

Growth rate of consumption of oil products from 1997-99 (million litres per day)

Year	97	Rate of growth 97 to	98	Rate of growth 98 to	99	Rate of growth 99 to
Product		96		97		98
LPG	9.4	2.2	9.6	2.1	10	7.3
Petrol	35	6.4	38	7.7	39	3.7
Kerosene	29	-4.9	27	-6.2	26	-4.4
Gas Oil	64	2.9	64	-0.8	63	-1.1
Fuel oil	44	3.8	37	-15.4	36	-3.2
Total	182	2.4	176	-3.4	175	-0.6

Growth rate of exports of oil products within 1997-99 (million litres per day)

Year	97	Rate of growth 97 to	98	Rate of growth 98 to	99	Rate of growth 99 to
Product		96		97		98
Kerosene	0	-	0	-	2.41	X
Gas oil	0	-	0.27	X	7.59	2711.1
Fuel oil	35	23.7	43.30	23.7	49.83	15.1
Total	35	23.7	43.6	24.5	59.8	37.3

- Kerosene export started in 99
- Gas Oil export started in 98

Growth rate of imports of oil products within 1997-99 (million litres per day)

Year	97	Rate of growth 97 to	98	Rate of growth 98 to	99	Rate of growth 99 to
Product		96		97		98
Kerosene	3.7	-31.5	0	0	0	-
Gas oil	1.3	-66.7	0	0	0	-
Petrol	5.8	114.8	3.8	-34.5	3.4	-10.5
Total	10.8	-10	3.8	-64.8	3.4	-10.5

Growth rate of imports of oil products from 1997-99 (million litres per day)

Year	97	Rate of growth 97 to	98	Rate of growth 98 to	99	Rate of growth 99 to
Product		96		97		98
LPG	7.8	5.4	81	3.8	8.4	3.7
Petrol	29.3	3.2	33.2	13.3	36	8.4
Kerosene	25.5	0.8	28.4	11.4	28.6	0.7
Gas oil	61.7	6.4	64.7	4.9	69.5	7.4
Fuel oil	76.7	11.5	79.1	3.1	84.2	6.4
Other products	21.8	13	20.9	-4.1	2.7	-1
Total	222.8	7.5	234.4	5.2	247.4	5.5

A comprehensive plan is underway to improve the structure of the refineries through investments and with the help of Iranian and foreign experts

the incentive was different. We were only trying to expand exports as a national move, because our budget was fixed. We have now around 500 million dollars of petrochemicals exports. Last year, we had 2.5 billion dollars of petrochemicals exports.

● *Is this issue because of the growth of gas consumption?*

- Three are three reasons for this issue:

1. Gas replacement
2. Consumption management
3. Expanded refinery output due to amendment of production pattern

In the case of kerosene, there will be no replacement, because it is mostly used in the rural areas. The townships also do not have any replacement policy, because of their specific consumption pattern. In the agricultural, non-industrial, residential and commercial centres, there is no replacement for gas oil, mainly because of the consumption management.

● *What measures have been taken so far to eliminate Tetra-Ethyl in petrol?*

- One of the main considerations in the establishment of the Arak and Bandar Abbas refineries was that they produce lead-free petrol. Currently, 11.5 million litres of lead-free petrol are being produced daily in the country,

whereas the domestic consumption goes no more than 1.3 million litres per day. The reason for the reluctance is that the combustion system of most cars is in a way that they cannot easily burn up lead-free petrol.

This means they will have to use Tetra-Ethyl lead for the better running of the engine. So, the continued use of the substance is because of the situation imposed by the cars on the refineries. We have taken a lot of measures to encourage consumption of lead-free petrol in Tehran, and not to mix the 12 million litres of high-quality petrol with other compounds.

We produce very high-quality petrol, but it is inevitably mixed with other kinds of petrol to become suitable for car consumption. So, it is the cars which impose their consumption pattern on the refineries. Anyhow, we encourage the carmakers to produce cars capable of consuming lead-free petrol.

In the interim, we are planning to use MTBE in petrol. We will try to replace Tetra-Ethyl with MTBE. The system is being conducted only at the Abadan refinery but will be used at other refineries too. The optimisation method of each of these products is different from the other. In the case of fuel oil, the optimisation bid is aimed at replacing fuel oil consumption with gas. In line with the same policy, the power stations are to use gas instead of fuel oil or gas oil. Factories are encouraged to

follow the same policy too.

As for gas oil, we are trying to control the consumption patterns so that it would be replaced with gas consumption. The replacement of kerosene with gas proved highly successful. Yet, the price should not be forgotten, especially for petrol, kerosene, gas oil and LPG. In the first six months of the current year (beginning in March 2000), the fuel consumption increased dramatically. Consumption of major oil products grew by 3.3 per cent in the first five months of the current year and the use of other oil derivatives jumped by 11 per cent. The highest growth occurred for liquid gas, followed by petrol with 8.5 per cent.

● *What was the cause of the increase of petrol consumption?*

- The main reason is low price. The other key factor is the production and sales of new private luxury cars, without declaring the ageing cars out of service.

● *What is your opinion about the merger of the ministries of oil and energy?*

- I give my personal opinion. The Third Five-Year Economic Development Plan has envisioned the merger of some ministries such as Agriculture, Construction Jihad, Industries, Mines and Metals and Energy. It may mean the merger of the ministries of oil and energy too. At any rate, the merger will not solve any of the problems of the Oil Ministry, at least in the areas where we are concerned.

The energy management is mainly a matter of software management rather than hardware management. I think the two ministries should deepen their organisational contacts, and the Plan and Budget Organisation should act more dynamically to reorganise energy management. Otherwise, no problem of the Oil Ministry will be solved. ■

The construction of refinery in Iran has been traditionally aimed at supplying the domestic fuel needs



moves are to be set in place; in the first stage, we have tendered the improvement of the distillation unit 85, and establish a vacuum distillation tower and desalinisation unit to reduce the level of salt in the inlet crude oil. In the second phase, which is being seriously followed, a viscosity breaker unit is to be built at the Abadan refinery. The third work is to reconstruct the existing alkalisation unit and set up a new one. Meantime, an isomerisation unit is to be established.

The cat cracker unit has now been reformed and set in place. A new cat cracker unit is being designed at the Abadan refinery. We are constantly pursuing the change of production pattern in line with the environmental standards at the Abadan refinery.

Such works require mammoth investments. The Abadan refinery is expected to absorb 600-700 million dollars of investments within the next 5-6 years. The works either have begun or are being tendered or designed.

The objectives are more conspicuous at the Bandar Abbas and Abadan refineries. The same reservations have been observed for other refineries. In view of realities, one section of your question has remained unanswered, i.e., the economical nature of the Abadan

refinery. This issue directly hinges on the crude oil price. The price of fuel oil is not directly affected by the oil price. Should the crude oil price climbs down, the price of fuel oil will not plunge. In that case, the Abadan refinery output will not be economical.

From an economic viewpoint, then the sales of crude oil will be admittedly more lucrative than the fuel oil sales. But at the present juncture when the oil price remains high, the production of fuel oil will be profitable. Yet, the reason that we continue production even during oil price plunge is to prevent layoffs and the social ills of unemployment.

With regard to exports, there are three considerations involved: consumption management, gas replacement, and increase of production. During the last three years, we have attempted to reduce consumption. It means with sufficient delivery of fuel, we can make more exports.

● *What is your assessment of the trend of the consumption of oil products? With the current level of consumption continuing, how will be the situation of oil exports in the future?*

- Our imports change in accordance

with the level of consumption and production. Taking into account the expanded domestic output and the control of consumption, I have to say our imports have decreased. In 1998 and early 99, kerosene and gas oil imports ground to a halt. In late 99, we even exported kerosene and gas oil. As the only item imported, the level of petrol imports even diminished in 1999.

● *Is it because of reduced consumption or expanded output of the refineries or both?*

- The quality and output of refineries have changed. Besides, we have launched a consumption management system to replace kerosene, gas oil and fuel oil with gas. What was the result? For the first time in 1999, we exported 878 million litres of kerosene, 2,770 billion litres of gas oil, and 18,178 billion litres of fuel oil. It means we exported 21 billion litres or 20 million tonnes of oil products combined, earning over 2.7 billion dollars in revenues, far more than forecasts of 1.2 billion dollars.

As of this year, the additional income is returned to the NIOC. Last year, the additional export revenues went to the treasure and we were given our budgetary appropriation. Last year,

**our goal is
to raise the quality of products,
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and meet internal fuel demand**

refinery, which produces too much fuel oil has raised doubts that most of the refineries may be uneconomical. Meanwhile, it is not yet clear how much the policy has been successful. Some say the sales of crude oil will earn further income than the sales of fuel oil. Could you explain the level of progress in this refinery?

- The issue of refinery is highly crucial. The construction of refinery in Iran has been traditionally aimed at supplying the domestic fuel needs. Its development plan was even set in tandem with the amount of needs in the refinery. Therefore, the refineries were constructed to produce the country's fuel including petrol, gas oil, kerosene, LPG and fuel oil. Several manufacturing and industrial units used fuel oil.

It should be noted that the Bandar Abbas refinery, the latest constructed refinery in Iran, was designed to produce 28-29 per cent fuel oil. The Abadan refinery, constructed near the oil fields, was designed to make exports. Meanwhile, it was also aimed at supplying the domestic needs. Basically speaking, the Abadan refinery was designed to produce 40-45 per cent of fuel oil. So, it is not proper nowadays to blame the high production of fuel oil at the Abadan refinery.

It is widely expected that the refineries should use modern technology, modernise their process, and optimise their production pattern. At

any rate, the production pattern must be changed. So, we attempted first to set the targets, make investments, and reform the structure.

● *How far the reform can be implemented?*

- Firstly, we have to evaluate the initial goal. The policy focuses on raising the quality of the refinery. It means it can produce lucrative products especially for exports. The refinery should be reformed in a manner that it will go beyond the production of the five mentioned products and will be able to churn out other high-quality output. This means the quality of the productions must be constantly improved. Production of sulphur and aromatic compounds must be reduced. At the same time, the octane level of petrol must be constantly increased and lead petered out.

The second goal is to meet the level of domestic fuel demand which stands as high as in the past. It means we have to produce fuel for cars such as gas oil, petrol and fuel for household consumption, factories, etc.

The third goal is to produce a variety of other products. We are basically attempting to produce the feedstock of other petrochemicals and other downstream products. Such products can be of great assistance to most of the country's industries.

To put it in a nutshell, our goal is to

raise the quality of products, expand exports, diversify output for domestic industries, and meet internal fuel demand. The reason that we have placed the fulfilment of domestic fuel demand at the second stage is that we manage the domestic fuel consumption and replace other fuels with gas. For instance, gas consumption stood at 25 per cent in 1989. Presently, the level of gas consumption has been increased to 45 per cent, and is expected to increase further in the future.

The Third Five-Year Economic Development Plan has been founded on this policy. A comprehensive plan is under way to improve the structure of the refineries through investments and with the help of Iranian and foreign experts, and render a new model of production. This is mammoth task. For the moment, we are performing a hydrotreating system at the Tabriz and Tehran refineries to reduce sulphur level in the output especially gas oil.

Meanwhile, a cat cracker unit is to be set up at the Isfahan refinery, to raise the amount and quality of petrol production. Every refinery is set to implement the same model. In the Bandar Abbas refinery, we are trying to set in place a flexible system, based on which we can constantly change the production pattern and quality of products. The same policy is being conducted at refineries in Kermanshah, Tehran and Shiraz.

The cat reforming plant of the Lavan refinery will soon become operational, which is a marked improvement in the change of production pattern. Whereas the distillation tower of the Lavan refinery was designed to produce ship gas oil and fuel oil, it is now expected to produce high-quality petrol.

An extensive plan is to be implemented at the Abadan refinery. In line with the same policy, three major



Present Situation of Iran's Downstream Oil Industry

An interview with Mohammad Aghaei, Deputy Oil Minister and Managing Director of the National Iranian Oil Refining and Distribution Company (NIORDC)

The NIORDC is one of the four major subsidiary firms of the Oil Ministry, charged with supplying and distributing oil products across the country. In recent years, the NIORDC has made considerable efforts to optimise consumption pattern, and produce high-quality output both for domestic market and exports. At the beginning of the interview, Mr Aghaei described the current situation of the company. Here are excerpts:

The National Oil Refining and Distribution Company was set up in 1992, after the Oil Ministry decided that the NIOC should only get engaged in upstream oil activities including oil and gas exploration at the oil fields and delivery to refineries for preparation for exports. Thus, the downstream oil activities were separated from the company.

The major activities of the company were: transfer and treat crude oil at the refineries for transfer to the major consumption centres; distribute oil products in the country through the major consumption hubs; monitor the telecommunications network of the oil industry; and conduct downstream projects.

With the Oil Ministry's decision, two major downstream oil companies were set up. One of them handles petrochemicals. It means it uses the refined products of the NIGC and some of the gas liquid products of the NIPC. The other one handles downstream oil products which concerns production and distribution. These activities are part of the works done by the NIGC in the production, distribution and transfer of

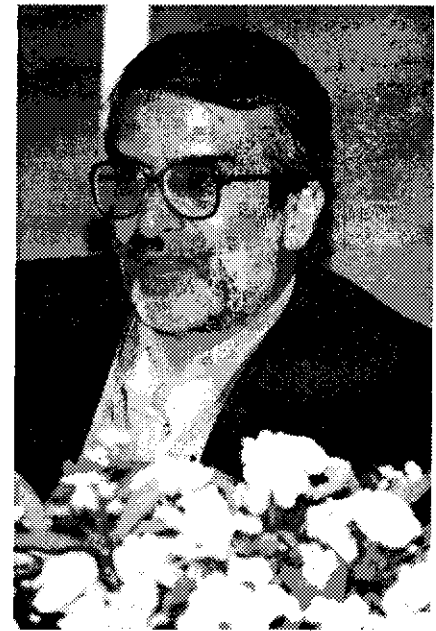
gas.

● *How are your affiliated companies handled financially regarding their budget, costs and revenues?*

In the past, a refinery was considered a cost centre and, it had its own production schedule, specific output, manpower and spare part needs accordingly.

The schedule was a great deficiency for a large refining centre. No other refinery was run like this in the world. Iranian oil refineries run within a five-year plan with certain financial targets set by their own and the Oil Ministry. This issue has been envisioned in the refinery's memorandum of association. Thus, under a parliamentary ratification, we expected them to produce a certain ceiling of output.

The most important aspect of the issue was that the refinery should raise its output within the desirable production schedule, i.e., it should not sacrifice quality for the sake of maintaining a certain level of production. Therefore, before setting a quantity level, a production standard or model had to be defined for the



refinery. This was very important. It means their output must consist of certain amounts of petrol, kerosene, liquefied petroleum gas (LPG), gas oil and fuel oil, along with other miscellaneous products.

Apart from the five major products, 69 per cent of other oil cuts are produced in domestic refineries. One of the crucial issues is to control the production model by production management through the financial management. In order to gain the production quantity with the target percentages of different cuts of products dictated by the production pattern, we set a single price for each of their products. It means the fuel oil gains the lowest price and LPG and gasoline the highest prices. So that the sum of every product multiplied by its price should yield a figure which would match the refinery's production expenses.

Therefore, every refinery attempts to outstrip the defined pattern, to gain additional revenue and spend the increased income for improvement of its own quality.

● *The performance of the Abadan*