

The following table shows the increase in the length of gas network pipelines throughout the country

By the end of the year 1357 (march 21, 1979) 2,054 km
 By the end of the year 1367 (march 21, 1988) 15,188 km
 By the end of the year 1377 (march 21, 1998) 46,758 km
 By the end of the year 1378 (march 21, 1999) 50,926 km

Natural gas extension have also increased considerably over the last two decades (1978-1999) and registers a 21.4% growth. During this period the number of gas extension increased from 51,879 in 1978 to more than 3,057,000 in 1999.

The following tables shows the number of gas extension installed in the country

1357 (beg. March 21, 1978)	Nos. 51,879
1367 (beg. March 21, 1988)	Nos. 8,270,822
1377 (beg. March 21, 1998)	Nos. 2,796,000
1378 (beg. March 21, 1999)	Nos. 3,041,000

The number of consumer extensions and households using the gas supply system has also considerably soared along with the development projects carried out during the said period. The average annual growth of the number of such consumer extensions during the years 1978 to 1999 increased by over 24%. Such growing trend is displayed by the following table:

Year	Consumer Extensions	Households (in thousand)
1357 (beg. March 21, 1978)	46,472	Less than 100
1367 (beg. March 21, 1988)	616,549	903
1377 (beg. March 21, 1998)	3,603,300	4,900
1378 (beg. March 21, 1999)	4,000,000	5,700

The expansion of gas supply system in the country and emergence of consumption potentials at various sectors of consumption were reasons behind increased consumption of natural gas and also increased share of this kind of energy in the state energy consumption basket. During the years 1978 to 1999 consumption of natural gas in the country registered an increase of 16%. Total amount of natural gas annually consumed in the said period increased from 2.5 billion cubic meters to 57.5 billion cubic meters. In 1377 (beginning March 21, 1998), structure of natural gas consumption by sector was as follows:

Residential/ Commercial sector:	33.3%
Industry sector:	26.9%
Power plants sector:	39.8%

Along with increase in consumption of natural gas which replaced for other types of energy conventionally used in the country, the share of natural gas in the energy consumption basket increased from 6.6% in 1978 to 40% in 1999. As a result of this, the share of crude products in the said basket decreased from 81% to about 50%. NIGC is presently equipped with necessary facilities needed during the Third Five Years Economic/ Cultural Development Plan (2000-2005), for materialization of the objectives pursued for:

- 1- Increasing natural gas refining capacity up to 161 MM cm/d.
- 2- Construction of 4,950 km of gas supply pipeline.
- 3- Construction of 17,000 km of gas supply network.
- 4- Installation of 1,300,000 residential/ commercial consumer extensions.
- 5- Installation of 2200 new industrial consumer extensions.

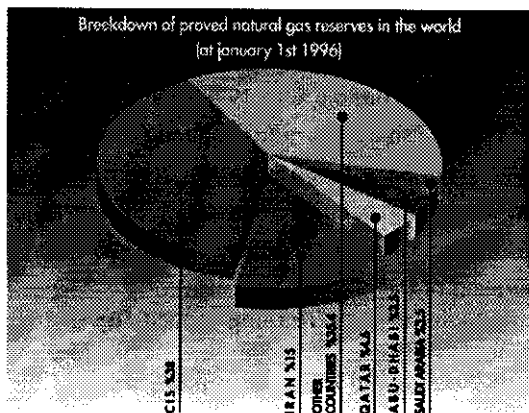
Export of Natural Gas

By signing a contract 1970 with the former Soviet Union, the Islamic Republic of Iran joined the international trade market of natural gas. The contract period was 15 years and total amount of gas supposed to be delivered under the said contract was 10 billion cubic meters per year. But, due to price disagreement between the two parties, the said contract was canceled and terminated in 1979 pursuant to which delivery of the gas was stopped.

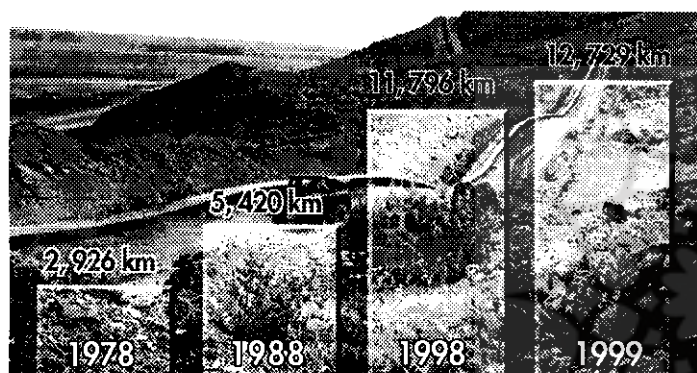
In spite of frequent ups and down of various nature so far experienced in materialization of the objectives pursued at natural gas export sector (export of gas to Europe, export of liquefied natural gas to Japan- Kalingas project), and also priority of consumption of natural gas inside the country, exporting of gas has been taken in account. Iran has so far completed studies and taken measures of various nature during the recent years for boosting export of its natural gas to neighboring countries such as Turkey, Pakistan, Azerbaijan, and Armenia, as well as to India and Europe.

As regards, export of natural gas, based on a 22 year long contract signed for selling gas to Turkey, NIGC is now to deliver up to 10 billion cubic meters of gas a year to Bootash company which is in charge of purchase and distribution of gas in Turkey.

In addition, other studies are being carried out for export of gas to Pakistan and India. The economic feasibility of exporting gas to East Asia via Indian continent is another topic in the agenda. There are also some other separate contracts finalized with Azerbaijan and Armenia for export of 3 billion cubic meters a year of Iranian gas to those countries. And finally, a comprehensive study has been carried out by an Iranian/ European consortium for finding ways of exporting gas to Europe, the result of which will be announced soon. ■



The Iranian gas transmission system considerably developed over the last 21 years can be seen in the following table:



At international gas market, Iran ranks the second in the world for gas reserves. In 1998, the proved Iranian gas reserves was about 23 trillion cubic meters. This figure is equal to 15% of the total natural gas reserves of the world, 47% of the total Middle East gas reserves and 36% of the total gas reserves available to oil exporting countries - OPEC.

Consumption of natural gas in Iran boomed after the victory of the Islamic Revolution. Such increase was mainly due to implementation of ambitious projects for using natural gas as a substitute for meeting domestic fuel requirements, while the amount of gas needed at export sector and also for injection of the oil wells was maintained without any considerable change. As a result of the said fuel substitution and also increased share of gas in the total energy consumption basket, development of the facilities needed for gas production, transmission and distribution throughout the country proportional to such increased amount of consumption became an imperative and unavoidable necessity.

The development of new gas fields, construction of gas transmission pipelines and suitable refining installations as well as distribution systems are among the factors be taken into consideration in studying and execution of the projects.

Having recruited a personnel of 18000 for administrative and operational works, NIGC is presently assigned with the task of refining, transmission and distribution of gas to customers at various points of consumption. The process through which gas enters energy consumption basket can be reviewed at a short glance. Presently, the Islamic Republic of Iran has 4 refineries and 5 treating plants which are located at various places throughout the country. In 1999, total nominal capacity of these refining and treating plants installations was over 183 million cubic meters per day.

Bidboland refinery, the oldest gas refinery in Iran with a nominal capacity of 23 million cubic meters of gas per day, transfers, after refining, the gas obtainable from the South Fields to the first Iranian gas Trunkline (IGAT I). The said pipeline which extends from the South up to the North of the border city of Astara conveys the gas to the points of consumption at the South- North route in Iran (the pipeline is 1,100 km long and has diameters of 40 and 42 inches).

The huge refinery of Fajr with a nominal capacity of about 105 million cubic meters (including a standby unit) transfers the gas produced in Nar and Kangan fields to the second Iranian gas Trunkline (IGAT II). This pipeline is generally constructed in parallel with the first pipeline. It is 1,300 km long and has a diameter of 56 inches.

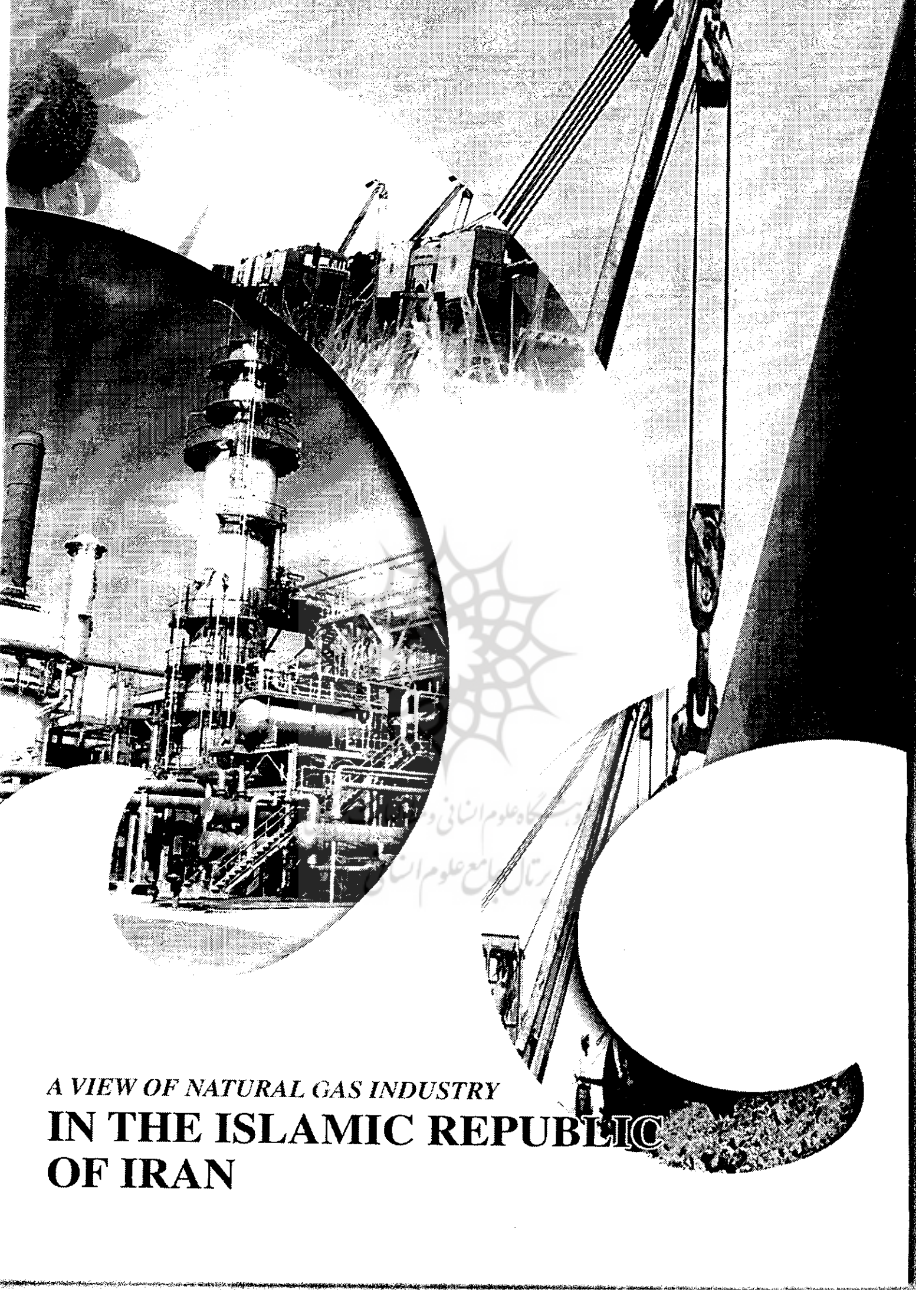
Shahid Hashemi Nejad Refinery was designed and constructed 16 years ago for the first phase with a nominal capacity of 21 million cubic meters per day: it transfers the gas from North- East to the northern parts of the country via Sarakhs- Neka- Rasht pipeline. This pipeline is 1,200 km long with diameters of 30 and 36 inches.

In designing the refining system for each "sweetening unit" installed in the refinery, one dehydration unit has also been designed. There is also dehydration unit installed at each sweet gas production field (Sarajeh in central Iran, Sarkhoon and Gavazrin in southeast, Gondbadli and Shorijeh in the north east).

The total length of under high pressure pipeline laid in the country as at the end of the year 1375 (March 21, 1996) was about 10,213 km,. The most important of these pipelines for size and length are the first and second Iranian gas Trunkline (IGAT I & II), 30" pipeline through Sarakhs- Neka- Rasht, and the west and north west pipeline.

In tandem with the development of the refining system and HP pipelines in the country, the gas distribution system of urban and rural areas has also considerably been developed.

The networks installed for supply of natural gas throughout the country during the years 1978 to 1999 with an average growth of 17% have increased from 2,054 km to 51,133 km.



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A VIEW OF NATURAL GAS INDUSTRY
IN THE ISLAMIC REPUBLIC
OF IRAN