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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 4.02 million barrels per day in 2007. According to the U.S. Energy Information Administration (undated), Iran was the world's fourth ranked producer of crude oil and condensate, accounting for about 5.4% of the world's output. The country also was estimated to account for more than 1% of the world's output of cement and fluorspar (Central Bank of the Islamic Republic of Iran, 2008b, p. 7; Miller, 2008; van Oss, 2009).

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 10% of the country's gross domestic product at constant prices. Cement and steel were significant sectors of the domestic mineral industry. Aluminum, refined copper, and steel ingots were minor, but notable, mineral sector exports. Most mineral sector producers were required by law to satisfy domestic demand before exporting any output (Central Bank of the Islamic Republic of Iran, 2008b, p. 3).

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. In 2004, a reinterpretation of the Constitution 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. With regard to the provisions of Article 81 of Chapter 6 of the Constitution (which prohibited foreigners from acquiring equity interest in Iran's agriculture, commercial, industrial, mineral extraction, and services sectors), such adjustments as Note 29 of the First Five-Year Plan and Note 22 of the Second Five-Year Plan allowed international companies to participate in Iranian petroleum sector operations under 'buyback' contracts, which were short-term service contracts that authorized international companies to work on oil and natural gas production projects for a defined time period in return for revenue from produced oil and gas.

In December, the Government cited the depreciation of the United States (U.S.) dollar and U.S. economic sanctions as reasons to end its sales of crude oil in U.S. dollars. Future oil sales were expected to be primarily in European Union euros and Japanese yen (Tehran Times, 2007).

Production

Based on estimates of mineral commodity production, significant increases in output in 2007 compared with that of 2006 were projected for ammonia, copper ore, gold ore, and molybdenum ore. Notable increases were estimated for cement, ferrochromium, iron ore, kaolin, and lead ore. Because of problems at the Angouran Mine, which was the largest zinc mine in Iran, production decreases were projected for zinc ore and refined zinc metal. Data on estimated mineral production are provided 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 retained control of many of the larger mineral commodity companies, especially those that produced aluminum, ammonia, coal, copper, iron and steel, natural gas, petroleum, salt, and sulfur. In 2007, the Government privatized 20% of its equity interest in National Iranian Copper Industries Co., 6% of its interest in Mobarekeh Steel Co., 5% of its interest in Iran Aluminium Co., and 5% of its interest in Khouzestan Steel Co. The Government evaluated the proposed privatization of 92 subsidiaries in the oil and gas sector (table 2).

Mineral Trade

The Central Bank of the Islamic Republic of Iran (2006, p. 13; 2008a, p. 13; b, p. 13) reported that hydrocarbons accounted for about 82% of total exports in 2007. Hydrocarbon exports were valued at about $72.7 billion[1] in 2007 compared with a revised $59.6 billion in 2006. Crude oil exports accounted for most of the hydrocarbon exports; natural gas and refined petroleum products made up the remainder. About 50% of crude oil exports (based on value) were shipped to China, India, and Japan.

Commodity Review

Metals

Bauxite and Alumina, Aluminum, and Nepheline Syenite.—In October, the Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) awarded the contract for the construction of a 200,000-metric-ton-per-

[1]Where necessary, values have been converted from Iranian rials (RI) to U.S. dollars (US$) at the average exchange rate of RI9,532=US$1.00.

year (t/yr)-capacity alumina plant at Sarab to the consortium of China Nonferrous Metal Industry's Foreign Engineering and Construction Co., Ltd. and Iranian partners Jahad Tahgihighat Group and Jahad Tahghighat Sahand. The facility would process nepheline syenite to produce alumina (Iran Daily, 2007b).

Fata SpA of Italy continued work on the Hormozal 147,000-t/yr-capacity-expansion project of Almahdi Aluminium Corp.'s 100,000-t/yr-capacity smelter at Bandar Abbas. The expansion program would add 228 pots that would use Dubai Aluminium Co. Ltd.'s D20 reduction cell technology and pot control system. Initial production from the expansion was projected to begin in late 2008 (Fata SpA, 2006).

The initial phase of Iran Aluminium Co.'s new smelter at Arak was completed in 2007. The company's total production capacity was increased to 155,000 t/yr from 120,000 t/yr. An additional 75,000 t/yr of production capacity was scheduled to be completed at the new smelter in 2008. Also in 2007, China Aluminium International Engineering Co. and the CITIC Group of China started construction on a new 270,000-t/yr-capacity aluminum smelter in Fars Province for South Aluminum Group of Iran (Iran Daily, 2007c; Iranian Mines and Mining Industries Development and Renovation Organization, 2007b).

Gold.—IMIDRO awarded the construction contract for the Zarshuran gold mine and 3-t/yr-capacity pressure oxidation plant at Takab. Persian Gold plc of Ireland continued exploration of the Chah-e-Zard and the Dalli prospects (Iran Daily, 2007a).

Iron Ore and Iron and Steel.—IMIDRO published information on Iranian iron ore reserves and resources in 2007, which reported measured reserves of 1.2 billion metric tons (iron content). Most of the reserves are located in iron ore deposits at Chadormalu, the Gol-e-Gohar area, and the Sangan area (Iranian Mines and Mining Industries Development and Renovation Organization, 2007a).

By 2012, the proposed addition of 29 million metric tons per year (Mt/yr) of new crude steel capacity would bring Iran's total steel production capacity to about 40 Mt/yr. Most of the capacity expansion projects would use electric-arc furnaces, which would increase Iranian industrial demand for electrical power. Projects included Mobarekeh Steel Co.'s crude steel capacity expansion to about 6 Mt/yr from 4.2 Mt/yr, and National Iranian Steel Co.'s proposal to fund the construction of 800,000-t/yr-capacity steel plants at Bafgh, Miyaheh, Neiriz, Qaenat, Sefid Dasht, Shadegan, and Sirjan (Metal Bulletin, 2008; Middle East Economic Digest, 2007b, d).

Zinc.—The late 2006 collapse of a wall of the Angouran zinc mine, which was operated by Iran Zinc Mine Development Co., resulted in the significant decline in the production of zinc ore in 2007. Several plants refined ore from the Angouran Mine, and the reduction of zinc ore output adversely affected the output of refined zinc metal.

Beroner Tehran Co. transitioned from open pit mining to underground mining at the Emarat Mine. Zinc ore (5.47% average grade) and lead ore (1.79% average grade) output was increased to 100,000 metric tons (t) in 2007 from 35,000 t in 2006 (Nesko Maden Tic. ve San. A.Ş., undated).

Tete Mining and Engineering Co. of Turkey evaluated the development of an underground ore deposit below BAMA Co.'s Gooshfil open pit mine. Tete also evaluated the Firuzabad, the Kerman Gojer, the Khomeyn, the Raveng, and the Zehabad lead-zinc occurrences. Mehdiabad Zinc Co., which was a joint venture of IMIDRO (50% interest), Union Resources Ltd. of Australia (47.7%), and Iran Itok (an affiliate of Itok GmbH of Austria) (2.3%), had worked on the development of the Mehdiabad zinc deposit. In late 2006, IMIDRO notified Union Resources that it had terminated several agreements concerning the Mehdiabad joint venture because of alleged breaches of contract. Union Resources disputed the notice of termination and continued to attempt to settle the issue during 2007 (Union Resources Ltd., 2008).

Industrial Minerals

Cement.—Construction of new cement plants and capacity expansions at existing plants continued. In 2007, Iranian cement production capacity was about 42 Mt/yr; about 38 Mt/yr of additional production capacity was anticipated to be online by 2013 (Vaseghi and Parsaei, 2007; Irancement.com, undated).

Mineral Fuels

Natural Gas.—In March, Total S.A. of France delayed an expected investment decision for the $10 billion 9-Mt/yr-to-10-Mt/yr-capacity Pars liquefied natural gas (LNG) plant. Total, which held 30% interest in the project [partners included National Iranian Oil Co. (50%) and PETRONAS Carigali Overseas Sdn. Bhd. of Malaysia (20%)] noted that the estimated cost of the project had more than doubled in the past 3 years. During the same period, Iran's nuclear program had increased the potential for economic sanctions by the United Nations. Work on the development of three other Iranian LNG plants, which were subject to similar economic and geopolitical pressure, continued in 2007. A gas pipeline to Armenia was under construction, and gas pipelines to Europe, Kuwait, and the United Arab Emirates were also under consideration (Middle East Economic Digest, 2007a).

Petroleum.—In 2007, the Government increased the subsidized cost of gasoline to about $0.11 per liter ($0.42 per gallon) from $0.09 per liter ($0.34 per gallon). The strong domestic demand for petroleum products and Iran's limited refining capacity resulted in the rationing of motor gasoline, which began in June. Motorists were allowed to buy 120 liters (about 32 gallons) of gasoline per month (Middle East Economic Digest, 2007c).

National Iranian Oil Refining and Distribution Co. (NIORDC) worked on numerous refinery optimization and production-capacity expansion projects in 2007. NIORDC was increasing the production capacity of the Bandar Abbas Refinery to 320,000 barrels per day (bbl/d) from 232,000 bbl/d and expanding the production capacity of the Shazand refinery in Arak to 250,000 bbl/d from 169,100 bbl/d. NIORDC planned to significantly increase its motor gasoline production by 2012. Projects underway included an 85,000-bbl/d expansion of gasoline production capacity at the Esfahan refinery, a 36,300-bbl/d expansion of gasoline production capacity at the Bandar Abbas refinery, an 11,000-bbl/d expansion of production capacity at the Tehran refinery, an 11,000-bbl/d expansion of

production capacity at the Lavan refinery, and a 4,500-bbl/d expansion of production capacity at the Tabriz refinery. NIORDC also planned to reduce the sulfur content of the diesel fuel produced at the Tehran refinery and to recover the sulfur (National Iranian Oil Refining and Distribution Co., undated).

Outlook

Numerous development or expansion projects are planned or underway in the aluminum, cement, copper, ferroalloys, gold, iron and steel, magnesium compounds, oil and gas, potash, stone, and zinc sectors. 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 continued development of a nuclear program, which included the nuclear-fueled electricity-generating reactor at Bushehr. 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.

More than 60% of Iranian oil production was exported in 2007. 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 (2007) economic sanctions. New construction and renovation of existing oil refineries are expected to begin during the current 5-year plan (2005 to 2009) (Central Bank of the Islamic Republic of Iran, 2008b, 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]		2003	2004	2005[e]	2006[e]	2007[e]
METALS						
Aluminum:						
Bauxite, gross weight		364,306	366,000	437,595 [4]	500,000	500,000
Alumina		102,785	137,002	200,000 [r]	250,000 [r]	250,000
Metal, primary ingot		182,477	212,602	220,000	205,000	205,000
Arsenic, orpiment and realgar, concentrates[e]		275	89 [4]	100	100	100
Chromite, mine output, concentrate						
Gross weight		97,328	138,755	223,563 [4]	225,000	225,000
Cr_2O_3 content[e]		48,000	68,000	110,000	110,000	110,000
Copper:						
Mine output:						
Ore mined (0.6% to 1.2% Cu):						
Gross weight	thousand metric tons	15,084	18,885	19,000	20,000	26,500
Cu content[e]		160,000	190,000	190,000	210,000	260,000
Concentrate (29% to 35% Cu):						
Gross weight		395,036	448,689	480,000	620,000	731,000
Cu content[e]		130,000	150,000	160,000	190,000 [r]	217,000
Metal:						
Smelter output, blister or anode		168,613	184,814	227,000	242,000	250,000
Refined output, cathode		145,669	152,463	178,000	200,000	201,000
Gold, mine output, Au content[5]	kilograms	203	195	1,000 [r]	1,000 [r]	1,500
Iron and steel:						
Ore and concentrate:						
Gross weight	thousand metric tons	18,287	18,205	19,000	21,000	23,000
Fe content[e]	do.	9,000	8,900	9,162 [4]	10,000	11,000
Metal:						
Pig iron	do.	2,709	2,136	2,300	2,000	2,100
Direct-reduced iron	do.	5,620	6,410	6,850	6,900	7,500
Ferrochromium[e]		10,000	7,750 [4]	8,000	7,000	8,000
Ferrosilicon		40,297	50,140	50,000	45,000	45,000
Steel, crude, ingots and castings	thousand metric tons	7,869	8,382	9,400	9,800	10,100
Lead:						
Mine output, concentrate:						
Gross weight		39,093	42,018	43,000	47,000	40,000
Pb content[e]		20,000	22,000	22,000	24,000	20,000
Refinery output, includes secondary[e]		58,000	68,000	68,000	75,000	70,000
Manganese, mine output (30% to 35% Mn):						
Gross weight		115,680	128,924	125,000	125,000	130,000
Mn content[e]		38,000	43,000	42,000	42,000	45,000
Molybdenum, mine output, concentrate:						
Gross weight		4,084	3,367	4,603 [4]	4,600	6,644
Mo content[e]		2,200	1,800	2,476 [4]	2,500	3,600
Silver, mine output, Ag content		23	25	25	25	26
Zinc:						
Mine output, concentrate:						
Gross weight		222,000	244,006	310,000	300,000	190,000
Zn content[e]		110,000	121,000	167,000	164,000	100,000
Metal		78,428	109,400	120,000	140,000	90,000
INDUSTRIAL MINERALS						
Asbestos:						
Concentrate (3% to 8% marketable fiber)		98,000 [e]	82,018	40,000	40,000	43,000
Marketable fiber[e]		1,470 [4]	6,000	1,300	1,300	1,400
Barite		196,169	275,607	231,184 [4]	230,000	240,000

See footnotes at end of table.

TABLE 1--Continued
IRAN: PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons unless otherwise specified)

Commodity[3]		2003	2004	2005[e]	2006[e]	2007[e]
INDUSTRIAL MINERALS--Continued						
Boron, borax		3,361	2,142	1,660	2,000	2,000
Cement, hydraulic	thousand metric tons	30,460	32,198	32,650 [4]	35,000 [r]	41,000
Clays:						
Bentonite		140,528	193,046	261,888 [4]	260,000	250,000
Industrial clays		388,543	578,750	550,000	550,000	550,000
Kaolin		484,501	531,109	311,501 [4]	310,000	350,000
Diatomite		9,500	8,028	1,450	1,500	1,500
Feldspar		242,898	252,713	286,033 [4]	290,000	290,000
Fluorspar		47,730	54,052	64,601 [4]	65,000	65,000
Gemstones, turquoise[e]	kilograms	20,000	20,000	20,000	20,000	20,000
Gypsum	thousand metric tons	13,828	12,594	11,196 [4]	12,000	12,000
Industrial or glass sand (quartzite and silica)		1,964,965	1,880,093	1,900,000	1,900,000	2,000,000
Lime	thousand metric tons	2,300	2,500	2,500	2,600	2,600
Magnesite		87,795	88,194	114,708 [4]	110,000	110,000
Mica		5,500	7,032	705 [4]	--	--
Nepheline syenite		75,500	63,798	65,000	70,000	70,000
Nitrogen:						
N content of ammonia		1,115,100	1,087,700	1,020,000	1,020,000	2,000,000
N content of urea		734,200	717,800	670,000	670,000	1,300,000
Perlite		26,495	31,259	31,000	40,000	30,000
Phosphate rock:						
Ore		194,000	229,575	324,166 [4]	325,000	330,000
P_2O_5 content[e]		23,000	28,000	40,000	40,000	40,500
Pigments, mineral, natural iron oxide, ochre[e]		2,300	2,500	2,500	2,600	2,600
Pumice and related volcanic materials		1,228,388	1,536,448	1,500,000	1,400,000	1,500,000
Salt		2,002,899	1,790,669	2,009,195 [4]	2,000,000	2,000,000
Soda ash[e]		120,000	130,000	130,000	130,000	140,000
Sodium compound, caustic soda[e]		22,000	22,000	22,000	20,000	20,000
Stone:						
Construction and building, crushed[6]	thousand metric tons	21,383	25,369	25,000	25,000	26,000
Dimension and decorative:						
Granite	do.	838	1,019	1,000	1,000	1,100
Marble, blocks and slabs[7]	do.	4,014	4,068	4,000	4,000	4,200
Travertine, blocks	do.	935	1,360	1,400	1,400	1,500
Total[e]	do.	5,790	6,450	6,400	6,400	6,800
Dolomite	do.	522	609	600	600	650
Limestone	do.	46,170	50,380	50,000	50,000	55,000
Strontium, celesite		2,100	7,500	672	--	--
Sulfates, natural:[e]						
Aluminum potassium sulfate (alum)		1,000	1,000	1,000	1,000	1,000
Sodium sulfate		580,000	600,000	600,000	600,000	600,000
Sulfur:[e]						
Byproduct of petroleum and natural gas		1,310,000	1,400,000	1,400,000	1,400,000	1,500,000
Byproduct of metallurgical processing, S content of acid		50,000	60,000	60,000	60,000	70,000
Total		1,360,000	1,460,000	1,460,000	1,460,000	1,570,000
Talc		65,833	187,465	70,600	70,000	70,000
MINERAL FUELS AND RELATED MATERIALS						
Coal	thousand metric tons	1,902	2,498	1,898 [4]	2,000	2,000
Coke	do.	1,004	1,021	1,020	1,184 [r, 4]	1,200
Gas, natural:[e]						
Gross	million cubic meters	125,000	137,000	150,000	160,000	170,000
Dry	do.	81,500	89,663 [4]	100,000	105,000	112,000
Plant liquids	thousand 42-gallon barrels	25,000	84,000	85,000	90,000	95,000

See footnotes at end of table.

TABLE 1--Continued

IRAN: PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons unless otherwise specified)

Commodity[3]		2003	2004	2005[e]	2006[e]	2007[e]
MINERAL FUELS AND RELATED MATERIALS--Continued						
Petroleum:						
Crude	thousand 42-gallon barrels	1,470,000	1,500,000	1,493,000 [r, 4]	1,487,000 [r, 4]	1,470,000
Refinery products:[e]						
Liquefied petroleum gases	do.	16,000	48,100	48,000 [r]	47,000 [r]	48,000
Motor gasoline	do.	67,000	92,000	100,000 [r]	103,000 [r]	105,000
Jet fuel	do.	14,000	6,300	7,000 [r]	8,000 [r]	8,000
Kerosene	do.	46,000	52,800	50,000 [r]	49,000 [r]	50,000
Distillate fuel oil	do.	140,000	117,000	120,000	185,000 [r]	190,000
Residual fuel oil	do.	160,000	172,000	170,000	175,000 [r]	180,000
Other	do.	100,000	21,000	20,000	16,000 [r]	19,000
Total	do.	543,000	509,000 [r]	515,000 [r]	583,000 [r]	600,000

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. do. Ditto. -- Zero.

[1]Table includes data available through February 27, 2009.

[2]Data 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.

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

[4]Reported figure.

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

[6]Includes marble and travertine.

[7]Includes marmarite.

TABLE 2
IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2007[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)	About 15 kilometers northeast of Jajarm	280
Aluminum	Iran Aluminium Co. [Iranian Mines and Mining Development and Renovation Organization (IMIDRO)][3]	Arak	155
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	100
Cement	Abadeh Cement Co.	Abedeh	175
Do.	Abyek Cement Co. (Fars & Khouzestan Cement Co.)	Abyek, 80 kilometers northwest of Tehran	2,600
Do.	Ardebil Cement Co. (Espandar Cement Investment Co.)	About 20 kilometers from Astara	800
Do.	Behbahan Cement Co. (Fars & Khouzestan Cement Co.)	Behbahan	960
Do.	Benvid White Cement Co.	Benvid, Isfahan	175
Do.	Bojnourd Cement Plant (Fars & Khouzestan Cement Co.)	About 37 kilometers from Bojnourd	700
Do.	Bushehr Cement Co. (Dashtestan Cement) (Ehdasse Sanat Corp.)[4]	Borazjan	1,000
Do.	Darab Cement Co. (Ehdasse Sanat Corp.)[4]	Near Shiraz	1,100
Do.	Doroud Cement Co. (Fars & Khouzestan Cement Co.)	Doroud	1,400
Do.	Ekbatan Cement Co. (Espandar Cement Investment Co.)	Ekbatan	175
Do.	Estahban Cement Co.	Estahban	350
Do.	Faraz Firouzkhuh Cement Co. (Espandar Cement Investment Co.)	About 180 kilometers northeast of Tehran	1,200
Do.	Fars Cement Co. (Fars & Khouzestan Cement Co.)	Fars	2,000
Do.	Fars Nov Cement Co. (Fars & Khouzestan Cement Co.)	do.	1,000
Do.	Ghaen Cement Co. (Fars & Khouzestan Cement Co.)	Ghaen	770
Do.	Gharb Cement Co. (Fars & Khouzestan Cement Co.)	Kermanshah	700
Do.	Hegmatan Cement Co. (Tehran Cement Co.)	East of Razan	1,120
Do.	Hormozgan Cement Co. (Sepahan Cement Co.)	About 52 kilometers west of Bandar Abbas	2,200
Do.	Ilam Cement Co. (Tehran Cement Co.)	Ilam	700
Do.	Isfahan Cement Co.	Esfahan	1,100
Do.	Karoon Cement Co.	Karoon	1,050
Do.	Kavir Kashan Cement Co. (Espandar Cement Investment Co.)	Near Kashan	600
Do.	Kerman Cement Co. (Bank Melli Iran Investment Co.)	Kerman	1,260
Do.	Khash Cement Co. (Fars & Khouzestan Cement Co.)	Khash	730 e
Do.	Khazar Cement Co. (Fars & Khouzestan Cement Co.)	Khazar	640 e
Do.	Khouzestan Cement Co. (Fars & Khouzestan Cement Co.)	Ramhormoz	1,100 e
Do.	Kohkiloye Yasuj Cement (State Retirement Organization[3])	Kohkiloye	240
Do.	Kordestan Cement Co. (Sepahan Cement Co.)	North of Bijar	800 e
Do.	Mazandaran Cement Co. (Bank Melli Iran Investment Co.)	Neka	700
Do.	Qeshm Cement Co.	Qeshm Island	250
Do.	Oroumiyeh Cement Co.	Uroumiyeh (Urumia)	740
Do.	Oroumiyeh White Cement Co.	do.	180 e
Do.	Neyriz White Cement Co. (Fars & Khouzestan Cement Co.)	Neyriz	160
Do.	Saveh White Cement Co. (State Retirement Organization[3])	Saveh Grey Cement Factory, Saveh	2,200
Do.	do.	Saveh White Cement Factory, Saveh	350
Do.	Sepahan Cement Co.	Sepahan	2,300
Do.	Shahroud Cement Co. (Sepahan Cement Co.)	Sharoud	600
Do.	Sharg Cement Co. (Sepahan Cement Co.)	Mashhad	1,600
Do.	Shomal Cement Co. (Bank Melli Iran Investment Co.)	Shomal	880
Do.	Simansaz (Loshan) Cement Co. (Tehran Cement Co.)	Loshan	200 e
Do.	Soufian Cement Co. (Tehran Cement Co.)	Sufiyan	1,500
Do.	Tehran Cement Co.	Tehran	6,000
Do.	Yazd Bohrouk Cement Co.	Yazd	1,260
Do.	Zanjan Cement Co. (Fars & Khouzestan Cement Co.)	Zanjan	600

See footnotes at end of table.

TABLE 2--Continued
IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2007[1, 2]

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Chromite	Faryab Mining Co.	Faryab Mine and processing plant, Minab, Hormuzgan	180 e
Do.	Esfandaghe Mines Co.	Abdasht Mine, Kerman; Suqan (Saboughan) Mine, Kerman; Processing plant at Esfandaghe, Kerman	30
Do.	NA	Furumad Mine, Shahrud, Semnan; Gaft processing processing plant, Semnan	6
Do.	NA	Mir Mahmud Mine, Mayami, Seman	6
Do.	NA	Dumak Mine, Zahedan, Sistan va Baluchestan	2
Copper:			
Concentrate	National Iranian Copper Industries Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Sarcheshmeh Mine, 60 kilometers south of Rafsanjan, Kerman	670
Do.	do.	Sungun copper mine, Azarbaijan	150
Do.	do.	Miduk copper mine, Kerman	150
Do.	do.	Qal'eh Zari Mine, near Birjand, Khorsan	10
Do.	Private cooperatives	Chah Musa Mine and Qal'eh Sukhteh, Semnan	5
Smelter output	National Iranian Copper Industries Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Smelter, Sarcheshmeh copper complex	145
Do.	do.	Smelter, Khatoonabad	80
Refined metal	do.	Refinery, Sarcheshmeh copper complex	210
Do.	do.	Electrowon plant, Sarcheshmeh copper complex	14
Gemstones, turquoise	NA	Neyshabour Mine	6 e
Gold:			
Ore kilograms	Iran Gold Co.	Muteh Mine (Chah Khaton and Senjedeh pits), Esfahan, and Kuh-e-Zar Mine, Semnan	600
Do. do.	Artisanal placer operations	Neyshabour area	NA
Metal[5] do.	National Iranian Copper Industries Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Sarcheshmeh Copper Complex, Kerman	500
Iron and Steel:			
Iron ore	Iran Central Iron Ore Co. (National Iranian Steel Co., 100%)[4]	Choghart Mine, Bafgh, Yazd	7,400
Do.	Chadormalou Mining and Industrial Co. (National Iranian Steel Co., 100%)[4]	Chadormalu Mine, 90 kilometers north of Tchogart	6,500
Do.	Gol-e-Gohar Iron Ore Co. (National Iranian Steel Co., 100%.)[4]	Gol-e-Gohar Mine, Kerman	3,800
Do.	Sangan Iron Ore Co. (National Iranian Steel Co., 100%)[4]	Sangan (Songun) Mine, Golestan	300
Do.	About 50 small privately owned mines	NA	1,000 e
Iron metal	Mobarekeh Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Direct-reduction iron plant (Midrex process) at Esfahan	4,000
Do.	Khouzestan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Direct-reduction iron plant (HYL I, Midrex, and Purofer processes), Ahwaz	3,200
Do.	Isfahan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Direct-reduction iron plant (Ghaem process) at Esfahan	600
Steel, crude	Mobarekeh Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Plant at Esfahan	4,200
Do.	Isfahan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	do.	2,900
Do.	Khouzestan Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Plant at Ahwaz	2,600
Do.	National Iranian Steel Co. [Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)][3]	Includes subsidiaries Iran National Steel Industrial Group plant at Ahwaz, and Khorasan Steel Co. plant near Neyshabur	1,500
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	32 6

See footnotes at end of table.

TABLE 2--Continued
IRAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2007[1, 2]

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
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, Kermanshah, Lavan, Shiraz, Tabriz, and Tehran	1,728
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 100 kilometers northeast of Yazd	50 [e]
Do. do.*	do.	Gchine Mine, near Bandar Abbas	21 [e]
Zinc:			
Ore	Iran Zinc Mine Development Co.	Angouran open pit mine, Zanjan	500 [7]
Do.	BAMA Co.	Irankouh complex (Gooshfil, Kolah Darvazeh, and Tappeh Sorkh open pit mines), Esfahan	190 [7]
Do.	Bafgh Mining Co.	Kushk Mine, Yazd	120 [7]
Do.	Beroner Tehran Co.	Emarat Mine, Markazi	100 [7]
Refined metal	Bafgh Zinc Co. (Iran Zinc Mine Development Co.)	Bafgh, Yazd	30
Do.	Qeshm Zinc Smelter Co. (affiliate of Calcimine Co.)	Qeshm Island, Hormozgan	20
Do.	National Iranian Lead and Zinc Co. (Iran Zinc Mine Development Co.)	Zanjan	15
Do.	Calcimine Co. (Iran Zinc Mine Development Co.)	Dandi (Angouran) plant, Zanjan	14
Do.	Faravari Mavad Madani Iran Co. (Iran Zinc Mine Development Co.)	Zanjan	14
Do.	Bandar Abbas Zinc Production Co. (affiliate of Calcimine Co.)	Bandar Abbas	13
Do.	Zanjan Zinc Smelter Co. (affiliate of Calcimine Co.)	Zanjan	5

[e]Estimated. Do., do. Ditto. NA Not available.

[1]About 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.

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

[3]Government owned.

[4]A subsidiary of state-owned Iranian Mines and Mining Industries Development and Renovation Organization.

[5]Recovered from Sar Chemesh copper plant slimes.

[6]May include basic sediment and condensate.

[7]Includes lead and zinc ores.

*Correction posted October 23, 2009.