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National Iranian Oil Company

1972

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*His Imperial Majesty the Shahanshah Arja Mehr, accompanied by Her Imperial Majesty the Shahbanoo, at the opening of the new Kermanshah refinery.*

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**National Iranian Oil Company**

**1972**

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## FOREWORD

Iran at long last, is in full control of its oil industry. Before it, lies a brilliant vista of hope and success – success for exceeding all that which has yet been achieved. What the resolute determination of His Imperial Majesty, the Shahanshah Arya Mehr, has won for Iran, the dedication of the employees of the oil, gas and petrochemical sectors is sure to strengthen and develop to full measure in the future.

Great advances on the economic and social fronts have been made by the country during the present period of the Revolution of the Shah and the People, the most conspicuous of them being N.I.O.C.'s record of success during the past year. This fact takes on particular significance when the company's key role as provider of foreign exchange for the country's development programmes is taken into consideration.

Production of crude oil and liquid gas in Iran rose some 11 per cent during the past year, reaching a total of 294,1 million cubic metres.

Revenues accruing to the government and NIOC from the operations of the Consortium in the Agreement Area in 1972 amounted to £910 million (equivalent to about Rls. 159,143 million) of which £193.5 million consisted of stated payments, £707.6 million of income tax paid by the Trading Companies and £8.9 million of income tax paid by the Iranian Oil Operating Companies. The government's revenues from the Iran Pan American Oil Company (IPAC) were equivalent to Rls. 2,818 million, from Societe Irano-Indienne des Petroles (SIRIP) Rls. 676 million, from the Lavan Petroleum Company (LAPCO) Rls. 4,668 million and from the Iranian Marine International Oil Company (IMINOCO) Rls. 1,506 million.

The Treasury's total receipts from the country's oil industry during the year, including revenues paid by the various oil companies active in Iran, income tax on NIOC's net profits, dividends, taxes, dues, the increase in the price of oil products sold on the home market and income tax payments of oil industry employees and contractors, amounted to

## FOREWORD

about Rls. 201,146 million, an increase of 23 per cent over the figure for 1971.

One of the major oil industry projects completed during the year was the new Azarpad sea island loading terminal off Kharg, inaugurated by Shahanshah Arya Mehr, which can accommodate tankers of up to 500,000 tons. Another project was the new Kermanshah refinery, opened by Their Imperial Majesties the Shahanshah and the Shahbanou in May.

A joint-venture agreement for the export between 4.8 and 7.2 million tons a year of liquid natural gas to U.S.A. and Japan was signed between the National Iranian Gas Company and American, Japanese and Norwegian firms. Another agreement for investment in a project for the production of plastic softeners was concluded between the National Petrochemical Company and a Japanese group.

The National Petrochemical Company continued its successful operation of the three major petrochemical complexes and the Shiraz chemical fertiliser factory. The construction of the sodium carbonate and bicarbonate plants adjacent to the Shiraz Chemical Factory was completed and work commenced on the carbon black project. The Chemical Fertiliser Distribution Company increased its marketing activities and sold 360,000 tons of fertiliser on the home market.

The country's refineries, working at full capacity throughout the year, processed a total 34.1 million cubic metres of crude oil and gas for home consumption and export. Domestic sales of oil products, which are playing a vital part in the country's economic development, rose during the year to 12.7 million cubic metres.

The National Iranian Gas Company increased its exports of gas via the Iranian Gas Trunk Line, as well as the distribution of gas in Iran through networks in Tehran, Shiraz and Ahvaz and deliveries to the Arya Mehr steel mill in Isfahan and the industrial towns of Alborz and Manjil. Considerable volumes of gas were also consumed in the Shahpour and Kharg petrochemical complexes and the Mahshahr liquid gas plant.

## FOREWORD

Work continued on the second stage of the gas trunkline which will raise its capacity to 16.5 billion cubic metres a year. Also the construction of several compressor stations was completed during the year.

NIOC increased its efforts to enter world oil markets. In addition to the sale of Darius and Sassan crude respectively to the Madras and Sasolburg refineries (both of which were built in partnership with NIOC), the company took up its option to participate in the Madras chemical fertiliser plant, in which it acquired 24.5 per cent of the shares. A letter of intent was also signed for the establishment of the Irano-Greek Refining and Distributing Company and the enlargement of the Aspropyrgos refinery. So also was an agreement for the construction of a refinery at Liege and the formation of the Irano-Belgian Refining and Distributing Company signed with the Belgian Ministry of Economy.

NIOC stepped up its research work and the studies required for the Iranian oil industry's future plans and progress, as well as its comprehensive programmes aimed at raising the technical knowledge of its employees and training the manpower needed by the industry. Close attention was also paid to the health and wellbeing of employees of the oil, gas and petrochemical industries and their families.

The remarkable progress made by NIOC in the past year, a summary of which is presented in this report, could not have been achieved without the personal attention and wise leadership of H.I.M. the Shahanshah Arya Mehr. Thus, it is with the greatest of pride that the employees of the oil, gas, petrochemical and associated industries exert themselves in carrying out the wishes of this great leader of ours now and in the future.

Dr. M. Eghbal,  
Chairman of the Board and  
General Managing Director of the  
National Iranian Oil Company

## THE ROLE OF THE OIL INDUSTRY IN IRAN'S ECONOMY

Oil revenues received by the Iranian Government from the Consortium in 1972 consisted of stated payments and income tax paid by the Trading Companies and Iranian Oil Operating Companies amounting to £910 million (\$2,276 million), an increase of some 21.1 per cent compared with 1971 revenues. After the transfer of \$3.9 million (2 per cent of the stated payments) to the general reserve, NIOC paid the remainder of this sum into the Treasury.

In addition to these payments the Operating Companies brought into the country £43.1 million (\$108 million) worth of foreign exchange and converted it into rials to cover their local expenditure. The country's total foreign exchange income arising from the Consortium's operations in 1972 therefore amounted to £953.1 million (\$2,384 million), 20.1 per cent more than the corresponding figure for 1971.

Societe Irano-Italienne des Petroles (SIRIP) paid the government \$9.8 million in come tax, while the second parties in the joint venture companies Iran Pan American (IPAC), Lavan Petroleum Co. (LAPCO) and Iranian Marine International Oil Co. (IMINOCO) paid \$23.6 million, \$39.5 million and \$12.4 million respectively as income tax during the year. The total received by the government as income tax from the joint venture companies in 1972 thus amounted to \$85.3 million – an increase of 82.5 per cent over the 1971 figure. These companies also imported \$26.4 million worth of foreign exchange and converted into rials for their local expenditure.

NIOC received a further \$47 million in bonuses on the conclusion of three more joint-venture agreements in 1972, and after deducting 2 per cent for the general reserve paid the remainder to the Treasury. As a result, the country's foreign exchange income from the operations of the Consortium and joint-venture oil companies amounted to \$2,542.7 million, some 29 per cent more than in 1971.

NIOC's income tax payments to the Government in respect of its 50 per cent shareholdings in IPAC, LAPCO and IMINOCO amounted to Rls. 1,198 million, Rls. 1,959 million



## THE ROLE OF THE OIL INDUSTRY IN IRAN'S ECONOMY

and Rls. 653 million respectively. The total received by the government as income tax paid by all parties in SIRIP, IPAC, LAPCO and IMINOCO thus amounted to Rls. 9,667 million – an increase of Rls. 3,464 million or 55.8 per cent over the corresponding figure for 1971. NIOC also paid Rls. 2,756 million as income tax on net profits and Rls. 2,295 million to the government as dividends on its shareholding in the company.

Oil products sold in Iran in 1972 realized Rls. 34,921 million of which Rls. 12,219 million, consisting of taxes, municipal dues, the price increase of products marketed internally and the levy for charity, was handed over to the governmental organizations concerned. At the same time oil worth of 145 million rials received from Afghanistan.

Rls. 1,220 million was collected as income tax on the salaries and wages of employees of the different oil companies at work in Iran and paid to the Ministry of Finance, and Rls. 1,060 million in come tax on oil industry contractors was paid to the Treasury.

**TOTAL GOVERNMENT REVENUES FROM THE  
IRANIAN OIL INDUSTRY IN 1972**

	In 1,000 Rials
1. <i>Income tax paid by the Trading Companies of the Consortium</i>	131,254,469
2. <i>Income tax paid by the Iranian Oil Operating Companies</i>	1,521,726
3. <i>Stated payments (less 2% general reserve)</i>	35,639,683
4. <i>Income tax paid by SIRIP</i>	675,609
5. <i>Income tax paid by IPAC (Second Party Share)</i>	1,619,110
6. <i>Income tax paid by IPAC (NIOC'S Share)</i>	1,198,447
7. <i>Income tax paid by LAPCO (Second Party's Share)</i>	2,708,526
8. <i>Income tax paid by LAPCO (NIOC's Share)</i>	1,959,109
9. <i>Income tax paid by IMINOCO (Second Party's Share)</i>	853,278
10. <i>Income tax paid by IMINOCO (NIOC's Share)</i>	653,218
11. <i>Bonus payments (less 2% General Reserve)</i>	3,512,075
12. <i>Income tax on NIOC's net profits</i>	2,756,438
13. <i>Dividends</i>	2,295,207
14. <i>Taxes, dues and products price increase</i>	12,219,235
15. <i>Employees' income tax</i>	1,219,967
16. <i>Contractors' income tax</i>	1,059,682
<b>TOTAL:</b>	<b>201,145,779</b>

# EXPLORATION

## **NATIONAL IRANIAN OIL COMPANY:**

NIOC was active in 1972 in the regions of Kermanshah, Lurestan, Saveh, north of Mashad, Quchan, Shirvan, Torbate Heydarieh and southeast of Shiraz.

## **IRANIAN OIL EXPLORATION AND PRODUCING COMPANY**

Seismic surveys were made near Dehloran in the region between Haftkel and Kube Asmari, in Makran southeast of Bibi Hakimeh, and in the region of Rage Safid, Mahshahr, Behbahan and Dehdasht. Geological surveys were made in the Kazerun and Dehdasht regions.

## **IRAN-NIPPON PETROLEUM COMPANY (INPECO)**

Geological surveys were made of various parts of the company's area. Seismic surveys covered some 140 kms., of which 105 kms. were in the west of Shahabad Gharb region, and 35 kms. in the Pataq area.

## **HORMUZ PETROLEUM COMPANY (HOPCO)**

Seismic surveys totalling 3,700 kms were carried out in the company's areas.

## **EUROPEAN GROUP OF OIL COMPANIES (EGOCO)**

Geological surveys of structures in Kuhdasht, and other regions were completed.

## **SOFIRAN (ERAP AGREEMENT AREA)**

This Company, which works as contractor to the National Iranian Oil Company, completed, 2758 kms. of seismic surveys.

## **IRANIAN OFFSHORE PETROLEUM COMPANY (IROP CO)**

Detailed studies were made of gas reserves of the Khuff

# EXPLORATION

formation of the "F" structure in the company's area.

## **PERSIAN GULF PETROLEUM COMPANY (PEGUPCO)**

Some 204 kms. of seismic survey were carried out in order to determine the sites of exploratory wells.

## **IRAN CONTINENTAL OIL COMPANY (CONIRAN)**

Geological surveys were made in the south-west sector of the company's area. The main objective of the company's operations in 1972 was the selection of suitable drilling sites.



## DRILLING

### **NATIONAL IRANIAN OIL COMPANY**

A total 6,738 metres were drilled in 1972 in the regions of Khaneh Sorkh near Khorramabad, Mahidasht near Kermanshah and "Taraz Na'in" near Saveh.

### **IRANIAN OIL EXPLORATION AND PRODUCING COMPANY**

Eight exploratory wells with a total footage of 19,311 metres and 42 development wells totalling 99,980 metres were drilled in 1972. Of the latter, 33 wells were completed as producers.

### **IRAN NIPPON PETROLEUM COMPANY (INPECO)**

The company's first exploratory well was spudded in during November, and had reached a depth of 614 metres by the year's end.

### **EUROPEAN GROUP OF OIL COMPANIES (EGOCO)**

One exploratory well was drilled and had reached a depth of 3,142 metres by the end of the year.

### **SOFIRAN (ERAP AGREEMENT AREA)**

Two wells were drilled on the Sirri structure, both of which were completed as producers. Footage drilled in 1972 totalled 5,959 metres.

### **IRAN CONTINENTAL OIL COMPANY (CONIRAN)**

Work was in progress on two exploratory wells, the total depth of which amounted to 6,006 metres by the year's end.

### **IRAN PAN AMERICAN OIL COMPANY (IPAC)**

Two development wells were drilled in accordance with the company's agreement, and footage drilled during 1972 totalled 1,173 metres.

### **LAVAN PETROLEUM COMPANY (LAPCO)**

Two exploratory wells were drilled and two development wells completed as producers. Footage drilled in 1972 totalled 8,972 metres.

## DRILLING

### **IRANIAN MARINE INTERNATIONAL OIL COMPANY (IMINOCO)**

The company drilled five wells – two exploratory and three development. All of the latter were completed as producers. Drilled totalled 9,877 metres by the years end.

### **SOCIETE IRANO-ITALIENNE DES PETROLES (SIRIP)**

Two exploratory wells were drilled, one of which was completed as a producer. Total depth drilled in 1972 was 6,727 metres.

### **BUSHEHR PETROLEUM COMPANY (BUSHCO)**

Three exploratory wells totalling 8,846 metres were drilled in 1972 two of which were completed as producers.



## PRODUCTION

Production of crude oil and liquid gas in Iran in 1972 reached the level of 294,1 million cubic metres, an increase of 11 per cent as compared with 1971 output. There were 313 wells in production during the year.

Direct production by the National Iranian Oil Company from the Naft-e Shah oil field amounted to 855,974 cubic metres – 22 per cent more than in 1971, and a record for this field.

The Iranian Oil Exploration and Producing Company produced 264.3 million cubic metres of crude oil from the agreement area, some 10 per cent more than in 1971. The production of liquid gas 1.7 million cubic metres, an increase of 9.5% from the last year.

Production of crude by other companies was as follows: LAPCO, 9.8 million cu.m. (an increase of over 25 per cent); IPAC, 7.9 million cu.m. (+8.4 per cent); SIRIP, 4.9 million cu.m. (+49 per cent); IMINOCO, 4.6 million cu.m. (+20 per cent).



## REFINING

Iran's refineries had a total crude oil and liquid gas throughput of 34.1 million cubic metres in 1972.

Tehran refinery processed 5.4 million cu.m. a record for the refinery and 14 per cent more than its designed capacity. The capacity of the refinery's Isomax plant was raised during the year. Altogether 94 engineering and construction projects were completed at a total cost of RIs. 60 million.

The new Kermanshah refinery was inaugurated by His Imperial Majesty the Shahanshah Arya Mehr in May. The refinery processed 834,437 cubic metres of crude during the year, 63 per cent more than in 1971.

Abadan refinery had a crude oil throughput of 24.2 million cubic metres; some 1.7 million cubic metres of liquid gas was refined at Mahshahr Refinery of which some 1.5 million cubic metres of the products were exported and Masjid-e-Suleiman topping plant produced 1.9 million cu.metres.

Work continued on the new Shiraz refinery, the construction of which entered its final stage.





## PIPELINES AND COMMUNICATIONS

Some 12.2 million cubic metres of oil of various grades was transported by the Iranian pipeline system during the year, an increase of about 7 per cent as compared with the 1971 figure.

Amongst the projects completed during the year was the pipeline from the Rey Depot to Mehrabad, built to facilitate the refuelling of planes at the airport. The line is 8 inches in diameter, with a length of 22 kms.

Work began on the construction of the second crude oil pipeline from Ahvaz to Rey, together with the relevant pumping stations. The line will have a diameter of 26-30 inches, and will run for 736 kms. The laying of a 10-inch crude oil pipeline from Gachsaran to Shiraz Refinery was also commenced.

The National Iranian Oil Company's principal communications projects during the year were the centralisation of microwave communications in the Radio Room at the Central Office in Tehran, and the installation of a temporary UHF radio link between Tehran, Shiraz and the Fars Refinery.

In order to expand its activities overseas and to acquire secure outlets and added value for Iranian crude oil, NIOC has participated in a number of overseas refinery projects, the most notable of which are as follows:

### THE MADRAS REFINERY

NIOC's first overseas refinery project was its participation in the Madras refinery which has a designed crude capacity of 2.5 million tons per year (50,000 b/d). Madras refinery, one of the most modern and complex refineries in the world, was designed, constructed, and began its operations under the direct supervision of NIOC experts and technicians. The refinery processed 2.65 million tons of crude oil in 1972, which represented a 6 percent increase over its designed capacity.

### MADRAS FERTILIZER PLANTS

In July 1971, NIOC exercised its option, and acquired 24.5 percent of the shares of the Fertilizer Company. The fertilizer complex is the largest and most modern in India, and it has a capacity for 750 tons a day of ammonia, 885 tons a day of urea, and 1,100 tons a day of mixed fertilizers.

### THE SOUTH AFRICAN REFINERY

This refinery is a joint venture project between NIOC, SASOL and TOTAL. It has a designed capacity of 2.5 million tons per year (50,000 b/d). It processed 5.8 million cubic metres upto the end of 1972, of which 1.7 million cubic metres was from Iranian crude oils.

Extensive efforts are being made to expand NIOC's activities in the fields of refining and marketing of petroleum products in other countries. The most important steps taken in this direction in 1972 were as follows:

## JOINT VENTURE PROJECTS ABROAD

### GREECE

An agreement was reached for the establishment of a joint company for the expansion of the existing Asperopygos refinery and the marketing of its products.

### BELGIUM

In December 1972, the Formation Agreement of the "Irano-Belgian Refining and Marketing Company" (IBRAMCO) was signed between the National Iranian Oil Company and the State of Belgium. Construction of a refinery with a design capacity of 5 million tons per year (100,000 b/d) near the city of Liege, and distribution of its petroleum products in Belgium and nearby countries is being studied by this company.

### EXPORT REFINERIES IN IRAN

With due consideration to the increasing world market demand for petroleum products NIOC, in participation with various other oil companies, has begun feasibility studies for the establishment of Export Refineries in Iran.

### MISCELLANEOUS

Negotiations with various American, European and Far Eastern oil companies, regarding joint venture refining and marketing projects within these areas are also in progress.

## EXPORTS OF CRUDE OIL

Iran's total exports of crude oil plus the crude oil delivered to Abadan Refinery as well as Liquid Gas in 1972 reached the record figure of 281,1 million cubic metres, an increase of 12.0 per cent over the 1971 figure. The Trading Companies of the Consortium exported 253,6 million cubic metres of crude oil and liquid gas from the agreement area to markets throughout the world. (A quantity of 17.8 million cubic metres of crude oil delivered to Abadan Refinery, about 1.5 million cubic metres of gas and 2.4 million cubic metres of crude oil has been exported directly by NIOC from the Consortium area).

Exports by other companies were: LAPCO, 9.8 million cubic metres (+22.6 per cent); IPAC, 8.0 million cu.m. (+10.0 per cent); SIRIP 4.9 million cu.m. (+57.3 per cent); IMINOCO 4.8 million cu.m. (+23.9 per cent).

The National Iranian Oil Company directly exported 13.3 million cu.m. of crude from different Iranian oil fields to various countries of the world which was 104 per cent more than in 1971 and the proceeds of these sales amounted to \$165 million an increase of \$96 million over the 1971 figure.



## DISTRIBUTION AND CONSUMPTION OF PETROLEUM PRODUCTS IN IRAN

Iran's consumption of oil products during the year, excluding natural and liquid gas distributed by the National Iranian Gas Company, rose to 12,751,000 cubic metres, an increase of 10.1 per cent over the 1971, figure. These products were provided by Tehran refinery (39 per cent), Abadan refinery (46 per cent), Kermanshah Refinery (6 per cent) and Masjid-e-Suleiman Topping Plant (9 per cent)

Approximately 68 per cent of these products were transported to their destinations by pipeline, and the remainder by road tankers, the railways, and by sea.

### ESTABLISHMENT OF NEW SALES CENTRES

New sales outlets established during the year included 308 rural outlets (most of which were rural cooperative ventures), 22 filling stations, 36 urban sales centres, and five centres for the distribution of Iranoil lubricants. These new additions raised the total of the country's sales outlets to 11,763 units.

### SALES IN RURAL AREAS

Sales of oil products through the rural cooperatives totalled 537,491 cubic metres, 17 per cent more than last year. Commission on these sales paid to the cooperatives amounted to about 70 million Rials.

### AIRCRAFT REFUELLING

A total of 493,000 cubic metres of aviation fuels were supplied to planes at the country's airports in 1972, 13.3 per cent more than last year. The number of aircraft refuelled totalled 43,000.

### AIRPORTS IN AFGHANISTAN

NIOC's Distribution Department continued its work of refuelling at Kabul and Kandahar airports, where 2,776 air-

crafts were supplied with approximately 11,000 cubic metres of fuel, 10.7 per cent more than last year. In addition, 65,000 cubic metres of gasoline, kerosine and gas oil was exported to Afghanistan.

#### **OTHER ACTIVITIES OF THE DISTRIBUTION GROUP**

Bunkering facilities for ships in the Persian Gulf were established at the ports of Shahpour, Khorramshahr and Lavan.

The company's aerosol insecticide, sold under the name of Reytex was introduced into the market for the first time.

Several new storage depots for oil products were established in different parts of the country.



## AHWAZ PIPE MILLS

In 1972 the two pipe mills at Ahwaz had an output of 88,555 tons, all of which was sold to different sectors of the oil and gas industries, the Ministry of Water and Power, and the private companies.

The 18-42 inch mill produced more than 50 kilometres a month of 26-inch pipe for the second Ahwaz-Tehran pipeline, and made deliveries in advance of the due date.

The mills received orders for more than 120,000 tons of pipe – the largest annual total of orders received since the plants' inauguration.



A. The first stage of the Iranian Gas Trunkline project, the construction of which was completed in 1969, provided for a throughput capacity of 6.3 billion cubic metres of gas annually for export and 2 billion cubic metres for domestic consumption. Construction of the second stage, which will increase the capacity of the line to 16.5 billion cubic metres a year, commenced in 1972, and involves the following work:

### 1. Extension of the Gathering System in the South

In order to gather and transport some 2.8 million cubic metres a day of low pressure gas from Marun Fields a compressor station - Marun 3 - was constructed. The construction of a 32,000 horsepower compressor station at Ahwaz to transport 14 million cubic metres a day of gas from Ahwaz field is in progress.

The design of a 40 inch pipeline, 120 kms long, for the transport of gas from the Ahwaz field to Bid Boland gas refinery reached its final stages during the year.

### 2. Compressor Station at Bid Boland and on the Trunkline

A fourth compressor was installed at Bid Boland compressor station in order to increase throughput in the second stage of Project. All construction work on the compressor station and related installation at Tange Pirzal, situated in the Zagros Mountains 77 Kilometres from the Bid Boland refinery was also completed during the year.

Mainline compressor station will be equipped with additional 16 Soviet made turbo - compressors during the second stage of the Project.



## PLANNING AND ENGINEERING

### 3. Housing and Office Buildings

A number of houses for employees of the National Iranian Gas Company, together with a hostel and related facilities, will be built in the project's second phase; construction of workshops were completed by contractors during the year. Work also began on the NIGC's central office building in Isfahan.

### 4. Commissioning of the Telemetering System and Automation of Stations

The commissioning of the telemetering system on the gas gathering lines and trunk line was completed during the year. The automation of the trunk line stations enabling them to be switched on or off by remote control from the main control centre in Rey, was completed and tested, and by the end of the year two stations, numbers 3 and 7, were functioning automatically.

## B. ENGINEERING AND CONSTRUCTION

A total of 164 projects for pipelines, communications and general construction work were in progress during the year, 24 of which were completed and commissioned. Expenditure on these projects totalled Rls. 6,213,386.

## C. FEASIBILITY STUDIES

Demand for oil products in Iran over the last eleven years has risen from 3.9 million cubic metres in 1960 to 11.6 million in 1971, and is expected to reach about 33 million by 1982. Economic studies indicated the necessity for a new refinery adjacent to the existing refinery in Tehran to meet additional demand from 1973 onwards.

To meet extra demand from 1976 onwards it is proposed that a fifth refinery with a capacity of 80,000 barrels a day

## PLANNING AND ENGINEERING

should be built in north-western Iran. Studies and shown the need for a new products pipeline from Tehran to Tabriz, and since the Tabriz region has also been shown to be the most suitable location for the fifth refinery, this pipeline can subsequently be used to transport the refinery's crude oil requirements.



## THE GAS

The volume of natural gas processed and exported by the National Iranian Gas Company, and of natural and liquid gas sold in various parts of the country, increased during the year. Steps were taken to enter world gas markets, and a joint venture agreement for a large project for the export of Iranian liquid natural gas to U.S.A. and Japan was signed in New York.

A new agreement for the revision of the prices of natural gas exported to the U.S.S.R. was signed, and preliminary studies of a second gas pipeline were commenced.

A total of 9,030 million cubic metres of natural gas was transported by the Iranian Gas Trunkline during the year, 40 per cent more than in 1971. Gas exports to the Soviet Union rose to 8,197 million cubic metres, an increase of 45 per cent. Internal sales of natural gas for household, industrial and commercial consumption underwent a marked increase. In Shiraz, 2,108 consumers utilized 276.2 million cu.m. of gas, 17 per cent more than in 1971. The gas distribution networks in Tehran, Ahwaz, Isfahan and Alborz industrial estate were further extended and consumption in these centres rose to 287.8 million, 2.8 million, 53.1 million and 2.8 million cubic metres respectively. The project for piping natural gas from Sarakhs to Mashhad was commenced, and work is in progress.

A total of 178,000 tons of liquid gas from Tehran, Kermanshah and Abadan refineries, 25 per cent more than in 1971, was sold to 17 LPG distributors while a further 329,278 kg. of liquid gas in containers and 1,561,678 litres in bulk were marketed independently by NIGC.

Products of the petrochemical complexes of Shahpour, Abadan and Kharg continued to find ready markets at home and abroad, thereby playing the dual role of meeting national requirements and providing foreign exchange.

Construction of the sodium carbonate and bicarbonate plants adjacent to the Shiraz chemical fertiliser factory was completed, and trial runs commenced. Work began on the mixed fertiliser and sodium tri-poly-phosphate plants.

Preliminary work commenced on the olefines and aromatics project under the joint-venture agreement concluded with the Japanese group, which is investing a total of \$500 million. This huge project will be a basic step towards the production of the intermediate petrochemicals required for the establishment by the private sector of a wide variety of petrochemical industries.

Another project embarked upon was that for the production of carbon black, used by the rubber and other industries. An agreement for the production of plastic softeners was also signed.

Sales of fertiliser by the Chemical Fertiliser Distribution Company increased considerably, reaching the level of 360,000 tons.

# RESEARCH

NIOC's Research and Laboratories Centre was officially inaugurated by His Imperial Majesty the Shahanshah Arya Mehr in March. The Centre's most important tasks in 1972 were as follows:-

## **BITUMINOUS EMULSIONS**

The research project for the utilisation of bituminous emulsions to reduce loss of water from earth-lined irrigation channels was started in a water reservoir in the neighbourhood of Nosratabad near Ghazvin. A 70 per cent reduction in water loss was achieved in the tests.

Satisfactory results were also obtained from bituminous emulsions used to stabilize sand dunes and promote seed germination.

## **BITUMINOUS BRICKS AND DAMP – PROOFING**

Research into the use of bituminous bricks for rural rebuilding schemes began in co-operation with the Ministry of Development and Housing.

Several new grades of bitumen, for hot or cold application, were developed for the damp-proofing of buildings, and were successfully tested.

## **PROTEIN FROM OIL**

The production of protein from petroleum was carried out successfully on a laboratory scale.

## **GEOCHEMICAL STUDIES**

Research was carried out on new geochemical techniques for use in oil and gas exploration and the evaluation of reserves. Results were successfully tested in a number of oil fields.

## **STUDIES OF AIR POLLUTION**

Research on the problem of air pollution has been in progress for some time. Work done this year included the installation of an air pollution monitoring system in Tehran refinery and the adoption of measures to reduce

refinery emissions.

## AEROSOL INSECTICIDE

Research into the production of insecticides was completed, and NIOC's Aerosol insect killer was placed on the market.

## OTHER PROJECTS

Other research projects and studies carried out by the Research and Laboratories Centre included the following:

Research into catalysts required by the oil refining and petrochemical industries; preparation of standard specifications of petroleum products; research into new formulae for motor oils, transformer oils etc. evaluation of Iranian export crudes as regards sulphur content, calorific value etc.; research into plastics; research into corrosion caused by fuel oil used for power generation; preparation of anti-rust coatings.



## MANAGEMENT, ORGANIZATIONS AND TRAINING

Vigorous action was taken during the year to enrol graduates from Iranian and foreign universities in the oil industry. Following the visit to New York and London of a mission which interviewed 185 applicants for jobs 96 Iranian graduates from foreign universities were engaged.

New employees engaged in the course of the year numbered 3,106. Of these 1,481 were labourers, 1,120 holders of high school diplomas and 505 university graduates with degrees in engineering or doctorates.

The Training and Personnel Planning Division arranged 16 lectures on the principles of management and 20 on leadership, report writing and orientation. These lectures, given in Tehran and the provinces, were attended by 771 oil industry employees. Another 16 employees attended the management seminar at Gachsar.

During the year 481 technicians and artisans were studying in vocational schools (of whom 138 successfully completed the course) and 300 university and high school students were undergoing their apprenticeships in different sectors of the oil industry.

Improved facilities were provided by the company's Central Library, where the number of volumes was raised to 26,899. A credit of RIs. 10 million was placed at the disposal of Tehran University, to be made available as loans to students in accordance with the loans regulations.

A total 15,481 employees enjoyed vacations at the Mahmoodabad holiday camp on the Caspian coast, while 2,787 boys and 1,516 girls between the ages of 12 and 17 stayed at the seaside camp for workers children. In Isfahan, a new club for workers was opened.

The NIOC's Organizations Department continued its activities during the year, and achieved successes in the fields of organisational planning and job descriptions.

## LOANS, PENSIONS AND SAVINGS

More than Rls. 1,400 million worth of loans for various purposes such as house building or repairs, car purchase and emergencies were granted to NIOC employees during the year.

Some 4,600 retired employees or their survivors in Tehran and the provinces received pensions totalling Rials 679.4 million.

About 131 health insurance agreements were signed with retired employees and their families, and 4,499 pensioners and their dependents are now members of the health insurance scheme.

Rials 665,930 worth of *ex-gratia* payments was made to 50 pensioners or their survivors who were in financial difficulties, while 37 pensioners received a total of Rls. 266,876 for medical expenses, in excess of their rights under the insurance scheme, that they were unable to meet.





## HEALTH AND HYGIENE

In the course of the year, 24,821 persons entered the company's hospital in Tehran and the provinces for treatment and occupied beds for a total of 235,772 days. Visits to out-patients departments reached the figure of 2,687,805 and 458,743 inoculations against various diseases were given. The company arranged 295 hygiene classes which were attended by 32,421 persons. Visits to the family planning clinics numbered 39,134.

The construction of the new wing of NIOC's hospital in Tehran was completed, and 40 new beds and an outpatients clinic with five doctors in attendance were added to the hospital, together with a specially equipped three bed unit for the care of heart patients. Close cooperation in research and training was maintained between NIOC's Health Department and the World Health Organization, the Ministry of Health, and the universities of Tehran and Jondi Shahpur.

Towards the end of the year a programme of research into the treatment of streptococcal infections was begun by the company's health department in Abadan, in connection with which more than 800 school children have undergone medical tests.

Training programmes in health and hygiene continued successfully. In the course of the year, seven of NIOC's doctors and nurses underwent specialist training abroad, while 55 student nurses qualified at the High School of Nursing in Abadan and the assistant nurses school in Masjid-e-Suleiman.

## NON BASIC OPERATIONS IN ABADAN AND FIELDS

Altogether 151 different building projects were completed in Abadan and the Field areas in 1972. These projects included the following:

- The construction or repair of oil industry employees' houses and office buildings in the Agreement Area.
- Construction of the new Public Relations building in Ahwaz.
- Construction of the new staff swimming pool in Ahwaz.
- Construction of a playground for workers' children in Karun (Ahwaz)

In order to provide the qualified men needed by the National Petrochemical Company, a full-time two year course in petrochemical technology was arranged for 72 newly engaged apprentices, who will gain practical experience in Abadan refinery and other oil industry organizations and theoretical knowledge in NIOC's Industrial School in Abadan.

A wide range of consumer goods continued to be made available to oil industry employees in stores throughout the Agreement Area.

## EMPLOYEES COOPERATIVES

More than Rls. 700 million worth of goods were sold in stores run by the Oil Industry Consumers' Co-operative Association in 1972, an increase of 45 per cent over last year's orders.

A large supermarket was opened in Tehran, and now has a monthly turnover in excess of Rls. 3,000,000. In addition, three new stores were opened in Shiraz, Kerman and Ahvaz, and a store supplying consumer durables on credit to oil industry labourers was established in Ahvaz.

Greater facilities were made available to labourers for the hire purchase of reasonably priced durable goods, and the company allocated the sum of Rls. 110 million as gratis contribution to the capital of the workers' co-operatives.



**Public Relations** had the honour of co-ordinating the oil industry employees' celebrations of the tenth anniversary of the Revolution of the Shah and the People.

**Public Relations** played a major part in the arrangements for the formal inauguration of the new Kermanshah Refinery, NIOC's Research Centre and the Azarpad sea island terminal by His Imperial Majesty the Shahanshah Arya Mehr and Her Imperial Majesty the Shahbanou. It was also responsible for the arrangement for the celebrations marking the twenty-second anniversary of the nationalisation of the Iranian oil industry.

**Having been given responsibility** for running the oil industry's sport affairs, **Public Relations** organized industry football teams in Tehran and the provinces. These competed for the newly instituted Amir Navidi Cup, the final match of which was played in the presence of His Excellency Dr. Eghbal Chairman of the Board and General Managing Director of NIOC.

**More than 100 NIOC** football teams were organised throughout Iran. A new sports club inaugurated by Dr. Eghbal in Tehransar has facilities for badminton, football, swimming, table tennis, wrestling, volleyball, basketball etc. In Abadan and other oil industry centres there are presently 127 sport fields for the use of NIOC employees and their families.

**Lectures** on the oil industry's activities for the information of the public in general and the teaching profession in particular were arranged in Tehran and the provinces, and a book entitled "Oil and Daily Life" was published, together with numerous booklets on the oil and related industries.

The daily "Yaddashte Rooz" and the monthly "Namehye Sanate Naft" kept employees regularly informed of the latest events and development in the oil industries of Iran and the world. The monthly "Iran Oil Journal" and "Iran Petrole"

**PUBLIC RELATIONS OF THE  
IRANIAN OIL INDUSTRY  
AND  
THE SECRETARIAT**

in English and French respectively, appeared regularly in attractive forms and were circulated to readers in numerous foreign countries.

Other important activities of Public Relations were the arrangement of photographic exhibitions and the showing of films in the cinemas and television network. NIOC's Printing Department installed new equipment for the printing of its daily and monthly publications, books, brochures and posters, and as well as printed forms for the different sectors of the oil industry.

NIOC's Secretariat extended its activities which included the compilation of archives, the distribution of oil publications abroad, and the supply of news items and articles for local and foreign news agencies, the press, radio and television.



**THE INDUSTRY  
IN  
PICTURES  
1972**



*The Azarpad Sea-Island terminal off the Kharg Island*

*His Imperial Majesty the Shahanshah Arya Mehr inaugurates the Azarpad Sea-island terminal on the west coast of Kharg Island.*





*The new Kermanshah refinery is inaugurated in the presence of Their Imperial Majesties the Shahanshah Arya Mehr and the Shahbanoo.*



*The new Kermanshah refinery.*



*His Imperial Majesty the Shahanshah Arya Mehr at the opening of NIOC's research centre and laboratories.*



*I.E. Dr. Eghbal signing the agreement for NIOC's participation in exploration in the British sector of the North Sea.*



*I.E. Dr. Eghbal signs the agreement in Brussels for the formation of the joint venture Franco-Belgian Refining and Distribution Company.*



*Signing of the joint-venture agreement for the export of Iranian LNG to U.S.A. and Japan.*



*Signature of the agreement for the export of chemical fertilizers to Afghanistan.*



*H.E. Dr. Eghbal opens the symposium on air pollution in NIOC's Conference Hall.*

*The Bak Boland Gas Refinery.*



*Offshore drilling by IPAC in the Persian Gulf.*





*Drilling in progress on Ahwaz well.*



*Production Unit No. 1 at Gachsaran.*

*Loading jetty on Kharg Island.*



*In the Ahwaz Pipe Mills.*



*Tehran Refinery at night.*



*The Dr. Eghbal Beach on Kharg Island.*

*Training School in Ahwaz.*

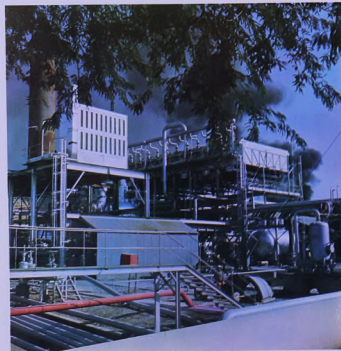


*Gas-oil separator unit at Marun.*



*Loading road tankers*

*Production Unit No. 1, Agha Jari.*



*Fuel for aircraft at Mehrabad*



*Oil storage at Chalus*



Always Production Unit No. 2

**OIL  
STATISTICS  
IN  
1972**

## CRUDE OIL PRODUCTION & EXPORT

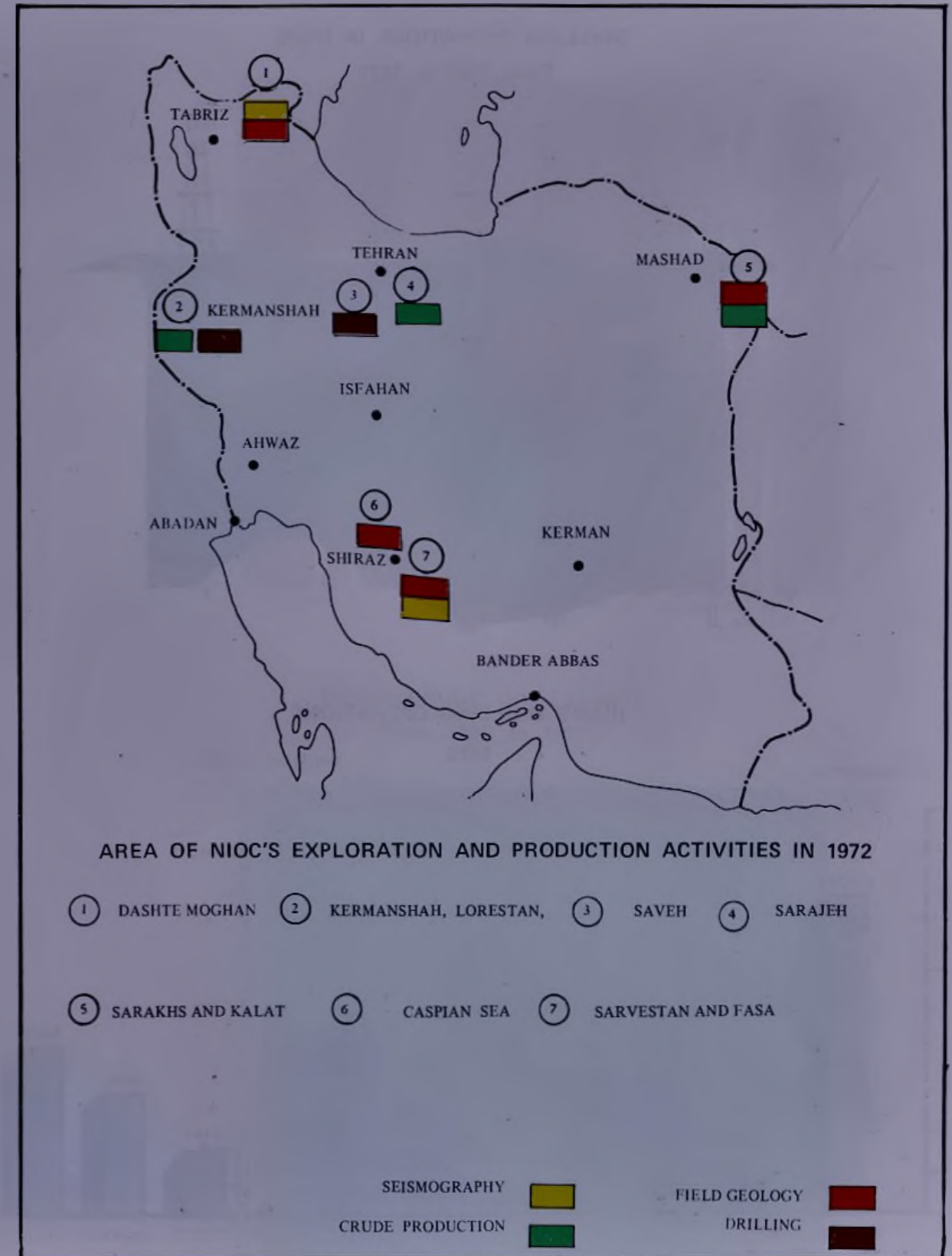
1972

Million Cubic Metres

COMPANY	NET PRODUCTION		EXPORT	
	Quantity	% Change 1971/1972	Quantity	% Change 1971/1972
CONSORTIUM <sup>(1)</sup>	266.0	+ 9.9	253.6	+10.9
LAPCO	9.8	+25.1	9.8	+22.6
IPAC	7.9	+8.4	8.0	+10.0
SIRIP	4.9	+49.3	4.9	+57.3
IMINOCO	4.6	+19.9	4.8	+23.9
NIOC <sup>(2)</sup>	0.9	+22.2		
TOTAL	294.1	+11.0	281.1	+12.0

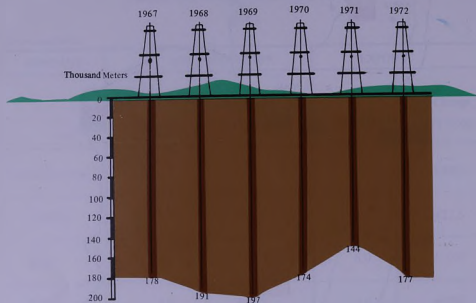
(1) Consists of a quantity of crude oil delivered to Abadan Refinery for export of products & liquid gas.

(2) A total of 13.3 million cubic metres of crude oil was exported by NIOC out of its share from the Affiliated Companies and from the Consortium's Agreement Area which are included in the export figures of each company.



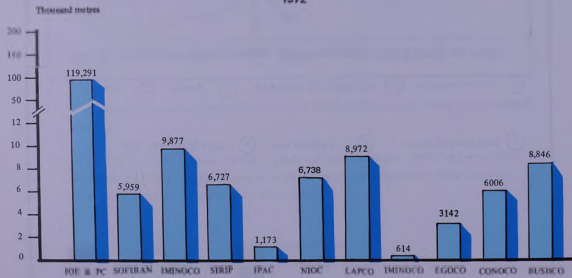
### DRILLING OPERATIONS IN IRAN

From 1967 to 1972



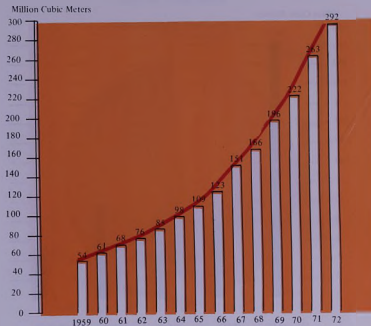
### IRAN'S DRILLING OPERATIONS

1972



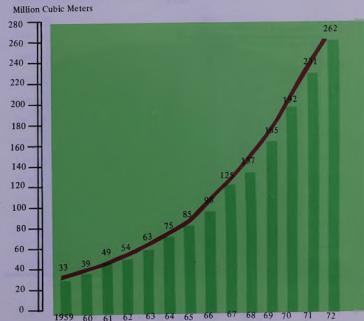
### CRUDE OIL PRODUCTION IN IRAN

From 1959 to 1972

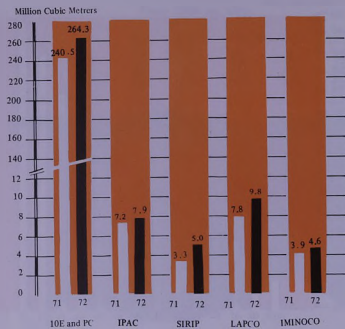


### IRAN'S CRUDE OIL EXPORTS

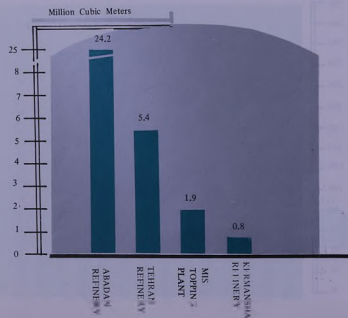
From 1959 to 1972



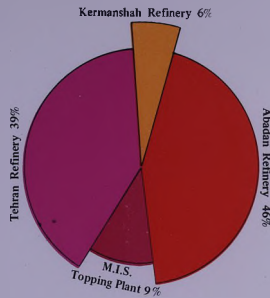
**CRUDE OIL EXPORTS BY COMPANIES**  
From 1971 to 1972



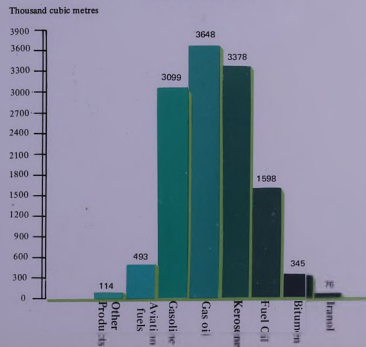
**IRANIAN REFINERIES CRUDE THROUGHPUT**  
1972



**REFINERIES SHARE OF PRODUCTS FOR**  
**DOMESTIC CONSUMPTION**  
1972



**DOMESTIC CONSUMPTION OF OIL**  
**PRODUCTS IN 1972**



Prepared By: Public Relations,  
Iranian Oil Industry, Tehran