

THE MINERAL INDUSTRY OF

SYRIA

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Hydrocarbons continued to dominate Syria's mineral industry, improving the Nation's balance of payments position. The discovery and development of domestic reservoirs containing light, low-sulfur crude oils provided suitable blends for Syria's traditionally heavier crudes as well as a higher-priced export crude. The development of nonassociated natural gas deposits in the north and northeast released additional fuel oil for export markets as greater quantities of natural gas became available for the generation of electric power. Natural gas also provided a feedstock for the production of ammonia and the further development of the fertilizer industry. Eventually, natural gas exports to neighboring countries are planned via pipeline.

Other significant mineral industries include gypsum and phosphate rock mining, the manufacture of fertilizers and cement, and the manufacture of steel from domestic and imported scrap.

An investment law encouraging domestic and foreign private participation by lifting restrictions on foreign-exchange transactions, as well as providing tax and customs concessions, was adopted. During 1994, most private investment was directed toward agricultural and tourism activities. Early private involvement in the minerals industry was expected to occur in petroleum refining and petrochemical ventures.

Crude oil production averaged 579,000 barrels per day (bbl/d) in 1994, an increase of 9,000 bbl/d over the previous year's level. Daily production approached 600,000 bbl/d in the last quarter of 1994 and output for 1995 was expected to exceed a 600,000 bbl/d average. The increased output is attributed to the Al-Furat Petroleum Co.'s operations at Dayr az-Zawr and Al-Sham.

Until recently, the lack of investment capital has precluded mineral exploration, deposit development, or equipment repair, replacement, or improvement. However, with the availability of financial aid for Syria's support in the expulsion of the Iraqi forces from Kuwait, the development of nonhydrocarbon minerals should improve. (*See table 1.*)

After three decades of negative trade balances, Syria reported a trade surplus for each year since 1989. Total exports were estimated at \$4 billion, of which approximately \$2.5 billion was derived from petroleum exports. Shipments to the United States in 1994 totaled 6.8 million barrels (Mbbbl) of crude and unfinished oils.

Exports of Syria's other significant mineral product, phosphate rock, was reported at more than 1 million metric tons (Mmt) in 1994, most of which was destined for Europe.

Syria had a state socialist economic system with a growing and vigorous private sector. However, the mineral industry remained owned and controlled by the Government. All mining, processing, and distribution companies are Government-operated firms. Hydrocarbon exploration concessions, however, have been granted to foreign companies on behalf of the Syrian Government.

The construction of an integrated iron and steel plant at Al-Zara near Hamah in east-central Syria was proposed. The plant is to include a U.S. Midrex direct reduction unit with a capacity of 800,000 metric tons per year (mt/a). Plant construction would also include two electric arc furnaces capable of producing 770,000 mt/a of liquid steel and two ladle furnaces for refining the liquid steel. The plant also was to include two five-strand continuous casting billet casters to produce 740,000 mt/a of 130-millimeter (mm) billets, a high-speed, single-strand mill to roll wire rods of 5.5- to 12-mm diameters in coil weight of 1,750 kilograms (kg), and a continuous merchant bar mill with 18 strands. The cost was projected at \$750 million. Saudi Arabia had pledged \$500 million in support of the project.

The Hama cement plant was expected to increase capacity by about 1 Mmt. Partial financing for the project, \$72 million, was obtained from the Kuwait Fund for Arab Economic development.

The long-delayed building of the phosphatic fertilizer complex at Palmyra continued under negotiation. The plant design capacity includes 500,000 mt/a of triple superphosphate (TSP). Arab financing agencies pledged most of the capital necessary for construction.

The overhauling of the fertilizer complex at Homs was behind schedule, and completion originally scheduled for 1993 was not expected before 1995.

Encouraged by Marathon Oil Co.'s discovery of major natural gasfields in the Palmyra (Tadmur) region, with combined reserves of 85 billion cubic meters (m³), the Government put a high priority on increased utilization of natural gas. Consumption was expected to rise rapidly in this decade, eventually accounting for 30% of the total annual energy consumption by the year 2000. Natural gas accounted for less than 10% of annual energy consumption. Several projects were underway, including the conversion of two power stations to natural gas fuel, the Baniyas with a 680-megawatt (MW) capacity and the Mardikh with a 630-MW capacity, and the construction of a gas-fueled power station at Tishrin with a 400-MW capacity. The later project was granted partial financing of \$89.4 million by the Kuwait

Fund for Arab Economic Development. Two cementworks were to be gas fueled, and the construction of a natural-gas-based fertilizer plant was planned for Homs. Syria also is considering piping natural gas to Lebanon and Turkey.

The Al-Furat Petroleum Co. development plans included construction of a natural gas gathering system encompassing the Umar, North Umar, Sharifah, Ash Shajar, Shahil, Al Isba, and Tanak Fields.

The Syrian Government encouraged the revival of foreign interest in petroleum exploration and the use of secondary recovery in fields that have been considered mature. The Syrian Petroleum Corp. entered into exploration and production-sharing agreements with foreign companies. Although most of the new exploration activity was centered in east-central Syria near Dayr az-Zawr, concessions also were awarded in the Palmyra area, in a region south of Damascus, and in the extreme northeast region near the Syrian Petroleum Co.'s producing fields.

Syrian refining policy was to operate its two refineries at full capacity to maximize the production of middle distillates; however, this policy resulted in large surpluses of fuel oil that have been difficult to export because of their high-sulfur content while gasoline and diesel oil production fell short of domestic consumption requirements. By yearend 1994, bids were being evaluated for the overhaul and conversion of the Homs and Baniyas refineries with the objective of producing a higher proportion of light products. The Government also was considering the construction of a third refinery. The refinery, to be located in the northeast at Dayr az-Zawr near the major oilfields, was expected to have a capacity of 65,000 bbl/d.

The Syrian Ministry of Oil, Electricity and Natural Resources reported recoverable natural gas reserves at 225 billion m³, of which 37 billion m³ was associated natural gas, 128 billion m³ was nonassociated natural gas, and 60 billion m³ was cap gas. Proven petroleum reserves were virtually unchanged at 1.7 billion bbl. Much of the Nation's oil and gas reserves are in seven major fields, the largest of which was Suwaydiyah in the extreme northeast section of the country. Proven reserves of this field alone are reported at 1 billion bbl of liquid hydrocarbons and 5.6 billion m³ of natural gas.

Railway transportation was available in northern and western Syria servicing the major cities and the three principal ports of Baniyas, Latakia, and Tartus. The existing hydrocarbon pipelines include the Iraq Petroleum Co. (IPC) pipeline traversing Syria from east to west. The pipeline had been closed for Iraqi use since 1982; however, sections of the pipeline were converted to domestic use. More than 100 kilometers (km) of the IPC pipeline was used for natural gas transmission forming part of the 377-km pipeline from the Jubaisseh gas processing plant to the fertilizer complex and refinery in Homs. Another section of the IPC line transported crude oil to the Homs refinery from the Al-Thayyim, Al Ashara, and Al-Ward Fields, which were connected by spur lines to the main pipeline. With the onset of production, two spur lines were constructed connecting the Al-Thayyim Field along with its smaller satellite fields and the Umar Field to

the IPC pipeline.

Installed power generation capacity was 3,000 MW, with thermal power stations accounting for about 2,100 MW and hydroelectric powerplants accounting for about 900 MW.

Syria's posture during the Gulf crisis ended years of isolation from the Gulf states, gaining the Government substantial financial resources to undertake several infrastructure rehabilitation projects as well as projects to revitalize ailing state enterprises. In addition to about \$2 billion in Arab funds, Japan provided a \$460 million loan, most of which was to be spent on the 600-MW Jandar combined cycle power station. The European Union provided about \$210 million, and smaller amounts were pledged by other nations. This surge in aid and the passage of less restrictive investment laws made Syria one of the more active business locations in the Middle East.

The public-sector development program includes a 750,000-mt/a-capacity iron and steel complex, a 500,000-mt/a-capacity TSP plant near Palmyra, and two cement factories with a combined capacity of nearly 2 Mmt/a.

The discovery of nonassociated natural gasfields and the increased utilization of associated natural gas was expected to reduce the demand for fuel oil and thus increase refined product export potential. Refurbishing of the two petroleum refining facilities operating at low levels of efficiency and high levels of pollution was expected to bring marked improvement to Syria's downstream petroleum operations.

Total installed electric capacity was scheduled to reach 5,000 MW by the year 2000. At that time, natural gas-fired generating capacity would account for more than one-half the total, and hydroelectric capacity was scheduled to rise to 1,700 MW.

Syria planned to take advantage of both the growing availability of natural gas feedstock and its indigenous reserves of phosphate by further developing its fertilizer industry.

¹Text prepared June 1995.

²Where necessary, values have been converted from Syrian pounds (£Syr) to U.S. dollars at the rate of £Syr11.2=US\$1.00.

Major Sources Of Information

Baniyas Refining Co.

P.O. Box 26

Baniyas, Syria

Telephone: [963] 238/307

General Company of Homs Refinery

P.O. Box 352

Homs, Syria

Telephone: [963] 22771/22768

General Company for Phosphate and Mines

Palmyra Road, P.O. Box 288

Homs, Syria

Telephone: [963] 31 20405

TABLE 1
SYRIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity		1990	1991	1992	1993	1994 e/
Cement, hydraulic	thousand tons	3,500	3,500	3,700	4,500	4,500
Gas, natural: e/						
Gross	million cubic meters	3,750	4,470	5,000	5,000	5,000
Dry	do.	1,200	1,400	2,800	2,800	2,800
Gypsum		15,500	175,000	234,000	235,000	235,000
Iron and steel: Steel, crude		76,000	63,000	70,000	70,000	70,000
Natural gas liquids	thousand 42-gallon barrels	750	800	1,800	1,800	1,800
Nitrogen:						
N content of ammonia		104,000	17,200	80,500	66,700	66,700
Urea		111,000	3,300	43,700	75,000	75,000
Petroleum:						
Crude	thousand 42-gallon barrels	140,000	172,000	194,000	208,000	211,000
Refinery products:						
Liquefied petroleum gas	do.	1,900	1,800	1,800	1,800	1,800
Gasoline	do.	11,100	9,600	10,900	9,800	9,800
Naphtha	do.	5,000	5,000	5,000	5,000	5,000
Jet fuel	do.	4,000	4,200	4,500	4,500	4,500
Kerosene	do.	1,500	1,500	1,400	1,600	1,600
Distillate fuel oil	do.	24,000	24,800	27,400	25,000	25,000
Residual fuel oil	do.	36,000	35,700	34,700	35,000	35,000
Asphalt	do.	1,400	1,300	1,400	1,400	1,400
Other	do.	1,700	1,700	1,800	1,800	1,800
Total	do.	86,600	85,600	88,900	85,900	85,900
Phosphate rock:						
Gross weight	thousand tons	1,630	1,360	1,270	931	1,200
P ₂ O ₅ content e/	do.	511	425	395	400	400
Salt		127,000	127,000	127,000	130,000	130,000
Stone, sand and gravel:						
Stone: Dimension, marble e/	cubic meters	18,000	18,000	18,000	18,000	18,000
Sand and gravel	thousand tons	8,000	8,000	4,095	4,200	4,200
Sulfur, byproduct of petroleum and natural gas		29,700	30,000	30,000	30,000	30,000

e/ Estimated.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits; may not add to totals shown.

2/ Table includes data available through June 1, 1995.

Source:

Nitrogen: 1990 Int'l Fertilizer Industry Assoc. May 1991

Petroleum: Inter'l Energy Annual DOE; 1991 crude oil MEED 20 Mar.92

Sulfur: Mineral Questionnaire 1990, Arab Oil and Gas Directory 1992 (12,800 mt S plus n gas proc plants.)

Gypsum:

Phosphate Rock: 1990; Int. Fert Assoc. 1991

Salt:

Steel IISI 20 March 1995.