2008 Minerals Yearbook

KUWAIT

U.S. Department of the Interior
U.S. Geological Survey

September 2010

The Mineral Industry of Kuwait

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Kuwait's economy was structured around the production and refining of hydrocarbons. The hydrocarbon sector accounted for 95% of total exports and about 94% of Government revenue. Kuwaiti crude oil reserves accounted for about 8.1% of the world's proven crude oil reserves (BP p.l.c., 2009, p. 9; Central Bank of Kuwait, 2009, table A).

Under Article 21 of the Constitution, the state owns all natural resources. Article 152 of the Constitution authorizes limited-time-period concessions for the exploitation of natural resources. Decree law No. 6 of 1980 authorizes Kuwait Petroleum Co. to form partnerships with other companies for petroleum sector activity. Environmental issues (including those associated with the manufacturing of aluminum, gold, and steel articles; cement production and storage; and the exploration for, production of, storage of, and transport of natural gas, petroleum, and sand) are covered by law No. 21 of 1995, law No. 16 of 1996, and decision No. 210 of 2001. Executive bylaw of law No. 2 of 2008 amends Kuwait income tax decree No. 3 of 1955 and reduces the income tax to 15% from 55%.

In 2008, total exports (free on board) were valued at \$87 billion,[1] of which oil exports accounted for about \$82.7 billion. In 2007, the value of exports was \$62 billion, of which oil exports accounted for a revised \$59 billion. The significant increase in the international market price of crude oil through mid-year accounted for a significant proportion of the 31% increase in the value of Kuwaiti exports in 2008 compared with that of 2007 (in terms of dinars; in dollar terms, the increase was about 40%). The monthly average price of Kuwaiti oil exports in 2008 was about \$90.54 per barrel; the average price ranged from \$85.63 per barrel in January to \$127.57 per barrel in July, before dropping to \$36.47 per barrel in December. In 2007, the price of Kuwaiti oil exports averaged \$66.35 per barrel. The total value of imports (which included cost, insurance, and freight paid to the point of destination) in 2008 was estimated to be about \$24.9 billion compared with a revised \$21.3 billion in 2007 (Organization of the Petroleum Exporting Countries, 2008, p. 50; 2009b, p. 82; Central Bank of Kuwait, 2009, table A).

Production

According to BP p.l.c. (2009, p. 9) data, Kuwait produced 3.5% of the world's crude oil in 2008. Data on estimated mineral commodity production are in table 1.

Structure of the Mineral Industry

Kuwait Petroleum Corp. (KPC), the Ministry of Oil, and the Supreme Petroleum Council are the Government organizations that are responsible for the petroleum sector in Kuwait. For the past few years, there has been significant friction between the Government and the National Assembly (the Parliament) concerning economic issues, such as allowing the participation of international oil companies in the expansion of the production capacity of the northern oilfields and the selection of contractors for the construction of an oil refinery at Al-Zour (Ali, 2008; Nield, 2008b).

Kuwait Oil Co. K.S.C., which was a subsidiary of state-owned KPC, managed the country's crude oil and natural gas operations. Kuwait Gulf Oil Co., which was a subsidiary of KPC, managed primarily offshore crude oil and natural gas operations in the Partitioned Neutral Zone, which also is known as the Divided Zone, between Kuwait and Saudi Arabia. Petrochemical Industries Co., which was a subsidiary of KPC, dominated the Kuwaiti fertilizer sector, and Kuwait National Petroleum Co., which was a subsidiary of KPC, operated the country's petroleum refineries. State-owned Kuwait Investment Authority held interests in Kuwaiti cement companies and manufacturers of steel pipe.

Commodity Review

Mineral Fuels

Natural Gas.—Most Kuwaiti gas production was associated with crude oil production. As a member of the Organization of the Petroleum Exporting Countries (OPEC), the volume of Kuwait's crude oil output was subject to a production ceiling, which effectively limited natural gas output. From January through October, the OPEC production allocation for Kuwait was 2,105,000 barrels per day (bbl/d), and in November and December, 1,973,000 bbl/d. Total crude oil production from Kuwait, which averaged about 2.7 million barrels per day, was higher than the OPEC quota because of Kuwait's share of production from the Partitioned Neutral Zone. The Government continued talks with Iran on the importation of natural gas by subsea pipeline and on maritime border issues (Petroleum Economist, 2008; Organization of the Petroleum Exporting Countries, 2009a, p. 8).

In June, the initial production of nonassociated gas from the Sabriyah field began at the rate of about 5 million cubic meters per day (or 1.8 billion cubic meters per year). Kuwait Oil's planned second phase of the nonassociated gas production program was expected to increase natural gas production by about 6 billion cubic meters per year by 2011 and by about 10 billion cubic meters per year by 2015. The nonassociated gas was substituted for fuel oil that had been used to fire the electricity-generating powerplants in Kuwait (MEED, 2008).

Petroleum.—Kuwait Oil continued its efforts to expand its production capacity to 4 million barrels per day (Mbbl/d) by 2020. Projects included the development of heavy crude oil resources, enhanced oil recovery from currently producing

[1] Where necessary, values have been converted from Kuwaiti dinars (KD) to U.S. dollars (US\$) at the rate of KD0.269=US\$1.00 for 2008 and a revised KD.284=US\$1.00 for 2007.

fields, and the expansion of the production capacity of the northern oilfields. Members of Parliament counter-proposed that crude oil production should be limited to the ratio of reserves to production in the fiscal years 2004-06 to maintain income for Kuwaitis in the future. Official oil reserve data were not released by the Government, but reserves were estimated to be about 99 billion barrels, which would limit future production to less than 3 Mbbl/d under the Parliament's proposal (Kuwait Times, 2007; Petroleum Economist, 2008).

Kuwait Oil projected that production of heavy oil (which is crude oil with a density of between 934 kilograms per cubic meter and 1,000 kilograms per cubic meter) could reach 700,000 bbl/d by 2020. In 2007, an initial agreement was signed that secured Exxon Mobil Corp. of the United States' assistance with a heavy oil recovery project, but by yearend 2008, no contract was signed. Much of Kuwait's crude oil output was produced by primary methods, such as the use of reservoir pressure to propel the crude to the surface. Enhanced oil recovery methods, such as the injection of alkaline fluids, carbon dioxide, steam, and surfactants into the reservoirs, were expected to significantly increase the recovery of oil remaining in the reservoirs of a number of Kuwaiti oilfields (Schenk and others, 2006; Al-Kafeef and Zaid, 2007).

The long-delayed Project Kuwait, which was a program proposed in 1997 to expand the capacity of the northern oilfields to 900,000 bbl/d from 450,000 bbl/d with the assistance of international oil companies, remained a point of contention between the Government and the Parliament. The Government had created Oil Development Co. as a subsidiary of KPC to manage technical service agreements associated with the project. In the past 8 years, operating without international technical assistance, Kuwait Oil had increased output from the northern oilfields to about 650,000 bbl/d (Melly, 2009).

In the Partitioned Neutral Zone, Kuwait and Saudi Arabia expected to increase oil production to more than 620,000 bbl/d by 2009 from about 550,000 bbl/d in 2008. Additionally, Kuwait Gulf Oil proposed a 5-year $3.6 billion investment program to further increase production capacity in the Partitioned Neutral Zone. A successful conclusion of the Government's maritime border talks with Iran could lead to the development the offshore Dorra gasfield, which straddles the disputed border (Rigzone.com, 2003; Petroleum Economist, 2009).

Controversy continued to plague the proposed 615,000-bbl/d-capacity crude oil refinery at Al-Zour. Although the dispute with Saudi Arabia concerning the proposed location in southern Kuwait near the Partitioned Neutral Zone was settled in 2008, the Kuwaiti Parliament criticized the process that Kuwait National Petroleum used for awarding bids for contracts to construct the $14.5 billion project, which originally was projected to cost $6 billion when proposed in 2001. The bids were submitted for review to the State Audit Bureau in August, and the issue remained pending at yearend. The delay with the Al-Zour refinery contracts also delayed the proposed $18 billion Clean Fuels Project, which was the planned upgrade and modernization of the Mina Abdullah and the Mina Al-Ahmadi refineries; the project was expected to expand the refineries' combined production capacity to 800,000 bbl/d (Nield, 2008a; Kuwait Times, 2009).

Outlook

To meet environmental and proposed power demands, Kuwait's electrical power generation plants will require significantly more natural gas than Kuwait currently produces. The development of the nonassociated natural gas deposits would partially reduce the impediment that the limited supply of natural gas had posed for industrial diversification and expansion in Kuwait. Whereas a significant expansion of the Kuwaiti petroleum industry has been under consideration for the past decade (subject to the OPEC crude oil production allocation), the differences in political opinion within the country concerning the future of the Kuwait's economy will likely need to be resolved before the expansion of the petroleum sector can continue.

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TABLE 1
KUWAIT: ESTIMATED PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons unless otherwise specified)

Commodity[3]		2004	2005	2006	2007	2008
Cement		2,635,000 [4]	2,145,000 [4]	2,200,000 [4]	2,200,000	2,200,000
Iron and steel:						
Crude		200,000	450,000	500,000	500,000	500,000
Rolled-steel bar		369,000	480,000	680,000	680,000	680,000
Lime, hydrated and quicklime		40,000	49,800 [4]	50,000 [4]	50,000	50,000
Natural gas:[5]						
Gross	million cubic meters	11,860 [4]	14,200 r	14,500 r	14,000 r	14,800
Dry	do.	9,800	12,200 r	12,500 r	12,100 r	12,800
Nitrogen:						
N content of ammonia		413,400 [4]	466,570 [4]	495,000	485,000	485,000
N content of urea		341,020 [4]	365,350 [4]	428,000	430,000	430,000
Petroleum:						
Crude[5]	thousand 42-gallon barrels	837,655 [4]	939,276 [4]	960,000 r	940,000 r	990,000
Natural gas liquids and liquefied petroleum gases	do.	39,920 [4]	37,887 [4]	40,000 r	38,000 r	44,000
Refinery products:						
Gasoline, motor[6]	do.	77,000 r	77,000 r	80,000 r	76,000 r	80,000
Kerosene	do.	53,133 [4]	59,054 [4]	61,000 r	61,000 r	65,000
Distillate fuel oil	do.	101,000 r	98,000 r	102,000 r	96,000 r	96,000
Residual fuel oil	do.	74,000 r	72,000 r	67,000 r	75,000 r	69,000
Other[7]	do.	16,000 r	17,000 r	20,000 r	19,000 r	19,000
Total	do.	321,000 r	323,000 r	330,000 r	327,000 r	329,000
Salt		10,200 [4]	8,100 [4]	13,200 [4]	14,000	14,000
Sulfur:						
Elemental, petroleum byproduct		682,000	700,000	650,000	660,000	700,000
Sulfuric acid		18,000	18,000	18,000	18,000	18,000

[r]Revised. do. Ditto.
[1]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown.
[2]Table includes data available through November 2, 2009.
[3]In addition to commodities listed, secondary aluminum, chlorine, clays, petroleum coke, glass, methanol, steel reinforcing bar, and sand and gravel were produced, but available information is inadequate to make reliable estimates of output.
[4]Reported figure.
[5]Includes Kuwait's share of production from the Partitioned Neutral Zone.
[6]Includes naphtha.
[7]Includes bitumen, coke, liquefied petroleum gases, and propylene.

TABLE 2
KUWAIT: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, secondary	Arabian Light Metals Co. K.S.C. (Kuwait Industries Co. Holding K.S.C.)	Ahmadi	NA
Cement:			
Clinker	Kuwait Cement Co. K.S.C. (Kuwait Investment Authority, 32%, and National Industries Group, 22.4%)	Kilns at Shuaiba	1,800,000
Grey portland	do.	Mills at Shuaiba	2,200,000
Do.	Hilal Cement Co. K.S.C.C. (Suez Cement Co., 51%)	Sulaibiya industrial area	(1)
Do.	Portland Cement Co. K.S.C.C.	Shuwaikh	(1)
White	Kuwait Cement Co. K.S.C. (Kuwait Investment Authority, 32%, and National Industries Group, 22.4%)	Kiln and mill at Shuaiba	170,000

See footnotes at end of table.

TABLE 2—Continued
KUWAIT: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Iron and steel, steel:				
Crude		Al Oula Steel Manufacturing Co.	Shuaiba	500,000
Do.		United Steel Industrial Co. K.S.C.C. (Joint venture of local investors and Ahwaz Steel Commercial and Technical Services GmbH)	Melt shop at Shuaiba	800,000
Rolled				
Bar and rod		do.	Rolling mill at Shuaiba	500,000 [2]
Do.		Kuwait Reinforcement Steel Manufacturing Co. (Ali Al-Sarraf International Group Co.)	do.	400,000
Pipes		Kuwait Pipes Industries and Oil Services Co. K.S.C.	Pipe mill at Sulaibiya industrial area	120,000
Do.		do.	Pipe mill at Shuwaikh	65,000
Natural gas	million cubic meters	Various[3]	Various fields	16,000
Natural gas liquids		Kuwait Oil Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%]	do.	45,000 [4]
Nitrogen:				
Ammonia		Petrochemical Industries Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%]	Plant B, Shuaiba	657,000
Urea		do.	Plants A and B, Shuaiba	639,000
Petroleum:				
Coke, calcined		do.	Shuaiba	350,000
Crude	42-gallon barrels per day	Kuwait Oil Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%]	Southern and eastern fields (Burgan, Khasman, and Madina fields)	1,350,000
Do.	do.	Al-Khafji Joint Operations (Kuwait Gulf Oil Co., 50%, and Aramco Gulf Operations Co., 50%)	Khafji field, offshore Partitioned Neutral Zone	600,000
Do.	do.	Kuwait Oil Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%]	Northern fields (Abdali, Bahra, Ratqa, Matraba, Raudhatain, and Sabiya fields)	559,000
Do.	do.	do.	Western fields (Abdaliya, Kra' Al-Mero, Managish, and Umm Gudair fields)	427,000
Do.	do.	do.	South Fuwaris and South Umm Gudair fields, onshore Partitioned Neutral Zone	80,000
Do.	do.	Kuwait Oil Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%] and Saudi Arabian Chevron Inc. (Chevron Corp., 100%)	Wafra field, onshore Partitioned Neutral Zone	80,000
Do.	do.	Kuwait Gulf Oil Co. [Kuwait Petroleum Corp. (KPC), 100%]	Hout field, offshore Partitioned Neutral Zone	NA
Refined products	do.	Kuwait National Petroleum Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%]	Mina Al-Ahmadi refinery	452,000
Do.	do.	do.	Mina Abdulla refinery	270,000
Do.	do.	do.	Shuaiba refinery	198,000
Salt		Al Kout Industrial Projects Co.	Shuaiba	NA
Sulfur		Kuwait National Petroleum Co. K.S.C. [Kuwait Petroleum Corp. (KPC), 100%]	Mina Abdulla, Mina Al-Ahmadi, and Shuaiba refineries	NA
Do.		Kuwait Sulphuric Acid Co.	Safat	18,000

Do., do. Ditto. NA Not available.
[1]Marketed imported bulk cement.
[2]Nominal design capacity. Since 2006, actual production has exceeded design capacity.
[3]Some natural gas is produced and recovered from most crude oil production operations in Kuwait and the Partitioned Neutral Zone. Nonassociated natural gas was produced from the Sabriyah field.
[4]Includes refinery-produced liquefied petroleum gases.