



2011 Minerals Yearbook

KUWAIT

THE MINERAL INDUSTRY OF KUWAIT

By Philip M. Mobbs

Kuwait's economy was structured around the production and refining of hydrocarbons. In 2011, the oil sector accounted for about 93% of total exports and about 94% of Government revenue. In 2010 (the latest year for which data were available), the crude oil and natural gas sector accounted for 49% of the gross domestic product (GDP) at current producer prices compared with 43% in 2009. Petroleum refining activity accounted for about 3% of the GDP in 2010 compared with 2% in 2009. The construction sector accounted for about 2% of the GDP in 2010, which was similar to that of 2009, and the mining and quarrying sector accounted for 0.2% of the GDP in 2010 compared with 0.1% in 2009. According to BP p.l.c., Kuwaiti crude oil reserves remained at an estimated 101.5 billion barrels, which accounted for about 6.1% of the world's proven crude oil reserves in 2011 compared with 7.3% in 2010. The decline in Kuwait's share of the world's reserves was an artifact of significant additions to Canadian, Iranian, Iraqi, and Venezuelan crude oil reserves in 2011 (BP p.l.c., 2011, p. 6; 2012, p. 6; Central Bank of Kuwait, 2012, tables A, 48).

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 Corp. (KPC) to form partnerships with other companies to conduct 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 and production, storage, 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.

In 2011, total exports (free on board) were valued at about \$104 billion¹ compared with a revised \$73 billion in 2010, of which crude oil exports accounted for about \$97 billion in 2011 compared with a revised \$64 billion in 2010, and nitrogen fertilizer exports accounted for \$571 million in 2011 compared with a revised \$436 million in 2010. The total value of imports (which included cost, insurance, and freight paid to the point of destination) in 2011 was \$37 billion compared with a revised \$25 billion in 2010 (Central Bank of Kuwait, 2012, tables A, 40).

Production

Data on estimated mineral commodity production are in table 1.

Structure of the Mineral Industry

KPC, the Ministry of Oil, and the Supreme Petroleum Council are the Government organizations that are responsible for the petroleum sector in Kuwait. Kuwait Oil Co. K.S.C. (KOC),

¹Where necessary, values have been converted from Kuwaiti dinars (KWD) to U.S. dollars (US\$) at the average rate of KWD0.276=US\$1.00 for 2011 and KWD0.287=US\$1.00 for 2010.

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. K.S.C., which was a subsidiary of KPC, dominated the Kuwaiti fertilizer sector, and Kuwait National Petroleum Co. K.S.C. (KNPC), 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. Privately owned companies were active in the industrial minerals and metals sectors.

Commodity Review

Industrial Minerals

Cement.—FLSmidth & Company A/S continued work on the installation of a second 5,500-metric-ton-per-day-capacity cement production line for Kuwait Cement Co. K.S.C. The new line at Shuaiba, which would double Kuwait Cement's production capacity, was expected to begin commercial operations in 2012 (FL Smidth & Company A/S, 2010).

ACICO Industries Co. K.S.C. (which was known as Aerated Concrete Industries Co. K.S.C.C. prior to May 2008) installed a cement plant at Shuaiba that would supply the company's cement needs for its primary industrial product, which was autoclaved aerated concrete. The plant's capacity was expected to reach 1 million metric tons per year. Excess cement was expected to be sold on the domestic market (ACICO Industries Co., K.S.C., undated a, b).

Mineral Fuels and Other Sources of Energy

Petroleum and Natural Gas.—KNPC planned to complete the installation of the fourth natural gas train at the Mina Al-Ahmadi refinery by 2014. The construction of a fifth gas train, which was projected to cost \$900 million, was proposed in 2011. Each of the new gas trains was expected to process about 23 million cubic meters per day of natural gas and to recover more than 100,000 barrels per day (bbl/d) of condensate. An additional tank farm was proposed to store the condensate and liquefied petroleum gases prior to export. KNPC also proposed to install a new recovery system by January 2013, which would eliminate flared gas from the Mina Al-Ahmadi refinery (Kuwait National Petroleum Co. K.S.C., 2011, p. 30, 32; MEED, 2011a, d).

KNPC was awaiting approval from the Supreme Petroleum Council to proceed with two large projects. The first was the proposed 615,000-bbl/d-capacity refinery project at Al-Zour that had been cancelled in 2009. The second was the Clean Fuels project, which would upgrade the Mina al-Ahmadi and

the Mina Abdullah refineries and close the Shuaiba refinery (Kuwait National Petroleum Co. K.S.C., 2011, p. 29–30; MEED, 2011c).

Nuclear Energy.—In 2011, the Kuwait National Nuclear Energy Committee completed initial feasibility studies of various sites for nuclear power facilities. The facilities were proposed to assist in meeting the country's projected peak electricity demand, which was expected to increase to 28 gigawatts (GW) by 2030 from 11 GW in 2011. Up to 15% of Kuwait's annual oil production was used domestically to generate electricity. Fuel oil powered about 58% of the electricity-generating plants in Kuwait in 2010; natural-gas-fired plants accounted for 25%; crude-oil-fueled plants, about 10%; and diesel-fuel-fired plants, about 7%. If the proposed nuclear plans were initiated by 2013, initial production of electrical power was expected to begin between 2020 and 2022 (MEED, 2010, 2011b).

Outlook

The development of known nonassociated natural gas deposits would help reduce the impediment that the limited supply of natural gas has imposed on industrial diversification and expansion in Kuwait. The ongoing expansion of the Kuwaiti petroleum production capacity (subject to the Organization of the Petroleum Exporting Countries' crude oil production allocation) is expected to continue.

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TABLE 1
KUWAIT: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2007	2008	2009	2010	2011
Cement	2,200,000	2,200,000	2,000,000	2,000,000	2,250,000
Iron and steel:					
Crude	500,000	500,000	450,000	500,000	500,000
Rolled-steel bar	680,000	680,000	600,000	650,000	650,000
Lime, hydrated and quicklime	50,000	50,000	45,000	50,000	50,000
Natural gas: ⁴					
Gross million cubic meters	14,000	14,800	13,000	13,500	15,200
Dry do.	12,100	12,800	11,200	11,600	13,000
Nitrogen:					
N content of ammonia	485,000	490,000 ^r	470,000	380,000 ^r	520,000
N content of urea	430,000	430,000	450,000 ^r	340,000 ^r	460,000
Petroleum:					
Crude ⁴ thousand 42-gallon barrels	940,000	990,000	880,000	950,000	1,000,000
Natural gas liquids and liquefied petroleum gases ^e do.	54,000	57,000	54,000	54,000 ^r	61,000
Refinery products:					
Gasoline, motor do.	24,000	23,000	20,000	22,000	23,000
Kerosene do.	69,000	65,000	60,000	68,000	66,000
Distillate fuel oil do.	83,000	86,000	80,000	85,000	94,000
Residual fuel oil do.	77,000	75,000	69,000	68,000 ^r	70,000
Other ⁵ do.	87,000	85,000	80,000	80,000 ^r	82,000
Total do.	340,000	334,000	309,000	323,000 ^r	335,000
Salt	14,000	14,000	13,000	14,000	15,000
Sulfur:					
Elemental, petroleum byproduct	830,000	830,000	800,000	820,000 ^r	830,000
Sulfuric acid	18,000	18,000	17,000	18,000	18,000

^rRevised. do. Ditto.

¹Estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Table includes data available through June 25, 2012.

³In addition to commodities listed, secondary aluminum, chlorine, clays, petroleum coke, glass, gypsum, methanol, and sand and gravel were produced, but available information is inadequate to make reliable estimates of output.

⁴Includes Kuwait's share of production from the Partitioned Neutral Zone.

⁵Includes bitumen, coke, naphtha, and propylene.

TABLE 2
KUWAIT: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(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%)	Kiln at Shuaiba	1,800,000
Do.		ACICO Industries Co. K.S.C.	do.	1,000,000
Gray portland		Kuwait Cement Co. K.S.C. (Kuwait Investment Authority, 32%, and National Industries Group, 22.4%)	Mill at Shuaiba	2,200,000
Do.		ACICO Industries Co. K.S.C.	do.	1,000,000
Do.		Hilal Cement Co. K.S.C.C. (Suez Cement Co., 51%)	Sulaibiya industrial area	(1)
Do.		Kuwait 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
Iron and steel, steel:				
Crude		Al Oula Steel Manufacturing Co. K.S.C.	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	1,000,000
Rolled:				
Bar and rod		do.	Rolling mill at Shuaiba	650,000
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 ²	Various fields	16,000
Natural gas liquids		Kuwait Oil Co. K.S.C. (KOC) [Kuwait Petroleum Corp. (KPC), 100%]	do.	65,000 ³
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	1,000,000
Petroleum:				
Coke, calcined		do.	Shuaiba	350,000
Crude	42-gallon barrels per day	Kuwait Oil Co. K.S.C. (KOC) [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. (KOC) [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. (KOC) [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

See footnotes at end of the table.

TABLE 2—Continued
 KUWAIT: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum—Continued:				
Refined products	42-gallon barrels per day	Kuwait National Petroleum Co. K.S.C. (KNPC) [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. (KNPC) [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.

¹Marketed imported bulk cement.

²Some 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.

³Includes refinery-produced liquefied petroleum gases.