UNESCWA

ECONOMIC AND SOCIAL COMMISSION
FOR WESTERN ASIA

UNITED NATIONS
DEVELOPMENT PROGRAMME

Distr.
GENERAL
E/ESCWA/ENR/1992/WG.1/13
10 June 1992
ORIGINAL: ENGLISH

Interregional Symposium on Gas Development and Market Prospects by the Year 2000 and Beyond
20-26 June 1992
Damascus

Natural Gas Exploration and Development in the Syrian Arab Republic*

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* Issued without formal editing.

92-0312

Considerable efforts have been deployed in the Syrian Arab Republic to develop natural gas resources. Plans to promote the use of natural gas have been included in the overall development plans and gas use is encouraged in different industries and in power generation. The percentage of electric power generated by natural gas is projected to reach about 70% of the total electricity produced. Gas will be used as a raw material in fertilizers production as well as in the process of reducing iron oxide in the iron industry. Continued exploration for non-associated natural gas deposits is expected to result in higher reserve levels. Ultimately the exploitation of natural gas reserves will lead to considerable replacement of oil and petroleum products consumed enabling the country to export more oil. Expected increase in oil revenues will positively affect the economic performance and the long-term economic growth prospects in Syria.

Hydrocarbon exploration activity in Syria dates back to the 1940's when several wildcat wells were drilled on different structures by the Iraqi Petroleum Company Ltd. (IPC). Exploration work continued, after interruption during the second World War, at the end of 1940's and during the 1950's. Discoveries of oil fields occurred during this time namely the Karatchouk, Roumailan and Souedie fields. The fields were developed by the Syrian Petroleum Company (SPC) and were put into commercial production. Transportation of oil to the export terminal on the Mediterranean Sea through an oil pipeline from Souedie (Tal Adas) to Tartous, commenced in 1968.

Extensive exploration programmes and development activities continued during the sixties by the SPC in different areas of the country. The SPC also concluded service contracts with international oil companies for the exploration and development of oil and gas in concession blocks.

Several gas discoveries were made during the fifties and sixties including the Ghouna field in the year 1948 by the IPC[1/] and Soukhne field in 1968 by the SPC. The low prices of oil and oil products at that time, and the absence of an infrastructure required for gas utilization delayed the domestic use of free gas. The use of associated gas was limited to the oil heaters in the Souedie field.

An important step in gas utilization was taken in 1972 when three gas turbines were installed in the Souedie field using the associated gas. The generated electric power was used to supply the oil fields with the network in the year 1987. Two turbines were installed in Souedie and put into production in the year 1984, followed by additional five turbines in the year 1989 which are currently operated by the Ministry of Electricity.

The first gas treatment plant began operating in 1984 in Souedie with a nominal capacity of 660 thousand cubic meters of associated gas per day. In 1988, the development of four gas fields in Jbissa was completed, and a gas treatment plant of 1.7 million cubic meter of gas per day nominal capacity began operating. This gas is transported to the consumers in Homs area via a 475 km long 16 inch pipeline.

1/ A study was presented by Dr. M. Makki, Professor in the Civil Engineering Faculty, University of Aleppo, in 1951, called "Natural gas and the Importance of its Utilization in Syria". The study was based on the results of IPC activities in Khabour area (i.e Jbissa and is vicinity, especially Ghouna). The advantages of using natural gas were presented, as well as means of gas treatment and transportation. The presence of free gas reserves in the area was noted, and initial production at a level of (650) thousand cubic meters per day with the possibility of reaching up to (5) million cubic meters of gas per day was highlighted. The study suggested building a 24 inch pipeline to transport the gas, with the possibility of generating 560 million kwh per year using this

gas, which exceeded the electric demand in Syria, at that year, by ten fold.

In November 1991, the Al Furat (Syria/Shell group) Omar Field associated gas treatment plant was commissioned. The nominal capacity of the plant is about 4.5 million cubic meters of associated gas per day. This gas will be transported to consumers in Damascus, Homs and Mahardi via an 18 inch pipeline. The pipeline route to Damascus is about 440 km in length, while it is about 200 km from Palmyra to Homs and Mahardi. The associated gas of the Thayyem oil field is supplying 3 gas turbines of 30 MW each with gas. Also, the associated gas from Qbeibe and El Hol oil fields is transported to the Jbissa Gas Treatment Plant. Thus, instead of flaring the associated gas much higher utilization percentage has been achieved.

In addition, the planned development of non-associated gas fields in the mid-region of the country and in the concession area of Palmyra Block will lead to a great saving in the consumption of oil products, allowing more oil to be exported, and to improving the efficiency of the power stations. The electric energy generated using gas will constitute about 70% of the electricity consumed in Syria by the year 1995. The contribution of natural gas in other sectors of industry, such as cement and steel factories will be increased considerably.

After developing the known natural gas reserves in Syria, the average daily production of gas is expected to reach 21 million cubic meters. This level of production is expected to be maintained for 20 years. However, new discoveries in potential areas, such as Nabek, and the marginal areas of Palmyra should result in higher production levels and stimulate new gas utilization projects.

The demand for liquefied petroleum gas (LPG) is also expected to increase in Syria and reach the level of about 360 thousand tonnes in 1991. 50 percent thereof will be supplied from the Gas Treatment Plants in Souedie, Jbissa and Omar.