I N D I A N

P_E_T_R_O_L_E_U_M_ & P_E_T_R_O_C_H_E_M_I_C_A_L_S

S_T_A_T_I_S_T_I_C_S

1 9 7 5

ECONOMICS & STATISTICS DIVISION

MINISTRY OF PETROLEUM

GOVERNMENT OF INDIA

NEW DELHI

PREFACE

The Economics & Statistics Division of the erstwhile Ministry of Petroleum and Chemicals had been bringing out an annual publication entitled "Indian Petroleum and Chemical Statistics", which contained basic economic and statistical data covering various aspects of petroleum, fertilizers and other chemical & pharmaceutical industries. The growing importance of these industries and need for a wider coverage to meet the requirements of effective planning and administration necessitated the division of the publication in 1975 into 3 separate publications entitled "Indian Petroleum and Petrochemicals Statistics", "Indian Fertilizer Statistics" and "Indian Chemical & Pharmaceuticals Statistics". With the bifurcation of the Ministry of Petroleum and Chemicals into Ministry of Petroleum and Ministry of Chemicals & Fertilizers in January, 1976, the task of publishing "Indian Petroleum and Petro-chemical Statistics" was taken up by the staff of Economics & Statistics Division assigned to Ministry of Petroleum.

The current issue "Indian Petroleum & Petro-chemicals Statistics-1975", in addition to the usual items, contains information/data pertaining to chronology of important events of petro-chemical manufacturing units, analysis of end-use of selected petro-chemicals, prices & price build-up of petroleum products.

While it has been our endeavour to ensure accuracy in presentation of data and various factual information contained in the publication, we would welcome suggestions for improvement of the publication and for rectification of any error or omission.

Our sincere thanks are due to all those associated with the oil industry who have promptly responded to our request for data and information. Their cooperation and help has enabled us to place this volume in readers hands well in time. I would also like to express my appreciation for the efforts put in by Shri V.L. Nagar, Research Officer who was ably assisted by S/Shri B.K. Verma, H.R. Chopra, D.C. Garg, A.K. Chopra and Subhash Chander, but for whose unstinted cooperation it would not have been possible to bring out this publication on time.

J.S. Sinha.

(J.S. SINHA)
SENIOR RESEARCH OFFICER

September, 1976.

C O N T E N T S

P A R T -I

PETROLEUM STATISTICS

Sec. No.	Subject	Page No.
I.	Highlights in Oil Industry in India.	i-iii
II.	CHRONOLOGY OF IMPORTANT EVENTS IN THE PETROLEUM INDUSTRY	1-31
III.	GROWTH OF PETROLEUM INDUSTRY	32
IV.	EXPLORATION AND PRODUCTION IN INDIA	
	1. Reserves of Crude Oil and Natural Gas	33
	2. Number of deep drilling Rigs in the country	34
	3. Status of Wells	35
	4. State-wise achievements of geological field parties since inception upto December-1975	36
	5. State-wise achievements of geophysical field parties since inception upto December-1975	37
	6. State-wise achievements of drilling since inception to December,1975	38
	7. Company-wise production of crude oil	39
	8. Production and state-wise utilisation of natural gas in India.	40
V.	REFINING IN INDIA	
	1. Petroleum Refining Capacity	41
	2. Refinery crude throughput and production of petroleum products.	42
	3. Refinery-wise crude charged and total production of petroleum products.	43
	4. Refinery production 1972-1975	44
	5. Pattern of refinery production in India.	44
VI.	CONSUMPTION/SALES	
	1. All India total consumption of petroleum products from 1948 to 1975.	45
	2. Consumption of petroleum products during the years 1973, 1974 and 1975.	46
	3. Sales/consumption and market participation of oil companies from 1960 to 1975.	47
	4. Deliveries made to international/coastal bunkers from 1965 to 1975.	48

Sec. No.	Subject	Page No.
5.	State-wise sales/consumption of major petroleum products during the year 1974	49 - 50
6.	State-wise per capita sales/consumption of major petroleum products (excluding sales to international bunkers)	51
7.	Estimated sector-wise consumption of fuel oils during 1972,1973, and 1974.	52
8.	Estimated sector-wise consumption of LPG during 1972,1973 and 1974	53
9.	Estimated sector-wise consumption of refinery gas during 1972,1973 and 1974.	53
10.	Estimated sector-wise consumption of Naphtha during 1972,1973 and 1974.	53
11.	Estimated sector-wise consumption of H.S.D. during 1972,1973 and 1974.	54
12.	Estimated sector-wise consumption of L.D.O. during 1972,1973 and 1974.	54
13.	Estimated sector-wise consumption of Wax during 1972,1973 and 1974.	55
14.	Consumption of diesel oil in Indian Railways during 1960-61 to 1974-75.	55
15.	Fuel consumption in gas turbine and diesel power station in India in 1973-74	56
16.	Fuel consumption in steam power station 1973--74.	57
VII.	INDIAN FOREIGN TRADE	
1.	Crude oil and petroleum products imported during 1948 to 1975.	58
2.	Imports of crude oil and petroleum products during 1972 to 1975.	59
3.	Total exports of petroleum products since 1954.	60
4.	Exports/re-exports of petroleum products during the years 1971 to 1975.	61
5.	Export earnings during 1975-76.	62
VIII.	MANPOWER EMPLOYED	
1.	Manpower employed in the petroleum industry in India during 1971 to 1975.	63
2.	Category-wise manpower employed in the petroleum industry.	63
3.	Category-wise manpower employed in Exploration and production of petroleum crude in India	64
4.	Category-wise manpower employed in petroleum refining in India.	64
5.	Category-wise manpower employed in marketing of petroleum in India.	64

Sec. No.	Subject	Page No.
IX.	PRICES	
1.	Index number of whole sale prices of selected petroleum products in India.	65
2.	Basic ceiling selling prices (ex-storage) of petroleum products as on 1.1.1976	66
3.	Price build up of selected petroleum products-	
	. Aviation Turbine Fuel	67
	Furnace Oil	68
	High Speed Diesel Oil	69
	Light Diesel Oil	70
	Motor Spirit	71
	Kerosine Superior	72
X.	EXCISE/CUSTOMS DUTIES AND SALES TAX	
1.	Realisation of excise and customs duties from crude oil and petroleum products	73
2.	Central excise duty as on 1.3.1976	74
3.	Sales Tax rates applicable on petroleum products in different states as on 1.4.76	75-78
XI.	TANKER AND FREIGHT RATES	
1.	Tonnage of Indian tanker fleet	79
2.	Indian tanker fleet as on 31.12.1975	80
3.	Share of traffic in petroleum products, fertilizers and fertilizers raw materials in the total traffic handled at major ports during 1965-66, 1969-70, 1973-74, 1974-75 and 1975-76.	81-82
4.	Coastal movement of petroleum products	83
5.	AFRA freight costs 1972 to 1975	
	i. Ras Tanura to Bombay	84-85
	ii. Ras Tanura to Madras	86-87
	iii. Ras Tanura to Calcutta	88-89
XII.	GENERAL	
1.	Retail outlets in India as on Ist January of each year since 1968.	90
2.	Crude oil and product pipelines in India	91

Sec.	No.	Subject	Page No.
XII.		INTERNATIONAL PETROLEUM STATISTICS	
	1.	Estimated world crude oil and gas reserves as on 1.1.76.	92
	2.	World estimated \ crude oil production	93-94
	3.	Estimated natural gas production	95
	4.	Productivity of producing wells in selected fields in the world-1975.	96
	5.	World oil refining capacities at end of 1975 and 1974.	97
	6.	World oil consumption 1975 and 1974	98
	7.	Imports and exports of crude oil and products country-wise 1975.	99
	8.	Lowest posted prices of POL products at Bandar Mah-Shahr 1967 - 1976	100-102
	9.	Retail prices, including duty and taxes of some selected products in different countries as on 31.7.1975.	103-106
	10.	Posted airfield prices of Jet A-1 fuel at major international airports as on 1.1.76	107
	11.	Key crude oil price postings around the world	108
	12.	World scale freight rates (AFRA rates)	109-110
	13.	World tanker fleet at end 1975 by flag ownership.	111
	14.	Inter-area total oil movements-1975	112
	15.	Estimated G.N.P. and per capita G.N.P. of OPEC countries	113
	16.	Total and per capita revenues from oil of OPEC countries.	113
	17.	World primary energy co-nsumption 1960-1980	114-115

Sec. No.	Subject	Page No.
18.	Comparative transportation costs from Persian Gulf to Rotterdam in various sizes of tankers.	116
19.	Basic tanker operating data and performance characteristics	117
20.	Estimates of tanker supply and demand balance 1972 to 1980.	118
21.	Sulphur contents of main gulf and African crudes	119

-.-.-.-.-.-.-.

P A R T -II

PETRO-CHEMICALS STATISTICS

I. CHRONOLOGY OF IMPORTANT EVENTS IN PETRO-CHEMICAL INDUSTRY. 1-30

II. CAPACITY & PRODUCTION :-

1. Organic heavy chemicals 31-32
2. Synthetic fibres 32
3. Synthetic rubber 32
4. Plastics raw materials 32-33

III. CONSUMPTION

1. Estimated consumption of organic chemicals in India 34
2. Estimated consumption of synthetic fibres and synthetic rubber in India 35

Sec. No.	Subject	Page No.
	3. Estimated consumption of plastic raw materials	36
	4. Consumption of SBR by end-products	36
	5. End-use analysis of polyethylene L.D.	37
	6. End-use analysis of polyethylene H.D.	38
	7. End-use analysis of polystyrene	39
	8. End-use analysis of P.V.C. Resins	40
IV.	PRICES	
	1. Prices of nylon yarn sold to actual users	41
	2. Ex-works prices(bulk, excluding excise duty) of selected petro-chemicals	42-44
V.	DEMAND	
	1. Demand of methanol during V Plan	45
	2. Net demand of Naphtha for petro-chemicals in India	45
VI.	FOREIGN TRADE OF INDIA	
	1. Imports of selected petro-chemicals in India during 1973-74 and 1974-75	46
	2. Exports of selected petro-chemicals from India during 1973-74 and 1974-75	47
VII.	INTERNATIONAL STATISTICS	
	1. Production of non-cellulosic continuous filaments in selected countries of the World	48
	2. Production of non-cellulosic discontinuous fibres in selected countries of the World	49
	3. Production of plastics and resins in selected countries of the World.	50

P A R T-III

P L A N S T A T I S T I C S

Sec. No.	Subject	Page No.
1.	Fifth Plan targets and achievements during the year 1975-76 selected petroleum and petro-chemicals.	1
2.	Annual Plan outlay for 1976-77 for a various Programme/Activities of the Ministry of Petroleum	2-3
3.	Budget provision (both Plan and Non-Plan) included in the Budget Estimates 1975-76, revised Estimates 1975-76 and Budget Estimates 1976-77 for various programmes/activities of the Ministry of Petroleum.	4-6

-.-.-.-.-.-

P A R T -IV

FINANCIAL STATISTICS

1.	Profitability analysis of Cochin Refineries Ltd.	1
2.	Profitability analysis of Hindustan Petroleum Corporation Ltd.	2
3.	Profitability analysis of Hydrocarbons India Ltd.	3
4.	Profitability analysis of Indian Oil corporation Ltd.	4
5.	Profitability analysis of Indo-Burma Petroleum Co. Limited.	5
6.	Profitability analysis of Lubrizol India Ltd.	6
7.	Profitability analysis of Madras Refineries Ltd.	7
8.	Profitability analysis of Oil & Natural Gas Commission.	8
9.	Profitability analysis of Indian Petro-Chemicals Corporation Limited.	9.

A P P E N D I X I - XI

PART - I

PETROLEUM STATISTICS

HIGHLIGHTS IN OIL INDUSTRY IN INDIA - 1975

1. In May, Oil & Natural Gas Commission acquired a seismic survey vessel "Anweshak" for carrying out systematic surveys of Indian Continental Shelf.

2. In May, a Committee was set up under the chairmanship of Shri K.R. Damle to examine and suggest measures for improving the distribution arrangements for petroleum products; expansion of retail net work so as to reach the products as close to the consumer as possible, particularly in the rural areas; induction of genuine consumer's cooperatives, agro-industries corporation, agro-Service centres in the retail net work in rural and semi-urban areas; streamlining of field supervision; maintenance of adequate level of inventories; and changes in organisational set up in order to economise on overheads, transportation, cross-movement and other charges to reduce their incidence on consumer prices. The Committee submitted its interim report to the Government in September. In its interim report, the Committee, inter alia, recommended setting up of 1600 farm fuel outlets in rural areas for distribution of HSD, Kerosene, LDO and other scarce/controlled commodities such as pesticides, seeds, common drugs etc. Similarly, it recommended setting up of Kerosene stores/depots at Taluka/Tehsil level. To make these capable of realisations, the Committee recommended a cess of 1 paisa per litre on all sales of petroleum products.

3. The Oil Prices Committee, set up in March, 1974, under the chairmanship of Dr. K.S.Krishnaswamy, submitted an interim report to the Government in February, 1975. The Government accepted its recommendations with some modifications with effect from 14th July. Some of the decisions are summarised below :-

   (i) The principle of import parity hitherto followed for pricing of indigenous crude oil and for bulk refined petroleum products will be discontinued.

   (ii) The price of indigenous crude oil will continue to be $4.58/bbl or Rs.36.64/bbl. inclusive of the existing Oil Development cess of Rs.60/- per tonne.

   (iii) The actual costs of ocean transportation by Indian tankers should be reflected in the price of petroleum products and refineries should be reimbursed on this basis.

   (iv) The oil marketing companies have been allowed a 12% return on capital employed and refineries a return of 10% on net fixed assets and 15% on working capital.

.../-

(v) Only refineries shall be the primary pricing points and prices at up country depots/installations shall be determined on the basis of the lowest cost of transportation by any means.

(vi) The ex-refinery prices shall be uniform for all the refineries.

(vii) An Oil Coordination Committee shall be set up to administer the Pool Accounts.

(viii) New products such as jute batching oil, solvents, hexane mineral turpentine oil have been included in the pricing scheme.

4. Oil & Natural Gas Commission and Tanzanian Petroleum Development Corporation signed a Memorandum of Understanding wherein it was agreed that Oil & Natural Gas Commission would assist Tanzania in drilling an exploration well in Songo-Songo Island. Drilling of this well will help TPDC in assessing the Natural Gas reserves in that area.

5. Following the decision of the Organisation of Petroleum Exporting Countries to raise the prices of crude oil by 10% from October 1, 1975, the suppliers of crude oil to India from Middle East raised their prices by about $ 1 per barrel. Consequently, basic ceiling selling prices of Kerosene, High Speed Diesel Oil and Furnace Oil were increased by Rs.120/- per Kilolitre or 12 paise per litre with effect from December 1, 1975. The price of Liquified Petroleum Gas (Cooking Gas) was also increased by Rs.2.50 per cylinder of 15 kg. These increases were exclusive of local taxes etc.

6. A special award of Rs.25 thousand was announced by the Government for devising a suitable Kerosene stove which would be more convenient to the housewife and provide better fuel efficiency. However, no stove was found to be superior to stoves currently available in the market. The Indian Institute of Petroleum and the Research & Development Centre of Indian Oil Corporation have been able to devise a model with improved thermal efficiency of 60% against 35 to 45% of the existing stove in the market. Prototypes of the improved stoves are under fabrication and eventually they are proposed to be sold through the retail outlets of oil companies.

7. Near self-sufficiency was achieved during the year in affreightment of crude and refined products including coastal movements within the country. Except for Cochin, crude supplies, even to the foreign oil company refineries at Bombay and Vizag. were transported during the year, in Indian Flag vessels. For the first time arrangements were made for lightering of crude oil on the high seas (both on the East and West coast).

.../-

8. Considerable progress was made to expand the marketing facilities for domestic gas. Indian Oil Corporation devised an improved seal which will prevent tampering of cylinder valves by unscrupulous dealers and delivery men.

9. A scheme of converting the existing petroleum retail outlets of the oil companies into Multi-Purpose Rural Distribution Centres was launched by the Government. Apart from selling all petroleum products these centres will provide tractor repair facilities and spare parts; agricultural inputs like seeds, fertilizers, pesticides etc. and other essential commodities like cycle tyres, tubes and other spare, controlled cloth, common household drugs, soaps, vanaspati etc.

10. To avoid temporary dislocation in supplies, particularly in Bombay area, during refinery shut downs, import of spiked crude was allowed as a special case for processing on an experimental basis in the Hindustan Petroleum Corporation refinery. Results of this experiment were quite satisfactory and helped in saving considerable inconvenience to customers during shut down of HPCL refinery in March-April, 1975 and of Burmah-Shell refinery in November, 1975.

11. In December, 1975, an agreement was signed between Government of India and principals of Burmah Shell for purchase/sale of 100% shares of Burmah Shell Refineries Limited and for transfer and vesting of Indian assets and liabilities of Burmah Shell Oil Storage and Distributing Company of India Limited. With the takeover of Burmah Shell, the Government would assume effective control over 94% of the production and marketing of petroleum products in the country.

-.-.-.-

Chronology of some important events
in the Petroleum Industry in India

(A) Exploration and Production

(i) Assam Oil Company

1825: The earliest recorded reference of oil in Assam 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 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 the 26th March Mr. Goodenough struck oil at Makum near Margherita at a depth of 118 ft.(36 meters).

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 meters). 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 interests 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 Compnay 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 up-to-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.

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

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

1969: In December drilling of wells was again started in Digboi oil field.

1970: Secondary recovery techniques such as gas injection and water flooding were being used in the Digboi oil field while the feasibility to use thermal recovery method was being studied.

...../-

1971: AOC resumed drilling & completed 14 wells in Digboi oilfied.

(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 participation and 33-1/3 per cent Government of India.

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 Co.

1962: On Ist January, a separate organisation with headquarter 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.

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, 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 conneeted 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 2 was completed as an oil producer in Dum Duma Area.

.....3/-

1970: Kusijan well 3 was completed as a gas producer in Dum Duma. Regular oil production commenced from Kusijan well 2.

Gas injection for pressure maintenance 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 reservior simulation computer programme from Mc Cord Associates Inc. of USA.

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 sale 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.

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 rope-way across the Noa Dihing River in Arunachal Pradesh was commissioned.

Pilot polymer flood project initiated. In this technique, a special type of polymer chemical is added to the water that is used for flooding an oil reservoir. The chemical decreases the mobility of water (by increasing its viscosity) but does not affect the mobility of oil; thus it helps/achieve a /to greater volumetric sweep efficiency and unit displacement efficiency of the reservoir and results in greater oil recoveries.

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

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

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

.....4/-

(iii) Oil & Natural Gas Commission

1947: 1953: Reconnaissance and detailed . geological Mapping were done in parts of Punjab, Himachal radesh, 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.

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: A number of expoerts visited India.

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

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

1957: In April Jwalamukhi well No. 1 was spudded in.

1958: In May, gas was struck at Jwalamukhi.

In July, Cambay well No. 1 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 Ankleshwarand drilling was commenced on Rudrasagar Structure.

1961: In January, oil was struck at Rudrasagar well No. 1

In June oil was struck in Kalol.

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

1962: In February, an agreement was signed with the Soviet Union for the preparation of project reports and working drawing for the Gujarat Refinery.

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

In June, production from Ankleshvar oilfield was stepped up.

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

1963: The Ankleshwar crude oil production was progressively increased during the year. In January, offshore seismic surveys started in the Gulf of Cambay.

In March, drilling commenced on Nawagam structure in Gujarat.

In June, a contract was concluded with the C.G.G. of France for carrying out seismic exploration in Jaisalmer, oil was struck in Saund in Gujarat.

In July, oil was struck in Nawagan well No.1 in Gujarat.

In August, the first well on the Lakwa structure in Assam was spudded in.

.....5/-

In December, a 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: Oil despatches from Ankleshwar were progressively stepped up during the year.

In February, a contract was entered into with a French Company, FORASOL 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 off-shore seismic surveys with the help of the specially equipped Soviet Ship Akademic 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.

In September, the Soviet Ship started its operations.

In October, SNAM started drilling at Janauri well No.2 in Punjab.

In December, production and supply of non-associated gas from Cambay to the Dhuwaran Thermal Power Station was commenced.

1965: In February, oil was struck at Lakwa in Assam by the Commission.

By March, the ONGC completed drilling of 300 wells.

In May, drilling of first well on Kathana structure in Gujarat was commenced.

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

In October, drilling commenced on Baroach structure and Mehsana well No. 1 in Gujarat. Oil was struck at Kathana well No. 1 in Gujarat.

In November, drilling commenced on Surat, Jagadia and Jambusar structures in Gujarat.

1966: Oil production from Ankleswar was progressively stepped up further. Traces of oil and gas were found in Karaikal well No.1. During the first few months, first wells on Bakrol and Dholka structures in Gujarat were spudded in.

In August, Bodra well in West Bengal was spudded in.

1967: In January, drilling at Nagapattinam in Tamil Nadu State was started and supplies of crude oil from Kalol oil field in Gujarat were sent to the Gujarat Refinery.

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

In May, the Water Injection Scheme for the Ankleshwar oil-field in Gujarat started functioning.

By August , the ONGC completed drilling of 500 wells.

In September, drilling on the Di-khumukh structure in Assam was started.

.....6/-

:In November, the ONGC completed the drilling of one million metres and the daily rate of production from the Ankleshwar oil field and kalol oil field was stepped upto 7600 tonnes and 150 tonnes respectively.

1968 : In January, trial production of crude from Kosamba field in Gujarat, near Ankleshwar oil field was started and drilling was commanced on Celeki structure in Assam.

In February ,drilling on Detroj, a new structure in Gujarat, was started.

In March, the National Iranian oil Company, declared the oil find in the Rostam structure in the Porsian Gulf as a commercial discovery, ONGC's share is one-sixth of the crude produced. Drilling was started at Ratanpur, North Kalol and Sobhashan in Gujarat.

In May, oil struck at Geleki, a new structure in Assam and trial production from Lakwa has started.

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

Drilling operations at Asjol and Paloj, (New structures) in Gujarat and Tirupundi in Tamil Nadu were started.

In July, the 17.5 kms. cross country crude oil pipeline connecting the Lakwa oilfield of the Commission with the Oil India Pipeline at Moran was Commissioned and regular production from the Lakwa oil field 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 the Kadi oil field in Gujarat started.

In August, the rate of production from the Kalol and Nawagam oil fields in Gujarat was stepped up. Drilling operations at Sisva in Gujarat and Nagnijan in Assam were started.

By September, ONGC completed the drilling of 600 wells. Drilling operations at Nazira structure in Assam were started.

In October, rate of production oil from Anklesvar and Nawagam oil fields of Gujarat was stepped up. Trial production from Dholka oil fields in Gujarat was started.

In November, trial production from kathana oil field in Gujarat and drilling at Hazira and vaso (new structures), in Gujarat, started.

In December, production of crude oil from Ankleshwar was stepped up.

1969; In January, the first well at Becharaji structure was spudded.

Oil production from Ankdwswar was stepped up.

In March, the 15 kms. Kalol-Sabarmati pipeline was commissioned. Oil production from Ankleshwar Kalol and Nawagam was stepped up further.

In May, the first well at Valod structure in Gujarat was spudded in.

By June, ONGC completed drilling of 700 wells.

.....7/-

Exploratory drilling on four new structures namely Borholla in Nagaland, Duma, Tharad and Vaso-east in Gujarat was commenced.

In August, production from the Rostam field in the Persian Gulf was commenced.(The first of the seven blocks of the fixed platform meant for drilling India's first off-shore well would be based, was launched.)

In December, first exploratory well on Kawa structure in Gujarat was spudded in.

1970: In January, drilling on three new structures viz., Bagnara in Assam , Mohmadabad and East in Gujarat were started.

In February, the first well on a new structure Balol in Gujarat was spudded in.

On 14th March, the first well at Surinsar a new structure in Jammu and Kashmir state was spudded in.

On 19th March, the first off-shore well in the shallow waters of the Gulf of Cambay (Aliabet Island) was spudded in, by the Honourable Prime Ministrer of India. This was the first venture of its kind in India.

Oil was struck at Berholla, a new structure in Assam.

In April, the first well on Dinoj, a new structure in Gujarat was spudded in. ONGC completed drilling of 800 th well.

In May, drilling on three new structures namely, Chidambaram in the Cauvery Basin, and Baad and Sinjiwa in Gujarat was commenced.

In June, the first well on wataman, a new structure in Gujarat was spudded in.

In July, drilling on three new structures namely Amguri in Assam and Dabka and Varsada in Gujarat was commenced.

In August, first well on Santhol, a new structure in Gujarat was spudded in.

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

In November, first well on Kanwara, a new structure in Gujarat was spudded in.

In December, drilling on three new structures namely, Deodar and Baola in Gujarat and Banmali in Assam was commenced.

1971:- In January, drilling was started on Rakanpur, a new structure in Gujarat. An agreement to supply associated gas from Kalol to M/s Mahendra Mills and M/s Navjivan Mills was finalised.

In February, drilling was started on four new structures viz., Delvada, Daswara, Amliala and Chaklasi in Gujarat. Drilling of India's first off-shore well on shallow-waters was also completed during this month.

Sophisticated Digital seismic equipment and data processing system was put into operation in West Bengal.

.....8/-

A contract for procurement of a mobile self-elevating self propelled Jack-up type platform was signed.

In March, drilling was started on two new structures viz. Kauka in Gujarat and Saliayamangalam in Cauvery. The first off-shore well drilled at Aliabet, showed the presence of oil and an agreement to supply gas to the IFFCO was signed.

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

On 12th May, Nawagam-Koyali sector of the Kalol-Nawagam-Kayali pipeline was commissioned. The rate of production of crude oil from Eastern Region was increased. An agreement for supply of associated gas from Kalol to M/s Metro Woods and Enginneering Works was signed.

In June, drilling was started at a new structure Pandanallur in Tamil Nadu.

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

By July, ONGC completed drilling of 900 deep wells. Oil/gas was discovered in Amguri, a new structure in Assam. A high power committee headed by Shri K.D.Malviya, 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.

On 28th August, Kalol-Nawagam sector of the Kalol-Nawagam-Koyali pipeline was inaugurated.

In September, drilling was started at Indrora, a new structure in Gujarat and gas was discovered in Baola, a new structure in Gujarat.

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

In December, oil was discovered in Indrora, a new structure in Gujarat and drilling on Kathumannar-koil, a new structure in Tamil Nadu was commenced.

1972: In January, drilling was started at North Balol, a new structure in Gujarat; and oil was struck at Indrora well No.1 in Gujarat.

In February, drilling was started on two new structures viz. , Devla and Linch in Gujarat and gas was struck in North Balol in North Gujarat and oil in Dabka structure in Broach district in Gujarat. A new oil Thermal Laboratory was commissioned at Lakwa Group Gathoring Station for testing of oil samples.

In March, drilling was started on Atali West, a new structure in Gujarat. Supply of associated gas from Kalol field to M/s Navjeevan Mills was also commissioned.

In April, drilling was started at Dungri, a new structure in Gujarat.

In June, drilling was started at two new structures viz. Balutri and Banni (Kutch)in Gujarat.

.....9/-

In July, drilling was commenced at Baramura structure in Tripura. Petrographic and Geo-chemical Laboratories were commissioned at Madras. Oil was struck at Lanch in Gujarat. Supply of associated gas to M/s Mahindra Mills from Kalol field and to Baroda Municipal Coporation 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 Dehradun.

In September, drilling was started at Anand a new structure in Gujarat and supply of associated gas to three private firms, viz., M/s Metro Wood Works, M/s Melamino and Fibres and M/s Calico Printing Company from Kalol field was commenced.

In November, drilling was started at Vithalpur, a new structure in Gujarat.

In December, drilling was started at West Unnava, a new structure in Gujarat.

1973: In January, drilling was started at Deragaon a new structure in Assam. 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 Taxes, USA, for conducting about 2800 kms. of off-shore seismic reflection work.

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

In March, drilling was started at Charali, a new structure in Assam. The self-propelled, self-clevating Jacking type of mobile drilling platform "Sagar Samrat" got made to order in Ja an 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 May drilling was started on Maraini, a new structure in Assam.

In June drilling was started at Nirora a new structure in Kutch area of Gujarat. 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, drilling was started at Nayavaram, a new structure in Tamil Nadu. The presence of oil was observed in a well on the Charali structure in Assam during an open hole drill stem test. About 71 indigenous items as replacement to imported spares for use in the Cementing section at Nazira were developed and put to successful field-tests.

.....10/-

In August, drilling was started at Mindhola, a new structure in Gujarat.

In October, drilling was commenced on the first off-shore deep well on Tarapur structure in the Arabian Sea adjoining the Gulf of Cambay, about 120 kms. north-west of Bombay with the help of the self-propelled, self elevating jack up type mobile platform, named "Sagar Samrat". Trial production of oil started from Dabka (South Gujarat).

/ During In November, drilling was started at Galodra, a new structure in Gujarat/drilling, indications of presence of gas were observed during open hole drill stem tests conducted in the well on the Tarapur structure in the Arabian sea adjoining the Gulf of Cambay.

For the first time in the history of oil exploration in India oil was discovered in commercial quantities in the basement rocks in Assam while testing the fifth well (Borholla-7) in Borholla area. This oil find was in addition to the earlier discovered oil reserves in the basal sandstone lying just above the Basement.

In December, drilling was started at two new structures namely Puna andSamas-Khurd in Gujarat.

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

1974: During January, Charali structure in Assam was proved to be oil bearing and computer programme, similar to schulumberger Cori-Band programme, for well leg evaluation was developed.

In February, drilling was started with "Sagar Samart" on the first well of Bombay High (Main) structure in the Arabian Sea adjoining the Gulf of Cambay. Oil was struck while drilling at this well.

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.

In April, drilling operations were commenced at Wara, a new structure in Gujarat and well head installation at Indrora were commissioned.

During June, drilling operations were commenced at North Sarkhej, a new structure in Gujarat and anew structure vis, Asjol was declared as oil bearing; well head installation at Santhol-4 were also commissioned.

In July, ONGC completed drilling of 1100th well.

In August, trial production from Geleki oil field, Assam was commenced. The Sanand-GGS and gas line from Sanand GGS to Kalol CTF were also commissioned.

During September, drilling operations were started on Khambel, a new structure in Gujarat. Sanand GGS Kalol CTF oilpipe line was commissioned and well head installation at Linch was commissioned.

In October, precision gravity surveys were introduced for the first time. Seismic and Magnetic surveys for petroleum exploration in the Gulf of Kutch and in the Bay of Bengal by the foreign contractors were commenced.

In November, TNR-91 fast digital off-line pletter was installed in Data Processing Centre for plotting of seismic sections.

In December, production from Dabka was resumed after isolating the gas producing horizons.

1975: In January, North Kadi GGS-cum-CTF was commissioned. Drilling was started on a new structure named Nandasan in Gujarat.

During February, Balol in Gujarat was put on sustained production Oil was struck in a well drilled on Sanao 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. 1. Lakwa, 2. GGS-II GGS-VI at Rudra Sagar and GGS at Gelèki in Assam were commissioned.

New contracts of gas with M/s Hindustan Developement Corporation, and Deepak .. Nitrite were signed. GGS-cum-CTF at South field in Gujarat was inaugurated. Central workshop Baroda, completed manufacture of a prototype work over rig of 28-tonnes of capacity, which is hitherto imported.

During April, production from Geleki and Rudrasagar fields in Assam stepped up. Drilling of a well on Suthsukalan structure in J.K. was commenced.

In May, production from Mehsana in North Gujarat stepped up. GGS-III, at Nawagam in Gujarat was commissioned. During June, gas struck in Baramura well No.I, in Tripura. New work over rig Azimash was commissioned in Ahmedabad.

In July ,drilling of a well commenced on a new structure namely Dhanduka in Gujarat. Gas supplies from Geleki oil field to Geleki Tea estate commenced.

During August, gas supplies from Geleki oil field to Sibbari Tea estate commenced. Drilling started in new structure namely Bhatlai in Gujarat.

During September, gas supplies from Geleki field to Barshilla Tea estate commenced. Two drilling ships spudded wells in Bombay High main off-shore structure in the Arabian sea. Drilling was commenced in a new structure namely Jorhat in Assam.

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

In December, presence of oil was indicated in a well drilled on Nandasan structure in Gujarat. Drilling commenced in two new structure namely Gopinathkilla and Anguri Jorhat in Assam.

.....12/-

(iv)Institute of Petroleum Exploration.

1962-63: Govt. of India decided to set up R.T.I.(Now called IPE) as a part of ONGC with the assistance of UN Special Fund. First phase started. Indigenous equipment was made available. International experts arrived and started working.

Dr. Hari Narain was appointed as first Director of Institute.

1964: Training courses for new entrants were started from 19th August.

1965: The second phase of UNDP assistance was started.

1966: On Ist January United Nations Special Fund and expanded programme of Tech.assistance of United Nations were merged into UNDP.

1967: The first foreign trainee from Phillipines attended Petroleum Geology Course. More United Nation experts joined for strengthening and supervising various branches of oil exploration and exploitation in the Institute.

1968: UNDP evaluation mission visited the Institute to evaluate for further assistance to Institute. The tectonic Map of India was prepared. Honeywell-400 digital computer was installed in the Institute.

1969: UNDP came to end on 30th June. The R.T.I. was named as I.P.E. The Tectonic Map of India was finalised and printed. The BOOK on 'Selected lectures in Petroleum Geology' was published. Fabrication of cable fault detector unit, casing collar locator was completed.

Technological development scheme for Sanand, Dholka, Kalol was completed. Book on 'Control of threatened/out was / belo published.

1970: For the first time computer course in Automath Language was arranged by I.P.E.

Ferro-ch-rome legno sulphonate, imported at present was synthesized in laboratory, using indiginous raw material. Preparation of Oil and Gas Map of ECAFE region was taken up.

1971: Designing fabrication and testing of Gamma-Gamma device was completed.

The hydrocarbon prospect analysis of Andaman Islands was completed. Artifical Lift studies of Kathana, Dholka, Lakwa Oil fields were completed.

.....14/-

1972: The Tectonic Map of India was dicussed in Kualalumpur in March 1972. Delegation from Nigeria visited Institute to discuss training facilities to their country.

A cement clinker, comparable to API class E cement was developed. Fabrication of sequential firing blaster and High and low cut filters for seismic unit was done.

1973: A batch of 19 Nigerian trainees underwent training in Petroleum Geology, Petroleum Engineering and oil well Drilling.

The Institute prepared technical dossiers of various off-shore blocks of India which were sold prospective foreign oil companies. A team of Russian experts arrived for assessing prognostic reserves of various basins in India.

Fabrication of apparatus for demulsification and desalting of Nawagam Oil crude is in progress.

The Additional Director, IPE was elected vice-Chairman of Regional Committee on stratigraphic correlation in ECAFE region.

The NCST report on Land and Marine resources was submitted.

1974: Non-solid .. work over fluids for improving productivity of oil wells of North of Gujarat have been developed.

Chrome lignite and sulphonated asphalts are being developed. Work is still in progress.

Brakish to marine paleosalinity conditions have been estimated in Gondwana sediments (Kota-Maleri Limestone) of Pranhita-Godavari basin utilising trace element technique.

1975:- The Institute was re-organised and strengthened.

.....2/15/-

(v) 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 Co. , ONGC (India), PPCO (USA) and AGIP of Italy. Incorporated as a Private Limited Company, wholly owned subridiary of ONGC. ONGC assigned its right and liabilities under this agreement.

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

First Rostam crude oil tanker containing our share was loaded in September and sold to Spain.

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

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

(VI) 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.

(B) Refineries

(i) The Digboi Refinery, Digboi, Assam,

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
and the Indian Sub-Continent/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 ~~entire~~ 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 commission.

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 Dis-tillation unit was installed.

.....13/-

-: :-

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 pipe lines for the receipt of crude oil and gas from Nahorkatiya oilfield.

1956: A new pipe line for the pumping of white oils to Tinsukia was installed, one of the old 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 old 4 Red oil line 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.

(ii) Burmah Shell Refineries Ltd. Trombay ( )

1951: Towards the end of the year the Refinery agreement was signed.

1953: In February site development commenced

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

In June Bitumen production commenced.

1956: In January, Liquified Petroleum Gas production commenced.

In June, MT-80 production commenced.

Duty protection on Motor Gasoline with effect from Ist Oct. was surrendered.

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 on Ist July.

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

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

1963: Processed 3.75 million tonnes of crude during the year. 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 to FCI was commenced.

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

..... 16/-

1966: Annual crude throughtput crossed the 4 million tonnes mark (.....).

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

In August, supply of chemical feedstock grade Naphtha to NOCIL was commenced.

In November, supply of Hot Heavy Stock by pipeline to Tata Power Station was commenced.

1973: Processing of Government crude commenced.

1974: Crude processing capacity reached a rate of 6 million tonnes per annum.

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

1975: In August the refinery completed working 7 million manhours without lost-time accident which is a world record for petroleum refineries.

(iii) Esso Standard Refining Co. of India Ltd./ Hindustan Petroleum Corporation Ltd./ Fuel Refinery.

1951: In November, an agreement was signed between the Govt. 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 Co. 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: Esso started export of Naphtha.

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

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

.....17/-

1966: Esso started raw material naphtha feedstock supplies to the new petrochemical plant of Carbide Chemical Company.

1967: Esso started manufacturing Industrial Asphalts.

1968: Esso started manufacturing-for the first time in India speciality products (CS-330 and Petroleum Ether) -to substitute imports.

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

1970: Esso started manufacturing -for the first time in India-of Propane. To date, Esso is the only company manufacturing propane.

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

1970: ESRC manufactured Carbon Black Feedstock.

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

1974: In March, the Government 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.,

In July, the fuel Refinery completed 20 years. The foreign exchange saved from start up in 1954 has been more than Rs. 175 crores.

1975: Commissioned for the first time in India lightering operations to better utilize the 87,000 DWT tankers in August.

(iv) Caltex Oil Refining (India) Ltd. Visakhapatnam.

1953: In March, an agreement was reached between the Government 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 Caltex Refinery went on stream at Visakhapatnam. Exports of Mogas and Fuel oil were undertakin in the same year.

1959: In October, the duty protection on Motor Gasoline was sureendered by the Company.

1963: In April duty protection on other products was surrendered.

In May, manufacturing of LPG commenced.

1964: Caltex Refinery started export of Naphtha.

1969: Caltex Refinery exported Asphalt.

1973: During November-December CORIL commenced processing crudeof IOC on a processing fee basis.

1975: In June, CORIL commenced purchasing crude oil from IOC. The crude oil is brought by World Bank Tankers and transhipped into smaller vessels for discharge into Refinery storage, Tanks.

.....18/-

(v) Indian Oil Corporation(Refinery Division)

(a) Barauni Refinery,Barauni, Bihar.

1961 : In June, a contract was signed with M/s-Tiajpromexport, Mo... 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 work for the coke calcination plant started.

1971 : In June, Govt. 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, Bareilly for evaluation and plant trials at their end.
In Sept., Naphtha pipeline to FCI was commenced.

1975 : During 1975-76 , 2949 thousand tonnes of crude were processed in the refinery which is the highest annual throughput so far. Coking unit, kerotreating unit and coke calcination Plant processed 717,339 and 59 thousand tonnes of feed stock respectively which is the highest throughputs achieved so far in these units.

204 thousand tonnes of LPG was produced in a year which is the highest production so far.

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 destillates components in dewaxing unit was introduced.

(b) Gauhati Refinery, Gauhati, Assam.

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

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

1969 : In November, production of ATF was commenced.

1971 : In March, production of LPG was started.

1975 : Refinery achieved a record crude throughput of 827 thousand tonnes in the distillation unit during 1975-76. Refinery also processed 331 & 137 thousand tonnes of feed stock in coking & Kerosene Refining units respectively during 1975-76 which is the highest achievement so far.

3102 tonnes of LPG was produced during 1975-76 which is the highest production in a year so far.

.....19/-

(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 M^3 crude oil tanks were commissioned

1975: Refinery processed 4107 Thousand tonnes of crude during 75-76 which is the highest annual throughput achived so far.

90 thousand tonnes of LPG was produced during 75-76 which is the highest annual production achived so far.

LSHS despatches to HPC 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.

(d) Haldia Refinery

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 Government 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 part was taken up.

In May electrical works in power plant process units and off sites was commenced.

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

.....20/-

1974 : In August, crude destillation unit went on trial runs.
In December, Naphtha pretreater Calalytic reforming and kero Hydrodesulpha risation units were commissioned.
In October HSD, & FO despatches were started.
In December LPG, SK, & ATF upliftements were started.

1975 : The refinery went into commercial production on Ist January.
Visbreaking unit was commissioned on 8th October.
Production of JBO and MTO products was started.
Ist Naphtha export parcel of 17 thousand tonnes was loaded in the tanker on 22nd May.

(e) Mathura Refinery Project

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 by the Prime Minister of India.

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 Techmeco 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 & Neftechimpromexport.
Govt. Decision regarding the revised schedule for Mathura Refinery i.e. Mechanical 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.

(f) Cochin Refinery, Cochin, Kerala

1963: On 27th April, the fermation agreement was entered into between the Govt. of India, Phillips Petroleum Co. of USA and Duncan Bros. Co.Ltd. Calcutta for setting up a Refinery in the South.

1966: On 6th September , Cochin Refinery 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.

1973: The expansion programme of the refinery was completed during August,1973.

-. . . .21/-

(g) Madras Refineries Ltd.

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

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

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

In April, the construction and erection of the Refinery was
ceremony started.

1969: First crude oil tanker arrived.

In April, the Refinery was commissioned.

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

In September, the Refinery was formally inaugurated.

1970: Naphtha was exported to Japan for the first time.

1971; Since February, the company has no expatriate employee.

1972: Achieved hundred per cent utilisation of installed capacity. Declared dividend for the first time.

Services of two experts were loaned to Ceylon Petroleum Corpn. to train operating personnel.

Services of one expert were loaned to Syria under UNDIO programme.

In September, New Oil Jetty for berthing tankers in fair weather was available.

1973: Asphalt production increased to 243 thousand tonnes from 80 thousand tonnes (Design) to meet demand by providing additiona storage and filling facilities.

Received first Prize under Shram Vir National Safety Awards for highest reduction in accident frequency rate among Petroleum Refineries. New products like Rubber Processing Oils Ink oil and Axle Oil were developed.

1973: Asphalt was exported to Indonesia for the first time.

Exported Lubricating Oil Base stock to Bangaladesh for the first time.

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

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

1975: Services of one experts were loaned for serving in Syria under UNDIO.

Fuel consumption was reduced by 10% which resulted in annual saving of about one crore rupees. LPG production increased to 36 thousand tonnes from 20 thousand tonnes (Design) by debottlenecking and decrease in fuel Gas Consumption.

.....22/-

(vi) Bongaigaon Refinery & Petro-Chemicals Ltd.

1974: The company was registered under companies Act,1956, on 20th February in thestate of Assam, with an authorised capital of Rs.50 crores.

The work on various aspect of the Refinery has been entrusted to M/s Engineers India Ltd., and process design completed indiginously for the first time.

Feasibility Report of K.T.U. Was prepared and submitted to the Ministry.

1975: Clearance for K.T.U. was obtained. Clearance of Public Investment Board was obtained for coker unit.

(C) MARKETING

(i) Burmah-Shell

1963: The Asiatic Petroleum Company entered the Indian Market.

1921: The Burmah Oil Company entered the Indian Market.

1928: Burmah Shell came into existance on 6th January.

1956: Burmach-Shell started the use of special tankwagons for transporatation of Bitumen. In May Indian Flag vessel Desh Sewak was chartered.

1965: Burmah-Shell started use of special tank wagons for tansportation 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 export advice to fuel users.

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

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

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

1933: On 7th September, Standard Vacuum 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 jointely owned lubricating base oil refinery at Bombay.

..... /-

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

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

1974: In 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 have been more than Rs.175 crores.

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

(iii) Caltex (India) Limited.

1937: Caltex started its operations in India by taking over the business of Taxas company (India) Ltd.,

1959: In October, Caltex chartered an Indian Flag tanker Desh Deep for off-shore movement of its products.

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

1972: In response to a request from Government of India 'Desh Bandhu' 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.

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

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

1960: In July, first import tanker was received form 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: In April, first shipment of Petroleum products to Nepal was made.

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

In October, supplies to Defence commenced.

.....24/-

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 uner / Motor rehabili /tation 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 /the for agricultural operation. As at/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 blending 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 Combatore under the scheme of Employment to unemployed o graduatos.
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 45kl. Avnre- fueller, 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.

.....25/-

1972: In January, scheme for the award of dealerships to rehabili tate, 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 in 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 Napal Oil Corporation as per orders of the Govt. 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.

Besides petroleum products essential commodities for farmers are made available in these centres.

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

(D) Lube Plants (i) Lube India Ltd./ Hindustan Petroleum Corporation Ltd.

1965: On 15th September, lube Refineryagreement was signed by the Presi dent of India and Esso Eastern Inc.

1966: On 4th April, the Companywas incorporated.

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

1970: On 12th February, Lube India Ltd. was formally inaugurated.

.....26/-

Company achieved production of 57% of design (volume) against target of 50% during the year.

1971: Company achieved production of 87% of design(volume) against target of 75@% during the year.

1972: Company's production was 101% of design (volume) against target of 100% during the year.

1973: Company obtained an industrial licence for manufacture of Carbon Black Feed stock.

CN CBFS licence was enhanced to 110 thousand tonnes.

Company made experimental batches of 150 turbine Oil base stock. Production in 1973 was 106% of design (volume).

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

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

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

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

(ii) Lubrizol India Limited.

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

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

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

1968: On 28th 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 (Stages II and III of Phase II) was started.

(iii) Indian Oil Blending Ltd.

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 IndianOil Blending Ltd., was established for manufacturing lubricating oils of Mobil and other Brands, with financial participation in the new company by Mobil Petroleum Co. Inc.

..... 27/-

1963: On 25th March, Indian Oil Blending Ltd., was incorporated as a Public Limited Co. 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 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 Ist November a supplementary Agreement was signed between Indian Oil Corporation Ltd.& Mobil Petroleum Co.Inc. for the construction of Greese 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 Limited and Mobil Petroleum Co.Inc. the capital contributed by Mobil Petroleum Co.Inc. being in U.S.Dollars

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

1968: On 19th July, a Supplemental and Amendatory 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 Absorption Spectrophotometer. Both these instruments are for research and development and are mainly to be used for import substitution programme.

1972: The licensed 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 Inc. of New York were terminated with effect from 19.7.1974 and the 50% of shareholdings of Mobil in Indian Oil Blending Ltd., were taken over by Indian Oil Corporation as a result of which Indian Oil Blending Ltd., became a whelly-owned subsidiery of Indian Oil Corporation Limited.

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

.....28/-

(B) Research & Development

(i) Indian Institute of Petroleum, Dehradun

1959: In October, the Council of Scientific & Industrial Research took a decision to set up a Central Petroleum Research Institute.

1960: In June, an agreement for collaboration (5years) was finalised with the Institute Francais du Petrole, France

In September the Institute started functioning in temporary laboratories in the Central Road Research Institute N.Delhi.

1961: In September, land was acquired at Mokkampur, Dehradun, for construction of Institute's premises.

1963: During April-June the first laboratory building viz., the Technology Block at Dehradun was completed & occupied.

1964: In June, approval of United Nations Special Fund's Project for strengthening the Refining Division and creating a petro-chemistry Division was obtained.

In August, first special post-graduate training courses in Petroleum Refining, and Utilisation of Petroleum Products in Engines was started.

1965: In June, agreement of collaboration with the Institute Francais du Petrole, France was extended by six months, i.e. upto December , 1965.

1966: In January, IIP's scientists got Republic Day Award for developing a process on Reforming of Iomox and the Agreement of collaboration with the Institute Francais du Petrole, France was extended for another three years.

In May, an agreement was signed with the Institute Francais du petrole, France for the manufacture of proteins from Hydrocarbon cuts.

In July, United Nations Special Fund's Project for strengthening, the Refining Division and creating a petrochemistry Division became effective.

1967: In June, a Pilot plant for producing proteins from petroleum was received as a gift from Institut Francais du Petrole, France.

In October, an agreement was signed with the Institute Francais du Petrole, France, for IIP-IFP process for Hydrodesulphurisation and Hydrogenation of petroleum cuts.

1968: In Jaunary, IIP's Scientist got Republic Day Award for development of a simple reflux splitter.

In July, a patent on "A wick sloove to improve the non-smoking illumination when burning oil in a cylindrical wick lamp" was sealed.

.....29/-

In October, a Patent on "Aprocess for the production of pure aromatics such as benzene, toluene, xylenes, naphthlene, etc. from pure and mixed alkylaromatic feeds with or without saturates" was sealed.

In November, a patent on "A process for the production of hydrous or anhydrous lanolin from wool grease" was sealed.

In December, Pilot plant for ... proteins from petroleum was shifted to Gujarat Refinery.

Process on re-refining of used I.C.Engines crank case oils was released to six parties.

1969: In January, agreement of collaboration with the Institu Francais du Petrole, France was extended for another three years, i.e. upto December,1971.

In Feb. IIP-IFP Hydrodesulphurisation process was released to Madras Refineries Limited, Madras.

1970: In March, IIP-IFP Hydrodesulphurisation process was released to Zuari Agrochemicals, Goa.

In April, a patent on "High altitude fuel regulator for diesels" was sealed.

In November, IIP's process on re- refining of used I.C. engine crank case oil was released to M/s Petroleum Oil Regenerating Industries, Bhilai.

1971: In January, patents on "High altitude mixture corrector" and "AProcess for seperation of pure aromatics for olefins" were sealed.

In May, patent on "Process for Preparation of Alkyl Nitrate esters for use as cetane improver additive" was sealed.

In June, patents on "New support material for gas chromatography from attapulgite", " An improved Process for the preparation of alkylnitrate esters from glycol ethers", "An improved process for preparation of alkyl nitrate esters from allphatic alcolhols", and "An improved process for preparation of alkyl nitrate esters from alicyclic alcohols", were sealed.

In August, IIP's process on re-refining of used I.C. engine crank case oil was released to Shri T.K.Nagraj, Madras.

An agreement with Hindustan Liver Ltd., was signed for collarborative work on the scale up studies for production of synthetic fatty acids.

1972: In January, IIP'S scientists get Republic Day Award for developing a process for Flouresent Indicator Analyssis grade silica Gel. During the same month, IIP's process for the production of hydrous or anhydrous lanolin from wool grease was released to M/s Kapoor Industries, Bombay.

In Feb. IIP's process for the production of white oils was released to M/s Petroleum Products Manufacturing & Marketing Society, Ahmadabad.

.....30/-

In March, IIP-IFP hydrodesulphurization process and Catalytic Reforming process were released to Indian Oil Corporation Limited. (Haldia Refinery).

IIP's Process on re-refining of used I.C. Engine crank case oil was released to three parties.

IIP-IFP process for hydrogenation of pyrelysis gasoline was released to Indian Petrochemicals Corporation Limited.

1973: In January Padamashri award was given to Mr. M.G.Krishna, Director, IIP.

IIP's Process on re-refining of used I.C. engine crank case oil was released to eleven parties.

IIP-IFP Hydrodesulphurization process was released to Southern Petrochemicals Industries Corporation, Tuticorin.

During April-May training in petroleum refining and petrochemicals was provided to two trainees from Pertimina (Indonesia) under the Technical Cooperation Scheme of the Colombo Plan and special Assistance Plan SCAAP).

1974: IIP's process on re- refining of used I.C. engine crank case oil was released to six parties.

Training was provided to two candidates from Tanzanian Petroleum Developments Corporation Tanzania in the field of petroleum refining.

IIP-IFP Hydrodesulphurization and Catalytic reforming process released to Mathura Refinery.

In September, approval of United Nations Special Fund was obtained for Strengthening the Petroleum Products Application Division.

1975: The know-how for hurricane lanterns with modified design for optimum performance was released to M/s Modi Lantern and Torch Works , Modinagar for commercialisation.

A modified ... erosine wick stone having thermal ... efficiency higher by 15% than that of conventional types was developed which was selected by the Indian Oil Corporation for commercialisation.

After successful bench scale trials the process for the preparation of butylated hydroxy toluene, and important antioxidant additive, was licensed to M/s Amar Dye Chem.Ltd., Bombay, for scale up.

Process for re-refining of used I.C. engine crank case oils was released to Oil Natural Gas Commission Dehra Dun.

.....31/-

(ii) Research & Development Centre,
Indian Oil Corporation Limited.

1970: On 21st December, the feasibility report was submitted.

1971: On 3rd September, land for the centre was acquired at Faridabad.

On 23rd September, the feasibility report was approved by the Government.

1972: In November, foundation stone for a temporary laboratory was laid.

1973; The temporary laboratory was commissioned during June.

1974: In April , the erection of Technical Block was commenced.

On 6th December, an investment of Rs.4.84 crores for this project was approved by the Government of India.

On 27th December, Technical Block was commissioned.

1975: In July thefirst patent application for Malarial Larvicidal oil was filed.

The first issue of monthly technical journal Oil Quest & Digest was published in November.

- - - - -

GROWTH OF PETROLEUM INDUSTRY IN INDIA

Year	Production of crude oil ('000' Tonnes)	Refineries crude Charged ('000'Tonnes)	Production of Petroleum Products ('000'Tonnes)	Imports (Rs.Million Crude	Products	Total	Exports/Re-Exports Rs.Million	Consumption ('000' @@ Tonnes)
1.	2.	3.	4.	5.	6.	7.	8.	9.
1960	451	6091	5747	405.7	410.2	815.9	46.1	7784
1961	513	6440	6090	393.1	476.1	869.2	37.6	8394
1962	1078	7003	6584	387.3	514.6	901.9	38.5	9521
1963	1652	8138	7650	417.8	548.1	965.9	55.0	10347
1964	2212	8932	8428	425.9	537.8	963.7	48.4	11361
1965	3022	9754	9113	403.8	447.3	851.1	39.2	12279
1966	4647	12030	11283	561.0	520.2	1081.2	87.6	12968
1967	5667	14430	13452	795.9	390.1	1186.0	142.3	14089
1968	5853	16096	14923	938.8	407.4	1346.2	82.5	15829
1969	6723	17495	16239	940.1	382.4	1322.5	107.7	17336
1970	6809	18459	17177	1023.6	305.3	1328.9	57.2	18735
1971	7185	19588	18229	1398.8	434.9	1833.7	25.5	20640
1972	7373	19672	18204	1442.5	566.9	2009.4	89.4	22628
1973	7198	20518	19125	2445.6	880.3	3325.9	57.7	23687
1974	7490	20783	19303	8993.6	2099.0	11092.6	193.7	23015
1975	8283	21835	20532	9579.1	1887.9	11467.0	121.3	25502

Note:- Data for consumption is under revision

@@ Including Refinery Boilder Fuel (1962 onwards).

RESERVES OF CRUDE OIL & NATURAL GAS IN INDIA*

	GUJARAT		ASSAM		TOTAL	
	Crude oil (in million tonnes)	Natural Gas (in billion Cu. Metres)	Crude Oil (in Million tonnes)	Natural Gas (in billion Cu. Metres)	Crude Oil (in Million tonnes)	Natural Gas in billion Cu. Meters
1966	62.73	23.09	90.27	40.06	153.00	63.15
1967	65.83	24.65	88.96	42.60	154.84	67.25
1968	64.92	21.80	76.08	41.54	141.00	63.34
1969	59.80	22.90	72.51	42.70	132.31	65.60
1970	56.33	19.66	71.46	42.82	127.84	62.48
1971	51.08	18.84	62.70	43.45	113.78	62.29
1972	52.28	16.88	72.90	45.25	125.18	62.51 **
1973	49.45	16.35	77.87	49.71	127.32	66.44 **
1974	48.45	16.18	76.05	51.30	124.50	67.86 **
1975	45.72	15.72	84.41	65.24	157.67***	93.95 @@

** Including Reserves of 0.38 billion Cu. Metres in the Rajasthan State.
* Proved and indicated balance recoverable reserves.
*** Including 13.77 million tonnes of crude oil off-shore reserves.
@@ Including 0.43 billion cubic metres in Rajasthan State and 6.28 billion cubic metres off-shore reserves.

ONGC : Figures are as on Ist October of each year upto 1973.
ONGC,OIL & AOC : Figurers are as on Ist January of each year.

NUMBER OF DEEP DRILLING RIGS IN THE COUNTRY

As on 31st December of	ONGC	OIL	AOC	TOTAL
1.	2.	3.	4.	5.
1960	10	4	-	14
1961	23	4	-	27
1962	31	4	-	35
1963	43	4	-	47
1964	43	4	-	47
1965	46	4	-	50
1966	50	4	-	54
1967	50	4	-	54
1968	50	4	-	54
1969	50	4	1	55
1970	55	4	1	60
1971	55	4	1	60
1972	55	4	1	60
1973	56	4	-	60
1974	56	4	-	60
1975	59*	4	-	63

* Including two drill ships working for ONGC in Bombay High.

STATUS OF WELLS @

(Number of Wells)

Company/Year	Oil	Gas	Dry	Under Test	Injection	Others *	Total
1.	2.	3.	4.	5.	6.	7.	8.
I. Oil India Ltd.							
1967	127	10	24	28	3	-	262
1968	206	11	28	25	3	-	273
1969	215	12	28	22	7	-	284
1970	224	13	29	23	9	-	298
1971	231	15	31	23	13	-	313
1972	240	17	31	24	14	-	326
1973	244	18	33	24	18	-	337
1974	249	18	34	26	20	-	347
1975	252	19	33	28	24	-	356
II. Oil &Natural Gas Commission							
1967	265	44	115	85	18	-	527
1968	345	52	153	79	18	-	647
1969	430	63	182	68	18	-	761
1970	478	66	214	83	21	-	862
1971	504	70	252	82	22	-	930
1972	528	74	268	102	26	-	998
1973	548	77	284	114	28	-	1051
1974	590	79	312	134	28	-	1143
1975	674	85	332	137	29	-	1257
III. Assam Oil Co.							
1967	379	8	-	-	8	592	987
1968	373	8	-	-	8	598	987
1969	380	9	-	-	10	588	987
1970	377	7	-	-	8	606	998
1971	381	7	-	-	4	609	1001
1972	367	7	-	-	5	622	1001
1973	370	7	-	-	5	619	1001
1974	377	7	-	-	5	612	1001
1975	380	6	-	-	5	610	1001
TOTAL(I+II+III)							
1967	841	62	139	113	29	592	1776
1968	924	71	181	104	29	598	1907
1969	1025	84	210	90	35	588	2032
1970	1079	86	243	106	38	606	2158
1971	1116	92	283	105	39	609	2244
1972	1135	98	299	126	45	622	2325
1973	1162	102	317	138	51	619	2389
1974	1216	104	346	160	53	612	2491
1975	1306	110	365	165	58	610	2614

@ As at the end of each year

* Includes abodoned and shut in wells.

STATE-WISE ACHIEVEMENT OF GEOLOGICAL FIELD PARTIES SINCE INCEPTION UPTO DECEMBER, 1975.
(Provisional)

STATE	GEOLOGICAL SURVEYS						
	Detailed (Sq. Kms.)	Semi-detailed (Sq. kms.)	Traversing (line kms.	Reconnaissance (Sq. kms.)	Special studies (sq.kms.	Neotectonic/ Geomorpholo-tical (Sq. kms.	Reconnaitory traversing (line kms.)
1.	2.	3.	4.	5.	6.	7.	8.
Andhra Pradesh (including Tamil Nadu & Kerala)	3316	19694	1040	20754	-	271535	3300
Andaman & Nicobar	608	2265	477	1891	-	-	-
Assam(Including Tripura, Mizoram, Arunachal Pradesh & Meghalaya)	7388	14843	7888	4282	-	-	650
Gujarat(including Kutch/Maharashtra and U.P.)	8258	41955	2952	13043	2926	-	-
Bihar	-	1259	64	-	-	-	-
H.P.	Included in Punjab						
J & K	1749	7029	1369	6513	70	-	-
Tamil Nadu	-	-	Included in Andhra Pradesh				
Orissa	-	-	-	-	-	-	-
Punjab(including Himachal Pradesh	9710	8919	4863	4568	1489	-	382
U.P.	4653	10727	2054	613	4170	-	-
West Bengal	912	1062	187	2	-	-	-
Rajasthan	3584	21554	1372	4030	-	-	-
Nepal	194	8446	1087	-	-	-	-
Pondicherry	-	-	-	-	-	-	-
Kerala		included in Andhra Pradesh			-	-	167
Nagaland	25	345	449	-	-	-	-
Bhutan	-	1076	88	290	-	-	-
Others	Off the coRomandal coast Palk Strait-Gulf off Cambay & Kutch/Off the Arabian Sea Mouth of Ganges & Mahanadi Gulf of Mannar/Off the KeralaCoa						
Total O.N.G.C.	40402	139164	23890	55989	8655	271535	4499

Statewise distribution of Geophysical work done in the country during the year 1969-70 (Provisional)

State	Geophysical Surveys		
	Departmental Line kms.	Contract Line kms.	Total Line kms.
A. ON LAND			
1. Andhra Pradesh	5136	-	5136
2. Andaman & Nicobar	-	-	-
3. Assam (including Tripura, Mizoram Arunachal Pradesh & Meghalaya)	11606	-	11606
4. Gujarat (including Kutch/ Maharashtra & M.P.	39564	-	39564
5. Bihar	* 1711	-	1711
6. Himachal Pradesh	include in Punjab		
7. Jammu & Kashmir	1937	-	1937
8. Tamil Nadu	8969	-	8969
9. Orissa	1631	-	1631
10. Punjab (including H.P.)	5073	-	5073
11. Uttar Pradesh	10861	-	10861
12. West Bengal	10661	-	10661
13. Rajasthan	2825	2106	4931
14. Nepal	-	-	-
15. Pondicherry	-	-	-
16. Kerala	-	-	-
17. Nagaland	-	-	-
18. Bhutan	-	-	-
Total On Land	99974	2106	102080
B. Off-Shore			
1. Gujarat/Saurashtra	3358	*4685 B.H.	8043
Corromendal Coast	(a) 4920	**2838 B.H.	7750
Bombay High etc.	(b) 3055	***14623	17678
Total Offshore	11333	22146	33479
Total A+B	102080+33379	= 135559 Line kms.	

Note:- (a) By Anweshak Seismic Survey Ship
(b) By Petty Ray in Deeper contimental self Project
* By Franch CGG Party beside 4685 linekms of reflection surveys, the CGG. party also carried out 3845 of Magnetic survey.
** By G.S.I.

*** By Russian Off-shore Party.

@ In addition 39 line kms. were done for Oil India Ltd. In Assam during 1969-70 The break up of 14623 line kms. Seismic survey conducted by the Russian off-shore party was as under:-

1.	Off-the corromendal Coast	1351 Line kms.
2.	Gulf of Mannar	208 "
3.	Off the Kerala Coast	395 "
4.	Gulf of Cambay & its shelf	6946 "
5.	Gulf of Kutch & its self	1458 "
6.	Bay of Nizama Pattam	113 "
7.	Corromandal Coast of Palk s strait	1729 "
8.	Shelf of West Bengal	286 "
9.	Self of Godavari& Krishna Basin	970 "
10.	Month of Coleroon area	888 "
11.	Karriakal Area	329 "
	Total	14623 "

B.H. - Bombay High

STATE-WISE ACHIEVEMENT OF DRILLING SINCE INCEPTION TO DECEMBER -1975. (Provisional)

State	Drilling Departmental Wells	Drilling Departmental Meterage	Drilling Contract Wells	Drilling Contract Meterage
1.	2.	3.	4.	5.
Andhra Pradesh (including Tamil Nadu & Kerala)	-	-	-	-
Andaman & Nicobar				
Assam(including Tripura, Mizoram, Arunachal Pradesh & Meghalaya)	250	846	-	-
Gujarat(including Kutch/Maharashtra and Madhya Pradesh	947	1595	-	-
Bihar	1	3	1	5
H.P.(included in Punjab)	-	-	-	-
Tamil Nadu & Pondicherry	17	40	-	-
J & K	2	5	-	-
Orissa	-	-	-	-
Punjab(including H.P.)	5	18	2	10
Uttar Pradesh	2	4	1	5
West Bengal	1	7	-	-
Rajasthan	9	9	6	11
Nepal	-	-	-	-
Kerala	-	-	-	-
Bhutan	-	-	-	-
Off-shore(BombayHigh)	12	22	-	-
Aliabet West	-	-	-	-
Others				
Off the Coromandal Coast Palk Strait	-	-	-	-
Gulf of cambay & Kutch off/the Arabian Sea	-	-	-	-
Mouth of Ganges and Mahanadi	-	-	-	-
Gulf of Mannar/off the Kerala Coast	-	-	-	-
Total ONGC	*1247	2550	10	31

(a) By French CGG Party.

(b) By Russian Off-shore party.

(c) By G.S.I.

*= In addition 39 line kms. were done for Oil India Ltd. in Assam during 1969-70.

* = In addition 4765 line km. of Reflection and 3851 km. of Magnetometric surveys were also done by M/ess CGG of France in Bombay High on contract basis during 1971-72.

COMPANY-WISE PRODUCTION OF CRUDE OIL

('000' Tonnes)

YEAR	AOC	OIL	ONGC	TOTAL	CUMULATIVE
1948	255	-	-	255	255
1949	258	-	-	258	513
1950	259	-	-	259	772
1951	269	-	-	269	1041
1952	263	-	-	263	1304
1953	269	3	-	272	1576
1954	278	30	-	308	1884
1955	272	75	-	347	2231
1956	307	89	-	396	2627
1957	277	163	-	440	3067
1958	214	226	-	440	3507
1959	202	248	-	450	3957
1960	179	272	-	451	4408
1961	184	319	10	513	4921
1962	188	556	334	1078	5999
1963	184	805	663	1652	7651
1964	170	1274	768	2212	9863
1965	158	1742	1122	3022	12885
1966	149	2143	2355	4647	17532
1967	134	2752	2781	5667	23199
1968	117	2771	2965	5853	29052
1969	112	3074	3537	6723	25775
1970	107	3070	3632	6809	42584
1971	98	3146	3941	7185	49769
1972	93	3183	4097	7373	57142
1973	84	3102	4012	7198	64340
1974	72	3080	4338	7490	71830
1975	68	3087	5128	8283	80113

Growth:	I Plan	(1951-55)	6.0%
	II Plan	(1956-60)	5.5%
	III Plan	(1961-65)	46.1%
		(1966-68)	24.7%
	IV Plan	(1969-73)	19.6%

PRODUCTION AND STATE-WISE UTILISATION OF NATURAL GAS IN INDIA

(Mn.Cu.Metres)

YEAR	Production	UTILISATION									Grand Total
		ASSAM				GUJARAT					
		Internal use*	A.G.C.	Others	Total	U.P.H.	D.P.H.	GSFC& BI	Others	Total	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10	11.	12.
1961	171.83	169.20	-	0.20	169.40	-	-	-	-	-	169.40
1962	209.64	186.30	-	0.22	186.52	-	-	-	-	-	186.52
1963	240.90	171.13	-	0.20	171.33	-	-	-	-	-	171.33
1964	430.71	179.36	-	2.71	182.07	-	0.65	-	-	0.65	182.72
1965	736.63	181.68	21.38	5.81	208.87	9.83	127.02	-	-	136.85	345.72
1966	803.16	208.45	39.20	6.86	254.51	65.79	51.21	-	-	117.00	371.51
1967	1221.50	210.71	43.63	8.24	262.58	102.08	52.48	48.36	-	202.92	465.50
1968	1316.71	212.22	95.06	9.83	317.11	106.55	68.88	111.94	-	287.37	604.48
1969	1383 .55	210.36	141.98	15.06	367.40	102.37	108.04	152.03	-	362.44	729.84
1970	1424.17	188.76	156.79	14.50	360.05	84.69	57.82	173.89	-	316.40	676.45
1971	1509.00	192.92	171.28	17.07	381.27	92.41	88.09	184.31	17.52	383.33	763.60
1972	1564.55	290.94	189.41	16.60	496.95	125.18	88.62	189.51	26.72	430.03	926.98
1973	1674.20	297.97	198.57	19.05	515.59	110.90	77.08	179.56	29.83	397.37	912.96
1974	1917.51	293.05	221.09	24.57	538.71	114.58	83.25	178.36	94.88	471.07	1009.78
1975	2310.24	339.08	254.09	27.86	621.03	112.88	89.54	192.67	236.43	631.52	1252.55

* Including the gas returned to natural reservoirs and gas used by OIL and AOC for field operation etc.

A.G.C. -Assam Gas Company , U.P.H. - Uttaran Power House,

D.P.H. - Dhuwaran Power House, GSFC- Gujarat State Fertilizers Co.

BI - Baroda Industries.

Petroleum Refining Capacity in India

Refinery	Capacity as on 1.1.76 (in Terms of Throughput) Mn.Tonnes	Expansion under implement-ation	Likely date for completion
1.	2.	3.	4.
Refineries under operation			
Public Sector	25.35	3.00	-
1. Bharat Refineries Ltd.	5.25	-	
2. Cochin Refineries Ltd	3.30	-	
3. HPCL, Bombay	3.50	-	
4. I.O.C. Barauni	3.00	-	
5. I.O.C. Gauhati	0.80	-	
6. I.O.C. Haldia	2.50	-	
7. I.O.C. Koyali	4.30	3.00	1977
8. M.R.L. Madras	2.70	-	
Private Sector	2.05	-	
9. Assam Oil Co. Digboi	0.50	-	
10. Caltex Oil Refining Co.	1.55	-	
Total Capacity	27.40	3.00	

Refineries under construction	Capacity Mn.Tonnes	Likely date for completion.
1. Bongaigaon Refinery	1.00	1977-78
2. Mathura Refinery	6.00	1980-81

REFINERY CRUDE THROUGHPUT AND PRODUCTION OF PETROLEUM PRODUCTS

('000' Tonnes)

Year	Crude Throughput			Production		
	Public sector	Private sector	Total	Public sector	Private sector	Total
1.	2.	3.	4.	5.	6.	7.
1948		253	253	-	185	185
1949	-	255	255	-	218	218
1950	-	251	251	-	211	211
1951	-	265	265	-	249	249
1952	-	258	258	-	235	235
1953	-	263	263	-	246	246
1954	-	699	699	-	655	655
1955	-	3335	3335	-	3024	3024
1956	-	4212	4212	-	3890	3890
1957	-	4830	4830	-	4447	4447
1958	-	5134	5134	-	4772	4772
1959	-	5436	5436	-	5152	5152
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	7838	14923
1969	9514	7981	17495	8736	7503	16239
1970	10994	7465	18459	10137	7040	17177
1971	11198	8390	19588	10297	7932	18229
1972	11838	7834	19672	10842	7362	18204
1973	11484	9034	20518	10557	8568	19125
1974	15107	5676	20783	13997	5306	19303
1975	16723	5112	21835	15765	4767	20532

% Growth	Crude Throughput	Production
I Plan	+ 67.8	+ 70.3
II Plan	+12. 8	+ 13.7
III Plan	+ 9.9	+ 9.7
1966-68	+18. 2	+ 17.9
IV Plan	+ 5.2	+ 5.3

REFINERY-WISE CRUDE CHARGED & TOTAL PRODUCTION OF POL PRODUCTS

('000 'Tonnes)

1.	AOC 2.	BSR 3.	ESRC/HPCL 4.	CORIL 5.	GAUHATI 6.	BARAUNI 7.	GUJARAT 8.	HALDIA 9.	COCHIN 10.	MADRAS 11.	TOTAL 12.
1960											
Total Production	419	2661	1822	845	-	-	-	-	-	-	5747
Crude Run	449	2815	1948	879	-	-	-	-	-	-	6091
1965											
Total Production	483	3790	2482	1030	708	489	131	-	-	-	9113
Crude Run	493	3996	2600	1116	793	611	145	-	-	-	9754
1970											
Total Production	463	3235	2259	1083	628	2009	3189	-	2439	1872	17177
Crude Run	490	3448	2350	1178	700	2197	3439	-	2592	2065	18459
1973											
Production(Total)	491	4282	2781	1013	693	2429	3365	-	1845	2226	19125
Crude Run	528	4481	2912	1113	771	2659	3581	-	1968	2505	20518
1974											
Total Production	491	3759	2963	1056	684	2574	3447	-	2243	2086	19303
Crude Run	533	3988	3153	1155	752	2817	3715	-	2345	2325	20783
1975											
Total Production	489	3310	2653	967	726	2672	3868	1092	2310	2445	20532
Crude Run	533	3528	2722	1052	802	2898	4036	1125	2442	2697	21835

Refinery Production -1972 to 1975

('000'Tonn

Products	Production 1972	1973	1974	1975	% Variation 1974/1973	1975/1974
I. Light Distillates	3205	3404	3339	3572	- 1.9	+ 7.0
of which						
L.P.Gas	227	259	278	320	+ 7.3	+15.1
Naphtha	1278	1368	1649	1915	+20.5	+16.1
Mogas	1581	1647	1290	1222	-21.7	- 5.3
SBP/Spirits/ Hexane	46	67	50	49	-25.4	- 2.0
II. Middle Distillates	9400	9805	10159	10522	+ 3.6	+ 3.6
of which						
Kerosenes	2813	2631	2052	2323	-22.0	+13.2
M.T.O.	91	106	79	63	-25.5	-20.3
H.S.D.	4598	5039	6034	6242	+19.7	+ 3.4
L.D.O.	1010	1079	1084	888	+ 0.5	-18.1
J.B.O.	87	75	73	73	- 2.7	-
III. Heavy Ends	5599	5916	5805	6438	- 1.9	+10.9
of which						
F.O.	2308	2571	2884	3490	+12.2	+21.0
LSHS	1091	1044	1046	1331	+0.2	+27.2
H.H.S.	289	316	313	252	- 1.0	-19.5
Total Fuel Oil	3688	3931	4243	5073	+ 7.9	+20.0
Lube Oils	308*	239*	389	355	+34.6	- 8.7
Bitumen	1090	1167	873	708	-25.2	-18.9
Petroleum Coke	133	131	132	157	+ 0.8	+18.9
Wax	51	48	46	45	- 4.2	- 2.2
IV. Total Production	18204	19125	19303	20532	+ 0.9	+ 6.4
V. Crude Run	19672	20518	20783	21835	+ 1.3	+ 5.1
Excludes production of lube oil by LIL	173	181				

Pattern of Refinery Production in India

PERCENTAGES

Products	1960	1965	1970	1973	1974	% 1975
Light Distillates*	17.2	17.0	16.4	16,6	16.1	16.4
Middle Distillates	42.4	42.2	46.2	47,8	48.9	48.2
Heavy Fuel Oils	27.0	26.8	23.0	19.2	20.4	23.2
Bitumens	6.6	5.6	4.1	5.7	4.2	3.2
Lubes	0.4	0.4	1.3	1.4	1.9	1.6
Others	0.8	1.4	2.1	2.5	1.4	1.4
Total Production	94.4	93.4	93.1	93.2	92.9	94.0
RBF&Losses/Inventories	5.6	6.6	6.9	6.8	7.1	6.0
Crude Throughput	100	100	100	100	100	100
*Includes Gases	0.1	1.1	1.0	1.4	1.4	1.5

.....

ALL INDIA* TOTAL CONSUMPTION OF PETROLEUM PRODUCTS FROM 1948 to 1975.

(In '000' Tonnes)

Year	Total Consumption@	% Growth	Year	Total Consumption@	% Growth
1948	2657	- 2.9	1961	8394	+ 7.8
1949	3125	+17.6	1962	9521	+13.4
1950	3319	+ 6.2	1963	10347	+ 8.4
1951	3888	+17.1	1964	11361	+ 9.8
1952	3741	- 3.8	1965	12279	+ 8.1
1953	3916	+ 4.7	1966	12968	+ 5.6
1954	4089	+ 4.4	1967	14089	+ 8.6
1955	4817	+17.8	1968	15829	+12.4
1956	5229	+ 8.6	1969	17336	+ 9.5
1957	5819	+11.3	1970	18735	+ 8.1
1958	6117	+ 5.1	1971	20640	+10.2
1959	6812	+11.4	1972	22628	+ 9.6
1960	7784	+14.3	1973	23687	+ 4.7
			1974	23015	- 2.8
			1975	23502	+ 2.

Note:- Includes Refinery Boiler Fuel from 1962 onwards. Prior to that RBF consumption is not available.

2. Data for consumption is under revision,

* Includes Sales to Nepal, Sikkim, Bhutan and International/ Coastal Bunkers and International Airlines.

@ Figures represent despatches from depots.

** Includes sales to Sikkim, Bhutan, International/ Coastal Bunkers and International Airlines.

Consumption of Petroleum Products During the Years 1973, 1974, and 1975.

Products	1973	1974	1975	% Variation 1974/1973	% Variation 1975/1974
I. Light Distillates	3491.3	3323.0	3603.6	- 4.8	+ 8.4
L.P. Gas	263.1	281.3	325.7	+ 6.9	+15.8
Naphtha	1453.6	1624.2	1868.4	+11.7	+15.0
Mogas	1605.1	1257.1	1259.1	+21.7	+ 0.2
SBP /Hexane	65.3	50.4	47.4	-22.8	-6 .0
Others	104.2	110.0	103.0	+ 5.6	- 6.4
II. Middle Distillates	11004.2	11200.0	11545.6	+ 1.8	+ 3.1
Kerosenes	3450.6	2849.2	3031.0	-17.4	+ 6.4
H.S.D.	5192.6	6228.8	6585.2	+20.0	+ 5.7
LDO/MDO	1347.7	1141.9	873.9	-15.3	-23.5
J.B.O.	77.4	69.1	67.1	-10.7	- 2.7
M.T.O.	101.9	77.1	67.5	-24.3	-12.5
Others	834.0	834.6	920.8	+ 0.1	+10.3
III. Heavy Ends	7987.2	7303.9	7230.8	- 8.6	- 1.0
(a) Fuel Oils	5931.9	5705.2	5804.3	- 3.8	+ 1.7
F.O./T.D.O.	4542.1	4296.0	4290.5	- 5.4	- 0.1
L.S.H.S.	1150.9	1168.2	1367.9	+ 1.5	+17.1
H.H.S.	238.9	241.0	145.9	+ 0.9	-39.5
b) Lubes & Greases	635.2	488.9	453.8	-23.0	- 7.2
C) Bitumen/Asphalt	1134.2	857.5	706.6	-24.4	-17.6
d) Petroleum Coke	132.8	102.6	132.3	-22.7	+28.9
e) Wax	47.3	44.9	46.7	- 5.1	+ 4.0
f) Others	105.8	104.8	87.1	- 0.9	-16.9
Total (I+II+III)	22482.7	21827.6	22380.0	- 2.9	+ 2.5
R.B.F.	1203.8	1187.3	1122.5	- 1.4	- 5.5
Grand Total	23686.5	23014.9	23502.5	- 2.8	+ 2.1

Notes : R.B.F. figures are subject to revision

Sales/consumption and market participation of oil companies from 1960 to 1975.

Qty: '000' Tonnes

Year		IOC	B/Shell	Esso/HPCL	Caltex	Others	Total
1960	S/C	10	3638	2224	1237	560	7669
	%	0.2	47.4	29.0	16.1	7.3	100
1961	S/C	120	3645	2332	1284	875	8256
	%	1.5	44.1	28.3	15.6	10.5	100
1962	S/C	396	4093	2626	1447	626	9188
	%	4.3	44.5	28.6	15.8	6.8	100
1963	S/C	844	4231	2770	1545	608	9998
	%	8.4	42.3	27.7	15.5	6.1	100
1964	S/C	1301	4498	3024	1573	636	11032
	%	11.8	40.8	27.4	14.3	5.7	100
1965	S/C	2499	4368	2866	1469	666	11868
	%	21.0	36.8	24.2	12.4	5.6	100
1966	S/C	3823	4095	2737	1197	524	12376
	%	30.9	33.1	22.1	9.7	4.2	100
1967	S/C	4888	3948	2701	1281	530	13348
	%	36.6	29.6	20.2	9.6	4.0	100
1968	S/C	6377	4006	2639	1432	553	15007
	%	42.5	26.7	17.6	9.5	3.7	100
1969	S/C	7880	4026	2568	1286	582	16342
	%	48.2	24.6	15.7	7.9	3.6	100
1970	S/C	8958	4191	2544	1243	652	17588
	%	50.9	23.8	14.5	7.1	3.7	100
1971	S/C	10566	4116	2651	1312	844	19489
	%	54.2	21.1	13.6	6.7	4.4	100
1972	S/C	12265	4140	2721	1261	1017	21404
	%	57.3	19.3	12.7	5.9	4.8	100
1973	S/C	13689	4134	2440	1119	1101	22483
	%	60.9	18.4	10.8	5.0	4.9	100
1974	S/C	14081	3307	2387	967	1086	21828
	%	64.5	15.2	11.9	4.4	5.0	100
1975	S/C	14558	3056	2663	931	1172	22380
	%	65.0	13.7	11.9	4.2	5.2	100

S/C Sales/Consumption

%= Percentage

Deliveries Made to International/Coastal Bunkers from 1965 to 1975.

('000' Tonnes)

	Products	1965	1966	1967	1968	1969	1970	197	1972	1973	1974	1975
I. Shipping												
1. International Bunkers	F.O.	357.3	394.0	440.0	379.8	260.1	217.4	204.6	148.7	202.7	111.5	137.2
	H.S.D.	3.1	1.9	4.8	4.4	5.1	5.7	5.3	3.8	5.0	4.1	9.6
	L.D.O.	17.4	15.4	23.1	26.4	19.9	21.4	20.5	23.1	25.9	20.7	38.3
	Total	377.8	411.3	467.9	410.6	285.1	244.5	230.4	175.6	233.6	136.3	185.1
II. Coastal Bunkers	F.O.	241.5	226.9	242.8	239.1	260.0	199.1	238.7	181.2	148.7	130.0	158.7
	H.S.D.	13.1	13.9	11.2	11.2.	14.9	21.4	33.9	20.4	23.1	25.6	23.0
	L.D.O.	10.7	12.5	17.3	20.2	20.6	21.1	25.9	23.4	18.6	22.6	27.9
	Total	265.3	253.3	271.3	270.5	295.5	241.6	298.5	225.0	190.4	178.2	209.6
III. Total Bunkers	F.O.	598.8	620.9	682.7	619.0	520.1	416.5	443.3	329.9	351.4	241.5	295.9
	H.S.D.	16.2	15 .8	16.1	15.5	20.0	27.1	39.2	24. 2	28.1	29.7	32.6
	L.D.O.	28.1	27.9	40.4	46.6	40.5	42.5	46.4	46.5	44.5	43.3	66.2
	Total	643.1	664.6	739.2	681.1	580.6	486.1	528.9	400.6	424.0	314.5	394.7

N.B. : Excludes from above/sales to foreign Bunkers on KNPC account by IOC.

STATEWISE SALES/CONSUMPTION OF MAJOR PETROLEUM PRODUCTS
DURING THE YEAR-1974(EXCL. INTERNATIONAL BUNKERS)

(Qty. in '000 Tonnes)

State/Terr.	Mogas	Kero.	A.T.F.	H.S.D.	L.D.O.	Fuel oils	Asphalt/ Bitumen	Others	Total
A-STATES									
Andhra Pradesh	54.0	195.9	24.3	518.0	43.6	141.3	36.6	73.8	1087.5
Assam	33.1	91.4	24.2	107.6	22.5	104.9	12.5	1.3	397.5
Bihar	56.5	149.5	2.3	288.7	67.4	324.5	27.4	29.9	946.2
Gujarat	88.8	234.9	23.3	453.7	336.6	1329.0	78.8	231.2	2776.3
Haryana	24.6	59.0	22.1	205.0	53.5	46.1	15.1	3.5	428.9
Himachal Pradesh	3.6	9.3	-	32.9	1.1	1.3	8.7	0.2	57.1
J & K	8.9	18.4	5.6	49.9	7.2	-	6.0	1.2	97.2
Kerala	59.7	92.9	3.8	214.3	7.6	248.0	21.3	118.2	765.8
M. P.	41.9	130.4	1.7	382.3	9.1	57.2	90.6	25.1	738.3
Maharashtra	235.8	563.4	270.9	721.7	132.7	1632.2	144.6	528.4	4229.7
Mysore(Karnataka)	80.7	140.7	16.0	350.9	20.0	144.1	22.4	7.6	782.4
Manipur	3.8	4.9	-	8.2	2.0	-	2.6	neg	21.5
Meghalaya	6.1	7.2	-	6.3	0.3	neg	3.0	0.2	23.1
Nagaland	4.9	3.4	-	7.6	neg	0.1	4.5	-	20.5
Orissa	21.0	59.0	3.6	120.0	2.2	111.0	14.9	60.2	391.9
Punjab	56.7	98.1	45.6	504.2	72.3	33.5	40.1	2.9	853.4
Rajasthan	29.4	57.9	23.6	269.1	59.7	44.1	50.7	105.8	650.3
Sikkim	2.0	2.5	-	1.3	0.1	-	-	-	5.9
Tamil Nadu	111.5	264.7	25.5	596.3	32.7	558.7	59.0	187.8	1836.2
Tripura	3.5	8.3	0.7	7.6	0.5	0.1	0.3	-	21.0

STATEWISE SALES/CONSUMPTION OF MAJOR PETROLEUM PRODUCTS DURING THE YEAR 1974 (Excl. INTERNATIONAL BUNKERS)

(Qty. in '000' Tonnes)

State/Terr.	Mogas	Kero.	A.T.F.	H.S.D.	L.D.O.	Fuel oils	Asphalt/ Bit.	others	Total
Uttar Pradesh	96.6	279.6	46.1	730.5	133.3	187.1	84.6	271.3	1829.1
West Bengal	107.7	253.5	62.4	358.8	82.3	461.2	58.8	60.4	1445.1
Total(A)	1130.8	2734.9	601.7	5934.9	1086.7	5424.4	782.5	1709.0	19404.9
B.Union Territories									
Andaman & Nicobar	0.6	0.4	0.4	6.3	0.4	-	2.8	-	10.9
Arunachal Pradesh	0.6	0.5	0.1	1.9	0.1	-	0.1	-	3.3
Chandigarh	5.8	5.9	24.4	11.8	3.2	2.8	19.9	1.6	75.4
Delhi	100.5	71.4	163.8	187.2	27.9	65.5	43.9	30.9	691.1
Goa	7.1	11.0	3.7	50.7	2.6	99.1	5.3	164.1	343.6
Mizoram	1.1	1.0	-	1.3	-	-	-	-	3.4
Pondicherry	1.8	5.0	-	8.1	1.2	1.4	0.8	0.1	18.4
Total (B)	117.5	95.2	192.4	267.3	35.4	160.8	72.8	198.7	1146.1
Total (A+B)	1248.3	2830.1	794.1	6202.2	1122.1	5593.2	855.3	1905.7	20551.0
C.Other Territories									
Bhutan	1.2	0.6	-	2.8	neg	-	0.3	neg	4.9
Nepal(supplies)	7.6	18.5	5.2	19.6	8.4	0.5	1.8	0.5	62.1
Total(C)	8.8	19.1	5.2	22.4	8.4	0.5	2.1	0.5	67.0
Total (A+B+C)	1257.1	2849.2	799.3	6224.6	1130.5	5593.7	857.4	1906.2	20618.0
D. International Bunkers	-	-	-	4.2	20.6	111.5	-	-	136.3
Grand Total	1257.1	2849.2	799.3	6228.8	1151.1*	5705.2	857.4	1906.2	20754.3

Note :- Figures represent despatches from depots situated in various States

* Including 9.1 thousand tonnes sales of LO by IOC.

State-wise per Capita Sales/Consumption of Major POL Products (Excl.Internation Bunkers)*

(Kgs.)

State	1971	1972	1973	1974	Compound growth rate 1974/1971
Andhra Pradesh	23.9	25.1	24.7	23.7	-0.3
Assam	31.3	30.0	30.7	24.9	-7.3
Bihar	16.1	18.8	18.0	15.8	-0.6
Gujarat	83.2	94-7	100.8	97.6	+5.5
Haryana	34.2	30.5	39.6	40.3	+5.6
Himachal Pradesh	10.9	12.8	14.8	15.6	+12.7
J & K	17.4	19.2	18.8	19.9	+4.6
Kerala	33.1	32.6	34.1	33.8	+0.7
Madhya Pradesh	14.7	15.4	16.6	16.7	+4.3
Maharashtra	31.9	82.3	82.1	78.9	-1.2
Meghalaya	22.5	24.9	24.3	22.1	-0.6
Mysore(karnataka)	25.3	28.8	30.3	25.2	-0.1
Nagaland	34.5	37.9	38.2	36-1	+1.5
Orissa	14.9	17.3	18.0	16.8	+4.1
Punjab	51.5	55.7	56.7	59.8	+5.1
Rajasthan	22.7	23.4	24.5	23.7	+1.4
Tamil Nadu(Excl.Pondichery)	37.4	42.2	45.2	42.2	+4.1
Uttar Pradesh	16.9	19.0	18.3	19.6	+5.1
West Bengal	29.4	33.0	32.9	30.5	+1.2
Delhi	144.3	161.0	149.8	140.4	-0.9
ALL INDIA @	37.1	39.9	40.9	38.8	+2.3

N.B. Based on : (i) Depot-wise sales/consumption
(ii) International Institute of population Studies, Bombay-Population projections for states.
(iii) Registrar General, population projection for Delhi.

@ = Actual consumption, including R.B.F. but excl. International Bunkers.

* = Include Mogas kero., ATF, HSD, L.D.O., Fuel oils, LPG, Naphtha & Bitumen.

Estimated Sector-wise consumption of fuel oils@

Sector	1972 Consumption ('000' Tonnes)	1972 % to total	1973 Consumption ('000' Tonnes)	1973 %to total	1974 Consumption ('000' Tonnes)	1974 % to total
1. Road Transport	2	neg	3	neg.	2	neg
2. Railways	60	1.1	61	1.0	52	0.9
3. Waterways:						
a) Coastal & Inland	330	600	354	6.0	242	4.3
Bunkers	181	3.3	205	3.5	130	2.3
b) International Bunkers	149	2.7	149	2.5	112	2.0
Total Transport	392	7.1	417	7.0	296	5.2
4. Agriculture/Plantation	175	3.2	222	3.7	172	3.0
5. Power Generation	1519	27.3	1648	27.8	1724	30.2
6. Iron & Steel	449	8.1	439	7.4	448	7.9
7. Textile & Fibre	606	10.9	650	11.0	560	9.8
8. Cement	171	3.1	204	3.4	141	2.5
9. Ceramics& Glass	182	3.3	219	3.7	205	3.6
10. Chemicals & Allied Industries	702	12.6	795	13.4	715	12.5
11. Fertilisers	181	3.2	266	4.5	287	5.0
12. Aluminium	123	2.2	110	1.9	96	1.7
13. Sugar	60	1.1	59	1.0	52	0.9
14. Minning & Querrying	54	1.0	35	0.6	125	2.2
15. Engineering	292	5.3	361	6.1	320	5.6
16. Others(Incl.DG&D)	644	11.6	507	8.5	564	9.9
17. Total	5550	100	5932	100	5705	100

@ = F.O. Includes T.D.O. , L.S.H.S. and H.H.S.

Estimated Sector-wise consumption of L.P.G.

Sector	1972 Consumption ('000'Tonnes)	1972 % to total	1973 Consumption ('000'Tonnes)	1973 % to total	1974 Consumption ('000' Tonnes)	1974 % to total
1. Domestic	189	79.4	209	79.4	225	80.1
2. Commercial	11	4.6	12	4.6	13	4.6
3. Industry	38	16.0	42	16.0	43	15.3
4. Others	neg	-	-	neg	-	-
5. Total	238	100	263	100	281	100

Estimated Sector-wise consumption of Refinery Gas

1. Indutry	20	64.5	21	95.5	25	100.0
2. Power-Generation	11	35.5	1	4.5	-	-
3. Others	-	-	-	-	-	-
4. Total	31	100	22	100	25	100

Estimated Sector-wise consumption of Naphtha

1. Fertilisers	983	76.9	1044	71.8	1189	73.2
2. Petro-Chemicals	210	16.4	313	21.5	415	25.5
3. Others	85	6.7	97	6.7	21	1.3
Total	1278	100	1454	100	1625	100

Estimated Sector-Wise consumption of H.S.D.

Sector	1972 Consumption '000' Tonnes	% to total	1973 Consumption '000' tonnes	% to total	1974 Consumption '000' tonnes	% to total
1. State Transport (Incl. Municipal Transport)	561	12.2	599	11.5	661	10.6
2. Other Road Transport (incl. Agriculture Retail Trade)	3032	65.6	3359	64.7	4382	70.3
3. Railways	559	12.1	581	11.2	581	9.3
4. Bunkers	24	0.5	28	0.5	29	0.5
5. Miscellaneous	444	9.6	626	12.1	576	9.3
Total	4620	100	5193	100	6229	100

Estimated sectorwise consumption of L.D.O.

1. Power	143	10.3	158	11.7	124	10.8
2. Bunkers	46	3.3	45	3.3	43	3.8
3. Rest(incl.Agr.and small scale Industries)	1196	86.4	1145	85.0	975	85.4
Total	1385	100	1348	100	1142	100

ESTIMATED SECTORWISE CONSUMPTION OF WAX DURING 1972-1974

Sector	1972 Consumption ('000' Tonnes)	1972 % to Total	1973 Consumption ('000' Tonnes)	1973 % to total	1974 Consumption ('000' Tonnes)	1974 % to total
1. Candle Manufacturing	19	39.6	18	38.3	19	41.3
2. Water Proofing	6	12.5	6	12.8	7	15.2
3. Match Industry	4	8.3	2	4.2	6	13.1
4. Paper Waxing	5	10.4	6	12.8	4	8.7
5. Hard Board	neg	-	neg	-	neg	neg
6. Misc.	14	29.2	15	31.9	10	21.7
Total	48	100	47	100	46	100

CONSUMPTION OF DIESEL OIL IN INDIAN RAILWAYS DURING 1960-61 to 1974-75

Year	No.of diesel locomotives	Consumption of diesel oil (In Kls.)	Consumption per diesel locomotive(in Kls.)
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

Source:- For Col. 2 & 3 Indian Railways Report and Accounts-1974-75.

FUEL CONSUMPTION IN GAS TURBINE & DIESEL POWER STATION IN INDIA-1973-74

State/Union Territory	Gas Turbine & Diesel Power Station Oil consumption kls	Power consumption MillionKWH	Av. Oil Consmption litre/KWH generated
1. Andhra Pradesh	1646(1)	4.04	0.40
2. Assam	5251(2)	279.95 (3)	0.41
3. Bihar	1897	5.63	0.34
4. Gujarat	1000 (4)	66.90 (5)	0.32
5. Haryana	145	0.49	0.30
6. Himachal Pradesh	37	0.10	0.37
7. Jammu & Kashmir	2260	7.29	0.31
8. Karnataka	-	-	-
9. Kerala	-	-	-
10. Madhya Pradesh	84	0.09	0.93
11. Maharashtra	275	0.57	0.48
12. Manipur	3373	11.42	0.30
13. Nagaland	182	0.32	0.57
14. Orissa	229	0.43	0.53
15. Punjab	8939	30.24	0.30
16. Rajasthan	4397	11.45	0.38
17. Tamil Nadu	-	-	-
18. Tripura	2217	5.10	0.43
19. Uttar Pradesh	4363 (6)	9.74(7)	0.44
20. West Bengal	3034	8.71	0.35
21. D.V.C.	-	-	-
22. Central Govt. Project	-	-	-
Union Territories.			
(a) A&N Islands	2080	4.74	0.44
(b) Arunachal Pradesh	-	-	-
(c) Chandigarh	120	0.35	0.34
(d) D&N Haveli	-	-	-
(e) Delhi	5319	17.30	0.31
(f) Goa,Daman& Diu	-	-	-
(g) Lakshadweep	210	0.37	0.57
(h) Pondicherry	-	-	-
All India Total	**47058**	**465.23***	**0.35**

Note:- (1) All diesel oil consumed by Gas Turbine Plant,Erragada.
(2) The Gas Turbines at Naharkatia consume Natural Gas. The figure represents therefore the diesel Oil used only by diesel engine station's.
(3) Includes 267.29 Million KWH generated by Gas Turbine at Naharkatia.
(4) The Gas Turbines at Dhuvaran consume N/Gas. The figure represents therefore the diesel oil used only by the diesel engine stations.
(5) Includes 63.83 Million KWH generated by Gas Turbine at Dhuvaran.
(6) Includes diesel oil Consumed by Gas Turbine.
(7) Includes 7.98 Million KWH generated by Gas Turbine at Murad Nagar.

* = Includes 331.12 Million KWH energy generated by Gas Turbine consuming Natural Gas.

Source:- Public Electricity Supply All India Statistics-1973-1974

FUEL CONSUMPTION IN STEAM POWER STATIONS - 1973-74

State/Union Territory	Steam Power Stations				Gross generation MKWH	Average heat input in K. Cal/KWH generated
	Coal (Tonnes)	Furnace oil (KL.)	Natural & other Gaseous fuel Cu.Meters M.Tons	Heat input (K.Cal) X 10^9		
1.	2.	3.	4.	5.	6.	7.
1. Andhra Pradesh	1520521	15164(A)	-	7274.29	2192.06	3318
2. Assam	-	15286(B)	-	592.87	45.08	2060
3. Bihar	1061711	141019	-	6609.62	1980.11	3338
4. Gujarat	683057	925726	153.781 (M.Cu.M.)	15493.35	4610.73	3360
5. Haryana	70017	-	-	411.56	81.34	5059
6. Himachal Pradesh	-	-	-	-	-	-
7. Jammu & Kashmir	43151	-	-	81.54	11.26	7241
8. Karnataka	-	-	-	-	-	-
9. Kerala	-	-	-	-	-	-
10. Madhya Pradesh	2165947	18113	-	12201.86	3086.17	3953
11. Maharashtra	2460316	431577@	954 MT (Ref.Gas)	15669.60	5146.94	3044
12. Manipur	-	-	-	-	-	-
13. Nagaland	-	-	-	-	-	-
14. Orissa	360277	1312(C)	-	1930.94	550.06	3510
15. Punjab	9601	-	-	56.00	8.72	6422
16. Rajasthan	30049	-	-	180.95	18.40	9834
17. Tamil Nadu	740349	76291	-	4136.08	1170.96	3532
18. Tripura	-	-	-	-	-	-
19. Uttar Pradesh	3176535	37492(D)	-	16264.24	3892.80	4178
20. West Bengal	2889533	38431	-	16721.48	4413.59	3788
21. D.V.C.	1993,904	-	-	10604.04	3427.69	3093
22. Central Govt. Projects	3159,279@@	14994	-	8414.62	2643.71	3183
Union Territories	$					
a) A & N Islands	11707	-	-	14.63	0.98	14930
b) Arunachal Pradesh	-	-	-	-	-	-
c) Chandigarh	-	-	-	-	-	-
d) D & N Maveli	-	-	-	-	-	-
e) Delhi	847101	46759	-	5293.12	1572.48	3366
f) Goa, Daman & Diu	-	-	-	-	-	-
g) Lakshadweep	-	-	-	-	-	-
h) Pondicherry	-	-	-	-	-	-
ALL INDIA TOTAL	21193055	1762164	153.781 (Mu.Cu. Ms) 954 MT Ref.Gas	121450.79 x 109	34853.08	3484

@ Includes 353213 MT of Furnace oil equivalent of low & high sulphur pitch.
@@ Includes 2875000 Metric Tonne of Lignite used in Neyveli Power Station
$ Wood-fuel.
(A) Includes 1615 KL of diesel oil used.
(B) Includes 61 KL of diesel oil used.
(C) Diesel oil used by Steam Power Stations.
(D) Includes 1433 KL of diesel oil used.

Source: Public Electricity Supply- All India Statistics - 1973-74

Crude Oil and Petroleum Products Imported During 1948 to 1975

Q=('000' Tonnes)
V= Rs. Million

Year	Products		Crude		Total	
	Q.	V.	Q.	V.	Q.	V.
1948	2269		-		2269	
1949	2833		-		2833	
1950	2986		-		2986	
1951	3492		-		3492	
1952	3513		-		3513	
1953	3610		-		3610	
1954	3635		504	41.2	4139	
1955	2071		3052	243.1	5123	
1956	1807		3769	300.6	5576	
1957	1869		4438	381.2	6307	
1958	1824		4682	394.9	6506	
1959	1984		5006	389.6	6990	
1960	2032	410.2	5723	405.7	7755	815.9
1961	2481	476.1	5968	393.1	8449	869.2
1962	2984	514.6	6022	387.3	9006	901.9
1963	2900	548.1	6519	417.8	9419	965.9
1964	2956	537.8	6791	425.9	9747	963.7
1965	2880	447.3	6811	403.8	9691	851.1
1966	2207	520.2	7457	561.0	9664	1081.2
1967	951	390.1	8704	795.9	9655	1186.0
1968	933	407.4	10450	938.8	11383	1346.2
1969	1052	382.4	10702	940.1	11754	1322.5
1970	970	305.3	11665	1023.6	12635	1328.9
1971	1932	434.9	12688	1398.8	14620	1833.7
1972	3257	566.9	12310	1442.5	15567	2009.4
1973	3735	880.3	13443	2445.6	17178	3325.9
1974	2949	2099.0	13973	8993.6	16922	11092.6
1975*	2180	1887.9	13669	9579.1	15849	11467.0

* Provisional

N.B.:- Imports of ATF from 1952 to 1955, Bitumen from 1948 to 1953/and lubricants from 1951 to 1955 are not available and have not been included in the total imports. Value data for POL products prior to 1960 are also not available.

IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS DURING 1972-75

Qty:= ('000'Tonnes)
V: = Mn.Rs.

Item	1972		1973		1974		1975*	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
6 1.	2.	3.	4.	5.	6.	7.	8.	9.
A. Crude Oil	12310	1442.49	13443	2445.57	13973	8993.58	13669	9579.09
B. Petroleum Products								
1. Light Distillates	68	20.43	217	80.71	87	65.94	39	70.37
1. Naphtha	37	6.81	172	54.31	50	16.88	-	-
2. Others	31	13.62	45	26.40	37	49.06	39	70.37
II. Middle Distillates	1303	284.51	1478	470.40	1224	1040.09	1229	1187.20
1. Kerosene Superior	767	193.68	886	312.56	852	727.44	657	677.36
2. H.S.D.	96	17.10	291	87.17	268	227.92	572	509.84
3. L.D.O.	422	69.61	301	70.67	104	84.73	-	-
4. Others	18	4.12	-	-	-	-	-	-
III. Heavy Ends	1886	262.00	2040	329.23	1638	992.94	912	630.37
1. Furnace Oil	1758	169.04	1943	254.86	1533	828.74	833	486.36
2. Lubes	128	92.96	96	74.37	105	164.20	79	144.01
Total(B)	3257	566.94	3735	880.34	2949	2098.97	2180	1887.94
Grand Total(A&B)	15567	2009.43	17178	3325.91	16922	11092.55	15849	11467.03

* Provisional

Total Exports of Petroleum Products Since-1954.

Year	Quantity (Tonnes)	Value (Rs.Million)
1954	17586	12.73
1955	215967	35.49
1956	375694	51.24
1957	444821	69.37
1958	400952	63.24
1959	196371	43.20
1960	225061	46.13
1961	211254	37.64
1962	227169	38.50
1963	376249	54.99
1964	375158	40.37
1965	344680	39.16
1966	729703	87.56
1967	1057000	142.26
1968	558166	82.53
1969	738867	107.72
1970	412209	37.22
1971	151631	25.54
1972	109313	89.39
1973	154990	53.50
1974	202409	193.67
1975	165669	121.35

Exports/Re-Exports of Petroleum Products
for the year 1971 to 1975(Excl.supplies to Nepal)

Qty: '000' Tonnes
Value: Rs. Million

Products	1971		1972		1973		1974		1975	
	Q.	V.	Q.	V.	Q.	V.	Q.	V.	Q.	V.
Light Ends	140.7	21.23	4.0	8.44	13,6	5.50	130.7	127.00	92.6	57.91
Naphtha	81.7	9.81	-	-	4.5	1.90	123.7	120.90	90.9	55.47
Gasolines	59.0	11.42	4.0	8.44	9.1	3.60	6.0	6.10	1.7	2.44
Middle Distillates	6.5	1.67	89.2	67.32	140.8	46.72	56.5	49.50	29.9	27.84
Kerosene	-	-	49.1	32.73	56.1	18.78	38.6	33.50	13.6	12.82
A.T.F.	-	-	2.0	1.74	3.8	1.31	-	-	-	-
H.S.D.	6.5	1.67	25.3	26.34	68.8	23.26	11.9	10.30	7.9	7.23
L.D.O.	-	-	12.8	6.51	12.1	3.37	6.0	5.70	8.4	7.79
Others	4.4	2.64	16.1	13.63	0.6	1.28	15.2	17.17	43.2	35.60
F.C.	-	-	2.7	0.89	-	-	-	-	-	-
Asphalt/Bitumen	2.2	0.49	9.4	5.15	-	0.17	9.4	7.30	33.2	21.13
Lubes/Greases	-	-	0.6	1.74	0.1	0.39@	3.1	4.50	9.9	14.25
Base Oil	-	-	3.4	5.85	-	-	-	-	-	-
Wax	2.2	2.15	-	-	0.5	0.72	2.7	5.37	0.1	0.22
Total POL Products	151.6	25.54	109.3	89.39	155.0	53.50	202.4	193.67	165.7	121.35
Crude Oil	-	-	-	[illegible]	18.3	4.16	-	-	-	-
Grand Total	151.6	25.54	109.3	89.39	173.3	57.66	202.4	193.67	165.7	121.35

@ = Recoveries of [illegible]river freight /sales tax.

EXPORT EARNINGS 1975-76 V/S 1974-75

Qty = Tonnes
Value = Rs./lacs

Category/ Product	1975-76 Qty.	1975-76 Value	1974-75 Qty.	1974-75 Value
I. Sales to Bunkers:				
(a) Shipping Bunkers				
International Foreign Flag	74647	601.65	65179	521.90
" Indian "	113914	927.94	72065	597.84
Coastal Foreign Flag	11275	98.06	7793	62.66
" Indian "	219778	1606.84	162966	1108.62
Total (a)	419614	3234.49	308003	2291.02
(b) International Airlines (Excl. Air India)	327249	4880.46	300489	4800.88
(c) C.C.P-Bunkers	6583	29.96	14587	37.25
Total (I)	753446	8144.91	623079	7129.15
II. Exports of POL Products				
(a) Export to Bangla Desh	38125	349.86	28089	322.32
(b) Export to Other Countries:				
Export of Naphtha	90856	554.73	123687	1209.00
" " Bitumen	39773	296.96	14363	112.15
" " Wax	1062	24.15	2708	53.80
" " 93 Oct.	-	-	6003	49.00
Total (b)	131691	875.84	146761	1423.95
Total II	169816	1225.70	174850	1746.27
Grand Total (I + II)	923262	9370.61	797929	8875.42

Source:- 1. Bunkers (b) & (c) Distribution Section of Ministry of Petroleum.

2. Rest of the data relates to E &S Division

B- INDIA'S REVENUES FROM HIPL CRUDE

	Qty. Tonnes	Value Rs. lacs.
1974	654272	3858.91
1975	567345	4195.98
1976 (Jan.-June)	217472	1717.40

Manpower Employed in the Petroleum Industry IN INDIA

(Numbers)

Category	1971	1972	1973	1974	1975
1. Exploration & Prodn.	25850	25898	25593	26102	27067
2. Refining *	11518	11619	11594	12093	12327
3. Marketing	19739	19415	19322	19239	19072
4. Others :-					
1. IOC(Pipeline)	523	574	620	620	724
2. ONGC(Pipeline)	324	286	278	228	233
3. OIL (pipeline)	439	434	429	425	431
4. I.I.P.	602	621	603	644	676
5. E.I.L.	813	1162	1394	1641	1940
Total	2701	3077	3324	3558	4004
GRAND TOTAL	59808	60009	59833	60992	62470

Category wise manpower employed in the Petroleum industry in India

(Numbers)

Category	1971	1972	1973	1974	1975
1. Executive/Managerial	4975	4992	6024	6488	6461
2. Supervisory	6512	6770	6148	6071	6659
3. Clerical	11336	11499	11282	12705	11723
4. Workman	36923	36716	36359	35709	37611
5. Total	59746	59977	59813	60973	62454
6. Expatriates/ Foreign experts	62	32	20	19	16
Grand total	59808	60009	59833	60992	62470

Note:-

1. Staff employed as on 1st April of each year
2. Total does not include Staff employed on contract basis

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

Category-wise Manpower Employed in Exploration and Production of Petroleum crude in India.

(Numbers)

Category	1971	1972	1973	1974	1975
1. Executive/Managerial	1813	1813	1838	1857	1967
2. Supervisory	2969	3074	3148	3281	3538
3. Clerical	3463	3477	3351	3490	3538
4. Workmen	17571	17522	17247	17463	18013
5. Total	25816	25886	25584	26091	27056
6. Expatriates/Foreign Experts	34	12	9	11	11
Grand Total	25850	25898	25593	26102	27067

*Category-wise manpower employed in the Petroleum Refining in India @

1. Executive/managerial	565	563	640	899	818
2. Supervisory	1138	1180	1196	1102	1313
3. Clerical	1294	1334	1389	1430	1568
4. Workmen	8505	8531	8363	8657	8626
5. Total	11502	11628	11588	12088	12325
6. Expatriates/ Foreign experts	16	11	6	5	2
Grand Total	11518	11619	11594	12093	12327

Category-wise manpower employed in marketing of petroleum in India@

1. Expecutive/Managerial	2450	2461	3288	3586	3519
2. Supervisory	1958	1946	1198	892	910
3. Clerical	6103	6021	5943	7124	5870
4. Workmen	9217	8978	8888	7634	8770
5. Total	19728	19406	19317	19236	19069
6. Expatriates/ Foreign exports	11	9	5	3	3
Grand Total	19739	19415	19322	19239	19072

@ = Manpower employed by companies directly.

N.B.:- 1. Staff employed as on 1st April of each year

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

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

INDEX NUMBER OF WHOLE SALE PRICES OF SELECTED PETROLEUM PRODUCTS IN INDIA

YEAR	Aviation spirit	Petrol	Light Deisel Oil	Kerosene	Lubricating Oil
1961-62	100	100.	100	100	100
1962-63	97.1	101.9	102.1	101.9	99.5
1963-64	111.8	120.2	128.9	135.6	96.0
1964-65	111.9	120.6	129.3	135.2	95.8
1965-66	117.4	127.0	110.9	146.6	103.4
1966-67	120.9	131.5	119.3	154.5	115.9
1967-68	132.0	144.5	119.3	154.9	123.3
1968-69	138.1	148.6	121.7	157.8	125.3
1969-70	147.8	160.0	122.8	172.1	133.1
1970-71	160.9	175.5	121.3	176.6	141.9
1971-72	194.9	204.5	128.9	186.0	139.7
1972-73	201.6	213.1	130.5	202.9	140.5
1973-74	279.8	313.9	159.7	235.2	193.4
1974-75	464.0	477.2	315.2	331.7	438.8
1975-76	477.0	495.8	324.2	370.4	448.0
April 1975	476.8	495.4	324.2	340.5	438.2
May 1975	476.8	495.4	324.2	340.5	448.9
June 1975	476.8	495.4	324.2	340.5	448.9
July 1975	476.8	495.4	324.2	350.8	448.9
August 1975	476.8	495.4	324.2	362.3	448.9
Sept. 1975	476.8	495.4	324.2	362.3	448.9
Oct. 1975	476.8	495.4	324.2	362.3	448.9
Nov. 1975	477.3	496.2	324.2	362.3	448.9
Dec. 1975	477.3	496.2	324.2	405.8	448.9
Jan. 1976	477.3	496.2	324.2	405.8	448.9
Feb. 1976	477.3	496.2	324.2	405.8	448.9
March 1976	477.3	496.2	324.2	405.8	448.9

Source:- Indices compiled by the Economic Adviser Ministry of Industries & Civil Supplies, Government of India

BASIC CEILING SELLING PRICES (EX-STORAGE) OF PETROLEUM PRODUCTS AS ON 1.1.1976

(Rs./Kl.)

PRODUCTS	Bombay	Cochin	Madras	Vizag.	Barauni/ Digboi Haldia Gauhati	Calcutta	Kandla	Okha	Goa
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Av. Gas 100/130 octane	3381.80	-	3398.44	-	3408.02	3408.02	3378.71	-	3376.83
2. Av. Gas 115/145 Octane	3470.93	-	3487.76	-	3496.84	3496.84	-	-	3465.75
3. Av. Gas 73 Octane	3247.84	3244.34	3254.69	3247.29	3269.91	3269.91	3246.55	-	-
4. A.T.F.	1267.13	-	1286.49	1279.92	1285.32	1285.32	1264.73	1269.76	1266.99
5. Motor Spirit 83	2944.88	2941.90	2953.71	2946.28	2967.92	2967.92	2944.18	-	2939.93
6. M.S. 93	3099.92	3096.80	3108.71	3101.28	3123.38	3123.38	3099.07	-	3094.89
7. H.S.D.O.	1094.89	1094.27	1106.32	1100.03	1107.09	1129.02	1133.75	1144.18	1127.92
8. S.K.	1084.24	1086.76	1094.66	1092.04	1098.82	1119.63	1118.62	1131.04	1114.80
9. L.D.O.	879.64	879.00	894.13	884.86	892.24	892.24	880.91	-	878.21
10. F.O.	883.07	882.34	897.79	889.40	896.82	921.13	925.17	937.88	920.38
11. Bitumen St. Gde. (Bulk)	670.60	670.60	670.60	670.60	670.60	695.60	-	-	-
12. Bitumen St. Gde.(Packed)	951.91	951.91	951.91	951.91	951.91	979.41	951.91	951.91	951.91
*13. Naphtha for non-Fert.	1012.00	1012.00	1012.00	1012.00	1012.00	1054.22	1065.87	1074.13	1072.47
*14. Naphtha for Fertilizers	596.31	595.11	612.48	602.63	611.35	653.58	650.92	658.83	654.57
*15. J.B.O.	789.42	789.42	789.42	789.42	789.42	815.68	-	-	-
*16. SBP Spirit 55/115	935.56	935.56	935.56	935.56	935.56	964.72	972.38	978.48	967.51
*17. SBP Spirit 64/69	1136.36	1111.36	1111.36	1111.36	1111.36	1139.40	1146.76	1152.62	1142.07
*18. Solvent/1425	935.56	935.56	935.56	935.56	935.56	964.72	972.38	978.48	967.51
*19. Hexane	1111.36	1111.36	1111.36	1111.36	1111.36	1139.40	1146.76	1152.62	1142.08
*20. M.T.O. 140/205	762.26	762.26	762.26	762.26	762.26	782.42	796.17	808.42	792.40
21. M.T.O. Laws	762.41	762.41	762.41	762.41	762.41	782.58	796.34	808.60	792.57
22. L.P.G.Domestic use	1482.65	1486.15	1496.83	1493.47	1501.67	-	-	-	-
23. L.P.G.Industrial use	1776.98	1776.98	1776.98	1776.98	1776.98	-	-	-	-

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

@ Rate Rupee per Metric Tonne

PRICE BUILD UP OF SELECTED PETROLEUM PRODUCTS
AVIATION TURBINE FUEL

(Rs./kl.)

Price Components	Bombay 1.1.75	Madras 1.1.75	Delhi 1.1.75	Kanpur 1.1.75	Calcutta 1.1.75
1. Ex.-Main Installation Rates	1267.13	1286.49	1267.13	1267.13	1285.32
2. Railway freight	-	-	79.00	84.70	-
3. Air field charges	24.44	24.44	24.44	41.94	24.44
4. Octroi/local/entry/ S BT.Tax	13.50	-	12.50	-	20.00
5. Net delivered rate exclusive of surcharge	1305.07	1310.93	1383.07	1393.77	1329.76
6. Sales tax (including surcharge)	300.17	221.00	96.81	100.00	365.68
7. Selling price to consumers Rs./kl.	1605.24	1531.93	1479.88	1493.77	1695.44

67

PRICE BUILD- UP OF SELECTED PETROLEUM PRODUCTS

FURNACE OIL

Rs./kl

	Bombay		Madras	Delhi		Calcutta	
	1.1.75	1.1.76	1.1.75	1.1.75	1.1.76	1.1.75	1.1.76
1. Ex-Main Installation	654.12	883.07	668.84	654.12	883.07	667.87	896.82
2. State Surcharge	-	-	25.00	-	-	-	-
3. Railway Freight	-	-	-	93.24	103.97	-	-
4 Delivery charges withinFDZ	6.25	-	-	6.25	-	-	-
5. Transportation Charges	-	-	-	-	-	20.00	24.31
6. Octroi/local/Entry/SSBT. Tax	18.47	18.47	-	5.18	5.18	20.00	20.00
7. Nett delivered rate exclusive of sales tax & dealers commission	678.84	901.54	693.84	758.79	992.22	707.87	941.13
8. Sales tax(including surcharge)	33.94	45.08	55.51	37.94	69.46	45.40	62.68
9. Dealers Commission	-	-	-	-	-	6.60	-
10. Transportation / handling charges	-	-	10.00	-	-	-	55.00
11. Selling price to consumers Rs./kl	712.78	946.62	759.35	796.73	1061.68	759.87	1058.81
12. Retail selling price Rs./kl	0.71	0.95	0.76	0.80	1.06	0.76	1.06

PRICE BUILD UP OF SELECTED PETROLEUM PRODUCTS

HIGH SPEED DIESEL OIL

(Rs./Kl.)

Price Components	Bombay		Madras		Delhi		Calcutta	
	1/1/75	1/1/76	1.1.75	1.1.76	1.1.75	1.1.76	1.1.75	1.1.76
1. Ex.M.I.Rates	894.89	1094.89	906.32	1106.32	894.89	1094.89	907.09	1107.09
2. State Surcharge	-	-	25.00	35.00	-	-	1.00	1.00
3. Railway Freight transportation	-	-	-	-	84.12	93.81	-	-
4. Delivery Charges with in FDZ	7.27	7.27	7.27	7.27	7.27	7.27	7.27	7.27
5. Delivery charges beyond FDZ	-	-	-	-	-	-	2.88	2.88
6. Octroi	18.50	18.50	-	-	4.68	4.68	20.00	20.00
7. Net Delivery	920.66	1120.66	938.59	1148.59	990.96	1200.65	938.24	1160.17
8. Sales Tax(including surcharge)	82.86	100.86	157.50	157.50	69.36	84.05	134.25	150.82
9. Dealers Commission	17.60	17.60	17.60	17.60	17.60	17.60	17.60	17.60
10. Selling price to consumers Rs./kl.	1021.12	1239.12	1113.69	1323.69	1077.92	1332.30	1080.10	1348.59
11. Retail selling price(including service charges recovered by dealer Rs.per liter	1.06	1.28	1.12	1.36	1.11	1.36	1.10	1.15
12. Service charges imposed by the dealer	-	-	-	0.03 per ltr.	0.03 per ltr.			20.00

PRICE BUILD UP OF SELECTED PETROLEUM PRODUCTS-
LIGHT DIESEL OIL

Price Components	Bombay		Delhi		Calcutta	
	1.1.75	1.1.76	1.1.75	1.1.76	1.1.75	1.1.76
1. Ex-M.I. Rates	879.64	879.64	879.64	879.64	892.24	892.24
2. State Surcharges	-	-	-	-	-	-
3. Railway freight	-	-	86.69	96.67	-	-
4. Delivery charge within FDZ	7.00	7.00	-	-	-	-
5. Octrori/ Local/ Entry/ SSB T.Tax	13.50	13.50	4.82	4.82	20.00	20.00
6. Net delivery rates exclusive of sales tax & dealers commission	900.14	900.14	971.15	981.13	912.24	912.24
7. Sales tax inclusive of surcharge	45.01	45.01	48.56	68.68	118.59	118.59
8. Dealers commission	-	-	6.60	6.60	6.60	-
9. Transportation charges	-	-	14.00	14.00	-	20.00
10. Transportation charges (Ex-M.D.C)	-	-	-	-	20.00	-
11. Handling charge	-	-	3.75	3.75	-	-
12. Leakage/B.D. A.etc.	-	-	15.21	15.45	-	30.00
13. Selling prices to consumers in Rs./kl.	945.15	945.15	1059.27	1089.61	1057.43	1080.83
14. Retail selling prices (inclusive of service charge)in Rs./ltr.	-	-	1.06	1.09	1.06	1.08

Note:- L.D.O.not sold in retail at Madras and hence price build up has not been reported at Madras.

Price Build up of selected petroleum products

Motor Spirit -83 Oct.

Rs-/kl

Price components	Bombay		Madras		Delhi		Calcutta	
	1.1.75	1.1.76	1.1.75	1.1.76	1/1/76	1/1/76	1/1/75	1/1/76
1. Ex-Main Inatallation	2846.58	2944.88	2855.41	2953.71	2846.58	2944.88	2869.62	2967.92
2. State Surcharge	-	-	25.00	35.00	-	-	1.00	10.00
3. Railway freight	-	-	-	-	117.78	128.74	-	-
4. Delivery charges within FDZ	11.36	11.36	11.36	11.36	11.36	11.36	11.36	11.36
5. Transportation charges for mean distances	.50	.50	-	-	-	-	2.88	2.88
6. Octror/local/entry tax	28.50	28.50	-	-	-	-	20.00	20.00
7. Net delivery rate exclusive of sales tax and dealers commission	2886.44	2984.74	2891.77	3000.07	2975.72	3084.98	2904.86	3012.16
8 Sales Tax inclusive of surcharge	317.51	328.32	213.00	220.00	208.30	215.95	294.57	301.22
9. Dealers Commission	41.80	41.80	41.80	41.80	41.80	41.80	41.00	41.80
10. Service charges imposed by the dealer	-	-	-	per ltr 0.03	-	-	-	30.00
11. Selling price to consumer Rs./kl.	3245.75	3354.86	3146.57	3262.37	3225.82	3392.73	3241.33	3385.18
12. Retail Selling price per litre (including Service charges recovered by dealer)	3.26	3.33	3.15	3.30	3.26	3.39	3.27	3.39

PRICE BUILD UP OF SELECTED PETROLEUM PRODUCTS
SUPERIOR KEROSENE- AS ON -1-1-1976.

(Rs./kl)

	Bombay		Madras		Delhi		Calcutta	
	1.1.75	1.1.76	1.1.75	1.1.76	1.1.75	1.1.76	1.1.75	1.1.76
1. Ex-Main installation Rates	914.24	1084.24	924.66	1094.66	914.24	1084.24	928.82	1098.82
2. State Surchage	-	-	25.00	35.00	-	-	-	-
3. Railway freight/Transportation	-	-	-	-	79.82	89.01	-	20.81
4. Octroi/ Local/Entry/ SSB T.Tax	13.50	13.50	-	-	12.50	12.50	-	-
5. Net Delivery rate exclusive of sales tax and dealers Commission	927.74	1097.74	949.66	1129.66	1006.56	1185.75	928.82	1119.63
6. Sales Tax inclusive of Surcharge	27.83	32.93	84.76	100.82	exempted	35.57	51.08	61.92
7. Dealers Commission	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70
8. Handling charges	-	-	-	14.00	3.75	-	-	-
9. Leakage/ B.D.A./Cartage etc.	25.00	25.00	10.34	12.30	15.21	-	41.31	9.90
10. Transportation Charges	-	-	-	-	12.00	12.00	17.89	7.99
11. Profit for dealers	-	46.50	-	42.50	-	48.98	-	-
12. Service Charges	-	-	-	-	-	-	-	-
13. Selling price to consumers Rs./kl	988.27	1209.87	1052.46	1306.98	1045.22	1290.00	1046.80	1248.45
14. Retail selling price Rs./litre (inclusive of Service Charges)	1.04	1.21	1.10	1.31	1.08	1.29	1.05	1.25

REALIZATION OF EXCISE &CUSTOMS DUTIES FROM CRUDE OIL AND PETROLEUM PRODUCTS

(Rs.Lakhs)

PRODUCTS	ACTUALS 1972-73	1973-74	1974-75	1975-76 BE	1975-76 RE	1976-77 BE
A. Excise Duties						
1. Mogas	22818	30723	38866	40300	40000	41500
2. Kerosene Oil	13791	14112	13949	17600	16000	16700
3. Refined Diesel oils&Vap.Oil.	28379	29102	30962	29200	29000	30500
4. Diesel Oil(Nos)	2015	2304	2258	2710	1900	2000
5. Furnace Oil	2482	3001	3265	3610	4800	5000
6. Asphalt/Tar	1670	1602	1502	1400	1150	1200
7. Petroleum Products (Others)	4345	4684	5130	5700	5000	5500
8. Blended or compounded Lubes & Greases	1148	1737	4901	5200	4800	5200
9. Calcined Petroleum Coke	94	120	224	400	350	400
TOTAL (A)	76742	87385	101057	106120	103000	108000
B. Custom Duties						
1. Petroleum Crude	582	-	-	1380	1325	1370
2. Mogas	575	764	1135	1470	1250	1150
3. Kerosene Oil	2830	3349	4253	2900	3350	3100
4. Batching,lubricating &Other Mineral Oils	1238	1525	1430	1790	1960	2000*
5. HSD &Vap Oil	807	1778	1368	2660	2730	2900
6. Indl. Fuel Oil	2569	2187	1400	2620	960	990
TOTAL (B)	8601	9603	9586	12820	11575	11510
Grand Total	85343	96988	110643	118940	114575	119510

Source:- Explanatory Memorandum on the Budget of the Central Government for 1976-77.

* = 1300 Lube Oils
700 Other Mineral Oils

CENTRAL EXCISE DUTY AS ON 1.3.1976.

(Figures in Rs.)

Products	Unit	Excise Duty at 15°C				Total 3 to 6	Excise duty at 29.5° C				Total 8 to 11
		Basic	Additional WGOP	Additional OPC	Additional Devaluation		Basic	Additional WGOP	Additional OPC	Additional Devaluation	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Avgas 100/130	KL	2100.00	41.80	4.75	35.00	2181.55	2063.67	41.08	4.67	34.39	2143.81
2. " 115/145	"	"	"	"	"	"	2062.20	41.05	"	34.37	2142.29
3. " 73	"	"	"	"	"	"	2063.04	41.06	"	34.38	2143.15
4. Motor Sprit 83	"	"	"	"	"	"	2064.30	41.09	"	34.41	2144.47
5. " " 93	"	"	"	"	"	"	2065.56	41.11	"	34.43	2145.77
6. Aviation Turbine Fuel	"	365.00	21.70	2.05	44.70	433.45	359.96	21.40	2.02	44.08	427.46
7. Kerosene Superior	"	"	"	"	"	"	360.04	"	"	44.09	427.55
8. " Inferior	"	50.90	55.85	0.10	31.75	138.60	50.28	55.17	0.10	31.36	136.91
9. High Speed Diesel Oil	"	361.05	22.90	0.85	33.70	418.50	356.68	22.62	0.84	33.29	413.43
10. Light Diesel Oil	"	95.55	51.95	0.80	31.85	180.15	94.47	51.36	0.79	31.49	178.11
11. Furnace Oil	"	100.00	21.05	-	17.70	138.75	98.99	20.84	-	17.52	137.35
12. Bitumen St.Gr(Bulk)	MT	30.00	40.30	34.75	20.45	125.50					
13. " " "(Packed)	"	75.00	"	"	"	170.50					
14. " Cutbacks(BS/RC)	"	75.00	27.00	47.80	25.20	175.00					
15. L.P.Gas	"	250.00	-	-	-	250.00					

Sales Tax

RATES APPLICABLE ON PETROLEUM PRODUCTS IN DIFFERENT STATES AS ON 1.4.1976.

Sr. No.	Name of the States / Name of the Products	Andhra Pradesh	Assam	Bihar	Chandigarh	Delhi	Goa Daman & Deu	Gujarat	Haryana
1.	Aviation Spirit	13.96%	30 Ps/Ltr.	15%	9 Ps/Ltr.	7%	12%	9% Duty Paid	12 Ps/Ltr.
2.	Aviation Turbine Fuel	11.43%	30 "	15%	9 PPL	7%	12%	20 % Bonded	7%
3.	Motor Spirit	12.68%	30 "	7%	9 Ps/Ltr.	7%	12%	20%	12 Ps/Ltr.
4.	High Speed Diesel Oil	11.43%	11 "	15%	7 "	7%	12%	12%	12 "
5.	Light Diesel Oil	11.43%	11 "	12%	6%	7%	12%	5%	7%
6.	Mosquito Larvicidal Oil	11.43%	7%	-	6%	7%	6%	5%	7%
87.	Superior Kerosene	4.46%	3 Ps/Ltr.	5%	6%	3%	4%	3%	7%
8.	Inferior Kerosene	4.46%	2 "	5%	6%	3%	4%	3%	7%
9.	Furnace Oil	4.46%	7%	7%	6%	7%	6%	4%	7%
10.	Mineral Turpentine Oil	4.46%	7%	-	-	7%	-	5%	7%
11.	Lube Oils	6.67%	10 Ps/Ltr.	7%	6%	7%	6%	4%	7%
12.	Greases	6.67%	11 " Kg.	7%	6%	7%	6%	4%	7%
13.	Petroleum Naphtha	6.67%	7%	7%	6%	7%	6%	5%	7%
14.	Bitumen	4.46%	7%	5%	6%	7%	6%	5%	7%
15.	Petroleum Coke	4%	4%	4%	3%	3%	4%	4%	4%
16.	Indane (Liquified Petroleum Gas)	5.56%*	7%	7%	6%	5%	-	12%	7%
17.	Transformer Oil	4.46%	7%	7%	6%	7%	-	5%	7%
18.	Tins & Containers	4.46%	6%	7%	6%	7%	-	4%	7%
19.	H.B.Fluid	4.46%	10 PPL	-	-	-	-	8%	-

* (LPG in Containers - 5.56%)
(LPG in Bulk - 4.46%)

Sales tax rates applicable to an Petroleum Products in different States as on 1.4. 1976.

Sr. No.	Name of the States / Name of the Products	Himachal Pradesh	Jammu& Kashmir	Kerala	Madhya Pradesh	Maharashtra	Karnataka	Manipur	Nagalan
1.	Aviation Spirit	7 Ps/Ltr.	8%	12%	8.74%	23%(Bonded) 9% (Duty Paid)	12	15 PPL	8PPL
2.	Aviation Turbine Fuel	7%	8%	8%	8.74%	30%(Bonded) 23%(Duty Paid)	14%	15PPL	8PPL
3.	Motor Spirit	7 Ps/ltr.	12Ps/Ltr.	15%	11.17%	11%	12%	20Ps/Ltr	8PPL
4.	High Speed Diesel Oil	7 "	12 "	20%	9.94%	9%	14%	15 "	7 PPL
5.	Light Diesel Oil	7%	8%	20%	13.70%	5%	14%	10 "	7 PPL
6.	Mosquito Larvicidal Oil	7%	8%	4%	-	5%	4%	6%	5%
7.	Superior Kerosene	7%	2%	4%	7.56%	3%	4%	6%	3PPL
8.	Inferior Kerosene	7%	-	4%	7.56%	3%	4%	6%	2PPL
9.	Furnace Oil	7%	8%	5%	8.74%	5%	8%	6%	5%
10.	Mineral Turpentine Oil	7%	8%	4%	-	5%	-	-	-
11.	Lube Oils	7%	8%	7%	8.74%	5%	8%	10Ps/ltr	9PPL
12.	Greases	7%	8%	7%	8.74%	5%	8%	10Ps/ltr.	9PPL
13.	Petroleum Naphtha	7%	8%	5%	8.74%	5%	4%	[illegible]	[illegible]
14.	Bitumen	7%	5%	4%	8.74%	5%	[illegible]	-	5%
15.	Petroleum Coke	3%	4%	3%	4%	4%	4%	3%	4%
16.	Indane(Liquified Petroleum Gas)	7%	Exempted	15%	8.74%	5%	8%	-	5%
17.	Transformer Oil	7%	8%	7%	8.74%	5%	6%	-	[illegible]
18.	Tins & Containers	7%	8%	4%	8.74%	8%	4%	-	5%
19.	H.B.Fluid	-	-	7%	8.74%	8%	8%	-	-

Sales Tax rates applicable on Petroleum Products in different ~~States as on 1.4.76~~

Sr. No.	Name of the States / Name of the Products	Orissa	Pondicherry	Punjab	Rajasthan	Tamil Nadu	Uttar Pradesh	West Bengal
1.	Aviation Spirit	8 Ps/Ltr	3%	15Ps/ltr	12%	21 Ps/Ltr	25 PPL	9%
2.	Aviation Turbine Fuel	5%	3%	6%	12%	21 "	25 "	25%
3.	Motor Spirit	15 Ps/Ltr	3%	15Ps/LTR	15%	21 "	25 "	9.9%
4.	High Speed Diesel Oil	12 "	3%	10 "	12½%	15%	10 "	13%
5.	Light Diesel Oil	12 "	3%	6%	20%	15 "	10 "	13%
6.	Mosquito Larvicidal Oil	5%	2½%	6%	7%	8%	4%	6.66%
7.	Superior Kerosene	5%	Exemp.	6%	7%	8½%	8%	5.56%
8.	Inferior Kerosene	2%	Exemp.	6%	7%	8½%	8%	Exempted
9.	Furnace Oil	5%	2½%	6%	7%	8%	4%	6%
10.	Mineral Turpentine Oil	5%	-	-	12%	-	4%	6.66%
11.	Lube oils	8%	3%	6%	7%	8%	8%	6.66%
12.	H.B.Fluid	-	-	-	7%	8%	8%	-
13.	Greases	8%	3%	6%	7%	8%	8%	6.66%
14.	Petroleum Naphtha	5%	-	-	-	8%	6%	6.66%
15.	Bitumen	5%	-	6%	7%	8%	8%	6.66%
16.	Petroleum Coke	4%	-	4%	4%	4%	4%	4%
17.	Indane(Lidquified Petroleum Gas)	5%	-	6%	7%	8%	8%	6.66%
18.	Transformer Oil	-	-	6%	7%	8%	-	6.66%
19.	Tins/containers	5%	-	6%	7%	4%	8%	6.66%

IN ADDITION TO THE SALES TAX PAYABLE THE FOLLOWING TAX AMOUNTS ARE ALSO PAYABLE-RECOVERABLE.

1. Bihar :- Additional Tax at 100 Paise eff. 1.12.1975 for every Rs.100/- of the value of the bill is payable (on products under Sales Tax Act).
2. Haryana :- Surcharge at 2% on Sales Tax on all products under Sales Tax Act is payable.
3. Madhya Pradesh Sales :- Turn over tax at 0.4% of the value of the bill on all products is payable. The Tax rates indicated includes this leavy also.
4. Punjab :- Additional Tax at 2% of the Sales Tax on products under General Sales Tax Act is payable.
5. West Bengal payable. :- Surcharge at 10% eff. 20.4.1974 of Sales Tax on Sales Tax Products is payable. The S.Tax rates indicated includes this levy also.
6. Kerala :- Surcharge at 5% of S.Tax is payable, but thesame is not recoverable from the market.
7. J & Kashmir :- Surcharge at 5% of S.Tax is payable,but the same is not recoverable from the market.
8. Maharashtra :- Additional S.Tax @ 6% of tax is payable but the same is not recoverable from the market. This does not apply to Kerosene.
9. Karnataka :- Additional tax @ 10% of S.Tax is payable and is not recoverable from the market.
10. Tamil Nadu :- Surcharge at 5% on Tax is also payable which is recoverable. Additional Sales Tax at 10% eff. 1.4.1974 of tax is also payable which has to be borne by seller i.e. not recoverable.
11. Gujarat :- Additional S.Tax at 3% on S.Tax in respect of products under Gujarat S.Tax Act is also payable.eff 12.12.75.
12. Orissa :- Additional S.Tax at 5% on S.Tax is payable on products falling under S.Tax Act. This is non-recoverable from the market.
13. Uttar Pradesh :- A Surcharge levy of 1% on the taxable turnover is also payable. The S.Tax rates indicated includes this levy also.

TANKER TONNAGE OF INDIAN FLEET.

(DWT in '000')

Year*	Oil Tankers		Ore oil Carriers		Total	
	No.of Tankers	DW Tonnage	No.of ships	D.W. Tonnage	No.of Ships	D.W. Tonnage
1.	2.	3.	4.	5.	6.	7.
		(A) Coastal Tankers				
1966	3	37.3	-	-	3	37.3
1967	4	60.4	-	-	4	60.4
1968	5	75.0	-	-	5	75.0
1969	5	75.0	-	-	5	75.0
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
		(B) Overseas Tankers				
1966	5	221.2	3	61.8	8	283.0
1967	5	227.4	3	61.8	8	289.2
1968	5	229.8	5	144.6	10	374.4
1969	6	317.5	6	186.0	12	503.5
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
		(C) All Tankers				
1966	8	258.5	3	61.8	11	320.3
1967	9	287.4	3	61.8	12	349.2
1968	10	304.8	5	144.6	15	449.4
1969	11	392.5	6	186.0	17	578.5
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

* As on 31st December of Each Year

Source : Ministry of Shipping & Transport.

Indian Tanker Fleet as on 31.12.1975.

Owners	Name of Vessel	D.W. Tonnes	Year Build
1.	2.	3.	4.
1. Shipping Corporation of India	Lajpat Rai	48484	1965
	Desh Bandhu	36232	1964
	Jawahar Lal Nehru	87612	1969
	Lal Bahadur Shastri	87649	1970
	Nanak	34780	1956
	Gargi	57588	1964
	Netaji Subash Bose	87980	1973
	Vivekananda	87980	1974
	Chhatrapati Shivaji	87980	1974
	B.R.Ambedkar	88041	1974
	Desh Deap	11226	1959
	Visvesvaraya	16400	1974
	Bhagat Singh	16480	1974
	Bellary *	85000	1969
	Bailadila*	85520	1971
	Barauni *	85000	1970
	Chanakya*	21615	1964
	Bhaskara*	21594	1965
	Leelavati*	21615	1965
	Moti Lal Nehru*	112289	1973
	Gautama Buddha*	127468	1974
	Abdul Kalam Azad*	112539	1974
	Jhansi Ki Rani*	75000	1974
	Jai Narain Vyas	24500	1975
	Kanchanjanga	273317	1975
	Lok Manya Tilak	89407	1975
	Rafi Ahmed Kidwai	24500	1975
	Rajendra Prashad	115723	1975
	Sarojni Naidu	16480	1975
	Satya Murti	89490	1975
	Zakir Husain	115723	1975
	Samarat Ashok	127468	1974
2. Great Eastern Shipping Co.	Anco Jyoti	17610	1968
	Jag Prakash	25072	1974
	Jag Priya	32360	1975
3. Ratnakar Shipping Co.Ltd.	Jag Athal laadki	101500	1972
	Ratna Jayshree	59284	1966
4. Thakur Shipping Co.	Varuna Vahini	20460	1961
5. Scindia Steam Nav.Co.	Walchand*	103100	1973
6. Varun Shipping Co.Ltd.	Aryadoot	20637	1960
7. Essar Constructions	Nand Kala	6703	1972
8. Sagar Line	Sagar Tarani	723	1965

* Ore Oil Carries.

Share of Traffic in Petroleum Products & Fert. &Fert. Raw Materials in the total traffic handled at Major ports during -1965-66 1969-70, and 1973-74 to 1975-76.

Name of the major port	year	Total traffic in Mn. tonnes	Of the traffic in col.3 traffic in Pol Mn Tonnes	Fert.& Fert. Raw Materials	Total col.4+5 Mn. tonnes	PERCENTAGES Col.4 to col.3	Col.5 to Col.3	Col.6 to Col.3
1.	2.	3.	4.	5.	6.	7.	8.	9.
Calcutta	1965-66	9.84	1.43	0.23	1.66	14.5	2.3	16.8
	1969-70	6.89	1.49	0.20	1.69	21.6	2.9	24.5
	1973-74	6.28	1.97	0.40	2.37	31.4	6.4	37.7
	1974-75	7.54	2.28	0.49	2.77	30.2	6.5	36.7
	1975-76	7.70	2.89	0.40	3.29	37.5	5.2	42.7
Bombay	1965-66	18.11	9.92	0.45	10.37	54.8	2.5	57.3
	1969-70	15.04	8.53	0.51	9.04	56.7	3.4	60.1
	1973-74	18.37	11.15	0.94	12.09	60.7	5.1	65.8
	1974-75	18.01	10.29	1.06	11.35	57.1	5.9	63.0
	1975-76	16.94	8.79	1.08	9.87	51.9	6.4	58.3
Madras	1965-66	4.87	0.93	0.47	1.40	19.1	9.7	28.7
	1969-70	6.44	2.24	0.83	3.07	34.8	12.9	47.7
	1973-74	7.75	3.46	0.49	3.95	44.6	6.3	51.0
	1974-75	8.02	3.23	0.72	3.95	40.3	9.0	49.3
	1975-76	8.26	3.35	0.34	3.69	40.6	4.1	44.7
Cochin	1965-66	2.87	1.04	0.21	1.25	36.2	7.3	43.6
	1969-70	4.79	3.56	0.18	3.74	74.3	3.8	78.1
	1973-74	3.72	2.50	0.21	2.71	67.2	5.6	72.8
	1974-75	4.81	3.53	0.26	3.79	73.4	5.4	78.8
	1975-76	4.25	2.87	0.29	3.16	67.5	6.8	74.4
Vizag	1965-66	4.38	2.01	0.14	2.15	45.9	3.2	49.1
	1969-70	8.31	1.95	0.55	2.50	23.5	6.6	30.1
	1973-74	8.05	2.02	0.73	2.75	25.1	9.1	34.2
	1974-75	7.22	1.72	0.75	2.47	23.8	10.4	34.2
	1975-76	8.52	1.42	0.69	2.11	16.7	8.1	24.8
Kandla	1965-66	2.51	0.93	0.13	1.06	37.1	5.2	42.2
	1969-70	2.11	0.98	0.38	1,36	46.4	18.0	64.4
	1973-74	3.12	1.60	0.52	2.12	51.3	16.7	67.9

Name of the major port	Year	Total Traffic in Mn.Tonnes	Of the traffic in col.3 traffic in			PERCENTAGES		
			POL.	Fert.& Fert. Raw Materials	Total col.4+5 Mn.Tonnes	Col.4 to col.3	Col.5 to col.3	Col.6 to col.3
1.	2.	3.	4.	5.	6.	7.	8.	9.
Kandla	1974-75	3.52	1.75	0.71	2.46	49.7	20.2	69.9
	1975-76	3.28	1.44	0.52	1.96	43.9	15.9	59.8
Mormugoa	1965-66	7.86	0.09	0.07	0.16	1.1	0.9	2.0
	1969-70	9.03	0.15	0.05	0.20	1.7	0.6	2.2
	1973-74	14.34	0.65	0.03	0.68	4.5	0.2	4.7
	1974-75	14.11	0.60	0.06	0.66	4.3	0.4	4.7
	1975-76	12.77	0.55	0.06	0.61	4.3	0.5	4.8
Paradip	1965-66	-	-	-	-	-	-	-
	1969-70	1.75	-	-	-	-	-	-
	1973-74	2.29	-	-	-	-	-	-
	1974-75	2.61	-	-	-	-	-	-
	1975-76	3.29	-	-	-	-	-	-
Port of New Mangalore	1975-76	0.33	0.06	0.03	0.09	18.2	9.1	27.3
Port of New Tuticorin	1975-76	0.27	0.20	-	0.20	74.1	-	74.1
Grand total	1965-66	50.44	16.35	1.70	18.05	32.4	3.4	35.8
	1969-70	54.36	18.90	2.20	21.10	34.8	4.0	38.8
	1973-74	63.92	23.25	3.32	26.57	36.4	5.2	41.6
	1974-75	65.84	23.40	4.08	27.48	35.5	6.2	41.7
	1975-76	65.61	21.57	3.38	24.95	32.9	5.2	38.0

COASTAL MOVEMENT OF PETROLEUM PRODUCTS

(Quantity 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	1055.64	2696.35	136.59
1975	1726.61	741.17	2467.78	182.40

N.B. I/F = Indian Flag Vessels

F/F = Foreign Flag Vessels

* = Includes Freight paid on Demurrage and Dead Freight paid.

- - - -

AERA FREIGHT COSTS, 1972, 73, 74 and 1975.

RAS TANURA TO BOMBAY

$per long ton

	General Purpose (16,500-24,999 dwt)	Medium Rang 25,000-44,999	L.R.1. 45,000-79,999	L.R.2 (80000-159999)	VLCC 160000 & above
1972					
January	1.87	1.66	1.38	1.21	
Februrary	2.02	1.80	1.44	1.26	
March	1.95	1.81	1.45	1.27	
April	1.90	1.76	1.42	1.23	
May	1.89	1.70	1.35	1.15	
June	1.86	1.64	1.30	1.09	
July	1.87	1.63	1.27	1.10	
August	1.91	1.66	1.28	1.12	
September	1.91	1.66	1.29	1.11	
October	1.96	1.69	1.29	1.11	
November	2.02	1.73	1.32	1.13	
December	2.02	1.73	1.36	1.17	
Average, 72	1.93	1.71	1.35	1 1.16	
1973					
January	2.21	1.90	1.45	1.25	
February	2.26	1.98	1.49	1.30	
March	2.30	2.02	1.55	1.37	
April	2.45	2.14	1.65	1.44	
May	2.43	2.20	1.73	1.53	
June	2.48	2.21	1.75	1.53	
July	2.78	2.39	1.75	1.55	
August	3.24	2.80	2.00	1.72	
September	3.63	3.04	2.22	1.96	
October	3.70	3.20	2.32	2.13	
November	3.95	3.45	2.49	2.39	
December	4.58	3.90	2.74	2.57	
Average, 73	3.00	2.60	1.94	1.60	
1 9 7 4					
January	4.20	3.50	2.50	2.25	1.55
February	3.97	3.19	2.21	1.83	1,46
March	4.09	3.39	2.25	1.78	1.45
April	4.02	3.36	2.18	1.80	1.42
May	4.01	3.33	2.18	1.82	1.42
June	3.97	3.34	2.18	1.75	1.41
July	3.84	3.26	2.14	1.66	1.39
August	3.64	3.21	2.16	1.67	1.41
September	3.41	3.03	2.08	1.62	1.39
October	3.28	2.95	1.97	1.55	1.34
November	3.41	2.96	1.97	1.54	1.30
December	3.51	3.02	2.06	1.57	1.34
Average, 1974	3.78	3.21	2.16	1.74	1.41

1975	General purpose (16500-24999 dwt)	Medium Range (25000-44999)	L.R.1 (45000-79999)	L.R.2 (80000-159999)	VLCC * 160,000 & above
January	3.15	2.77	1.85	1.41	1.23
February	3.20	2.76	1.83	1.38	1.25
March	3.09	2.73	1.85	1.41	1.28
April	3.01	2.75	1.85	1.41	1.29
May	2.96	2.79	1.85	1.43	
June	3.01	2.77	1.86	1.44	1.31
July	3.13	2.86	1.91	1.43	1.32
August	3.30	3.00	1.98	1.46	1.37
September	3.36	2.95	2.00	1.48	
October	3.36	2.94	1.97	1.48	1.33
November	3.39	3.00	1.98	1.42	
December	3.40	3.00	1.95	1.47	1.32
Average 1975	3.20	2.86	1.91	1.44	1.30

($ per long ton)

WORLD SCALE FLAT RATE RAS TANURA TO BOMBAY

Date	Rate
Ist Jan.1972	1.60
Ist Feb.1972	1.68
Ist Jan.1973	1.72
Ist Jan.1974	1.79
Ist Jan.1975	2.27
Ist July.1975	2.31

* Available only w.e.f.Jan.1974

AFRA FREIGHT COSTS 1972,73,74 &1975.

RAS TANURA TO MADRAS

$ per long ton

	General Purpose (16500-24999 dwt)	Medium Range (25000-44999)	L.R.1 (45000-79999)	L.R.2 (80000-159999)	VL CC * (160000 and above.
1972					
January	2.98	2.64	2.20	1.93	
February	3.16	2.81	2.26	1.97	
March	3.05	2.84	2.28	1.99	
April	2.97	2.76	2.22	1.93	
May	2.96	2.65	2.12	1.80	
June	2.92	2.57	2.04	1.71	
July	2.93	2.55	1.98	1.71	
August	3.00	2.60	2.00	1.75	
September	2.99	2.60	2.02	1.74	
October	3.07	2.65	2.01	1.74	
November	3.16	2.70	2.06	1.77	
December	3.16	2.71	2.13	1.83	
Average,1972	3.03	2.67	2.11	1.82	
1973					
January	3.42	2.94	2.24	1.93	
February	3.50	3.07	2.30	2.02	
March	3.56	3.12	2.40	2.12	
April	3.80	3.31	2.56	2.23	
May	3.75	3.41	2.67	2.36	
June	3.83	3.42	2.71	2.36	
July	4.29	3.69	2.71	2.40	
August	5.01	4.33	3.09	2.67	
September	5.61	4.70	3.44	3.03	
October	5.72	4.95	3.59	3.30	
November	6.12	5.33	3.83	3.69	
December	7.08	6.03	4.24	3.97	
Average,1973	4.64	4.03	2.98	2.67	
1974					
January	6.35	5.31	3.78	3.46	2.35
February	6.01	4.83	3.35	2.76	2.21
March	6.20	5.13	3.41	2.69	2.20
April	6.08	5.09	3.30	2.73	2.15
May	6.06	5.04	3.31	2.76	2.15
June	6.02	5.06	3.30	2.65	2.14
July	5.82	4.93	3.24	2.52	2.10
August	5.51	4.86	3.28	2.53	2.13
September	5.17	4.59	3.15	2.45	2.10
October	4.97	4.46	2.99	2.34	2.02
November	5.17	4.49	2.99	2.33	1.98
December	5.32	4.57	3.12	2.38	2.02
Average,1974	5.72	4.86	3.27	2.63	2.13

1975	General Purpose (16500-24999 dwt)	Medium Range (25000-44999 dwt)	LR.1 (45000 79999) dwt	L.R.2 (80000-159999 dwt)	VLCC* (160000 & above dwt)
January	5.08	4.47	2.98	2.28	1.99
February	5.15	4.46	2.95	2.23	2.01
March	4.99	4.40	2.98	2.28	2.06
April	4.85	4.44	2.98	2.27	2.09
May	4.78	4.51	2.98	2.30	
June	4.86	4.47	3.00	2.33	2.12
July	5.01	4.58	3.06	2.29	2.12
August	5.28	4.81	3.17	2.35	2.19
September	5.38	4.73	3.21	2.37	
October	5.38	4.66	3.16	2.36	2.14
November	5.42	4.80	3.17	2.28	
December	5.44	4.80	3.12	2.35	2.11
Average, 1975	5.14	4.59	3.06	2.31	2.09

($ per long ton)

WORLD SCALE FLAT RATE RASTANURA TO MADRAS

Date	Rate
Ist Jan.1972	2.55
Ist Feb.1972	2.63
Ist Jan.1973	2.66
Ist Jan.1974	2.71
Ist Jan.1975	3.66
Ist July.1975	3.70

* Available only w.e.f. Jan.1974

AFRA FREIGHT COSTS 1972,73 ,74 and 1975.

RAS TANURA TO CALCUTTA

$per long ton

	General Purpose (16500-24999 dwt)	Medium Range (25000-44999)	L.R. 1 (45000-79999)	L.R.2 (80000-159999	VLCC* 160000 and above
1972					
January	3.68	3.26	2.72	2.39	
February	3.88	3.46	2.77	2.42	
March	3.74	3.49	2.80	2.45	
April	3,65	3.39	2.72	2.37	
May	3.63	3.26	2.60	2.21	
June	3.58	3.15	2.50	2.10	
July	3.60	3.13	2.44	2.11	
August	3.68	3.19	2.46	2.15	
September	3.67	3.19	2.48	2.14	
October	3.78	3.25	2.47	2.14	
November	3.88	3.32	2.53	2.17	
December	3.89	3.33	2.62	2.25	
Average,72	3.72	3.28	2.59	2.24	
1973					
January	4.22	3.62	2.76	2.38	
February	4.31	3.78	2.84	2.49	
March	4.39	3.85	2.96	2.61	
April	4.68	4.09	3.15	2.75	
May	4.62	4.20	3.29	2.91	
June	4.72	4.21	3.34	2.91	
July	5.29	4.56	3.34	2.96	
August	6.18	5.34	3.80	3.29	
September	6.92	5.79	4.24	3.73	
October	7.05	6.00	4.43	4.06	
November	7.54	6.57	4.75	4.55	
December	8.72	7.43	5.23	4.90	
Average, 73	5.72	4.96	3.68	3.29	
1974					
January	7-81	6.52	4.65	4.18	2.89
February	7.39	5.93	4.12	3.40	2.71
March	7.62	6.31	4.19	3.30	2.70
April	7.47	6.25	4.06	3.35	2.64
May	7.45	6.19	4.06	3.39	2.64
June	7.39	6.22	4.05	3.26	2.63
July	7.15	6.06	3.99	3.09	2.59
August	6.77	5.97	4.03	3.10	2.62
September	6.35	5.64	3.87	3.01	2,58
October	6.11	5.48	3.67	2.88	2.48
November	6.35	5.51	3.67	2.87	2.43
December	6.53	5.62	3.83	2.93	2.49
Average,74	7.03	5.97	4.02	3.23	2.62

1975	General Purpose (16500-24999dwt)	Medium Range (25000-44999 dwt)	L.R.1 (45000-79999 dwt)	L.R.2 (80000-159999 dwt)	VLCC* (160000- & above dwt)
January	6.24	5.49	3.67	2.80	2.44
February	6.34	5.48	3.62	2.74	2.48
March	6.13	5.40	3.66	2.80	2.54
April	5.96	5.45	3.66	2.79	2.57
May	5.88	5.54	3.67	2.83	
June	5.98	5.50	3.69	2.86	2.60
July	6.15	5.62	3.75	2.81	2.60
August	6.48	5.90	3.89	2.88	2.68
September	6.60	5.80	3.94	2.91	
October	6.61	5.72	3.87	2.90	2.63
November	6.66	5.89	3.89	2.80	
December	6.67	5.89	3.83	2.89	2.59
Average,1975	6.31	5.64	3.76	2.83	2.57

($ per long ton)

WORLD SCALE FLAT RATE RASTANURA-CALCUTTA

Date	Rate
Ist Jan.1972	3.15
Ist Feb.1972	3.23
Ist Jan.1973	3.28
Ist Jan.1974	3.33
Ist Jan.1975	4.50
Ist July.1975	4.54

* Available only w.e.f.Jan.1974

Retail Outlets in India as on Ist Jan. Of each year

(Number)

Year		BRL/	B/Shell	Esso/HPCL	Caltex	I.O.C.	IBPC	A.O.C.	Total
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	391	155	10590
	%	32.8	18.1	13.0	30.9	3.7	1.5	100
1974	Nos.	3262	1887	1359	3349	442	164	10463
	%	31.2	18.0	13.0	32.0	4.2	1.6	100
1975	Nos.	3173	1868	1206	3550	480	163	10440
	%	30.4	17.9	11.6	34.0	4.6	1.5	100
1976	Nos.	3157	1872	1201	3583	578	164	10555
	%	29.9	17.7	11.4	33.9	5.5	1.6	100

Note:-

1. % = Percentage.
2. - Excluding Consumers retail outlets

Crude Oil & Products Pipeline in India
(as on 1.1.76)

Pipelines	Owned by	Length in kms.	Diametre in inches
1.	2.	3.	4.
1. Crude Pipelines			
i) Digboi Oil Field-Digboi Refinery	A.O.C.	12	6"
ii) Digboi Oil Field-Digboi Refinery	A.O.C.	11	4"
iii) Nahorkatiya-Gauhati	O.I.L.	404	16"
iv) Gauhati- Barauni	O.I.L.	754	14" 16"
v) Ankleshwar-Koyali	O.N.G.C.	94.8	
vi) Lakwa-Moran	O.N.G.C.	17.5	12"
vii) Nawagam-Koyali	O.N.G.C.	78.7	14"
viii) Kalol-Nawagam	O.N.G.C.	48.8	12"
ix) Sanand Kalol	O.N.G.C.	12.5	8"
x) Sobhashan-North Kadi	O.N.G.C.	20.2	8"
xi) NorthKadi-Kalol	O.N.G.C.	36.2	12"
xii) Nahorkatiya-Digboi	O.I.L.	35	8"
Total Crude Pipeline		1524.7	
2. Products Pipelines			
i) Digboi Refinery-Tinsukia	A.O.C.	34	6"
ii) Digboi Refinery-Tinsukia	A.O.C.	37	6"
iii) Digboi Refinery-Tinsukia	A.O.C.	34	4"
iv) Gauhati-Siliguri	I.O.C.	425	8-5/8"
v) Barauni-Kanpur	I.O.C.	668	12-¾"
vi) Koyali-Ahmedabad	I.O.C.	115	8-5/8
vii) Haldia-Morigram-RajBand	I.O.C.	270	12¾"
viii) Haldia-Barauni	I.O.C.	524	12¾"
Total Products Pipeline		2107	
3. GAS Pipelines			
i) Cambay Dhuvaran	O.N.G.C.	24.9	14"
ii) Ankleshwar Uttaran	O.N.G.C.	37.5	16"
iii) Ankleshwar-Baroda	O.N.G.C.	96.6	14"
iv) Nawagam-Calico Mills Ahmedabad	O.N.G.C.	22.2	8"
v) Kalol-IFFCO Premises (L.P.)	O.N.G.C.	2.6	12"
vi) Kalol-IFFCO Premises (H.P.)	O.N.G.C.	2.6	8"
vii) Sanand-Kalol	O.N.G.C.	12.6	6"
viii) Sobhashan-Dudh sagar Dairy	O.N.G.C	9.1	8"
TOTAL GAS PIPELINE		208.1	
Total (1+2 + 3)		3839.8	

L.P.= Low Pressure

H.P.= High Pressure

ESTIMATED WORLD CRUDE OIL AND GAS RESERVES AS ON 1.1.1976.

Country	OIL		GAS	
	Billion Tonnes	% of total	Trillion cu.Ft.	% of total
1. Total Western Hemisphere	10.3	11.4	358.9	16.1
of which				
1.1 U.S.A.	4.5	5.0	215.0	9.6
1.2 Venezuela	2.4	2.7	42.0	1.9
1,3 Canada	1.0	1.1	53.4	2.4
1.4 Ecuador	0.3	0.3	5.5	0.2
1.5 Mexico	1.3	1.4	12.0	0.5
1.6 Argentina	0.3	0.3	7.2	0.3
2. Total Africa	8.9	9.9	207.1	9.3
of which				
2.1 Libya	3.6	4.0	26.3	1.2
2.2 Algeria	1.0	1.1	126.0	5.6
2.3 Nigeria	2.8	3.1	44.3	2.0
2.4 Egypt	0.5	0.6	4.0	0.2
3. Total Middle East	50.5	56.0	538.6	24.1
of which				
3.1 Saudi Arabia	20.4	22.6	103.0	4.6
3.2 Kuwait	9.3	10.3	31.8	1.4
3.3 Iran	8.8	9.8	329.5	14.8
3.4 Iraq	4.7	5.2	27.1	1.2
3.5 Neutral Zone	0.9	1.0	7.5	0.3
3.6 Abu Dhabi	4.0	4.4	20.0	0.9
4. Total Europe	3.5	3.9	180.9	8.1
of which				
4.1 West Germany	0.05	0.1	8.3	0.4
4.2 U.K.	2.2	2.4	50.0	2.2
4.3 Netherlands	0.03	neg	70.0	3.1
4.4 Italy & Sicily	0.1	0.1	10.0	0.5
4.5 Norway	1.0	1.1	25.0	1.1
4.6 Yugoslavia	0.05	0.1	1.5	0.1
5. Total Asia & Pacific	2.9	3.2	111.6	5.0
of which				
5.1 Indonesia	1.9	2.1	-	0.7
5.2 Australia	0.2	0.2	32.5	1.5
5.3 India	0.1	0.1	2.4	0.1
5.4 Pakistan	neg	neg	15.4	0.7
5,5 Brunei-Malaysia	0.3	0.3	15.0	0.7
6. Total Free World	76.1	84.4	1397.2	62.6
7. Total Communist World	14.1	15.6	835.0	37.4
of which				
7.1 Russia	11.0	12.2	800.0	35.8
7.2 Red China	2.7	3.0	25.0	1.1
7.3 Hungry (Others)	0.4	0.4	10.0	0.5
Total World	90.2	100	2232.1	100

Source:- Oil & Gas Journal, Dec. 29.1975

Conversion factor used: 20,000 bbl/day=1mn.Tonnage per year.

WORLD ESTIMATED CRUDE OIL PRODUCTION

(Thousand metric tons)

Country	Year			% Change	1975 (%
	1973	1974	1975	1975/74	to total world)
North America:					
U.S.A.	514297	491742	468500	- 4.7	17.3
Canada	100117	94322	80000	-15.2	3.0
Total	614414	586064	548500	- 6.4	20.3
Caribbean Area					
Venezuela*	175388	155079	124000	-20.0	4.6
Trinidad	8580	9450	10000	+ 5.8	0.4
Colombia	9498	8748	8000	- 8.6	0.3
Total	193466	173277	142000	-19.1	5.3
Other Latin America					
Mexico	23208	29700	37500	+26.3	1.4
Argentina	21434	21069	19550	- 7.2	0.7
Ecuador *	10706	8975	8050	-10.3	0.3
Brazil	8284	8599	8400	- 2.3	0.3
Peru	3410	3750	3500	- 6.7	0.1
Bolivia	2191	2280	2000	-12.3	0.1
Chile	1472	1310	1200	- 8.4	0.1
Total	70705	75683	80200	+ 6.0	3.0
Middle East					
Saudi Arabia*	364685	421750	337300	-20.0	12.5
Iran *	293908	302163	268700	-11.1	9.9
Iraq *	99371	91600	111300	+21.5	4.4
Kuwait*	138255	114390	93300	-18.4	3.5
Abu Dhabi*	68525	68048	64600	- 5.1	2.4
Kuwait/SA "Neutral zone*	27415	29013	25400	-12.5	0.9
Qatar*	27495	24781	20000	-19.3	0.8
Oman	14457	14349	16500	+15.0	0.6
Egypt*	13500	12150	15750	+13.2	0.6
Dubai *	11047	12975	12600	+ 4.3	0.5
Syria	5521	6535	9000	+37.7	0.3
Turkey	3602	3422	3150	- 7.9	0.1
Bahrain	3410	3354	3100	- 7.6	0.1
Sharjah *	-	1356	2000	+47.5	0.1
Total	1065191	1104986	982700	-11.1	36.4
Africa (Excluding Egypt)					
Nigeria*	101306	111026	87800	-21.0	3.2
Libya*	104586	74766	71000	- 5.0	2.6
Algeria*	51154	48656	42600	-12.4	1.6
Angola	8112	8950	7000	-21.8	0.3
Gabon*	7598	10202	11500	+12.7	0.4
Tunisia	3878	4139	4500	+ 8.7	0.2
Congo	2053	2470	1800	-27.1	0.1
Zaire	-	-	40	-	neg
Total	278687	260209	226210	-13.1	8.4

contd.....

Country	1973	1974	1975	%Change 1975/74	1975 % to total World
Western Europe					
Norway	1575	1707	9350	+447.7	0.3
West Germany	6638	6191	5750	- 7.1	0.2
Austria	2579	2238	2000	-10.6	0.1
Spain	765	1810	1880	+ 3.9	0.1
Netherlands	1431	1461	1460	-	0.1
U.K.	89	95	1130	+1089.5	0.1
France	1255	1081	1050	- 2.9	neg
Italy	1044	1026	1030	+ 0.4	neg
Denmark	135	90	160	+77.8	neg
Total	15511	15699	23810	+51.7	0.9
Far East					
Indonesia*	66407	68234	63000	- 7.7	2.3
Australia	18188	18957	19250	+ 1.5	0.7
Brunei	11685	10036	9550	- 4.8	0.3
India	7199	7490	8300	+10.8	0.3
Malaysia	4293	3845	4600	+19.6	0.2
Burma	968	903	900	- 0.3	neg
Japan	703	675	600	-11.1	neg
Pakistan	407	430	400	- 7.0	neg
Total	109852	110570	106600	-3.6	3.8
Free World:					
Western Hemisphere	878585	835024	771200	+ 7.6	28.5
Eastern Hemisphere	1469241	1491464	1339320	-10.2	49.6
Total	2347826	2326488	2110520	-9.3	78.1
of which					
OPEC Countries	1541846	1542114	1343150	-12.9	49.7
USSR and Eastern Europe					
UUSR	427250	459000	490000	+ 6.8	18.1
Romania	14292	14400	14600	+ 1.0	0.6
Yugoslavia	3392	3458	3700	+ 7.0	0.1
Albania	2100	2200	2300	+ 4.5	0.1
Hungary	1990	1996	2000	+ 0.2	0.1
Poland	396	510	550	+ 7.8	neg
East Germany	200	200	200	-	neg
Czechoslovakia	170	148	150	+ 1.4	neg
Bulgaria	190	144	120	-16.7	neg
Total	449980	482116	513620	+ 6.5	19.0
China	53000	64000	78000	+21.9	2.9
World Total	2850806	2872604	2702140	- 6.0	100.0

(a) Mostly including natural gas liquids, in Canada and China also oil from unconventional sources. Excluding small-scale production in Cuba, Morocco, Afghanistan, Bangladesh, Thailand, , Taiwan, Mongoila and New Zealand.

(b) Including the Sanai fields until lately under Israel occupation

* OPEC Countries.

Source:- The Petroleum Econist Jan.1976

Estimated world Natural Gas Prodiation

Country/Area	1973 Billion (10^9) cubic feet	1973 % of total	1974 Billion (10^9) cubic feet	1974 % of total	% Change 1974/1973
Total western Hemi-sphere	29539	61.4	28801	60.7	-2.5
of which					
1.1 U.S.A.	22854	47.5	22377	47.1	-2.1
1.2 Venezuela	1741	3.6	1457	3.1	-16.3
1.3 Canada	3241	6.7	3342	7.0	+3.1
1.4 Trinidad &Tobago	137	0.3	65	0.1	-52.6
1.5 Mexico	686	1.4	686	1.4	-
1.6 Argentina	242	0.5	278	0.6	+14.9
1.7 Bolivia	152	0.3	152	0.3	-
Total Africa	341	0.7	283	0.6	-17.0
of which					
2.1Libya	43	0.1	41	0.1	-4.7
2.2 Algeria	120	0.3	21	Neg	-82.5
2.3 Nigeria	60	0.1	60	0.1	-
2.4 Egypt	30	0.1	50	0.1	+66.7
Total Middle East	1926	4.0	1046	2.2	-45.7
of which					
3.1 Kuwait	51	0.1	-	-	-
3.2 Iran	1689	3.5	906	1.9	-46.4
3.3 Iraq	155	0.3	129	0.3	-16.8
3.4 Bahrain	20	neg	3	-	-85.0
Total Europe	5215	10.9	5767	12.1	+10.6
of which					
4.1 West Germany	590	1.2	674	1.4	+14.2
4.2 U.K.	1152	2.4	1207	2.5	+4.8
4.3 Netherlands	2590	5.4	2868	6.0	+10.7
4.4 Italy & Sicily	487	1.0	572	1.2	+17.5
4.5 France	258	0.5	304	0.6	+17.8
4.6 Yougosalavia	66	0.1	55	0.1	-16.7
Total Asia & Pacific	628	1.3	740	1.6	+17.8
of which					
5.1 Indonesia	139	0.3	161	0.3	+24.8
5.2 Australia	149	0.3	160	0.3	+ 7.4
5.3 India	18	neg	19	neg	+ 5.6
5.4 Pakistan	128	0.3	142	0.3	+10.9
Total free world	37649	78.3	36637	77.2	- 2.7
Total Communist world	10447	21.7	10938	22,8	+ 5.7
of which					
7.1 U.S.S.R.	8263	17.2	9213	19.4	+11.5
7.2 Red China	158	0.3	198	0.4	+19.0
7.3 Hungry	149	0.3	162	0.3	+ 8.7
7.4 Rumania	1303	2.7	936	2.0	-28.2
7.5 Poland	200	0.4	178	0.4	-11.0
7.6 Others	374	0.8	161	0.3	-57.0
Total World	48096	100	47475	100	- 1.3

Source:- International Petroleum Encyclopedia-1975.

PRODUCTIVITY OF PRODUCING WELLS IN SELECTED FIELDS IN THE WORLD -1975.

Country	Field	Discovery Date	Depth (meters)	Wells F.	Wells P.	Daily average Ist 6 month '75 ('000' bbls)	Gravity (API)	T/w/d 1975
Algeria	Edjeleh	1956	580-915	40	-	19.8	35.0	66.7
	Zarzaitine	1958	1403	25	-	90.0	42.0	465.4
	Hassi Messaoud North	1956	3355	108	-	222.0	49.0	255.9
	Hassi Messaoud South	1956	3355	145	-	350.0	49.0	300.3
Libya	Gialo	1961	671-1922	1	155	117.8	35.7	101.2
	Sarir	1961	2745	68	-	175.0	37.2	342.9
	Intisar,D,	1967	2867	18	-	137.9	39.5	1008.7
	Dafa	1969	1647-1800	60	-	116.7	35.6	260.7
	Nasser(zelten)	1959	1678-2318	55	-	89.8	38.0	213.7
Iran	Agha Jari	1936	2288	45	-	800.0	33.8	2411.2
	Ahwaz-Asmari	1958	2654	34	-	966.0	31.9	3876.1
	Gach Saran	1937	1525-2745	31	-	808.0	31.1	3597.1
	Marun	1963	3355-3660	35	-	1152.0	32.9	4490.4
	Darius-Offshore	1961	3355	12	-	88.0	34.0	994.6
	Sassan	1966	2288-2471	19	-	179.2	34.0	1279.2
	Rostem "	1966	2196-2989	9	12	21.8	33.7	140.8
Iraq								
	Rumaila	1953	3294	30	-	800.0	35.0	3595.3
Neutral Zone	Khafji-offshore	1961	1312-3660	106	-	273.3	28.4	362.0
Saudi Arabia	Abqaiq	1940	2034	60	-	762.5	38.0	1683.2
	Berri(Partly-offshore)	1964	2272	45	-	334.4	33.3	995.1
	Safaniyah(,,-Offshore)	1951	1556	92	-	827.4	27.0	1276.9
	Ghawar	1948	2044	391	-	4205.1	35.0	1450.0
Burma*	Chauk-lanywa	1902	1050	2	290	2.0	36.0	0.9
	Yenangyuang	1902	1525	-	200	4.0	36.0	2.7
India	All fields since	1890	92-3902	-	1545**	165.0	22.0-48.0	13.6
Indonesia	Bangko	1970	458	-	40	77.0	34.1	261.1
	Minas	1944	732	-	222	355.9	35.4	214.9
	Attaka(Offshore)	1972	2288	49	-	98.6	41.4	261.7

t/w/d/ = Tonnes/well/day * = Estimated ** = Flowing, pumping and shut in wells including wells, used for injection purposes.

Source:- Oil & Gas Journal 29th December, 1975.

World Oil Refining Capacities at end 1975 and 1974

Country/Area	Million tonnes per annum 1975	1974	1975 share of Total (%)	% Change 1975 over 1974	% Change Annual Average 1970/1975
North America	874	845	24.4	+3.5	+4.4
U.S.A.	764	745	21.3	+2.6	+3.6
Canada	110	100	3.1	+10.2	+10.7
Latin America	381	380	10.5	+0.3	+7.0
Argentina	36	35	1.0	+3.6	+8.6
Brazil	51	51	1.4	-	+15.3
Mexico	37	37	1.0	-	+6.0
N.W.I.	45	45	1.2	-	+2.4
Trinidad	23	23	0.6	-	+1.0
Venezuela	75	75	2.1	-	+3.1
Other Latin America	114	114	3.2	-	+10.7
Total Western Hemisphere	1255	1225	34.9	+2.5	+5.1
Western Europe	1042	959	29.0	+8.7	+7.7
Belgium	49	47	1.4	+4.3	+6.8
France	175	165	4.9	+6.2	+8.9
Italy	219	194	6.1	+13.3	+8.4
Netherlands	97	97	2.7	-	+7.6
Spain	59	50	1.6	+18.6	+9.8
United Kingdom	147	147	4.1	-0.2	+5.2
West Germany	155	148	44.3	+4.5	+5.3
Other Western Europe	141	111	3.9	+26.6	+10.6
Middle East	139	132	3.9	+5.3	+4.2
Aden	8	8	0.2	-	-
Bahrain	12	12	0.3	-	+4.0
Iran	38	33	1.1	+15.1	+5.0
Iraq	9	9	0.3	-	+11.3
Kuwait	28	26	0.8	+7.6	+3.7
Neutral Zone	4	4	0.1	-	-
Saudi Arabia	23	23	0.6	-	+1.8
Other Middle East	17	17	0.5	-	+7.8
Africa	62	62	1.7	-	+11.3
South Asia	36	36	1.0	-	+2.8
South East Asia	144	137	4.0	+5.1	+15.8
Indonesia	21	21	0.6	-	+ 7.5
Singapore	54	52	1.5	+4.8	+20.5
Other South East Asia	69	64	1.9	+7.0	+15.6
Japan	266	254	7.4	+4.9	+10.1
Australasia	38	37	1.1	+2.4	+3.0
U.S.S.R., E.Europe, & China	610	563	17.0	+8.3	+8.7
Total Eastern Hemisphere	2337	2180	65.1	+7.2	+8.3
Total World	3592	3405	100.0	+5.5	+7.1

Source:- BP Statistical Review-1975.

WORLD OIL CONSUMPTION 1975 and 1974.

Million Tonnes

Country/Area	1975	1974	1975 (% share of total)	% Change 1975 over 1974	% Change Annual Average 1970/1975
			%		
U.S.A.	764.2	782.6	28.3	-2.3	+1.9
Canada	82.5	84.8	3.1	-2.7	+2.5
Total North America	846.7	867.4	31.4	-2.4	+2.0
Latin America	173.9	171.3	6.4	+1.5	+4.9
Total Western Hemisphere	1020.6	1038.7	37.8	-1.7	+2,4
Austria	10.6	10.7	0.4	-1.3	+2.5
Belgium & Luxembourg	27.1	28.1	1.0	-3.4	-0.6
Denmark	15.5	16.0	0.6	-3.0	-3.6
Eire	5.2	5.4	0.2	-3.3	+4.8
Finland	11.9	11.6	0.4	+3.3	+2.1
France	109.3	121.0	4.1	-9.7	+3.0
Greece	10.2	9.4	0.4	+8.7	+8.7
Iceland	0.6	0.6	-	-2.5	+0.9
Italy	95.6	100.8	3.5	-5.1	+1.8
Netherlands	34.8	35.4	1.3	-1.7	-1.0
Norway	8.0	7.7	0.3	+4.3	-0.7
Portugal	6.8	6.5	0.2	+5.1	+8.2
Spain	43.4	41.1	1.6	+5.7	+9.1
Sweden	26.4	27.1	1.0	-2.5	-2.4
Switzerland	12.5	13.0	0.5	-4.4	-0.1
Turkey	13.6	12.5	0.5	+9.9	+12.1
U.K.	92.1	105.9	3.4	-13.0	-2.0
West Germany	128.6	134.3	4.8	-4.3	-4.3
Yugoslavia	11.4	11.5	0.4	-0.6	+10.7
Cyprus/Gibraltar/Malta	1.1	1.3	-	-12.8	+1.1
Total Western Europe	664.7	699.9	24.6	-5.0	+1.2
Middle East	70.4	68.6	2.6	+2.7	+7.3
Africa	51.4	50.3	1.9	+2.2	+4.3
South Asia	28.5	27.7	1.0	+2.9	+1.0
South East Asia	81.3	77.7	3.0	+4.7	+6.4
Japan	239.8	258.9	8.9	-7.	+3.8
Australasia	35.6	36.0	1.3	-0.9	+3.4
U.S.S.R.	370.0	341.5	13.7	+8.3	+7.1
Eastern Europe	84.0	81.0	3.1	+3.7	+8.7
China	55.5	48.5	2.1	+14.4	+22.6
Total Eastern Hemisphere	1681.2	1690.1	62.2	-0.5	+4.2
World	2701.8	2728.8	100.0	-1.0	+3.5
free World (Excl. U.S.S.R. E.Europe & China)	2192.3	2257.8	81.1	-2.9	+2.5

Source:- BP STATISTICAL REVIEW -1975.

Country-wise Imports and Exports-1975

Crude Oil and Products

(Million Tonnes)

Country/Area	IMPORTS		EXPORTS	
	Crude	Products	Crude	Products
U.S.A.	203.5	96.9	0.3	10.4
Canada	40.4	1.8	29.7	10.1
Latin America	101.1	15.1	56.2	103.0
Western Europe	578.9	47.0	3.0	9.3
Middle East	6.9	5.6	876.2	41.6
North Africa	4.2	4.5	116.5	2.8
East and South Africa	16.9	7.3	97.1	1.8
South Asia	14.6	4.8	-	0.2
West Africa	0.2	2.3	97.1	0.8
South East Asia	57.2	20.7	58.2	14.1
Japan	226.2	19.2	-	0.2
Australasia	11.1	6.0	-	2.5
U.S.S.R., E.Europe & China	11.7	3.5	35.7	37.9
Total	1272.9	234.7	1272.9	234.7

Source: BP STATISTICAL REVIEW - 1975.

LOWEST POSTED PRICES OF POL PRODUCTS AT BANDAR MAHSHAHR

/AG

Date of change (w.e.f.)	Light Distillates					Middle Distillates				Others
	Avgas 115/145	Avgas 100/130	Avgas 73	93 Octane	83 Octane	Turbine fuel 58F	Kerosine	Diesel Index 53-57	Ind. Diesel ($ bbl.)	Light Fuel ($ bbl.)
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
25.7.67	16.0	44.7	12.7	9.3	7.3	9.5	8.9	6.8	2.70	1.52
5.9.68	"	"	"							1.50
28.3.69	"	"	"	9.0	7.1	"	"	6.6	2.62	1.42
20.10.70	"	"	"	"	"	"	"	"	2.80	1.50
19.2.71	"	"	13.6	"	"	"	"	"	2.72	1.52
23.2.71	16.7	15.4	"	9.7	7.8	10.2	9.6	7.3	3.02	1.82
14.5.71	"	"	"	"	"	"	"	"	3.10	1.90
3.6.71	16.9	15.6	"	9.9	8.0	10.4	9.8	7.5	"	"
10.6.71	"	"	13.7	"	"	"	"	"	3.20	2.02
21.9.71	"	"	"	"	"	"	"	"	"	1.95
21.1.72	"	"	13.8	"	"	"	"	"	"	"
26.1.72	17.1	15.8	"	10.1	8.1	10.6	10.0	7.8	"	2.02
3.2.72	17.2	15.9	14.1	10.2	8.3	10.7	10.1	"	3.32	2.07
3.1.73	17.4	16.1	"	10.3	"	10.9	10.3	8.1	"	"
5.1.73				10.4	8.4			8.2		2.17
(Effective Jan.1)										
10.1.73	17.6	16.3	14.7	10.6	8.7	11.1	10.5	"	3.42	2.20
23.2.73	"	"	"	"	"	"	"	"	3.45	2.22
2.4.73	"	"	"	"	"	"	"	"	"	2.23
5.4.73	18.0	16.7	"	10.9	8.9	11.3	10.7	8.4	"	"
6.4.73	18.5	17.2	15.2	11.5	9.5	11.8	11.2	9.0	3.57	2.27
(Effective April 1)										
7.6.73	"	"	"	"	"	"	"	"	"	"
11.6.73	20.3	19.0	17.0	13.2	11.3	12.5	11.9	9.6	3.58	"
2.7.73	20.5	19.2	17.2	13.5	11.6			9.7	3.65	2.32
(Eff. on and since July 1)										
9.7.73	20.6	19.3	17.3	13.6	11.7	12.7	12.1	9.8	"	"
11.7.73									3.87	2.32
2.8.73	20.8	19.5	17.5	13.8	11.8	12.9	12.5	10.3	4.05	2.35
8.8.73	"	"	"				12.6		"	"
9.8.73				13.9	11.9	"	"	"	4.12	2.40

Date of Change (W.E.F.)	Light Distillates					Middle Distillates				Others
	Avgas 115/145	Avgas 100/130	Avgas 73	93 Octane	87 Octane	Turbine Fuel 58f	Kerosine	Diesel Index	Indl. Diesel	Light Fuel($bbl)
17.10.73	21.0	19.7	17.7	14.0	12.1	13.1	12.8	10.3	4.14	2.40
25.10.73	"	"	"	14.1	"	13.4	"	10.6	4.15	"
30.10.73										"
31.10.73	21.3	20.0	18.0	14.4	12.4	14.4		11.5	4.42	
1.11.73	23.0	21.7	20.0	16.0	14.1	17.1	16.8	14.3	5.80	5.24
14.11.73	23.5	22.2	"	16.6	14.6	17.8	17.3	14.9	"	14.6
26.11.73	23.8	22.5	20.5	16.8	14.9	"	"	14.9	5.82	"
6.12.73			20.8				17.5			
10.12.73	24.1	22.8	"	17.2	15.2	18.6	18.0	15.3	5.90	3.35
14.12.73	24.3**	23.0**	21.0**	17.3**	15.4**	"	18.3	15.7	6.16	3.75
14.1.74	24.3	23.0	21.0	17.4	15.4	18.9	18.3	15.7	6.25	3.78
18.1.74	36.5	35.0	33.0	28.0	25.0	29.9	28.5	26.5	10.40	8.70
4.2.74	36.7	35.4	33.5	28.5	26.0	31.0	30.0	28.0	11.35	9.00
1.4.74	36.8	35.5	"	29.5	27.0	"	"	"	"	"
2.4.74				29.7	27.7	"	"	"	"	"
25.4.74	40.5	39.0	37.0	33.2	30.2	"	"	"	"	9.10
6.6.74						"	"	"	"	9.20
7.7.74	40.7	39.4	37.5	"	"	"	"	"	11.36	"
18.7.74	"	"	"	"	31.3	"	"	"	"	"
13.8.74			41.0	"	"	"	"	"	"	"
20.8.74	45.9	43.9	"	"	"	"	"	"	"	9.25
1.10.74							30.7	28.1	11.50	9.30
15.10.74	46.1	44.3	41.1	33.5	32.0	32.0	31.5	29.5	11.77	9.55
21.10.74	47.6	45.6	45.0	34.5	32.5	32.5	32.2	29.6	"	9.60
1.11.74			"	"	"	"	"	"	11.85	
2.12.74	50.0	48.0	"	35.0	33.5	33.5				9.65
5.12.74										
6.12.74	50.6	48.6	47.5	35.9	34.0[b]	33.7	33.4	30.8	12.11	10.05
27										
27. 1.75	"	"	"	"	"	34.1	33.8	31.1	"	"
10.10.75	52.5	50.5	"	36.5	"	35.5	34.5	31.1	12.50	
20.10.75			"		"					10.20
21.10.75	53.0	51.0	51.0	38.3	36.4	36.7	36.4	33.6	12.86	10.80

101

Date of change w.e.f.	Light Distillates					Middle Distillates				Others
	Avgas 115/145	Avgas 100/ 130	Avgas 73	93 Octane	83 Octane	Turbine Fuel 58-F	Kerosine	Diesel Index (53-57)	Indl. Diesel	Light Fuel ($ bbl)
27.2.76	53.0	51.0	51.0	38.3	36.4	36.7	36.4	33.6	12.86	10.60
4.3.76	"	"	48.0	"	"	"	"	"	"	"
3.5.76	"	"	"	"	"	"	"	"	"	10.80
NB:- No Change upto 29.6.76.										

53-57 = H.S.D.

Indl.Diesel= L.D.C.

Light Fuel = Furnace Oil

a) Effective Feb. 15,1971

* Effective on and since Dec.3,1973

** Effective on and since Dec.12,1973

(b) Effective on and since Dec. 1,1974

Source:- Platt's Oilgram.

RETAIL PRICES INCLUDING DUTY AND TAXES OF SOME SELECTED PRODUCTS IN DIFFERENT COUNTRIES AS ON 31-7-1975.

1. MOTOR GASOLINE REGULAR

COUNTRY	¢ / US GALLON		
	Retail Price	Duty	Taxes
Canada (Ottawa)	59.7	-	26.1
USA (New York)	63.9	1.3	13,0
France (Paris)	155.9	-	88.5
Germany west(Bonn)	124.6	6%	65.3+11%
Italy (Rome)	167.1	7%	113.9
Netherland 9(The Hague)	141.0	65.9	19.5
U.K.(London)	127.0	-	50.0
Kenya(Nairobi)	113.4	31.7	21.4
Iran (Tehran)	33.6	-	-
Saudi Arabia(Jidda)	11.3	-	-
Burma (Rangoon)	75.0	-	24.0
India(New Delhi)	159.9	99.8	7%
Indonesia(Djakarta)	51.9	-	NA
Japan (Tokyo)	136.1	2.7	45.4
Pakistan (Islamabad)	88.3	33.3	44.2
Philippines (Manila)	65.0	1.4	16.2
Sri Lanka (Colombo)	154.2	-	33%
Singapore (Singapore)	104.0	52.5	52.9
Thailand (Bangkok)	64.0	17.0	4.4%
Australia (Sydney)	69.3	24.1	-

Source:- International Petroleum Annual-1974.

RETAIL PRICES INCLUDING DUTY AND TAXES OF SOME SELECTED PRODUCTS IN DIFFERENT COUNTRIES AS ON 31-7-1975

2. House Hold Kerosine

Country	Ø /US Gallon		
	Retail Price	Duty	Taxes
Canada(Ottawa)	31.4*	-	-
USA (New York)	58.9	0.3	-
France (paris)	100.6	-	47.0
Germary West (Bonn)	NA	6%	65.3+11%
Italy (Rome)	39.0	7%	5.8
Netherland(The Hague)	62.0	4.7	2.4
U.K.(London)	51.0	-	2.0
Kenya (Nairobi)	61.3	7.4	-
Iran (Tehran)	14.0	-	-
Saudi Arabia(Jiddah)	7.7	-	-
Burma(Rangoon)	32.0	-	12.0
India(New Delhi)	53.5	48.1	7%
Indonesia(Djakarta)	14.6	-	NA
Japan(Tokyo)	41.6	1.1	-
Pakistan (Islamabad)	33.3	1.7	24.2
Philippines(Manila)	49.4	1.0	2.6
Sri Lanka(Colombo)	46.7	-	23%
Singapore(Singapore)	45.4	1.9	-
Thailand(Bangkok)	45.0	3.0	4.4%
Australia(Sydney)	51.9	-	-

* As on 31-7-1974

Source :- International Petroleum Annual-1974

RETAIL PRICES INCLUDING DUTY AND TAXES OF SOME SELECTED PRODUCTS IN DIFFERENT COUNTRIES AS ON 31- 7- 1975.

3. Motor Lubricating Oil

COUNTRY	ø / US GALLON		
	Retail Price	Duty	Taxes
Canada(Ottawa)	626.0	-	27.0
USA(New York)	340.0	2.0	6.0
France (Paris)	738.0	-	NA
Germany West(Bonn)	1127.8	6%	55.3+11%
Italy (Rome)	931.4	6%	165.3
Netherland (The Hague)	665.3*	-	26.5*
U.K.(London)	350.0	-	2.0
Kenya (Nairobi)	501.1	11.6	18.5
Iran (Th Tehran)	77.8	-	-
Saudi Arabia (Jiddah)	230.0	-	-
Burma (r Rangoon)	38.0	-	14.0
India(New Delhi)	468.4	NA	.5%
Indonesia(Djakarta)	NA	-	NA
Japan (Tokyo)	1304.1	212%	-
Pakistan (Islamabad)	245.0	-	65.0
Philippines (Manila)	242.0	NA	26.7
Sri Lanka (Colombo)	398.3	-	16%
Singapore (Singapore)	502.7	35.9	34.0
Thailand (Bangkok)	411.0	12.0	5.5%
Australia(Sydney)	540.0	-	-

* As on 31.7.1974

Source: International Petroleum Annual- 1974.

RETAIL PRICES INCLUDING DUTY AND TAXES OF SOME SELECTED PRODUCTS IN DIFFERENT COUNTRIES AS ON 31-7-1975.

4.- Bunkers 'C' Fuel

	¢ / US Barrel		
	Retail Price	Duty	Taxes
Canada(Ottawa)	1087.8	-	-
USA(New York)	1150.0	-	-
France(Paris)	1040.3	-	207.7
Germany West(Bonn)	1121.4	3.5%	88.2+11%
Italy(Rome)	1432.2	5%	184.6
Netherland (The Hague)	1147.9	84.2	-
U.K.(London)	1764.0*	-	84.0
Kenya(Nairobi)	1212.5	-	-
Iran (Tehran)	1105.3	-	168.0
Saudi Arabia(Jiddah)	900.9	-	-
Burma (Rangoon)	1050.0	-	168.0
India (New Delhi)	1107.8	-	-
Indonesia(Djakarta)	726.7	-	NA
Japan (Tokyo)	1205.6	36.3	-
Pakistan (Islamabad)	735.0	70.0	455.0
Philippines(Manila)	1470.0	5.9	5.5
Sri Lanka (Colombo)	1171.2	-	23%
Singapore (Singapore)	1793.4	1507.8	127.0
Thailand (Bangkok)	1134.0	42.0	-
Australia (Sydney)	1404.1	-	-

* = As on 31-7-1974

Source:- International Petroleum Annual-1974.

Posted Airfield Price of JetA-1 Fuel at major International Airports as on 1.1.1976.

Country/ Airfield	Jet A-1 Price USC/USG	RS/KL
Australia		
Sydney	33.02*	690
Perth	33.02*	690
BAHRAIN	57.51	1381
Belgium		
Brussels	63.06	1514
Egypt		
Cairo	64.00	1537
Ethiopia		
Addis Ababa	73.80	1772
FIJI		
Nandi	58.51*	1223
France		
Paris(Orly)	57.50	1381
Germany		
Frankfurt	61.05	1466
Holland		
Amsterdam(Schiphol)	61.00	1465
Iran		
Tehran	46.25	1111
Italy		
Rome(Fimicino)	59.00	1231
Kenya		
Nairobi	63.00	1513
Kuwait	47.35	988
Lebanon		
Beirut	61.00	1465
Malaysia		
KualaLumpur	57.64	1384
Mauritius		
Plaisance	59.00	1417
Singapore		
Paya Lebar	52.61	1264
Switzerland		
Geneva	66.42	1595
Trucial States		
Abu Dhabi	57.51	1381
Sharjah	62.26	1495
United Kingdom		
London-Heathrow	54.68	1313

* As on 1.1.1975

$-Rs. 9.090909

Source :- Air India

1 USG= 3.78533 litres

Key Crude Oil Price Postings Around the World

These are not sales prices (except in the U.S. and Indonesia), but prices posted by Governments for computing oil company taxes.

In $ per barrel. Postings in effect on dates shown or thereabouts)

	1973				1974			1975				1976
	Jan.1	Oct.1	Oct.16	Nov.1	Jan.1	July 1	Nov.1	Jan.1	Apr.1	July 1	Oct.1	Jan.1
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
PERSIAN/ARABIAN GULF CRUDES												
Crude & Gravity												
Arab Light 34	2.591	3.011	5.119	5.176	11.651	11.651	11.251	11.251	11.251	11.251	12.376	12.376
Arab Berri 39	2.666	3.086	5.682	5.741	12.351	12.351	11.951	11.951	11.951	11.951	12.768	12.768
Arab Medium 31	2.482	2.884	4.903	4.957	11.561	11.561	11.161	11.161	11.161	11.161	12.227	12.184
Arab Heavy 27	2.345	2.725	4.633	4.684	11.441	11.441	11.041	11.041	11.041	11.041	12.086	11.978
Iran Light 34	2.579	2.995	5.341	5.401	11.875	11.875	11.475	11.475	11.475	11.475	12.495	12.495
Iran Heavy 31	2.527	2.936	4.991	5.046	11.635	11.635	11.235	11.235	11.235	11.235	12.360	12.360
Kuwait 31	2.482	2.884	4.903	4.957	11.545	11.545	11.145	11.145	11.145	11.145	12.260	12.151
Abu Dhabi:												
Umm Shaif 37	2.642	3.070	5.537	5.599	12.086	12.086	11.686	11.446	11.446	11.446	12.575	12.575
Murban 39	2.654	3.084	6.045	6.113	12.636	12.636	12.236	11.686	11.686	11.686	12.815	12.815
Zakum 40	2.687	3.115	5.964	6.031	12.566	12.566	12.166	11.586	11.586	11.586	12.715	12.715
Iraq Basrah 35	2.562	2.977	5.061	5.117	11.672	11.672	11.272	11.272	11.272	11.272	12.400	12.400
Qatar Marine 36	2.614	3.037	5.503	5.564	12.013	12.013	11.613	11.613	11.613	11.613	12.540	12.540
Qatar Dukhan 40	2.705	3.143	5.834	5.899	12.414	12.414	12.014	12.014	12.014	12.014	12.740	12.740
Oman 34	2.634	3.058	5.738	5.802	12.298	12.298	12.298	12.298	12.298	12.298	NA £	
MEDITERRANEAN & AFRICAN CRUDES												
Arab Light 34	3.451	4.205	7.149	7.228	13.647	13.647	13.247	13.247	13.247	13.247	NA £	
Iraq Kirkuk 36	3.484	4.243	7.213	7.293	NA £	NA £	NA £	NA £	NA £	NA £	NA £	
Libyan 40	3.777	4.604	8.925	9.061	15.768	15.768	15.768	15.768	15.000	14.600	16.060	16.060
Nigerian 34	3.561	4.287	8.310	8.404	14.691	14.691	14.691	14.691	12.063	11.663	13.071	13.709
INDONESIAN CRUDE (OFFICIAL SELLING PRICE)												
Sumatra Light 34	2.960	4.750	4.750	6.000	10.800	12.600	12.600	12.600	12.600	12.600	NA £	-
VENEZUELAN CRUDES (REFERENCE PRICES)												
Tia Juana 26	3.094	4.925	4.925	7.261	13.836	14.312	14.312	13.541	13.541	13.541	14.643	-
Tia Juana 31	3.249	5.203	5.203	7.563	14.356	14.906	14.906	14.134	14.134	14.134	15.579	-
Oficina 35	3.396	5.447	5.447	7.802	14.876	15.436	15.436	14.665	14.665	14.665	16.169	-
UNITED STATES (REPRESENTATIVE POSTING)												
East Texas flat	3.600	4.200	4.200	4.200	*10.000	*10.000	*10.600	*11.200	*11.600	*12.650	NA £	

* Posted prices for crude not subject to government price controls; controlled crudes (about 60% of output) are posted at $5.200 per barrel. £ Posting not available. Source: PIW August 18, 1975.

108

WORLD SCALE FREIGHT RATES (Percentage)

Period	General Purpose (16500-24999 dwt)	Medium Range (25000-44999 dwt)	L.R. 1 (45000-79999 dwt)	L.R. 2 80000-159999dwt	VLCC 16000 &abov
1970					
January	110.6	97.4	75.3	67 5	
February	115.4	102.2	78.6	68.9	
March	111.7	102,2	78.0	69.4	
April	111.3	100.2	78.0	69.6	
May	113.5	105.2	82.0	72.2	
June	117.2	107.4	82.2	73.0	
July	118.4	105.0	80.9	72.4	
August	124.1	110.4	82.0	73.5	
September	136.4	125.9	92.1	79.6	
October	146.6	139.3	99.8	85.4	
November	157.5	148.1	103.9	90.3	
December	170.4	156.8	109.7	95.2	
1971					
January	168.5	152.4	114.7	97.9	
February	158.8	142.8	111.2	94.7	
March	143.0	133.5	107.8	90.7	
April	133.8	130.3	109.6	91.2	
May	130.3	125.7	106.3	89.5	
June	123.6	119.1	103.2	90.2	
July	118.8	114.7	101.4	88.8	
August	114.6	110.5	99.3	.1	
September	116.1	111.2	97.0	4	
October	117.6	109.3	95.6	3	
November	116.3	107.8	91.4	.9	
December	118.4	107.6	87.9	79.4	
1972					
January	116.7	103.5	86.4	75.8	
February	120.1	107.0	85.9	74.8	
March	115.8	107.9	86.6	75.7	
April	113.1	105.0	84.3	73.3	
May	112.5	100.9	80.6	68.5	
June	110.9	97.6	77.5	65.1	
July	111.4	96.9	75.4	65.2	
August	113.9	98.7	76.2	66.6	
September	113.6	98.7	76.7	66.3	
October	116.9	100.6	76.6	66.2	
November	120.2	102.8	78.4	67.3	
December	120.3	103.2	81.0	69.6	

Period	General Purpose (16500-24999 dwt)	Medium Range (25000-44999 dwt)	L.R.1 (45000 79999 dwt)	L.R.2 (80000- 159999 dwt)	VLCC 160000 and above
1973					
January	128.6	110.5	84.1	72.7	
February	131.4	115.3	86.6	75.8	
March	133.7	117.3	90.1	79.6	
April	142.7	124.6	96.1	83.8	
May	141.0	128.1	100.4	88.7	
June	143.9	128.5	101.8	88.7	
July	161.4	138.9	101.7	90.3	
August	188.5	162.8	116.0	100.2	
September	210.9	176.6	129.2	113.8	
October	215.0	186.0	135.0	123.9	
November	229.9	200.3	144.9	138.7	
December	266.0	226.5	159.5	149.4	
1974					
January	234.5	195.8	139.6	125.5	86.8
February	221.8	178.2	123.6	102.0	81.5
March	228.7	189.4	125.8	99.2	81.1
April	224.4	187.8	121.9	100.6	79.2
May	223.8	185.8	122.0	101.7	79.4
June	222.0	186.8	121.6	97.8	78.9
July	214.6	181.9	119.7	92.9	77.8
August	203.3	179.4	120.9	93.2	78.7
September	190.6	169.3	116.3	90.5	77.5
October	183.4	164.6	110.2	86.5	74.6
November	190.7	165.5	110.3	86.1	72.9
December	196.2	168.8	115.0	87.9	74.7
1975					
January	138.7	122.0	81.5	62.3	54.3
February	140.8	121.8	80.5	60.8	55.0
March	136.3	120.1	81.4	62.2	56.4
April	132.5	121.2	81.3	62.1	57.0
May	130.6	123.1	81.5	62.8	-
June	132.8	122.2	82.0	63.6	57.8
July	135.4	123.8	82.6	61.9	57.3
August	142.8	130.0	85.6	63.4	59.2
September	145.4	127.8	86.7	64.0	-
October	145.5	126.0	85.3	63.9	57.9
November	146.6	129.7	85.6	61.6	-
December	147.0	129.8	84.4	63.6	57.0

WORLD TANKER FLEET AT END 1975(10000 Long tons D.W. and over)
(EXCLUDING 43.6 MILLION D.W.T. COMBINED CARRIERS)

BY FLAG AND OWNERSHIP

Flag	OWNERSHIP				Total 1975	Total 1974	Change 1975 over 1974
	Oil Company	Private	Govern-ment	Others			
	(Million long ton Dead weight)						
Liberia	25.6	63.7	-	0.3	89.6	73.9	+15.7
Norway	0.5	25.4	-	0.2	26.1	23.9	+2.2
U.K.	21.8	10.7	0.2	-	32.7	32.2	+0.5
Japan	4.5	27.3	-	-	31.8	29.2	+2.6
U.S.A.	4.4	4.9	1.3	-	10.6	10.4	+0.2
Panama	4.8	4.0	-	-	8.8	8.4	+0.4
France	8.8	3.9	0.1	-	12.8	11.8	+1.0
Greece	-	15.9	-	-	15.9	13.9	+2.0
Other Western Europe	13.8	21.5	0.1	0.2	35.6	31.8	+3.8
Other Western Hemisphere	6.1	0.2	0.2	-	6.5	6.1	+0.4
U.S.S.R., E.Europe and China	-	-	8.4	-	8.4	6.6	+1.8
Other Eastern Hemisphere	4.8	7.6	0.2	-	12.6	7.6	+5.0
Total	95.1	185.1	10.5	0.7	291.4	255.8	+35.6
Fleet as at end 1974	83.4	163.2	8.8	0.4	255.8		
Net increase 1975	11.7	21.9	1.7	0.3	35.6		

Source:- BP Statistical review of the world oil industry 1975.

INTER- AREA TOTAL OIL MOVEMENTS -1975.

Millions Tonnes

Country	U.S.A.	Canada	Latin America	Western Europe	Africa	South East Asia	Japan	Austr-alasia	Other Eastern Hemis-phere	Total Expo-rts
U.S.A.	-	1.0	3.3.	3.6	0.3	-	1.5	0.5	0.5	10.7
Canada	39.8	-	-	-	-	-	-	-	-	39.8
Latin America	113.8	13.5	6.0	19.1	2.0	-	1.0	-	3.8	159.2
Western Europe	2.2	-	-	-	8.3	-	-	-	1.8	12.3
Middle East	56.7	26.7	75.5	436.9	23.6	72.1	182.4	12.6	31.3	917.8
North Africa	24.8	-	7.0	75.9	-	-	3.4	-	8.2	119.3
West Africa	42.1	1.0	9.9	41.4	-	-	3.5	-	-	97.9
East and South Africa	-	-	-	-	-	1.8	-	-	-	1.8
South Asia	-	-	-	0.2	-	-	-	-	-	0.2
South East Asia	19.9	-	4.0	-	0.5	-	43.9	4.0	-	72.3
Japan	-	-	-	0.2	-	-	-	-	-	0.2
Australasia	0.3	-	-	-	-	0.5	1.7	-	-	2.5
U.S.S.R.,E.Europe &China	0.8	-	10.5	48.6	0.7	3.5	8.0	-	1.5	73.6
Total Imports	300.4	42.2	116.2	625.9	35.4	77.9	245.4	17.1	47.1	1507.6

Thousand Barrels Daily.

U.S.A.	-	20	65	70	5	-	30	10	10	210
Canada	800	-	-	-	-	-	-	-	-	800
Latin America	2270	270	120	380	40	-	20	-	75	3175
Western Europe	45	-	-	-	165	-	-	-	35	245
Middle East	1140	540	1525	8815	475	1450	3675	255	630	18505
North Africa	500	-	140	1530	-	-	70	-	165	2405
West Africa	850	20	200	835	-	-	70	-	-	1975
East & South Africa	-	-	-	-	-	35	-	-	-	35
South Asia	-	-	-	5	-	-	-	-	-	5
South East Asia	400	-	80	-	10	-	885	80	-	1455
Japan	-	-	-	5	-	-	-	-	-	5
Australasia	5	-	-	-	-	10	35	-	-	50
U.S.S.R.,E.REuope&China	15	-	210	970	15	70	160	-	30	1470
Total Imports	6025	850	2340	12610	710	1565	4945	345	945	30335

BP Statistical review of the world oil indiustry 1975.

ESTIMATED G.N.P. AND PER CAPITA G.N.P. OF OPEC COUNTRIES

Country	Estimated G.N.P.at Current Prices (MN.$)					Per capita N G.N.P.($)				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
Abu Dhabi	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Algeria@	4011	4638	5168	6026	7431	300	322	350	396	471
Indonesia @	7629	9824	10144	12180*	17680	66	82	81	95	133
Iran	9304	10581	12677	15292	25810	336	371	422	496	816
Iraq	2909	2932	3611	NA	NA	329	234	370	NA	NA
Kuwait	2752	3027	4302	3886	NA	4906	4036	5279	4858	NA
Libya	2910	3117	3916	4122	7192	1556	1608	1948	1978	3330
Nigeria @@	5887	8198	NA	NA	NA	115*	148*	NA	NA	NA
Qatar	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saudi Arabia @	3550	3866	5530	6818	11423	492	528	715	852	1428
Venezuela	10492	11557	12680	14431	17864	1046	1112	1177	1292	1576

@ Gross Domestic Product * Provisional @@ National Income

Source:- Annual Statistical Bulletin -OPEC Statistical unit-1974.

TOTAL & PER CAPITA REVENUES FROM OIL OF OPEC COUNTRIES

Countries	Total oil Revenues (MN $)					Per Capital Oil Revenue				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
Abu Dhabi	229	436	551	678	NA	2696	4364	3673	3390	NA
Algeria	272	324	613	988	3299	19	22	40	62	203
Indonesia	292	376	616	812*	1748*	2	3	5	6	14
Iran	1109	1851	2396	4399	21443	39	62	78	139	674
Iraq	513	850	575**	432**	NA	57	87	57	41	NA
Kuwait	834*	1076*	1545*	1789*	NA	1111	1321	1931	2075	NA
Libya	1351	1805	1563	2243	NA	697	898	750	1038	NA
Nigeria	247	922	1117	2080	NA	5	15	16	26	NA
Qatar	122	199	255	454	1849	816	1208	1500	2671	9245
Saudi Arabia	1214	1945	2795	4340	23194	166	251	349	543	2899
Venezuela	1409	1715	1956	3188	8765	136	159	175	281	754

* Relate to Financial years -1969-70, 1970-71, 1971-72, 1972-73, 1973-74 & 1974-75

** Revenues from foreign companies only.

Source:- Annual Statistical Bulletin of OPEC Statistical unit-1974

WORLD PRIMARY ENERGY CONSUMPTION 1960-1980

	North* America MTOE	%	Western Europe Mtoe	%	Japan Mtoe	%	Other Areas Mtoe	%	World@ Mtoe	%
1960										
Solid Fuels	253	22.5	363	60.7	41	53.2	97	33.2	754	36.1
Oil £	516	46.0	205	34.3	30	39.0	169	57.9	920	44.0
Natural Gas	332	29.6	11	1.8	1	1.3	20	6.8	364	17.4
Primary Electricity	21	1.9	19	3.2	5	6.5	6	2.1	51	2.5
Total	1122	100	598	100	77	100	292	100	2089	100
% World	53.7		28.6		3.7		14.0		100	
1970										
Solid Fuels	330	19.0	299	29.1	59	23.1	131	23.7	819	23.0
Oil £	769	44.4	623	60.8	186	72.9	345	62.5	1923	53.9
Natural Gas	598	34.5	72	7.0	3	1.2	62	11.2	735	20.6
Primary Electricity	31	2.1	32	3.1	7	2.8	14	2.1	89	2.5
Total	1733	100	1026	100	255	100	552	100	3566	100
%World	48.6		28.8		7.1		15.5		100	
Growth % p.a. 1960-70	4.4		5.5		12.7		6.6		5.5	
1973										
Solid Fuels	360	18.7	257	22.2	54	16.1	147	21.7	818	20.0
Oil £	892	46.2	730	63.0	269	80.3	430	63.4	2321	56.6
Natural Gas	626	32.5	135	11.6	5	1.5	84	12.4	850	20.7
Primary Electricity	51	2.6	37	3.2	7	2.1	17	2.5	112	2.7
Total	1929	100	1159	100	335	100	678	100	4101	100
% World	47.0		28.3		8.2		16.5		100	
Growth % p.a. 1970-73	3.6		4.2		9.5		7.1		4.8	
1974										
Solid Fuels	351	18.6	253	22.4	55	16.6	155	22.3	814	20.1
Oil £	864	45.8	679	60.1	261	78.9	431	61.9	2235	55.3
Natural Gas	617	32.7	157	13.9	8	2.4	91	13.1	873	21.6
Primary Electricity	55	2.9	40	3.6	7	2.1	19	2.7	121	3.0
Total	1887	100	1129	100	331	100	696	100	4043	100
% World	46.7		27.9		8.2		17.2		100	
Growth % p.a. 1970-1974	2.2		2.4		6.7		6.0		3.2	

	North* America Mtoe	%	Western Europe Mtoe	%	Japan Mtoe	%	Other Areas Mtoe	%	World@ Mtoe	%
1977										
Solid Fuels	385	19.1	225	20.9	63	16.9	170	23.2	873	20.1
Oil £	960	47.8	712	58.4	287	77.2	436	59.4	2395	55.2
Natural Gas	595	29.6	205	16.8	12	3.2	105	14.3	917	21.2
Primary Electricity	70	3.5	48	3.9	10	2.7	23	3.1	151	3.5
Total	2010	100	1220	100	372	100	734	100	4336	100
% World	46.4		28.1		8.6		16.9		100	
Growth % p.a. 1974-77	2.1		2.6		4.0		1.8		2.4	
1980										
Solid Fuels	455	19.8	250	18.3	70	15.9	180	21.5	955	19.3
Oil £	1156	50.4	787	57.7	334	75.9	505	60.5	2782	56.4
Natural Gas	584	25.4	263	19.3	21	4.8	120	14.4	988	20.0
Primary Electricity	100	4.4	65	4.7	15	3.4	30	3.6	210	4.3
Total	2295	100	1365	100	440	100	835	100	4935	100
% World	46.5		27.7		8.9		16.9		100	
Growth % p.a. 1977-1980	4.5		3.8		5.9		4.3		4.4	

Notes :- Mtoe = Million tons oil equivalent

* = U.S.A. and Canada

@ = Excluding Soviet Bloc and China but includes net exports from these areas. Represents net consumption and does not include stock changes, oil afloat, etc.

£ = Consists of all oil products including refinery fuel and loss.

Comparative Transportation Costs Persian Gulf to Rottardom in Various Size of Tanker, 1974, 1977 and 1980.

Year of Delivery	Size of Tanker (DWT)	20000	30000	50000	70000	120000	250000
	Mileage (round trip)	22338	22338	22338	22338	22338	22338
	Days at Sea	64.2	60.1	60.1	60.1	60.1	60.1
	Days in port	2.5	2.8	3.1	3.4	3.8	4.5
	Total Voyage Days	66.7	62.9	63.2	63.5	63.9	64.6
	Trips per annum	5.17	5.48	5.46	5.43	5.40	5.26
	Cargo (tons per trip)	18725	28175	47465	66995	115700	241100
	Voyage Costs ($ 000)						
1974	Fixed direct costs	177	182	209	227	269	408
	Capital costs	153	163	221	274	394	741
	Bunkers	137	197	271	298	382	656
	Post charges	13	16	23	29	46	81
	Total	480	558	724	828	1091	1886
	Cost per ton of cargo($)	25.63	19.81	15.25	12.36	9.43	7.82
1977	Fixed direct costs	246	253	289	313	368	549
	Capital costs	269	287	409	502	725	1380
	Bunkers	149	215	296	325	417	718
	Port Charges	17	22	30	39	61	107
	Total	681	777	1024	1179	1571	2754
	Cost per ton of Cargo($)	36.38	27.58	21.58	17.59	13.58	11.42
1980	Fixed direct costs	336	345	393	426	497	736
	Capital costs	337	357	506	630	866	1650
	Bunkers	162	234	322	354	455	784
	Port charges	22	28	39	50	79	139
	Total	857	964	1260	1460	1897	3309
	Cost per ton of cargo($)	45.77	34.21	26.55	21.79	16.40	13.72
	1974 World scale Equivalent						
1974	Fixed direct costs	92.8	63.5	43.2	33.3	22.8	16.6
	Bunkers and port charges	78.7	74.3	60.8	47.9	36.3	30.1
	Total direct costs	171.5	137.8	104.0	81.2	59.1	46.7
	Capital costs	80.3	56.9	45.8	40.2	33.5	30.2
	Total Cost	251.8	194.7	149.8	121.4	92.6	76.9
1977	Fixed direct costs	129.1	88.2	59.8	45.9	31.2	22.4
	Bunkers and port charges	87.1	82.6	67.5	53.3	40.6	33.6
	Total direct costs	216.2	170.8	127.3	99.2	71.8	56.0
	Capital costs	141.2	100.1	84.7	73.6	61.6	56.2
	Total cost	357.4	270.9	212.0	172.8	133.4	112.2
1980	Fixed direct costs	176.2	120.2	81.3	62.5	42.2	30.0
	Bunkers and port charges	96.6	91.4	74.8	59.2	45.4	37.6
	Total direct costs	272.8	211.6	156.1	121.7	87.6	67.6
	Capital costs	176.8	124.5	104.7	92.3	73.5	67.2
	Total cost	449.6	336.1	260.8	214.0	161.1	134.8

Source:- Petroleum Economics London.

BASIC TANKER OPERATING DATA AND PERFORMANCE CHARACTERISTICS

Size							
	Summer deadweight tons	20000	30000	50000	70000	120000	250000
	Approximate gross registered tonnage	12500	18500	29000	39500	64000	130000
	Approximate net registered tonnage	7500	12000	17500	26000	43000	100000
Dimensions							
	Draught fully taken (Feet)	30	35	39	42	53	65.5
	Length between perpendiculars (Feet)	530	540	685	760	850	1085
	Beam : Extreme breadth (Feet)	72	85	100	110	130	170
Type		Motor	Motor	Motor	Motor	Motor	Steam Turbine
Performance							
	Speed (knots) loaded	14.0	15.0	15.0	15.0	15.0	15.0
	ballast	15.0	16.0	16.0	16.0	16.0	16.0
	average	14.5	15.5	15.5	15.5	15.5	15.5
	Fuel consumption(HFO/Dieseltons/day):						
	at sea(fuel/diesel)	27*/2	43*/2	60*/2	66*/2	85*/2	154
	in port(fuel/diesel)	3*/2	6*/2	13*/2	18*/2	28*/2	60
	Operating days per annum	345	345	345	345	345	340
Building Costs($ per dwt)							
1974	delivery	280	210	170	150	125	110
1977	delivery	490	370	315	275	230	205
1980	delivery	615	460	390	345	275	245

* Interfuel 1500 Seconds Redwood Viscosity.

Source:- Petroleum Economics Limited London

ESTIMATES OF TANKER SUPPLY AND DEMAND BALANCE 1972-1980

Million dwt.

Size Group 000 dwt		0-45	45-80	80-160	160-300	300 +	1) Minimum Total Demand	2) Maximum Total Demand	Mean Total Demand
1972	Tanker Demand (canal closed)	43.9	28.1	56.3	52.8	8.2	189.3	189.3	189.3
	Tanker Supply	52.7	39.7	42.8	59.0	2.3	196.5	196.5	196.5
	Surplus/(Deficit)	8.8	11.6	(13.5)	6.2	(5.9)	7.2	7.2	7.2
1975	Tanker Demand(Canal open)	41.6	25.0	49.1	73.4	29.0	218.1	255.0	236.6
	Tanker Supply	51.0	40.0	62.0	131.7	11.8	296.5	296.5	296.5
	Surplus/(Deficit)	9.4	15.0	12.9	58.3	(17.2)	78.4	41.5	59.9
1977	Tanker Demand(Canal open)	41.0	27.5	41.5	67.6	41.1	218.7	300.0	259.4
	Tanker Supply	49.3	39.4	85.3	171.9	43.8	389.7	389.7	389.7
	Surplus/(Deficit)	8.3	11.9	43.8	104.3	2.7	171.0	89.7	130.3
1980	Tanker Demand(Canal open)	43.4	35.9	48.7	69.9	56.5	254.4	335.0	294.7
	Tanker Supply	42.0	40.5	92.0	183.5	62.0	420.0	420.0	420.0
	Surplus/(Deficit)	(1.4)	4.6	43.3	113.6	5.5	165.6	85.0	125.3

I) Minimum total tanker demand on basis current model assuming Suez Canal Open from 1975.

II) Maximum total tanker demand on basis of estimates made in 1973 assuming Suez Canal closed throughout.

Source:- Petroleum Economics Limited London.

SULPHER CONTENTS INOIL OF SELECTED MAIN GULF AND AFRICAN FIELDS.

Country	Fields	API°	Sulpher% by weight
Abu Dhabi	Murban	38.0-40.0	-
	Umm Shaif	37.7	-
	Zakum	40.1	-
Algeria	Hassi Messaoud	49.0	0.15
Iran	Agha Jari	33.9	1.36
	Ahwaz-Asmari	32.1	1.66
	Darius	34.0	-
	Gach Saran	31.2	1.66
	Haft-Kel	36.6	1.12
	Rostam	38.7	-
	Sassan	34.1	-
Iraq	Kirkuk	36.0	1.97
	Rumaila	35.0	-
Kuwait	Burgan	30.0-32.0	-
Libya	Nafoora	36.0	-
	Sarir	37.2	-
	Dahra	37.0-41.0	0.29
	Gialo	35.7	0.52
	Nassar	40.0	0.23
	Waha	36.1	0.24
Nigeria	Forc-Estuary	25.0	-
Qatar	Dukhan	41.1	-
	Bul Hanina	35.0	-
Saudi Arbia	Ghawar	35.0	1.80
	Safaniyah	27.0	2.90
	Abqaiq	38.0	1.30
	Berri	33.0-38.0	2.40

Source:- International Petroleum Encyclopedia-1975

P A R T - II

PETRO-CHEMICALS STATISTICS

CHRONOLOGY OF SOME IMPORTANT EVENTS IN THE PETRO-CHEMICALS INDUSTRY IN INDIA.

(A) ORGANIC INTERMEDIATES

(i) The Durgapur Projects Ltd.

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.

1961: The Durgapur Projects Ltd. was incorporated as a Private Limited Company on 6th September and from 15th September, the Company took over the complex managed previously under departmental control of the Durgapur Industries Board.

1959: The Second Battery of the Coke Oven Plant was commissioned in February.

1960: The first Battery of the Coke Oven Plant was commissioned in March.

The first two power generating units (each with the capacity of 30 M.W.) was commissioned in June.

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 150 M.W. was planned and necessary clearance from the Government was obtained for inclusion of the same in the fifth five year Plan period.

...../-

(ii) M/s Durgapur Chemicals Ltd.

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, 59, Rue Pouchet, 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 & Cie India (P) Limited, a Company sponsored by M/s Krebs & Cie 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 started.

1966: The construction work of the factory buildings completed.

1968: Phthalic Anhydride Plant was commissioned on 24th January.

1969: Caustic Chlorine Plant commissioned on 3rd February. Pentachlorophenol plant was commissioned in June.

1970: Phenol plant was finally commissioned after repeated failure of guarantee test on 12th May.

(iii) M/s Herdillia Chemicals Ltd.

1963: Incorporated on 1st July.

1964: Agreement to lease about 300 acres of land at Thana-Belapur Road, Thana (Mahrashtra) from Maharashtra Industrial Development Corporation was finalised.

1965: An industrial licence for the manufacture of the various organic chemicals was issued.

Agreements were signed with the Distillers Co. Ltd., (now BP Chemicals International Ltd., U.K.) for provision of technical know-how, patent licence fees 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.

Grading and levelling of the grounds at site was commenced in October.

..../-

1966: Agreements were entered into with Universal Oil Products Company, U.S.A., 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: The plant was inaugurated on 18th February. Commercial production of phenol, acetone, diacetone alcohol, phthalic anhydride and phthalates commenced.

1972: The licenced capacity of Phthalates was increased to 5000 M.T. per annum in November.

1973: There was a major fire in the reactor of Phthalic Anhydride plant in January causing extensive damage. A new reactor was fabricated indigenously in place of the earlier reactor which was imported and the plant was re-strated in December.

Commenced recovery of crude acetophenone from Phenol plant for sale.

1974: Through progressive debottlenecking, the installed capacity of Phenol plant has been increased from 10000 Metric Tonnes to 14000 Metric Tonnes and that of Dioctyl Phthalate to 5000 Metric Tonnes.

Phenolic residue (waste tar) hitherto burnt is used as fuel by mixing it with waste hydrocarbons and furnance oil which has considerably prevented air pollution.

(iv) M/s Indian Organic Chemicals Ltd.

1960: The company was incorporated.

1962: The commercial production of Acetic Acid was started.

1964: The 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 plant.

1970: Plasticizers Plant expanded to its full licensed capacity of 10,000 M.Ts. per annum. Received licence for manufacture of 6,100 tonnes per annum of Polyester Fibre.

1971: Commenced production of Monochloro Acetic Acid.

1974: Exported Chemicals worth Rs.43,34,000/-.

1975: Expanded Benzyl Chloride capacity to 1,000 M.Ts. per annum.

..../-

(v) M/s National Organic Chemical Industries Ltd.

1961: NOCIL was incorporated on May 11.

1964: Various Technical collaboration and Engineering Agreements with Companies of Royal Dutch Shell Group of Companies were signed in July.

Industrial licence was granted in August.

1965: Ground was broken for the construction of the complex in January.

Foreign currency loan agreement signed with Shell Petroleum in December.

1966: Central Sales Office and four Branch Offices opened in Bombay, Calcutta, Delhi and Madras in April.

Rupee loan agreements signed with Indian Financial Institutions and SBI.

1968: Petrochemical Complex was inaugurated in January.

Installation of naphtha pipeline along the Eastern Express Highway was completed.

First Ethylene deliveries to Polyolefins Industries Ltd. took place in March.

Various Plants of the complex such as Glycols Plant, PVC Plant and Solvents Plant were commissioned.

1969: Alcohols Plant was commissioned in September.

1970: Technical Service Laboratory was inaugurated in September.

A Jetty for bulk exports was completed in October.

1972: First dividend declared for the year 1971 in June.

1974: Naphtha Pipe Line from Burmah-Shell Refineries to the factory across Thana Creek Bridge was installed.

(vi) M/s Sirsilk Limited

1946: Incorporation of the company.

Collaboration agreement entered into with M/s Lansils Ltd. of Lancaster, England.

1954: Following plants commissioned:

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 Lansil Ltd. of Lancaster, England terminated.

1955: Weaving unit commissioned with 480 Looms having yearly production capacity of 95 lakhs meters of Art Silk Fabrics.

1956: Licence for substantial expansion granted.

1960: Licence granted for substantial expansion for weaving unit.

1964: Yearly installed capacity of the plants increased.

1965: Further increase of the installed capacity of the plant.

1966: Production of acetate staple fibre commenced.

1968: Part of looms diverted for manufacture of synthetic fabrics.

1974: Established Research and Development Division and Technical Consultancy Service Unit for rendering Technical know-how and other Engineering services for manufacture of chemicals etc.

1975: Process know-how offered to manufacture chemicals such as acetone, acetic acid, acetic anhydride, etc.

(vii) M/s Somaiya Organics (India) Limited

1964: Incorporated on 1st June under the Companies Act, 1956.

1967: With effect from 1st June, the Company acquired a Distillery at Captainganj, Dist.Deoria, U.P. from M/s Godavari Sugar Mills Ltd., who are the promotors of this Company and who had also obtained original licence for the manufacture of Butanol and Butyl Acetate, who also transferred approximately 245 acres of land acquired by them for establishing this factory in Tehsil Nawabganj, Dist. Barabanki U.P.

1969: Civil construction work of the factory commenced in the second quarter.

1970: Erection of Butanol and Butyl acetate plants was completed and trial production commenced 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 can be made available to the Paint Industries at much cheaper rates compared to other solvents of same effectiveness, out of a waste which was till then being drained out.

1974: A Third Furnace was added in the Main Plant. Trial production of Ethyl acetate commenced.

1975: Commercial production of Ethyl acetate was started on a regular basis.

Similar to the 'Solvent-72' developed in 1973, another 'Solvent-75' was distilled from the same waste material with improved potency.

(viii) M/s Union Carbide India Limited

1926: Eveready Company (India) Limited started manufacturing flashlight batteries in Calcutta.

1934: The Eveready Company (India) Ltd. 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.

(ix) M/s Polychem Limited

1955: Polychem Limited was incorporated.

1957: The Polystyrene Plant was brought on stream on 26th May and formally inaugurated on 16th June. Polystyrene was the first major thermoplastic resin to be manufactured indigenously and the Company can rightly claim the credit for placing India on the Plastics Map of the world. The plant was engineered by Bechtel Corporation, USA on the basis of DOW know-how and had an initial installed production capacity of 6 million lbs.(2,750 tonnes) per annum.

1958: The facilities for production of High Impact Polystyrene Sheet were commissioned.

1959: The production capacity of the plant was doubled to 12 million (5,500 tonnes) per year on account of steep [illegible] demand of Polystyrene. The production of Polystyrene was however based on imported Styrene.

..../-

1960: The Company received an industrial licence in February for establishing a 6,800 tonnes/year of Styrene Monomer Plant in Bombay in technical collaboration with the Dow Chemical Company, USA. It also received in August industrial licence for stablishing a 5,450 KL/year Alcohol Distillery in Maharashtra.

The Styrene plant was engineered and constructed by H.K.Ferguson Company, USA and had an initial installed production capacity of 6,800 tonnes/year. To ensure reliable supplies of alcohol for the production of ethylene, one of the basic raw materials required for the manufacture of Styrene, an Alcohol Distillery to produce 5,450 KL/year of Industrial Alcohol was simultaneously built in Nira, 43 Miles south of Poona. The contract for the distillery was executed on a turn-key basis by Savalle India Limited, Bombay.

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: The Styrene Monomer and Alcohol Plants were brought on stream in August.

1964: To meet the steadily increasing demand for Polystyrene, the capacity of Styrene and Polystyrene plants were increased to 10,000 tonnes per year and that of Alcohol Distillery to 9,090 KL per year.

1967: Started export of substantial quantities of Polystyrene directly, besides giving Polystyrene at international prices to local processors to promote export of converted products.

1968: With the availability of petro-based ethylene and benzene, the capacity of styrene plant was further increased to 14,000 tonnes per annum.

Expansion of both Styrene and Polystyrene Plants beyond their initial capacities was achieved without any foreign technical help or collaboration.

1972: A Pilot plant for the manufacture of 150 tons/year Divinylbenzene Monomer was brought on stream based on the know-how developed by Research & Development work carried on since 1968.

The production of neutral 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' Chamber for 'Outstanding Contribution for improvement of Industrial and Labour relations' for the year 1974 was 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 indigenous commercial technology based on bench scale work done by Sri Ram Institute for Industrial Research on the manufacture of ABS resins, which know-how was purchased through National Research Development Corporation of India.

1975: Soon after the Polystyrene plant was commissioned, the Company has been engaged in Research & Development work. Over these years, the Company has developed several new formulations of Polystyrene such as Polybutadiene Rubber based high impact grades, glass reinforced polystyrene, food grade polystyrene, structural foam etc.

The divinylbenzene plant of 150 tonnes/year capacity was built based on self developed technology.

To improve gloss and abrasion resistance and sales appeal of Polystyrene, technology for production of suitable overcoat lacquer (Butylated melamine formaldehyde lacquer) was developed and sold to N.G.Industries, Bombay who now produces it on a commercial basis.

Bench scale technology for making styrene based on exchange resins has been developed.

Development of commercial technology for making ABS resins is in progress.

Research and Development work for making organo-phosphorous type protection chemicals is also on hand.

(B) Plastic Raw Materials

(i) M/s Alkali & Chemical Corporation of India Ltd.

1937: 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 the 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.

1952: A plant to produce 2,8000 Kl of nitrocellulose and synthetic paints per annum was installed at Rishra.

The capacity of the caustic soda/chlorine plant was expanded to 5,200 m.t.p.a.

A benzene hexachloride plant with a capacity of 2,600 tes 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 rubber chemicals plant.

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 p.a.

1966: The capacity of the rubber chemicals plant was expanded to 2,770 tes p.a.

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 2,370 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 m.t. was received.

1975: The company received an industrial licence to put up a pharmaceuticals plant in Madras.

.../-

(ii) M/s 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 wholly owned subsidiaries as under :-

(a) Ilac Limited
(b) Rajindra Dyeing & Printing Mills Ltd.
(c) Gujarat Nets Ltd.
(d) Varma Industrials Ltd (Subsidiary of Rajindra Dyeing & Printing Mills Ltd.)

The Company employed more than 14,000 employees.

1947: Caustic/chlorine plant of 6 tpd capacity was started at Ahmedabad.

1954: The Company obtained industrial licence for the manufacture of Caustic soda and Chlorine.

1956: The Company obtained industrial licence for substantial expansion of Caustic soda and chlorine plant.

1958: The Caustic soda and chlorine plant was commissioned at Anik-Chembur, Bombay.

. . The Company obtained two industrial licences for the manufacture of Calcium 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 plant was commissioned in 1965 at Bombay.

The company obtained industrial licence for manufacture of plastic moulded and extruded articles. The plant was commissioned 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: The company obtained industrial licence for effecting substantial expansion of Calcium Carbide plant. The expansion plant was commissioned in 1966.

The company obtained industrial licence for effecting substantial expansion of Trichloroethylene and related products. The plant was commissioned in 1967 at Bombay.

.../-

1967: The company obtained industrial licence for effecting substantial expansion of Polyvinyl chloride & its co-polymers. P.V.C. (Bulk Polymerisation) plant was commissioned in 1972.

1970: The company obtained industrial licence for manufacture of Polyester Staple Fibre at Baroda. Out of two units, Spinning and Processing Unit was commissioned in 1974.

1973: The company obtained industrial licence for effecting substantial expansion of Calcium Carbide plant from the capacity of 13,200 tpy to 22,000 tpy.

1975: A letter of intent is received for expansion of Trichloroethylene and related products for capacity of 10,000 tpy after expansion.

A letter of intent is received for expansion of Calcium Carbide plant from capacity of 22,000 tpy to 37,000 tpy.

(iii) M/s Bakelite Hylam Limited

1947: Hyderabad Laminated Products Limited incorporated on June 18 in the Nizam's Dominion of Hyderabad.

1949: Plant from U.K. arrived anderection started.

1950: Erection of plant and machinery completed.

1951: Started trial production with imported varnishes of Laminates for panelling.

Managing Agency changed from the promotors, Khan Bahadur Ahmed Alladin & Co., to Best & 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 laminates commenced.

1956: 2-shift production started to cater for bulk business from the Railways for panelling.

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.

.../-

1961: Press No.2 installed.

Plant and machinery erected for manufacture 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, Sweden, U.A.R.

Managing Agency terminated.

1969: Hylam Limited and Bakelite (India) Private Limited merged to form Bakelite Hylam Limited on December 4.

1970: Expansion taken in hand.

1971: Expansion work on schedule. Press No.3 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.

Diesel Generator installed.

1975: Introduced a range of high-quality Insulating Phenolic Varnishes for the Electrical Industry.

(iv) M/s Chemicals and Plastics India Ltd.

1961: In May, Licence granted to The India Cements Ltd., to manufacture 6,000 tonnes per annum of PVC resins/compounds.

1962: Incorporation of the Company.

In November, original licence was changed to the name & 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 & mouldings (rigid & flexible) in January.

1967: Inauguration of PVC Plant in May.

Commercial production of PVC resins commenced in July.

1969: Production of PVC pipes commenced.

1970: Industrial Licence was issued for expanding PVC capacity to 20,000 tonnes per annum.

1971 : Successful commercial production of gramophone record compound.

1972/73: Completed intermediate stage of expansion in PVC capacity to 13,500 tonnes per annum.

1975: Permission granted by the State Government to set up a captive distillery for production of industrial alcohol.

Industrial Licence was granted for production of 3,500 tonnes of PVC pipes per annum in December.

(v) M/s East Anglia Plastics (India) Ltd.

1956: Incorporated in West Bengal with an authorised capital of Rs.1 crore. Government approval to manufacture Cellulose Acetate Moulding Compound and PVC Compound in technical collaboration with East Anglia Plastics Ltd., UK was accorded.

1961: Government modifies terms of collaboration with East Anglia Plastics Ltd., U.K. and collaboration agreement made.

1962: Production of Cellulose Acetate Moulding Compound commenced.

1963: Further share capital of Rs.85 lakhs raised. Industrial Licence for manufacture of 1000 tons Phthalate Plasticisers received and foreign collaboration approved by Govt.

1964: Capital Goods Import Licence for Phthalate Plasticisers received.

1965: Manufacture of P.V.C. Compound commenced.

1966: Production of Lighter Phthalates commenced. Imported equipments for Heavier Phthalates received.

1967: Production of Heavier Phthalates commenced. Industrial Licence for Plastic Films, Foils and laminates received.

.../-

1968: Industrial Licence for expansion of capacity of Phthalate Plasticisers to 2,000 tonnes received. Capital Goods Import Licence for Films, Foils issued.

1970: Industrial Licence for expansion of capacity of Phthalate Plasticisers to 5,000 tonnes issued by the Government.

1971: Letter of Intent for manufacture of Phthalic Anhydride, one of the major raw materials for Phthalate Plasticisers, issued by the Government.

1972: Industrial Licence for Phthalate Plasticisers endorsed by Government for production upto the installed capacity of 8,500 tonnes.

1973: Imported equipments for Plastic Films, Foils received and production commenced.

1974: Industrial Licence for 6,000 tonnes of Phthalic Anhydride received.

1975: Letter of Intent issued by the Govt. for production of Malathion, an agricultural insecticide.

(vi) M/s Indian Plastics Limited

1946: M/s Bestolite Moulding Company of India, a British firm having its factory at Jogeshwari which was taken over in 1944 by BIRLA BROTHERS was named as 'INDIAN PLASTICS LTD.'

1947: The manufacturing of Phenol Formaldehyde Moulding Powder was started for using the same in its compression moulding section, where mainly Electrical Accessories were being produced. On Injection side, household products in plastics were produced and sold for home consumption.

1948: The manufacture of thermosetting Synthetic Resins for commercial sale was undertaken.

1950: The factory was shifted from Jogeshwari to a more spacious site comprising about 29,000 sq. meters at Poisar Bridge, Kandivli, Bombay.

Started manufacturing of Valve set Radios with the technical know-how from LEYLAND'S INSTRUMENTS LIMITED, ENGLAND.

1956: Started manufacture of Urea Formaldehyde Moulding Powder.

1957: Manufacture of Transistor Radios started.

1961: Entered into collaboration agreement with HAYAKAWA ELECTRIC COMPANY LIMITED OF JAPAN for the manufacture of Transistor Radios.

1962: Entered into collaboration agreement with BAKELITE GESELLSCHAFT MBH, West Germany for the technical know-how for the manufacture of thermosetting moulding powders - Phenol Formaldehyde, Urea Formaldehyde and Melamine Formaldehyde - and Synthetic Resins for various Industrial Applications.

.../-

1964: Started the manufacture of Melamine Formaldehyde Moulding Powder.

1967: Research & Development Department was set up and started accepting custom mouldings to meet the specific requirements of the industries in different fields right from development of powder and moulds.

1972: Rayon Spinning Bucket was manufactured from own know-how developed at R&D Section for the first time in India.

(vii) M/s Mysore Acetate and Chemicals Co.,Ltd.,

1963: The company was incorporated under the Indian Companies Act on 24th December with its registered 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 Films Mfg.Co.Ltd., Ootacamund, Tamilnadu.

1964: The certificate was issued for commencement of business on the 25th May.

1965: Entered into collaboration with M/s Vankoharn Inc., USA for supply of plant and machinery for the manufacture 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 the 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 required for captive use. The plant was designed and commissioned entirely by the company personnel.

1974: The direct solution process for the manufacture of Cellulose Secondary Acetate was commissioned in September. Start-up operations were supervised by Foreign Technical Experts and the Secondary Acetate manufactured by the company is superior in quality and is matching to the quality of imported Secondary Acetate.

(viii) M/s Nuchem Plastics Ltd.

1951: Started as Button moulders, Rattanchand Harjasrai (Plastics) Ltd. at Amritsar with a paid up capital of 3.11 lacs.

1952/1954: Developmental work on moulding powders, collecting valuable data regarding the manufacture of U.F.Moulding Powder in tropical conditions.

1955/1956: Agreement concluded with Messrs British Industrial Plastics (Chemicals) Ltd., Birmingham for Technical Collaboration.

1957: U.F.Moulding Powder production started.

1958: Button plant shifted from Verka (Amritsar) to Faridabad.

1959: Expansion for 840 tons of Urea Formaldehyde and for 250 tons of Melamine Formaldehyde Moulding Powders sanctioned. Licence received to manufacture Urea Formaldehyde Resins 1800 tons per annum.

1962: Expansion completed. Production on new plant started. The Company received a Licence to manufacture 192 Compression and Injection Moulding Tools per annum, starting of ENGINEERING DIVISION.

1965: Resin plant 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 installed.

1971: International Division set up to accelerate exports. Production of 5000 tons Moulding Powders per annum taken up.

1972: Research & Development Centre started functioning.

1973: Hexamine Plant commissioned.

Company was awarded 'National Safety Award' By Ministry of Labour.

.../-

1974: Bonus shares 1 : 2 issued.

1975: .. Formaldehyde Plant sold out on turn-key basis to M/s Southern Synthetics Limited, Ranipet (Tamil Nadu).

Company was awarded 'TOP EXPORTERS AWARD' in the category of raw-materials by Government of India.

(ix) M/s Plastic Resins and Chemicals Ltd.

1962: Incorporated under the Companies Act, 1956.

1971: Commenced manufacturing of PVC Compound with own technical know-how.

1972: Set up a Research Laboratory at factory for quality control and Technical Service Laboratory for customer service in Bombay.

1973: Exported 462 tons of PVC Resins. Exporter's Award by Plastic Linoleum 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.

(x) M/s 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: Foundation 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 Agreements were finalised. It was for the first time Kreditanstalt fur Wiederfbau (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 imported 1,500 tonnes of HDPE raw material on a product loan basis. This material was distributed 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 start d simultaneously production of Ziegler Catalyst, viz. Ethyl Aluminium Sesqui Chlorids and Ethyl Aluminium Mono 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 Desulphurisation Plant. In the later 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 concept of packaging in India which has resulted in considerable saving of foreign exchange and conserving of essential raw materials.

Production of barrels and jerrycans made of HDPE for storage and transportation of hazardous chemicals was undertaken.

1970: Started production of HDPE Pipes which are extensively used by Chemical 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 5.4 crores 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 MT.

.../-

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.

(xi) M/s Shriram Chemical Industries

1960: Industrial licence for setting up a 20 tons/day PVC plant at Kota was received.

1961: Technical collaboration agreement signed with M/s Shin Etsu Chemical Industry Co.Ltd. and Mitsui Bussan Kaisha Ltd., Japan.

Receipt of Import Licence.

Laying of foundation stone.

1963: Commercial production of calcium carbide started.

1964: Commercial production of PVC started.

1965: ICMA export promotion award for outstanding performance in the promotion for exports.

1966: Licence for expansion of PVC capacity to 40 T/day received.

1968: Commencement of commercial production for expanded capacity of PVC i.e. 40 tons/day.

1969: National safety Award given for outstanding performance in industrial safety by achieving highest percentage reduction in frequency rate during the year 1967.

1973: Licence for increased capacity of PVC i.e. 80 tons/day received.

(xii) M/s 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 Plastics 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 Philips 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/ compounds to companies like, Indian Telephone Industries, BHEL, HAL, BEL, etc. who were hitherto required to import their raw material based on Phenol & 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 - Philips collaboration terminated. Established production of many additional special purpose Phenolic Resins for foundries Brakelining Industries etc.

1970: Celebrated silver jubilee year.

1971: Joined Release Order scheme to supply P.F. Resin 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.M.Thakkar was honoured by an award for pioneering work done for Plastics Industry, at the hands of the then President of India, Shri V.V.Giri.

1973: Established a production of Phenolic Resins/compounds of 2 thousand tons per annum.

Exported Phenolic Resin/compounds for the first time to Hongkong.

Introduced Phenolic Resin compounds for injection moulding for the first time in India.

1975: Added a very modern, continuous process closed system equipment for processing P.F. Resin compounds by way of modernisation of the plant.

(xiii) M/s Chemo-Pharma Laboratories Ltd.

1970: Diversification and expansion programme undertaken to maintain sufficient diversity of products and product lines. The necessary land acquired at MIDC Industrial Area, Kalyan Hiwandi Road.

1971: First stage of gradual diversification costing about Rs.20 lacs completed with commissioning of plant to manufacture Urea Formaldehyde & Melamine formaldehyde moulding powders.

1972: Commercial production of Urea Formaldehyde & Melamine formaldehyde powders started.

1975: An improved pullveriser installed which can pullverise the sheets into fine granules without any increase of temperature.

(c) Synthetic Fibre

(i) M/s Century Enka Limited

1967: Public issue of shares.

1968: Commencement of construction work.

1969: Nylon Plant commissioned.

(ii) M/s Baroda Rayon Corporation Ltd.

1958: In May, the company was incorporated.

1959: Received an Industrial licence in September, 1959 for the manufacture of Filament Rayon Yarn, Sulphuric Acid, Carbon-Di-Sulphide, Anhydrous Sodium Sulphate.

1960: Acquired about 320 acres of land from Government.

1961: Railway Siding was commissioned in May.

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: Building foundation for Nylon plant was laid in June.

1973: On 1st January, Gujarat Polyamides was merged with The Baroda Rayon Corporation Limited 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.

.../-

(iii) M/s Chemicals and Fibres of India Ltd.

1961: Company incorporated and licence given for manufacture of Polyester Staple Fibre.

1963: Possession of land was given by State Government.

1965: Production of Polyester Staple Fibre commenced.

1967: Licence given for expansion of Polyester Staple Fibre.

1971: Licence given for expansion to 6,100 tonnes per annum of Polyester Staple Fibre.

1972: Expansion to 6,100 tonnes per annum of Polyester Staple Fibre completed.

(iv) M/s Garware 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 polymerization of Caprolactam to Nylon chips.

1968: Substantial expansion was carried out, raising the capacity to 756 tons per annum of Nylon Yarn.

1969: The Company received a letter of int nt to increase its capacity to 2000 tonnes.

1970: The company became a Public Limited Company.

Licensed capacity was increased to 2000 tonnes.

1972: The Industrial licence for 2000 tonnes was implemented and with the additional capacity increased under the fuller utilisation scheme, the total capacity of production was raised to 2394 tonnes per annum of Nylon Yarn.

Letter of intent received for the manufacture of Polyester filament yarn for 360 tonnes per annum. Received an Industrial Licence for the manufacture of Nylon Chips for Plastics Industry with an annual capacity of 330 tonnes. This additional production has been taken care of by the inbuilt capacity of the plant.

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.

.../-

(v) M/s Indian Organic Chemicals Ltd. (Fibre Division).

1960: The Company was incorporated.

1969: Site selected for the Polyester Staple Fibre Plant.

1970: Industrial Licence was granted for the manufacture of 6100 metric tonnes of Polyester Staple Fibre per annum.

1971: In February, foundation stone was laid.

In November, machinery erection commenced.

1972: In August, plant commissioned.

1973: In January, commercial production started.

(vi) M/s J.K. Synthetics Ltd.

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 received.

1964: Industrial licence for manufacture of 4000 tonnes per annum of acrylic staple fibre received.

1965: First stage expansion was completed in record time rasising the plant capacity to approx. 3 tonnes/day.

1966: Industrial licence for the manufacture of 1000 tonnes per annum of Nylon Tyre Cord received.

1967: Encouraged by the success of its research activities, the Company had undertaken further research work in the field of manufacture of synthetic fibres.

Industrial licence for manufacture of 1800 tonnes per annum of nylon staple fibre received.

.../-

1968: The 2nd stage of expansion of nylon plant 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 lacs during the year.

Initiated research 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 fibre, recovery 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 lacs was incurred for carrying out scientific research.

1970: The Prime Minster Smt. Indira Gandhi visited Synthetic Fibre Complex at Kota and appreciated the research efforts made by young technicians. She blessed thus : "I am glad to be here and to see the working of the plant. Young engineers and technicians working in the factory deserve appreciation, as they had helped to make India self-reliant by developing country's indigenous know-how and save considerable foreign exchange. I congratulate them."

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 lacs 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 lacs.

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 tonnes per annum of polyester staple fibre by way of diversification.

Commercial production of nylon tyre cord, nylon staple fibre and polyester staple fibre commenced.

1973: Licence for the manufacture of 3840 tonnes per annum of nylon yarn implemented.

.../-

1973: (contd.) 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 & machineries to Indian Petrochemical Corporation, Baroda for their proposed polyester filament plant.

The installed capacity for manufacture of nylon tyre cord and polyester filament yarn 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 known as "Nova colour nylon" for the first time in India.

1974: Approval for foreign technical collaboration with M/s Techimont 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 licenced.

Received approval of the Govt. of India for setting up a synthetic filament yarn plant in Kenya.

Received and implemented industrial licence for manufacture of 800 tonnes per annum of nylon tyre yarn fabrics.

Sir Padampat Research Centre recognised by the Department of Science and Technology, 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.

Research activities further strengthened and development of new technologies for recovery of DMT from Polyester Waste undertaken.

(vii) M/s Modipon Limited

1965: Company incorporated and Industrial Licence received.

1967: Corner stone was laid.

1968: Commercial production was started in March.

1969: Dividend of 8% on Equity share capital 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 to 3000 tonnes/annum.

C.O.B. licence for the manufacture of 360 tonnes per annum of Polyester filament yarn was received.

Expansion project of the company commissioned.

Received letter of Intent for substantial expansion of 2,000 tonnes/annum of Nylon filament yarn.

1973: Started production of Polyester filament yarn in the month of January.

(viii) M/s Nirlon Synthetic Fibres & Chemicals Limited

1962: 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.

1964: Declared maiden dividend.

1965: The annual licensed capacity of nylon textile yarn was increased from 1872 tonnes to 2520 tonnes and the annual licensed capacity of nylon tyre cord was increased from 576 tonnes to 1,440 tonnes.

Floated a wholly owned subsidiary Company for manufacturing nylon fabrics.

1967: Excise Duty on nylon yarn was increased by about 200%.

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 2,160 tonnes.

Tariff Commission Inquiry into the price structure of nylon yarn ordered by the Govt.

1969: Excise duty on nylon yarn of 75 denier and above was increased.

1970: The annual production capacity of nylon yarn was increased to 2520 tonnes.

Machinery for setting up of the Tyrecord Plant 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.

Introduced Gratuity Scheme and a non-contributory staff superannuation scheme.

.../-

1971: Nylon Tyrecord Plant commenced production. Nylon tyre cord was manufactured for the first time in India.

1972: Export/synthetic fabrics to Czechoslovakia for the first time.

Annual licensed capacity for manufacturing Polyester filament yarn was increased from 360 tonnes to 576 tonnes.

1973: Polyester filament yarn manufactured to full licensed capacity.

1974: Polycondensation Plant commissioned.

(ix) M/s Shriram Fibres Ltd.

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 at Madras was set up.

1974: On 31st December, trial runs commenced.

1975: On 1st April, commercial production commenced.

(x) M/s Stretch Fibres (India) Ltd.

1965: Incorporation on 19th June.

On 29th July, certificate for commencement of business was received.

1966: Commencement of Stretch Nylon Yarn in January.

1969: Ist plant for manufacture of knitting fabric installed.

1973: Spinning plant for the manufacture of nylon installed.

Commercial production of nylon yarn commenced on 10th October.

(xi) M/s Shree Synthetics Limited

1968: Shreeram Silk Mills Ltd., Calcutta, a unit of Hastings Mill with an authorised capital of Rs.5 crores was incorporated.

An Industrial Licence was received for the manufacture of 1080 tons/annum of Nylon-6 filament yarn.

1969: The name of the company was changed to Shree Synthetics Limited.

1972: The plant for production of Nylon-6 and Polyester filament yarn was commissioned.

1975: Monomer Recovery Plant for recovering the caprolactum from the wash water was commissioned.

(xii) M/s 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.

1972: In October, erection of plant and equipment completed. Trial runs commenced.

1973: In March, commercial production 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 Jailone 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 June, process dyed fibre was commercialised.

(xiii) M/s National Rayon Corporation Ltd.

1946: The company was incorporated at Bombay with authorised capital of Rs.10 crores divided into Equity of Rs.5 crores and Preference Shares of Rs.5 crores.

1951: Production of Rayon Textile yarn started.

1975: Nylon-6 Tyre Cord Plant was commissioned in December.

(D) Synthetic Rubber

M/s Synthetics And Chemicals Ltd.

1958/59: Chairman visited U.S.A. for foreign collaboration 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 & Rubber Co., USA.

Government approval of the project and Firestone agreement.

1961: Foundation stone laid at site at Bareilly.

1962: Technical Service Laboratory at Bombay commissioned to help rubber consuming industries in the field of application of synthetic rubbers.

1963: All plants were commissioned and commercial production started.

1964: Started new Resin S-1958 rubber.

1965: Explosion at Butadiene Plant causing temporary stoppage of production for about six months.

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 chemical industry for the first time in India.

First public enquiry in the fair prices of synthetic rubber held.

1969: Maiden dividend declared for shareholders for this year.

Government applied for the first time statutory control under the Essential Commodities Act on the prices of company's SYNAPRENE rubbers.

Developed new rubbers viz. S-1513 and EPB-OE.

1970: Excise duty levied by Government of India at the rate of Rs.300 per tonne of rubber for the first time.

The company developed and marketed a special synthetic latex S-2000 high solids with high bound styrene latex for use in cord dipping operations.

1971: A competent design engineering firm from Bombay prepared project for building our Research & Development Centre to be set-up at Bareilly.

..../-

1971 (Contnd.) Two National Safety Awardswon for the year 1971 from the Government of India, Deptt. of Labour & Employment.

Developed two new synthetic rubbers, S-1713 and SBR-C[illegible].

Record production of synthetic rubber achieved at 33,010 MT for the year and also sales over 32900 MT.

1972: Letter of intent received for manufacture of 2000 MT/year of nitrile rubber.

Pilot plant completed for nitrile rubber.

Three National Safety Awards received for the year 1971-72 for singular achievement of safety records as under :

1) Highest percentage reduction in accident frequency rate.

2) Lower frequency rate in chemical industry and

3) Longest accident free period.

Signed agreement with NCL/NRDC on nitrile rubber.

Also signed agreement with NRDC for ABS technology based on process know-how of Shri Ram Institute.

1973: Letter of intent received for the manufacture of Steel Cord, Textile Re-inforced and Solid PVC conveyor belting.

Two National Safety Awards received for the year 1973

1) Lowest accident frequency rate in the chemical industry.

2) Longest accident free period.

R&D Centre of the company was recognised by Deptt. of Science & Technology and NCST.

Chairman hosted International Synthetic Rubber Producers Board meeting - Eastern Section.

1974: 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 received. Set up 1 ton/day pilot plant for nitrile rubber and produced nitrile rubber 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 1 ton plant for ABS plastics resins for development of technology and commenced trial production in a few grades of ABS.

Award of Merit received from National Safety Council of USA for operating plant for 1771 thousand manhours without disabling injury.

INSTALLED CAPACITY AND PRODUCTION OF PETRO-CHEMICALS IN INDIA DURING ,1960,1965,1974,1975.

(Qty. in Tonnes)

Name of the Industry Items.	1960			1965			1974			1975		
	No.of Unit	Installed Capacity	Production	No. of unit	Installed capacity	Production	No.of units	Installed capacity	Prodn.	No.of units	Installed capacity	Prodn.
Benzene	4	-	5363	7	35513	23958	10	94000	70539	10	94000	70737
Butadiene	-	-	-	-	-	-	1	7200	4765	1	7200	5464
Butyl Acetate	-	-	-	2	1856	1052	4	7230	3817	4	7230	3781
Butyl Alcohol	-	-	-	1	1540	551	4	16250	4646	4	16250	5582
Diacetone Alcohol	-	-	-	-	-	-	2	5800	3129	2	5800	2336
Diethylene Glycol	-	-	-	-	-	-	1	600	671	1	600	732
Dichloro Ethane	-	-	-	-	-	-	1	50000	37510	1	50000	29361
2-Ethyl Hexanol	-	-	-	-	-	-	2	9600	6638	2	9600	7822
Ethylene	-	-	-	-	-	-	2	75000	73103	2	75000	66326
Ethylene Oxide	-	-	-	-	-	-	1	12000	10597	1	12000	10340
Monoethylene Glycol	-	-	-	-	-	-	1	10000	7481	1	10000	7719
Methyl Isobutyl Ketone.	-	-	-	-	-	-	1	3700	1289	1	3700	866
Isopropanol	-	-	-	-	-	-	1	1500	1512	1	1500	1352
Phthalic Anhydride	-	-	-	-	-	-	3	15300	8486	3	15300	5653
Polyethylene Glycol	-	-	-	-	-	-	1	1000	713	1	1000	860

Name of the Industry items	1960 @ No.of units	Installed Capacity	Prodn.	1965@ No.of units	Installed capacity	Prodn.	1974 No.of units	Installed capacity	Prodn.	1975 No.of units	Installed capacity	Production
Propylene	-	-	-	-	-	-	2	42000	37245	2	42000	33299
Styrene	-	-	-	1	14000	5274	2	24000	11947	2	24000	10672
Toluene	4	-	1106	6	2448	2360	9	25755	14609	9	25755	13407
D.M.T.	-	-	-	-	-	-	1	24000	12745	1	24000	15553
Ortho-xylene	-	-	-	-	-	-	1	21000	11749	1	21000	3933
Para xylene	-	-	-	-	-	-	1	17000	7720	1	17000	9919
Mixed xylene	-	-	-	-	-	-	1	2500	2159	1	2500	3962
Vinyl Chloride	-	-	-	-	-	-	1	30000	18340	1	30000	16071
Caprolactum	-	-	-	-	-	-	1	20000	2816	1	20000	13832
SYNTHETIC FIBRES												
Nylon Staple Fibre	-	-	-	-	-	-	1	900	6	1	900	174
Nylon Filament yarn	-	-	-	3	1140	1478	8	15736	10153	8	15736	13581
Nylon Tyre Cord.	-	-	-	-	-	-	2	3790	1693	3	5790	3813
Polyester Filament yarn	-	-	-	-	-	-	4	1806	1238	5	2166	2233
PolyesterStaple Fibre	-	-	-	1	2000	1764	5	25300	7928	5	25300	14315
SYNTHETIC RUBBER												
Synthetic Rubber	-	-	-	1	22	14	1	30000	17918	1	30000	22958
4. PLASTICS												
THERMOSETS												
M.F.Moulding Powder	-	-	-	-	-	-	3	1490	102	3	1490	106
P.F.Moulding Powder	4	3414	2134	5	4512	3360	3	6200	4506	3	6200	3592
U.F.Moulding Powder	4	957	366	3	1074	1228	4	5150	1646	4	5150	1764
C.A.Moulding Powder	-	-	-	1	4200	1100	2	7200	1366	2	7200	1003

Name of the Industry/items.	1960 @ No.of units	Installed capacity	Production	1965 @ No.of units	Installed capacity	Prodn.	1974 No.of units	Installed capacity	Prodn.	1975 No.of units	Installed capacity	Prodn.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
THERMOPLASTICS												
Polyethylene H.D	-	-	-	-	-	-	1	20000	24616	1	20000	22987
Polyethylene L.D.	1	3556	4213	2	11200	13501	2	25000	26546	2	25000	27835
Polystyrene	1	5436	3676	2	7836	5984	2	17500	9848	2	17500	9091
P.V.C. Resin	-	-	-	3	9600	12179	5	64700	47432	5	64700	4-2884

@ Note:- 1. Installed Capacity as per D.G.T.D.

2. Data for 1960 & 1965 have been taken from D.G.T.D. Reports.

ESTIMATED CONSUMPTION OF ORGANIC CHEMICALS IN INDIA DURING 1974-75.

(Tonnes)

ITEMS	Actual Production	Imports	Exports	Estimated Consumption.
1	2	3	4	5
1. Benezene	70242	141	1	70382
2. Butadiene	4711	-	-	4711
3. Diacetone Alcohol	2818	-	-	2818
4. Diethylene Glycol	673	-	-	673
5. Dichlor• Ethane	39339	-	-	39339
6. Ethylene	72863	-	-	72863
7. Ethylene Oxide	10495	-	-	10495
8. Ethylene Glycol	7625	489	-	8114
9. 2-Ethyl Hexanol	6369	-	-	6369
10. Isopropanol	1503	-	-	1503
11. M.I. Ketone	1056	-	-	1056
12. Phthalic Anhydride	7339	6466	-	13805
13. Polyethylene Glycol	680	-	-	680
14. Propylene	37462	-	-	37462
15. Styrene	10432	-	-	10432
16. Toluene	13047	3	-	13050

N.B. Col.5 = Col.2+Col.3 - Col.4

Source: For Col. No. 2 Mfg. units and Cols.3 and 4 from Monthly Statistics of Foreign Trade of India.

....

ESTIMATED CONSUMPTION OF SYNTHETIC FIBRES AND SYNTHETIC RUBBER IN INDIA DURING 1974-75.

(Tonnes)

	ITEM	Actual Production	Imports	Exports	Estimated Consumption
	1	2	3	4	5
A.	SYNTHETIC FIBRES				
1.	Acrylic Fibre	-	752	-	752
2.	Nylon-6-Filament Yarn.	11159	-	-	11159
3.	Nylon Industrial Yarn/Tyre Cord	2415	-	-	2415
4.	Nylon Staple Fibre	179	-	-	179
5.	Polyster Filament Yarn	1350	-	-	1350
6.	Polyster Staple Fibre	9571	328	-	9899
B.	CRUDE RUBBER, SYNTHETIC AND RECLAIMED	17617 *	9441 @	2072 @	24986

N.B. Col.5 = Col.2+Col.3 - Col.4

* SBR only.

@ Includes SBR, Natural Rubber and Reclaimed Rubber.

SOURCE: Col.2 Mfg. units and Cols.3 & 4 Monthly Statistics of Foreign Trade of India.

.....

BOMBAY MARKET PRICES OF SELECTED DENIERS OF NYLON YARN.

Rs. Per kg.

Denier	Spinner	1.1.75 @	1.7.75	Prices as on 1.1.76
12-1-0	J K I	131.00	148.00	145.00
	Modipon I	129.00	146.00	142.00
	Garware	125.00	145.00	141.00
	Nirlon Std.	126.00	142.00	142.00
20-1-0	Nirlon Std.	122.00	133.00	136.00
	Modipon I	124.00	132.00	135.00
	J K I	125.00	133.00	136.00
	Garware	118.00	133.00	135.00
40-10-0	J K Sd I	125.00	124.00	115.00
	Modipon Wvg. I	129.00	128.00	122.00
	Nirlon Std.	131.00	129.00	115.00
	Garware ISD	129.00	124.00	113.00

@: Prices published on Tecoya dt. 1.1.75.

Source: Office of the Textile Commissioner, Bombay.

.....

ESTIMATED CONSUMPTION OF PLASTICS IN INDIA DURING 1974-75.

(Tonnes)

	ITEM	Actual Production	Imports	Exports	Estimated Consumption
	(1)	(2)	(3)	(4)	(5)
1.	M.F.Moulding Powder	109	-	33	76
2.	P.F.Moulding Powder	3921	4	32	3893
3.	U.F.Moulding Powder	1590	96	1	1685
4.	C.A.Moulding Powder	1009	388	-	1397
5.	Polyethylene L.D.	26949	876	204	27621
6.	Polyethylene H.D.	24059	3153	13	27199
7.	Polystyrene Moulding Powder	8024	160	3	8181
8.	P.V.C.Resin	46747	706	-	47453

N.B.: Col.5 = Col.2+Col.3 - Col.4

Source: Col.2 Mfg. units & Cols.3&4 Monthly Statistics of Foreign Trade of India

.....

CONSUMPTION OF SBR BY END PRODUCTS

		1974	1975
A.	AUTO TYRE UNITS		
	1. Firestone	1146	3008
	2. Ceat	1506	2473
	3. Dunlop	2344	5634
	4. Inchek	312	261
	5. Goodyear	464	1311
	6. M.R.F.	933	1092
	7. Premier	408	466
	8. Modi	37	826
	SUB TOTAL	7150	14871
B.	OTHERS		
	1. Footwear	3825	5700
	2. Cycle Tyres & Tubes	710	50
	3. Retreading material	1550	1200
	4. Industrial Rubber Products	700	850
	5. Others	1576	1719
	SUB TOTAL	8361	10319
	G R A N D T O T A L	15511	25190

SOURCE:- M/S. SYNTHETIC & CHEMICALS LIMITED, BOMBAY.

.....

END USE ANALYSIS OF POLYETHYLENE L.D.(PERCENTAGE CONSUMPTION IN DIFFERENT INDUSTRIES)

	1970	1971	1972	1973	1974	1975
Film & Coatings	74.6	74.6	73.8	74.3	75.1	75.2
Mouldings	7.2	7.0	6.5	6.4	6.3	7.0
Wire & Pipe	8.2	8.2	7.9	8.2	8.0	7.7
Miscellaneous	10.0	10.2	11.8	11.1	10.6	10.1
Total	100.00	100.00	100.00	100.00	100.00	100.00

END .. USE ANALYSIS (POLYETHYLENE-HD(Perentage consumption in different industries)

Applications.	1970	1971	197	1973	1974	1975
(A) INJECTION MOULDING.						
i) Household articles	59.(	46.6	34.4	25.7	24.3	25.2
ii) Transport cases	0.1	0.7	0.7	0.5	1.2	0.8
iii) Industrial Components	4.6	5.2	5.2	6.2	6.3	5.6
Total :	63.7	52.5	40.3	32.4	31.6	31.6
(B) BLOW MOULDING.						
i) Consumer Packaging	7.5	9.7	12.0	15.1	13.4	11.5
ii) Industrial Packaging.	9.3	8.5	12.5	11.2	11.5	6.5
iii) Miscellaneous	1.1	0.8	0.7	10.8	1.6	0.6
Total ;	17.9	19.0	25.3	27.1	26.5	18.6
(C) EXTRUSION.						
i) Monofilament & Cane stropping.	9.6	10.0	9.6	8.9	8.1	17.5
ii) Films and sheets	5.0	5.4	2.9	3.3	2.8	4.1
iii) Pipes and cables	1.4	1.2	2.6	6.1	4.9	6.1
iv) Strips and woven sales	2.4	11.8	19.3	22.2	26.0	22.1
Total :	18.4	28.5	34.4	40.5	41.9	49.8
Grand Total:	100.00	100.00	100.00	100.00	100.00	100.00

END-USE ANALYSIS OF POLYSTYRENE (PERCENTAGE CONSUMPTION IN DIFFERENT INDUSTRIES.

Qty. Tonnes

INDUSTRY GROUP	1972	1973	1974	1975
1. Appliances	0.2	0.3	0.6	0.1
2. Electronics & Industrias.	23.0	30.2	31.7	30.8
3. Buildings	14.3	13.6	11.1	[illegible]
4. Packaging	19.8	21.7	24.0	22.0
5. House hold wares	30.8	28.3	26.7	29.4
6. Toys & Novelties	0.1	0.2	0.2	12.0
7. Defence	0.6	0.6	1.0	0.9
8. Miscellaneous	11.2	5.1	4.7	4.8
Total	100.00	100.00	100.00	100.00

End-Use analysis of PVC(Resins) Percentage consumption in different industries.

	1970	1971	1972	1973	1974	1975
1. Wires & Cables	27.51	30.29	30.53	28.64	25.55	28.82
2. Pipes, fittings & conduits	6.07	7.72	13.46	15.98	25.06	17.04
3. Leather cloth & sheet/ films	8.29	6.96	9.69	9.42	10.12	11.48
4. Footwear	22.26	19.17	17.35	17.12	11.07	11.59
5. Gramophone	0.05	0.12	0.50	0.69	0.72	0.84
6. Vinyl Tiles	-	0.15	0.13	0.19	0.21	0.24
7. Conveyor Belting	-	-	0.09	0.07	0.32	0.26
8. Battery Separators	-	-	0.33	0.30	1.09	0.67
9. Transparent Blown Bottons	-	-	-	-	-	0.24
10. Transparent Blown films	-	-	-	-	0.04	0.09
11. Toys	-	-	0.04	0.04	0.06	0.07
12. Compounders	18.30	14.37	10.71	10.63	10.36	7.96
13. Miscellaneous	17.52	21.22	17.15	16.92	15.40	20.70
Total	100.00	100.00	100.00	100.00	100.00	100.00

.-.-.-.-.-.-.-

PRICES OF NYLON YARN SOLD TO ACTUAL USERS.

Denier	Quality	Agreed ex-factory selling prices in Rs. per Kg.	
		From 1.3.72 to 31.8.73	From 1.9.73 onwards.
12/1/0	SD	82.00	86.95
15/1/0	SD	74.00	78.90
20/1/0	SD	70.00	74.85
20/1/0	TWINKLE	95.00	100.10
30/10/0	SD(W)	68.00	78.05
32/10/0	SD(W)	68.00	78.05
32/10/0	SD(K)	70.50	80.55
40/10/0	SD(W)	62.00	66.75
40/10/0	SD(SP/K)	64.50	69.25
40/10/0	FD(K)	69.00	73.85
76/17/0½	SD	60.00	69.90
76/20/0½	SD		
90/20/0	SD	53.00	62.85
100/20-24/0½ 101/20-24/0½ 105/20-24/0½	SD	51.00	60.85

SD = Semi Dull
FD = Full Dull
W = Weaving
K= Knitting
SP= Special

Note: The Prices include Excise Duty.

Source: Textile Commissioner, Bombay.

EX-WORKS PRICES (BULK, EXCLUDING EXCISE DUTY) OF SELECTED PETROCHEMICALS

(Prices Rs./Tonne)

Item	Manufacturers	Prices (as on...) 1.1.70	1.7.70	1.1.71	1.7.71
1	2	3	4	5	6
1. Polyethylene LD	UCI	4700	5130	5130	5130
2. "	ACCI	4792	4792	4792	4792
2. " HD (Natural Colour)	Polyolefins Inds. Ltd.	4016	4016	4212	4329
3. Monomer	Polychem Ltd.	3970	-	3331	3186
"	Hindustan Polymers Ltd.	4250	-	4250	4250
4. PVC (Resin)	NOCIL	3350	3200	3100	3100
5. "	Chemicals & Plastics India Ltd.	3000	3000	2900	2900
	Calico Ltd.	3200	3000	2825	2825
5. Dioctyl Phthalate	UCI Ltd.	6600	7000	7300	7300
	IOC Ltd.	7500	7500 (as on 1.7.70)	7150	7150 (as on 1.1.71)
	HCL Bombay	7150	7400	7400	6606
6. 2-Ethyle Hexanol	NOCIL	5200	5200	5200	5200
"	UCI Ltd.	4900	5000	5300	5300
7. Ethylene Glycol	NOCIL	3800	4700	4700	4300
8. Phenol	HCL Bombay	3100	3100	3300	3393
9. Ethylene Oxide	NOCIL	6600	8050	8050	6600 (in consumers cylinder)
10. Synthetic Rubber	Synthetic & Chem. Ltd.				
-S-1500/502		4400	4400	4400	4400
-S-1712		3900	3900	3900	3900
-S-1958		6800	6800	6800	6800
11. Di Butyl Ph-thalate	IOC, Bombay	7100	-	7000	-

UCI = Union Carbide India Ltd.,
NOCIL = National Organic Chemicals Industries Ltd.,
- = Not available.,
HCL = Herdillia Chemicals Ltd.,
IOC = Indian Organic Chemical Ltd.,
ACCI = Alkalies & Chemicals Corporation of India Ltd.,

S.

EX-WORKS PRICES(BULK,EXCLUDING EXCISE DUTY) OF SELECTED PETROCHEMICALS.

(Price Rs./Tonne as on:)

Item	Manufacturers	1.1.72	1.7.72	1.173	1.7.73
1. Polyethylene LD	UCI	5400	5400	5400	5770
"	ACCI	4792	4798	4798	5122
2. " HD (Natural Colour)	Polyolefins Inds.Ltd	4329	4346	4346	4671
3. Monomer	Polychem Ltd.	3293	3864	3807	4082
"	Hindustan Polymers Ltd.	-	-	-	-
4. PVC (Resin)	NOCIL	3100	3100	3100	3650
"	Chemicals&Plastics India Ltd.,	3050	3350	3350	3600
	Calico Ltd.	2825	2825	2825	2825
5. Dioctyl Phthalate	UCI,Ltd.	6000	6250	6250	8900
	IOC,Ltd.	4650	4500	4300	7900
	HCL, Bombay	5612	5433	5798	8520
6. 2-Ethyle Hexanol	NOCIL	5200	4900 (as on 1.7.71)	4900	4900
"	UCI,Ltd.	4900	5300 (discontinued)	5300	5400
7. Ethylene Glycol	NOCIL	4300	4300	4300	4300
8. Phenol	HCL,Bombay	3502	3451	3522	4473
9. Ethylene Oxide	NOCIL	6100	6100	6100	6100
10. Synthetic Rubber	Synthetic & Chem.Ltd.				
-S-1500/502		4400	4400	4400	4400
-S-1712		3900	3900	3900	3900
-S-1958		6800	6800	6800	6800
11. Di Butyl Phthalate	IOC,Bombay	5900	6250	6150	9900

* = 0685 grade
UCI= Union Carbide India Ltd.,
NOCIL= National Organic Chemicals Industries Ltd.,
- = Not Available
HCL = Herdillia Chemicals Ltd.,
IOC = Indian Organic Chemicals Ltd.,
ACCI = Alkalies & Chemicals Corpn. of India Ltd.,

EX-WORKS PRICES(BULK, EXCLUDING EXCISE DUTY) OF SELECTED PETROCHEMICALS

Item	Manufacturers	(Price Rs./Tonne as on :) 1.1.74	1.7.74	1.1.75	1.7.75	1.1.76
1.Polyethylene LD	UCI	6140	9425	9425	14703	14703
,,	ACCI	5122	6169	8087	8087	8087
2. ,, HD Polyolefins (Natural Colour)	Inds.Ltd	4671	7613	7744	7613	7613
3. Monomer	Polychem L'd.	4060	9196	9340	9316	8230
,,	Hindustan Polymers Ltd.	-	9800	9100	9100	9100
4. PVC (Resin)	NOCIL	3800	6000	6000	6000	6000
	Chemicals & Plastics India Ltd.,	4200	6000	6000	6000	5150
	Calico Ltd.	2750*	5200*	5300*	5300*	5300*
5.Dioctyl Ph-thalate	UCI,Ltd.	13000	14800	14700	-	-
	IOC, Ltd.	11650	13500	8600	7200	8100
	HCL, Bombay	9458	13500	10800	9300	10000
6.2-Ethyle Hexanol	NOCIL	5200	8300	8300	8300	8750
,,	UCI, Ltd.	(as on 1.1.75) 7700	-	8000	8000	8650
7.Ethylene Glycol	NOCIL	4550	6800	6800	6800	7250
8. Phenol	HCL, Bombay	6184	8700	8700	8700	8700
9. Ethylene Oxide	NOCIL	6350	8750	8750	8750	9300
10. Synthetic Rubber	Synthetic &Chem.Ltd.					
-S-1500/502		4400	4950	4950	5050	5050
-S-1712		3900	4450	4450	4550	4550
-S-1958		6800	7400	7400	7600	7600
11. Di Butyl Ph-thalate	IOC,Bombay	16150	15750	15550	11600	10600

* = 0685 grade
UCI = Union Carbide India Ltd.,
NOCIL = National Organic Chemicals Industries Ltd.,
\- = Not Available
HCL = Herdillia Chemicals Ltd.,
IOC = Indian Organic Chemicals Ltd.,
ACCI = Alkalies & Chemicals Corpn.of India Ltd.,

Demandof Methanel during V Plan.

(Qty. in thousand tonnes)

Product	1974-75	1975-76	1976-77	1977-78	1978-79
Formaldehyde	26	30	34	38	40-45
Pharmaceuticals	6	7	8	9	10
DMT	3	4	4	4	8
Intermediates	6	7	9	10	12
Av/Defence	3	3	3	4	4
Solvents	3	4	4	5	6
Fertilisers	-	1	6	13	25
Total	47	56	68	83	105-110
Production Estimates					
F.C.I. Trombay	35	35	35	35	35
Haldia	-	-	-	-	20
Assam Petrochemical	-	-	-	-	7
Total	35	35	35	35	62
Deficit	12	21	33	48	43-48

Net Demand of Naphtha for petro-chemicals in India.

(Qty. in thousand tonnes)

Consumers.	1974	1975	1976	1977	1978	1979	1980
Union Carbide of India Ltd.	100	100	100	100	100	100	100
National Organic Chemical Industries Ltd.	225	225	225	225	225	225	225
Fertilizer Corporation Of India.	35	35	35	35	35	35	35
Indian Petro-Chemical Corporation Ltd.(Aromatics)	80	80	80	80	80	80	80
IndianOrganic Chemicals Ltd.	110	110	110	110	110	110	110
Plastic Resin & Chemical Industries.	20	20	20	20	20	20	20
Hindustan Organic Chemicals Ltd.	5	5	5	5	5	5	5
Indian Petro-Chemicals Corporation Ltd.	-	-	50	270	360	450	450
B.R.P.L.	-	-	-	-	-	30	50
New Aromatics	-	-	-	-	-	105	175
Total	575	575	625	845	935	1160	1250

IMPORTS OF P TRO-CHEMICALS IN INDIA DURING 1973-74 & 1974-75

Qty= Tonnes
Value=Rs.Mn.

S.No.	Industry/Products	1973-74 Qty.	1973-74 Value	1974-75 Qty.	1974-75 Value.
1	2	3	4	5	6
(1)	Organic Chemicals(Excl.Pesticides)				
1.	Benzene	170.0	0.52	140.8	0.90
2.	Toluene	0.6	neg	3.1	0.03
3.	Methyl Alcohol(Methanol)	12662.1	9.82	11177.5	17.34
4.	Butyl Alcohol(Butanol)	32.3	0.26	48.6	0.77
5.	Ethylene Glycol	1614.4	4.53	488.5	2.77
6.	Ethyl Alcohol undenatured	16865.0	20.71	1.2	0.02
7.	Ethyl Alcohol denatured	1.9	0.11	1.0	0.04
8.	Acetone	-	-	0.7	0.01
9.	M.I. Ketone	-	-	-	-
10.	Carbolic Acid(Phenol)-Pure	95.5	0.21	47.5	0.27
11.	Phthalic Anhydride	5635.0	17.22	6465.6	39.12
12.	Butyl acetate	108.0	0.53	16.3	0.15
13.	Others (Excl.Pesticides Viz.,BHC, DDT & Ethylene Dichloride)	-	756.78	-	1351.52
	TOTAL	-	810.69	-	1412.94
(2)	PLASTIC MATERIALS REGENERATED CELLULOSE & ARTIFICIAL RESIN:				
1.	P.F. Moulding Powder	19.8	0.19	4.0	0.03
2.	U.F.Moulding Powder	23.0	0.06	96.2	0.31
3.	Polyethylene L.D.	5990.8	17.99	875.8	5.68
4.	Polyethylene H.D.	6169.6	19.22	3152.8	19.44
5.	Polystyrene Moulding Powder	626.4	2.12	159.9	1.29
6.	P.V.C, Resins	1587.6	6.33	706.9	5.10
7.	C.A. Moulding Powder	102.6	0.41	388.4	3.78
8.	Others	-	105.75	-	146.76
	TOTAL		152.07		182.39
(3)	Crude synthetic & Reclaimed rubber	6624.3	40.73	9441.4	68.39
(4)	Synthetic & Regenerated fibres.				
1.	Polymide fibre	324.8	2.42	151.4	2.12
2.	Polyester fibre	636.9	4.92	327.5	4.86
3.	Acrylic fibre	762.5	6.24	751.8	11.59
4.	Others	-	11.81	-	8.62
	TOTAL		25.39		27.19

Source: Monthly Statistics of Foreign Trade.

EXPORTS OF PETRO-CHEMICALS FROM INDIA DURING 1973-74 & 1974-75.

Quantity: Tonnes
Value: Rs.Mn.

S.No.	Industry/Products	1973-74 Qty.	1973-74 Value.	1974-75 Qty.	1974-75 Value.
1	2	3	4	5	6
1.	Organic Chemicals(Excluding Pesticides viz , BHC)				
	1. Methyl Alcohol (Methanol)	0.2	neg	-	neg
	2. Benzene	2020.1	1.92	0.7	0.01
	3. Butylalcohol	1542.6	1.82	8.2	0.07
	4. Ethylene glycol	-	-	-	-
	5. Ethyl alcohol undenatured	34.0	0.03	21.0	0.02
	6. Acetone	507.6	0.35	0.6	0.005
	7. Others(excluding Pesticides viz.,BHC)	-	48.34	-	79.365
	Total(Excluding Pesticides viz,.BHC)	-	52.46	-	79.470
2.	Plastic materials, regenerated cellulose and artificial resins:				
	1. M.F.Moulding Powder	-	-	33.0	0.33
	2. P.F.Moulding Powder	146.0	0.97	32.0	0.21
	3. C.A. Moulding Powder	-	-	-	-
	4. Polyethylene L.D.	269.0	2.65	203.5	2.74
	5. Polyethlene H.D.	27.1	0.41	12.6	0.19
	6. U.F. Moulding Powder	30.9	0.12	1.2	0.01
	7. PolystyroneMoulding Powder	163.0	0.65	3.1	0.05
	8. P.V.C. Resins	620.2	3.26	-	-
	9. Others	-	7.49	-	15.23
	Total:	-	15.55	-	18.76
3.	Synthetic & Regenerated fibres	-	0.36	-	0.15
4.	Crude rubber (Synthetic & reclaimed):				
	1. Synthetic rubber	200.0	1.74	669.3	4.08
	2. Others	3096.0	11.77	1402.5	4.32
	Total:	3296.0	13.51	2071.8	8.40

Source: Monthly Statistics of Foreign Trade.

....

PRODUCTION OF NON-CELLULOSIC CONTINUOUS FILAMENTS IN SELECTED COUNTRIES OF THE WORLD 1969-1973.

('000' Tonn-es)

Country	1969	1970	1971	1972	1973*
1	2	3	4	5	6
1. Argetina	18.60	18.08	23.71	25.48	28.83
2. Australia	18.40	23.70	25.30	25.50	25.20
3. Brazil	18.10	26.90	31.20	44.50	63.30
4. Canada	52.62	52.44	60.14	58.10	-
5. Czechoslovakia	17.20	19.56	20.09	20.52	23.06
6. France	74.71	81.74	97.19	103.81	111.77
7. Germany Dem.Rep.	12.50	13.60	14.10	24.00	27.00
8. Germany.Fed.Rep.	239.08	276.50	335.22	316.38	398.07
9. India	8.09	10.34	10.93	14.20	15.00
10. Japan	359.72	456.71	530.69	502.82	592.13
11. Italy	105.58	99.00	127.00	137.91	....
12. Netherlands	56.70	56.80	66.60	67.80	.....
13. Spain	26.88	28.17	31.28	37.80	.....
14. Switzerland	27.90	32.70	38.60	46.80	49.20
15. U.S.S.R.	103.44	115.08	132.29	157.19	176.26
16. U.K.	155.89	166.61	191.20	196.43	232.97
17. U.S.A.	801.40	813.50	992.40	1257.90	1514.90

* Provisional

Source: U,N.Statistical Year Book-1974

PRODUCTION OF NON-CELLULOSTIC DISCONTINUOUS FIBRES IN SELECTED COUNTRIES OF THE WORLD-1969-73

('000' Tonnes)

Country	1969	1970	1971	1972	1973
1. Canada	23.00	20.95	25.49	22.10	- -
2. France	81.55	93.48	115.76	130.49	154.54
3. Germany Dem. Rep	17.60	26.40	27.90	29.50	45.00
4. Germany F.D.R.	213.47	220.38	268.79	324.22	412.26
5. India	5.72	5.33	5.99	6.70	11.00
6. Italy	131.18	142.36	174.71	187.12	232.04
7. Japan	446.59	571.24	633.93	613.84	716.32
8. Netherlands	35.70	33.20	38.10	44.90	- -
9. Poland	33.82	36.33	38.70	39.38	43.56
10. Spain	30.47	35.32	44.75	69.70	83.70
11. U.S.S.R.	39.09	51.44	70.77	81.37	110.65
12. U.K.	135.49	170.30	166.14	177.54	220.92
13. U.S.A.	798.80	813.30	954.80	1171.50	1347.00

*Provisional - - Not available

Source: U.N. Statistical Year Book - 1974

PRODUCTION OF PLASTICS & RESINS IN SELECTED COUNTRIES OF THE WORLD
1969- 1973

('000' Tonnes)

	Country	1969	1970	1971	1972*	1973*
1.	2.	2.	3.	4.	5.	6.
1.	Australia	197	225	256	285	341
2.	Belgium	496	605	...	...	...
3.	Czechoslovakia	213	245	270	301	356
4.	France	1319	1519	1765	2100	...
5.	Germany Dem.Rep.	328	370	420	458	489
6.	Germany Fed.Rep.	3776	4170	4605	5289	6239
7.	India	81	95	103	110	109
8.	Italy	1445	1670	1709	1936	2322
9.	Japan	4303	5154	5206	5573	6425
10.	Netherlands	964	1150	1305	1526	...
11.	Poland	199	224	257	299	334
12.	Sweden	265	294	313	399	...
13.	U.S.S.R.	1453	1673	1864	2042	2320
14.	U.K.	1319	1449	1447	1608	1976
15.	U.S.A.	8470	8712	9556	11755	....

* Provisional

Source: U.N.Statistical Year Book -1974

PART - III

PLAN STATISTICS

FIFTH PLAN TARGETS AND ACHIEVEMENTS DURING THE YEAR 1975-76 of SELECTED PETROLEUM & PETRO CHEMICALS

Industry/Item	Unit	Fifth Plan Targets 1978-79		Achievements 1975-76		Production		
		Capacity	Prodn.	Capacity 1.1.76	Prodn.	1968-69 Actual	74-75 Actual	76-77 Targets
A. PETROLEUM								
1. Oil Exploration & Prodn. of crude.	Mn. Tonnes	-	12	-	8.45	6.06	7.68	9.3
2. Refinery Products including Lubricants	Mn. Tonnes	39	34.6	27.4*	21.04	15.4	19.62	21.5
B. PETRO-CHEMICALS								
1. D.M.T.	'000' Tonnes	54	50	24	19.02	-	13.34	-
2. Caprolectum	-do-	22.5	20	20	13.27	-	6.41	-
3. Thermoplastic Resins	Mn.Cu.Metre	325	280	NA	NA	NA	NA	NA
4. Synthetic Fibres								
(a) Nylon Filament & Staple Fibre	'000' Tonnes	23	21	16.64	14.04	6.5	11.34	15.0
(b) Nylon Tyre Cord & Other Industrial Yarn	"	10	9	7.99	4.00		2.41	5.0
(c) Polyester Filament & Staple Fibre	"	59	43	27.47	18.32	-	10.92	22.0
(d) Acrylic Fibre	"	16	14	-	-	-	-	-
(e) Synthetic Rubber	"	55	48	30	25.20	26	17.62	-

Notes = * Capacity is in terms of Crude Throughput.

Source:- Draft Vth plan data for Col 5,6 & 8 have been Compiled in E&S Division for all the items except for thermo-plastic Resines which is reproduced from Draft Vth plan Targets of Production 1976-77 have been reported from Annual Plan 1976-77, Planning Commission.

Annual Plan outlay for 1976-77 for various Programme/ Activities of the Ministry of Petroleum.

(Rupees in Lakhs)

Sl. No.	Programme/Activity	Name of the Undertaking responsible for execution of the Programme/Activity	Annual Plan outlay for 1976-77	Extra budgetary resources for financing the Annual Plan outlay for 1976-77	Government budgetary support for financing the Annual Plan outlay for 1976-77	Remarks
1.	2.	3.	4.	5.	6.	7.
1.	Exploration and Exploitation of Oil and Natural Gas Reserves.	(i) Oil & Natural Gas Commission	22815.00	15486.00	7329.00	The figure of extra budgetary resources in Col.5 includes Rs. 4500 lakhs/oil Industry Development Fund.
		(ii) Oil India Ltd.	3878.00	1050.00	2828.00	
		Total	26693.00	16536.00	10157.00	
2.	Petroleum Refining, Marketing & Distribution of Petroleum Products	(i) Indian Oil Corporation Ltd.	9500.00	3050.00	6450.00	The figure of extra budgetary resources in Col.5 includes Rs.600 lakhs as contribution from Oil Industry Development Fund.
		(ii) Hindustan Petroleum Corporation Ltd.	350.00	350.00	-	as contribution from.
		(iii) IndoBurma Petroleum Company Limited	325.00	157.00	168.00	
		(iv) Madras Refineries Ltd.	100.00	100.00	-	
		(v) Cochin Refinries Ltd.	3.00	-	3.00	
		(vI) Bitumen Marketing Corpn.Ltd.	100.00	-	100.00	
		(vii) Lubrizol India Ltd.	62.00	62.00	-	
		Total	10440.00	3719.00	6721.00	

Sl. No.	Programme/Aciivity	Name of the Undertaking responsible for execution of the Programme/Activity	Annual Plan outlay for 1976-77	Extra budgetary resources for financing the Annual Plan outlay for 1976-77	Government budgetary support for financing the Annual Plan outlay for 1976-77	Remarks
1.	2.	3.	4.	5.	6.	7.
3.	Production of Petro-Chemicals and other allied products	(i) Indian Petro-Chemicals Corpn. Ltd.	8810.00	750.00	8060.00	The amount of Rs.100 lakhs indicated as extra budgetary resources in Col.5 would be provided by the Oil Industry Development Board.
		(ii) Bongaigaon Refinery and Petro-Chemicals Ltd	2527.00	100.00	2427.00	
		(iii) Petrofils Cooperative Ltd.	1.00	-	1.00	
		Total	11338.00	850.00	10488.00	
4.	Consultancy in engineering services	(i) Engineers India Ltd.	15.00	-	15.00	
		Total	15.00	-	15.00	
		Grand Total	48486.00	21105.00	27381.00	

Source:- Annual Plan 1976-77 , Planning Commission

Budget provision (both Plan and Non-Plan) included in the Budget Estimates 1975-76, Revised Estimates 1975-76 and Budget Estimates 1976-77 for various programmes/activities of the Ministry of Petroleum.

(In lakhs of Ruppees)

Sl. No.	Programme/Activity with break-down by undertakings/agencies responsible for its execution)	Budget Estimates 1975-76			Revised Estimates 1975-76			Budget Estimates 1976-77		
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.	Direction and Administration									
	. Secretariat of the Ministry	0.01	67.71	67.72	..	82.29	82.29	..	45.92	45.92
	Total Direction and Admn.	0.01	67.71	67.72	..	82.29	82.29	..	45.92	45.92
2.	Exploration and Exploitation of Oil and Natural Gas Reserves									
	(i) Oil & Natural Gas Commission	2210.00	..	2210.00	3210.00	..	3210.00	7329.00	..	7329.00
	(ii) Oil India Ltd.	2900.00	..	2900.00	2500.00	..	2500.00	2828.00	..	2828.00
	Total-Exploration and Exploitation of Oil and Natural Gas Reserves	5110.00	..	5110.00	5710.00	..	5710.00	10157.00	..	10157.00

Contd.../

Sl. No.	Programme/Activity	Budget Estimates 1975-76			Revised Estimates 1975-76			Budget Estimates 76-77		
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
3.	Petroleum Refining, Marketing & Distribution of Petroleum Products.									
	(i) Indian Oil Corporation Limited	1100.00	..	1100.00	1400.00	..	1400.00	6450.00	..	6450.00
	(ii) Cochin Refineries Ltd.	30.00	849.00	879.00	27.00	1263.98	1290.98	3.00	..	3.00
	(iii) Madras Refineries Ltd.	..	..	..	..	..	..	..	..	..
	(iv) Hindustan Petroleum Corporation Ltd.	..	845.00	845.00	..	756.13	756.13	..	311.00	311.00
	(v) Lubrizol India Ltd.	..	..	..	..	..	..	..	..	..
	(vi) Indo Burma Petroleum Company Ltd.	..	..	..	..	144.57	144.57	78.00	..	78.00
	(vii) Bridge & Roof Co. (India) Limited	..	..	..	..	..	..	50.00	100.00	150.00
	(viii) Biecco Lawrie Ltd.	..	..	--	..	..	..	40.00	30.00	70.00
	(ix) Bitumen Marketing Corporation Ltd.	..	2.00	2.00	..	15.00	15.00	100.00	..	100.00
	(x) Bharat Refineries Ltd.	..	..	..	..	925.00	925.00	..	988.08	988.08
	Total-Petroleum Refining and Marketing & Distribution of Petroleum Products	1130.00	1696.00	2826.00	1427.00	3093.55	4520.55	6721.00	1429.08	8150.08

Contd..../-

Sl. No.	Programme/Activity	Budget Estimates 1975-76			Revised Estimates 1975-76			Budget Estimates 1976-77		
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
1.	2.	3.	4.	5.	6.	7..	8.	9.	10.	11.
4.	Production of Petro-Chemicals Corporation Limited and other allied Products									
(i)	Indian Petro-Chemicals Corpn.Ltd.	8850.00	..	8850.00	7700.00		7700.00	8060.00	..	8060.00
(ii)	Petrofils Cooperative Ltd.	200.00	..	200.00	555.00	..	555.00	1.00	..	1.00
(iii)	Bongaigaon Refinery &Petrochemicals Ltd.	1700.00	..	1700.00	1600.00	..	1600.00	2427.00	..	2427.00
	Total-Production of Petrochemicals and other allied products	10750.00	..	10750.00	9855.00	..	9855.00	10488.00	..	10488.00
5.	Consultancy in Engineering services	..	..	..	..	..	..	..	..	..
	Engineers India Ltd.	..	..	..	..	..	..	15.00	..	15.00
	Total -consultandy in Engineering services	..	..	..	..	..	..	15.00	..	15.00
6.	Assistance for the Development of Oil Industry:									
i	Oil Industry Development Board	..	6400.00	6400.00	..	6228.00	6228.00	..	5545.00	5545.00
	Total-Assistance for the Development of Oil Industry	..	6400.00	6400.00	..	6228.00	6228.00	..	5545.00	5545.00
7.	Miscellaneous items of expenditure.	..	3.00	3.00	..	11.92	11.92	..	1.25	1.25
	Grand Total :-	16990.01	8166.71	25156.72	16992.00	9246.89	26418.89	27381.00	7021.25	34402.25

Source:- Performance Budget -1976-77, Ministry of Petroleum.

PART - IV

FINANCIAL STATISTICS

Profitability analysis of

COCHIN REFINERIES LTD.

(Rs./lakhs)

Item	1972-73	1973-74	1974-75
1-	2-	3.	4.
1. Authorised capital	1500	1500	1500
2. Equity capital	700	700	700
3. Loans(a) Total	1217	1875	1556
(b) Foreign	663	495	408
4. Net worth	1243	1245	727
5. Capital employed	2230	2703	2241
6. Working capital	515	1112	445
7. Sales/operating Income	4073	3788	12362
8. Profit	113	73	(-)394
9. Net Profit/loss	52	2	(-)519
10. Dividend declared	100	-	-
11. Percentage of			
i) Net profit to equity	7.4	0.3	-
ii) Profit to capital employed	5.1	2.7	-
iii) Net profit to net worth	4.2	0.2	-
iv) Sales to capital employed	182.6	140.1	551.6
v) Total loans to equity	173.9	267.9	222.3
vi) Foreign loans to capital employed	29.7	18.3	18.2

Source:- Annual Report on Central Government undertakings by Bureau of Public Enterprises.

Profitability analysis of
INDIAN OIL CORPORATION LTD.

(Rs./Lakhs)

Item	1972-73	1973-74	1974-75
1.	2.	3.	4.
1. Authorised capital	8500	8500	8500
2. Equity Capital	7118	7118	7118
3. Loans(a) Total	4996	7539	9107
(b) Foreign	993	885	5083
4. Net worth	16508	17134	19628
5. Capital employed	15705	17744	23587
6. Working capital	2256	5013	7336
7. Sales/operating Income	99924	124454	196745
8. Profit	5262	3472	6087
9. Net profit	217	981	3064
10. Dividend declared	498	356	570
11. Percentage of			
i) Net profit to equity	31.1	13.8	43.0
ii) Profit to capital employed	33.5	19.6	25.8
iii) Net profit to net worth	13.4	5.7	15.6
iv) Sales to capital employed	636.3	701.4	834.1
v) Total loans to equity	70.2	105.9	127.9
vi) Foreign loans to capital employed	6.3	5.0	21.6

Source:- Annual Report on Central Government Undertakings by Bureau of Public Enterprises.

Profitability Analysis of
Indo-Burma Petroleum Co.Ltd.

Rs.in Lakhs

Item	1972	1973	1974
1. Authorised Capital	300*	300*	300*
2. Equity Capital	100	100	160
3. Loans:-			
a) Total	-	-	-
b) Foreign	-	-	-
4. Net worth	389	414	453
5. Capital employed	188	148	187
6. Working Capital	55	2	25
7. Sales/operating Income	3943	4999	8846
8. Profit	86	122	150
9. Net Profit	43	49	49
10. Dividend declared	15	23	16
11. Percentage of			
i) Net Profit to Equity	43.0	49.0	49.0
ii) Profit to Capital employed	45.7	82.4	80.2
iii) Net profit to Net worth	11.1.	11.8	10.8
iv) Sales to capital employed	2097.3	3377.7	4730.5
v) Total loans to Equity	-	-	-
vi) Foreign loans to capital employed	-	-	-

* Includes preference share capital of Rs.50 lakhs.

Source:- Annual Report on Central Govt. undertakings by the Bureau of Public Enterprises.

Profitability analysis of

LUBRIZOL INDIA LTD.

(Rs./Lakhs)

Item	1972-73	1973-74	1974-75
1.	2.	3.	4.
1. Authorised Capital	75	75	75
2. Equity Capital	60	60	60
3. Loans:-a) Total	192	118	201
b) Foreign	-	-	-
4. Net worth	199	251	623
5. Capital employed	341	361	800
6. Working capital	258	218	661
7. Sales/operating Income	576	675	1350
8. Profit	112	120	389
9. Net profit	40	57	375
10. Dividend declared	4	4	4
11. Percentage of			
a) Net profit to equity	66-7	95.0	625.0
b) Profit to capital employed	32.8	33.2	48.6
c) Net Profit to Net worth	20.1	22.7	60.2
d) Sales to capital employed	168.9	187.0	168.8
e) Total loans to equity	320.0	196.67	318.3
f) Foreign loans to capital employed	-	-	-

Source:- Annual Report on Central Government Undertakings by Bureau of Public Enterprises.

Profitability analysis of

MADRAS REFINERIES LTD.

(Rs./lakhs)

Item	1972-73	1973-74	1974-75
1.	2.	3.	4.
1. Authorised capital	1350	1350	1350
2. Equity capital	1288	1288	1288
3. Loans a) Total	1791	1431	1071
b) Foreign	729	594	459
4. Net worth	2191	2711	2769
5. Capital employed	3982	4154	3854
6. Working capital	1282	1745	1758
7. Sales/operating Income	6530	14198	20021
8. Profit	744	769	303
9. Net Profit	625	671	227
10. Dividend declared	155	155	155
11. Percentage of			
(a) Net profit to equity	48.5	52.1	17.6
(b) Profit to capital employed	18.7	18.5	7.9
(c) Net profit to Net worth	28.5	24.8	8.2
(d) Total loans to equity	139.1	111.1	83.2
(e) Foreign loans to capital employed	18.3	14.3	11.9
F) Sales to capital employed	164.0	341.8	519.5

Source:- Annual Report on Central Government Undertakings by Bureau of Public Enterprises.

Profitability analysis of

OIL & NATURAL GAS COMMISSION

(Rs./lakhs)

Item	1972-73	1973-74	1974-75
1.	2.	3.	4.
1. Authorised Capital	[illegible]	-	-
2. Equity Capital	13515	13515	13515
3. Loans:-			
(a) Total	8582	8078	7300
(b) Foreign	350	271	161
4. Net worth	20173	21258	17031
5. Capital employed	19032	21072	17456
6. Working capital	4102	5406	6773
7. Sales/operating Income	5095	2983	14353
8. Profit	1205	8160	5526
9. Net Profit	700	2983	5077
10. Dividend declared	-	-	-
11. Percentage of			
i) Net Profit to equity	5.2	18.1	37.6
ii) Profit to capital employed	6.3	14.2	31.7
iii) Net profit to net worth	3.5	11.5	29.8
iv) Sales to capital employed	26.8	38.7	82.2
v) Total loans to equity	63.5	59.8	54.0
vi) Foreign loans to capital employed	1.8	1.3	0.9

Source:- Annual Report on Central Government Undertakings by Bureau of Public Enterprises.

Profitability Analysis of

Indian PetroChemicals Corpn.Ltd. (Rs.in Lacs)

Item	1972-73	1973-74	1974-75
1. Authorised Capital	3000	6000	10000
2. Equity capital	2673	4900	8900
3. Loans:			
(a) Total	1508	1843	1490
(b) Foreign	-	173	211
4. Net worth	2671	4576	9402
5. Capital employed	1047	4097	5521
6. Working capital	744	1313	2699
7. Sales/operting Income	-	522	2748
8. Profit/loss	-	(-)175	912
9. Net Profit	-	(-)281	806
10. Dividend declared	-	-	-
11. Percentage of			
i) Net Profit to Equity	-	-	9.1
ii) Profit to capital employed	-	-	16.5
iii) Net profit to Net worth	-	-	8.6
iv) Sales to capital employed	-	12.8	49.8
v) Total loans to equity	56.4	37.6	16.7
vi) Foreign loans to capital employed	-	4.2	3.8

Note: Commercial Production of DMT commenced in December, 1973.

Source:- Annual Report on Central Government undertakings by Bureau of Public Enterprises.

A P P E N D I X

I

ABBREVIATIONS USED IN PETROLEUM STATISTICS

L.P.G.	= Liquified Petroleum Gas
Mogas	= Motor Gasoline
Avgas	= Aviation Gasoline
K.S.	= Kerosene Superior
K.I.	= Kerosene Inferior
M.T.	= Mineral Turpentine
A.T.F.	= Aviation Turbine Fuel
H.S.D.	= High Speed Diesel
L.D.O.	= Light Diesel Oil
F.O.	= Furnace Oil
T.D.O.	= Tea Drier Oil
L.S.H.S.	= Low Sulphur Heavy Stock
H.H.S.	= Hot Heavy Stock
Lub.Oil	= Lubricating Oils
Pet.Coke	= Petroleum Coke
J.B.O.	= Jute Betching Oil
Ref.Gas	= Refinery Gas
A.O.C.	= Assam Oil Company
O.I.L.	= Oil India Limited
O.N.G.C.	= Oil & Natural Gas Commission
I.I.P.	= Indian Institute of Petroleum
I.O.C.	= Indian Oil Corporation
nog	= Negligible
-	= Nil
../N.A.	= Not Available

II

LIST OF PRODUCTS INCLUDED AMONG LIGHT/MIDDLE DISTILLATES.

A. LIGHT DISTILLATES(including Gases)

1. Motor Gasolines
2. Aviation Gasolines
3. Naphtha
4. SBP Spirit/Solvent Oils
5. Hexane
6. Benzene
7. Toluene
8. L.P.G.
9. Refinery Gas

B. MIDDLE DISTILLATES

1. Kerosines
2. ATF/Jet A-1
3. Vaporising Oil
4. Mineral Turpentine
5. Aromex-Iomex
6. H.S.D.
7. L.D.O./M.L.O.
8. J.B.O.

****

III
WEIGHTS

1	Oz	= 28.35 grammes
1	lb	= 0.453592 Kilogrammes
		= 0.009 cwt
1	Kg	= 2.20462 lb
		= 0.01 quintal
1	cwt	= 112 lb
		= 50.802 kg.
1	Metric ton	= 0.98421 long ton*
		= 1.10231 short ton
		= 2204.6 lb
1	English or long ton	= 1.01605 metric tons*
		= 1.12 short tons
1	Short ton	= 0.892857 long ton*
		= 0.907185 metric ton*
		= 2000 lb

* These conversions are based on the assumption that all weights are weights in air, which is the correct basis for computing bulk commercial quantities of petroleum.

POWER AND HEAT UNITS

1	Hp (Horse power)	= 550 foot pounds per second
		= 0.746 Kilowatt
		= 1.014 PS (or Cheval Vapeur)
1	PS (Pferdestaerke) or CV (Cheval Vapeur)	= 542 foot pounds per second
		= 0.986 hp
		= 0.736 KW
1	KW (kilowatt)	= 1000 watts
		= 1.340 hp
		= 1.359 PS or CV
		= 737 foot pounds per second
1	Therm	= 100000 Btu (British thermal units)
		= 25200 Kilo calories
		= 25.2 thermies
		= 29.3 Kilowatt hours
	1000 Kilocalories (large calories)	= 3968 Btu
		= 1.163 Kilowatt hours
		= 1 thermie
1	Kilowatt hour	= 3411 Btu
		= 1.340 hp hours
		= 859.6 Kilocalories
1	Foot pound per second	= 0.00136 Kilowatt
		= 0.00182 hp
		= 0.00184 PS or CV

IV

Specific Gravity : Volume per ton

Degrees API	Specific gravity	Barrels per * Metric ton	Barrels per * 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

* Approx. figures at 60 degree F.

Specific gravity ranges

	Specific gravity	Barrels per metric ton
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

Calorific value of fuels

Rough gross values in Btu per lb

Crude Oil	18300-19500
Gasolines	20500
Kerosines	19800
Benzole	18100
Ethyl alcohol	11600
Gas Oils	19200
Fuels Oils (Bunker)	18300
Coal(Bituminous)	10200-14800

V

PRODUCT CONVERSION FACTOR

(Conversion Factor from Volume @ $Te_{mp.}$ to tonnes at Natural Temp.

Products	Litres to Metric Tonne :	Tonnes per K.L.	American barrels to Metric tonne
Aviation Spirit 100/130	1421	0.7037	8.94
Aviation Spirit 115/145	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 Sprit 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 Kerosine (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	1071	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
Wax/Aromex/P.Coke/Chemicals	1114	0.8977	7.01
Bitumen	1002	0.9980	6.30
HPP/Alcohol Mixture	1414	0.7072	8.89
Methanol Mixture	1106	0.9042	6.96
Carbon Black Feed Stocks	1134	0.8818	7.13
Carburettor Testing Fluid	1388	0.7205	8.73
Benzene	1121	0.8921	7.05
Toluene	1143	0.8749	7.19
Demineralised Water	1002	0.9930	6.30
Shell Glass Kleanzit	1003	0.9970	6.31
Miscellaneous	1114	0.8977	7.01

VI

VOLUME PER METRIC TON OF PETROLEUM PRODUCTS.

	Kilolitre-M^3	Imperial Gallons	U.S.Gallons	Barrels
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
Kerosine	1.2346	271.569	326.137	7.764
Jet Fuel	1.2346	271.569	326.137	7.764
Distillate Fuel Oil	1.1494	252.845	303.647	7.231
Lubricating Oil	1.1111	244.415	293.522	6.988
Fuel Oils n.o.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

VII
METRIC UNITS.

Linear

10 millimetres	=	1 Centimetre
10 Centimetres	=	1 decimetre
10 decimetres	=	1 metre
10 metres	=	1 decametre
10 decametres	=	1 hectametre
10 hectametres	=	1 kilometre

AREA

100 sq. millimetres	=	1 sq. centimetre
100 sq. centimetres	=	1 sq. decimetre
100 sq. decimetres	=	1 sq.metre
100 sq. metres	=	1 sq. decametre
	=	1 sq. are
100 ares	=	1 hectare
	=	1 sq. hectometre
100 hectares	=	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.

.-.

Approximate calorific values

1 kg of	K.cals	or kg of hard coal	or kg of crude oil
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 electricity	2,800	0.40	0 .28

Crude oil conversions (for world average gravity)

To convert these into these	Metric tons	Barrels	Kilo litres	1,000 Imp. gallons	1,000 U.S. gallons
	Multiply by				
Metric tons	1	7.30	1.16	0.2555	0.306
Barrels	0.137	1	0.159	0.035	0.042
Kilolitres	0.863	6.29	1	0.22	0.264
1,000 Imp. gallons	3.92	28.6	4.55	1	1.20
1,000 U.S. gallons	3.26	23.8	3.79	0.83	1

CONVERSION FACTORS USED IN THE OIL TRADE

Linear and square measures.

1 inch	= 0.0254 metre
1 foot	= 0.333 yards = 12 inches = 0.305 metre
1 yard	= 3 feet = 36 inches = 0.914 metre
1 metre (m)	= 1.094 yards = 3.281 feet = 39.37 inches = 0.001 km
1 Kilometre (Km)	= 1000 metres = 0.621 miles
1 Statute mile	= 1760 yards = 1.609 Km
1 nautical mile	= 6080 feet = 1.15152 statute miles
1 squarefoot	= 0.093 square metre
1 square yard	= 9 square feet = 0.836 square metre
1 square metre	= 1.196 square yards = 10.764 square feet
1 acre	= 0.405 hectare = 4840 square yards
1 hectare (ha)	= 0.01 square Km = 2.471 acres
1 square Km	= 0.386 square mile = 100 ha
1 square mile	= 2.590 square km = 640 acres = 259 ha

X

Cubic measures

1 Cubic inch	= 16.387 cubic centimetres
1 pint	= 0.5683 litre
1 Litre	= 1000 cubic centimetres = 61.024 cubic inches = 1.7597 pints = 0.26417 American gallon = 0.21997 Imperial gallon = 0.035314 cubic feet
1 hectolitre	= 100 litres
1 American gallon	= 231 cubic inches = 3.7854 litres = 0.83268 Imperial gallon = 0.133681 cubic foot = 0.0238095 American barrel = 0.0037854 cubic metre
1 Imperial gallon	= 277.42 cubic inches = 4.5461 litres = 0.160544 cubic foot = 1.20094 American gallon = 0.028594 American barrel = 0.0045461 cubic metre
1 Cubic foot	= 28.317 litres = 7.4805 American gallons = 6.2288 Imperial gallons = 0.17811 American barrel = 0.028317 cubic metre
1 American barrel	= 9702 cubic inches = 158.99 litres = 42 American gallons = 34.9726 Imperial gallons = 5.6146 cubic feet = 0.15899 cubic metre
1 Cubic metre	= 35.315 cubic feet = 1000 litres = 264.17 American gallons = 219.97 Imperial gallons = 6.2898 American barrels
1 Kilolitre	= 1000 litre = 6.2989 American barrels
1 gross ton (shipping)	= 100 cubic feet or 2.83 cubic metres of permanently enclosed space.

CONVERSION FACTORS

UNITS	1,000 metric tons oil	1,000 bbl oil*	b/d*	Billion BTU	Billion Kilo-calories	Million kw-hr output basis	Million kw-hr input basis	1,000 metric tons hard coal eq.	Million cu-m natural gas‡
1,000 metric tons oil*	-	7,300	20.0	42.705	10.762	12.516	3.868	1.479	1.169
1,000 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 BTU.....	0.024	0.172	0.472	-	0.252	0.293	0.906	0.035	0.027
Billion kilocalories..	0.094	0.684	1.874	3.968	-	1.163	0.359	0.137	0.109
Million kw-hr-output basis.....	0.081	0.583	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 gas.....	0.847	6.250	17.125	36.546	9.216	10.699	3.319	1.271	....
MMef natural gas‡	0.024	0.177	0.485	1.035	0.261	0.303	0.094	0.036	0.028
Million cum-/day..... natural gas‡.....	0.309	2.281	6.251	13.339	3.364	3.905	1.211	0.464	0.365
Mefd natrual gas‡....	0.009	0.065	0.177	0.378	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.‡ 1,035 BTU/cu ft.