



2008 Minerals Yearbook

IRAN [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF IRAN

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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. The Central Bank reported that crude oil production averaged 4 million barrels per day in 2008. According to the BP p.l.c. (2009, p. 9), Iran was the world's fourth ranked producer of crude oil and condensate, accounting for about 5.3% of the world's output. Iran also held 16% of proved worldwide natural gas reserves and 10.9% of proved oil reserves. The country also was estimated to account for more than 1% of the world's output of cement and fluorspar (table 1; BP p.l.c., 2009, p. 6, 22; Central Bank of the Islamic Republic of Iran, 2009, p. 7; Miller, 2010; van Oss, 2010).

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 about 30% of the country's gross domestic product (GDP) at current prices for the first three quarters of 2008 (the latest period for which data were available). At constant prices, hydrocarbons accounted for 9.7% of the country's GDP for the first three quarters of 2008 compared with about 10.3% for the first three quarters of 2007 and about 10.2% for all of 2007. Cement and steel were significant components of the domestic mineral industry. Aluminum, refined copper, and steel ingots accounted for minor, but notable, mineral sector export values and volumes (Central Bank of the Islamic Republic of Iran, 2009, p. 2, 3).

The Government subsidized several segments of the economy, including the electricity, mineral fuel, and natural gas sectors. Gasoline rationing remained in effect in 2008, and the Government-controlled price of gasoline was raised to \$0.45 per liter (\$1.71 per gallon) from \$0.11 per liter (\$0.42 per gallon). For Iranian year 1386 (March 21, 2007, to March 20, 2008), the Government lost an estimated \$32 billion in revenue because of the motor fuels subsidy and about \$25 billion owing to the subsidy for industrial users of natural gas (Kramarenko, Bonato, and Zytec, 2008, p. 26-27).

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. A reinterpretation of the Constitution in 2004 allowed private domestic and international investor participation in the mining sector. The Petroleum Act of 1987 clarified the Government's authority in the oil sector.

Production

Based on estimates of mineral commodity production, significant increases in output in 2008 compared with that of 2007 were estimated for aluminum, gold ore, iron ore, manganese ore, and zinc ore and metal. Other large swings observed in the production data primarily were artifacts of rounding to fewer significant digits. Data on estimated mineral production 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 controlled many of the larger mining and mineral-processing companies, especially those that produced aluminum, ammonia, coal, copper, iron and steel, natural gas, petroleum, salt, and sulfur. In 2008, the Government divested some of its interest in the mineral sector.

A consortium headed by the Industrial Development Investment Co. of Iran and a subsidiary of Mehr Finance & Credit Institution of Iran acquired 40% of Iran Aluminium Co. from the Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO). The Government divested 40% of its interest in Khorasan Steel Co. (which was acquired by a Government pension fund), 30.5% of its interest in Khouzestan Steel Co., and a minority stake in Zagros Steel Co. The Government also divested 25% of its interest in IMIDRO's Mobarekeh Steel Co., of which the Government's Social Security Organization acquired 10%, a subsidiary of Mehr Finance acquired 5%, and the Steel Employees Fund acquired 5%. Five percent of the shares of National Iranian Oil Refining and Distribution Co.'s (NIORDC's) Esfahan Oil Refinery Co. were sold off. The Government also sold Razi Petrochemical Co., which was an ammonia, diammonium phosphate fertilizer, and urea producer, to a group led by Gubre Fabrikalari Turk A.Ş. of Turkey.

In 2009, the Government planned to privatize 100% of its interest in Isfahan Steel Co., 69% of its interest in Almahdi Aluminium Corp., and 49% of its interest in Meibod Steel Co., in addition to partial interest in the Arak, the Bandar Abbas, the Esfahan, the Kermanshah, and the Lavan refineries of National Iranian Oil Co.

Mineral Trade

The Central Bank of the Islamic Republic of Iran (2008, p. 13; 2009, p. 13) reported that hydrocarbons accounted for

about 84% of the total value of exports in 2008. Hydrocarbon exports were valued at about \$95 billion¹ in 2008 compared with \$72 billion in 2007. The increase was primarily the result of the increased international price of oil. Crude oil exports accounted for most of the hydrocarbon exports. About 40% of exported Iranian oil (based on value) was shipped to China, India, and Japan.

Commodity Review

Metals

Aluminum.—The second phase of Iran Aluminium Co.'s new smelter at Arak was completed in 2008. The company's total production capacity increased to about 190,000 metric tons per year (t/yr) from 155,000 t/yr (Iran Mining & Related Industries Information Center, 2008b).

Fata SpA of Italy continued work on the Hormozgan aluminum complex (Hormozal) at Bandar Abbas. The 147,000-t/yr-capacity Hormozal smelter was expected to begin production in 2010 (Iranian Mines and Mining Industries Development and Renovation Organization, 2010).

Copper.—National Iranian Copper Industries Co. (NICICO) proposed significant increases in Iran's refined copper production by 2013. Domestic copper cathode capacity was expected to increase to 440,000 t/yr from 224,000 t/yr. Projects underway in 2008 included the construction of a 5,000-t/yr-capacity solvent extraction-electrowon plant at Miduk and the expansion of the capacity of several domestic copper mines to concentrate ore. New concentrators were under construction at the Sarcheshmeh Mine, which was expected to produce 160,000 t/yr of concentrate at a grade of 28% copper, and at the Sungun Mine, which was expected to produce 150,000 t/yr of concentrate at grade of 30% copper. Also underway were the construction of the Yazd Ali-Abad Mine, which was expected to mine 2.5 million metric tons per year of ore to produce 43,000 t/yr of concentrate at a grade of 27% copper, and the 300,000-t/yr Zahedan Chehel-Kooreh Mine, which would produce 17,000 t/yr of concentrate at a grade of 20% copper. NICICO also started the construction of a molybdenum plant at Sungun, which would produce 2,000 t/yr of molybdenum concentrate at an expected grade of 54% molybdenum (Iranian Mines and Mining Industries Development and Renovation Organization, 2008; National Iranian Copper Industries Co., undated a-f).

Mineral Fuels and Related Materials

Coal and Coke.—Production of coke from coal began at the Zarand Iranian Steel Co.'s plant. The 400,000-t/yr-capacity plant, which was located at Zarand, Kerman Province, reached 60% of capacity by yearend. Coke output was sold to the Isfahan, the Meibod, and the Zagros steel plants. The Zarand tar refinery was under construction at the coke plant. The refinery also was designed to produce about 19,200 t/yr of coke byproducts, such as ammonium sulfate, benzol, naphthalene, sulfur, and toluene (Iran Mining & Related Industries Information Center, 2008a).

¹Where necessary, values have been converted from Iranian rials (IR) to U.S. dollars (US\$) at the average exchange rate of IR9,638=US\$1.00 for 2008.

Petroleum.—NIORDC continued work on numerous refinery projects in 2008. Projects underway included production-capacity expansions of 85,000 barrels per day (bbl/d) of gasoline at the Esfahan refinery, 36,300 bbl/d at the Bandar Abbas refinery, 11,000 bbl/d at the Tehran refinery, 11,000 bbl/d at the Lavan refinery, and 4,500 bbl/d at the Tabriz refinery (National Iranian Oil Refining and Distribution Co., undated).

Outlook

The Government continued the planned reduction of its direct-controlling interest in the economy to 25% from about 75%. Quasi-governmental organizations, however, were expected to continue to acquire a significant proportion of the shares in companies that the Government divests.

Numerous development or expansion projects are planned or underway in Iran's mineral sector. Despite the higher-than-expected international prices at the beginning of the year for minerals, the dependence of large-scale mineral resource development programs on Government funding adversely affected the timeliness of mineral development and production-capacity expansion projects. Such project delays historically have resulted in increased construction costs and lost revenue from the projects. The availability of international funding for capital-intensive development of mineral-related projects by Government-controlled and private companies operating in Iran was impaired, in part, by the Government's nuclear program, which had attracted international sanctions.

About 60% of Iranian crude oil production was exported in 2008. Domestic demand for crude oil and natural gas is expected to continue to increase in the future, which may require that Iran forgo income-generating hydrocarbon exports in order to meet demand. Development of identified natural gas and oil resources is expected to continue, subject to funding constraints and limitations imposed by existing (2008) economic sanctions. The renovation of existing crude oil refineries and the construction of several new refineries are expected to increase the value of the Iranian oil output (Central Bank of the Islamic Republic of Iran, 2009, p. 7; U.S. Department of the Treasury, Office of Foreign Assets Control, undated).

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

(Metric tons unless otherwise specified)

Commodity ³	2004	2005 ^c	2006 ^c	2007 ^c	2008 ^c
METALS					
Aluminum:					
Bauxite, gross weight	366,000	437,595 ⁴	500,000	520,800 ^{r,4}	520,000
Alumina	137,002	200,000	250,000	250,000	200,000
Metal, primary ingot	212,602	220,000	205,000	215,981 ^{r,4}	248,000
Arsenic, orpiment and realgar, concentrates ^c	89 ⁴	100	100	100	100
Chromite, mine output, concentrate					
Gross weight	138,755	223,563 ⁴	244,603 ^{r,4}	185,760 ^{r,4}	180,000
Cr ₂ O ₃ content ^c	68,000	110,000	115,000 ^r	90,000 ^r	80,000
Copper:					
Mine output:					
Ore mined (0.6% to 1.2% Cu):					
Gross weight	18,885	19,000	20,000	26,500	26,500
Cu content ^c	190,000	190,000	210,000	244,000 ^r	248,000
Concentrate (29% to 35% Cu):					
Gross weight	448,689	480,000	620,000	731,000	740,000
Cu content ^c	150,000	160,000	200,000 ^r	235,000 ^r	240,000
Metal:					
Smelter output, blister or anode	184,814	227,000	242,000	250,000	248,000
Refined output, cathode	152,463	178,000	200,000	201,000	200,000
Gold, mine output, Au content ⁵	195	200 ^r	200 ^r	252 ^{r,4}	400
Iron and steel:					
Ore and concentrate:					
Gross weight	18,205	19,000	21,000	23,000	25,500
Fe content ^c	8,900	9,162 ⁴	10,000	11,000	12,000
Metal:					
Pig iron	2,136	2,300	2,000	2,572 ^{r,4}	2,600
Direct-reduced iron	6,410	6,850	6,900	7,440 ^{r,4}	7,500
Ferrosilicon	7,750 ⁴	8,000	7,000	8,000	8,000
Ferrosilicon	50,140	50,000	45,000	45,000	45,000
Steel, crude, ingots and castings	8,382	9,400	9,800	10,100	9,960
Lead:					
Mine output, concentrate:					
Gross weight	42,018	43,000	47,000	40,000	40,000
Pb content ^c	22,000	22,000	24,000	20,000	20,000
Refinery output, includes secondary ^c	68,000	68,000	75,000	70,000	75,000
Manganese, mine output (30% to 35% Mn):					
Gross weight	128,924	125,000	125,000	103,441 ^{r,4}	130,000
Mn content ^c	43,000	42,000	42,000	35,000 ^r	44,000
Molybdenum, mine output, concentrate:					
Gross weight	3,367	4,603 ⁴	4,600	6,644 ⁴	6,500
Mo content ^c	1,800	2,476 ⁴	2,500	3,600	3,500
Silver, mine output, Ag content	25	25	25	26	25
Zinc:					
Mine output, concentrate:					
Gross weight	244,006	310,000	300,000	190,000	280,000
Zn content ^c	121,000	167,000	164,000	100,000	150,000
Metal	109,400	120,000	140,000	90,000	100,000
INDUSTRIAL MINERALS					
Asbestos:					
Concentrate (3% to 8% marketable fiber)	82,018	40,000	40,000	-- ^{r,4}	--
Marketable fiber ^c	6,000	1,300	1,300	-- ^{r,4}	--
Barite	275,607	231,184 ⁴	230,000	249,495 ^{r,4}	250,000

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity ³	2004	2005 ^c	2006 ^c	2007 ^c	2008 ^c	
INDUSTRIAL MINERALS—Continued						
Boron, borax	2,142	1,660	2,000	1,603 ^{r,4}	2,000	
Cement, hydraulic	thousand metric tons	32,198	32,650 ⁴	35,000	41,000	44,400
Clays:						
Bentonite	193,046	261,888 ⁴	260,000	254,084 ^{r,4}	240,000	
Industrial clays	578,750	550,000	550,000	550,000	530,000	
Kaolin	531,109	311,501 ⁴	310,000	350,000	320,000	
Diatomite	8,028	1,450	1,500	300 ^r	300	
Feldspar	252,713	286,033 ⁴	290,000	512,261 ^{r,4}	500,000	
Fluorspar	54,052	64,601 ⁴	65,000	68,192 ^{r,4}	65,000	
Gemstones, turquoise ^c	kilograms	20,000	20,000	20,000	20,000	
Gypsum	thousand metric tons	12,594	11,196 ⁴	12,000	12,000	12,000
Industrial or glass sand (quartzite and silica)	1,880,093	1,900,000	1,900,000	2,000,000	2,000,000	
Lime	thousand metric tons	2,500	2,500	2,600	2,600	2,700
Magnesite	88,194	114,708 ⁴	110,000	112,229 ^{r,4}	110,000	
Mica	7,032	705 ⁴	--	1,800 ^{r,4}	1,800	
Nepheline syenite	63,798	65,000	70,000	70,000	70,000	
Nitrogen:						
N content of ammonia	1,087,700	1,020,000	1,020,000	2,000,000	2,000,000	
N content of urea	717,800	670,000	670,000	1,300,000	1,300,000	
Perlite	31,259	31,000	40,000	30,000	30,000	
Phosphate rock:						
Ore	229,575	324,166 ⁴	325,000	330,000	325,000	
P ₂ O ₅ content ^c	28,000	40,000	40,000	40,500	36,000	
Pigments, mineral, natural iron oxide, ochre ^c	2,500	2,500	2,600	2,600	2,600	
Pumice and related volcanic materials	1,536,448	1,500,000	1,400,000	1,500,000	1,500,000	
Salt	1,790,669	2,009,195 ⁴	2,000,000	2,564,871 ^{r,4}	2,000,000	
Soda ash ^c	130,000	130,000	130,000	140,000	140,000	
Sodium compound, caustic soda ^c	22,000	22,000	20,000	20,000	20,000	
Stone:						
Construction and building, crushed ⁶	thousand metric tons	25,369	25,000	25,000	26,000	25,000
Dimension and decorative:						
Granite	do.	1,019	1,000	1,000	1,100	1,000
Marble, blocks and slabs ⁷	do.	4,068	4,000	4,000	4,200	4,000
Travertine, blocks	do.	1,360	1,400	1,400	1,500	1,500
Total ^c	do.	6,450	6,400	6,400	6,800	6,500
Dolomite	do.	609	600	600	650	600
Limestone	do.	50,380	50,000	50,000	55,000	50,000
Strontium, celestite	7,500	672	--	--	--	
Sulfates, natural: ^c						
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: ^c						
Byproduct of petroleum and natural gas	1,400,000	1,400,000	1,400,000	1,500,000	1,500,000	
Byproduct of metallurgical processing, S content of acid	60,000	60,000	60,000	70,000	70,000	
Total	1,460,000	1,460,000	1,460,000	1,570,000	1,570,000	
Talc	187,465	70,600	70,000	90,889 ^{r,4}	90,000	

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity ³	2004	2005 ^c	2006 ^c	2007 ^c	2008 ^c	
MINERAL FUELS AND RELATED MATERIALS						
Coal	thousand metric tons	2,498	1,898 ⁴	2,000	2,000	2,000
Coke	do.	1,021	1,020	1,184 ⁴	1,200 ⁴	1,300
Gas, natural: ^c						
Gross	million cubic meters	137,000	150,000	160,000	170,000	175,000
Dry	do.	89,663 ⁴	100,000	105,000	112,000	116,000
Plant liquids	thousand 42-gallon barrels	84,000	85,000	90,000	95,000	95,000
Petroleum:						
Crude	do.	1,500,000	1,493,000 ⁴	1,487,000 ⁴	1,470,000 ⁴	1,490,000
Refinery products: ^c						
Liquefied petroleum gases	do.	48,100	48,000	47,000	48,000	48,000
Motor gasoline	do.	92,000	100,000	103,000	105,000	105,000
Jet fuel	do.	6,300	7,000	8,000	8,000	8,000
Kerosene	do.	52,800	50,000	49,000	50,000	50,000
Distillate fuel oil	do.	117,000	120,000	185,000	190,000	190,000
Residual fuel oil	do.	172,000	170,000	175,000	180,000	180,000
Other	do.	21,000	20,000	16,000	19,000	19,000
Total	do.	509,000	515,000	583,000	600,000	600,000

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

¹Table includes data available through January 29, 2010.

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 2008^{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
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 & Khouzestan Cement Co.)	Abyek, Qazvin Province, 80 kilometers northwest of Tehran	5,100
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 & Khouzestan 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 & Khouzestan 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 & Khouzestan Cement Co.)	Doroud, Lorestan Province	1,400
Do.	Ekbatan Cement Co. (Espandar Cement Investment Co.)	Ekbatan, Tehran Province	175
Do.	Estahban Cement Co.	20 kilometers west of Estahban, 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 & Khouzestan Cement Co.)	Shiraz, Fars Province	2,000
Do.	Fars Nov Cement Co. (Fars & Khouzestan Cement Co.)	About 65 kilometers southeast of Shiraz, Fars Province	1,000
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 & Khouzestan 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 & Khouzestan Cement Co.)	Khash, Sistan va Baluchestan Province	730 ^e
Do.	Khazar Cement Co. (Fars & Khouzestan Cement Co.)	About 80 kilometers northwest of Qazvin, Qazvin Province	1,200
Do.	Khouzestan Cement Co. (Fars & Khouzestan Cement Co.)	Ramhormoz, Khuzestan Province	1,100 ^e
Do.	Kohkiloye Yasuj Cement (State Retirement Organization ³ and Fars & Khouzestan 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.	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.	Qeshm Cement Co.	Qeshm Island, Hormozgan Province	250
Do.	Neyriz White Cement Co. (Fars & Khouzestan Cement Co.)	Neyriz, Fars Province	160
Do.	Saveh Grey Cement Co. (Fars & Khouzestan Cement Co.)	Saveh, Markazi Province	2,200
Do.	Saveh White Cement Co. (Fars & Khouzestan Cement Co.)	do.	350
Do.	Sepahan Cement Co. (Ghadir Investment Co.)	Mobarekeh, Esfahan Province	2,300

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2008^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity		
Cement—Continued	Shahroud Cement Co. (Fars & Khouzestan 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 & Khouzestan 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 & Khouzestan 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 & Khouzestan Cement Co.)	Zanjan, Zanjan Province	600		
Chromite	Faryab Mining Co.	Faryab Mine and processing plant, Minab, Hormozgan Province	180 ^e		
Do.	Esfandaghe Mines Co.	Abdasht 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	thousand metric tons	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.		Private cooperatives	Chah Musa Mine and Qal'eh Sukhteh, Semnan	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	
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	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

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2008^{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:				
Iron ore	Iran Central Iron Ore Co. (National Iranian Steel Co., 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%) ⁴	Sangan (Songun) Mine, about 140 kilometers southeast of Torbat e-Heydariyeh, Khorasan Province	2,000	
Do.	About 50 small privately owned mines	NA	1,000 ^c	
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	Direct-reduction iron plant (Midrex process) about 50 kilometers southwest of Esfahan, Esfahan Province	4,000	
Do.	Khouzestan 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.	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.	Khouzestan 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	
Do.	Khorasan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) ³ majority interest; 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	
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

See footnotes at end of table.

TABLE 2—Continued
 IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2008^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum—Continued:				
Crude— Continued	million 42-gallon barrels	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. (IranKoooh)	Irankouh 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
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

^eEstimated. 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 Chemesh copper plant slimes.

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

⁶May include basic sediment and condensate.

⁷Held 95% equity interest.

⁸Includes lead and zinc ores.