



2010 Minerals Yearbook

IRAN [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF IRAN

By Philip M. Mobbs

Iran's hydrocarbon sector, which included the production of natural gas and oil, the refining of crude oil, and the distribution of hydrocarbons, was a significant facet of the country's economy. According to BP p.l.c., Iran was the world's fourth ranked producer of crude oil and condensate (natural gas liquids) and accounted for about 5.2% of the world's output. The country also was estimated to account for 9% of the world's output of gypsum and pumice; of barite, 4%; feldspar, 3%; molybdenum, nitrogen, and sulfur, 2%; and more than 1% of the world's output of cement, iron ore, and silica sand. About 2% of the world's crude oil refining capacity was located in the country. According to BP, Iran held 15.8% of proved worldwide natural gas reserves and 9.9% of proved oil reserves in 2010, although in October, Iran announced an increase in its crude oil reserves to 150.3 billion barrels (Gbbbl) from 137.6 Gbbbl (Apodaca, 2011a, b; BP p.l.c., 2011, p. 6, 10, 16, 20; Crangle, 2011a, b; Dolley, 2011; Jorgenson, 2011; Miller, 2011; Mirza, 2010a; Polyak, 2011; Tanner, 2011; van Oss, 2011).

In 2010, the United Nations Security Council adopted Resolution 1929, which required that questions about the purpose of Iran's nuclear program be resolved. The European Union (European Council Declaration of 17 June) and the United States (Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010) subsequently imposed additional sanctions based upon concerns about Iran's nuclear program.

Minerals in the National Economy

Iran had an extensive mineral production and processing industry. Production, processing, transportation, and sales of crude oil and natural gas accounted for a notable portion of the country's gross domestic product. Cement and steel also were significant components of the domestic mineral industry. Mining accounted for about 0.8% of the gross domestic product. The mines and mining industries sector employed about 106,000 people (Mining & Development, 2011, p. 2).

For most of 2010, the Government continued to subsidize several segments of the economy, including the electricity, mineral fuel, and natural gas sectors. Legislation to reform the subsidy programs was passed in January, but implementation did not begin until December (Mining & Development, 2010c, p. 4-5; Mirza, 2010d).

Government Policies and Programs

The Mining Code of 1998, which was based on Articles 44 and 45 of Chapter 4 of the 1978 Constitution of the Islamic Republic of Iran, and various amendments to the Mining Code, regulated the mining sector. The Petroleum Act of 1987 clarified the Government's authority in the oil sector. A new mines exploitation law was under consideration by the National Consultative Assembly of Iran.

Production

Data on estimated mineral production in Iran are in table 1.

Structure of the Mineral Industry

The Ministry of Industries and Mines administered all mining, smelting, and refining industries except the oil and gas sectors, which were administered by the Ministry of Petroleum. Basic geologic exploration and most initial evaluations of the Nation's mineral resources (except hydrocarbons) were performed by the Geological Survey of Iran.

Most of the country's more than 3,000 active mines were privately owned. The Government, primarily through Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), controlled many of the larger capacity mining and mineral-processing companies, especially those that produced aluminum, ammonia, coal, copper, iron and steel, natural gas, petroleum, salt, and sulfur. National Iranian Oil Co. (NIOC) was responsible for natural gas and crude oil production.

In 2010, the Government continued to divest some of its interest in mineral-sector companies through sales of stock on the Tehran Stock Exchange or tenders. By 2012, the Government anticipated that it would divest some of its interest in several companies and mines, which included Almahdi Aluminum Corp., Azerbaijan Coal Co., East Alborz Coal Co., the Miduk copper mine, South Aluminum Co., and Zagros Steel Co. A number of new cement plants opened in 2010 as did the Takht-e-Minoodasht coal mine in Golestan Province and the Chah Firozeh, the Chah Messi, the Darehzar, and the Eijo copper mines in Kerman Province.

Mineral Trade

The Central Bank of the Islamic Republic of Iran reported that hydrocarbons accounted for about 79% of the total value of exports in 2010. Hydrocarbon exports were valued at about \$79 billion in 2010 compared with \$59 billion in 2009. Crude oil exports accounted for most of the hydrocarbon exports (Central Bank of the Islamic Republic of Iran, 2010, p. 13; 2011, p. 13).

Commodity Review

Owing to international sanctions, the Government increased its emphasis on the development of local self-sufficiency in the areas of mine and mineral-processing plant construction, design, and planning. In addition to increased use of domestic consulting engineering services for mine and plant design, the Government promoted local manufacturing of mineral-industry-related equipment, machinery, and parts (Mining & Development, 2010a, p. 8).

The Government's Fifth Development Plan for the years 2011 to 2015 proposed that the production capacities of several mineral commodities would be increased by 2015. Production capacity expansions included that of the cement sector, which was proposed to be increased to 100 million metric tons per year (Mt/yr); crude steel, to 42 Mt/yr, and copper cathode, to 910,000 metric tons per year (t/yr). The \$27 billion Fifth Development Plan targeted 108 mineral projects (Mining & Development, 2010b, p. 1–2).

Metals

Aluminum.—The 147,000-t/yr-capacity Hormozgan aluminum complex (Hormozal) was commissioned in January. The plant was located adjacent to the Almahdi Aluminum Corp's smelter at Bandar Abbas, which was working on a 23,000-t/yr-capacity expansion. In December, Almahdi and Hormozal signed a merger agreement. Other aluminum projects included a new 276,000-t/yr-capacity smelter under construction at Lamerd for South Aluminum Co. and an 110,000-t/yr-capacity expansion at Iran Aluminum Co. (Aluminium International Today, 2009; Iranian Mines and Mining Industries Development and Renovation Organization, 2010).

Gold.—Work on the pilot plant for the Zarshoran gold project continued. The proposed gold facility was expected to have a production capacity of 3,000 kilograms per year (kg/yr) of gold, 1,000 kg/yr of silver, and 800 kg/yr of mercury. The mine was scheduled to begin operations in 2012 (Mining & Development, 2010e, p. 6).

Zinc.—In 2010, IMIDRO divested 45.6% of its equity interest in Mehdiabad Zinc Co. to Karoun Dez Dasht and an additional 2.4% interest to two individuals. Mehdiabad's other joint-venture partners (Itok GmbH of Austria and Union Resources Ltd. of Australia) resumed negotiations with IMIDRO, which held the exploitation license for the Mehdiabad zinc deposit (Union Resources Ltd., 2011, p. 4).

Industrial Minerals

Nitrogen.—Two large fertilizer projects were among the numerous petrochemical projects proposed to be built in Iran. Construction of a 770,000-t/yr-capacity ammonia plant for the joint venture of Nagarjuna Fertilisers and Chemicals Limited Co. of India and National Petrochemical Co. of Iran was expected to be completed in 2014. A 680,000-t/yr-capacity ammonia plant was planned to be built for the joint venture of Hengam Petrochemical Co. of Iran and PT Pupuk Sriwidjaja of Indonesia (Mirza, 2010b; Tehran Times, 2011).

Mineral Fuels

Natural Gas and Petroleum.—Most of the country's hydrocarbon production activity was located in the southwest, both offshore and onshore. About 40 fields were producing, and several other fields were under development. The construction of new hydrocarbon refineries, which included the Anahita refinery at Kermanshah, the Caspian refinery in Golestan Province, the Horumuz refinery adjacent to NIOC's

Bandar Abbas refinery, the Khuzestan extra heavy crude oil refinery at Abadan, the Pars refinery at Shiraz, the Persian Gulf Star refinery at Bandar Abbas, and the Shahriyar refinery at Tabriz, were expected to begin to increase the domestic supply of gasoline by 2013. International sanctions, however, have adversely affected the availability of financing for and international oil company participation in oilfield development and oil refinery construction (U.S. Energy Information Administration, 2009; Mirza, 2010c).

Outlook

The Government is continuing with the planned reduction of its direct-controlling interest in the economy. In the recent past, however, quasi-governmental organizations, such as Government-owned banks and state-affiliated investment and pension funds, have acquired a significant proportion of the shares in companies that the Government had divested. Numerous production-capacity expansion projects and new mineral commodity development projects in Iran's mineral sector are planned or underway. There has been some foreign investment in the mineral sector in the past few years; however, the availability of international funding for capital-intensive development of mineral-related projects by Government-controlled and private companies operating in Iran is expected to become more impaired owing, in part, to international sanctions. Consequently, most large-scale mineral resource development programs will be even more dependent on the availability of scarce Government funding (Mining & Development, 2010d; Mirza, 2010d; Oraee, Goodarzi, and Oraee-Mirzamani, 2011, p. 2; U.S. Department of the Treasury, Office of Foreign Assets Control, 2010).

References Cited

- Aluminium International Today, 2009, A summary of existing and new-build smelters in the Middle East: Aluminium International Today, January–February, p. 19–24.
- Apodaca, L.E., 2011a, Nitrogen: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 112–113.
- Apodaca, L.E., 2011b, Sulfur: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 158–159.
- BP p.l.c., 2011, BP statistical review of world energy June 2011: London, United Kingdom, BP p.l.c., 45 p.
- Central Bank of the Islamic Republic of Iran, 2010, Economic trends no. 58—Third quarter 1388 (2009/10): Tehran, Iran, Central Bank of the Islamic Republic of Iran, February, 31 p.
- Central Bank of the Islamic Republic of Iran, 2011, Economic trends no. 62—Third quarter 1389 (2010/11): Tehran, Iran, Central Bank of the Islamic Republic of Iran, May, 30 p.
- Crangle, R.D., Jr., 2011a, Gypsum: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 70–71.
- Crangle, R.D., Jr., 2011b, Pumice: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 124–125.
- Dolley, T.P., 2011, Sand and gravel (industrial): U.S. Geological Survey Mineral Commodity Summaries 2011, p. 138–139.
- Iranian Mines and Mining Industries Development and Renovation Organization, 2010, Iran's most advanced aluminum plant opens by President: Iranian Mines and Mining Industries Development and Renovation Organization, January 10. (Accessed January 31, 2012, at <http://news.imidro.org/en/magazines=no.29/categories=1/news=559/show.aspx>.)
- Jorgenson, J.D., 2011, Iron ore: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 84–85.
- Miller, M.M., 2011, Barite: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 24–25.

- Mining & Development, 2010a, First exhibition of mines and mining industries localization to [be] held January 2011: Iranian Mines and Mining Industries Development and Renovation Organization, v. 4, no. 39, November 24, 8 p.
- Mining & Development, 2010b, Imidro invests \$7.1 bn in the fourth development plan: Iranian Mines and Mining Industries Development and Renovation Organization, v. 3, no. 34, July 11, 8 p.
- Mining & Development, 2010c, Mines, biggest advantage for long-term goals: Iranian Mines and Mining Industries Development and Renovation Organization, v. 4, no. 39, November 24, 8 p.
- Mining & Development, 2010d, More than \$1/1 bn foreign investment recorded in mining sector: Iranian Mines and Mining Industries Development and Renovation Organization, v. 4, no. 36, September 22, 8 p.
- Mining & Development, 2010e, Zarshoran gold plant to set up in 2010: Iranian Mines and Mining Industries Development and Renovation Organization, v. 4, no. 38, October 16, 8 p.
- Mining & Development, 2011, 700,000 people employed in Iran's mine & mining industries: Iranian Mines and Mining Industries Development and Renovation Organization, v. 4, no. 46, July, 8 p.
- Mirza, Adal, 2010a, Sanctions begin to kick in: MEED, v. 54, no. 42, October 15–21, p. 40.
- Mirza, Adal, 2010b, Taking the lead in capacity building: MEED, v. 54, no. 19, May 7–13, p. 39–40.
- Mirza, Adal, 2010c, Tehran refines its options: MEED, v. 54, no. 3, January 15–21, p. 26–27.
- Mirza, Adal, 2010d, Tehran stands at a crossroads: MEED, v. 54, no. 53, December 31–January 6, 2011, p. 34–35.
- Oraee, Kazem, Goodarzi, Arash, Oraee-Mirzamani, Nikzad, 2011, Economic analysis of the copper mining industry [sic] of Iran: SME annual meeting, February 27–March 2, 2011, 7 p. (Accessed January 31, 2012, at http://www.oraee.net/shenase/Portals/0/ECONOMIC_ANALYSIS_OF_THE_COPPER_MINING_INDUSDRY_OF_IRAN.pdf.)
- Polyak, D.E., 2011, Molybdenum: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 106–107.
- Tanner, A.O., 2011, Feldspar: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 54–55.
- Tehran Times, 2011, Indonesia ready to commission Hengam petrochemical complex in Iran: Tehran Times, November 27. (Accessed January 31, 2012, at <http://www.tehrantimes.com/economy-and-business/92957-indonesia-ready-to-commission-hengam-petrochemical-complex-in-iran.>)
- Union Resources Ltd., 2011, Annual report 2011: Brisbane, Queensland, Australia, Union Resources Ltd., 65 p.
- U.S. Department of the Treasury, Office of Foreign Assets Control, 2010, Iran—What you need to know about U.S. economic sanctions: Washington, DC, U.S. Department of the Treasury, December 2, 4 p.
- U.S. Energy Information Administration, 2009, Iran: U.S. Energy Information Administration country analysis brief, February. (Accessed January 27, 2010, at <http://www.eia.doe.gov/cabs/Iran/Full.html>.)
- van Oss, H.G., 2011, Cement: U.S. Geological Survey Mineral Commodity Summaries 2011, p. 38–39.

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

(Metric tons unless otherwise specified)

Commodity ³	2006	2007	2008	2009	2010
METALS					
Aluminum:					
Bauxite, gross weight	500,000	520,800 ⁴	715,339 ⁴	522,018 ^{r,4}	600,000
Alumina	250,000	250,000	250,000	250,000	250,000
Metal, primary ingot	205,000	215,981 ⁴	248,000	250,000	270,000
Arsenic, orpiment and realgar, concentrates ^e	100	100	100	100	100
Chromite, mine output, concentrate:					
Gross weight	244,603 ⁴	185,760 ⁴	268,586 ⁴	225,129 ⁴	250,000
Cr ₂ O ₃ content ^e	115,000	90,000	130,000	110,000	120,000
Copper:					
Mine output:					
Ore mined (0.6% to 1.2% Cu):					
Gross weight	20,000	26,500	26,500	27,000	27,500
Cu content ^e	210,000	244,000	248,000	260,000	265,000
Concentrate (29% to 35% Cu):					
Gross weight	620,000	731,000	740,000	750,000	760,000
Cu content ^e	200,000	235,000	240,000	250,000 ^r	255,000
Metal:					
Smelter output, blister or anode	242,000	250,000	248,000	260,000	280,000
Refined output, cathode	200,000	201,000	200,000	210,254 ^{r,4}	210,000
Gold, mine output, Au content ⁵	200	252 ⁴	303 ^{r,4}	340 ^{r,4}	341
Iron and steel:					
Ore and concentrate:					
Gross weight	26,244 ⁴	31,538 ⁴	32,000	34,034 ^{r,4}	35,000
Fe content ^e	13,000	15,000	15,000	16,000	16,500
Metal:					
Pig iron	2,000	2,572 ⁴	2,200	2,400 ^r	2,500
Direct-reduced iron	6,900	7,440 ⁴	7,500	8,200 ^r	9,400
Ferrochromium ^e	7,000	8,000	8,000	8,000	8,000
Ferrosilicon	45,000	45,000	45,000	45,000	45,000
Steel, crude, ingots and castings	9,800	10,100	9,960	10,000	12,000

See footnotes at end of table.

TABLE 1—Continued
 IRAN: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2006	2007	2008	2009	2010
METALS—Continued					
Lead:					
Mine output, concentrate:					
Gross weight	47,000	40,000	53,000	39,254 ^{r,4}	70,000
Pb content ^e	24,000	20,000	26,905 ⁴	20,000 ^r	35,000
Refinery output, includes secondary ^e	75,000	70,000	75,000	75,000	75,000
Manganese, mine output (30% to 35% Mn):					
Gross weight	125,000	103,441 ⁴	115,000	125,506 ^{r,4}	130,000
Mn content ^e	42,000	35,000	40,000	45,000	46,000
Molybdenum, mine output, concentrate:					
Gross weight	4,600	6,644 ⁴	6,597 ⁴	4,447 ^{r,4}	7,000
Mo content ^e	2,500	3,600	3,700	2,500 ^r	3,900
Silver, mine output, Ag content	25	20	15	15	15
Zinc:					
Mine output, concentrate:					
Gross weight	300,000	190,000	130,000	150,000	160,000
Zn content ^e	164,000	100,000	69,267 ⁴	72,048 ^{r,4}	80,000
Metal	140,000	90,000	60,000	65,000	65,000
INDUSTRIAL MINERALS					
Asbestos:					
Concentrate (3% to 8% marketable fiber)	40,000	-- ⁴	--	--	--
Marketable fiber ^e	1,300	-- ⁴	--	--	--
Barite	230,000	249,495 ⁴	226,590 ⁴	361,217 ^{r,4}	400,000
Boron, borax	2,000	1,603 ⁴	1,020	388 ^{r,4}	500
Cement, hydraulic	thousand metric tons	35,000	41,000	44,400	50,000
Clays:					
Bentonite	260,000	254,084 ⁴	375,898 ⁴	387,437 ^{r,4}	400,000
Industrial clays	550,000	550,000	530,000	530,000	550,000
Kaolin	310,000	350,000	320,000	907,487 ^{r,4}	900,000
Diatomite	1,500	300	2,000 ⁴	-- ^r	--
Feldspar	290,000	512,261 ⁴	501,821 ⁴	634,503 ^{r,4}	650,000
Fluorspar	65,000	68,192 ⁴	61,592 ⁴	71,409 ^{r,4}	72,000
Gemstones, turquoise ^e	kilograms	20,000	20,000	19,000	19,000
Gypsum	thousand metric tons	12,000	12,000	11,251 ⁴	13,000
Industrial or glass sand (quartzite and silica)	do.	1,900	2,000	2,000	1,500
Lime	do.	2,600	2,600	2,700	2,600 ^r
Magnesite	110,000	112,229 ⁴	115,987 ⁴	130,575 ^{r,4}	130,000
Mica	--	1,800 ⁴	1,510 ⁴	6,797 ^{r,4}	7,000
Nepheline syenite	70,000	70,000	70,000	70,000	70,000
Nitrogen:					
N content of ammonia	1,020,000	2,000,000	2,000,000	2,000,000	2,500,000
N content of urea	670,000	1,300,000	1,300,000	1,300,000	1,600,000
Perlite	40,000	30,000	30,000	30,000	30,000
Phosphate rock:					
Ore	325,000	330,000	325,000	330,000	330,000
P ₂ O ₅ content ^e	40,000	40,500	37,000	39,000	39,000
Pigments, mineral, natural iron oxide, ochre ^e	2,600	2,600	2,600	2,600	2,600
Pumice and related volcanic materials	thousand metric tons	1,400	1,500	1,500	1,500
Salt	2,000,000	2,564,871 ⁴	2,158,280 ⁴	2,816,235 ^{r,4}	2,900,000
Soda ash ^e	130,000	140,000	140,000	140,000	140,000

See footnotes at end of table.

TABLE 1—Continued
 IRAN: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2006	2007	2008	2009	2010	
INDUSTRIAL MINERALS—Continued						
Sodium compound, caustic soda ^e	20,000	20,000	20,000	20,000	20,000	
Stone:						
Construction and building, crushed ⁶	thousand metric tons	25,000	26,000	25,000	25,000	26,000
Dimension and decorative:						
Granite	do.	1,000	1,100	1,000	1,000	1,000
Marble, blocks and slabs ⁷	do.	4,000	4,200	4,000	4,000	4,000
Travertine, blocks	do.	1,400	1,500	1,500	1,500	1,500
Total ^c	do.	6,400	6,800	6,500	6,500	6,500
Dolomite	do.	600	650	600	600	600
Limestone	do.	50,000	55,000	50,000	50,000	50,000
Strontium, celestite		1,000	2,000	2,000	15,396 ^{r,4}	16,000
Sulfates, natural: ^e						
Aluminum potassium sulfate (alum)		1,000	1,000	1,000	1,000	1,000
Sodium sulfate		600,000	600,000	600,000	600,000	600,000
Sulfur: ^e						
Byproduct of petroleum and natural gas		1,400,000	1,500,000	1,500,000	1,500,000	1,700,000
Byproduct of metallurgical processing, S content of acid		60,000	70,000	70,000	70,000	80,000
Total		1,460,000	1,570,000	1,570,000	1,570,000	1,800,000
Talc		70,000	90,889 ⁴	89,110 ⁴	66,383 ^{r,4}	80,000
MINERAL FUELS AND RELATED MATERIALS						
Coal	thousand metric tons	2,000	2,000	1,800	2,181 ^{r,4}	2,300
Coke	do.	1,184 ⁴	1,200 ⁴	1,300	1,300	1,350
Gas, natural: ^e						
Gross	million cubic meters	160,000	170,000	175,000	200,000	210,000
Dry	do.	105,000	112,000	116,000	131,000	138,000
Gas plant liquids	thousand 42-gallon barrels	90,000	150,000	140,000	140,000	145,000
Petroleum:						
Crude	do.	1,487,000 ⁴	1,470,000 ⁴	1,490,000	1,450,000 ^{r,4}	1,470,000
Refinery products: ^e						
Liquefied petroleum gases	do.	47,000	53,000	55,000	56,000	57,000
Motor gasoline	do.	103,000	103,000	102,000	105,000	106,000
Jet fuel	do.	8,000	7,900	8,000	8,100	8,200
Kerosene	do.	49,000	51,000	49,000	50,000	50,500
Distillate fuel oil	do.	185,000	187,000	196,000	200,000	203,000
Residual fuel oil	do.	175,000	168,000	178,000	180,000	182,000
Other	do.	16,000	17,000	19,000	20,000	20,000
Total	do.	583,000	586,900	607,000	619,000	627,000

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through January 31, 2012.

²Data are for Iranian years ending March 20 of that stated, except data for alumina, natural gas, natural-gas-plant liquids, and petroleum, which are for Gregorian calendar years.

³In addition to commodities listed, the following may have been produced, but information is inadequate to estimate output: antimony, bromine, crude construction materials (such as sand and shell), ferromolybdenum, hafnium oxide, ilmenite, selenium, silicomanganese, uranium, zeolite, and zirconium metal.

⁴Reported figure.

⁵Includes gold recovered from the Mouteh gold mine and from the Sarcheshmeh copper complex.

⁶Includes marble and travertine.

⁷Includes marmarite.

TABLE 2
IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Iran Alumina Co. (Government)	Northeast of Jajarm, Khorasan Province	280
Aluminum	Iran Aluminium Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) ³ majority interest, and a joint venture of Industrial Development Investment Co. and a subsidiary of Mehr Finance & Credit Institution, 40%]	Arak, Markazi Province	190
Do.	Almahdi Aluminium Corp. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), ³ 59.34%, and International Development Corp., 20.78%]	Bandar Abbas, Hormozgan Province	110
Do.	Hormozgan Aluminium Complex (Hormozal)	do.	147
Bauxite	Iran Alumina Co. (Government)	Jajarm Mine, about 15 kilometers northeast of Jajarm	500
Cement	Abadeh Cement Co.	Abadeh, Fars Province	175
Do.	Abyek Cement Co. (Fars & Khuzestan Cement Co.)	Abyek, Qazvin Province, 80 kilometers northwest of Tehran	5,100
Do.	Anarak Special Cement Co.	Anarak, Markazi Province	500
Do.	Ardebil Cement Co. (Espandar Cement Investment Co.)	Namin, Ardebil Province	1,050
Do.	Ardestan Cement Co.	North of Esfahan, Esfahan Province	1,000
Do.	Behbahan Cement Co. (Fars & Khuzestan Cement Co.)	Behbahan, Khuzestan Province	960
Do.	Benvid White Cement Co. (Bank Melli Iran Investment Co.)	Benvid, Esfahan Province	175
Do.	Bojnourd Cement Plant (Fars & Khuzestan Cement Co.)	About 37 kilometers from Bojnourd, Khorasan Province	700
Do.	Bushehr Cement Co. (Dashtestan Cement)	Borazjan, Bushehr Province	1,000
Do.	Darab Cement Co. [General public (Justice shares), 50%, and Bank Melli Iran Investment Co., 29%]	About 190 kilometers southeast of Shiraz, Fars Province	1,100
Do.	Doroud Cement Co. (Fars & Khuzestan Cement Co.)	Doroud, Lorestan Province	1,400
Do.	Ekbatan Cement Co. (Espandar Cement Investment Co.)	Ekbatan, Tehran Province	175
Do.	Eshabban Cement Co.	20 kilometers west of Eshabban, Fars Province	350
Do.	Faraz Firouzkhu Cement Co. (Espandar Cement Investment Co.)	About 180 kilometers northeast of Tehran	1,200
Do.	Fars Cement Co. (Fars & Khuzestan Cement Co.)	Shiraz, Fars Province	2,000
Do.	Fars Nov Cement Co. (Fars & Khuzestan Cement Co.)	About 65 kilometers southeast of Shiraz, Fars Province	1,000
Do.	Firozkuh	Firozkuh	1,100
Do.	Ghaen Cement Co. (Cement Investment and Development Co., 26%, and Bank Melli Iran Investment Co., 14%)	Qayen (Ghaen), Khorasan Province	770
Do.	Gharb Cement Co. (Fars & Khuzestan Cement Co.)	Kermanshah, Kermanshah Province	700
Do.	Hegmatan Cement Co. (Tehran Cement Co., 79%)	East of Razan, Hamedan Province	1,000
Do.	Hormozgan Cement Co. (OMID Investment Co.)	About 75 kilometers west of Bandar Abbas	2,200
Do.	Ilam Cement Co. (Tehran Cement Co., 47%)	Northeast of Ilam, Ilam Province	700
Do.	Isfahan Cement Co.	Esfahan, Esfahan Province	1,100
Do.	Karoon Cement Co.	Near Masjed Soleyman, Khozestan Province	1,100
Do.	Kavir Kashan Cement Co. (Espandar Cement Investment Co.)	Near Kashan, Esfahan Province	660
Do.	Kerman Cement Co. (Bank Melli Iran Investment Co., 38%)	Kerman, Kerman Province	1,260
Do.	Khash Cement Co. (Fars & Khuzestan Cement Co.)	Khash, Sistan va Baluchestan Province	730 ^e
Do.	Khazar Cement Co. (Fars & Khuzestan Cement Co.)	About 80 kilometers northwest of Qazvin, Qazvin Province	1,200
Do.	Khuzestan Cement Co. (Fars & Khuzestan Cement Co.)	Ramhormoz, Khuzestan Province	1,100 ^e
Do.	Kohkiloye Yasuj Cement (State Retirement Organization ³ and Fars & Khuzestan Cement Co.)	Behbahan, near Deh Dasht, Kohkiloye, Kohgiluyeh va Bowyer Ahmad Province	240
Do.	Kordestan Cement Co. (Ghadir Investment Co.)	North of Bijar, Kurdistan Province	1,000
Do.	Lar-e Sabzevar Cement Co.	Sabzevar, Khorasan Province	1,100
Do.	Loshan Cement Co. (Tehran Cement Co., 66%)	Loshan, Gilan Province	100
Do.	Mazandaran Cement Co. (Bank Melli Iran Investment Co., 60%)	Neka, Mazandaran Province	1,600
Do.	Neyriz White Cement Co. (Fars & Khuzestan Cement Co.)	Neyriz, Fars Province	160

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement—Continued	Omran Anarak Cement Co.	Delijan, Markazi Province	1,030
Do.	Qeshm Cement Co.	Qeshm Island, Hormozgan Province	250
Do.	Sarooj Bushehr International Co.	Kangan, Bushehr Province	1,600
Do.	Saveh Grey Cement Co. (Fars & Khuzestan Cement Co.)	Saveh, Markazi Province	2,200
Do.	Saveh White Cement Co. (Fars & Khuzestan Cement Co.)	do.	350
Do.	Sepahan Cement Co. (Ghadir Investment Co.)	Mobarekeh, Esfahan Province	2,300
Do.	Shahroud Cement Co. (Fars & Khuzestan Cement Co.)	Shahroud, Semnan Province	600
Do.	Sharg Cement Co. (Ghadir Investment Co.)	Mashhad, Khorasan Province	1,600
Do.	Shemal Cement Co. (Bank Melli Iran Investment Co., 59%)	Pardis, Tehran Province	880
Do.	Soufian Cement Co. (Fars & Khuzestan Cement Co. and Social Security Organization Investment Co.)	About 33 kilometers northwest of Tabriz, East Azerbaijan Province	1,500
Do.	Tehran Cement Co. (Ghadir Investment Co.)	Tehran, Tehran Province	6,000
Do.	Urmia Cement Co. (Fars & Khuzestan Cement Co.)	Orumiyeh, West Azerbaijan Province	740
Do.	Urumieh White Cement Co.	do.	180
Do.	Yazd Bohrouk Cement Co.	Yazd, Yazd Province	1,100
Do.	Zanjan Cement Co. (Fars & Khuzestan Cement Co.)	Zanjan, Zanjan Province	600
Do.	Zarveh Torbat Cement Co.	Torbat-Heydareh, Khorasan Province	1,100
Chromite	Faryab Mining Co.	Faryab Mine and processing plant, Minab, Hormozgan Province	180 ^e
Do.	Esfandaghe Mines Co.	Abdasth Mine, Kerman Province; Suqan (Saboughan) Mine, Kerman Province; Processing plant at Esfandaghe, Kerman Province	30
Do.	NA	Furumad Mine, Shahrud, Semnan Province; Gaft processing plant, Semnan Province	6
Do.	NA	Mir Mahmud Mine, Mayami, Semnam Province	6
Do.	NA	Dumak Mine, Zahedan, Sistan va Baluchestan Province	2
Coke	Isfahan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Plant about 40 kilometers southwest of Esfahan, Esfahan Province	900
Do.	Zarand Iranian Steel Co.	Zarand, Kerman Province	400
Copper:			
Concentrate	National Iranian Copper Industries Co. (NICICO) [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Sarcheshmeh Mine, south of Rafsanjan, Kerman Province	670
Do.	do.	Sungun copper mine, East Azerbaijan Province	150
Do.	do.	Miduk copper mine, Kerman Province	150
Do.	do.	Qal'eh Zari Mine, about 120 kilometers southwest of Birjand, Khorasan Province	10
Do.	do.	Chah Firozeh, Chah Messi, Darehzar, and Eijo copper mines, Kerman Province	NA
Do.	Private cooperatives	Chah Musa Mine and Qal'eh Sukhteh, Semnan Province	5
Smelter output	National Iranian Copper Industries Co. (NICICO) [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Smelter, Sarcheshmeh copper complex, south of Rafsanjan, Kerman Province	145
Do.	do.	Smelter near Khatoonabad, Kerman Province	80
Refined metal	do.	Refinery, Sarcheshmeh copper complex, south of Rafsanjan, Kerman Province	210
Do.	do.	Electrowon plant, Sarcheshmeh copper complex, south of Rafsanjan, Kerman Province	14
Gemstones, turquoise	NA	Neyshabur Mine, Khorasan Province	6 ^e

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Gold:			
Ore	kilograms Iran Gold Co.	Muteh Mine (Chah Khaton and Senjedeh pits), Esfahan Province, and Kuh-e-Zar Mine, Semnan Province	600
Do.	do. Artisanal placer operations	Neyshabur area, Khorasan Province	NA
Metal ⁴	do. National Iranian Copper Industries Co. (NICICO) [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Sarcheshmeh copper complex, south of Rafsanjan, Kerman Province	500
Iron and steel:			
Iron ore	Iran Central Iron Ore Co. (National Iranian Steel Co. (NISCO), 100%) ⁵	Choghart Mine, Bafgh, Yazd Province	7,400
Do.	Chadormalu Mining and Industrial Co. [Omid Investment Management Corp., 37%; Mines and Metals Development Investment Co., 15%; Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), ³ 8%]	Chadormalu Mine, 80 kilometers north of Bafgh, Yazd Province	6,500
Do.	Gol-e-Gohar Iron Ore Co. [Omid Investment Management Corp., 39%; Mines and Metals Development Investment Co., 28%; Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), ³ 18%]	Gol-e-Gohar Mine, about 50 kilometers southwest of Sirjan, Kerman Province	3,800
Do.	Sangan Iron Ore Co. (National Iranian Steel Co., 100%) ³	Sangan (Songun) Mine, about 140 kilometers southeast of Torbat e-Heydariyeh, Khorasan Province	2,000
Do.	Iranian Minerals Production and Supply Co. (IMPASCO) [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) ³]	Jalal Abad Mine, about 40 kilometers northwest of Zarand	1,700
Do.	About 20 small privately owned mines	NA	1,000 ^e
Iron:			
Cast iron	Zagros Steel Co. (Government, majority interest)	Foundry in Kurdistan Province	70
Iron metal	Mobarekeh Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³ majority interest; Social Security Organization, ³ 10%; a subsidiary of Mehr Finance & Credit Institution, 5%, and the Steel Employees Fund, 5%]	Direct-reduction iron plant (Midrex® process) about 50 kilometers southwest of Esfahan, Esfahan Province	4,000
Do.	Khuzestan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), ³ majority interest]	Direct-reduction iron plant (HYL I, Midrex®, and Purofer processes), Ahwaz, Khuzestan Province	3,200
Do.	Hormozgan Steel Complex [National Iranian Steel Co. (NISCO) ⁵ and partners]	Direct-reduction iron plant (Midrex® process)	850
Do.	Isfahan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Direct-reduction iron plant (Ghaem process) about 40 kilometers southwest of Esfahan, Esfahan Province	600
Steel, crude	Mobarekeh Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³ majority interest; Social Security Organization, ³ 10%; a subsidiary of Mehr Finance & Credit Institution, 5%, and the Steel Employees Fund, 5%]	Plant about 50 kilometers southwest of Esfahan, Esfahan Province	4,200
Do.	Khuzestan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³ majority interest]	Plant at Ahwaz, Khuzestan Province	2,600
Do.	Isfahan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Plant about 40 kilometers southwest of Esfahan, Esfahan Province	2,200

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity
Iron and steel—Continued:				
Steel, crude—Continued	Khorasan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) ³ majority interest, and a Government pension fund, 40%]		Plant at Neyshabur, Khorasan Province	650
Do.	Vian Steel Melting and Casting Co.		Plant, about 42 kilometers of Hamadan, Hamadan Province	600
Do.	Meibod (Maybod) Steel Co. (Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)], ³ 50%		About 15 kilometers southwest of Meybod, Yazd Province	300
Magnesite	Birjand Refractory Mining Co. (Iranian Refractories Procurement & Production Co.)		Hoz Sefid, Shirkuhak, and Torshak Mohammadi Mines, about 50 kilometers southeast of Birjand, South Khorasan Province	NA
Natural gas	billion cubic meters	National Iranian Oil Co. (Government, 100%)	Associated gas from company oilfields	96
Do.	do.	do.	Aghar, Dalan, Kangan, and Nar gasfields	57
Do.	do.	Pars Oil and Gas Co. (National Iranian Oil Co., 100%) ³	South Pars gasfields, offshore	32 ⁶
Petroleum:				
Crude	million 42-gallon barrels	National Iranian Oil Co. (Government, 100%)	Onshore oilfields include the Agha Jari, the Ahwaz-Asmari, the Bangestan, the Hakimeh, the Gachsaran, the Karanj, the Marun, the Pazanan, and the Rag-e-Safid. Offshore oilfields include the Abouzar and the Salman	1,400
Do.	do.	National Iranian Oil Co. and buyback contract joint venture of Shell Iran Nowrooz/Soroosh Development (70%), JJI S&N B.V. (20%), and Iranian Offshore Engineering & Construction Co. (10%)	Nowrooz and Soroosh fields, offshore	75
Do.	do.	National Iranian Oil Co. and buyback contract joint venture of Total S.A. (55%) and Eni SpA (45%)	Doroud field, offshore	65
Do.	do.	National Iranian Oil Co. and buyback contract joint venture of Total S.A. (70%) and PETRONAS Carigali International Sdn Bhd (30%)	Sirri A and E fields, offshore	40
Do.	do.	National Iranian Oil Co. and buyback contract joint venture of Total S.A. (60%) and Naftiran Intertrade Co. (40%)	Darquain field, onshore	17
Refined products	thousand 42-gallon barrels per day	National Iranian Oil Refining and Distribution Co. (NIORDC) (Government, 100%)	Refineries at Abadan, Arak, Bandar Abbas, Esfahan, ⁷ Kermanshah, Lavan, Shiraz, Tabriz, and Tehran	1,728
Phosphate rock		Esfordi Phosphate Complex (Iran Minerals Production & Supply Co.) ³	About 35 kilometers northeast of Bafgh, Yazd Province	500
Titanium, ilmenite		Kahnuj pilot plant [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)] ³	Daregaz placer and Kahnuj titanium dioxide processing plant	NA
Uranium	metric tons	Atomic Energy Organization of Iran (Government)	Saghand Mine, about 125 kilometers northeast of Yazd, Yazd Province	50 ^e
Do.	do.	do.	Gchine Mine, near Bandar Abbas, Hormozgan Province	21 ^e
Zinc:				
Ore		Iran Zinc Mine Development Co.	Angouran open pit mine, Dandi, Zanjan Province	500 ⁸
Do.		BAMA Co. (IranKooch)	Irakouh complex (Gooshfil and Tappeh Sorkh open pit mines, about 20 kilometers southeast of Esfahan, Esfahan Province, and Kolah Darvazeh Mine, south of Esfahan, Esfahan Province)	190 ⁸
Do.		Bafgh Mining Co.	Kushk Mine, Yazd Province	120 ⁸
Do.		Beroner Tehran Co.	Emarat Mine, about 25 kilometers southwest of Arak, Markazi Province	100 ⁸

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Zinc—Continued:			
Refined metal	Bafgh Zinc Co. (Iran Zinc Mine Development Co.)	West of Bafgh, Yazd Province	30
Do.	Qeshm Zinc Smelter Co. (affiliate of Calcimine Co.)	Kaveh Industrial Zone, Qeshm Island, Hormozgan Province	20
Do.	Calcimine Co. (Iran Zinc Mine Development Co.)	Dandi (Angouran) plant, Zanjan Province	18
Do.	Faravari Mavad Madani Iran Co. (Iran Zinc Mine Development Co.)	Dandi, Zanjan Province	18
Do.	National Iranian Lead and Zinc Co. (Iran Zinc Mine Development Co.)	About 12 kilometers east of Zanjan, Zanjan Province	15
Do.	Bandar Abbas Zinc Production Co. (affiliate of Calcimine Co.)	Bandar Abbas, Hormozgan Province	13
Do.	Zanjan Zinc Smelter Co. (affiliate of Calcimine Co.)	Zanjan, Zanjan Province	5

⁶Estimated. Do., do. Ditto. NA Not available.

¹About 3,000 mines that are located in Iran are active. About 65% of the active mines and quarries produce building and construction materials, such as aggregate, sand, and stone.

²Data was augmented by input from the Iranian National Committee of the World Mining Congress.

³Government owned.

⁴Recovered from Sar Cheshmeh copper plant slimes.

⁵A subsidiary of state-owned Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO).

⁶May include basic sediment and condensate.

⁷Held 95% equity interest.

⁸Includes lead and zinc ores.