



# 2006 Minerals Yearbook

---

## BAHRAIN

---

# THE MINERAL INDUSTRY OF BAHRAIN

By Philip M. Mobbs

The island Kingdom of Bahrain is located in the Gulf of Bahrain between Qatar and Saudi Arabia. Revenues associated with the production and processing of crude oil and natural gas accounted for a significant segment of the national economy. In 2006, Bahrain's total merchandise export earnings were about \$11.6 billion<sup>1</sup> compared with \$10 billion in 2005, of which Bahraini exports of crude oil and refined petroleum products were valued at about \$9.2 billion in 2006 and about \$7.8 billion in 2005. Aluminum exports in 2006 were valued at about \$1.5 billion compared with \$1.1 billion in 2005 (Central Bank of Bahrain, 2007, p. 5, 6, 9, 11).

## Minerals in the National Economy

In 2006, crude oil was produced from Bahrain Field. Bahrain also sold the oil that was produced by Saudi Arabian Oil Co. from the offshore Abu Saafa Field, which straddled the Bahrain-Saudi Arabia border. The petroleum sector accounted for more than 10% of the real gross domestic product. The aluminum sector also figured prominently in the country's mineral economy. Other minerals and mineral-based commodities produced in Bahrain included cement, which was produced from imported clinker; fertilizers (ammonia and urea); methanol; and sulfur. Imported iron ore was pelleted and exported to regional steel plants. Imported petroleum coke was calcined in Bahrain for use by Aluminium Bahrain B.S.C.'s (Alba) aluminum smelter (Central Bank of Bahrain, 2007, p. 5, 9).

## Production

With the addition of the fifth potline in May 2005 and the implementation of various process improvements over the years, the production capacity of Alba's plant was reported to be 850,000 metric tons (t). In 2006, Alba's output exceeded the smelter's nominal production capacity and the company reported record aluminum production of 872,388 t in the first full year of operations with 5 potlines (Aluminium Bahrain B.S.C., 2007).

## Structure of the Mineral Industry

The Government held majority interest in Aluminium Bahrain B.S.C. and Bahrain Petroleum Co., B.S.C., and minority interest in companies in the aluminum rolling and petrochemical sectors. Private sector companies controlled the cement and pelleted iron ore companies.

## Commodity Review

### Metals

**Aluminum.**—Alba continued to evaluate a proposed 310,000-metric-ton-per-year (t/yr)-capacity Potline 6. The lack of natural gas to power the new line remained a major impediment for the project's development (Middle East Economic Digest, 2006a).

**Iron and Steel.**—Proposed sector projects included the capacity expansion of the Gulf Industrial Investment Co. E.C.'s iron ore pellet plant to 6 million metric tons per year, a 90,000-t/yr-capacity stainless steel mill, and a steel complex. In 2006, Gulf Industrial Investment Co. of Kuwait acquired the remaining 50% interest in the pellet plant from Companhia Vale do Rio Doce (Maree, 2006; Metal Bulletin, 2007).

### Industrial Minerals

**Cement.**—Arabian Gulf Cement Co. W.L.L., which was a subsidiary of Star Cement (LLC) of the United Arab Emirates, increased its production capacity to 360,000 t/yr. Falcon Cement Co. B.S.C., which was formed in 2005 by Bahrain Motor Co. and BBC Building Materials B.S.C. (Closed), which was a subsidiary of Khaleej Finance and Investment of Bahrain, proposed to build a 730,000-t/yr-capacity cement plant in the Hafeera Industrial Area of Riffa (Star Cement (LLC), undated; Middle East Economic Digest, 2006b).

## References Cited

- Aluminium Bahrain B.S.C., 2007, Albayan: Aluminium Bahrain B.S.C., v. 36, no. 1, p. 4-5.
- Central Bank of Bahrain, 2007, Economic indicators: Central Bank of Bahrain, no. 15, March, 28 p.
- Maree, Karin, 2006, Maturing market for costly metal: Middle East Economic Digest, v. 50, no. 51, December 22, p. 52-56.
- Metal Bulletin, 2007, Kobe Steel to build 6m tpy iron ore pellet plant in Bahrain: Metal Bulletin, no. 8996, May 21, p. 32.
- Middle East Economic Digest, 2006a, Alba moots Maaden voyage: Middle East Economic Digest, v. 50, no. 11, March 17, p. 19.
- Middle East Economic Digest, 2006b, Six in for Falcon Cement: Middle East Economic Digest, v. 50, no. 27, July 7, p. 23.
- Star Cement (LLC), undated, Corporate profile: Star Cement (LLC). (Accessed July 27, 2007, at <http://www.starcement.net/frz/bin/aboutus.html>.)

<sup>1</sup>Where necessary, values have been converted from Bahraini dinars (BhD) to U.S. dollars (US\$) at the rate of BhD0.376=US\$1.00.

TABLE 1  
BAHRAIN: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2002	2003	2004	2005	2006 <sup>e</sup>
Aluminum, smelter output, primary metal	518,924	531,991	531,626	750,710	872,388 <sup>3</sup>
Cement	66,986	129,256	153,483	191,400	192,000
Gas, natural:					
Gross million cubic meters	12,154	12,305	12,130	13,320	13,817 <sup>3</sup>
Dry do.	9,429	9,622	9,194	10,278	10,700
Methanol	405,763	370,008	398,406	375,609	375,000
Natural gas plant liquids:					
Propane thousand 42-gallon barrels	1,099	1,021	1,032	1,065	1,070
Butane do.	961	922	981	1,015	1,020
Naphtha do.	1,610	1,647	1,786	1,783	1,790
Nitrogen, N content of ammonia	377,400	311,900	311,300	329,745	360,000
Petroleum:					
Crude <sup>4</sup> thousand 42-gallon barrels	13,800	13,720	13,647	13,348	13,085 <sup>3</sup>
Refinery products:					
Liquefied petroleum gas do.	350 <sup>e</sup>	350 <sup>e</sup>	425 <sup>r</sup>	452	400
Gasoline do.	6,500 <sup>e</sup>	7,000 <sup>e</sup>	6,439 <sup>r</sup>	7,309	7,200
Jet fuel do.	16,000 <sup>e</sup>	16,000 <sup>e</sup>	17,268 <sup>r</sup>	19,956	19,800
Kerosene do.	3,000 <sup>e</sup>	5,000 <sup>e</sup>	2,436 <sup>r</sup>	1,101	1,000
Distillate fuel oil do.	18,000 <sup>e</sup>	20,000	18,210 <sup>r</sup>	19,278	19,000
Residual fuel oil <sup>e</sup> do.	26,000	29,000	28,900	29,000	28,500
Other <sup>e</sup> do.	21,300	15,000	19,000	20,600	20,300
Total do.	91,122	92,350	92,669	97,716	96,217 <sup>3</sup>
Sulfur	67,381	60,455 <sup>r</sup>	71,258	71,963	70,000

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised.

<sup>1</sup>Table includes data available through July 26, 2007.

<sup>2</sup>In addition, iron ore was pelleted and exported for use by direct-reduction plants. Pellets were produced from imported iron ore. Granular urea has been produced from locally produced ammonia since 1998.

<sup>3</sup>Reported.

<sup>4</sup>Does not include production from the Abu Saafa Field.

TABLE 2  
BAHRAIN: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners		Location of main facilities	Annual capacity
<b>Aluminum:</b>					
Metal		Aluminium Bahrain B.S.C. (Government of Bahrain, 77%; SABIC Industrial Investments, 20%; Breton Investments, 3%)		Smelter at Sitra	850,000 <sup>1</sup>
Rolled products		Gulf Aluminium Rolling Mill Co. B.S.C. (Closed) (Government of Bahrain, 38%; Saudi Basic Industries Corp., 30%; Industrial Bank of Kuwait, 17%; Gulf Investment Corp., 6%; Government of Iraq, 5%; Government of Oman, 2%; Government of Qatar, 2%)		Rolling mill at Sitra	165,000
Do.		Midal Cables Ltd. (Intersteel W.L.L. of Bahrain, 50%, and Saudi Cable Co. of Saudi Arabia, 50%)		Rolling mill at Manama	120,000
Cement		Arabian Gulf Cement Co. W.L.L. (Star Cement Co. (LLC) of the United Arab Emirates, 100%)		Clinker grinding mill at Hidd	360,000
Iron ore, pellets		Gulf Industrial Investment Co. E.C. (Gulf Industrial Investment Co. of Kuwait, 100%)		Pellet plant at Hidd	4,000,000
Methanol		Gulf Petrochemical Industries Co. B.S.C. (Government of Bahrain, 33.3%; Petrochemical Industries Co. of Kuwait, 33.3%; Saudi Basic Industries Corp., 33.3%)		Sitra	438,000
<b>Natural gas:</b>					
Extracted	million cubic meters	Bahrain Petroleum Co., B.S.C. (Closed) (Government)		Bahrain Field, Ahwali	13,900
<b>Liquids:</b>					
Butane	thousand 42-gallon barrels	Bahrain National Gas Co. B.S.C. [Bahrain Petroleum Co., B.S.C. (Closed), 75%; Arab Petroleum Investment Corp., 12.5%; Caltex Bahrain, 12.5%]		Natural gas plant at Ahwali	1,100
Naphtha	do.	do.		do.	1,020
Propane	do.	do.		do.	1,800
<b>Nitrogen:</b>					
Ammonia		Gulf Petrochemical Industries Co. B.S.C. (Government of Bahrain, 33.3%; Petrochemical Industries Co. of Kuwait, 33.3%; Saudi Basic Industries Corp., 33.3%)		Sitra	438,000
Urea		do.		do.	621,000
<b>Petroleum:</b>					
Coke, calcined		Aluminium Bahrain B.S.C. (Government of Bahrain, 77%; SABIC Industrial Investments, 20%; Breton Investments, 3%)		do.	600,000
Crude	thousand 42-gallon barrels	Saudi Arabia Oil Co. of Saudi Arabia		Abu Saafa Field, offshore	110,000 <sup>2</sup>
Do.	do.	Bahrain Petroleum Co., B.S.C. (Closed) (Government)		Bahrain Field, Ahwali	13,800
Refined products	do.	do.		Sitra	95,600 <sup>1</sup>
Sulfur		do.		do.	72,000

<sup>1</sup>In 2006, actual production exceeded the facility's nominal production capacity.

<sup>2</sup>Production from the field is pumped to Bahrain and subsequently refined and marketed by Bahrain Petroleum Co.