The Mineral Industry of the United Arab Emirates

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The production of natural gas and crude oil and international and regional trade were significant facets of the economy of the United Arab Emirates[1] (UAE). Of the seven emirates, Abu Dhabi accounted for most of the country's crude oil production; Dubai, Ras Al-Khaimah, and Sharjah also produced hydrocarbons. Other minerals and mineral commodities produced in the UAE included aluminum and steel manufactured in Dubai; ammonia manufactured in Abu Dhabi; cement manufactured in Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al-Khaimah, and Sharjah; chromite mined in Fujairah; and stone quarried in Ras Al-Khaimah. Also, ceramic tiles, glass, and gypsum were produced in various Emirates. All mineral resources were controlled by the individual Emirates and administered by the Federal Government.

The UAE had an estimated GDP based on purchasing power parity of about $103.6 billion[2] and a GDP per capita based on purchasing power parity of $23,818. In 2004, crude oil, natural gas, and other mineral production accounted for 29.2% of the GDP; the manufacturing sector (which included the production of liquefied natural gas, refined petroleum, and rolled steel products) accounted for 13.9%, and the construction sector, 7.8%. Total population was estimated to be more than 4.3 million in 2004, primarily in Abu Dhabi (1.7 million), Dubai (1.3 million), and Sharjah (0.7 million). Of the country's labor force of 2.5 million, 497,974 worked in the construction sector, 319,384 in the manufacturing sector, 30,015 in the crude oil and natural gas sector, and 5,560 in quarrying. About 25% of the country's population was less than 15 years old (Central Bank of the United Arab Emirates, 2005, p. 18, 20, 22; International Monetary Fund, 2005§[3]).

Trade

In 2004, the UAE's total exports (free-on-board), which included reexports, were valued at $82.8 billion, which was up significantly from a revised $67.2 billion in 2003 and $49.6 billion in 2002. The value of total imports (cost, insurance, and freight) in 2004 was estimated to be $61.6 billion. The value of crude oil exports from the UAE was estimated to be $29.6 billion in 2004 compared with $22.1 billion in 2003. In 2004, crude oil exports accounted for about 35.8% of the value of total exports compared with 32.9% in 2003. Natural gas exports were valued at $4.7 billion (5.7% of total exports) in 2004, and refined petroleum product exports were valued at $4.1 billion (5% of total exports). Much of the increase in the value of crude oil exports could be attributed to an increase in the average price received per barrel of crude, which was $36.1 per barrel in 2004 compared with $28.1 per barrel in 2003 and $24.7 per barrel in 2002. Reexports (the UAE was a significant transshipment point for the Gulf region) accounted for 33.5% of total exports in 2004 compared with 33.5% in 2003 and 29.4% in 2002 (Central Bank of the United Arab Emirates, 2005, p. 34, 36).

In 2004, Dubai, which was a major regional trading center for gold, imported about 503.5 metric tons (t) of gold and exported 260.9 t. In 2003, 373.8 t of gold was imported and 121.7 t exported. The Dubai Diamond Exchange opened in April 2004 (Dubai Metals & Commodities Centre, 2005§).

Much of the cross-border trade between member States of the Cooperation Council for the Arab States of the Gulf (GCC) traveled by road or by sea. In October, a feasibility study was proposed for the construction of a more-than-2,000-kilometer railroad to Kuwait from Muscat, Oman. The proposed track would pass through the 82,880-square-kilometer UAE and Saudi Arabia (Middle East Economic Digest, 2004c).

Commodity Review

The demands of the construction industry revitalized the UAE's nonfuel mineral sector. In 2004, the average price of cement rose 52.7% to $3.67 per bag, the average price of aggregate increased 45.6% to $9.58 per metric ton, and the average price of concrete-reinforcing bar (rebar) increased 44.4% to $534.25 per metric ton (Thompson, 2004).

Offshore Dubai, construction continued on The Palm Jebel Ali and The Palm Jumeirah developments. In 2002 and 2003, about 200 million cubic meters of rock and sand quarried in (or offshore) the UAE was used to build the offshore islands that comprise the project. At yearend 2004, proposed commercial and residential construction projects were estimated to cost more than $52 billion. Construction projects include the Burj Dubai, which will include a 610- to 705-meter (m) tower that, when built, would become the world's tallest building, exceeding the Taipei 101 (509 m) in Taipei, Taiwan; the Petronas Towers (452 m) in Kuala Lumpur, Malaysia; and the Sears Tower (442 m) in Chicago, IL. The proposed projects also include the 4.2-million-square-meter Retail and Entertainment World in Dubai and the Dubai Mall, which was designed with 560,000 square meters (m^2) of gross leasable area compared with the West Edmonton Mall (490,000 m^2) in Edmonton, Alberta, Canada, and the Mall of America (390,000 m^2) in Bloomington, MN (Middle East Economic Digest, 2004e; Ministry of Information and Culture, 2004§; Chicago Public Library, 2005§; Emirates Network, The, 2005§).

Metals

Aluminum.—In June, construction of potline 7 began at the Dubai Aluminium Co. Ltd. (Dubal) aluminum smelter. The $204 million expansion project would add 120 pots and 75,000 metric tons per year (t/yr) of primary aluminum production

[1]Comprises the following emirates: Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al-Khaimah, Sharjah, and Umm al-Qaywayn.

[2]Where necessary, values have been converted from United Arab Emirate dirham (Dh) to U.S. dollars (US$) at the rate of Dh3.67=US$1.00.

[3]References that include a section mark (§) are found in the Internet References Cited section.

capacity to the Dubal smelter. Commercial production was expected to begin in late 2005. In November 2004, Dubal announced plans to expand its aluminum casting operations by mid-2005. The proposed casthouse expansion would bring finished-aluminum production capacity to a reported 850,000 t/yr (Dubai Aluminium Co. Ltd., 2004a, b).

Iron and Steel.—The construction boom in the Gulf region provided the impetus for several new projects that were announced in 2004. Because of the local demand for rebar, the state-owned General Holding Corp.'s Emirates Iron and Steel Factory increased production to about 600,000 t in 2004, which exceeded the plant's 500,000-t/yr design capacity. In 2003, the factory's output was 340,000 t (Middle-East-Steel.com, 2005§; Qadir, 2005§).

The Abu Dhabi Investment Co. proposed to build a 1.2-million-metric-ton-per-year (Mt/yr)-capacity sponge iron plant and a 1.18-Mt/yr steel plant in Fujairah. QASCO Dubai Steel FZE (an affiliate of Qatar Steel Co. of Qatar) awarded a contract to Morgan Construction Co. to upgrade its rod mill in Dubai. Qatar Steel had acquired the mill in the Jebel Ali Free Zone in August 2003. Also in Dubai, the newly formed United Stainless Co., which was owned by Gulf Industrial Investment Co. of Kuwait, National Industries Group of Kuwait, and local investors, proposed to build a $200 million stainless steel mill. The 90,000-t/yr cold-rolled stainless steel mill was expected to begin production in 2007. Union Iron and Steel LLC ordered a 300,000-t/yr-capacity mill, which would be installed in Abu Dhabi. Abu Dhabi Metals Pipes and Profiles Industries Complex LLC announced a planned $68 million expansion of its pipeline manufacturing facility in Mussafah, Abu Dhabi. The proposed 300,000-t/yr expansion would be producing large-diameter pipe by late 2005 (Steel Times International, 2004; Middle East Economic Digest, 2004d, f, g).

The iron and steel scrap sector was roiled after a $68 per ton tax was imposed on exports of iron and steel scrap in September. Gulf region scrap traditionally had been collected and consolidated in Dubai, then reexported to Asia (primarily China and India).

Industrial Minerals

Cement.—Cement prices in the UAE reached $6.80 per bag in June, after which increased imports resulted in the decline in the price per bag to below $4.00. Because of the high demand for cement in the UAE, several new cement projects were announced. Al-Ain Cement Co. proposed to close its Al-Ain, Abu Dhabi plant and open a 7,500- to 10,000-metric-ton-per-day (t/d) plant in Fujairah. In Ras Al-Khaimah, Union Cement Co. proposed to increase the output of its Koher Khwair Industrial area plant with the installation of a new 10,000-t/d clinker kiln, and Gulf Cement Co. proposed a 7,500-t/d expansion of its plant. Jebel Ali Cement Factory LLC awarded a contract for the construction of a 2,300-t/d cement plant in the Jebel Ali Industrial Area, Dubai. The Jebel Ali plant was expected to be in operation by early 2006 (Middle East Economic Digest, 2004b; ABQ Zawya Ltd., 2004§; Gulf News, 2004§; Khaleej Times, 2004§).

Mineral Fuels

Natural Gas.—Several natural gas projects underway in 2004 included the expansion of gas handling facilities at the Bu Hasa and the Habshan gas plants for the Abu Dhabi National Oil Co. (ADNOC) Group. With the completion of the Onshore Gas Development Project phase III and the Asab Gas Development Project phase II in 2008, the Group would increase natural gas processing capacity to more than 72 billion cubic meters per year from the current capacity of about 52 billion cubic meters per year. In January, Dolphin Energy Ltd. began to pipe natural gas to Fujairah from Oman (Middle East Economic Digest, 2004a).

Outlook

The Government continued its long-term diversification of the economy away from dependence on hydrocarbons. In 2004, the mining and quarrying sector (primarily hydrocarbons) accounted for about 29.2% of the GDP compared with that of 1990, when mining and quarrying accounted for 46% of the GDP. The Emirate of Abu Dhabi planned to establish five new industrial zones and an oilfield service company complex. Abu Dhabi also continued with its privatization of state-owned companies, which included the Emirates Cement Factory and the Emirates Iron and Steel Factory. Dubal's production and the availability of natural gas could attract downstream aluminum processors to Dubai (Central Bank of the United Arab Emirates, 2005, p. 18; Ministry of Information and Culture, 2005§).

The Gulf region construction boom has resulted from the development of the tourism industry in Abu Dhabi and Dubai, the reconstruction of Iraqi infrastructure, and regional growth. Demand for aggregates, cement, glass, and steel has outstripped domestic supply; several new factories and quarries, and plant expansions were proposed or underway. Development of the tourism industry in the northern Emirates could continue the demand for construction materials for years.

In the oil sector, ADNOC proposed to expand its crude oil production capacity to 3.7 million barrels per day by 2010 after national output approached about 2.5 million barrels per day in April. The UAE's proven oil reserves were estimated to be 97.8 million barrels, which ranked the country as the fifth in the world after Saudi Arabia, Iran, Iraq, and Kuwait. Any increased oil production would be subject to OPEC production ceiling allocations. Additional domestic and international investor attention in the natural gas and petrochemical sectors is expected (BP plc., 2005, p. 4).

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Major Source of Information

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TABLE 1

THE UNITED ARAB EMIRATES: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002[e]	2003[e]	2004[e]
Aluminum, primary[e]		470,000	500,000	536,000	560,000	683,000
Cement, hydraulic[e]		6,100,000	6,100,000	7,000,000 [r]	8,000,000 [r]	8,000,000
Chromium, gross weight[e]		30,000	10,000	-- [r]	-- [r]	7,089 [3]
Gas, natural:[e]						
Gross	million cubic meters	52,000	54,000	55,000	60,000	61,000
Dry	do.	39,800	41,300	42,000	45,000	46,000
Gypsum[e]		90,000	90,000	90,000	100,000	100,000
Lime[e]		50,000	50,000	50,000	50,000	50,000
Natural gas plant liquids[e]	thousand 42-gallon barrels	80,000	80,000	81,000 [r]	87,000 [r]	88,000
Nitrogen:						
N content of ammonia		348,400	357,900	364,000	421,000	380,400 [3]
N content of urea		243,400	250,000 [e]	260,000	400,000	350,000
Petroleum:[e]						
Crude	thousand 42-gallon barrels	815,000	790,000	750,000	920,000	970,000
Refinery products:[4]						
Gasoline	do.	10,800	11,000	11,400	11,000	12,000
Kerosene	do.	30,900	30,000	39,000	40,000	40,000
Distillate fuels	do.	29,100	30,000	34,900	33,800	36,000
Residual fuels	do.	13,400	12,000	11,300	7,800	13,000
Other	do.	30,800	30,000	58,300	38,400	59,000
Total	do.	115,000	113,000	155,000	131,000	160,000
Steel[e]		70,000	70,000	70,000	50,000	70,000
Sulfur, byproduct of petroleum refining and natural gas processing		1,122,000	1,490,000 [e]	1,900,000	1,900,000	1,900,000

[e]Estimated; estimated data and totals are rounded to no more than three significant digits and may not add to totals shown. [r]Revised. -- Negligible or no production.

[1]Table includes data available through October 7, 2005.

[2]In addition to the commodities listed, crude industrial minerals, such as common clays, diabase, gravel, limestone, marble, sand, and shale presumably are produced, but output is not reported, and information is inadequate to make estimates of output.

[3]Reported figure.

[4]Daily production data converted assuming a 365-day operating year, and rounded to no more than three significant digits; may not add to totals shown.