

# THE MINERAL INDUSTRY OF

# SYRIA

By Bernadette Michalski

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 were 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.

The Nation's gross domestic product (GDP) was estimated at \$14,000 million.<sup>1</sup> Mining and manufacturing account for 14% of GDP.<sup>2</sup>

Crude oil production averaged 610,000 barrels per day (bbl/d) in 1995, an increase of 21,000 bbl/d over that of 1994. The increased output was attributed to the operations of the Dayr az-Zawr Petroleum Co. from its Qahar and Jafra Fields. The Al-Furat Petroleum Co., a joint venture between Syrian Petroleum Co., Royal Dutch/Shell, and Deminex, maintained production at an average of 405,000 bbl/d. Details of Syrian mineral production are shown in 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 1995 totaled 2.46 million barrels (Mbbbl) of unfinished oils.

Exports of Syria's other significant mineral product, phosphate rock, was reported at more than 1 million metric tons (Mt) in 1995, 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 were 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 was expected to include an 800,000-metric ton per year (t/yr) capacity U.S. Midrex direct reduction unit. Plant construction would also include two electric arc furnaces capable of producing 770,000 t/yr of liquid steel and two ladle furnaces for refining the liquid steel. The cost was projected at \$750 million.

The Syrian Saudi Co. for Cement was formed in 1995 with 42% equity provided by a Saudi Arabian private business group, 14% provided by the Syrian public sector company, The General Establishment for Cement, and 44% as public offering.

Syria's fertilizer manufacturing industry was centered around Homs. There were three plants in operation—two produce nitrogenous fertilizers and the third produces phosphate fertilizers. The later was expanded from a capacity of 250,000 t/yr to 450,000 t/y by yearend 1994. A second phosphate plant was to be developed near Palmyra. The proposed 500,000-t/yr capacity triple superphosphate plant has undergone considerable delays.

Encouraged by Marathon Oil Co.'s discovery of major natural gasfields in the Palmyra (Tadmur) region, 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. In 1995, 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. Syria was also investigating the possibility of 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 were mature.

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. 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. Refining capacity was 220,000 bbl/d in 1995. 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 Petroleum Co. reported proven recoverable natural gas reserves at 234.5 billion cubic meters (m<sup>3</sup>) on January 1, 1995. Proven petroleum reserves were virtually unchanged at 1.7 billion barrels (bbl). Much of the Nation's oil and gas reserves were in seven major fields, the largest of which was Suwaydiyah in the extreme northeast section of the country. Proven reserves of this field alone were reported at 1 billion bbl of liquid hydrocarbons and 5.6 billion m<sup>3</sup> 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 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 3,280 MW, with thermal power stations accounting for two-thirds and hydroelectric powerplants accounting for the remainder.

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. The passage of less restrictive investment laws made Syria one of the more active business locations in the Middle East.

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.

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.

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<sup>1</sup>Where necessary, values have been converted from Syrian pounds (£ Syr) to U.S. dollars at the rate of £Syr11.2=US\$1.00.

<sup>2</sup>Middle East Economic Digest Feb. 9, 1996.

## 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/

(Metric tons unless otherwise specified)

Commodity	1991	1992	1993	1994	1995 e/
Cement, hydraulic thousand tons	3,500	3,700	4,500	5,000 r/	6,000
Gas, natural: e/					
Gross million cubic meters	4,470	5,000	5,000	5,000	5,000
Dry do.	1,400	2,800	2,800	2,800	3,000
Gypsum	182,589 r/	234,432	299,812 r/	301,600 r/	300,000
Iron and steel, steel, crude e/	63,000 2/	70,000	70,000	70,000	70,000
Natural gas liquids thousand 42-gallon barrels	800	1,800	1,800 e/	1,800 e/	1,800
Nitrogen:					
N content of ammonia	17,200	80,500	66,700	67,000 r/	67,000
Urea	3,300	43,700	75,000	75,000	75,000
Petroleum:					
Crude	179,580 r/	175,600 r/	208,000	211,335	222,650 2/
Refinery products:					
Liquefied petroleum gas thousand 42-gallon barrels	1,800	1,800	1,800	1,800 e/	1,800
Gasoline do.	9,600	10,900	9,800	9,800 e/	9,800
Naphtha do.	5,000	5,000	5,000	5,000 e/	5,000
Jet fuel do.	4,200	4,500	4,500	4,500 e/	4,500
Kerosene do.	1,500	1,400	1,600	1,600 e/	1,600
Distillate fuel oil do.	24,800	27,400	25,000	22,000 r/ e/	22,000
Residual fuel oil do.	35,700	34,700	35,000	39,700 r/ e/	39,700
Asphalt do.	1,300	1,400	1,400	1,400 e/	1,400
Other do.	1,700	1,800	1,800	1,800 e/	1,800
Total do.	85,600	88,900	85,900	87,600 r/ e/	87,600
Phosphate rock:					
Gross weight thousand tons	1,360	1,270	931	1,203	1,551 2/
P <sub>2</sub> O <sub>5</sub> content e/ do.	425	395	286 r/	371 r/	477 2/
Salt e/	74,000 r/	84,000 r/	113,000 r/	127,000 r/	130,000
Stone, sand and gravel: e/					
Stone, dimension, marble cubic meters	18,000	18,000	18,000	18,000	18,000
Sand and gravel thousand tons	8,000	4,095 2/	4,200	4,200	4,200
Sulfur, byproduct of petroleum and natural gas e/	30,000	30,000	30,000	30,000	30,000

e/ Estimated. r/ Revised.

1/ Table includes data available through May 15, 1996.

2/ Reported figure.