.

On 30th March, the IPCL complex was formally inaugurated by the Prime Minister. Acrylic Plant was also commissioned during the same month due to which the entire olefins complex went in production.

In May, IPCL won for the second successive year Gujarat State Safety Award. Site grading work for 2 x 12.5 MW Captive Power Plant for IPCL Complex was commenced.

In June, civil construction work for Acrylates 10,000TPA Project was commenced.

In September, Government of India approved the implementation of Petroleum Resins Project by IPCL and two days Exhibition was also held on the Acrylic Fibre products at IPCL Complex.

In December, production of Ethylene Oxide was commenced in Mono Ethylene Glycol Plant and approval of the Foreign Collaboration agreement in respect of VC/PVC Project was received from the Govt. of India. The Export Committee on R&D appointed by the Government of India visited IPCL to review the work of IPCL R&D Centre.

1980: In January, extension of validity of letter of intent upto 27.2.81 in respect of DMT Expansion to manufacture 30,000 MTA was received from the Ministry. Design Conference in respect of VC/PVC Project was held with process licensors in USA.

In February, foreign collaboration agreements in respect of VC/PVC Project was taken on record by the Govt. of India.

In March, civil construction work in respect of Time office, ware house and operational building of VC/PVC project was commenced.

In June, industrial licence for manufacture of 6000 MTA DMT, 60 MTA Methyl Benzoate and 40 MTA Dimethyl Isophthalate was received for DMT Expansion Project.

In August, letter of intent for manufacture of 5000 MTA Petroleum Resins was received.

In November, letter of intent for manufacture of 2500 MTA of Diethyl Glycol and 250 MTA Tri-ethylene Glycol was received. A feasibility report in respect of FCCU Gas Utilisation Project, Baroda was submitted to the Government.

In December, preliminary feasibility reports in respect of Toluene Extraction, Linear Alkyl Benzene Expansion, Kerosene Prefractionation, Naphtha Prefractionation, DMT expansion Phase II, Acrylic Fibre Expansion Projects were submitted to the Government.

1981: In March, industrial licence in respect of manufacture of solvents was received. Industrial Licence for manufacture of 55,000 MTA of Polyvinyl Chloride, 57,300 MTA of Vinyl Chloride & 100000 MTA of Ethylene Dichloride was received. Bhoomi puja of VC/PVC project was performed during the same month.

In September, feasibility Reports in respect of DMT. Expansion Phase-II, Acrylic Fibre Expansion, Naphtha prefractionation/Xylenes Production, Kerosene Prefractionation/LAB Expansion were submitted to Government of India.

In November, extension of validity of letter of Intent upto 10.5.82 for the manufacture of Di-ethylene glycol(2500 MTA) and Tri-ethylene glycol(250 MTA) was received.

1982: In March, a new product viz. Ammonium Sulphate with the annual capacity of 12,000 tonnes per year was included in the industrial licence issued earlier for manufacture of Acrylates.

(vii) Mysore Petrochemicals Limited

1969: On 9th June, the Company was incorporated in the name of Premier Petrochemicals Ltd.,

1970: On 3rd September, the name was subsequently changed to Mysore Petrochemicals Ltd.,

The project was promoted by the Karnataka State Industrial Investment & Development Corporation Ltd., Bangalore and Shekhavati Investment Corporation Ltd; Calcutta.

1972: On 4th August, the Industrial licence for the manufacture of 6000 tonnes Phthalic Anhydride per annum and 3000 tonnes Plasticisers per annum was issued to the Company.

1976: On 16th May, commercial production of Phthalic Anhydride was commenced.

1980: To meet with large shortfall in power, one 1100 KVA/11KV 'SKL' DG set together with two other DG sets of 250 and 166 KVA respectively were installed. Implementation of Phthalate Plasticizen Projects was in progress.

1982: On 1st March, letter of intent for increasing manufacturing capacity of Phthalic Anhydride upto 12,000 tonnes per annum was received. Implementation of Phthalic Anhydride expansion project was in progress.

(viii)National Organic Chemicals Industries Ltd.

1961: On 11th May, the Company was incorporated.

1964: In July, various technical collaboration and Engineering Agreement with Companies of Royal Dutch Shell Group of Companies were signed.

In August, industrial licence was granted.

1965: In January, ground was broken for the construction of the complex.

In December, foreign currency loan agreement was signed with Shell Petroleum.

1966: Rupee loan agreement was signed with Indian Financial Institutions and SBI.

1968: In January, NOCIL Petrochemicals Complex was inaugurated.

Installation of naphtha pipe along the Eastern Express Highway was completed.

In March, first Ethylene deliveries to Polylefins Industries Ltd., took place.

Various plants of the complex such as Glycols Plant, PVC Plant and Solvents Plant were commissioned.

1969: In September, Alcohols Plant and PVC Compounding Unit were comissioned.

1970: In September, Technical Service Laboratory was inaugurated

In October, a Jetty for bulk exports was completed.

1974: Naphtha Pipe Line from Durmah-Shell Refineries to the factory was installed.

1977: Research and Development activities were reorganised.

1978: NOCIL launched a programme for integrated rural development to raise the poverty line in Yavatmal district of Maharashtra with 2500 families living in backward and draught prone villages.

1980: New site in backward area of Ratnagiri, Maharashtra was selected for Agrochemicals operations.

1981: R&D Centre was constructed, Effluent Treatment Plants Phase I & II were complted and work on Monocrotophos Project was started.

Government's approval for revamping of certain plants and industrial licence for Monocrotophos was obtained.

(ix) Polychem Limited

1955: Company was incorporated.

1957: On 25th May, the Polystrene Plant was brought on stream.

On 16th June, the plant was formally inaugurated.

1958: The facilities for production of High Impact Polystyrene Sheet wre commissioned.

1959: The production capacity of the plant was doubled to 12 million lbs (5500 tonnes) per year.

1960: In February, an industrial licence was obtained for establishing a Styrene Monomer plant of 6,800 tonnes/year in Bombay in technical collaboration with the Dow Chemicals Company, USA.

In August, another industrial licence for establishing a 5,450 KL/Year Alcohol Distillery in Maharashtra was also received.

1962: The authorised capital was increased from Rs. 150 lakhs to Rs. 5 crores and subscribed equity capital from Rs.40 lakhs to Rs. 56 lakhs.

1963: In August, Styrene Monmer and Alcohol Plants were brought on stream.

1964: The capacity of Styrene and Polystrene plants were increased to 1[illegible],000 tonnes per year and that of Alcohol Distillery to 9,090 KL per year.

1967: Started export of substantial quantities of Polystyrene directly.

1968: With the availability of petro-based ethylene and benzene, the capacity of styrene plant was further increased to 14,000 tonnes per annum, without any foreign technical help of collaboration.

1972: A pilot plant for the manufacture of 150 tonnes/year Divinyl benzene Monomer was brought on stream based on the know-how developed by Research & Development work carried on since 1968.

The production of natural spirit and Indian made Foreign Liquors as well as Country Liquors was started utilising surplus alcohol subsequent to the availability of Petro-ethylene.

1973: During the period 1964 to 1973 the Company increased its equity capital from Rs. 56 lakhs to Rs. 160 lakhs by issue of ' Bonus Shares '.

1974: The production capacity of the Polystyrene plant was increased to 16,000 tonnes per year.

The Polystyrene Plant received second prize for the reduction in frequency rate of accidents for the period 1972-74 from the Council of Industrial Safety.

An award from the Indian Merchants Chember for Outstanding Contribution for improvement of Industrial and Labour relations for the year 1974 was also awarded.

The Company received a letter of intent for the manufacture of 2,000 tonnes per year of acrylonitrile Butadiene Styrene (ABS) resins at Koyali in Gujarat State. A pilot plant with a capacity to produce one ton per day of ABS resins was commissioned in November for developing

Contd. :

1974 indigenous commercial technology based on bench scale work done by Sri Ram Institute for Industrial Research on the manufacture of ABS resins, for which know-how was purchased through National Research Development Corporation of India.

1975: The Divinyl benzene plant of 150 tonnes/ year capacity was built based on self developed technology.

To improve gloss and abrasian resistence and sales appeal of Polystyrene, technology for production of suitable overcoat lacquer (Butylated melanine Formaldehyde lacquer) was developed and sold to N.G Industries, Bombay for production on commercial basis.

Bunch scale technology for making styrene based on exchange resins was developed.

1976: Received a letter of intent for manufacture of Vinyl Acetate Monomer by Ethylene route in Maharashtra State.

Foreign collaboration proposals and import of technology for this project were approved by the Government.

1977: Industrial licence for the manufacture of 2000 MTPA of ABS resins at Baroda, Gujarat was received.

Contract for detailed engineering for ABS plant was awarded.

Technical collaboration agreement with Bayer A.G., West Germany for Vinyl Acetate Monomer Project was signed.

1978: Equity capital was increased from Rs. 160 lakhs to Rs.200 lakhs by issue of bonus shares.

1979: Successfully comissioned the 2000 MTPA ABS plant at Baroda.

Capital goods Licensing Committee cleared the import of capital goods for the Vinyl Acetate Monomer Project.

Received an industrial licence for the manufacture of 5000 tonnes per annum Vinyl Acetate Monomer.

Sanction letters of financial assistance for VAM project was received from financial institution. 50,000 10% Redeemable Mortgage Debentures of Rs. 100 each for cash at par were subscribed by members, depositers and associate companies, etc.

1981:- letter of intent for the expansion of the Vinyl Acetate Monomer(VAM) Plant from 5,000 MTPA to 10,000 MTPA was received.

Production of Styrene, Polystyrane, industrial Alcohol and other products was seriously hampered during the year due fire at the Polystyrene Plant followed by the strike of the workmen from 23.3.81 to end of February,82.

1982: Construction of VAM plant of 5,000 MTA was almost complete for commissioning in June, 82.

(x) Sirsilk Limited

1946: The Company was incorporated.

Collaboration agreement was entered into with M/s. Lansils Ltd., of Lancaster, England.

1954: Following plants were commissioned during the year :

1. Bleached cotton linter pulp
2. Cellulose acetate plant
3. Acetic Acid Plant
4. Acetic Anhydride Plant
5. Acetone Plant
6. Acetate Rayon Filament Yarn
7. Ethyl Acetate

Collaboration agreement with M/s. Lansils Ltd. of Lancaster, England was terminated.

1955: Weaving unit was commissioned with 480 Looms having yearly production capacity of 95 lakhs metres of Art Silk Fabrics.

1956: Licence for substantial expansion was granted.

1960: Licence was granted for substantial expansion for weaving plant unit.

1964: Yearly installed capacity of the plants was increased.

1965: Installed capacity of the plant was increased.

1966: Production of acetate staple fibre was commenced.

1968: Part of looms were diverted for manufacture of synthetic fabrics.

1974: Research and Development Division and Technical Consultancy Service Unit for rendering Technical know-how and other Engineering services for manufacture of chemicals etc. were established.

1975: Process know-how was offered to manufactur chemicals such as acetone, acetic acid, acetic anhydride etc.

1979: In order to diversify production on Synthetic line, latest type of processing mechineries like Hot Air Stenter, Beam Dyeing Machine and Thermo were installed.

1981: Scheme for modernisation of cellulose Acetate, Spinning and Weaving Plants was forwarded by Ministry of Commerce to Industrial Development Bank of India, Bombay for consideration under the Soft Loan Scheme.

1982: Plant for Acetic Anhydride at Nandesari was commissioned.

(xi) Somaiya Organics(India) Limited

1964: The Company was incorporated on 1st June under the Companies Act, 1956.

1967: The Company acquired a Distillery at Captainganj, Dist. Decria, U.P. from M/s. Godavari Sugar Mills Ltd., who are the promoters of the Company.

1969: In the second quarter of civil construction work of the factory was commenced.

1970: Erection of Butanol and Butyl Acetate plants was completed and trial production was undertaken on 11th November.

1971: The erection of Acetic Acid plant was completed and it was commissioned.

1972: A Research & Development Wing was started. After Laboratory trials production of Paraldehyde, a chemical which was till then being imported in the country, was commenced.

1973: A Pilot plant for production of Plasticizers was erected and commissioned.

Factory successfully distilled and manufactured a'Solvent' by name 'Solvent-72' which could be made available to the Paint Industries at much cheaper rates compared to other solvents of same effectivness, out of a waste which was till then being drained out.

1974: A third Furnace was added in the Main Plant. Trial Production of Ethyle Acetate was also commenced. Organic chemicals were exported to Japan and Far East countries.

1975: Commercial production of Ethyl Acetate was started on a regular basis. Further, installed capacity of Acetic Acid Plant was increased to 5700 tonnes per annum.

1976: Erection work of an independent Mini Plant for production of Paraldehyde and Plasticizers was started.

1978: Installed capacity of Acetic Acid Plant was increased to 7600 tonnes per annum.

1980: Letter of intent for production of 300 lakh litres per annum/ Alcohol was received and application of industrial licence was made.

1981: Industrial licence for production of 300 lakhs litres per annum of Alcohol was received.

(xii) Union Carbide India Limited

1926: Eveready Company(India) Limited started manufacturing flashlight batteries in Calcutta.

1934: The Eveready Company(India) Limited was incorporated in India as a Private Company.

1941: National Carbon Company(India) Ltd. was formed to assume both manufacturing and selling functions. This was a fundamental beginning of the Company in India.

1961: Chemicals and Plastics plant was commissioned in Bombay.

1966: The Company expanded its Chemicals and Plastics operations and set up India's first Petro-chemicals Complex at Bombay.

1977: The Company received letter of intent to increase the Low Density Polyethlene production capacity to 20,000 tonnes per annum. The letter of intent was converted into an Industrial Licence.

1978: The Company recived letter of intent to manufacture 1000 tonnes of 2 Ethyl Hexoic Acid and 500 tonnes of 2 Ethyl Hexyl Acetate for implementation in the existing facilities at Trombay.

1979: Implementation of industrial licence for substantial expansion of the Bombay Plant of 20,000 tonnes per annum of Polyethylene was completed.

(xiii) Bongaigaon Refinery & Petrochemicals Ltd.

1974: On 20th February, the Company was registered under Companies Act, 1956 in the State of Assam, with an authorised capital of Rs. 50 crores.

1977: The share capital of the Company was increased to Rs.100 crores was work on xylene and DMT Unit was started.

1979-80: The implementation of Xylene and DMT Projects and selection of foreign technology for polyester Fibre Plant was under way.

1980-81: Work on the Xylene, DMT plant and the offsites Phase-II was progressed further.

The technology selected for the Polyester Staple Fibre Plant was approved by the Government.

(B) PLASTIC RAW MATERIALS

(i) The Alkali & Chemicals Corporation of India Ltd.,

1937. The Company was incorporated with a share capital of Rs. 35.34 lakhs of which preference capital was of the order of Rs. 31.00 lakhs and equity Rs. 4.34 lakhs. Out of the equity shares, 1 % was held by the Indian public and and balance 99 % was held by ICI(India) Private Ltd., a wholly owned subsidiary of ICI(U.K.).

1940: The Company started operations with a caustic soda/chlorine plant at Rishra in West Bengal.

1949: A hydrochloric acid plant with a capacity to produce 2,400 m.t.p.a. was put up at Rishra.

1951: A plant to produce 2,800 KL of nitrocellulose and synthetic paints per annum was installed at Rishra.

1952: The capacity of the caustic soda/chlorine plant was expanded to 5,600 m.t.p.a of caustic lye on 100% basis and 5200 m.t.p.a. of Liquid Chlorine.

A benzene hexachloride plant with a capacity of 500 tonnes was set up at Rishra.

1958: While the scheme for the manufacture of polythene was being implemented, the equity share capital of the company was expanded to Rs. 310 lakhs by the issue of fresh share capital, at this stage the shares held by the Indian public went up to 24.1% and the remainder 75.9% was being held by ICI(India) Private Ltd.,

1959: Polyethylene plant was set up at Rishra.

1963: The Company set up India's first rubber chemicals plant.

The capacity of the caustic soda/chlorine plant was expanded to 7041 m.t.p.a of caustic lye on 100% basis, and 5814 m.t.p.a. of liquid chlorine.

1965: The capacity of the polythene plant was expanded to 10,000 m.t.p.a. and that of the paints plant to 4,700 kl. per annum.

1966: The capacity of the rubber chemicals plant was expanded from 2250 to 2700 tonnes per annum.

Equity share capital was increased to Rs. 434 lakhs by the issue of bonus shares.

1967: The capacity of the BHC Technical plant was expanded to reach a figure of 5,200 m.t.p.a.

1971: A new paints plant with a capacity of 2350 kl. p.a. was set up at Hyderabad.

1974: An industrial licence for expansion in the capacity of the rubber chemicals plant to 6,000 t.p.a. and 2500 t.p.a. of diphenylamine was received.

Received an industrial licence to put up a pharmaceuticals plant in Madras.

1976: Industrial licece for manufacture of 2500 K.L. per annum of Gramexane Bipyridilium Herbicide was received and work commenced. Agro-chemicals screening station at Bangalore was also inaugurated.

1976 : Expansion work for rubber chemicals was commenced.
Contd.
Equity holding in the company was diluted.

1977: Production at the formulation unit of the pharmaceuticals plant was commenced.

1978: Production at the Gramoxone and Bulk Drung plants was commenced.

(ii) Ahmedabad Manufacturing & Calico Printing Co. Ltd.

1880: Calico (Textiles) was established at Ahmedabad. The Company is now Public Company with Limited liability. Today it has three Main Divisions- Textiles, Chemicals Plastics and Fibres & Marketing Division and four wholy owned subsidiaries as under :

a) Ilao Limited
b) Rajindra Dyeing & Printing Mills Ltd.
c) Gujarat Nets Ltd.
d) Verma Industrials Ltd.(Subsidiary of Rajindra Dyeing & Printing Mills (Ltd.)

1958: The Company obtained two industrial licences for the manufacture of Calcuim Carbide and Polyvinyl chloride. By 1961 both licences were implemented at Bombay. The Company obtained permission on the same licence to manufacture PVC fabricated products. This plant was commissioned in 1961-

1959: The Company obtained industrial licence for manufacture of Polyvinyl Alcohol.

The Company obtained industrial licence for manufactures of plastic moulded and extruded articles. The plant was commission in 1961 at Bombay.

1960: The Company obtained industrial licence for manufacture of PVC Coated Wires & Cables. The licence was implemented and production started in 1961.

1965: Polyvinyl Alcohol plant commissioned.

1967: The Company obtained industrial licence for effecting substantial expansion of Polyvinyl chloride and its co-polymers.

1972: P.V.C. (Bulk Polymerisation) plant was commissioned.

1976: On 28th February, the Company obtained industrial licence for Polyvinyl pyrrolidon.

1978: Plant for manufacture of Polyvinyl-Pyrrolidon was commissioned.

(iii) Bakelite Hylam Limited

1947: On June 18, Hyderabad Laminated Products Limited was incorporated in the Nizam's Dominion of Hyderabad.

1949: Plant from U.K. arrived and erection was started.

1950: Erection of plant and machinery was completed.

1951: Started trial production with imported varnishes of Laminates for panelling.

Managing Agency changed from the promoters, Khan Bahadur Ahmed Alladin & Co. to Best & Company (Company)Limited.

1953: Varnishes developed indigenously.

Manufacture of Laminated Wood commenced under the trade Mark HYPLY.

1954: Break-even point reached in operations.

1955: Manufacture of higher electrical grade laminate commenced.

1956: 2-shift production started to cater for bulk business from the Railways for pancelling.

1958: Manufacture commenced of laminates of very high electrical properties as also Asbestos- based Laminates and Decorative Veneers.

1959: Laminate Expansion sanctioned.

Licence received for manufacture and sale of Polyester Resins Phenolic Resins, and Moulding Materials.

1962: Trial production commenced of Laminates on the new Press.

Trial production of Polyester Resins, Phenolic Resins and Moulding Materials commenced.

1963: Progress in the development of new grades of Polyester Resins, phenolic Resins and Moulding Materials.

1965: Name of Company changed from Hyderabad Laminated Products Limited to Hylam Limited.

1967: First export of Industrial Laminates to Holland.

1968: Industrial Laminates exported to Holland, West Germany, Swedan, U.A.E.

Managing Agency terminated.

1969: Hylam Limited and Balkelite(India) Private Limited merged to form Bakelite Hylam Limited on 4th December.

1970: Expansion taken in hand.

1971: Expansion work on shcedule. Press No. 30 installed and production started.

1972: Sophisticated 4-Colour Printing Machine installed for Decorative Papers.

1973: Buildings for Thixotropic Plant and storage of Polyester Resins completed.

New Polyester still installed and production started.

Glass- Epoxy and Cold- punching Laminate Grades Developed.

1974: Expansion completed. Two Boilers converted to Coal-firing Diesal Goneration installed.

1975: Introduced a range of high-quality Insulating Phenolic Varnishes for the Electrical Industry.

1977: Rigid PF foam was developed in R&D Laboratory of the Company.

1978: Application for an industrial licence for the manufacture of Rigid PF foam developed in company's R&D Laboratory, was made to the Government.

1979: Effluent treatment plant was established at the factory for pollution control.

A new material, Phonolic Foam Based Marine Board, was developed at company's RID Laboratory, to replace imported asbestors-filled Marine Board used in ship building.

1980: Letter of intent for the manufacture of Rigid PF foam and Phenolic Foam based Marine Board was received.

1981: Letter of intent for the manufacture of Marine Boards and expansion of Industrial Laminate capacity was received.

(iv) Chemicals and Plastics India Ltd.,

1961: In May, Licence was granted to the India Cements Ltd. to manufacture 6,000 tonnes per annum of PVC resins/compounds.

1962: Company was incorporated.

In November, original licence was changed to the name and style of Chemicals and Plastics India Ltd.

1963: Certificate for commencement of business was issued.

Licence was granted to manufacture 1,500 tonnes per annum of PVC pipes and fittings, other extrusions and mouldings (rigid & flexible) in January.

1967: In May, PVC Plant was inaugurated.

In July, commercial production of PVC resins was commenced.

1969: Production of PVC pipes was commenced.

1970: Industrial Licence was issued for expanding PVC capacity to 20,000 tonnes per annum.

1971: Successful commercial production of gramophone record was compounded.

1972/73: Intermediate stage of expansion of PVC capacity to 13,500 tonnes per annum was complted.

1975: Permission was granted by the State Government to set up a captive distillery for production of industrial alcohol.

In December, Industrial Licence was granted for production of 3,500 tonnes of PVC pipes per annum.

1976: Entered export market for PVC conduits pipes and fittings.

1978: Debottlenecking programme to achieve an initial rated capacity of 16,500 tonnes of PVC resin was commenced.

In October, production of Industrial Alcohol in the captive distillery unit at Krishnagiri was commenced.

Government approval was received for effecting substantial expansion for manufacture of Rigid PVC pipes and fittings, other extrusions and mouldings to an annual capacity of 6,000 tonnes.

1979: Debottlenecking programme to achieve 20,000 tonnes of PVC resins was in progress.

The Company entered into an agreement with the BP Goodrich Co. for the introduction of VCM Technology.

1981: Debottlenecking programme to achieve 20,000 tonnes of PVC Resin per annum was completed.

Production had to be suspended due to workers strike from February 12 to April 16.

(v) Chemo-Pharma Laboratories Limited

1970: Diversification and expansion programme was undertaken to maintain sufficient diversity of products and product lines. The necessary land was acquired at MIDC Industrial Area, Kalyan Hiwandi Road.

1971: First stage of gradual diversification costing about Rs.20 lakhs was completed with commissioning of plant to manufacture Urea Formaldehyde & Melamine formaldehyde moulding powers.

1972: Commercial production of Urea- Formaldehyde & Melamine formaldehyde power was started.

1975: An improved pullveriser was installed which could pullverise the sheets into fine granules without any increase of temperature.

1976: Manufacturing technology of Indigo Vat Blue was developed in the R&D Department of the Company.

1977: New/improved process of manufacture of Niacinomide IP and Isomorzed IP was developed. Development of Solid Resins of Urea and Melamine for Industrial application was also done.

1978: Manufacture of Indigo, Urea Formaldehyde and Melamine Formaldehyde was suspended due to market conditions.

1979: Manufacturing technology of Analgin and Melronidozoli was developed in the R&D Department of the Company. Process was also tried on pilot scale with satisfactory results.

1980: Manufacturing technology of Trimethoprim was developed in R&D Department of the Company.

(vi) East Anglia Plastics(India) Limited

1956: The Company was incorporated in West Bengal with an authorised capital of Rs. 5 crores. Government approval to manufacture Cellulose Acetage Moulding Compund and PVC Compund in technical collaboration with East Anglia Plastics Ltd., U.K. was accorded.

1961: Government modified terms of collaboration with East Anglia Plastics Ltd., U.K. and collaboration agreement was made.

1962: Production of Cellulose Acetate Moulding Compound was commenced.

1963: Further share capital of Rs. 85 lakhs was raised. Industrial Licence for manufacture of 1000 tonnes Phthalate Plasticisers and foreign collaboration arrangement was approved by Govt.

1964: Capital Goods Import Licence for Phthalate Plasticisers was received.

1965 Manufacture of PVC Compound was commenced.

1966: Production of Lighter Phthalates was commenced.

1967: Production of Heavier Phthalates was commenced and Industrial Licence for Plastic Films, Foils and Laminates was received.

1968: Industrial Licence for expansion of capacity of Phthalate Plasticisers to 2000 tonnes was received.

1970: Industrial Licence for expansion of capacity of Phthalate Plasticisers to 5,000 tonnes was received.

(viii) Mysore Acetate and Chemicals Co. Ltd.

1963: On 24th December, the Company was incorporated under the Indian Companies Act with its registed office at Bangalore to manufacture various derivatives of Cellulose like Cellulose Triacetate, Cellulose Diacetate and Cellulose Acetate Moulding Granules. The Company was formed with the main object of supplying Cellulose Triacetate to M/s. Hindustan Photo Fimls Mfg. Col Ltd., Octacamund, Tamil Nadu.

1964: On 25th May, certificate was issued for commencement of business.

1965: Entered into collaboration with M/s. Vankoharn Inc., U.S.A. for supply of plant and machinery for the manfacture of Bleached Cotton Linters, Cellulose Triacetate, Cellulose Secondary Acetate and Cellulose Acetate Moulding Granules and with M/s. A.B. Chematur of Sweden for the supply of plant and machinery for the manufacture of Acetic Anhydride.

1967: The construction of factory buildings and erection of plant and machinery was started.

1968: Acetic Anhydride plant was put into operation in July after completion of trial runs. The moulding compound plant began trial production of Cellulose Acetate Moulding Granules with imported flakes.

1969: Started supplying Cellulose Triacetate to Hindustan Photo Films during the latter part of the year, thus saving considerable amount of Foreign Exchange. The other plants like, Bleached Cotton Linters, Cellulose Triacetate etc. was commissioned and production started with effect from 1st July.

1970: Cellulose Secondary Acetate Plant went into trial production via. Triacetate route and Dil. Acetic Acid Plant also went into trial production. All the foreign technicians were withdrawn and the Company was manned entirely by Indian personnel. The Ethyl Acetate plant was also commissioned during the year.

1972: The plasticizer unit, i.e. Diethyl Phthalate was commissioned in July to manufacture Diethyl Phthalate requried for captive use. The plant was designed and commissioned entirely by the Company rersonnel.

1974: The direct solution process for the manufacture of Cellulose Secondary Acetate was commissioned in September.

1975: The Secondary Acetate solution process was stablised and all grades of CAMG were reformulated to adopt to the cellulose acetate flakes produced by the solution process.

1977: The Company installed and commissioned two Diesel Generators sets of 210 KV each to meet the chronic power shortage of the State.

1978: Registereation for manufacture of Cellulose Acetate Butyrate (CAB) was entered with DGTD and also applied for registation for installation of a 20 tonne per day alcohol based acetic acid plant.

1979: Applied for letter of intent for manufacture of Cellulose Triacetate based photo Films viz. X-ray, Roll and cine, in colour and in black & white, Graphic Arts and photo-paper.

(ix) Nuchem Plastics Limited

1951: Started as Button moulders, Rattanchand Harjasraj (Plastics) Ltd. at Amritsar with a paid up capital of 3.11 lakhs.

1952/1954: Developmental work on moulding powders and collection of valuable data regarding the manufacture of U.F. Moulding Powder in tropical conditions was undertaken.

1955/1956: Agreement was concluded with M/s. British Industrial Plastics (Chemicals) Ltd. Birmingham for Technical Collaboration.

1957: U.F. Moulding Powder production was started.

1959: Expansion for 840 tonnes of Urea Formaldehyde and for 250 tonnes of Malamine Formaldehyde Moulding Powders was sanctioned. A licence to manufacture Urea Formaldehyde Resins 1800 tonnes per annum was also received.

1962: Expansion was completed. Production on new plant was started. The company received a Licence to manufacture 192 Compression and Injection Moulding Tools per annum. Engineering Division started.

1965: Resin plant was commissioned.

1967: Bonus shares 2:1 issued. Company's name changed to NUCHEM PLASTICS LIMITED, now a Public Limited Company.

1969: First public issue.

1970: Formaldehyde plant was installed.

1971: International Division was set up to accelerate exports. Production of 5000 tonnes Moulding Powders per annum taken up.

1972:, Research & Development Centre started functioning.

1973: Hexamine Plant was commissioned.

Company was awarded National Safety Award by Ministry of Labour.

1974: Bonus shares 1:2 issued.

1975: A formaldehyde Plant was sold out on turn-key basis to M/s. Southern Synthetics Ltd., Ranipet (Tamil Nadu).

Company was awarded TCP EXPORTERS AWARD in the category of raw- materials by Government of India.

1976: Process for manufacture of Phenyl Butazone was sold to M/s. Nufarm Chemicals, Faridabad.

Formaldehyde plant to M/s. Southern Synthetics Ltd., Ranipet was commissioned successfully.

Engineering Division started manufacturing compression processes for plastics, rubber and other specialised usage.

1977: Process for manufacture of Paraformaldehyde was completed and taken up in hand for execution.

1978: Encapsulation Process Ferite Moulding Presses and such specialised hydraulic presses were introduced in the market by the Engineering Division.

1979: A pilot plant for Phenolic Resins was supplied to Burma through National Research & Development Corporation.

An agreement was arrived at between Nuchem and U.P.State Industrial Development Corporation to flow a joint sector company to exploit CMC know-how, developed by the country.

1980: The Company exported its technology for Phenolic Resins to Burma through NRDC, New Delhi.

Submitted application for grant of Industrial licence for the production of 2000 tonnes of specialised Phenolic Resins and Moulding Powder.

(x) Plastics Resins and Chemicals Limited

1962: The Company was incorporated under the Companies Act, 1956

1971: Commenced manufacturing of PVC Compound with own technical know-how.

1972: Set up a Research Laboratory for quality control and Technical Service Laboratory for customer service in Bombay.

1973: Exported 462 tons of PVC resins.

Exporter's Award by Plastic Lineleum Export Promotion Council for the year 1973-74 was awarded.

Won the National Safety Award for Industrial Safety.

1975: Commenced commercial sale of by-product, i.e. Benzene.

1978: From 4th February, manufacturing operation was stopped due to uneconomical working conditions.

1979/80: Plant remained closed due to uneconomical working conditions.

1980-81: Plant continued to remain closed.

The Company applied for an industrial licence for the manufacture of 10,000 tonnes per annum of 1,1,1 Trichloro Ethane.

(xi) Polyolefins Industries Limited

1964: The Company was promoted by National Organic Chemical Industries Limited with financial and technical collaboration with Farbwerke Hoechst AG, West Germany for the manufacture of 20,000 tonnes per annum of High Density Polyethylene(HDPE), 320 tonnes per annum of Ziegler Catalysts and 5,600 tonnes per annum of processed products made out of HDPE for which the necessary industrial licence was received.

1965: Fondation stone was laid on 18th February and construction work started.

The Engineering Contract, Agreement with German Reconstruction Bank for foreign loans and all other major Agreemnts were finalised. It was for the first time Kreditanastalt fur Wederfabar (KfW), a German Reconstruction Bank gave direct loan to a party in India.

1966: In Order to develop the market for HDPE raw material in India, Company imported1,500 tonnes of HDPE raw material on a product loan basis. This material was distribution to various processors throughout India. This timely action by the Company resulted in rapid growth of plastic processing industry and also gave impetus to plastic machinery manufacturing industry in India.

1968: Started production of HDPE for the first time in India, in the month of March. Company also started simultaneously production of Ziegler Catalyst, viz. Ethyl Aluminium Sesqui Chloride and Ethyl Aluminum [illegible]no - Chloride, essential raw materials required for manufacture of HDPE. The Company successfully developed indigenously, an essential raw-material - dispersing agents required for manufacture of HDPE. To remove excess sulphur contents in locally developed dispersing agent, the Company put up a Dosulphurisation Plant. In the latter part of the year, the Company developed HDPE top up containers for packing of lubricating oils. A small quantity of the product was exported.

1969: Exported 10,300 tonnes of its product to various parts of the world.

After extensive tests and trials, a leading oil company started packing their lubricating oils in one litre and half litre top up containers made of HDPE. This changed the

Contd/ 1969: concept of packaging in India which has resulted in considerable saving of foreign exchange and conserving of essential raw materials.

Production of barrels and jerrycane made of HDPE for storage and transportation of hazardous chemicals was undertaken.

1970: Started production of HDPE Pipes which are extensively used by Cehmical Industry for transportation of corrosive chemicals and effluents. These pipes are also used for water supply in inaccessible hilly terrains and in Agriculture.

Obtained special permission for use of HDPE containers for packing hydrogenated vegetable oils.

Share capital was increased from Rs. 3.6 crores to 5.4crores by issuing Right Shares.

1971: Obtained Industrial Licence to manufacture N-Butene-1 required for the manufacture of HDPE.

Highest production of HDPE achieved.

1972: Export of processed products made of HDPE was started.

Undertook contract of laying HDPE Pipes for distribution of natural gas in Baroda City. 250 KM of HDPE Pipes of various sizes were laid down in Baroda City and gas connections were given to more than 26,000 consumers.

1973: Industrial Licence for expansion from 20,000 MT to 30,000 MT of HDPE was received. Also received capital goods licence for expansion.

1974: Plant for manufacture of N-Butene-1 started.

Bonus shares were issued in the ratio of one share for every three shares held by Shareholders, thus increasing the share capital from Rs. 540 lakhs to Rs. 720 lakhs achieved highest production of 24,618 M.T.

1975: Decided to set up a joint venture project in Malaysia for production of HDPE Pipes.

Received highest award in export performance for export of HDPE Pipes during 1974-75 from PLEX Council.

1976: Received highest award in export performance for export of HDPE pipes during the year 1975 -76 from PLEX Council.

1977: The share capital was increased from Rs. 7.2 crores to Rs. 9 crores.

A joint venture Agreement, Engineering Agreement, Technical Service Agreement and Equipment Sales Agreements were entered into with the Malysia Partners for establishement of a Pipe Project with a capacity of 600 MTA.

1978: The Company switched over to a new manufacturing process.

A joint venture project set up by the Company in Malaysia for the manufacture of High Density Polyethylene Pipes, commenced production.

1979: Collaboration Agreement with Hoechst Agreement was extended for 5 years. A decision was taken to set up a High Density Polyethylene Piple manufacturing plant at Akola in Maharashtra.

1981: On 1st January, Mindia Chemicals Ltd., was amalgamated with Polyolefins industries Ltd.,

Pipe lines Division at Akola was inaugurated and it started production.

(xii) Shriram Fertilizers & Chemicals Industries.

1960: Application for grant of industrial licence for setting up a 20 tons/day PVC plant at Kota was submitted.

1961: Industrial licence was received.

Technical collaboration agreement was signed with M/s. Shin Etsu Chemicals Industry Co. Ltd. and Mitsui Bussan Kaisha Ltd., Japan and the same was approved by the Government.

Import licence was received.

Foundation stone was laid.

1963: Commercial production of calcium carbide was started.

1964: Plant was formally inaugurated and commercial production of PVC was started.

Application for expansion of PVC capacity to 40 tons/day was submitted to the Government.

1965: Received ICMA expert promotion award for outstanding performance in the promotion for exports. Letter of intent for expansion of PVC capacity was received.

1966: Licence for expansion of PVC capacity to 40 tons/day was rcvd.

1968: Commercial production for expanded capacity of PVC, i.e. 40 tons/day was commenced.

1969: Got National Safety Award given for outstanding performance in industrial safety by achieving highest percentage reduction in frequency rate during the year 1967.

1972: Application for expansion for PVC capacity from 40 to 80 tons/day was submitted.

1973: Licence for increased capacity of PVC, i.e. 80 tons/day was received.

1974: Letter of inetnt for calcium expansion by 100 tons/day was received.

1976: Licence for expansion of calcium carbide capacity by 100 tons/day was received.

Design engineering contract was finalised and civil work for carbide expansion was commenced.

1977: Additional carbide capacity of 100 tons/day, i.e. total of 170 tons/day was commissioned.

1978: PVC Plant capacity increased was to 80 tons/day.

Technical collaboration agreement for modernisation of Vinyl Chloride Polymerisation plant was signed with M/s. Kanegafuchi Chemical Industry Co. Ltd., Japan.

1979: Letter of intent for expansion of PVC capacity to 60,000 tons per annum was received.

1980: Letter of intent for expansion of calcium carbide capacity from 56,100 tons to 125,000 tons per annum was received.

1982: Agreement for supply of 25 MW additional power for Vinyl Plants was signed with RSEB.

(xiii) The Industrial Plastics Corporation Pvt. Ltd (TIPCO)

1947: Established a production of Phenolic Resins/compounds of 72 tons per annum, became a founder member of all-India Plastic Mfg. Association.

1959: Established a production of Phenolic Resins/compounds of 809 tons per annum.

Entered into a technical collaboration for manufacturing special purpose Phenol Formaldehyde Resins/Compounds with Phillips, Holland.

1961: Appointed on thermosetting panel of ISI.

Central Excise was levied on P.F Resins/Compounds.

1964: Established as a regular suppliers of Phenolic Resins/ compunds to companies like Indian Telephone Industries, BHEL, HAL, BEL, etc. who were hitherto required to import their raw material based on Phenol and formaldehyde.

1968: Established Research & Development Wing on the most modern scale... Developed several additional special filler/property Phenolic Resins/compounds as import substitution. Also modernised the factory, technology and equipments- Phillips collaboration terminated. Established production of many additional expecial purpose Phenolic Resins for foundries Brakelining Industries, etc.

1970: Celebrated silver jubliee year.

1971: Joined Release Order scheme to supply P.F. Resins compounds at International prices to domestic manufacturers of components for export production.

1972: AIPMA celebrated its silver jubilee on which occasion the Chairman, Shri B.K. Thakkar was honoured by an award for pioneering work done for Plastics Industry.

1973: Established a production Phenolic Resins/compounds of 2000 tons per annum.

Exported Phenolic Resins/compounds for the first time to HongKong.

Introduced Phenolic Resins compounds for injection moulding for the first time in India.

1975: Added a very modern, continous process closed system equipment for processing P.F. Resins compounds by way of modernisation of the plant.

1976: Excise duty was reduced from effective 56% to effective 40% in March.

Export obligation imposed of Rs. 3.75 lakhs per annum became effective and over two years obligation was set off during the first year itself. Business under indigenous Release Order Scheme was at an all time high, value of total supplies exceeded Rs. 7 lakhs approximately.

1978: Exported Nigrosine to USA and realised foreign exchange worth Rs. 1,02,125.

1979: Earned foreign exchange by exporting Nigrosine worth Rs. 2,40,726/-

Industrial licence for manufacture of Engineering Plastics Polymer Resins was received.

An Application was made for an industrial licence to manufacture 2200 tons of Nylon Tyre Yarn per annum.

(xiv) Rattanchand Harjasrai(Mouldings)Pvt.Ltd.

1966: Company was formed

1979: Production of Melamine Formaldehyde Moulding Powder and resins was commenced.

(xv) Deccan Plasti-Chem Limited

1974: Company was incorporated under the company's Act, 1956.
1975

1978: Commercial production of Urea Formaldehyde Moulding Powder was started.

1980: Commercial production of Malamine Formaldehyde Moulding Powder was commenced.

(C) SYNTHETIC FIBRES

(i) Ahmedabad Manufacturing & Calico Ptg. Co. Ltd.

1880: Calico (Textiles) was established at Ahmedabad.

The Company is now a Public Limited Company with three Main Division (Textiles, Chemicals & Plastics and Synthetic Fibres Division) and following four wholly owned subsidiary companies.

a) Ilao Limited
b) Rajindra Dyeing & Ptg. Mills Ltd.,
c) Gujarat Nets Limited.
d) Verma Industries Ltd. (Subsidiary of Rajindra Dyeing & Ptg. Mills Itd)

1970: Industrial licence for manufacture of polyesterstaple fibre at Baroad was received.

1974: In May, the Spinning and Processing Unit of Polyester Fibre Plant was started.

In July, commercial production of polyester staple fibre was commenced.

1976: In March, the remaining polymer unit of the Polyester Staple Fibre Plant was started up.

In May, the integrated Polyester Staple Fibre Plant from DMT and MEG to Baled Fibre went into commercial production.

1977: On 31st December, a letter of intent for doubling the Polyesterstaple fibre production was received.

1979: In December, all Government formalities for doubling the polyester staple fibre production capacity viz issuance of the Industries Licence, Capital Goods Licence and Foreign Collaboration approval were completed.

1980: In March, the Tow/Top Convertor Unit was commissioned to market worsted tops.

In September, additional high tenacity cotton type polyester staple fibre spinningand processing equipment was commissioned which increased the overall plant capacity from 6100 tonnes to 7400 tonnes per annum, within the permissible maximum limit under the IDR Act, 1951.

1981 Agreement for the transfer of know-how for the Doubling Project was taken on record and approval of technical collaboration was recived.

In June/November, Industrial/capital goods licences was received.

(ii) Baroda Rayon Corporation Limited

1958: In May, the Company was incorporated.

1959: Received an Industrial Licence for the manufacture of Filament Rayon Yarn, Sulphuric Acid, Carbon-Di-Sulphide and Anhydrous Sodium Sulphate in September.

1960: About 320 acres of land was acquired from Government.

1961: In May, Railway Siding was commissioned.

1962: The Water Pumping Station at Varachha was put into commission in the last week of July and to ensure water supply, pipelines were laid from Tapti River bed at Varachha to the factory site.

The Sulphuric Acid and Carbon-Di-Sulphide Plants and the Viscose Section of the Rayon Plant was commissioned on 31st October.

The Rayon Plant formally inaugurated on 23rd December.

1965: Produced for the first time in the country Finer counts such as 30 and 40 denier.

1968: The expansion of the Spinning Division was completed in May with the installation of 8 more spinning frames.

1969: Additional machinery was installed to increase the viscose capacity and the expansion programme was completed in July.

The French type Radial well was commissioned.

1971. In June, building foundation for Nylon plant was laid.

1973: On 1st January, Gujarat Polyamides was merged with the Baroda Rayon Corporation Ltd. and was named NYLON DIVISION of the Baroda Rayon Corporation Ltd.,

1974: On 18th January, the Nylon Plant was inaugurated.

1975: In September, licence for increasing the Nylon Yarn capacity from 1800 million tonnes per annum to 2100 million tonnes per annum was received.

Industrial licence for manufacture of Nylon cord was received.

1976: Licence to manufacture 360 tonnes of Polyester filament yarn per annum within existing licenced capacity of 2100 tonnes per annum for nylon yarn was received.

In April, production of Polyester filament yarn was started.

1977: Licence for increasing the Nylon Yarn capacity from 1740 to 2436 tonnes per annum and Polyester Yarn from 360 tonnes to 576 tonnes was received.

1978: On 7th August, Polyester Polymerisation Plant was started for manufacture of Polyester Chips.

On 11th December, civil work for Nylon Tyre-cord Project was started.

1979: Industrial approval for Import of Equipment for Caprolactum Recovery Plant was granted.

On 31st December, Industrial Licence granting increase of licenced capacity of Nylon Tyre Yarn fabrics from 1000 tonnes to 1700 tonnes per annum was issued by the Govt.

(iii) Century Enka Limited

1967: Public issue of shares.

1968: Construction work was commenced.

1969: Nylon Plant was commissioned.

1976: Industrial licence for expansion of Nylong Plant was received.

1977: Industrial licence for manufacture of 360 tonnes p.a. Polyester Filament Yarn was received.

1978: Expansion of capacity of Nylon Plant to 6.5 tons per day was implemented and manufacture of Polyester Filament Yarn was commenced. Proposal for recognition of additional capacity for Nylon Yarn of 1660 tons p.a. through modernisation was approved and Industrial Licence to this effect was endorsed.

1979: Industrial licence for manufacture of Engineering Plastics Polymer Resins was received.

1980: An application was submitted for expansion of licensed capacity of Nylon Plant from 4000 to 60000 tons per annum. Another application for an Industrial Licence to manufacture Polyester Yarn upto a capacity of 6000 tons per annum was also submitted.

1981: Project for manufacture of Engineering Plastic Polymer Resins was commissioned.

The first stage of moderisation of the nylon plant was completed.

(iv) Chemicals and Fibres India Limited

1961: Company was incorporated and licence was obtained for manufacture of Polyester Staple Fibre.

1963: Possession of land was given by State Government.

1965: Production of Polyester Staple Fibre was commenced.

1967: Licence was obtained for expansion of Polyester Staple Fibre.

1968: Expansion was completed.

1971: Licence was granted for expansion to 6,100 tonnes per annum of Polyester Staple Fibre.

1972: Expansion to 6,100 tonnes per annum of Polyester Staple Fibre plant was completed.

1979: Licence was obtained for expansion to 10,000 tonnes p.a. capacity of Polyester Staple Fibre Plant.

1980: In August, the expansion programme was completed.

(v) Gareware Nylons Limited

1962: Factory was set up at Poona with a production capacity of 500 kgs. per day. It was the first Nylon Plant in the country set up without any foreign collaboration.

1965: Plant was set up for polymerisation of Caprolactum to Nylon chips.

1968: Substantial expansion was carried out, raising the capacity of 756 tons per annum of Nylon Yarn.

1969: The Company received a letter of intent to increase its capacity to 2000 tonnes.

1970: The Company became a Public Limited Company.

Licenced capacity was increased to 2000 tonnes.

1972: The Industrial licence for 2000 tonnes was implemented due to which the total capacity of production was raised to 2 394 tonnes per annum of Nylon Yarn. Letter of intent was received for the manufacture of Polyester filament yarn for 360 tonnes per annum. Industrial Licence for the manufacture of Nylon Chips for Plastics Industry with an annual capacity of 330 tonnes was also received.

1973: Industrial licence for manufacture of Polyester filament yarn was received.

1974: The Company entered into Joint Venture Agreement with Malaysian State Development Corporation for setting up a plant for manufacture of Fabrics in Malaysia.

1975: Commercial production of Polyester filament yarn commenced. Two diesal generating sets of 1450 KVA capacity each were installed.

1976: Depolymerisation plant to recover basic raw material (viz. Caprolactum) from Nylon waste was inaugurated on 20th March.

1977: As a result of modernisation programme, the licence capacity of Nylon and Polyester Filament Yarn was increased by the Government by 958 and 216 tons respectively.

As regards Polyester filament yarn, the additional capacity has already been achieved and the licence capacity stands at 576 tons per annum.

The modernisation programme of the Nylon filament yarn plant was under implementation.

1978: Third Diesel Generation set of 1450 KVA capacity was installed and construction/erection work of Ethylene Glycol recover-y plant was started.

1979: Some of the operations of the plant were shifted from Poona to Ahmednagar.

Ethylene Glycol Recovery Plant was commissioned.

1980: Modernisation programme of Nylon Filament Yarn was completed.

1981: Company submitted an application for regularisation of excess capacity of Nylon Yarn from 3352 MT to 4830 MT & Polyester Filament Yarn from 576 MT to 1576 MT based on 40 Denier.

In December letter of intent for manufacture of 2000 MT of Tyre cold/industrial yarn was received.

(vi) Indian Organic Chemicals Ltd.(Fibre Division)

1960: The Company was incorporated.

1969: Site for the Polyester Staple Fibre Plant was selected.

1970: Industrial licence for the manufacture of 6100 metric tonnes of Polyester Staple Fibre per annum was granted.

1971: In February, foundation stone was laid.

In November, machinery erection was commenced.

1972: In August, the plant was commissioned.

1973: In January, commercial production was started.

1974: Pilot plant was set up in R&D Laboratory.

R&D Unit was recognised by the Deptt. of Science & Technology.

Contd/
1974: First Diesel Generator set was commissioned.

1976: Second Diesel Generator set was commissioned.

In December, production of high performance polyester fibre was started.

1977: Licence for importing capital goods by way of balancing equipment was received.

In December, letter of intent for increasing the existing production capacity was received.

1978: In March, commercial production of Polyester Fibre from waste was started.

In August, production of high tenacity polyester fibre was started.

1979: Capital goods licence for expansion was received.

1980: In October, foundation stone for expansion was laid.

(vii) J.K. Synthetics Limited

1943: Incorporated at Kanpur, U.P

1958: Received Industrial licence for manufacture of Nylon/ Perlon Yarn at Kota.

1960: The name of the Company was changed to J.K. Synthetics Ltd. on its taking up industrial activities. Additional equity share capital was raised to finance the project.

1962: Country's first Nylon Plant with a capacity of 800 Kgs. per day was inaugurated. Nylon yarn was marketed under the trade names of Jaykaylon' and Jayanca'. The plant also produced stretch yarn.

1963: Technology developed for production of high tenacity industrial Nylon Yarn to cater to defence requirements of the country. Braiding plant at Kanpur commenced production to execute defence orders.

Industrial licence for first stage expansion for Nylon plant was received.

1964: Industrial licence for manufacture of 4000 tonnes per annum of acrylic staple fibre was received.

1965: First stage expansion was completed in record time raising the plant capacity to approx. 5 tonnes/day.

1966: Industrial licence for the manufacture of 1000 tonnes per annum of Nylon Tyre Cord wasreceived.

1967: Encouraged by the success of its research activities, the

Contd/

1967: Company had undertaken further research work in the field of manufacture of synthetic fibres.

1968: The 2nd stage of expansion of nylon plant was completed raising its installed capacity to 2200 tonnes per annum.

In the research centre of the company, technologies were developed for the first time in India for production of spaced-dyed and draw-wound yarns.

Research activities were further strengthened by incurring capital expenditure of Rs. 72.06 lakhs during the year. Initiated reasearch for development of technology for manufacture of polyester filament yarn from chips.

1969: Research work continued for development of technologies for manufacture of polyester filament yarn,, nylon tyre cord, acrylic staple fibres, recover of caprolactum etc. Engineering technology was also developed by doubling the number of ends in the spinning equipment. Additional capital expenditure of Rs.75.80 lakhs was incurred for carrying out scientific research.

1970: Research efforts continued for improvement in the techniques for the manufacture of nylon yarn and perfecting new technology. Additional capital expenditure amounting to Rs. 40.80 lakhs was incurred in the year for strengthening research facilities.

1971: Developed technologies for manufacture of nylon tyre cord and synthetic staple fibre.

Research activities further strengthened by incurring capital expenditure of Rs..80.24 lakhs.

Trial production in nylon tyre cord plant and synthetic fibre plant commenced.

1972: Received an industrial licence for manufacture of 360 tonnes per annum of polyester filament yarn and 450 tones per annum of polyester staple fibre by way of diversification.

Commercial production of nylon tyre cord, nylon staple fibre and polyester staple fibre was commenced.

1973: Licence for the manufacture of 3840 tonnes per annum of nylon yarn was implemented.

Received the approval of Government of Kenya for setting up of an industrial joint venture in Kenya for the manufacture of synthetic filament yarn. The Company was also selected for supply of know-how and engineering services.

Secured a contract for supply of know-how, engineering services and plant and machineries to Indian Petrochemicals Corporation, Baroda for their proposed polyester filament plant.

The installed capacity for manufacture of nylon tyre cord and polyester filament yarn was increased to 1600 tonnes per annum and 600 tonnes per annum respectively.

Foundation stone laid for Sir Padampat Research Centre,Kota.

Developed successfully the process of differential dyeable nylon yarn know as " Nova colour nylon" for first time in India.

1974: Approval for foreign technical collaboration with M/s. Techniment S.P.A. Milano (Italy) for setting up an acrylic fibre plant at Kota received.

Installed capacity for manufacture of Polyester Staple Fibre increased to 900 tonnes per annum as licensed.

Received and implemented industrial licence for manufacture of 800 tonnes per annum of nylon tyre yarn fabrics.

Sir, Padmpat Research Centre recognised by the Govt. of India, Research activities continued to contribute towards diversification and development of new products.

1975: Received Central Government's approval and import licence for the import of capital goods for acrylic fibre project.

1976: Received Government approval for the technical collaboration agreement with M/s. Zinser Textilmaschinen, West Germany for the manufacture of draw twisting machines suitable for nylon and polyester filament yarn and for heavy donier yarn.

Indigenous know-how was developed for recovery of DMT from Polyester waste for the first time in India.

First ever agreement for supply of know-how and engineering services and managing a synthetic yarn plant abroad was signed with Africa Synthetic Fibres Ltd.(a company incorporated in Kenya).

Indigenous Nylon- 6 battery fabric was developed which would save substantial foreign exchange.

1977; Government's approval was received for increasing the capacity of Nylon Filament Yarn by 40% and that of Polyester filament yarn by 60% due to modernisation. As a result of this the annual licenced capacity of Nylon filament yarn increased to 5376 tonnes and that of Polyester Filament Yarn to 960 tonnes.

Letter of intent for the manufacture of 4000 MT per annum of DMT, 1000 MT per annum of Mono Ethylene Glycol (by Products) from Polyester waste and for substantial expansion of Polyester staple fibre to 6000 MT per annum were also received.

1978: Received industrial licence for manufacture of 4000 MT p.a. of DMT and 1000 MT p.a. of MEG and also for expansion of polyester staple fibre capacity from 900 tonnes p.a. to 3000 tonnes p.a. and that of Nylon Tyre Cord Yarn from 1600 tonnes p.a. to 3000 tonnes p.a.

1979: Industrial licence for expansion of polyester staple fibre capacity from 3000 tonnes p.a. to 6000 tonnes p.a. was received and implementation work for this project was started.

Trial production of Acrylic Staple Fibre was commenced at the Company's Synthetic Fibre Complex at Kota.

Received letter of intent for expansion of Polyester staple fibre capacity from 6000 tonnes p.a. to 12,000 tonnes p.a. and nylon tyre yarn fabric from 800 tonnes p.a. to 2760 tonnes p.a.

1980: Received letter of intent for expansion Polyester filament yarn capacity from 960 tonnes p.a. to 6960 tonnes p.a.

Received Government approval for foreign technical collaboration with M/s. Zimmer AG, West Germany as well as capital goods clearance for the expansion of Polyester staple fibre capacity from 6000 tonnes to 12,000 tonnes per annum.

1981: Received approval for the import of capital goods for expansion of Polyester filament yarn capacity from 960 tonnes p.a. to 6960 tonnes p.a.

Received letter of intent for expansion of Acrylic fibre capacity from 4000 to 10000 tonnes per annum.

Received industrial licence for expansion of Nylon Tyre Cord fabrics capacity from 800 to 2760 tonnes per annum.

Received letter of intent for expansion of Nylon Tyre Cord fabrics capacity from 2760 to 4460 tonnes per annum.

Received industrial licence for expansion of Polyester filament yarn capacity from 960 to 6960 tonnes per annum.

Received industraial licence for expansion of Plyester staple fibre capacity from 6000 to 12000 tonnes per annum.

Import licences were granted for the import of pland and machinery for expansion projects of Polyester staple fibre from 6000 to 12000 tonnes per annum and of Polyester filament yarn from 960 to 6960 tonnes per annum.

Implemented expansion of Polyester staple fibre capacity from 3000 to 6000 tonnes per annum.

1982: Received letter of intent for expansion of Nylon Industrial Yarn/Tyre Cord capacity from 3000 to 5000 tonnes per annum.

(viii) Modipon Limited

1965: Company was incorporated and industrial licence was received.

1967: Cornor stone was laid.

1968: In March, commercial production was started.

1969: Dividend of 8% on equity share capital was recommended for the first year of production ending on February 28.

1970: The plant achieved its full production capacity.

Industrial licence for marginal expansion from 1800 tonnes to 2200 tonnes per annum was received.

1972: The capacity of original licence was enhanced from 1800 tonne to 3000 tonnes per annum.

C.O.B. licence for the manufacture of 360 tonnes per annum of polyester filament yarn was received.
Expansion project of the Company was commissioned.

1973: In January, production of Polyester filament yarn was started.

1974: Issued bonus shares to the Equity Shareholders in the proportion of three bonus shares for every four equity shares in August/September.

1975: It was decided to set up an ophthal-mic research centre at Modinagar in collaboration with the National Society for the Prevention of Blindness (India), New Delhi.

1976: In January, synthetic fabrics was exported.

1977: On 25th March, approval of the Government was obtained under the modernisation programme for increasing the annual manufacturing capacity of Nylon Filament Yarn by 1360 tonnes and Polyester Filament Yarn by 216 tonnes.

Capacity to produce higher tonnage of Polyester filament yarn as a result of shift in the average deniers from finer to Coarser denier, was also recognised by the Government on 29th December,

1978: Polyester chips plant was commissioned.

1979: Under diversification programme drawtexturing machine was installed using directly spun yarn for texturing, i.e. avoiding drawtwist stage.

1980: High speed drawtexturing machine was installed in R&D Cell.

Letter of inent was received for 2000 tonnes per annum for manufacture of Nylon Tyre Yarn.

1981: Two high speed polyester drawtexturing machines were installed and one high speed spinning machine was installed in R&D Cell.

POY was for the 1st time manufactured by Modipon.

Technical Agreement with M/s. Unitika for Tyre Yarn was submitted for Government approval.

(ix)National Rayon Corporation Limited

1946: The Company was incorporated at Bombay with authorised capital of Rs. 10 crores dividend into equity of Rs.5 crores and Preference Shares of Rs.5 crores.

1951: Production of Rayon Textile Yarn was started.

1961: Production of Rayon Tyre Cord and Fabric was commenced.

1976: In April, the share capital was raised to Rs. 12.5 crores comprising of equity of Rs. 7.5 crores and preference shares of Rs. 5 crores.

Commercial production of Nylon - 6 Tyre cord was commenced.

In December, water pollution control plant phase- I was commissioned.

1978: Commercial conversion of Nylon-6 Tyre Yarn to Fibre was commenced and Water Pollution Control Plant Phase-II was commissioned.

(x) Nirlon Synthetic Fibres & Chemicals Ltd.

1961: Nylon Textile Yarn Plant started production with an annual installed capacity of 720 tonnes.

1963: The Company was converted into Public Limited Company.

Commenced exports of synthetic fabrics.

1965: The annual licensed capacity of Nylon Textile Yarn was increased from 1872 tonnes to 2520 tonnes and the annual licnesed capacity of Nylon Tyre Cord was increased from 576 tonnes to 1,440 tonnes.

1967: Research & Development Division developed know-how for manufacturing polyester filament yarn.

Commenced production of polyester filament yarn which was manufactured in India for the first time.

1968: The first phase of Nylon Textile Yarn expansion was completed. The annual production capacity of Nylon Textile Yarn was increased to 2160 tonnes.

Tariff Commission Inquiry into the price structure of Nylon yarn was ordered by the Government.

1970: The annual production capacity of nylon yarn was increased to 2520 tonnes.

Machinery for setting up of the Tyre Cord Plant was received at site.

The Company with other Nylon Spinners, entered into a voluntary agreement with Consumers Association for selling yarn at an agreed price, which were far less than the price ruling in the market.

1971: Nylon Tyrecord Plant commenced production. Nylon tyre cord was manufactured for the first time in India.

1972: Exported synthetic fabrics to Czechoslovakia for the first time.

1973: Annual licenced capacity for manufacturing polyester filament yarn was increased from 360 tonnes to 576 tonnes.

Polyester filament yarn was manufactured to full licensed cpacity.

1974: Polycondensation plant was commissioned.

Installed capacity of Nylon Tyrecord was increased from 1440 tonnes to 2190 tonnes p.a.

1975: Plant for the recovery of Glycol and Methanol was commissioned.

Commenced work on Deploymerisation plant for recovery of Caprolactum from waste.

Received industrial licence for the manufacture of the Conveyer Belting and Fan and V-Belts.

1976: Recognition of Research & Development Centre was renewed by the Government.

1977: Deploymerisation plant for recovery of caprolactum from waste was commissioned. Work on conveyer betting, Fan & V-Belts Project and installation of additional capacity due to modernisation of Nylon & Polyester Textile Yarn was also started.

Modernisation of Polyester Textile Yarn to achieve increased capacity of 922 MT was completed. The annual licenced capacity of Nylon Textile Yarn was also increased from 2520 tonnes to 3528 tonnes.

1978: Plant for manufacture of Conveyor Belt was commissioned.

Government's approval for Foreign Technical collaboration with B.T.R. Belting Ltd., U.K. for manufacture of Synthetic Fibre reinforced conveyer Belt was also received.

1979: Plant for manufacture of V-Belts/Fan Belt was commissioned.

Modernisation of Nylon Textile Yarn to achieve the increased licence capacity of 3528 tonnes was also completed.

1980: Recognition of Research and Development Centre was renewed by the Government.

1981: Production of Nylon conveyer Belting was started.

Export orders for V-Belt were received.

(xi) Shriram Fibres Limited

1966: In November , letter of intent for 4500 tonnes of Nylon Tyre Cord was received by Delhi Cloth & General Mills Co,. Ltd.

1969: In July, the letter of intent was modified for two thousand tonnes of Nylon Tyre Cord in a plant to be set up at Madras.

1971: In May, MRTP clearance was obtained for participation of DCM in equity shares of Shriram Fibres Ltd.

In June, Certificate for Commencement of Business was obtained.

In July, Government approval for collaboration with M/s. Chemtex and Unitika was obtained.

1973: Project office was set up at Madras.

1974: On 31st December, trial runs were commenced.

1975: On 1st April, commercial production was commenced.

1976. Facilities for fabric production were installed.

1977: On 13th January, permission for manufacture of 500 tonnes per annum of Nylon dips and 600 tonnes per annum of Nylon Industrial yarn was issued by the Government .

By September, technology for the manufacture of Nylon Chafer Yarn and CPD was successfully developed in R&D Laboratory of the Company.

1978: An industrial licence was issued for the manufacture of 500 MTs per annum of Nylon Moulding Powder with total capacity of 3000 MT per annum.

1979: On 31st December, letter of intent was issued by the Govt. for increasing the Fabric conversion capacity from 1000 MT to 2550 MT per annum, including 200 MT chafer Fabric within the over all limit of 2550 MT.

1980: Government recognition for the R&D Centre of the Company was received.

Letter of intent for manufacture of 200 MT of Chafer Fabric was also received.

1981 : Letter of intent for expansion of Nylon Tyre Yarn capacity from 3000 MT.p.a. to 5000 MT p.a. was received.

(xii) Stretch Fibre(India) Ltd.

1965: Incorporation on 19th June with authorised capital of Rs. 150 lakhs dividend in 15 lakhs equity shares of Rs.10 each.

On 29th July, certificate for commencement of business was received.

1966: In January, production of Stretch Nylon Yarn was commenced.

1969: 1st plant for manufacture of knitting fabric was commissioned.

1973: Spinning plant for the manufacture of nylon was installed.

On 6th October, commercial production of nylon yarn was commenced.

1976: Permission for production of 135 MTA of Polyester Filament Yarn was obtained.

1977: Steps of erection of Polymerisation plant were started.

1978: In January, licence for substantial expansion of capacity for production of Nylon Yarn from 540 MT to 4200 MTPA was granted.

1979: Government's clearance for import of import of machinery for expansion scheme was obtained.

1980: LA for production of 135 MTPA Polyester Yarn was converted to Industrial Licence.

1981: Work for installation of the Polymerzation Plant was started.

(xiii)Shree Synthetics Limited

1968: Shreeram Silk Mills Ltd., Calcutta, a unit of Hastings Mills with an authorised capital of Rs. 5 crores was incorporated.

An Industrial licence was received for the manufacture of 1080 tonnes/ annum of Nylon-6 filament Yarn.

1969: The name of the Company was changed to Shree Synthetics Ltd.

1972: The plant for production of Nylon -6 and Polyester filament yarn was commissioned.

1975: Monomer Recovery Plant for recovering the caprolactum from wash water was commissioned.

1976: Industrial licence for expansion of nylon/polyester filament yarn capacity was received.

1978: Loans were sanctioned by the Financial Institutions for implementing Nylon Expansion Schemes.

1979: Industrial licence for 1740M.T.P.A. of nylon 576 M.T.P.A. of Elyester Fibre were received.

Four draw texturising machines were commissioned for manufacture of textile yarn.

1980: First Phase of nylon expansion was completed and commercial production was started.

The authorised capital of the company was increased from Rs. 5 crores to Rs. 7 crores.

The company approached the Government of India for enhancement of its capacity of nylon yarn from 1740 tonnes to 6000 tonnes and polyester yarn from 576 tonnes to 1800 tonnes.

1981: With the commissioning of balance equipments, expansion of nylon plant was completed.

The commissioning of Poly condensation plant for manufacture of Polyester Chips was in hand.

(xiv) Swadeshi Polytex Limited

1970: During September, collaboration agreement for polyester staple fibre plant was finalised with Zimmer A.G. West Germany.

In October, foundation stone for the plant was laid.

1971: In October, erection of plant and equipment was completed. Trial runs were commenced.

1973: In March, commercial production was commenced.

In August, normal 1.4 and 2.1. denier polyester fibre was introduced in India for the first time.

1974: In July, 0.9 denier Jailence polyester fibre was introduced for the first time in the world.

1975: Introduced low and high shrinkage fibre for the first time in India in March.

In September, Research & Development activities were recognised by the Government of India.

1977: Jailene polyester khadi(hand speen on Ambar Charkha and hand woven) was introduced.

During October to December had labour strike for 51 days.

1978: Sponsored Khadi & Village Industries Commission Research Project to optimise bend composition of Khadi fabrics.

In July, DMT Recovery Plant was commissioned.

1979: Labour strike from 7th September to 4th November resulting in stopage of plant.

1981: R&D team achieved promising results in formulating process chemicals.

Contd/
1981: In November, letter of intent for expansion of capacity to 12,200 tonnes per annum was received.

There was labour strike for 11 days during the year The plant was however, operated by officers/supervisors to 50% capacity for 70 days.

(xv) Petrofils Cooperative Limited

1970: In July, Govt. of India conveyed decision that manufacture of polyester filament yarn may be undertaken by IPCL and Co-operatives.

In November, Feasibility Report for manufacture of 10 tonnes/ day of polyester filament yarn alongwith a preliminary Feasibility Report was submitted to the Government by IPCL.

1971: In February, Industrial licence application was submitted to Government by IPCL for a plant to produce 3500 tonnes/ year of polyester filament yarn.

1972: In March, Government gave formal investment sanction to IPCL for the setting up a polyester filament yarn plant with an initial capacity of 3500 tonnes per year expandable to 7000 tonnes per year at an estimated initial investment of Rs. 15.39 crores with a foreign exchange component of Rs. 7.38 crores. Government also directed that a new company with 60:40 equity participation between the Government and co-operatives be set up to implement the project.

1973: During March-May, a sub-committee of the Board of directors of IPCL was constituted for evaluating and recommending the arrangements for technical collaboration and supply of imported and Indian main plant equipment.

In August, Board of Directors of IPCL approved the selection of the officer of Karl Fischer/J.K. Synthetics for technical collaboration and supply of equipment for the Project.

In September, an application for approval of the Foreign Collaboration was submitted to the Foreign Investment Board, Government of India. Industrial Licence for the production of 3500 tonnes/ year of polyester filament years was also received during the same month.

1974: In January, first import licence application was submitted to the Government.

In March, FIB approval to Foreign Collaboration was received.

In April, Government's approval to Collaboration Agreement has received.

In May, Collaboration Agreements was signed and taken on records by the Government.

Contd/

1974: In August, site office at plant site adjacent to ethylene glycol plant site was ready for occupation

In September, Petrofils Co-operative Limited was registered.

In December, possession of new land was taken from GIDC.

1975: In February, Know-how and basic engineering documents received from Collaboration. Members to the Board of Directors nominated by the Government.

In March, Foundation stone was laid by the Honourable Minister of Petroleum, Shri K.D. Malaviya and civil works started.

1976: In January, Government's approval to the revised estimated capital cost amounting to Rs. 24.76 crores was received.

In April, Government permission to increase the equity capital from Rs. 8.0 crores to Rs. 10.0 crores was received and mechanical and electrical erection of the plant was started.

In July, Civil work of main plant and Utility Block was completed.

1977: In May-August, mechanical errection of main plant and Utility was completed.

In November, First spinning line was commissioned (B.Line).

1978: In April, the second spinning line was commissioned(A Line)

In September, the 3rd Spinning line was commissioned (A 2 Line).

1979: In February, the Fourth Spinning line was commissioned (C Line).

In July, proposal for expansion by conversion of C&D lines into high speed spinning (POY) and installation of 9D/ Texturisers was submitted to Government.

1980: In April, approval for expansion was received from Government.

1981: In January, the approval of the Government of India was received for the manufacture of Nylon 6/66 filament yarn.

In February, Application for Foreign Collaboration for manufacture of POY and D/Texturised yarn was submitted. Application for Industrial Licence for expansion project was also submitted.

In May, the Government of India gave approval to the expansion to doubling the capacity of PFX from 3500 M.T. to 7000 M.T. per annum.

Contd/

1981: In June, the first line of the Poly Condensation(Chips) Plant was commissioned.

In September, the second line of Polycondensation plant was commissioned.

1982: In January, first of the nine drawtexturisers was commissioned.

(D) SYNTHETIC RUBBER

1958: Chairman visited U.S.A. for foreign collaboration

1959: Agreement for setting up the Synthetic rubber plant complex based on earlier visits of Lummus Team, Goodyear and Firestone Teams for setting up a plant complex in India.

1960: Company was registered to manufacture styrene, butadiene, synthetic latices and rubbers with technical collaboration from M/s. Firestone Tire & Tubber Co., U.S.A.

Government approval of the project and Firestone agreement received.

1961: Foundation stone laid at site at Bareilly.

1962: Technical Service Laboratory at Bombay was commissioned to help rubber consuming industries in the field of application of synthetic rubbers.

1963: All plants were commissioned and commercial production started.

1964: Imports of SBR manufactured by the company were banned by the Government of India.

1965: Explosition at Butadiene Plant causing temporary stoppage of production for about six months.

Production of self- reinforcing rubber 1958 started for the first time.

Developed other grades, i.e. S-1714, S-570 and S-1006.

1966: Plant rehabilitation work completed and plants recommissioned

1967: Company was awarded the ICMA Award for outstanding example of a forward development of technology in the chemicals industry for the first time in India.

First public enquiry in the fair prices os synthetic rubber held.

1968: Developed emulsion polymerised polybutadiene rubber- EBR.

PART - II

PETRO-CHEMICALS
STATISTICS

1974: Developed and produced S-1552, S-1752, S-1941 and S-5812 based on low bound styrene.

Technical Collaboration with M/s. Firestone Tire & Rubber Co. USA expired.

Tariff Commission held a second public enquiry to review the industry's price structure.

Exported SBR rubber for the first time.

Industrial licence for manufacture of 2000 MT/year nitrile rubber were received. Set up 1 ton/day pilot plant for nitrile rubber and produced nitrile rubber [illegible] in tonnage quantities for the first time.

1975: Letter of intent received for manufacture of 200 MT/year Vinyl Pyridine Monomer and 800 MT/year Vinyl Pyridine Latex.

Also set up a pilot plant for ABS plastics resins for development of technology and commenced trial production in a few grades of ABS.

Award of Merit was received from National Safety Council of USA for operating plant for 1771 thousand manhours without disabling injury.

1976: Construction of Nitrile Rubber plant was completed.

Letter of intent for manufacture of 60 tonnes/p.a. of butadiene catalyst was received.

Foreign collaboration for V.P. Monomer with M/s. Croda Synthetic Chemicals Ltd., U.K. and for V.P. Latex with M/s. Uniroyal, USA was approved by the Government.

Letter of intent for manufacture of ABS resins and plastics was received.

Two National Safety Awards, 1975 were received based on Safety Records among Rubber and Plastics industries for the year 1974 for (i) lowest frequency rate ;(ii) longest disabling injury free period.

Basic Trading Centre for practical training of apprentices started functioning.

1977: Regular commercial production of Nitrile Rubber was started.

Also developed and produced S-1511 on experimental basis.

Foreign collaboration agreement for Butadiene Catalyst Plant was surrendered to Government of India and it was decided to build up catalyst plant based on technology developed by the Company's R&D Laboratory.

Industrial licence for the manufacture of Butadiene Catalyst was received.

Contracts for engineering, technical services and construction of the factory were placed with the Lummus Co., London and the Lummus Co., India.

In October, grading and levelling of the grounds at site was commenced.

1966: Agreements were entered into with Universal Oil Products Company, USA for obtaining exclusive non-transferable licence to use a U.O.P. catalytic condensation process for the manufacture of Cumene. The same was guaranteed by U.O.P.

1968: On 18th February, the plant was inaugurated, Commercial production of phenol, acetone, diacotone alcohol, phthalic anhydride and phthalates was also commenced.

1972: In November, the licenced capacity of Phthalates was increased to 5000 M.T per annum.

1973: In January, there was a major fire in the reactor of Phthalic Anhydride plant causing extensive damage.

In December, a new reactor was fabricated indigenously in place of the earlier reactor which was imported and the plant was re-started.

Commenced recovery of crude acetophenone from Phenol Plant for sale.

1974: Through progressive debottlenacking the installed capacity of the phenol plant was increased to 14000 tonnes per annum.

The installed capacity of the Phthalates plants was fully established at 5000 tonnes per annum by installing minor balancing equipment.

1975: Phenolic tar was previously burnt in open pit. The operation was hazardous and pollutive. After prolonged research and development wrok, phenolic tar in a blend with other by-product streams, was used as a boiler fuel resulting in saving of approximately 1200 tonnes of fuel oil per year.

The Effluent treatment system was modified for effective removal of free oil and reduction in phenol content. Propane gas which was partly flared was wholly utilised for the burner of hot oil furnace.

The installed capacity of phenol plant was again increased from 14000 M.T. year to 14300 M.T/year by installation of balancing equipment.

1976: As a result of successful laboratory scale trials, Phenol content in the effluent was further reduced by dephenolation of waste streams.

A 750 KVA diesel generating set was installed to augment power supply.

1979: Contd. Based on the studies conducted by M/s. National Environmental Engineering Research Institute, Nagpur & M/s. Environmental Engineering Consultants on treatability and characterisation of waste water from the factory, M/s. Environmental Engineering Consultants were appointed as consultants for detailed engineering of additional effluent treatment facilities which have been estimated to cost around Rs. 1.0 crore.

Industrial licence for the manufacture of 2000 MTPA of ABS Resins and Plastics was revalidated upto December, 1980.

A unit for the recovery of Ethylene from the by-product crude ethylene streams from our Butadiene Plant was erected and commissioned during the year.

Third Styrene Reactor alongwith its balancing equipment was installed.

A number of sophisticated analytical control instruments for polymer testing were added and a full fledged R&D facilities were commissioned.

1980: The validity of Industrial Licence granted for manufacture of 2000 MTPA of ABS Resins and Plastics was extended upto December, 1981.

1981: The Company received " ASSOCHAM" 1980 Award for import substitution through indigenous R&D for development and production of rejuvenated and fresh butadiene catalyst.

There was labour problem on bonus issue resulting in lock-out of the factory for about 3 weeks.

Work on design, engineering and erection of additional waste water treatment plant was started.

One additional rubber coagulation and drying line was completed and commissioned to increase the production capacity to 37,500 MTPA.

The Company submitted an application for extension of Plastics and Resings licence which expired on 8.12.81 for another year.

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II. CAPACITY AND PRODUCTION

Annual Installed Capacity and Production of Petro-chemicals in India during the years 1970, 1975, 1980 and 1981.

(Tonnes)

Name of the Industry/Item	1970			1975		
	No.of Units	Installed capacity (p.a.)	Production	No.of Units	Installed capacity (p.a.)	Production
Organic Heavy Chemicals						
Benzene	10	94000	49228	10	94000	70737
Butadiene	2	32400	18482	2	32400	15154
Butyl Acetate	3	6280	2529	4	7230	3781
Butyl Alcohol	3	12450	3445	4	15450	5582
Diacetone Alcohol	2	4800	2418	2	5800	2336
Diethylene Glycol	1	600	411	1	600	732
Dichloro Ethane	1	3000	634	1	50000	29361
Dripolene A+B	1	5000	4423	1	5000	3615
2-Ethyl Hexanol	2	9600	6380	2	9600	7822
Ethylene	2	75000	52068	2	75000	66329
Ethylene Oxide	1	12000	1403	1	12000	10314
Monoethylene Glycol	1	10000	4998	1	10000	771
Methyl Isobutyl Ketone	1	3700	1131	1	3700	86
Isopropanol	1	1500	1594	1	1500	13
Phthalic Anhydride	3	12300	7256	3	15300	565
Polyethylene Glycol	1	1000	543	1	1000	8
Propylene	2	6000	5494	2	42000	3329
Styrene	-	-	-	3	33000	1596
Toluene	9	25755	7834	9	25755	1340
D.M.T.	-	-	-	1	24000	155
Ortho-xylene	-	-	-	1	21000	39
Para-xylene	-	-	-	1	17000	99
Mixed-xylene	-	-	-	1	2500	39
Vinyl Chloride	-	-	-	1	30000	1607
Caprolactum	-	-	-	1	20000	138
Synthetic Fibres						
Nylon Staple Fibre	-	-	-	1	900	
Nylon Filament Yarn	5	8996	9797	8	15586	138
Nylon Tyre Cord	2	360	68	3	5790	
Polyester Fil.Yarn	2	720	574	5	2166	22
Polyester Staple Fibre	1	4550	5333	5	25300	143
Synthetic Rubber						
Synthetic Rubber	1	30000	30339	1	30000	229
Plastic Raw Material/Thermosets						
MF Moulding Powder	2	550	83	3	1490	10
PF Moulding Powder	2	3200	3237	3	6200	35
UF Moulding Powder	3	1680	1589	4	5150	17
CA Moulding Powder	2	7200	1003	2	7200	100
Thermo-Plastics						
Polystyrene H.D.	1	20000	18346	1	20000	229
Polyethylene L.D.	2	19000	23215	2	25000	2783
Polystyrene	2	17500	8708	2	17500	909
P.V.C. Resin	4	43700	38552	5	64700	4288

Note : Installed Capacity as per D.G.T.D. records.

(Contd...)

Annual Installed Capacity and Production of Petro-chemicals in India during the years 1970, 1975, 1980 and 1981.

(Tonnes)

Name of the Industry/Item	1980			1981 *		
	No. of Units	Installed capacity (per annum)	Production	No. of Units	Installed capacity (per annum)	Production
Organic Heavy Chemicals						
Benzene	11	139000	83030	11	131060	81020
Butaidene	3	54400	15061	3	54400	24235
Butyl Acetate	4	8730	3684	4	7230	4182
Butyl Alcohol	4	15440	8521	4	12900	9733
Diacetone Alcohol	2	5800	4167	2	7800	3785
Diethylene Glycol	1	600	241	1	600	360
Dichlore Ethane	1	30000	27079	1	30000	27684
Dripolene A+B	1	5000	4375	1	5000	5643
2-Ethyl Hexanol	2	10700	6891	2	11600	7779
Ethylene	3	210000	121330	3	210000	158652
Ethylene Oxide	2	17000	10482	2	17000	13019
Monoethylene Glycol	2	30000	9375	2	30000	16412
Methyl Isobutyl Ketone	1	3700	495	1	3700	447
Isopropanol	1	4000	2148	1	4000	2190
Phthalic Anhydride	5	27300	22605	6	35800	24316
Polyethylene Glycol	1	1000	870	1	1000	944
Propylene	3	123300	62608	3	115300	73891
Styrene	3	35000	19976	3	35000	15529
Toluene	9	25755	21271	9	25755	22703
DMT	1	24000	25305	1	24000	25807
Ortho-xylene	1	21000	18379	1	21000	17589
Para-xylene	1	17000	14470	1	17000	12589
Mixed-xylene	1	2500	2497	1	2500	4942
Vinyl Chloride(M)	1	30000	14592	1	30000	14677
Caprolactum	1	20000	13945	1	20000	11888
Carbon Black Feedstock	1	17900	4515	1	17900	8482
Acrylonitrile	1	24000	6808	1	24000	13696
Linear Alkyl Benzene	1	30000	16772	1	30000	24424
Synthetic Fibres						
Nylon Acrylic Fibre	2	16000	7674	2	16000	11232
Nylon Filament Yarn	8	21976	19994	8	24476	22370
Nylon Indl.Yarn/ Tyre Cord	4	10490	11113	5	13490	13956
Polyester Staple Fibre	5	32050	22664	5	34300	18884
Polyester Filament Yarn	8	8046	9246	8	8046	14961
Synthetic Rubber						
Styrene Butadiene Rubber	1	30000	16361	1	30000	26756
Polybutadiene Rubber	1	20000	6264	1	20000	9901
Plastic Raw Material & Thermosets						
CA Moulding Powder	2	7200	256	2	7200	30
MF Moulding Powder	4	1740	221	4	1740	298
PF Moulding Powder	3	5000	4657	3	5000	4691
UF Moulding Powder	6	5400	2891	6	5400	3110
Thermo-plastics						
Polyethylene L.D.	3	110000	77014	3	109000	92823
Polyethylene H.D.	1	30000	20943	1	30000	35228
Polystyrene	2	23500	10527	2	23500	7799
P.V.C. Resins	5	77900	37068	5	85750	40919
Polypropylene	1	30000	12074	1	30000	20923

* Capacity as on 1.4.1982. Note: Installed Capacity as per DGTD records.

Production of Petro-chemicals in India - 1970-71, 1975-76 & 1979-80 to 1981-82

(Tonnes)

Products	Annual Installed Capacity as on 1.4.82	1970-71	1975-76	1979-80	1980-81	1981-82*
Organic Chemicals						
Benzene	131060	53190	71224	94801	79726	81664
Butadiene	54400	18183	16323	21766	18070	22720
Butyl Acetate	7230	2691	3703	3794	3860	4024
Butyl Alcohol	12900	4231	5587	8279	8844	9339
Diacetone Alcohol	7800	2572	2351	4483	4099	3423
Diethylene Glycol	600	527	681	443	249	339
Dichlore Ethane	30000	642	24557	33528	31150	23604
Dripolene A+B	5000	4476	3730	3922	4852	5190
2-Ethyl Hexanol	11600	7938	8340	8564	6610	6959
Ethylene	210000	58668	64257	126537	139846	147754
Ethylene Oxide	17000	1513	9921	12134	11787	11426
Monoethylene Glycol	30000	4500	7287	11782	11989	15491
Methyl Isobutyl Ketone	3700	1236	960	584	460	438
Isopropanol	4000	1650	1346	2034	2501	1821
Phthalic Anhydride	35800	7984	6429	23172	23081	24655
Polyethylene Glycol	1000	563	872	1043	1227	63
Propylene	115300	5663	32766	66084	72691	67638
Styrene	35000	-	16436	22781	19524	15966
Toluene	25755	8385	15292	23888	19012	25355
DMT	24000	-	19018	27939	23136	27310
Ortho-xylene	21000	-	7888	18544	18059	15933
Para-xylene	17000	-	12412	14589	13221	12212
Mixed xylene	2500	-	4336	3472	2844	524
Vinyl Chloride(M)	30000	-	13812	19249	16759	11760
Caprolactum	20000	-	13270	13477	13089	9911
Carbon Black Feedstock	17900	-	-	5197	5881	7744
Acrylonitrile	24000	-	-	3724	9326	13997
Linear Alkyl Benzene	30000	-	-	13096	17062	30309
Synthetic Fibres						
Acrylic Fibre	16000	-	-	3470	10275	13502
Nylon Filament Yarn	24476	9338	14037	17686	20822	23180
Nylon Indl.Yarn/Tyre cord	13490	440	4000	11231	11766	14312
Polyester staple fibre	34300	5423	16018	23617	22381	29707
Polyester Filament Yarn	8046	602	2297	9029	10707	15410
Synthetic Rubber						
Styrene Butadiene Rubber	30000	29791	25195	21596	18968	17391
Polybutadiene Rubber	20000	-	-	8712	6469	11181
Plastic Raw Materials & Thermoplastics						
C.A.Moulding Powder	7200	1084	1133	627	324	291
M.F.Moulding Powder	1740	78	120	245	214	388
P.F.Moulding Powder	5000	3286	3665	4592	4794	4536
U.F.Moulding Powder	5400	1735	1887	3077	2845	3289
Polyethylene L.D.	109000	24437	27635	71275	87154	94253
Polyethylene H.D.	30000	21153	20018	25380	24293	31738
Polystyrene	23500	8925	9203	12036	10205	7642
P.V.C. Resins	85750	41472	43818	49891	42050	37037
Polypropylene	30000	-	-	13425	16729	20644

* Provisional.

Note : Installed Capacity as per D.G.T.D. records.

III. SALES / CONSUMPTION.

Estimated/Consumption of Selected Petro-chemicals.

(Qty. Tonnes)

PRODUCTS.	1970-71	1975-76	1977-78	1978-79	1979-80	1980-81
1	2	3	4	5	6	7
Organic Intermodiates.						
Benzene	53209	72412	91689	96773	95909	79746
Butadiene	18183	16323	16511	19953	21766	18070
Diethylene Glycol	527	684	656	608	411	249
Dichloroethene	642	24557	34902	39064	33528	31150
Ethylene	58668	64257	69732	115779	126537	139846
Ethylene Oxide	1513	19921	12442	13396	12134	11787
Ethylene Glycol	4805	7444	6027	11534	13647	13230
2-Ethyl Hexanol	7938	8340	7980	9301	8564	6610
Isopropanol	1650	1346	1794	2306	2077	2501
M.I.Ketone	1236	960	969	1430	712	732
Phthalic Anhydride	13275	12931	21930	23420	2404	26040
Propylene	5663	32766	37705	56048	6608	72091
Polyethylene Glycol	563	872	1121	1173	1181	1441
Styrene	-	16436	24759	25476	22781	19524
Toluene	8327	15296	19915	24544	23894	19081
Plastics Raw Materials.						
M.F.Moulding Powder	78	120	180	178	245	214
P.F.Moulding Powder	3367	3661	4673	4287	4753	5214
U.F.Moulding Powder	1663	1939	2261	2506	3071	2870
C.A.Moulding Powder	1170	1465	1235	1093	689	387
Polyethylene L.D.	22988	35012	53738	83770	73631	90544
PolyethyleneH.D.	13590	21479	48574	54251	62706	59624
Polystyrene	8189	9610	14102	15531	12457	10552
P.V.C.Resins	41452	44223	67227	68736	81953	105768
Synthetic Fibre						
Acrylic Fibre	195	3163	8226	15330	5748	10936
Nylon Filament Yarn	9338	16890	17803	23651	19858	22284
Nylon Industrial Yarn/Tyre Cord.	440	4000	6583	8560	11194	11768
Nylon Polymides/ Staple Fibre	117	356	636	236	129	-
Polyester Filament Yarn	602	4456	6280	14157	17783	11763
Polyester Staple Fibre	14166	16559	31418	31822	33039	26399
Synthetic Rubber*	21731	31582	38515	42083**	47969**	40093

Note:- Estimated Consumption=Production+Imports-Exports.
* = Includes Imports and Exports of Natural &Reclaimed Rubber also. **=Included Polybutadene Rubber from IPCL, Baroda also.

ESTIMATED END USE SALES/CONSUMPTION OF U.F. AND M.F. MOULDING POWDER IN DIFFERENT INDUSTRIES.

(Percentages)

END - USE	1975	1977	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.
1. Button Moulders & Bottle Caps. etc.	30.1	19.0	17.9	12.2	14.0	17.8
2. Electrical Accessaries.	63.5	69.6	67.3	81.6	78.5	72.5
3. Tableware Croe.	1.4	2.5	3.5	2.3	3.0	3.8
4. Switchgeares	0.8	4.1	4.0	-	0.1	-
5. Miscellaneous (Includes Various Items like Ashtrays, handles pen, Stands, Toilet Sheets Novelty, etc.	4.2	4.8	7.3	3.9	4.4	5.9
T O T A L	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales (Thousand Tonnes)	2	2	2	3	3	3

ESTIMATED END-USE SALES/CONSUMPTION OF C.A. MOULDING POWDER IN DIFFERENT INDUSTRIES.

(Percentages)

END - USE	1975	1977	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.
1. Optical & Frames	16.9	5.2	6.5	6.6	5.2	5.2
2. Bangles	59.9	53.8	39.0	33.4	7.0	7.1
3. Tool Brush Handles	4.4	9.2	8.9	14.6	24.7	24.6
4. Comb	7.8	9.5	12.0	18.0	20.6	20.6
5. Umbrella Handles	14.1	10.0	11.0	5.9	6.6	6.8
6. Fountain Pens	3.5	1.2	1.2	0.3	0.3	0.3
7. Tool Handles	2.6	9.9	20.2	21.0	35.2	35.1
8. Industrial Components	0.2	0.2	0.2	0.2	0.4	0.3
9. Sheetings	-	-	-	-	-	-
10. Toys, Keys, Tops	-	-	-	-	-	-
11. Miscellaneous	0.6	1.0	1.0	-	-	-
T O T A L	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales('000'Tonnes)	2	1	1	1	1	0.3

ESTIMATED END-USE SALES/CONSUMPTION OF POLYETHYLENE L.D. IN DIFFERENT INDUSTRIES.

(Percentages)

END - USE.	1975	1977	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.
Film & Coating	76.7	76.9	69.7	85.2	85.6	74.3
Moulding	*	13.8	12.5	7.8	8.3	12.0
Wire & Pipes	7.5	7.2	7.4	2.8	1.7	2.0
Miscellaneous	15.8	2.1	10.4	4.2	4.4	11.7
T O T A L	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales('000'Tonnes)	28	25	22	66	77	87

* = Included under the Miscellanceous Category.

ESTIMATED END-USE SALES/CONSUMPTION OF POLYETHYLENE H.D. DIFFERENT INDUSTRIES.

(Percentages)

APPLICATION	1975	1977	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.
A. Injection Moulding.						
i) Household Articles	25.2	27.6	29.9	20.0	12.7	19.4
ii) Transport Crates.	0.8	0.7	0.4	1.1	0.9	0.7
iii) Industrial components.	5.6	5.3	5.6	5.3	6.2	9.6
SUB - T O T A L	31.6	33.6	35.9	26.6	19.8	29.7
B. Blow Moulding.						
i) Consumer Packaging	11.5	13.9	13.4	16.6	17.7	16.7
ii) Industrial Packaging	6.5	11.6	15.8	12.8	13.5	18.6
iii) Miscellaneous	0.6	0.2	0.2	0.2	0.1	0.1
SUB - T O T A L	18.6	25.7	27.4	29.6	31.3	25.4
C. EXTRUSION.						
i) Monofilament & Cane Stropping	17.6	11.6	12.3	10.4	8.3	8.9
ii) Films and Sheets	4.1	3.7	2.5	3.0	3.1	3.5
iii) Pipes and Cables	6.1	6.7	7.7	10.2	18.1	17.0
iv) Strip/Sacks.	22.0	18.7	14.1	20.2	19.4	15.5
Sub - Total	49.8	40.7	36.7	43.8	48.9	44.9
GRAND T O T A L	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales(Thousand-Tonnes)	24	24	28	24	21	35

ESTIMATED END-USE SALES/CONSUMPTION OF POLYSTYRENE IN DIFFERENT INDUSTRIES.

(Percentage)

END - USE	1975	1977	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.
Appliances	1.4	7.6	7.4	9.9	8.3	23.2
Electronics & Industrial	29.1	25.5	24.9	28.7	33.3	24.3
Buildings	9.4	14.5	12.2	9.7	9.5	7.9
Packaging	19.0	16.4	19.9	17.6	15.3	16.2
House Hold Wares	28.7	19.8	18.7	15.8	16.0	15.7
Toys & Novelties	2.7	6.7	7.8	11.3	7.1	10.8
Defence	0.8	0.5	1.0	0.7	1.7	0.1
Miscellaneous	8.8	9.0	8.1	6.3	8.8	1.8
T O T A L	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales (Thous. Tonnes)	19	14	15	11	11	8

ESTIMATED END-USE SALES/CONSUMPTION OF PVC RESINS IN DIFFERENT INDUSTRIES

END - USE	1975	19777	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.
Wire Cables	28.8	24.2	20.3	32.6	26.1	18.9
Pipes, Fittings Condiuts	17.1	21.8	24.2	25.4	31.0	43.0
Leather Cloth & Sheet/ Films.	24.0	28.3	26.4	22.3	27.8	2.8
Footwear	11.6	10.0	7.3	9.2	4.2	6.1
Gramophone	0.8	0.7	0.9	Neg	-	-
Vinyl Tiles	0.2	0.3	0.4	0.3	1.0	0.7
Conveyers Belting	0.3	0.1	0.1	0.1	-	0.2
Battery Separators	0.7	0.5	1.1	0.4	1.5	0.9
Transparent blown Bottoms	0.2	0.3	0.4	0.1	-	-
Transparent Blown Films	0.1	-	0.6	0.1	-	-
Toys	0.1	0.1	0.1	Neg	-	Neg.
Compounding	7.9	7.2	10.1	2.3	0.2	0.3
Miscellaneous	8.2	6.5	8.1	7.2	8.2	8.1
T O T A L	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales (Thousand Tonnes)	42	51	54	56	37	40

ESTIMATED END-USE SALE/CONSUMPTION @ OF SELECTED ORGANIC CHEMICALS

(Percentages)

END-USE.	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7
METHYL ISO BUTYL KETONE						
Pharamaceuticals	30	33	38	11	57	
Paints/Surface. Coatings	46	34	41	40	27	
Pesticides	17	22	13	29	10	
Others	7	11	8	20	6	
TOTAL	100	100	100	100	100	
Total Sales(Thousand tonnes)	0.9	0.9	1.0	1.0	1.0	
MONO-ETHYLENE GLYOOL.						
Polyester	66	42	69	73	83	82
Explosive	24	35	22	17	12	7
Others	10	23	9	10	5	11
TOTAL	100	100	100	100	100	100
Total(Sales(Thousand Tonnes)	6	5	8	11	11	17
ISOPROPANOL						
Pharmaceuticals	40	33	43	38	33	34
Paints/Surface/ Coastings	11	11	12	10	16	31
Textile/Chemicals/ Auxiliries.	16	11	13	16	10	8
Pesticides	10	11	9	12	11	-
Others	23	34	23	24	30	27
TOTAL	100	100	100	100	100	100
Total Sales(Thousand tonnes)	1.7	1.8	2	2	2	3
ETHYLENE OXIDE						
Glycols	57	48	57	42	40	49
Textile/Auxiliaries	27	40	33	42	42	28
Ethanolawines	8	-	-	-	4	45
Others	5	12	10	16	17	8
TOTAL	100	100	100	100	100	100
Total Sales(Thousand Tonnes)	10	12	6	7	7	9

@ = Excluding Captive Consumption.

ESTIMATED END-USE SALES/CONSUMPTION* OF SELECTED ORGANIC CHEMICALS

(Percentages)

END-USE	1974	1975	1976	1978	1979	1980	1981
1.	2.	3.	4.	5.	6.	7.	8.
D. M. T.							
Fibre	83.4	77.1	84.7	84.3	89.3	84.7	82.5
Filament	11.8	19.8	13.3	15.1	9.5	12.3	14.0
Resins	47.8	3.0	1.6	0.6	0.4	-	-
Wire Enament & Others	Neg.	0.1	0.4	-	0.8	3.0	3.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL SALES(Thousand Tonnes)	10	18	21	33	20	22	38
ORTHO - XYLENE.							
Phthalic Anhydride	98.8	91.9	72.8	78.0	67.7	72.7	75.7
Paints	0.2	1.2	4.8	10.6	10.8	14.7	2.0
Pesticides	Neg.	1.2	0.6	-	3.7	6.0	-
Dyestuffs & Dyes-Intermediates	0.5	0.8	1.2	11.4	3.0	1.9	-
Wire Enamels/Painting Ink.	-	1.1	1.1	-	1.9	1.4	1.5
Exports	-	-	13.0	-	-	-	-
Others	0.5	3.8	6.5	-	12.9	3.3	20.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Sales (Thousand Tonnes)	6	6	19	19	17	19	17
MIXED XYLENE.							
Paints	23.8	49.4	61.8	22.3	37.0	54.0	52.5
Pesticides	24.5	32.0	15.4	55.4	51.3	24.1	-
Dyestuffs & Dye-Intermediates	41.5	3.4	5.1	-	3.1	7.0	-
Wire Enaments & Resins/ Painting Ink.	0.4	1.2	5.0	22.3	-	5.0	-
Others	9.8	14.0	12.7	-	8.6	9.9	47.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL SALES (Thousand Tonnes)	2	4	2	2	3	3	6

* = Exclufinh Captive Consumption.

SALES/CONSUMPTION OF S.B.R. BY END PRODUCTS

(Qty. Tonnes)

End Product	1975	1976	1977	1978	1979	1980	1981
A. Auto Tyre Units							
1. Firestone (Bombay) Tyre	3008	2556	2363	2343	1637	1903	1297
2. Ceat	2473	3308	3306	2980	2003	2906	3191
3. Dunlop	5634	4051	2746	2867	2152	2978	2792
4. Inchek	261	50	48	23	19	56	11
5. Goodyear	1311	2665	2772	2684	1350	1847	2010
6. M.R.F.	1092	1280	1161	1073	711	740	1146
7. Premier	466	248	248	279	246	265	325
8. Modi	626	1115	1373	1169	580	610	500
9. J.K. Industries	-	25	721	552	650	540	1007
10. Apollo Tyres	-	23	334	312	417	233	133
11. Vikram Tyres Ltd.	-	-	-	-	8	473	854
Sub-Total	14871	15321	15042	14282	9673	12351	13366
B. O T H E R S							
1. Footwear	5700	5900	6500	7700	8000	8200	8300
2. Cycle Tyres & Tubes	50	900	1000	1200	1100	1175	875
3. Retreading Materials	1200	1000	800	500	300	315	50
4. Industrial RubberProducts	850	950	800	1050	1100	1200	1200
5. Others	1719	1889	1478	1574	1578	1597	1069
Sub-Total	10319	10639	10578	12024	12078	12487	9494
GRAND TOTAL	25190	25960	25620	26306	21751	24838	22860

Source :- M/s. Synthetic & Chemicals Limited, Bombay.

IV. P R I C E S

TREND IN EX-FACTORY PRICES OF CAPROLACTAM, DMT & MONO-ETHYLENE GLYCOL

(Rs. / Tonnes)

Year		Ex-factory Prices (Exclusive of Duties & Taxes				
		Caprolactam		DMT	Mono-ethylene Glycol	
		Used for filament upto 225 Deniers	Used for Tyre Cord & Nylon Yarn (above 225 Deniers)		Bulk	Packed
1		2	3	4	5	6
1970	January				4000	4450
	April				4200	4800
	June			-	4700	5300
1973	April			6000		
	August			7000		
	December				4950	5550
1974	January			12000		
	February				5700	6300
	March			16000	7100	7700
	August	26000	26000			
	December	22750	22750		7100	7900
1975	April	22000	22000			
	December	21334	21334			
1976	January	..			7550	8350
1977	January			12000		
	April	-		11000		
	October	17147	17147			
1978	January	16000	16000			
	March				7650	8450
	September	-	13500			
1979	April	17000	16000			
	May	21334	20026	15000		
	June				7650-7750	8750
	August	22174	20813	16000	10900-11000	11900-12000
	Aug. 17	23900	22431			
1980	January	25900	25900			
	April	26480	26480		10900-11000	12300
	June				12000-12700	13400-14100
	Aug. 5	22000	22000			
1981	January				12800-13300	14100-14700
	September	23850	23850		13800-14050	15300-15500
1982	May	24162	24162			

Source : Handbook of Statistics on Man-made/Synthetic Fibre/Yarn Industry-1981 brought out by A.S.F.I.

EX-WORKS PRICES (BULK, EXCLUDING EXCISE DUTY) OF SELECTED PETROCHEMICALS.

(Rs./MT)

ITEM.	Manufactures	1.1.71	1.1.72	1.1.73	1.1.74	1.1.75	1.1.76
1.	2.	3.	4.	5.	6.	7.	8.
1. Polyethylene L.D.	UCI	5130	5400	5400	6140	9425	14703
	ACCI	4792	4792	4798	5122	8087	8087
2. Polyethylene H.D. (Natural Colour)	Polyolefins Inds. Ltd.	4212	4329	4346	4671	7744	7613
3. Styrene Monomer	Polychem Limited	3331	3293	3807	4060	9340	8230
4. Polystyrene (Generalpurpose)	Hindustan Polymers Limited	4250	-	-	-	9100	9100
5. PVC (Resin)	NOCIL	3100	3100	3100	3800	6000	6000
	Chemicals & Plastics India Ltd.	2900	3050	3350	4200	6000	5150
	Calico Ltd.	2825	2825	2825	2750	5300	5300
6. Dioctyl Phthalate.	UCI Ltd.	7300	6000	6250	13000	11700	-
	IOC Ltd.	7150	4650	4300	11650	8600	8100
	HCL	7400	5612	5798	9458	10800	10000
7. 2-Ethylene-Hexanol	NOCIL	5200	5200	4900	5200	8300	8750
	UCI Ltd.	5300	4900	5300	7700	8000	8650
8. Ethylene Glycol.	NOCIL	4700	4300	4300	4550	6800	7250
9. Ethylene Oxide	NOCIL	8050	6100	6100	6350	8750	9300
10. Synthetic Rubber (Price ex-Bombay)	Synthetic & Chemicals Limited.						
S-1500/502		4400	4400	4400	4400	4950	5050
S-1712		3900	3900	3900	3900	4450	4550
S-1958		6800	6800	6800	6800	7400	7600
11. Di-Butyl Phthalate.	IOC	7000	5900	6150	16150	15550	10600

NOTE :- UCI stands for Union Carbide India Ltd., NOCIL for National Organic Chemicals Industries Ltd., HCL for Herdillia Chemicals Ltd., IOC for Indian Organic Chemicals Ltd., ACCI for Alkalies & Chemicals Corporation of India Limited,

(- = Not available).

EX-WORKS PRICES (BULK EXCLUDING EXCISE DUTY) OF SELECTED PETROCHEMICALS

(Rs./MT)

ITEM	Manufactures	1.1.77	1.1.78	1.1.79	1.1.80	1.1.81	1.1.82
9.	10.	11.	12.	13.	14.	15.	16.
1.Polyethylene* L.D.	UCI	13195	13195	14041	20300	22000	22000
	ACCI	8087	13195*	13500*	19469	19469	
2.Polyethylene HD (Natural Colour)	Polyolfins Inds. Ltd.	7613	7613	7900	13300	14539	15949
3.Styrene Monomer	Polychem Limited	10090	9225	8985	20420	20420	20000
4.Polystyrene (General purpose)	Hindustan Polymers Ltd.	9100	9100	13500	24800	24250	26800
5.PVC (Resin)	NOCIL	6000	6000	6300	9000	9900	10500
	Chemical & Plastics India Ltd.	5700	6150	6450	11400	14500	12000
	Calico Ltd.	5900	6200	6800	7200	9400	11000
6.Dioctyl Phthalate.	IOC Ltd.	10700	9920	10230	17310	20400	16630
	HCL	11600	11600	11800	20550	20900	19900
7.2-Ethyle Hexanol	NOCIL.	8750	8750	8900	14700	16700	18750
	UCI Ltd.	8650	9650	9250	13700	18300	25600
8.Ethyelene Glycol	NOCIL	7550	7550	7650	10900	12700	14050
9.Ethylene Oxide	NOCIL	9550	9550.	9725	13950	16300	18400
10.Synthetic Rubber (Price ex-Bombay)	Synthetic & Chem. Ltd.						
-S-1712/502.		8750	8800	9550	13500	17500	16700
-S-1712		8250	8300	9050	12500	15600	14900
-S-1958 (B)		14500	14450	14750	18700	21800	20900
11.Di Butyl Phthalate	IOC	11050	10160	10900	15210	20770	18580

UCI stands for Union Carbide India Ltd., NOCIL for National Organic Chemicals Industries Ltd., HCL for Herdillia Chemicals Ltd., IOC for Indian Organic Chemicals Ltd., ACCI for Alkalies and Chemicals Corporation of Indian Ltd.

NOTE :- Prices shown against NOCIL include market charges.

N.A. :- Not available. * = Selling Price. **= Inclusive of excise duty.

AVERAGE BOMBAY MARKET PRICE QUOTATION OF SYNTHETIC FIBRE/YARN

(Rs. / Kg.)

Denier	1975	1976	1977	1978	1979	1980	1981	1982 (Jan-March)
1. NYLON FILAMENT YARN								
12-1-0	139.76	123.15	132.47	147.32	151.52	166.73	184.17	168.24
20-1-0	134.24	119.43	124.84	132.38	133.05	146.07	157.98	144.93
40-10-0 SD	124.77	109.32	110.36	114.03	121.49	134.50	145.79	134.34
111-24-0	102.19	90.19	89.75	85.80	95.78	107.87	117.90	110.81
2. POLYESTER FILAMENT YARN								
76-24-0	197.53	153.34	144.84	135.35	150.35	142.65	168.90	156.13
76-34-0	-	-	147.14	137.64	152.79	141.85	169.16	155.18
76-36-0	194.61	169.97	148.84	140.02	154.36	143.30	172.02	156.99
3. POLYESTER STAPLE FIBRE								
1.2.D	74.55	91.12	65.40	63.07	76.11	77.37	87.12	
1.5.D	74.27	89.81	64.21	60.58	74.48	76.12	87.92	
2.0.D	72.33	87.81	63.11	61.27	74.15	75.42	86.49	

Source : Handbook of Statistics of Man-made/Synthetic Fibres/Yarn Industry brought out by Association of Synthetic Fibres Industry.

V. EXCISE AND CUSTOMS DUTIES

Realisation of Excise & Custom Duties from Petrochemicals and Petro-based Items

(Rs./Crores)

Products	ACTUALS				1981-82 (R.E)	1982-83 (BE)
	1977-78	1978-79	1979-80	1980-81		
EXCISE DUTIES						
1. Plastics materils & synthetic resins	63	92	110	123	141	152
2. Synthetic Organic Dyestuffs	38	42	42	42	47	51
3. Carbon Black	3	4	7	10	12	13
4. Man-made Fabrics	1	3	5	6	6	7
5. Man-made Fibre & Man-made filament yarn	283	329	363	425	476	348
6. Synthetic Rubber	1	2	2	4	5	6
TOTAL (A)	389	472	529	610	687	777
CUSTOMS DUTIES						
7. Artificial resins plastic materials and articles thereof.	90	90	108	142	171	210
8. Yarn of man-made fibres	33	79	98	160	240	275
9. Man-made fibres and filament two.	70	88	97	92	110	126
TOTAL (B)	200	257	303	394	521	611
GRAND TOTAL (A+B)	589	729	832	1004	1208	1388

Figures rounded to nearest crore .

Source : Budget Papers of the Central Government for 1982-83.

RATES OF EXCISE DUTIES ON SYNTHETIC FIBRES/YARN AND RAW MATERIALS 1982-83

ITEM / DENIER	UNIT	BASIC DUTY	SPECIAL DUTY	ADDITIONAL DUTY	TOTAL
1. RAW MATERIALS.					
1. Caprolactam		15%	0.75%*	-	15.75%
2. D. M. T.		NIL	NIL	NIL	NIL
3. M. E. G.		8%	-	-	8%
2. SYNTHETIC STAPLE FIBERS.					
1. Polyester Staple Fibre	Rs/kg	36.00	3.60	5.40	45.00
2. Acrylic Staple Fibre	Rs/kg	14.00	1.40	2.10	17.50
3. POLYMICE(NYLON FIMAMENT YARN)					
1. Below 35D	Rs/kg	58.80	5.88	8.82	73.50
2. 35D & above but below 80D	,,	51.80	5.18	7.77	64.75
3. 80D & above but a below 110D	,,	44.80	4.48	6.72	56.00
4. 110D & above but a below 150D	,,	37.80	3.78	5.67	47.25
5. 150D & above but not above 750D	,,	19.60	1.96	2.94	24.50
6. Above 750D	,,	6.50	0.65	0.98	8.13
4. POLYESTER FILAMENT YARN.					
1. Below 30D	Rs/kg	77.00	7.70	11.55	96.25
2. 30D & above but below 75D	,,	70.00	7.00	10.50	87.50
3. 75D & above but 4. below 100D	,,	63.00	6.30	9.45	78.75
4. 100D & above but not above 750D	,,	49.00	4.90	7.35	61.25
5. Above 750D	,,	15.00	1.50	2.25	18.75

* @ 5%

Source:- Handbook of statistics of Man-Made Synthetic Fibres/ Yarn Industry brought out by Associations of Synthetic Fibres Industry.

RATES OF CUSTOM DUTIES-1982-83

ITEM	Customs Duty	Auxiliary Duty	Total
Nylon Filament Yarn	100%	30%	130%
Polyester Filament Yarn	200%	10%	210%
Acrylic Yarn	100%+Rs30/- per kg.	15%	115%+Rs30/- per kg.
Acrylic Staple Fibre	100%	25%	125%
Polyester Staple Fibre	140%	25%	165%
Nylon Tyre Yarn	100%+Rs.11/- per kg	15%	115%+Rs11/- per kg.
Caprolactam	55%	NIL	55%
D. M. T.	100%	30%	130%

NOTE:- On all above items, countervailing duty equal to excise duty is also levied.

Source:- Handbook of statistics of Man-Made Synthetic Fibres/ Yarn Industry brought out by Associations of Synthetic Fibres Industry.

IMPORTS/EXPORTS

VI. IMPORTS OF SELECTED PETRO-CHEMICALS

(Qty.= Tonnes; Value in Rs. Lakhs.)

Product	1975-76 Qty.	1975-76 Value	1978-79 Qty.	1978-79 Value	1979-80 Qty.	1979-80 Value	1980-81 Qty.	1980-81 Value
A. Organic Chemicals								
Acrylonitrile	..	..	166	12	231	22	38	5
Benzene	1191	48.2	..	..	1108	139	-20	4
Butyl Alcohol (Butanol)	28	2.7	15	3	42	5	30	4
Butyl Acetate	161	14.5	19	2	135	15	57	7
DMT	248	13.0	320	11	7726	617	84	9
Epsilon Caprolactum	1985	200.2	8290	651	11836	1616	21088	3166
Ethylene Clycol	157	13.7	2964	154	1865	205	1241	104
Ethyl Alcohol undenatured	neg.	0.1	..	..	12	2	12	1
Ethyl Alcohol denatured	1	0.3	..	..	39	7	36	5
Methyl Isobutyl Ketone	..	..	886	72	128	12	272	26
Phthalic Anhyuride	6502	207.8	2218	81	869	63	2959	154
Toluene	4	0.3	84	8	6	3	69	5
B. Plastic Raw Materials								
CA Moulding Powder	332	30.3	328	14	62	5	63	6
PF Moulding Powder	1	0.5	81	5	165	12	420	33
Polyethylene LD	7376	311.9	27742	1291	2365	173	3390	256
Polyethylene HD	1512	84.0	26178	1378	37361	2435	35331	2637
Polystyrene Moulding Powder	416	27.4	1062	63	424	28	347	32
PVC Resins	405	26.9	6093	340	32062	2460	63719	4049
UF Moulding Powder	83	3.9	10	2	-	-	25	4
C. Synthetic Fibres								
Acrylic Fibre	3163	380.2	15330	1655	2378	272	661	102
Acrylic Filament Yarn	-	-	-	-	8	2	[illegible]	-
Nylon Filament Yarn	2853	587.0	5183	1093	2181	413	1478	482
Polymide Fibre	356	60.9	236	35	129	21	87	17
Polyester Filament Yarn	2159	274.0	6947	1265	8754	1911	11056	2147
Syn.&Renegerated Fibre	..	..	158243	17402	67316	8892	62306	8694
Polyester Fibre	541	66.9	7508	721	9422	1174	4018	568
D. Synthetic Rubber								
Crude&Syn.Rubber	6391	651.6	13525	1407	17661	1894	14660	1879

neg. = Negligible.

EXPORT OF SELECTED PETRO-CHEMICALS

Qty. Tonnes: Value in Rs Lakhs.

PRODUCT.	1970-71		1975-76		1979-80		1980-81.	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	2	3	4	5	6	7	8	9
ORGANIC CHEMICALS.								
Benzene	-	-	3	0.1	-	-	-	-
Butyl Alcohol	500	5.0	-	-	-	-	-	-
Ethyl Alcohol undenatured	5750	3.0	-	-	13900	243	13	-
PLASTIC RAW MATERIALS								
P.F.Moulding Powder	-	-	5	0.3	4	1	-	-
Polyethylene L.D.	1486	25.92	-	-	5	1	-	-
Polyethylene H.D.	7873	205.13	51	5.6	35	10	-	-
Polyethylene Moulding Powder	911	20.0	9	2.8	3	1	-	-
P.V.C.Resin	200	3.0	-	-	-	-	1	1
UF Moulding Powder	72	2.0	31	1.6	-	-	-	-
SYNTHETIC FIBRES								
Nylon Tyre Cord	-	-	-	-	37	7	-	-
Nylon Filament Yarn	-	-	-	-	9	6	16	5
Acrylic Filament Yarn	-	-	-	-	-	-	1	1
Syn. & Regenerated Fibres.	353	7.0	15	0.6	35	2	-	-
SYNTHETIC RUBBER								
Crude & Syn. Rubber	273	4.0	4	0.3	-	-	4	1

Source:- Directorate General of Commercial Intelligence and Statistics, Calcutta.

VII. INTERNATIONAL STATISTICS

World Production of Textile Fibres

('000 Tonnes)

Year	MAN - MADE FIBRES							Raw cotton	Raw wool	Raw Silk	GRAND TOTAL
	Yarn	Staple	Cellu-losic	Yarn	Staple	Synth-etic	TOTAL				
1950	874	738	1612	54	15	69	1681	6647	1057	- 19	9404
1955	1042	1236	2278	184	82	266	2544	9492	1265	- 29	13330
1960	1131	1476	2607	417	285	702	3309	10113	1463	- 31	14916
1970	1393	2043	3436	2363	2337	4700	8136	11782	1602	- 41	21561
1971	1401	2054	3455	2867	2742	5609	9064	13008	1566	- 41	23679
1972	1342	2217	3559	3213	3164	6377	9936	13669	1457	- 42	25104
1973	1363	2298	3661	3833	3807	7640	11301	13718	1432	- 43	26494
1974	1302	2230	3532	3785	3702	7487	11019	14046	1531	- 45	26641
1975	1136	1823	2959	3763	3590	7353	10312	11757	1538	- 47	23654
1976	1188	2022	3210	4128	4473	8601	11811	12480	1487	- 48	25826
1977	1172	2109	3281	4312	4837	9149	12430	13921	1488	- 49	27888
1978	1167	2151	3318	4603	5431	10034	13352	12973	1528	- 51	27904
1979	1176	2195	3371	4898	5710	10608	13979	14270	1573	- 55	29877
1980	1159	2085	3244	4731	5756	10487	13731	14137	1581	- 56	29505
1981 Production Capacity	1336	2449	3785	6000	7283	13283	17068	-	-	-	-
1982 Production Capacity	1324	2560	3884	6283	7686	13969	17853	-	-	-	-

Source: Handbook of Statistics on Man-made/Synthetic Fibre/Yarn Industry-1981 brought out by A.S.F.I.

WORLD PRODUCTION OF NON-CELLULOSIC FILAMENT FIBRES - 1971 TO 1978

('000 Metric Tons)

Country	1971	1975	1976	1977	1978*
(A) Non-Cellulosic Continous Filaments					
World Total	2960	3820	4165	4400	4610
Of which :					
Argentina	23.7	28.0	24.1	26.5	22.7
Australia	25.3	19.5	20.0	20.5	20.3
Brazil	31.2	80.1	96.6	95.6	105.7
Czechoslovakia	23.9	45.4	50.2	53.3	64.9
Canada	60.1	64.3	63.8	71.3	70.0
France	97.2	85.6	105.1	101.3	91.8
Germany Dem.Rep. of	24.6	49.0	51.0	53.0	53.5
Germany Fed.Rep.	335.2	323.9	374.8	337.7	337.9
India	10.9	20.1	24.2	25.6	30.0
Japan	530.7	490.6	566.9	640.9	644.5
Italy	129.6	123.2	142.7	133.4	132.5
Spain	31.3	45.8	54.5	55.1	60.0
Switzerland	38.6	44.8	49.4	49.0	49.8
U.S.S.R.	132.3	230.3	263.0	291.8	...
U.K.	191.2	184.0	200.4	176.7	181.2
U.S.A.	992.7	1455.6	1499.9	1666.2	1737.8
(B) Non-Cellulosic Discontinous Fibre					
World Total	2820	3600	4440	4670	5160
Canada	25.5	31.5	34.5	43.5	48.5
France	115.8	119.1	145.5	143.4	156.9
Germany Dem.Rep.	32.0	62.8	66.6	71.0	74.0
Germany Fed.Rep.of	268.8	309.1	396.4	375.2	408.3
India	6.0	14.6	21.8	21.8	25.8
Italy	173.9	198.7	284.8	253.9	284.7
Japan	633.9	570.6	678.6	715.4	774.2
Poland	38.7	65.1	68.4	65.4	67.0
Spain	44.8	74.4	91.7	104.6	129.1
U.S.S.R.	70.8	134.3	145.4	167.5	...
U.K.	166.1	177.1	214.1	182.1	225.5
U.S.A.	954.2	1210.6	1504.9	1658.0	1793.2

Note : 1. Including production in New Zealand.
2. Beginning 1972, excluding Olefin.

* Provisional.

Source : U.N. Statistical Year Book, 1979/80.

Production of Plastics & Resins in Selected Countries of the World - 1971-1978

('000 Metric Tons)

Country or Area and Product	1971	1975	1976	1977	1978*
Australia (Total)	255.6	362.4	406.8	464.4	494.4
Belgium					
Condensation	40.6	42.0	41.0	44.0	-
Polymerization	410.4	615.6	866.2	1037.0	-
Others	21.1	20.9	22.0	22.0	-
Czechoslovakia(Total)	270.0	427.2	579.6	738.0	810.0
Condensation	14.0	25.2	25.1	26.7	28.0
Alkyd Resins					
Amino Plastics	2.3	2.0	2.3	2.2	2.2
Phenoplasts	15.6	18.5	18.5	18.0	18.5
Polymerization					
Polyethylene	29.4	30.6	60.5	112.2	139.9
Polypropylene	-	31.3	89.1	100.7	105.8
Polystyrene	25.7	42.6	43.1	47.0	50.2
Polyvinyl Chloride	43.4	82.9	140.3	174.3	188.5
Others					
Regen. Cellulose	17.0	17.7	17.9	18.5	18.4
Canada(Total)	387.0	122.4	-	-	-
Condensation					
Alkyd Resins	-	-	-	-	-
Polymerization					
Polyethylene	179.7	246.1	300.9	345.0	477.5
Polystyrene	60.4	59.3	75.9	90.5	98.7
Polyvinyl Chloride	78.0	69.9	96.7	99.7	124.8
France					
Condensation	372.0	480.0	544.0	532.0	-
Alkyd Resins	28.5	38.4	43.8	46.4	47.4
Amino Plastics	91.9	203.9	207.4	194.8	173.4
Phenoplasts	46.2	61.1	73.9	65.4	57.2
Polymerization	1327.2	1479.0	2078.0	2243.0	-
Polyethylene	503.5	622.6	913.8	954.5	980.9
Polystyrene	149.3	160.6	238.7	233.3	239.9
Polyvinyl Chloride	457.6	473.6	616.4	645.2	664.6
Others	69.6	57.0	66.0	67.0	-
Germany Dem. Rep.					
TOTAL	420.0	604.8	679.2	734.4	762.0

Source : U.N. Statistical Year Book, 1979/80.

* Provisional.

(Contd.)

Production of Plastics & Resins in Selected Countries Of the World - 1971-1978

('000 Metric Tons)

Country of Area and Product	1971	1975	1976	1977	1978*
Germany Fed.Rep.of					
Condensation	1502.4	1611.6	1952.4	1929.6	2055.6
Alkyd Resins	111.9	88.7	101.6	99.0	113.5
Amino Plastics	644.3	717.2	833.2	814.8	792.4
Polym-erization	3102.0	3278.4	4310.4	4162.8	4521.6
Polyethylene	928.2	1068.4	1469.8	1433.6	1521.6
Polyvinyl Chloride	846.4	833.3	965.1	897.4	1006.3
Others	175.2	156.0	181.2	177.6	177.6
India (Total)	103.2	82.8	87.6	103.2	115.2
Polyethylene	51.5	50.8	49.4	47.0	71.7
Polystyrene	11.0	9.1	12.3	14.7	12.7
Italy					
Condensation	234.0	208.8	224.4	231.6	250.1
Alkyd Resins	29.1	27.5	30.5	28.5	31.
Phenoplastis	39.4	31.8	38.4	37.4	39.
Polymerization	1602.0	1816.8	2013.6	2277.6	2188.
Polyethylene	515.8	626.0	831.4	779.7	696.
Polystyrene	181.9	211.0	267.3	262.3	277.
Polyvinyl Chloride	483.2	555.2	713.8	685.4	673.
Others	35.2	27.0	27.8	28.8	26.
Japan					
Condensation	1128.0	1014.0	1246.8	1240.8	1347.
Alkyd Resins	229.6	217.3	265.2	275.1	310.
Amino Plastics	647.9	573.7	665.3	665.8	706.
Phenoplasts	217.6	195.6	253.8	246.2	267.
Polymerization	4033.2	3358.8	3705.6	3736.8	4357.
Polyethylene	1340.0	1290.6	1392.5	1466.7	1766.
Polypropylene	627.2	594.5	669.0	607.8	744.
Polystyrene	694.9	690.0	875.1	900.3	1031.
Polyvinyl Chloride	1034.5	1125.4	1044.0	1030.8	1204.
Netherlands					
Condensation	302.4	397.2	482.4	530.4	603.
Alkyd Resins	49.3	52.5	61.2	60.3	58.
Polymerization	574.8	913.2	1196.4	1209.6	1309.
Others	37.2	39.7	44.0	42.6	49.
Poland (Total)	256.8	538.8	559.2	583.2	596.

Source : U.N. Statistical Year Book, 1979/80.

* Provisional.

Production of Plastics & Resins in Selected Countries Of the World - 1971-1978

('000 Metric Tons)

Country of Area and Product	1971	1975	1976	1977	1978*
Poland					
Condensation					
Amino plastics	4.1	7.4	8.5	10.2	12.9
Phenoplasts	18.8	19.6	19.1	16.6	9.3
Polymerization					
Polyethylene	18.9	47.8	48.5	47.8	46.3
Polystyrene	22.1	32.0	32.5	33.8	33.9
Polyvinyl Chloride	93.8	124.4	124.9	122.2	125.5
Sweden					
Condensation	148.0	236.0	263.0	266.0	-
Alkyd resins	27.7	31.2	32.6	32.3	-
Amino plastics	74.7	106.4	121.4	125.3	-
Phenoplasts	38.4	48.2	54.7	50.2	-
Polymerization	210.9	280.0	366.0	330.0	-
Polyethylene	104.0	147.6	204.4	173.4	-
Polystyrene	16.1	12.7	16.0	18.7	-
Polyvinyl Chloride	79.8	118.0	137.3	119.0	-
Others	10.8	13.0	13.0	-	-
U.S.S.R. Total	1860.0	2844.0	3216.0	3300.0	-
United Kingdom					
Condensation	327.6	710.4	862.8	864.0	897.6
Alkyd resins	71.0	112.2	125.9	132.0	123.[illegible]
Amino plastics	138.0	121.9	172.1	178.4	167.[illegible]
Phenoplasts	55.0	46.7	53.3	57.9	57.0
Polymerization	1059.6	1238.4	1581.6	1736.4	1755.6
Polyethylene	378.4	382.9	474.4	489.9	428.[illegible]
Polypropylene	92.0	169.7	250.7	248.2	291.[illegible]
Polystyrene	161.0	184.6	240.6	228.9	209.[illegible]
Polyvinyl Chloride	314.0	334.0	417.2	386.4	409.[illegible]
Others	93.6	108.0	111.6	109.2	111.[illegible]
Regen. Cellulose	-	64.6	81.4	77.7	79.[illegible]
United States					
Condensation	1130.4	799.2	1610.4	769.2	904.8
Alkyd resins	246.2	305.7	319.6	341.7	-
Amino plastics	349.1	479.4	557.7	617.2	-
Phenoplasts	535.5	578.2	708.0	815.2	800.[illegible]
Polymerization	6870.0	7618.8	9470.4	8133.6	8983.[illegible]
Polypropylene	607.4	863.2	466.0	1227.3	1346.[illegible]
Polyethylene	2894.0	3302.1	4056.0	4581.3	5026.[illegible]
Polyvinyl Chloride	1558.9	1634.5	2133.0	2389.2	2564.[illegible]
Others	1873.2	1788.0	2180.4	2329.2	2388.[illegible]
Regen. Cellulose	631.7	339.8	-	-	-
Polystyrene	1809.7	1757.3	1685.0	2360.2	2039.4

Source : U.N. Statistical Year Book, 1979/80. * Provisional.

Production of Synthetic and Reclaimed Rubber - 1971-1978

('000 Metric Tons)

Country or Area	1971	1975	1976	1977	1978*
A. SYNTHETIC RUBBER					
World Total	5230	5210	6275	6580	6675
Of which :					
Argentina*	42.5	40.0	45.0	36.0	34.0
Australia	43.4	37.6	42.2	43.5	43.5
Belgium*	60.0	65.0	115.0	125.0	130.0
Brazil	78.2	128.8	164.4	188.1	206.1
Bulgaria	11.9	18.9	21.0	25.0	25.0
Canada	197.4	173.3	209.9	237.9	248.3
Czechoslovakia	52.2	56.7	57.0	58.8	58.9
France	323.1	350.4	437.0	479.0	491.1
Germany Demo.Rep.	129.3	143.9	145.5	146.9	145.0
Germany Fed.Rep.	306.4	315.9	372.6	414.3	401.0
India	33.0	23.0	23.3	27.4	28.0
Italy*	160.0	200.0	250.0	240.0	250.0
Japan	779.8	788.7	941.3	971.0	1028.1
Mexico	48.7	60.0	69.4	62.6	80.0
Netherlands	191.0	215.9	246.6	240.0	222.0
Poland	66.2	107.9	116.9	119.4	125.0
Romania	71.0	98.9	95.2	136.2	147.0
South Africa	29.7	31.8	34.6	27.2	31.0
Spain	45.4	66.1	78.9	77.1	79.0
United Kingdom	285.4	260.8	320.4	329.2	293.0
United States	2277.0	1989.5	2425.5	2520.8	2604.0
B. RECLAIMED RUBBER					
World Total	555	460	465	460	46[illegible]
Of which :					
Australia	9.0	5.8	4.2	1.1	.9
Brazil	22.0	28.5	31.6	31.6	3.[illegible]
Bulgaria	2.8	2.0	..	..	.
Canada	13.6	3.9	4.6	3.4	3
Czechoslovakia	14.7	15.1	15.4	16.0	19
France	24.7	22.4	21.5	21.0	20
Germany Fed.Rep.	14.9	10.8	14.1	13.3	1[illegible]
Hungary	2.7	1.7	1.5	0.1	
Japan	59.5	47.8	58.1	56.7	5[illegible]
Korea Rep. of	4.1	3.7	..	..	
Swedon	8.3	5.9	3.9	..	
U.S.S.R.	134.5	..	..	..	.
Bye-lorussian SSR	(24.1)	(25.4)	(..)	(..)	(.
United Kingdom	30.0	24.6	24.3	23.0	20
United States	202.4	120.6	110.7	121.1	123
Yugoslavia	6.0	6.4	6.5	6.1	7.

* Provisional. .. Not available.

Source : U.N. Statistical Year Book, 1979/80.

Production of Basic Organic Chemicals in Selected Countries of the World - 1971-1978

('000 Metric Tons)

Country of area and product	1971	1975	1976	1977	1978*
Bulgaria					
Ethylene	53.0	75.8	75.4	78.4	81.2
Propylene	45.6	59.2	60.5	62.2	62.1
Acetylene	7.3	14.7	12.7	12.2	13.1
Benzene	41.8	54.4	57.4	61.4	-
Toluene	44.5	52.1	55.1	48.0	36.0
Xylenes	30.4	34.7	34.5	30.9	32.4
Methyl Alcohol	26.1	27.5	27.2	27.3	24.3
Ethylene Oxide	7.4	9.6	9.8	10.4	10.4
Canada					
Ethylene	421.0	429.5	508.9	567.3	82.6
Acetylene	8.7	8.6	8.3	8.0	7.5
Benzene	263.9	247.7	411.3	435.0	55
Tolune	132.8	53.5	182.4	-	-
Xylenes	51.1	75.7	161.8	-	-
Ethyl Alcohol	396	233	227	240	-
Czechoslovakia					
Ethylene	127.8	75.4	92.8	201.4	22
Propylene	62.9	36.3	46.5	98.8	1
Acetylene	14.1	15.7	15.8	16.1	
Benzene	114.5	151.7	167.9	195.4	2
Toluene	40.8	38.8	46.0	48.5	
Xylenes	20.8	87.7	106.0	96.8	1
Methyl Alcohol	83.9	92.8	99.4	104	1
Ethyl Alcohol	1729	1330	1528	1189	11
Ethylene Oxide	5.9	7.7	8.5	11.1	
France					
Propylene	567.0	647.0	874.0	941	
Acetylene	114.0	-	-	-	
Benzene	371.7	295.1	456.6	493.8	5
Toluene	90.5	57.6	73.9	70.5	
Xylenes	49.4	47.1	75.0	72.5	1
Methyl Alcohol	225.2	287.1	345.2	375.7	3
Ethyl Alcohol	70.0	-	-	-	
Ethylene Oxide	91.0	153.0	-	-	
German Dem. Rep.					
Methyl Alcohol	172.4	240.1	243.5	240.1	
Ethyl Alcohol	359	358	336	315	3

Source : U.N. Statistical Year Book, 1979/80.

* Provisional.

Production of Basic Organic Chemicals in Selected Countries of the World - 1971-1978

('000 Metric Tons)

Country or area and Product	1971	1975	1976	1977	1978*
Germany, Fed.Rep.of					
Ethylene	2004.7	2140.1	2786.7	2999.	3219
Propylene	903.2	1091.0	1431.6	1535.9	1704
Acetylene	335.1	260.2	251.5	203.8	209
Benzene	814.5	691.2	918.4	824.4	894
Toluene	181.2	176.2	232.8	243.1	226
Xylenes	278.9	349.4	474.2	455.8	412
Methyl Alcohol	876.7	771.0	1052.3	887.2	800
Ethyl Alcohol	2189	1829	2146	2116	1823
Ethylene Oxide	232.8	271.4	300.5	295.1	351
Italy					
Ethylene	1016.3	1128.1	1442.8	1414.0	122
Propylene	617.5	704.2	868.6	830.2	74
Acetylene	203.7	157.7	188.2	164.5	12
Benzene	481.3	466.7	592.8	593.5	52
Toluene	388.4	374.7	466.0	424.9	35
Xylenes	335.0	322.0	371.7	342.4	31
Methyl Alcohol	277.9	230.5	294.1	232.7	15
Ethyl Alcohol	1851	234.6	-	-	-
Ethylene Oxide	69.3	75.3	82.9	78.6	
Japan					
Ethylene	3536.8	3399.1	3802.9	3978.6	43
Propylene	2455.3	2314.2	2635.5	2716.4	296
Acetylene	73.5	61.8	58.1	53.7	5
Benzene	1689.0	1608.2	1878.6	1951.3	20
Toluene	790.5	657.0	878.2	891.6	88
Xylenes	855.6	894.8	1169.2	1212.6	124
Methyl Alcohol	1010.7	719.0	951.2	762.0	9
Ethylene Oxide	333.8	509.1	546.8	537.6	63
Ethyl Alcohol	2289	2080	2216	2219	227
Mexico					
Ethylene	68.7	213.0	227.9	229.9	25
Propylene	70.6	93.1	113.7	138	13
Benzene	74.6	90.0	99.2	74.5	9
Toluene	92.9	116.0	132	116	12
Xylenes	58.5	84	106	98	1
Methyl Alcohol	17.4	31.6	32.2	33.1	1
Ethylene Oxide	-	27.3	25.5	26.8	
Ethyl Alcohol	596	586	528	763	78
Netherlands					
Ethylene	-	1406	1884	1780	19
Propylene	-	764.0	980.0	905.0	102
Benzene	280.2	729.0	456.0	-	
Toluene	105.6	56.0	81.0	-	
Xylenes	147.6	192.0	-	-	
Ethyl Alcohol	1074	1351	1410	1448	1
Ethylene Oxide	89.0	-	-	-	-

Source : U.N. Statistical Year Book, 1979/80. * Provisional.

Production of Basic Organic Chemicals in Selected Countries of the World - 1971-1978

('000 Metric Tons)

Country or area and Product	1971	1975	1976	1977	1978*
Poland					
Ethylene	35.3	95.0	94.6	96.5	98.3
Propylene	25.3	58.6	50.9	83.7	96.3
Acetylene	11.7	14.0	16.6	16.8	15.5
Methyl Alcohol	86.3	148.6	197.5	193.5	196
Ethyl Alcohol	1851	2265	2622	3297	3235
Romania					
Ethylene	-	155.0	242.0	263.0	280
Propylene	-	121.0	163.0	170.0	182
Benzene	109.0	125.0	159.0	162.0	157
Toluene	125.0	117.0	148.0	157.0	149
Xylenes	137.0	180.0	221.0	221.0	195
Methyl Alcohol	93.9	107.0	124.3	227.9	273
Ethyl Alcohol	608	810	784	820	823
Ethylene Oxide	-	-	-	-	-
Spain					
Ethylene	110.3	231.9	282.5	346	-
Propylene	65.7	121.0	148.9	171	-
Acetylene	31.3	32.4	24.9	23.9	-
Benzene	151.9	197.4	162	199	-
Toluene	90.2	37.1	51.2	67.0	-
Xylenes	115.6	21.9	-	-	-
Methyl Alcohol	41.0	2.8	5.8	-	-
Ethyl Alcohol	1593	1594	-	-	-
Ethylene Oxide	16.5	23.1	25.8	-	-
United Kingdom					
Ethylene	1040.0	958.9	1286.1	1137.5	106
Propylene	506.0	565.6	747.5	659.6	61
Benzene	550.0	581.8	927.7	844.6	65
Toluene	263.0	183.8	273	213	20
Ethyl Alcohol	1672	1982	2489	2717	293
Ethylene Oxide	192.0	-	-	-	-
United States					
Ethylene	8367.2	8971.4	9991.0	11533.0	1276
Propylene	3125.3	3445.6	4426.0	6046	652
Acetylene	386.2	102.4	109.7	91.3	14
Benzene	3562.0	3459.4	4795.0	4787	503
Toluene	2861.3	2649.0	3708.0	3346	419
Xylenes	2027.2	2330.5	2374	2667	-
Methyl Alcohol	2244.9	2347.9	2830.0	2927	2885
Ethyl Alchol	21575	21993	18910	18860	-
Ethylene Oxide	1631.5	1785.8	1852.0	1980	2194

Source : U.N. Statistical Year Book, 1979/80. * Provisional..

PART - III

PLAN STATISTICS

Undertaking-wise Sixth Year Plan Outlay for the Petroleum and Petrochemicals Industries

(Rs./Crores)

Undertakings	Continuing Schemes	New Schemes	Total
1.	2.	3.	4.
(A) Exploration & Production	2853.58	20.00	2873.58
ONGC)	2853.58	20.00*	2873.58
OIL)			
(B) Refining & Marketing	801.62	653.51	1455.13
IOC	434.48	272.46	706.94
BPCL	97.26	50.60	147.86
HPCL	115.47	93.33	208.80
CRL	51.64	10.50	62.14
MRL	69.82	16.00	85.82
BRPL	14.59	-	14.59
LIL	2.80	4.72	7.52
IBP	7.68	6.85	14.53
Balmer Lawrie	4.22	9.91	14.13
Bridge & Roof	1.40	8.95	10.35
Biecco Lawrie	2.26	1.64**	3.90
Deptt. of Petroleum	-	178.55	178.55
(C) Petrochemicals	272.31	617.50	889.81
IPCL	92.63	67.50***	160.13
PCL	-	1.00	1.00
BRPL	166.56	-	166.56
BPCL	13.12	-	13.12
Deptt. of Petroleum	-	549.00	549.00
(D) Engineering	6.11	10.37	16.48
EIL	3.56	3.64*	7.20
CIPET	0.05	2.23	2.28
IIP	2.50	4.50	7.00
TOTAL	3933.62	1301.38	5235.00

* Relates to R&D Schemes.

** Includes replacement and renewals.

*** Includes replacement and renewals, S&T programme.

ANNUAL PLAN OUTLAY/EXPENDITURE OF THE UNDERTAKINGS UNDER THE PURVIEW OF THE DEPARTMENT OF PETROLEUM

(Rs./Crores)

Name of the Undertaking	1980-81 B.E.	1980-81 R.E.	1980-81 Actual expenditure	1981-82 B.E.	1981-82 R.E.	1982-83 B.E.
1.	2.	3.	4.	5.	6.	7.
a) EXPLORATION & PRODUCTION	520.67	522.40	505.70	710.18	892.22	1518.23
1. ONGC	490.57	490.57	464.99	670.18	849.72	1400.00
2. OIL	30.10	31.83	40.71	40.00	42.50	118.23
b) REFINING & MARKETING	255.97	239.99	220.27	301.72	321.51	440.24
1. IOC	165.61	168.41	157.34	168.35	175.10	149.31
2. HPCL	19.96	22.22	22.74	38.88	39.84	85.50
3. BPCL	18.12	17.64	17.61	28.05	26.71	72.85
4. IBP @@	7.38	10.39	5.35	10.47	9.40	9.56
5. MRL	5.97	7.33	7.11	17.80	29.74	66.35
6. CRL	6.89	12.16	9.67	22.22	24.87	44.00
7. LIL	1.84	1.84	0.45	0.95	0.95	2.67
Doptt. of Petroleum	30.15	-	-	15.00	14.90	10.00
c) PETROCHEMICALS	56.30	51.15	42.70	63.36	74.46	82.93
1. IPCL	22.64	26.05	17.20	23.67	34.77	43.98
2. BRPL	33.56	25.00	25.40	39.59	39.59	38.85
3. PCL/Others	0.10	0.10	0.10	0.10	0.10	0.10
d) CONSULTANCY & ENGG. SERVICES	4.03	4.00	2.01	1.87	9.94	3.60
1. EIL	3.40	3.40	1.41	1.36	9.43	3.10
2. IIP	0.53	0.54	0.54	@	@	@
3. CIPET	0.10	0.06	0.06	0.51	0.51	0.50
GRAND TOTAL	836.92	817.54	770.68	1077.13	1298.13	2045.00

@ = Since transferred to CSIR.

@@ = Including subsidaries.

CAPACITY AND PRODUCTION ESTIMATES FOR PETROLEUM AND SELECTED PETRO-CHEMICALS FOR 1984-85.

INDUSTRY	UNIT	1979-80 Actual/ Anticipated Capacity	1979-80 Actual/ Anticipated Production	1984-85 Proposed Targets Capacity	1984-85 Proposed Targets Prodn.
1	2	3	4	5	6
1. Petroleum Products	M.Tonnes	-	25.79	-	35.34
2. Thermo Plastics & Synthetic Rubber.					
1. L.D.Polyethylene	'000 T.	112	71.3	112	100
2. H.D.Polyethylene	''	30	25.4	30	27
3. Polyvinyl Chloride	''	77.9	49.9	173	128
4. Polypropylene	''	30	13.4	30	27
5. Polystyrene	''	23.5	12.0	28.5	20
6. Synthetic Rubbers/ Styrene Butadiene/ Rubber	''	30	21.6	30	27
7. Polybutadiene Rubber	''	20	8.7	20	18
3. Petro-chemical Intermediates.					
1. Acrylonitrile	''	24	3.7	24	20
2. D.M.T.	''	24	27.9	66	56
3. Caprolactam	''	20	13.5	20	18
4. Man-made Fibres.					
1. Nylon Filament Yarn	''	21	17.7	31.4	28
2. Nylon Tyre Cord & Indl. Yarn.	''	12.1	11.2	13.5	13.5
3. Polyester Staple Fibre	''	30.4	23.6	58.6	55
4. Polyester Filament Yarn.	''	8	9.0	18	18
5. Acrylic Fibre	''	16	3.4	16	14

Source :- Sixth Five Year Plan 1980-1985.

Plan Targets of Domestic Crude Productions

(In Million Tonnes)

	1980-81	1981-82	1982-83	1983-84	1984-85
IN WESTERN REGION					
O.N.G.C.	3.4	3.2	3.1	3.0	2.8
EASTERN REGION					
O.N.G.C.	1.7	2.1	2.6	2.8	3.0
O.I.L.	2.8	3.2	3.0	2.8	2.6
Total :	4.5	5.3	5.6	5.6	5.6
Total Onshore	7.9	8.5	8.7	8.6	8.4
OFFSHORE	5.2	8.4	11.8	12.7	13.2
GRAND TOTAL	13.1	16.9	20.5	21.3	21.6

Material Balance Crude Petroleum

1979-80 / 1984-85

(MMT)

	1979-80	1984-85
a) Installed Refining Capacity	31.80	45.55
b) Production of PCL products	25.79	35.34
c) Crude Throughput	27.47	38.00
d) Crude Production	11.77	21.60
e) Crude Imports	16.12*	16.40

* Provisional

Material Balance : Petroleum Products - 1979-80/1984-85 (MMT)

Product Category	1979-80				1984-85 (Projection)			
	Production	Imports	Exp.& Re.Exp.	Consump	Production	Imports	Export	Demand
1.	2.	3.	4.	5.	6.	7.	8.	9.
a) Light Distillates	4.459	0.131	0.088	4.460	7.690	-	0.640	7.05
b) Middle Distillates	13.080	3.504	-	16.321	19.430	6.490	-	25.92
c) Heavy Ends	8.255	0.843	-	9.102	8.220	4.310	-	12.53
TOTAL	25.794	4.478	0.088	29.883	35.340	10.800	0.640	45.50

* Provisional

PART - IV

FINANCIAL PERFORMANCE / STRUCTURES

Financial Review/Structure of the Public/Joint Sector Undertakings under the purview of Department of Petroleum during 1980-81 and Quick Review during 1981-82

I. Financial Review/Structure - 1980-81

The financial structure of the public/joint sector Undertakings as per their annual published accounts/data submitted by them for the three years ending 1980-81 has been given in the attached statements. The glossary of the terms used has been given at the end. The public sector undertakings have been divided into four broad categories, viz. (A) Oil Exploration & Production; (B) Refining & Marketing; (C) Petrochemicals & other downstream units; and (D) Engineering Services. All these companies are now under the public/joint sector. In the review that follows, consolidated financial position of all the public/joint sector undertakings has been analysed, followed by an analysis of the consolidated position under each of the above mentioned categories.

Overall Financial Position

A consolidated picture of overall financial structure and performance of public sector undertakings during the three years 1978-79, 1979-80 and 1980-81 is provided in Tables 1 to 3. The following is a summary of the results :-

(Rs. Crores)

	1978-79*	1979-80	1980-81
1. Equity	725.01	830.21	841.66
2. Loans	696.89	1150.57	1960.06
3. Reserves & surpluses	667.31	812.46	973.54
4. Capital employed	1499.57	2133.43	2942.91
4.1 Net fixed assets	1165.03	1444.77	1713.33
4.2 Working capital	334.54	688.66	1229.58
5. Sales turnover	6662.96	8439.75	10901.18
6. Gross profit (adjusted)	345.57	397.58	397.94
7. Net profit (adjusted)	182.68	189.06	124.25
8. Dividends declared	40.67	43.83	44.01
9. Tax paid	81.78	170.00	75.13

* Excludes BRPL which was then under construction.

An analysis of the individual items is briefly discussed below :-

1. Capital Investment : The capital investment defined as the sum total of paid up capital and loans both long-term and short-term registered an increase of 41.4% from Rs.1980.78 crores in 1979-80 to Rs.2801.72 crores in 1980-81. The corresponding increase in the preceding year was 39.3%. The increase in the capital investment during 1980-81 over 1979-80 was mainly on account of increase in the quantum of loans from Rs.1150.57 crores to Rs.1960.06 crores.

An increase in paid-up capital and loans took place in ONGC where both paid-up capital and loans increased from Rs.337.35 crores in 1979-80 to Rs.342.85 crores and from Rs.391.61 crores to Rs.611.0 crores in 1980-81 respectively. In the case of IOC, loans have also increased by 101.8% from Rs.376.52 crores in 1979-80 to Rs.759.91 crores in 1980-81. There was an increase of Rs.4.20 crores in paid-up capital in the case of Lubrizol in 1980-81 where 42,0000 shares of Rs.100 each were issued as fully paid up by way of bonus shares. There were also increases in the total quantum of loans in the under-noted undertakings as indicated below :-

(Rs. Crores)

Name of the Company	Loans in 1979-80	Loans in 1980-81	% age increase
1. BPCL	15.77	78.95	400.6%
2. HPCL	67.86	127.75	88.3%
3. CRL	18.02	68.33	279.2%
4. Bieeco Lawrie	6.73	7.88	17.1%
5. IPCL	159.92	166.35	4.0%
6. BRPL	9.07	33.93	274.0%

In the case of ONGC, foreign loans increased by 236.6% frm Rs.41.48 crores to Rs.139.62 crores in 1980-81. With these major changes/increase in equity and loans, the equity/loan ratio declined from 0.72% in 1979-80 to 0.42% in 1980-81.

ii) Capital Employed : Capital employed defined as the sum total of the net fixed assets and working capital of the public sector undertakings went up by 37.9% from Rs.2133.43 crores in 1979-80 to Rs.2942.91 crores in 1980-81. The corresponding increase in the preceding year was 42.2%. The break-up of the figures has revealed that the increase in 1980-81 over 1979-80 was mainly on account of increase in the net fixed assets and working capital of the under noted companies :

(Rs. Lakhs)

A. Net Fixed Assets

	1979-80	1980-81
1. ONGC	66265	84156
2. IOC	27280	36873
3. IPCL	2329	3056
4. HPCL	5801	6804
Total :	101675	130889

B. Working Capital

1. ONGC	11274	11951
2. IOC	22323	58593
3. BPCL	3467	9619
4. HPCL	8279	14069
5. CRL	1822	5889
Total :	47165	100121

iii) Sales Turnover : The sales turnover of all the Companies put together increased by 29.2% from Rs.8439.75 crores in 1979-80 to Rs.10901.18 crores in 1980-81. The corresponding increase in the preceding year was of the order of 26.6%. Despite the increase in sales turnover, gross profit expressed as a percentage of sales stood at 3.7% in 1980-81 as against 4.7% in 1979-80. Out of the total sales of Rs.10901.18 crores effected in 1980-81, IOC's share towards the sales turnover was 52.3%, BPCL's share 11.1% and HPCL's share 14.4% respectively.

iv) Profitability : A rising trend is perceptible in the overall profitability of the public sector undertakings under the purview of Department of Petroleum. The adjusted gross profits improved by 0.1% from Rs.397.58 crores in 1979-80 to Rs.397.94 crores in 1980-81. The corresponding increase in the preceding year was of the order of 15%. On the other hand, the adjusted net profits declined by 34.3% from Rs.189.06 crores in 1979-80 to Rs.124.25 crores in 1980-81. The adjusted net profit expressed as a percentage of paid-up capital and net worth went down from 22.8% and 12.0% in 1979-80 to 14.8% and 7.2% respectively in 1980-81. The return on capital employed measured in terms of gross profit before interest and taxation during the year 1980-81 has registered a declining trend from 18.6% to 13.5% in 1979-80 on account of deterioration of sales performance in relation to capital employed. The ratio of sales to capital employed went down from 395.6% in 1979-80 to 170.4% in 1980-81.

v) Dividends : There has been a steady increase in the quantum of dividend in respect of public sector undertakings over the last three years. This has been consistently increasing from Rs.4.67 crores in 1978-79 to Rs.43.83 crores in 1979-80 to Rs.44.01 crores in 1980-81. The highest dividend declared in absolute terms during 1980-81 was in respect of ONGC, which stood at Rs.20.37 crores, followed by IOC at Rs.11.50 crores and CRL at Rs.3.82 crores. These three undertakings accounted for 81% of the total dividends declared during 1980-81. Hydro-Carbons, Oil India Ltd., Bisco Lawrie Bridge & Roof, IPCL and BRPL did not declare any dividend during 1980-81.

I. Exploration & Production
(See Table No. 4)

This category includes the following companies and data of individual companies is given in Table Nos. 5 to 7 :-

(i) Oil & Natural Gas Commission (ONGC)
(ii) Hydro-Carbons India Limited (HIL)
(iii) Oil India Limited (OIL)

Summary of the result of the undertakings under this category for the last three years is as under :-

(Rs. Crores)

	1979-80	1979-80	1980-81
i) Equity	385.35	390.35	395.85
ii) Loans	377.64	463.07	682.25
iii)(a) Net fixed assets	474.39	743.86	917.63
(b) Working capital	159.55	158.20	120.05
Capital employed(a+b)	633.94	902.06	1037.68
iv) Sales turnover	512.93	545.30	467.21
v) Gross profits(adjusted)	160.62	173.66	48.89
vi) Net profits(adjusted)	92.40	103.79	-16.21
vii) Dividend declared	22.21	24.16	20.37
Percentage of :			
1. Net profit to equity	24.0	26.6	- 4.1
2. Net profit to net worth	16.6	17.3	- 2.6
3. Gross profit to capital employed	25.3	19.3	4.7
4. Sales to capital employed	80.9	60.4	45.0
5. Equity loan ratio	1.02	0.84	0.58

Salient points of the analysis are given as under :-

i) Capital Investment : There has been an increase in the employment of capital from Rs.853.42 crores in 1979-80 to Rs.1078.10 crores in 1980-81, thereby registering a growth of 26.3%. The corresponding growth during the preceding year was of the order of 11.8%. The increase during 1980-81 was on account increase in equity and loans of ONGC. As a result of changes in both equity and loans, the equity/debt ratio came down from 1.02 in 1978-79 to 0.84 in 1979-80 and to 0.58 in 1980-81. Thus, there is a declining trend during the three years.

ii) Capital Employed : The capital employed increased during the year to Rs.1037.68 crores from Rs.902.06 crores in 1979-80 thereby registering a growth of 14.9%. The corresponding increase during the preceding year was of the order of 42.3%. This increase was made up of increase in the net fixed assets to the tune of Rs.178.91 crores in 1980-81 (27%) and working capital by Rs.6.77 crores (6%) in ONGC. There has, however, been an overall decrease of Rs.38.15 crores in the working capital under this category in 1980-81.

iii) Sales turnover : The sales turnover under this category decreased by 14.3% from Rs.545.30 crores in 1979-80 to Rs.467.21 crores in 1980-81. There was, however, an increase of 6.3% in the preceding year. The gross profit expressed as percentage of sales turnover went down from 31.8% in 1979-80 to 10.5% in 1980-81.

iv) Profitability : There was a decline in the profitability under this category during the year 1980-81. The adjusted gross profits which stood at Rs.160.62 crores at the close of 1978-79 went upto Rs.173.66 crores in 1979-80, thereby registering an increase of 8.1% but again dived low to Rs.48.89 crores in 1980-81,

the decline being of the order of 71.8%. The adjusted net profits also showed a declining trend from Rs.92.40 crores in 1978-79 to Rs.103.49 crores in 1979-80 and to (-)Rs.16.21 crores in 1980-81. The profitability in relation to equity and net worth has declined from 26.6% and 17.3% in 1979-80 to (-)4.1% and (-)2.6% in 1980-81. The return on capital employed also declined from 19.3% in 1979-80 to 4.7% in 1980-81.

v) Dividends : The dividends declared went down from Rs.24.16 crores in 1979-80 to Rs.20.37 crores in 1980-81. This is on account of the fact that only ONGC paid out dividends in 1980-81 and OIL which had declared dividend to the extent of Rs.4.11 crores and Rs.4.20 crores in 1978-79 and 1979-80 respectively did not pay out any dividends in the year 1980-81 resulting in the decline of dividend under the category of Exploration & Production.

II. Refining & Marketing.

(Refer Table No. 8)

Financial structure and performance of the individual companies during the period 1978-79 to 1980-81 have been given in Table Nos.9 to 19, while consolidated summary of the refining & marketing companies taken together has been given in Table No.8.

Summary of the results of the undertakings under this category for the last three years is as under :-

(Rs. Crores)

	1978-79	1979-80	1980-81
1. Equity	138.71	140.44	146.07
2. Loans	165.16	503.66	1066.95
3. Capital employed	495.65	782.25	1425.05
3.1 Net fixed assets	394.38	383.50	498.47
3.2 Working capital	101.27	398.75	926.58
4. Sales turnover	5995.64	7639.27	10662.21
5. Gross profit(adjusted)	171.94	193.40	290.63
6. Net profit(adjusted)	92.81	72.90	98.83
7. Dividends	18.42	18.90	22.68

i) Capital Investment : Capital investment under this category increased from Rs.644.10 crores in 1979-80 to Rs.1213.02 crores in 1980-81, thereby registering an increase of 88.3%. The corresponding increase in the preceding year was in the vicinity of 111.9%. The increase in paid-up capital in 1980-81 was contributed by Lubrizol to the tune of Rs.4.20 crores, by Biocco Lawrie to the tune of Rs.23 lakhs and Bridge & Roof by 1.20 crores. So far as the raise in loans is concerned, the increase can be seen from the following table :-

(Rs. Crores)

Name of the Company	1979-80	1980-81	Increase
1. IOC	376.52	759.91	383.39
2. BPCL	15.77	78.95	63.18
3. HPCL	67.86	127.75	59.89
4. CRL	18.02	68.33	50.31
5. Biocco Lawrie	6.73	7.88	1.15

Foreign loans have, however, dwindled down from Rs.2.59 crores in 1979-80 to Rs.1.05 crores in 1980-81, thereby maintaining the declining trends of the previous years. As a result of changes in equity/loans, the ratio of the two came down from 0.28 in 1979-80 to 0.14 in 1980-81.

ii) Capital employed : Capital employed by the Refining & Marketing category at the end of 1980-81 amounted to Rs.1425.05 crores being represented by Rs.498.47 crores as net fixed assets and Rs.926.58 crores/rose by 82.1% during 1980-81 as compared with /as the 1979-80 of which the major share 71.3% was accounted for by IOC working alone. The corresponding increase in the 1979-80 over 1978-79 in capital. respect of IOC was. 73.4%. It was during this period that IOC The cap-capitalized about Rs.15.01 crores of its capital work-in-progress tal mostly under plant & machinery. employed

iii) Sales turnover : The combined sales turnover of the undertakings under this category increased from Rs.7639.27 crores in 1979-80 to Rs.10062.21 crores in 1980-81 registering a growth of 31.7%. The corresponding increase in the preceding year was of the order of 27.4%. The increase in sales turnover in the year 1980-81 was accompanied by an increase in gross profit which when expressed as a percentage of sales turnover stood at 2.9% as against 2.5% in 1979-80.

iv) Profitability : There was an improvement in the profitability in this category. The gross profits increased from Rs.193.40 crores in 1979-80 to Rs.290.63 crores in 1980-81, i.e. by 50%. The corresponding increase in the preceding year was to the tune of 12.4%. The adjusted net profits also went up by 35.5% from Rs.72.90 crores in 1979-80 to Rs.98.83 crores in 1980-81. The percentage of net profit to paid-up capital and net worth was higher in the year 1980-81 when compared with 1979-80. The return on capital employed which stood at 24.7% in 1979-80 went down to 20.4% in 1980-81.

v) Dividends : During the year 1980-81, the companies in this category declared dividends to the tune of Rs.22.68 crores as against Rs.18.90 crores which constituted an improvement of 20% over the preceding year. In the quantum of dividends, IOC ranked at top with Rs.11.50 crores followed by CRL, which paid out Rs.3.82 crores as dividends. Bridge & Roof and Biocco Lawrie did not declare any dividend during the year under review.

III. Petrochemicals & Other Down-stream Units

(Refer Table No. 20)

There are three Companies under this category, viz. Indian Petrochemicals Corporation Ltd., Petrofils Cooperative Ltd. and Dongaigaon Refinery & Petrochemicals Ltd. BRPL started production in February 1979 and has been included in review from 1979-80. The combined financial structure of the three undertakings under this category for the three years has been given in Table No.20, while those of the individual companies in Table Nos.21 to 23.

Summary of the results of the undertakings under this category for the last three years is as under :-

(Rs. Crores)

	1978-79	1979-80	1980-81
1. Equity	200.70	299.17	299.24
2. Loans	153.91	183.84	210.73
3. Capital employed	361.95	439.46	464.46
3.1 Net fixed assets	292.82	313.63	293.04
3.2 Working capital	69.13	125.83	171.42
4. Sales turnover	139.19	241.80	347.95
5. Gross profits (adjusted)	9.16	28.46	53.99
6. Net profits (adjusted)	(-)4.18	10.33	35.71
7. Dividend declared	-	0.73	0.88

Salient points of the analysis are given below :-

i) Capital Investment : An upward trend in the growth of capital investment continued during the year 1980-81. The total capital investment of the three undertakings under this category increased from Rs.483.01 crores in 1979-80 to Rs.509.97 crores in 1980-81 thereby registering a growth of 5.6%. The corresponding increase in the preceding year was 36.2%. As a result of changes/increases in equity and loans under this category, equity/loan ratio declined from 1.62 in 1979-80 to 1.42 in 1980-81.

ii) Capital employed : The capital employed by the three companies increased from Rs.439.46 crores in 1979-80 to Rs.464.46 crores in 1980-81, showing an increase of 5.7%. The capital employed in respect of two companies for the year 1978-79 amounted to Rs.361.95 crores as BRPL had not gone into production in 1978-79 and was not included in the annual review analysis.

iii) Sales turnover : Sales turnover of the three undertakings increased from Rs.241.80 crores in 1979-80 to Rs.347.95 crores, thereby registering an increase of 43.9% The sales turnover of the two undertakings, viz. IPCL & PCL was Rs.139.19 crores in 1978-79.

iv) Profitability : The gross profitability of the three undertakings under this category went up from Rs.28.46 crores in 1979-80 to Rs.53.99 crores in 1980-81, showing an increase of 89.7%. The adjusted gross profits of the two undertakings was Rs.9.16 crores at the close of 1978-79. Similarly, the adjusted net profits increased from Rs.10.33 crores in 1979-80 to Rs.35.71 crores in 1980-81, showing a growth of 245.7%. The combined position of IPCL and Petrofils at the end of 1978-79 was a net loss of Rs.481 lakhs being made up of the following constituents :-

(Rs. Lakhs)

IPCL	999 - net loss
Petrofils	518 - net profit
Net	481 - net loss

v) Dividends : Out of the three undertakings under this category, only Petrofils Cooperative Ltd. declared dividend amounting to Rs.73 lakhs and Rs.88 lakhs in 1979-80 and 1980-81 respectively. In 1978-79 no dividend was paid out by Petrofils also.

IV. Engineering Services

There is only one Company under this category, viz. Engineers India Ltd. (EIL). The financial structure of the Company over the three years ending 1980-81 has been given in Table No.24.

Summary of the result of this Company for the last three years is as under :-

(Rs. Crores)

	1978-79	1979-80	1980-81
1. Equity	0.25	0.25	0.50
2. Loans	0.18	Nil	0.13
3. Capital employed	8.03	9.71	15.72
4. Income from services rendered	15.20	13.38	23.81
5. Gross profit (adjusted)	3.85	2.06	4.43
6. Net profit (adjusted)	2.28	2.04	5.92
7. Dividend declared	0.04	0.04	0.08

From the figures given above, it would be seen that the income of EIL has gone up from Rs.13.38 crores in 1979-80 to Rs.23.81 crores at the end of 1980-81, thereby registering an increase of 77.9%. However, income of EIL was more in 1978-79, i.e. Rs.15.20 crores when compared with that in 1979-80 which was Rs.13.38 crores. The adjusted gross profits improved from Rs.2.06 crores in 1979-80 to Rs.4.43 crores in 1980-81, showing an increase of 115.0%. The adjusted net profit also rose from Rs.2.04 crores in 1979-80 to Rs.5.92 crores in 1980-81 with a growth of 190.2%. The dividend

paid by EIL was Rs.8 lakhs in 1980-81 as compared with Rs.4 lakhs in 1978-79 and 1979-80 respectively.

II. QUICK REVIEW OF FINANCIAL PERFORMANCE - 1981-82

During 1981-82, there were altogether 18 running enterprises under the purview of the Department of Petroleum, three under the catogory "Exploration & Production", 11 under the catogory "Refining & Marketing", three under "Petrochemicals" and one under "Engineering Services". This includes Petrofils which is in the co-operative sector.

According to provisional figures on the financial position/ performance of these performances available in E&S Division, the 18 enterprises together employed a total capital of Rs.3855.92 crores and held a paid up capital of Rs.883.56 crores as per details of the enterprise-wise financial performance in Annexure No.1. During 1981-82 these enterprises had an annual sales turnover of Rs.15713.23 crores and they earned a gross profit of Rs.1243.16 crores the corresponding figures (unadjusted) in the year 1980-81 being Rs.10902.19 crores and Rs.431.54 crores respectively. Thus, while sales turnover registered an increase of 44%, the gross profit increased by 188%. The net profit after tax amounted to Rs.583.52 crores as against Rs.163.19 crores in 1980-81. The ratio of net profit to paid up capital and net worth worked out to 66.0% and 25.6% respectively compared with the figures of 19.3% and 9.4% achieved during 1980-81. Figures for 1981-82 showed marked improvement.

The overall financial results for the year 1981-82 under each of the above mentioned categories are summarised below :-

(Rs. Crores)

	Exploration & Production	Refining & Marketing	Petrochemical & other down stream units	Engineering Services	TOTAL
1. Equity	395.85	187.96	299.25	0.50	883.56
2. Loans	996.95	393.81	178.12	Nil	1568.88
3. Net worth	1021.97	808.54	432.58	19.75	2282.84
4. Capital employed	1725.21	1612.67	501.02	17.02	3855.92
5. Sales	1638.16	13528.96	516.61	29.50	15713.23
6. Gross profit	889.84	283.06	84.66	5.60	1243.16
7. Net profit	400.90	112.17	66.95	3.50	583.52
Percentage of :					
1. Net profit to equity	101.2	59.7	22.4	700.0	66.0
2. Net profit to net worth	39.2	13.9	15.5	17.7	25.6
3. Gross profit to capital employed	50.4	17.6	16.9	32.9	32.2
4. Sales to capital employed	95.0	838.9	103.1	173.3	407.5
5. Equity/loan ratio	0.39	0.47	1.68	Nil	0.56

It will be seen from the statement that with the exception of Hydro-Carbons India Ltd. and Biecco Lawrie Limited, all the Companies under the purview of Department of Petroleum have made net profits. Oil & Natural Gas Commission (ONGC) has earned the highest gross profit of Rs.734.32 crores with IOC standing close as second with Rs.178.11 crores. OIL which was taken over by the Government in October 1981 and whose accounts are still under finalization & completion has shown a provisional gross profit of Rs.135.17 crores. Likewise ONGC has earned the highest net profit of Rs.374.39 crores, followed by IOC with a net profit of Rs.79.84 crores during the year 1981-82. The third in line of succession to earn profit is IPCL with a net profit of Rs.54.53 crores.

ANNEXURE-I

STATEMENT-I

FINANCIAL STRUCTURE/PROFITABILITY OF THE JOINT/PUBLIC SECTOR UNDERTAKING UNDER THE PURVIEW OF DEPARTMENT OF PETROLEUM
1981-82 (PROVISIONAL)

Rs./Lakhs

NAME OF THE UNDERTAKING	Paid-up Capital	Loans	Net-Worth	Capital Employed	Sales	Gross Profit	Net Profit	Dividend Paid	Percentage of N.P to paid up Cap.	Percentage of N.P to N.W.	Percentage of G.P. to C.E.
1	2	3	4	5	6	7	8	9	10	11	12
1. Exploration & Prodn.	39585	99695	102197	172521	163816	86984	40090	2057	101.2	39.2	50.4
1. O. N. G. C.	34285	94472	93043	160217	137908	73432	37437	2057	109.2	40.2	45.8
2. H. I. L.	2500	Nil	2320	2320	Nil	35	- 43	Nil	Loss	Loss	1.5
3. O. I. L.	2800	5223	6834	9984	25908	13517	2696	Nil	96.3	39.4	135.4
2. Refining & Marketing	18796	39381	80854	161267	1352896	28306	11217	2751	59.7	13.9	17.6
4. I. O. C.	12327	27076	56843	102333	805750	17811	7984	1726	64.8	14.0	17.4
5. H. P. C. L.	1520	4718	10555	21275	197300	4284	1229	213	80.9	11.6	20.1
6. B. P. C. L.	1454	Nil	7411	13729	152481	3129	1184	204	81.4	16.0	22.8
7. C. R. L.	700	2842	971	16464	70645	791	323	382	46.2	33.3	4.8
8. M. R. L.	1288	2832	2960	2720	73162	1140	248	110	19.3	8.4	42.0
9. I. B. P.	240	Nil	914	743	40300	474	225	39	93.7	24.6	63.8
10. Biecco Lawrie	134	911	-711	190	590	-23	-155	Nil	Loss	Loss	Loss
11. Balmer Lawrie	189	280	701	1485	4373	462	111	30	58.8	15.8	31.1
12. Bridge & Roof	424	602	-131	819	3634	118	4	-	1.0	Neg.	14.4
13. Lubrizol India Ltd.	480	20	1161	1275	4396	72	45	43	9.4	3.9	5.6
14. Indian Oil Bldg.	40	Nil	180	234	265	48	19	4	47.5	10.6	20.5
3. Petrochemical & Other Down Stream Units.	29925	17812	43258	50102	51661	8466	6695	88	22.4	15.5	16.9
15. I. P. C. L.	18600	9833	29673	37038	40016	6970	5453	-	29.3	18.4	18.8
16. Petrofils	1475	996	3652	3506	3229	1014	892	88	60.5	24.4	28.9
17. B.R.P.L.	9850	6983	9953	9558	8416	482	350	Nil	3.5	3.5	5.0
4. Engineering Services.	50	Nil	1975	1702	2950	560	350	8	700.0	17.7	32.9
18. E. I. L.	50	Nil	1975	1702	2950	560	350	8	700.0	17.7	32.9
GRAND T O T A L	88356	156888	228284	387592	1571323	124316	58352	4904	66.0	25.6	32.2

TABLE NO :

CONSOLIDATED FINANCIAL STRUCTURE

1980 - 81

NAME OF THE COMPANY :- All Categories.

Rs/Lakhs.

ITEM	Exploration & Prodn.	Refining & Makt.	Petrochemicals	Engineering	TOTAL
1	2	3	4	5	6
1. Authorised Capital	8000*	24295	32000	200	64495
2.i) Paid-up Capital	39585	14607	29924	50	84166
ii)Reserves & Surpluses	28915	59496	7361	1582	97354
iii)Preference Capital	Nil	50	Nil	-	50
3.1) Total Loans	68225	106695	21073	13	196006
ii) Of which Foreign	13993	105	216	-	14314
4. Net Worth	62789	72380	36739	1632	173540
5.1)Net Fixed Assets	91763	49847	29304	419	171333
ii) Working Capital	12005	92658	17142	1153	122958
iii)Capital Employed (i+ii)	103768	142505	46446	1572	294291
6.Sales/Operating Income	46721	1006221	34795	2381	1090118
7.Adjusted Gross Profit	4889	29063	5399	443	39794
8.Adjusted Net Profit(-)	1621	9883	3571	592	12425
9. Dividends Declared	2037	2268	88	8	4401
10. Tax Provision/Paid	Nil	7333	Nil	180	7513
% Age of :-					
a) Net Profit to Equity(-)	4.1	67.7	11.9	1184.0	14.8
b)Net Profit to Net Worth(-)	2.6	13.7	9.7	36.3	7.2
c) Gross Profit to Cap.Emp.	4.7	20.4	11.6	28.2	13.5
d) Sales to Capital Emp.	45.0	706.1	74.9	151.5	370.4
e) Gross Profit to Sales	10.5	2.9	15.5	18.6	3.7
f) Equity Loan Ratio	0.58	0.13	1.42	3.84	0.42

* = There is no authorised capital fixed in respect of ONGC.

Source :- Annual Reports of the Companies.

TABLE No.2.

CONSOLIDATED FINANCIAL STRUCTURE- 1979-80.

NAME OF THE COMPANY :- All Categories.

Rs./Lakhs.

I T E M	Exploration & Prodn.	Refining & Mktg.	Petrochemicals.	Engineering	TOTAL
1.	2.	3.	4.	5.	6.
1. Authorised Capital	8000*	24295	32000	200	64495
2.i) Paid-up Capital	39035	14044	29917	25	83021
ii) Reserves & Surpluses	26526	50447	3294	979	81246
iii) Preference Capital	-	50	-	-	50
3.i) Total Loans Including Cash Credit/Advances from the Banks/etc.	46307	50366	18384	-	115057
ii) Of which Foreign	4190	259	294	-	4743
4. Net Worth	60143	63060	33203	1004	157415
5.i) Net Fixed Assets	74386	38350	31363	378	144477
ii) Working Capital	15820	39875	12578	593	68866
iii) Capital Employed (i + ii)	90206	78225	43941	971	213343
6. Sales	54530	763927	24180	1338	843975
7. Adjusted Gross Profit	17366	19340	2846	206	39758
8. Adjusted Net Profit	10379	7290	1033	204	18906
9. Dividends Declared	2416	1890	73	4	4383
10. Tax Provision/ Paid	7269	9731	-	-	17000
% Age of :-					
a) Net Profit to Equity	26.6	51.9	9.5	816.0	22.8
b) Net Profit to Net Worth	17.3	11.6	3.1	20.3	12.0
c) Gross profit to Cap.Emp.	19.3	24.7	6.5	21.2	18.6
d) Sales to Capital Emp.	60.4	976.6	55.0	137.8	395.6
e) Gross Profit to Sales	19.3	2.5	11.8	15.4	4.7
f) Equity Loan Ratio	0.84	0.27	1.63	Nil	0.72

*= No authorised capital has been fixed in respect of ONGC.

Source= Annual Reports of the Companies.

Table No.-3.

CONSOLIDATED FINANCIAL STRUCTURE 1978 - 79.

NAME OF THE COMPANY : - All Categories.

Rs./Lakhs.

I T E M.	Exploration & Production	Refining & Marketing	Petro-chemi-cals.	Enginee-ring	TOTAL
1.	2.	3.	4.	5.	6.
1. Authorised Capital	8000	23890	22000	200	54090
2.i) Paid-up Capita-l	38535	13871	20070	25	72501
ii) Reserves & Surpluses	21924	41918	2113	776	66731
iii) Preference Capital	-	50	-	-	50
3.i) Total Loans Including Cash Credit/ Advances from the Banks etc.	37764	16516	15391	18	69689
ii) Of which Foreign	4016	493	367	-	4876
4. Net Worth	55626	54999	22080	801	133506
5.i) Net Fixed Assets	47439	39438	29282	344	116503
ii) Working Capital	15955	10127	6913	459	33454
iii) Capital Employed (i + ii)	63394	49565	36195	803	149957
6. Sales/Operating Income	51293	599564	13919	1520	666296
7. Adjusted Gross Profit	16062	17194	916	385	34557
8. Adjusted Net Profit	9240	9281	(-) 481	228	18268
9. Dividends Declared	2221	1842	-	4	4067
10. Tax Provision/Paid	900	7178	Nil	160	8178
% Age of :-					
a) Net Profit to Equity	24.0	66.9	-	912.0	25.2
b) Net Profit to Net Worth	16.6	16.9	-	28.5	13.7
c) Gross Profit to Cap.Emp.	25.3	34.7	2.5	47.9	23.0
d) Sales to Capital Emp.	80.9	1209.7	38.5	189.3	444.3
e) Gross Profit to Sales	31.3	2.9	6.6	25.3	5.2
f) Equity Loan Ratio	1.02	0.84	1.30	1.39	1.04

NOTE :- There is no authorised Capital for ONGC in the Exploration & Production Category.

Source:- Annual Reports of the Companies.

TABLE No.4.

CONSOLIDATED FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Exploration & Production

Rs./Lakhs.

I T E M	1978-79	1979-80	1980-81
1.	2.	3.	4.
1. Aut-horised Capital*	8000	8000	8000
2.i) Paid-up Capital	38535	39035	39585
ii) Reserves & Surpluses	21924	26526	28915
iii) Preference Capital	Nil	Nil	Nil
3.i) Total Loan Including Cash Credit/Advances from the Bank etc.	37764	46307	68225
ii) Of which Foreign	4016	4190	13993
4. Net Worth	55626	60143	62789
5.i) Net Fixed Assets	47439	74386	91763
ii) Working Capital	15955	15820	12005
iii) Capital Employed (i + ii)	63394	90206	103768
6. Sales/Operating Income	51293	54530	46721
7. Adjusted Gross Profit	16062	17366	4889
8. Adjusted Net Profit	9240	10379	(-)1621
9. Dividends Declared	2221	2416	2037
10. Tax Provision/ Paid	900	7269	Nil
% Age of :-			
a) Net Profit to Equity	24.0	26.6	(-)4.1
b) Net Profit to Net Worth	16.6	17.3	(-)2.6
c) Gross Profit to Cap. Emp.	25.3	19.3	4.7
d) Sales to Capital Emp.	80.9	60.5	45.0
e) Gross Profit to Sales	31.3	31.8	10.5
f) Equity Loan Ratio	1.02	0.84	0.58

*= No authorised capital has been fixed for O.N.G.C.

Source:- Annual Reports of the Company.

TABLE No.-5.

CONSOLIDATED FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Oil & Natural Gas Commission.

Rs./Lakhs.

I T-E M	1978 - 79	1979 - 80	1980-- 81.
1.	2.	3.	4.
1. Authorised Capital *	-	-	-
2.i) Paid-Up Capital	33235	33735	34285
ii) Reserves & Surpluses	18527	22055	24675
iii) Preference Capital	-	-	-
3.i) Total Loans Including-Cash Credit/Advances from the Banks etc.	30505	39161	61100
ii) Of which Foreign	3966	4148	13962
4. Net Worth	48118	52558	56485
5.i) Net Fixed Assets @	39872	66265	84156
ii) Working Capital	12310	11274	11951
iii) Capital Employed (i + ii)	52182	77539	96107
6. Sales/Operating Income	37757	43150	43518
7. Adjusted Gross Profit	10425	13327	6894
8. Adjusted Net Profit	7366	5586	2044
9. Dividends Declared	1810	1996	2037
10. Tax Provision/ Paid	900	5200	Nil
% Age of :-			
a) Net Profit to Equity	22.2	16.5	6.0
b) Net Profit to Net Worth	15.3	10.6	3.6
c) Gross Profit to Capital Emp.	20.0	17.2	7.2
d) Sales to Capital Emp.	72.4	55.6	45.3
e) Gross Profit to Sales	27.6	30.9	15.8
f) Equity Loan Ratio	1.09	0.86	0.56

*= No authorised capital has been fixed for the commission.

@= Net fixed assets includes producing properties.

Source:- Annual Reports of the Company.

TABLE NO.-6.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Hydro Carbons India Limited.

Rs./Lakhs.

ITEM	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	3000	3000	3000
2.i) Paid-up Capital	2500	2500	2500
ii) Reserves & Surpluses	598	451	322
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	-	-	-
ii) Of which Foreign	-	-	-
4. Net Worth	3098	2331	2262
5.i) Net Fixed Assets	1	417	331
ii) Working Capital	1759	1914	1791
iii) Capital Employed (i + ii)	1760	2331	2122
6. Sales/Operating Income	2939	No Sales	No Sales
7. Adjusted Gross Profit	1898	(-) 106	(-) 19
8. Adjusted Net Profit	405	(-) 106	(-) 169
9. Dividends Declared	-	-	-
10. Tax Provision/ Paid	Nil	Nil	Nil
% Age of :-			
a) Net Profit to Equity	16.2	-	Loss
b) Net Profit to Net Worth	13.1	-	Loss
c) Gross Profit to Capital Emp.	107.8	-	Nil
d) Sales to Capital Emp.	167.0	-	Loss
e) Gross Profit to Sales	64.6	-	Nil
f) Equity Loan Ratio	-	-	

Source :- Annual Reports of the Company.

TABLE No.-7.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Oil India Limited.

Rs./Lakhs.

I T . E M	1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
1. Authorised Capital	5000	5000	5000
2.i) Paid-up Capital	2800	2800	2800
ii) Reserves & Surpluses	2799	3980	3918
iii) Preference Capital	Nil	Nil	Nil
3.i) Total Loan Including Cash Credit/Advances from the Banks etc.	7259	7146	7125
ii) Of which Foreign	50	42	31
4. Net Worth	4410	5254	4042
5.i) Net Fixed Assets	7566	7704	7276
ii) Working Capital	1886	2632	(-)1737
iii) Capital Employed (i + ii)	9452	10336	5539
6. Sales/Operating Income	10597	11380	3203
7. Gross Profit	3739	4145	(-)1986
8. Net Profit	1469	4899	(-)3496
9. Dividends Declared	411	420	Nil
10. Tax Provision/ Paid	Nil	2069	Nil
% Age Of :-			
a) Net Profit to Equity	52.5	174.9	Loss
b) Net Profit to Net Worth	33.3	93.2	Loss
c) Gross Profit to Cap. Emp.	39.6	40.1	Loss
d) Sales to Capital Emp.	112.1	110.1	57.8
e) Gross Profit to Sales	35.3	36.4	Loss
f) Equity Loan Ratio	0.39	0.39	0.39

N.B. - In the absence of Annual Reports of the Company data recieved from the Company has been adopted for the year 1980 without any moddification/adjustment.

TABLE No.-8.

CONSOLIDATED FINANCIAL STRUCTURE

NAME OF THE COMPANY : - Refining & Marketing.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	23890	24295	24295
2.i) Paid-up Capital	13871	14044	14607
ii) Reserves & Surpluses	41918	50447	59496
iii) Preference Capital	50	50	50
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	16516	50366	106695
ii) Of which Foreign	493	259	105
4. Net Worth	54999	63060	72380
5.i) Net Fixed Assets	39438	38350	49847
ii) Working Capital	10127	39875	92658
iii) Capital Employed (i + ii)	49565	78225	142505
6. Sales/Operating Income	599564	763927	1006221
7. Adjusted Gross Profit	17194	19340	29063
8. Adjusted Net Profit	9281	7290	9883
9. Dividends Declared	1842	1890	2268
10. Tax Provision/ Paid	7178	9731	7333
% Age of :-			
a) Net Profit to Equity	66.9	51.9	67.7
b) Net Profit to Net Worth	16.9	11.6	13.7
c) Gross Profit to Cap. Emp.	34.7	24.7	20.4
d) Sales to Capital Emp.	1209.7	976.6	706.1
e) Gross Profit to Sales	2.9	2.5	2.9
f) Equity Loan Ratio	0.84	0.28	0.14

NOTE :- Figures in the year 1979-80 have undergone a revision due to receipt of actual data of Bridge & Roof Co., Previously those figures were provisional due to non-completion & non-finalization of the annual accounts.

2. Annual Reports of the Company.

TABLE No-9.

FINANCIAL STRUCTURE.

NAME OF THE COMPANY :- Indian Oil Corporation Limited.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	15000	15000	15000
2.i) Paid-up Capital	8218	8218	8218
ii) Reserves & Surpluses	29096	35452	42367
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	11021	37652	75991
ii) Of which Foreign	357	230	105
4. Net Worth	37314	43670	50585
5.i) Net Fixed Assets	28685	27280	36873
ii) Working Capital	(-)129	22323	58593
iii) Capital Employed (i + ii)	28556	49603	95466
6. Sales/Operating Income	356399	447635	571094
7. Adjusted Gross Profit	9889	12047	17627
8. Adjusted Net Profit	6466	5317	7677
9. Dividends Declared	986	986	1150
10. Tax Provision/ Paid	3065	5425	2750
% Age of :-			
a) Net Profit o to Equity	78.7.	64.7	93.4
b) Net Profit to Net Worth	17.3	12.2	15.2
c) Gross Profit to Cap. Emp.	34.6	24.2	18.5
d) Sales to Capital Emp.	1248.1	902.4	598.2
e) Gross Profit to Sales	2.8	2.7	3.1
f) Equity Loan Ratio	0.75	0.21	0.11

Source :- Annual Reports of the Company.

TABLE No.-10.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Bharat Petroleum Corporation Ltd.

Rs./Lakhs.

I T E M	Y 1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
1. Authorised Capital	2500	2500	2500
2.i) Paid-up Capital	1454	1454	1454
ii) Reserves & Surpluses	3191	4105	4979
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	338	1577	7895
ii) Of which Foreign	-	-	-
4. Net Worth	4645	5559	6433
5.i) Net Fixed Assets	2060	2329	3056
ii) Working Capital	2256	3467	9619
iii) Capital Employed (i + ii)	4316	5796	12675
6. Sales/Operating Income	77712	93618	121413
7. Adjusted Gross Profit	2494	2383	2674
8. Adjusted Net Profit	877	832	1029
9. Dividends To be Declared	174	174	204
10. Tax Provision/ Paid	1589	1505	1267
% Age of :-			
a) Net Profit to Equity	60.3	57.2	70.7
b) Net Profit to Net Worth	18.9	15.0	16.0
c) Gross Profit to Cap. Emp.	57.8	41.1	21.1
d) Sales to Capital Emp.	1800.6	1615.2	957.9
e) Gross Profit to Sales	3.2	[illegible]	2.2
f) Equity Loan Ratio	4.2	[illegible]	0.18

Source :- Annual Reports of the Company.

TABLE No.-11.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Hindustan Petroleum Corporation Ltd.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980.- 81.
1.	2.	3.	4.
1. Authorised Capital	2075	2075	2075
2.i) Paid-up Capital	1520	1520	1520
ii) Reserves & Surpluses	6075	7054	8491
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	1571	6786	12775
ii) Of which Foreign	49	Nil	Nil
4. Net Worth	7595	8114	9538
5.i) Net Fixed Assets	5470	5801	6804
ii) Working Capital	3043	8279	14069
iii) Capital Employed (i + ii)	8513	14080	20873
6. Sales/ Operating Income	88365	110367	157383
7. Adjusted Gross Profit	2674	2623	4102
8. Adjusted Net Profit	1339	719	831
9. Dividends Declared	182	182	213
10. Tax Provision/ Paid	1240	1349	1735
% Age of :-			
a) Net Profit to Equity	88.1	47.3	54.7
b) Net Profit to Net Worth	17.6	8.9	8.7
c) Gross Profit to Cap. Emp.	31.4	18.6	19.7
d) Sales to Capital Emp.	1038.0	783.9	754.0
e) Gross Profit to Sales	3.0	2.4	2.6
f) Equity Loan Ratio	0.97	0.22	0.11

Source :- Annual Reports of the Company.

TABLE No.12.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Cochin Refineries Limited.

Rs./Lakhs.

I T.E. M	1978 - 79	1979.- 80	1980.- 81.
1.	2.	3.	4.
1. Authorised Capital	1500	1500	1500
2.i) Paid-up Capital	700	700	700
ii) Reserves & Surpluses	566	509	330
iii) Preference Capital	-	-	-
3.i) Total Loan Including-Cash Credit/Advances from the Banks etc.	1433	1802	6833
ii) Of which Foreign	87	29	-
4. Net Worth	1266	1209	1030
5.i) Net Fixed Assets	1186	1002	837
ii) Working Capital	1430	1822	5887
iii) Capital Employed (i + ii)	2616	2824	6724
6. Sales/ Operating Income	25445	38538	56072
7. Adjusted Gross Profit	603	628	205
8. Adjusted Net Profit	188	6	19
9. Dividends Declared	240	240	38
10. Tax Provision/ Paid	390	487	50
% Age of :-			
a) Net Profit to Equity	26.9	0.9	28.
b) Net Profit to Net Worth	14.8	0.5	19.
c) Gross Profit to Capital Emp.	23.1	22.2	30.5
d) Sales to Capital Emp.	972.7	1364.7	833.9
e) Gross Profit to Sales	2.4	1.6	3.7
f) Equity Loan Ratio	0.49	0.39	0.10

Source :- Annual Reports of the Company.

TABLE No.13.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Madras Refineries Limited.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 -.81.
1.	2.	3.	4.
1. Authorised Capital	1350	1350	1350
2.i) Paid-up Capital	1287	1288	1288
ii) Reserves & Surpluses	1431	1491	1545
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	14	59	178
ii) Of which Foreign	-	-	-
4. Net Worth	2694	2755	2815
5.i) Net Fixed Assets	1004	738	707
ii) Working Capital	1587	1840	1728
iii) Capital Employed (i + ii)	2591	2578	2435
6. Sales/Operating Income	26481	43455	60443
7. Adjusted Gross Profit	777	843	1507
8. Adjusted Net Profit	287	244	(-)16
9. Dividends Declared	193	193	193
10. Tax Provision/ Paid	485	595	460
% Age of :-			
a) Net Profit to Equity	22.3	18.9	(-)1.2
b) Net Profit to Net Worth	10.7	8.9	(-)0.6
c) Gross Profit to Cap. Emp.	30.0	32.7	61.9
d) Sales to Capital Emp.	1022.0	1685.6	2482.3
e) Gross Profit to Sales	2.9	1.9	2.5
f) Equity Loan Ratio	91.93	21.83	7.2

Source :- Annual Reports of the Company.

TABLE No.14.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Indo-Burma Petroleum Company.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	300	300	300
2.i) Paid-up Capital	160	160	160
ii) Reserves & Surpluses	294	379	517
iii) Preference Capital	50	50	50
3.i) Total Loans Including-Cash Credit/Advances from the Banks etc.	558	453	469
ii) Of which Foreign			
4. Net Worth	504	589	727
5.i) Net Fixed Assets	351	401	563
ii) Working Capital	142	(-) 124	46
iii) Capital Employed (i + ii)	493	277	609
6. Sales/ Operating Income	16335	20562	28222
7. Adjusted Gross Profit	77	134	278
8. Adjusted Net Profit	19	65	113
9. Dividends Declared	24	28	32
10. Tax Provision/ Paid	25	40	139
% Age of :-			
a) Net Profit to Equity	11.9	40.6	70.6
b) Net Profit to Net Worth	3.8	11.0	15.5
c) Gross Profit to Capital Emp.	15.6	48.4	45.6
d) Sales to Capital Emp.	3313.4	7423.1	4634.2
e) Gross Profit to Sales	0.5	0.7	1.0
f) Equity Loan Ratio	0.29	0.35	0.34

Source :- Annual Reports of the Company.

TABLE No.15.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Lubrizol India Limited.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	75	480	480
2.i) Paid-up Capital	60	60	480
ii) Reserves & Surpluses	864	969	679
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	-	-	23
ii) Of which Foreign	-	-	-
4. Net Worth	924	1029	1159
5.i) Net Fixed Assets	278	272	276
ii) Working Capital	646	742	881
iii) Capital Employed (i + ii)	924	1014	1157
6. Sales/Operating Income	2368	2829	3819
7. Adjusted Gross Profit	421	371	494
8. Adjusted Net Profit	171	160	190
9. Dividends Declared	11	53	60
10. Tax Provision/ Paid	245	210	301
% Age of :-			
a) Net Profit to Equity	285.0	266.7	39.6
b) Net Profit to Net Worth	18.5	15.5	16.4
c) Gross Profit to Cap. Emp.	45.6	36.6	42.7
d) Sales to Capital Emp.	256.3	279.0	330.1
e) Gross Profit to Sales	17.8	13.1	12.9
f) Equity Loan Ratio	-	-	20.9

Source :- Annual Reports of the Company.

TABLE No.-16.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Balmer Lawrie & Co. Limited.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	300	300	300
2.i) Paid-up Capital	189	189	189
ii) Reserves & Surpluses	262	336	431
iii) Preference Capital	-	-	-
3.i) Total Loans Including-Cash Credit/Advances from the Banks etc.	311	618	1006
ii) Of which Foreign	-	-	-
4. Net Worth	451	525	620
5.i) Net Fixed Assets	171	247	424
ii) Working Capital	515	767	1145
iii) Capital Employed (i + ii)	686	1014	1569
6. Sales/Operating Income	3510	3851	4077
7. Adjusted Gross Profit	212	291	354
8. Adjusted Net Profit	80	106	118
9. Dividends Declared	28	30	30
10. Tax Provision/ Paid	79	114	100
% Age of :-			
a) Net Profit to Equity	42.3	56.1	62.4
b) Net Profit to Net Worth	17.7	20.2	19.0
c) Gross Profit to Cap. Emp.	30.9	28.6	22.6
d) Sales to Capital Emp.	511.7	379.6	259.6
e) Gross Profit to Sales	6.0	7.6	8.7
f) Equity Loan Ratio	0.61	0.33	0.19

Source :- Annual Reports of the Company.

TABLE No.-17.

FINANCIAL STRUCTURE

NAME OF THE UNCOMPANY :- Biecco Lawrie Limited.

Rs./Lakhs.

I T. E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	250	250	250
2.i) Paid-up Capital	33	111	134
ii) Reserves & Surpluses	5	6	12
iii) Preference Capital	Nil	Nil	Nil
3.i) Total Loans Including-Cash Credit/Advances from the Banks etc.	555	673	788
ii) Of which Foreign	-	-	-
4. Net Worth	(-)360	(-)425	(-)557
5.i) Net Fixed Assets	39	41	61
ii) Working Capital	158	228	190
iii) Capital Employed (i + ii)	197	269	251
6. Sa-les/Operating Income	337	399	503
7. Adjusted Gross Profit	(-)89	(-)57	(-)49
8. Adjusted Net Profit	(-)157	(-)140	(-)150
9. Dividends Declared	Nil	Nil	Nil
10. Tax Provision/ Paid	Nil	Nil	Nil
% Age Of :-			
a) Net Profit to Equity	-	-	Loss
b) Net Profit to Net Worth	-	-	Loss
c) Gross Profit to Cap. Emp.	-	-	Loss
d) Sales to Capital Emp.	177.1	148.3	200.4
e) Gross Profit to Sales	-	-	Loss
f) Equity Loan Ratio	0.06	0.16	0.17

Source :- Annual Reports of the Company.

TABLE No. 18.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Bridge & Roof Co. Limited.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	500	500	500
2.i) Paid-up Capital	210	304	424
ii) Reserves & Surpluses	18	26	20
iii) Preference Capital	-	-	-
3.i) Total Loan Including-Cash Cridit/Advances from the Banks etc.	715	728	707
ii) Of which Foreign	-	-	-
4. Net Worth	(-)190	(-)125	(-)135
5.i) Net Fixed Assets	93	121	133
ii) Working Capital	431	484	439
iii) Capital Employed (i + ii)	524	605	572
6. Sales/ Operating Income	2424	2487	2962
7. Adjusted Gross Profit	82	62	(-)17
8. Adjusted Net Profit	(-)14	(-)28	(-)124
9. Dividends Declared	-	-	-
10. Tax Provision/ Paid	-	-	-
% Age of :-			
a) Net Profit to Equity	Loss	Loss	Loss
b) Net Profit to Net Worth	Loss	Loss	Loss
c) Gross Profit to Capital Emp.	15.6	10.2	Loss
d) Sales to Capital Emp.	462.6	411.1	517.8
e) Gross Profit to Sales	3.4	2.5	Loss
f) Equity Loan Ratio	0.29	0.41	0.60

NOTE :- Figures for the year 1980-81 are Provisional and unaudited and without any adjustment of Gross Profit and Net Profit.

TABLE No.19.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Indian Oil Blending Limited.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	40	40	40
2.i) Paid- up Capital	40	40	40
ii) Reserves & Surpluses	116	120	125
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	-	18	30
ii) Of which Foreign	-	-	-
4. Net Worth	156	160	165
5.i) Net Fixed Assets	101	118	113
ii) Working Capital	48	47	61
iii) Capital Employed (i + ii)	149	165	174
6. Sales/Operating Income	188	183	237
7. Adjusted Gross Profit	54	15	42
8. Adjusted Net Profit	25	9	18
9. Dividends Declared	4	4	4
10. Tax Provision/ Paid	-	6	21
% Age of :-			
a) Net Profit to Equity	62.5	22.5	45.0
b) Net Profit to Net Worth	16.0	5.6	10.9
c) Gross Profit to Cap. Emp.	36.2	9.1	24.1
d) Sales to Capital Emp.	126.2	110.9	136.2
e) Gross Profit to Sales	28.7	8.2	17.7
f) Equity Loan Ratio	-	2.22	1.33

Source :- Annual Reports of the Company.

TABLE No.20

CONSOLIDATED FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Petrochemicals & Other Down Stream Units.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
1. Authorised Capital	22000	32000	32000
2.i) Paid-up Capital	20070	29917	29924
ii) Reserves & Surpluses	2113	3294	7361
iii) Preference Capital	-	-	Nil
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	15391	18384	21073
ii) Of which Foreign	367	294	216
4. Net Worth	22080	33208	36739
5.i) Net Fixed Assets	29282	31363	29304
ii) Working Capital	6913	12583	17142
iii) Capital Employed (i + ii)	36195	43946	46446
6. Sales/Operating Income	13919	24180	37495
7. Adjusted Gross Profit	916	2846	5399
8. Adjusted Net Profit	(-) 481	1033	3573
9. Dividends Declared	-	73	38
10. Tax Provision/ Paid	Nil	Nil	Nil
% Age of :-			
a) Net Profit to Equity	Loss	3.5	11.9
b) Net Profit to Net Worth	Loss	3.1	9.7
c) Gross Profit to Cap. Emp.	2.5	6.5	11.6
d) Sales to Capital Emp.	38.5	55.0	80.7
e) Gross Profit to Sales	6.6	11.8	14.4
f) Equity Loan Ratio	1.30	1.62	1.42

Source :- Annual Reports of the Company.

TABLE No.21.

FINANCIAL STRUCTURE.

NAME OF THE COMPANY :- Indian Petrochemicals Corp. Ltd.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
1. Authorised Capital	20000	20000	20000
2.i) Paid-up Capital	18600	18600	18600
ii) Reserves & Surpluses	1643	2213	5620
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	13861	15992	16635
ii) Of which Foreign	367	294	216
4. Net Worth	20243	20813	24220
5.i) Net Fixed Assets	26995	24935	22738
ii) Working Capital	6468	11093	15700
iii) Capital Employed (i + ii)	33463	36028	38438
6. Sales/Operating Income	9294	17263	28073
7. Adjusted Gross Profit	213	1882	5091
8. Adjusted Net Profit	(-) 999	465	3390
9. Dividends Declared	-	-	-
10. Tax Provision/ Paid	-	-	-
% Age of :-			
a) Net Profit to Equity	Loss	2.5	18.2
b) Net Profit to Net Worth	Loss	2.2	14.0
c) Gross Profit to Cap. Emp.	0.6	5.2	13.2
d) Sales to Capital Emp.	27.8	47.9	73.0
e) Gross Profit to Sales	2.3	10.9	18.1
f) Equity Loan Ratio	1.34	1.16	1.11

Source :- Annual Reports of the Company.

TABLE No. 22.

FINANCIAL STRUCTURE

NAME OF THE COMPANY : - Petrofils Co-operative Ltd.

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
1. Authorised Capital	2000	2000	2000
2.i) Paid-up Capital	1470	1467	1474
ii) Reserves & Surpluses	470	828	1474
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	1530	1485	1045
ii) Of which Foreign	-	-	-
4. Net Worth	1837	2305	2948
5.i) Net Fixed Assets	2287	2128	2536
ii) Working Capital	445	919	986
iii) Capital Employed (i + ii)	2732	3047	3522
6. Sales/Operating Income	4625	4509	6165
7. Adjusted Gross Profit	703	674	816
8. Adjusted Net Profit	518	532	701
9. Dividends Declared	Nil	73	88
10. Tax Provision/ Paid	Nil	Nil	Nil
% Age of :-			
a) Net Profit to Equity	35.2	36.3	47.6
b) Net Profit to Net Worth	28.2	23.1	23.8
c) Gross Profit to Cap. Emp.	25.7	22.1	23.2
d) Sales to Capital Emp.	169.3	148.0	175.0
e) Gross Profit to Sales	15.2	15.0	13.2
f) Equity Loan Ratio	0.96	0.98	1.41

NOTE :- The Figures of working Capital for the year 1979-80 have been revised as shown above due to adjustment and are based on the balance sheet for the year 1980-81 from where this information has been taken.

Source:- Annual Reports of the Company.

TABLE No.23.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Bongaigaon Refine-ry & Petrochemical Ltd.

Rs./Lakhs.

I T. E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital		10000	10000
2.i) Paid-up Capital		9850	9850
ii) Reserves & Surpluses		253	267
iii) Preference Capital		Nil	Nil
3.i) Total Loan Including Cash Credit/ Advances from the Banks etc.		907	3393
ii) Of which Foreign		Nil	Nil
4. Net Worth		10090	9571
5.i) Net Fixed Assets		4300	4030
ii) Working Capital		566	456
iii) Capital Employed (i + ii)		4866	4486
6. Sales/Operating Income		2408	557
7. Adjusted Gross Profit		290	(-) 508
8. Adjusted Net Profit		36	(-) 520
9. Dividends Declared		Nil	Nil
10. Tax Provision / Paid		Nil	Nil
% Age of :-			
a) Net Profit to Equity		0.4	Loss
b) Net Profit to Net Worth		0.4	Loss
c) Gross Profit to Capital Emp.		6.0	Loss
d) Sales to Capital Emp.		49.5	12.4
e) Gross Profit to Sales		12.0	Loss
f) Equity Loan Ratio		10.86	2.90

Production Commenced in February, 1979 and first Account Prepared in 1979 - 80.

NOTE:- As the accounts for the year 1980-81 have not,sofor, been finalized the figurs as advised by BRPL have been adopted without any adjustment of gross and Net profit.

TABLE No. 24.

FINANCIAL STRUCTURE

NAME OF THE COMPANY :- Engineers India Limited.

Rs./Lakhs.

I T .E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	200	200	200
2.i) Paid-up Capital	25	25	50
ii) Reserves & Surpluses	776	979	1582
iii) Preference Capital	-	-	-
3.i) Total Loans Including Cash Credit/Advances from the Banks etc.	- 18	-	13
ii) Of which Foreign	-	-	-
4. Net Worth	801	1004	1632
5.i) Net Fixed Assets	344	378	419
ii) Working Capital	459	593	1153
iii) Capital Employed (i + ii)	803	971	1572
6. Sales/Operating Income	1520	1338	2381
7. Adjusted Gross Profit	385	206	443
8. Adjusted Net Profit	228	204	592
9. Dividends Declared	4	4	8
10. Tax Provision/ Paid	160	Nil	180
% Age of :-			
a) Net Profit to Equity	912.0	816.0	1184.0
b) Net Profit to Net Worth	28.5	20.3	36.3
c) Gross Profit to Cap.Emp.	47.9	21.2	28.2
d) Sales to Capital Emp.	189.2	137.8	151.5
e) Gross Profit to Sales	25.3	15.4	18.6
f) Equity Loan Ratio	1.39	-	3.84

Source :- Annual Reports of the Company.

TABLE No.25.

NAME OF THE UNDERTAKING :- Consolideted Financial Structure
All Categories Petrochemicals
(Private Sector)

Rs./Crores.

I T E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
No. OF COMPANIES.	39	39	39
1. Authorised Capital	346.9	356.1	402.7
2.i) Equity Capital	185.7	192.2	232.4
ii) Prefe-rence Capital	15.1	15.6	16.2
iii) Reserves & Surpluses	256.6	297.0	361.2
3. Total Loans	166.9	270.6	317.5
Of Which Foreign	16.7	19.9	22.6
4. Cash Credit/Advances from- Banks/ Others	161.2	197.4	275.5
5. Net Worth	419.6	483.3	579.8
6.i) Capital Employed	724.9	835.9	1055.1
ii) Net Fixed Assets	400.2	442.4	590.4
iii) Working Capital	324.7	393.5	464.7
7. Sales/Operating Income	1379.1	1611.1	2041.1
8. Value of Production	1071.4	1272.2	1585.9
9. Net Value Added	483.3	552.5	593.6
10. Gross Profit	154.6	151.7	156.2
11. Net Profit	69.6	66.5	66.2
12. Dividends Declared	26.9	28.9	32.4
PERCENTAGES OF :-			
a) Net Profit to Equity	37.5	34.6	28.5
b) Net Profit to Net Worth	16.6	13.8	11.4
c) Gross Profit to Cap. Emp.	21.3	18.1	14.8
d) Sales to Capital Emp.	190.3	192.7	193.4
e) Gross Profit to Sales	11.3	9.4	7.7
f) Equity Loan Ratio	1.11	0.71	0.73

NOTE :- The Consolidation is on the basis of lateral summation of data of undertakings having different Accounting years.

TABLE NO. 26.

CONSOLIDATED FINANCIAL STRUCTURE.

NAME OF THE UNDERTAKING :- Synthetic Fibre (Private Sector)

Rs./Lakhs.

I T E M	1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
No. OF UNDERTAKINGS	14	14	14
1. Authorised Capital	13631	14242	15739
2.i) Equity Capital	7223	7845	8549
ii) Preference Capital	745	847	916
iii) Reserves & Surpluses	12606	15063	16787
3.i) Total Loans	7797	11879	13929
ii) Of which Foreign	821	976	1060
4. Cash Credit/Advances from Banks/ Others	5203	5896	6927
5. Net Worth	19996	23050	25552
6.i) Capital Employed	32422	37947	44401
ii) Net Fixed Assets	19523	21894	27846
iii) Working Capital	12899	16053	16555
7. Sales/Operating Income	57836	68215	81481
8. Value of Production	35691	45277	53642
9. Net Value Added	18125	22892	23816
10. Gross Profit	7337	7520	7836
11. Net Profit	3909	3654	3327
12. Dividends Declared	1239	1384	1611
PERCENTAGES OF :-			
a) Net Profit to Equity	54.1	46.6	38.9
b) Net Profit to Net Worth	19.5	15.9	13.0
c) Gross Profit to Cap. Emp.	22.6	19.8	17.7
d) Sales to Capital Emp.	178.4	179.8	183.5
e) Gross Profit to Sales	12.7	11.0	9.6
f) Equity Loan Ratio	0.93	0.66	0.61

NOTE :- The Consolidation is on the basis of lateral summation of data of undertakings having defferent accounting year.

TABLE No.27.

CONSOLIDETED FINANCIAL STRUCTURE

NAME OF THE UNDERTAKING :- Plastics (Private) Sector.

Rs./Lakhs.

I T .E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
No. OF UNDERTAKINGS	13	13	13
1. Authorised Capital	9762	9738	9904
2.i) Equity Capital	4631	4613	4971
ii) Preference Capital	441	391	376
iii) Reserves & Surpluses	5911	6322	6337
3.i) Total Loans	5424	10175	11209
ii) Of which Foreign	269	203	466
4. Cash Credit/Advances- from Banks/Others	7209	9663	10625
5. Net Worth	8922	9860	10362
6.i) Capital Employed	21335	23000	24733
ii) Net Fixed Assets	10832	11514	11817
iii) Working Capital	10503	11486	12916
7. Sales/Operating Income	45206	50297	59547
8. Value of Production	40978	44029	51734
9. Net Value Added	17514	17415	18291
10. Gross Profit	3801	2162	2673
11. Net Profit	1140	,624	1383
12. Dividends Declared	523	557	564
PERCENTAGES OF :-			
a) Net Profit to Equity	24,6	13,6	27,8
b) Net Profit to Net Worth	12.8	6.3	13.4
c) Gross Profit to Cap. Emp.	17.8	9.4	10.8
d) Sales to Capital Emp.	211.9	218.7	240,8
e) Gross Profit to Sales	8.4	4.3	4.5
f) Equity Loan Ratio	0.85	0.45	0.44

NOTE :- The Consolidation is on the basis of lateral summation of data of undertakings having different accounting years.

TABLE No.28.

CONSOLIDATED FINANCIAL STRUCTURE "CHEMICAL"
(PRIVATE SECTOR)

Rs./Lakhs.

I T. E M	1978 - 79	1979 - 80	1980 - 81
1.	2.	3.	4.
No. of Undertakings.	11	11	11
1. Authorised Capital	9780	10130	13130
2.i) Equity Capital	6127	6180	9147
ii) Preference Capital	326	326	326
iii) Reserves & Surpluses	6592	7752	12415
3.i) TOTAL LOANS	3416	4910	6521
ii) (Of Which) Foreign	569	798	725
4. Cash Credits/Advances from Banks/ Others	3461	3670	9312
5. Net Worth	11920	14280	20917
6.i) Capital Employed	17357	20923	34452
ii) Net Fixed Assets	9114	10136	18585
iii) Working Capital	8243	10787	15867
7. Sales/ Operating Income	31928	39867	59815
8. Value of Production	27624	34653	50965
9. Net Value Added	11710	13683	15938
10. Gross Profit	4045	5204	5101
11. Net Profit	1793	2200	1902
12. Dividends Declared	839	880	1063
% Age of :-			
a) Net Profit to Equity	29.3	35.6	20.8
b) Net Profit to Net Worth	15.0	15.4	9.1
c) Gross Profit to Cap. Emp.	23.3	24.9	14.8
d) Sales to Capital Emp.	183.9	190.5	173.6
e) Gross Profit to Sales	12.7	13.1	8.5
f) Equity/ Loan Ratio	1.79	1.26	1.40

NOTE :- The Consolidation is on the basis of lateral summation of data of the undertakings having different accounting years.

TABLE No.29.

CONSOLIDATED FINANCIAL STRUCTURE
(SYNTHETIC RUBBER)

NAME OF THE UNDERTAKING :- Synthetics and Chemicals Limited.

Rs./Lakhs.

I T .E M	1978 - 79	1979 - 80	1980 - 81.
1.	2.	3.	4.
1. Authorised Capital	1500	1500	1500
2.i) Equity Capital	575	575	575
ii) Preference Capital	-	-	-
iii) Reserves & Surpluses	547	562	577
3.i)TOTAL LOANS	55	93	89
ii) (Of Which) Foreign	15	8	4
4. Cash Credit/Advances from Banks/ Others	249	508	685
5. Net Worth	1122	1137	1152
6. i) Capital Employed	1373	1720	1926
ii) Net Fixed Assets	546	694	778
iii) Working Capital	827	1026	1148
7. Sales/Operating Income	2944	2733	3266
8. Value of Production	2843	3259	3147
9. Net Value Added	978	1256	1319
10. Gross Profit	275	282	12
11. Net Profit	117	167	12
12. Dividends Declared	86	69	-
% Age of :-			
a) Net Profit to Equity	20.3	29.0	2.1
b) Net Profit to Net Worth	10.4	14.7	1.1
c) Gross Profit to Cap..Emp.	20.0	16.4	0.6
d) Sales to Capital Emp.	214.4	158.9	169.6
e) Gross Profit to Sales	9.3	10.3	0.4
f) Equity/ Loan Ratio	10.45	6.18	6.46

CAPITAL INVESTMENT IN PUBLIC/JOINT SECTOR UNDERTAKINGS AS ON 1-4-1982.

(Rs./Crores)

NAME OF THE UNDERTAKINGS.	PAID UP CAPITAL			LONG TERM LOAN			TOTAL		RELATIVE % OF SHARE	
	Total	Of which Govt.	%Age of Govt.	Total	Of which Govt.	%Age of Govt.	Total	Of which Govt.	Govt.	Non Govt.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. EXPLORATION & PRODUCTION.	395.9	370.9	93.7	999.1	90.6	9.1	1395.0	461.5	33.1%	66.9%
1. O.N.G.C.	342.9	342.9	100 %	946.8	41.8	4.4	1289.7	384.7	29.8%	70.2%
2. O. I. L.	28.0	28.0	100 %	52.3	48.8	93.3	80.3	76.8	95.6%	4.4%
3. H.I.L.	25.0	-	-	-	-	-	25.0	Nil	-	100.0%
2. REFINING & MARKETING	188.4	176.5	93.7	346.4	140.8	40.6	534.8	317.3	59.3	40.7%
4. I.O.C.	123.3	123.3	100 %	260.8	109.8	42.1	384.1	233.1	60.7%	39.3
5. B.P.C.L.	14.5	14.5	100%	-	-	-	14.5	14..5	100%	Nil
6. H.P.C.L.	15.2	15.2	100 %	13.5	11.0	81.5	28.7	26.2	91.3%	8.7
7. C.R.L.	7.0	4.2	60%	28.4	6.0	21.1%	35.4	10.2	28.8	71.2
88. M.R.L.	12.9	9.5	73.6	27.7	-	-	40.6	9.5	23.4	76.6
9. I. B. P.	2.9	1.6	55.2	-	-	-	2.9	1.6	55.2	44.8
10. Biecco Lawrie	1.3	1.0	76.9	8.2	8.2	100 %	9.5	9.2	96.8	3.2
11. Palmer Lawrie	1.9	-	-	1.8	-	-	3.7	-	Nil	100.0%
12. Bridge & Roof	4.2	3.9	92.9	5.8	5.8	100%	10.0	9.7	97.0%	3.0%
13. Lubrizol	4.8	2.9	60.4	0.2	-	-	5.0	2.9	58.0%	42.0%
14. Indian Oil-Blending	0.4	0.4	100%	-	-	-	0.4	0.4	100.0%	-
3. PETROCHEMICAL & OTHER DOWN STREAM UNITS.	299.2	297.3	99.5	181.2	99.9	55.1	480.4	397.6	82.8	17.2%
16. I.P.C.L.	186.0	186.0	100%	98.3	74.4	75.7	284.3	260.4	91.6	8.4
17. Petrofils	14.7	13.2	89.8	10.0	-	-	24.7	13.2	53.4	46.6
18. B.R.P.L.	98.5	98.5	100%	72.9	25.5	35.0	171.4	124.0	72.3	27.7
4. ENGINEERING SERVICES.	0.5	0.5	100%	-	-	-	0.5	0.5	100%	Nil
19. E. I. L.	0.5	0.5	100%	-	-	-	0.5	0.5	100%	Nil
GRAND TOTAL	884.0	845.6	95.7	1526.7	331.3	21.7	2410.7	1176.9	48.8%	51.2%

CAPITAL INVESTMENT IN PUBLIC/JOINT SECTOR UNDERTAKINGS AS ON 1-4-1980, 1-4-81 & 1-4-1982.

(Rs./Crores)

NAME OF THE UNDERTAKINGS	AS ON 1-4-1980 Equity	L.T.Loan	Total	Govt. Share	AS ON 1-4-1981 Equity	L.T.Loan	Total	Govt. Share	AS ON 1-4-1982 Equity	L.T.Loan	Total	Govt Share
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Exploration & Prod.	365.4	460.5	825.9	560.2	395.9	675.6	1071.5	492.2	395.9	999.1	1395.0	461.5
1. ONGC	327.4	390.8	728.2	480.7	342.9	592.2	935.1	398.9	342.9	948.8	1289.7	384.7
2. HI.L.	-	-	-	-	25.0	-	25.0	-	25.0	-	25.0	NIL
3. O.I.L.L	28.0	69.7	97.7	79.5	28.0	83.4	111.4	93.3	28.0	52.3	80.3	76.8
2. REFINING & MARKETING.	139.3	191.8	331.1	229.2	146.5	283.6	430.1	282.4	188.4	346.4	534.8	317.3
4. I.O.C.	82.2	168.7	250.9	159.8	82.2	251.0	333.2	203.2	123.3	260.8	384.1	233.1
5. B.P.C.L.	14.5	-	14.5	14.5	14.5	-	14.5	14.5	14.5	-	14.5	14.5
6. H.P.C.L.	15.2	10.6	25.8	24.8	15.2	12.2	27.4	26.3	15.2	13.5	28.7	26.2
7. C. R. L.	7.0	2.4	9.4	5.3	7.0	9.9	16.9	10.7	7.0	28.4	35.4	10.2
8. M. R. L.	12.9	0.6	13.5	10.1	12.9	1.8	14.7	11.3	12.9	27.7	40.6	9.5
9. I. B. P.	2.8	-	2.8@	1.1	2.1	-	2.1	1.1	2.9	-	2.9	1.6
10. Biecco Lawrie	1.1	4.7	5.8	5.4	1.3	2.2	3.5	3.2	1.3	8.2	9.5	9.2
11. Balmer Lawrie	-	-	-	-	1.9	1.6	3.5	-	1.9	1.8	3.7	-
12. Bridge & Roof	3.0	4.8	7.8	7.8	4.2	4.9	9.1	8.8	4.2	5.8	10.0	9.7
13. Lubrizol India Ltd.	0.6	-	0.6	0.4	4.8	-	4.8	2.9	4.8	0.2	5.0	2.9
14. Indian Oil Blendg.	-	-	-	-	0.4	-	0.4	0.4	0.4	-	0.4	0.4
3. PETROCHEMICALS & OTHER DOWN STREAM UNITS.	297.7	173.7	471.4	408.4	299.2	178.9	478.1	424.2	299.2	181.2	480.4	397.6
15. I. P. C. L.	186.0	150.2	336.2	294.8	186.0	135.4	321.4	287.3	186.0	98.3	284.3	260.4
16. Petrofils	13.2	15.0	28.2	13.2	14.7	10.2	24.9	13.2	14.7	10.0	24.7	13.2
17. B. R. P. L.	98.5	8.5	107.0	100.4	98.5	33.3	131.8	123.7	98.5	72.9	171.4	124.0
4. ENGINEERING SERVICES.	0.3	-	0.3	0.3	0.5	-	0.5	0.5	0.5	-	0.5	0.5
18. E. I. L.	0.3	-	0.3	0.3	0.5	-	0.5	0.5	0.5	-	0.5	0.5
GRAND T O T A L	802.7	826.0	1628.7	1198.1 (73.6%)	842.1	1138.1	1980.2	1199.3 (60.5%)	884.0	1526.7	2410.7	1176.9 (48.8%)

@= Represents net investment in IBP and subsidiaries after exclusion of inter company holding.

NOTE :-1. Figures in brackets indicate %age share of the Governments.

GLOSSARY OF TERMS USED IN THE "ANNUAL REPORT ANALYSIS"

1. Loans : These include both secured and unsecured loans but exclude interest accrued, if any included in the loans.

2. Net Worth : This represents paid-up capital plus free reserves less accumulated losses (deficit) and deferred revenue expenditure remaining unamortised.

3. Capital-Employed : This means gross block less accumulated depreciation thereon plus working capital, but excluding capital works in progress.

4. Working - Capital : Means all current assets, loans & advances, deposits, investments (other than trade investments) less current liabilities and provisions excluding cash credit & bank overdrafts and provision for gratuity.

5. Sales : Means net sales turnover i.e. after excluding trade discounts and products used for internal consumption.

6. Adjusted Gross Profit : Represents excess of Income over expenditure after providing for depreciation but before providing for interest on loans, taxes, appropriation to reserves, charges pertaining to previous years, bad debts, donations, exchange fluctuations loss on disposal of Assets, Dividends etc.

7. Adjusted Net Profit : Represents the figure arrived at after deducting from the adjusted gross profit interest on loans and taxes but before appropriation to reserves.

8. Dividend Declared : Includes preference dividend, if any.

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APPENDIX

ABBREVIATIONS

(i) Companies/Organisations

ACCI	:	Alkali & Chemicals Corporation of India Limited
AOC	:	Assam Oil Company
BPCL	:	Bharat Petroleum Corporation Limited
BRPL	:	Bongaigaon Refinery & Petrochemicals Limited
B/Shell/BSM	:	Burmah Shell Oil Storage & Distributing Co. Ltd.
BSR	:	Burmah Shell Refineries Limited
Caltex/CIL	:	Caltex(India) Limited
CORIL	:	Caltex Oil Refining(India) Limited
CRL	:	Cochin Refineires Limited
EIL	:	Engineers India Limited
ESSO	:	Esso Standard Eastern Inc.
ESRC	:	Esso Standard Refining Company of India Ltd.
HCL	:	Herdillia Chemicals Limited
HPCL	:	Hindustan Petroleum Corporation Limited
HIL	:	Hydrocarbons India Limited
IBPC	:	Indo-Burma Petroleum Company Limited
IPCL	:	Indian Petrochemicals Corporation Limited
IIP	:	Indian Institute of Petroleum
IPE	:	Institute of Petroleum Exploration
IOBL	:	Indian Oil Blending Limited
IOC	:	Indian Oil Corporation Limited
LIL	:	Lube India Limited
Lubrizol	:	Lubrizol India Limited
MRL	:	Madras Refineries Limited
OIL	:	Oil India Limited
ONGC	:	Oil & Natural Gas Commission
OPEC	:	Organisation of Petroleum Exporting Countires
TWOC	:	Tide Water Oil Company
PCL	:	Petrofils Cooperative Limited
NOCIL	:	National Organic Chemicals Industries Limited
TIPCO	:	The Industrial Plastics Corporation Pvt. Ltd.
WIODC	:	Western India Oil Distributing Company Ltd.

(ii) Petroleum Products

ATF	:	Aviation Turbine Fuel
AVGAS	:	Aviation Gasoline/Spirit
CBFS	:	Carbon Black Feed Stock
HHS	:	Hot Heavy Stock
HSDO	:	High Speed Diesel Oil
JBO	:	Jute Batching Oil
LDO	:	Light Diesel Oil
LSHS	:	Low Sulphur Heavy Stock
LPG	:	Liquified Petroleum Gas
MS/MOGAS	:	Motor Spirit/Motor Gasoline
FO	:	Furnace Oil
MTO	:	Mineral Turpentine Oil
Pet-coke	:	Petroleum Coke
SBP-Spirit	:	Special Boiling Point Spirit
SKO	:	Superior Kerosene Oil
TDO	:	Tea Drier Oil

LIGHT DISTILLATES(including Gases): Gasolines, Naphtha, SBP Spirit/ Solvent Oils, Hexane, Benzene, Toluene, L.P.G., Refinery Gas and W.D.Mixture.

MIDDLE DISTILLATES : Kerosene, ATF/Jet-A1, Vaporising Oil, Aromex-Lomex, H.S.D.O., L.D.O./M.L.O. and J.D.O.Mineral Turpentien Oil, Chemisperse & LSHFS.

(iii) Petrochemicals Products

CAMP	:	Cellulose Acetate Moulding Powder
CBFS	:	Carbon Black Feed-stock
DMT	:	Dimethyl Teraph Thalate
HDPE	:	Polyethylene Resins & Componds Low Pressure(High Density)
LAB	:	Linear Alkyl Benzene
LDPE	:	Polyethylene Resins & Compounds High Pressure(Low Density)
MEG	:	Mono-Ethylene Glycol
MI Ketone	:	Methyl Isobutyl Ketone
MF MP	:	Malamine Fermaldehyde Moulding Powder
NSF	:	Nylon Staple Fibre
NFY	:	Nylon Filament Yarn
PSF	:	Polyester Staple Fibre
PFY	:	Polyester Filament Yarn
PF MP	:	Phenol Formaldehyde Moulding Powder
PS	:	Polystyrone
PP	:	Polypropylene
PBR	:	Polybutadiene Rubber
PVC	:	Polyvinyl Chloride
SBR	:	Styrene Butadiene Rubber
UFMP	:	Urea Formal dehyde Moulding Powder

(iv) PREFIXES USED IN METRIC TABLES

Prefix	Meaning
Milli	One thousandth(1/1000 =.001)
Centi	One hundredth (1/100 = .01)
Deci	One tenth (1/10 = .1)
Unit	One (1)
Deka	Ten (10)
Hecto	One hundred (100)
Kilo	One thousand (1,000)
Mega	One Million (1000,000)

(V) Others

API	:	American Petroleum Institute
AFRA	:	Average Freight Rate Assessment
CIF	:	cost, Insurance and Freight
Crores	:	10 million/100 lakhs
DWT	:	Dead Weight Tonnage
FOB	:	Free on Board
GP	:	General Purpose (16,500-24,999 dwt)
HV	:	High Viscosity Index
KL	:	Kilometre
LR I	:	Large Range I (45,000-79,999 dwt)
LR II	:	Large Rante II(80,000-1,59,999 dwt)
LV	:	Low Viscosity
LVI	:	Low Viscosity Index
MR	:	Medium Range (25,000-49,999 dwt)
MT	:	Metric Ton
MTPA	:	Million tonnes per annum
MV	:	Medium Viscosity
MVI	:	Medium Viscosity Index
R&D	:	Research and Development
ULCC	:	Ultra Large Crude Carrier(320,000-549,999 dwt)
VLCC	:	Very Large Crude Carrier (1,60,000 dwt and more)
NA	:	Not Available
-	:	Nil
Ne	:	Negligible
1	:	10^9 or One thousand Million
	:	10^{12} or One million million
	:	High Viscosity
	:	Provisional

METRIC UNITS

LINEER

10 millimetres	= 1 Centimetre
10 Centimetres	= 1 decimetre
10 Decimetres	= 1 Metre
10 Metres	= 1 decametre
10 Dacametres	= 1 Hectametre
10 Hectametres	= 1 Kilometre

AREA

100 sq.millimetres	= 1 sq.centimetres
100 sq. centimetres	= 1 sq decimetre
100 sq. decimetres	= 1 sq. Metre
100 sq.metres	= 1 sq. dectare = 1 Area.
100 areas	= 1 sq. areas = 1 hectare
100 Hectares	= 1 sq. hectometre = 1 sq. kilometre

WEIGHTS.

10 milligrams	= 1 centigram
10 centigrams	= 1 decigram
10 decigrams	= 1 gram
10 grams	= 1 decagram
10 decagrams	= 1 hectogram
10 hectograms	= 1 kilogram
100 kilograms	= 1 quintal
1000 Kilograms	= 1 metric tonne

CAPACITY

10 millilitres	=1 centilitre
10 centilitres	=1 decilitre
10 decilitres	=1 litre
10 litres	=1 decalitre
10 decalitres	=1 hectolitre
10 hectolitres	=1 kilolitre

VOLUME

1000 cubic millimetres	=1 cubic centimetre
1000 cubic centimetres	=1 cubic decimetre
1000 cubic decimetres	=1 cubic metre.

CONVERSION FACTORS USED IN THE OIL TRADE LINEAR AND SQUARE MEASURES.

L E N G T H

1 inch	= 25.4 millimetres(mm) = 0.0254 metre
1 foot	= 12 inches = 0.333333 Yard = 0.3048 metre(m)
1 Yard	= 36 inches = 3 feet = 0.9144 metre(m)
1 Metre	= 39.3701 inches = 3.28084 feet = 1.09361 Yards = 0.001 kilometre(km)
1 Kilometre	= 1000 metres(m) = 0.621371 mile
1 Mile	= 1760 Yards = 1.60934 kilometres(km)
1 international nautical mile	=6076.12 feet = 1.852 kilometres(km) = 1.15078 miles

A R E A

1 square inch	= 645.16 square millimetres(mm^2)
1 square foot	= 0.0929030 square metre(m^2)
1 square yard	= 9 square feet = 0.836127 square metre(m^2)
1 square metre	= 10.7639 square feet = 1.19599 square yards
1 acre	=4840 square yards =4046.86 square metres(m^2) =0.404686 hectares
1 hectare	=10000 square metres(m^2) =2.47105 acres =0.01 square kilometre(km^2)
1 square kilometre	= 100 hectares = 0.386102 square mile
1 square mile	= 640 acres = 258.999 hectares = 2,58999 square kilometres(km^2)

MASS.	WEIGHTS
1 Ounce	= 28.3495 grams(g)
1 pound	= 0.453592 kilogram (kg)
	= 0.00892857 hundred weight
1 kilogram	= 2.20462 pounds
	= 0.01 quintal
1 hundreweight(cwt)	=112 pounds
	= 50.8023 Kilograms(kg)
1 American (short) ton	= 2000 pounds
	= 0.907185 tonne
	= 0.892857 long ton
1 tonne (metric ton)	= 2204.62 pounds
	= 1000 kilograms (kg)
	= 1.10231 short tons
	= 0.984207 long ton
1 Imperial (long) ton	= 2240 pounds
	= 1.12 short tons
	= 1.01605 tonnes

ENERGY AND POWER

1 international table(IT) caloric	= 4.1868 Joules (J)
115°C caloric	= 4.1855 joules(J)
1 thermochemical caloric	= 4.184 joules (J)
1 kilocaloric (IT)	= 1000 calories
	= 3.96832 British thermal units
	= 1.163 watt hours
	= 0.001 therme
1 Kilowatt hour	= 3412.14 British thermal units
	= 859.845 kilocalories(IT)
	= 3.6 megajoules (MJ)
	= 1.34102 horse power hours
1 therm	= 100000 British thermal units(BTU)
	= 105.506 megajoules (MJ)
	= 29.3071 kilowatt hours
	= 25.1996 thermies
	= 2520 kilocalories
1 metric horsepower (Pferdestaerke or cheval vapeur)	= 735.499 watts(W)
	= 542.476 foot pounds force/second
	= 0.986320 Imperial horsepower
1 Imperial horsepower	= 745.700 watts(W)
	= 550 foot pounds force/second
	= 1.01387 metric horse power
1 Kilowatt	= 737.562 foot pounds force/second
	= 1.35962 metric horsepower
	= 1.34102 Imperial horsepower
	= 1000 watts.

C U B I C M E A S U R E S

VOLUME

1 Cubic inch	=	16.3871 cubic centimetres(cm3)
1 Pint	=	0.568261 cubic decimetres(dm^3)
1 litre	=	1000 cubic centimetres
	=	61.024 cubic inches
	=	1.75975 pints
	=	1 cubic decimetre(dm^3)
	=	0.264172 American gallons
	=	0.219963 imperial gallons
	=	0.0353147 cubic foot.
1 hectolitre	=	100 cubic decimetires(dm^3) or
	=	100 litres
1 American gallon	=	231 cubic inches
	=	3.78541cubic decimetres or litres
	=	0.832674 Imperial gallon
	=	0.133681 cubic foot
	=	0.0238095 American barrel
	=	0.00378541 cubic metre (m^3)
1 Imperial gallon	=	277.420 cubic inches
	=	4.54609 cubic decimetres(dm^3) or
	=	1.20095 American gallon - litres
	=	0.160544 cubic foot
	=	0.028594 American barrel
	=	0.00454609 cubic metre (m^3)
	=	
1 cubic foot	=	28.3168cubic decimetres(dm^3) or
	=	7.48052 American gallongs letres
	=	6.22883 Imperial gallons
	=	0.17811 American barrel
	=	0.0283168 cubic metre (m^3)
1 American barrel	=	9702 cubic inches
	=	158.987 cubic decimetres(dm^3) or
	=	42 American gallons
	=	34.9726 Imperial gallons
	=	5.6146 cubic feet
	=	0.158987 cubic metre (m^3)
1 cubic metre	=	1000 litres
	=	264.172 American gallons
	=	219.969 Imperial gallons
	=	35.3147 cubic feet
	=	6.28981 American barrels.
1. Kilolitre	=	1000 cubic decimetres (dm^3) or
	=	6.28981 American barrels litres
1 gross ton (shipping)	=	2.83168 cubic metres or 100 cubic feet of permanently enclosed space.
1 ton of liquified methane	=	approx. 16 barrels
	=	approx. 1400 cubic metres of natural gas depending upon methane content.

(vii)

PRODUCT CONVERSION FACTOR

(Coversion Factor from Volume to tonnes at Natural temp.)

PRODUCTS	Litres to Metric Tonnes	Tonnes Per K.L.	American barrels to Metric tonnes.
1.	2.	3.	4.
Aviation Spirit 100/130	1421	0.7034	8.94
Aviation Spirit 114/145	1449	0.6901	9.11
Aviation Spirit 73 ON U/L.	1432	0.6983	9.01
Motor Spirit 79 R	1427	0.7008	8.98
Motor Spirit 80 MT	1427	0.7008	8.98
Motor Spirit 93 R	1386	0.7215	8.72
Motor Spirit 95 ON	1359	0.7358	8.55
Motor Spirit 83 ON	1411	0.7087	
JP-4	1384	0.7225	8.71
JP-5	1273	0.7855	8.01
Aviation Turbine Fuel	1288	0.7764	8.10
Naphtha	1467	0.6817	9.23
Power Alcohol	1286	0.7776	8.09
Benzol	1154	0.8666	7.26
SBP/Spirit/Hexane	1457	0.6863	9.16
Mineral Turpentine (Laws & 140/205).	1302	0.7680	8.19
Liquified Petroleum Gas	1785	0.5602	11.23
Superior Kerosene	1285	0.7782	8.08
Inferior Kerosene	1265	0.7905	7.96
Power Kerosene (Vap.Oil)	1251	0.7994	7.87
High Speed Diesel	1210	0.8263	7.61
Light Diesel Oil	1172	0.8532	7.37
Malarial Oil	1172	0.8532	7.37
Special Larvicides	1175	0.8511	7.39
Furnace Oil	1071	0.9337	6.74
Tea Drier Oil	1071	0.9337	6.74
Hot Heavy Stock/LSHS	1017	0.9833	6.40
Refinery Gas/Ref. Boiler Fuel	1071	0.9337	6.74
Lubricants/Greases	1114	0.8977	7.01
Jute Batching Oil/Wash Oils	1167	0.8569	7.34
Bitumen	1002	0.9980	6.30
HTF/Alcohol Mixture	1414	0.7072	8.89
Methanol Mixture	1106	0.9042	6.96
Carbon Black Feed Stock	1134	0.8818	7.13
Carburetter Testing Fluid	1388	0.7205	8.73
Benzene	1131	0.8812	7.05
Toluene	1148	0.8711	7.19
Demineralised Water	1002	0.9930	6.30
Shell Glass Kleanzit	1003	0.9970	6.31
Miscellaneous	1114	0.8977	7.01
Wax/ /P.Coke/Chemicals	1114	0.8977	7.01
Aromex	1221	0.8190	7.68

VOLUME PER METRIC TON OF PETROLEUM PRODUCTS

Products	Kilolitre-M^3	Imperial Gallons	U.S.Gallon	Barrel
1.	2.	3.	4.	5.
Liquified Pet.Gas.	1.8519	407.365	489.213	11.648
Aviation spirit	1.3699	301.332	361.873	8.613
Natural Gasolines	1.3514	297.265	356.990	8.496
Motor Spirit	1.3514	297.265	356.990	8.496
Kerosene	1.2346	271.569	326.137	7.764
Jet Fuel	1.2346	271.569	326.137	7.764
Distillates Fuel Oil	1.1494	252.415	293.522	6.988
Lubricating Oil	1.1111	252.845	303.647	7.231
Fuel Oils N.C.S.	1.0989	241.727	290.301	6.911
Residuel Fuel Oils	1.0526	231.551	278.071	6.623
Asphalt and Bitumen	0.9615	211.515	254.013	6.050
Crude Oil	1.1856	260.910	313.340	7.441

CONVERSION FACTORS FOR VOLUME REDUCTION FROM.

15^c to 29.5^c

1. Aviation Spirit 100/130	0.9827
2. Aviation Spirit 115/145	0.9820
3. Aviation Spirit 73 Clear	0.9824
4. Aviation Turbine Fuel	0.9862
5. Motor Spirit 83	0.9830
6. Motor Spirit 93	0.9836
7. H.S.D.O.	0.9879
8. Kerosene	0.9864
9. Light Diesel Oil	0.9887
10. Furnace Oil	0.9899
11. Special Boiling Point Spirit 55/115	0.9820
12. Special Boiling Point Spirit 64/69	0.9806
13. Solvent 1425	0.9820
14. Hexane	0.9806

PETROLEUM SPECIFIC GRAVITIES

DEGREES A.P.I.	Specific gravity	Barrels per tonne*	Long ton*
25	0.904	6.98	7.09
26	0.898	7.02	7.13
27	0.893	7.06	7.18
28	0.887	7.10	7.22
29	0.882	7.15	7.27
30	0.876	7.19	7.31
31	0.871	7.24	7,36
32	0.865	7.28	7.40
33	0.860	7.33	7.45
34	0.855	7.37	7.49
35	0.850	7.42	7.54
36	0.845	7.46	7.58
37	0.840	7.51	7.63
38	0.835	7.55	7.67
39	0.830	7.60	7.72
40	0.825	7.64	7.76
41	0.820	7.69	7.81
42	0.816	7.73	7.85

* Approximate figures at 15.6°C or 60°F.

PRODUCT SPECIFIC GRAVITY RANGES.

PRODUCTS	Specific gravity	Barrels per tonne
Crude Oils	0.80-0.97	8.0-6.6
Aviation gasolines	0.70-0.78	9.1-8.2
Motor gasolines	0.71-0.79	9.0-8.1
Kerosines	0.78-0.84	8.2-7.6
Gas Oils	0.82-0.90	7.8-7.1
Diesel Oils	0.82-0.92	7.8-6.9
Lubricating Oils	0.85-0.95	7.5-6.7
Fuel Oils	0.92-0.99	6.9-6.5
Asphaltic bitumens	1.00-1.10	6.4-5.8

HEAT ENERGY CONTENT OF FUELS
(Calorific Value of Fuels)

Approximate Value	MJ/Kg.	Btu/lb
Crude Oils	42.6-45.4	18300-19500
Gasolines	47.7	20500
Kerosines	46.1	19800
Benzole	42.1	18100
Ethanol	27.0	11600
Gas Oils	44.7	19200
Fuel Oils (bunker)	42.6	18300
Coal (bituminous)	23.7-34.0	10200-14600
[illegible]	51.9	22300

APPROXIMATE CALORIFIC VALUES

1. Kg. of	K. Cals.	Kg. of or Hard Coal	Kg. of or Crude Oil
1.	2.	3.	4.
Hard Coal	7,000	1	0.7
Lignite	2,000	0.28	0.2
Crude Oil	10.000	1.43	1
Fuel Oil	9.800	1.40	0.98
Natural Gas	7.700	1.10	0.77
1 Kw-hr Electri--city.	2,800	0.40	0.28

CRUDE OIL CONVERSIONS @

To Convert these into these.	Metric tons.	Barrels	Kilo Litres	1,000 Imp. Gallons.	1,000 U.S. Gallons.
1.	2.	3.	4.	5.	6.
Metric Tons	1	7.33	1.16	0.256	0.308
Barrels	0.136	1	0.159	0.035	0.042
Kilolitres	0.863	6.29	1	0.220	0.264
1,000 Imp. Gallons.	3.91	28.6	4.55	1	1.201
1,000 U.S. Gallons.	3.25	23.8	3.79	0.833	1

@ = Based on World average gravity (excluding Natural Gas Liquids)

C O N V E R S I O N F A C T O R

Units	1,000 metric tons oil	1,000 bbl oil*	b/d*	Billion B.T.U.	Billion kilo-calories	Million kw-hr output basis	Million kw-hr input basis	1,000 metric tons hard coal equivalent	Million cum natural gas
* 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1000 metric tons oil*	-	7.300	20.0	42.705	10.762	12.516	3.868	1.479	1.169
1000 bbl oil*	0.137	-	2.740	5.850	1.474	1.715	0.530	0.203	0.160
B/d oil	0.050	0.365	-	2.135	0.538	0.626	0.193	0.074	0.058
1,000 U.S. gallons Oil*	0.003	0.024	0.065	0.139	0.035	0.043	0.015	0.005	0.004
Billion B.T.U.	0.024	0.172	0.472	-	0.252	0.293	0.906	0.035	0.027
Billion Kilocalories	0.094	0.684	0.874	3.968	-	1.163	0.359	0.137	0.109
Million kw-hr-output basis	0.081	0.588	1.611	3.412	0.860	-	-	0.118	0.093
Million kw-hr-input basis	0.261	1.903	5.215	11.040	2.782	-	-	0.382	0.302
1,000 metric tons HCE.	0.682	4.980	13.642	28.881	7.278	8.465	2.616	-	0.790
1,000 metric tons lignite	0.455	3.321	9.100	19.264	4.855	5.646	1.745	0.667	0.527
Million cum-natural gas	0.847	6.250	17.125	36.546	9.216	10.699	3.319	1.271	-
MM of natural gas +	0.024	0.177	0.485	1.035	0.261	0.303	0.094	0.036	0.028
Natural Gas +	0.309	2.281	6.251	13.339	3.364	3.905	1.211	0.464	0.365
Mfd Natural Gas +	0.009	0.065	0.177	0.376	0.095	0.111	0.034	0.013	0.010

* Crude and products- 5,850,000 BTU/bbl. +@ 30.9% efficiency-11,040 BTU/kw-hr =I 1,035 BTU/cu ft.

-- Million cum -/Day.

COAL REPLACEMENT AND EQUIVALENTS OF DIFFERENT FUELS

Fuels	Unit coal equivalent in m.tonnes(mtce)		Coal replacement in m. tonnes (mtcr)
Coal (Coking 6640 Kcal/kg; Non-coking coal used in steam generation 5000 (Kcal/Kg)	1 mt	1.0	1.0
Hard Coke	1 mt	1.3	1.3
Soft Coke	1 mt	1.5	1.5
Firewood (4750 Kcal/Kg)	1 mt	0.95	0.95
Charcoal (6900 Kcal/Kg)	1 mt	1.0	1.0
OIL PRODUCTS : 10.000 Kcal/Kg.			
Black products (i.e. fuel oil; F.O.; Refinery Fuel, LSHS HHS).	1 mt	2.0	2.0
Kerosene & LPG	1 mt	2.0	8.0
HSDO & LDO	1 mt	2.0	9.0
Motor Spirit & Jet Fuel	1 mt	2.0	7.5
Natural Gas (9000 Kcal/Kg)	10^9 x m^3	1.8	3.6
Electricity	10^9 kwh	1.0	1.0

M = Million.

MT = Million Tonnes.