

## THE MINERAL INDUSTRY OF

# IRAN

By Philip M. Mobbs

Iran, which remained the world's fourth largest producer of crude oil, averaged 3.6 million barrels per day in 1999 (British Petroleum, 2000, World energy—Oil—Production, accessed January 1, 2001, via URL <http://www.bp.com/worldenergy/oil/page2.htm>). Commercial production of mineral and metal commodities included aluminum, cement, chromite, copper,

fertilizers, gypsum, iron, lead, petrochemicals, steel, stone, and zinc (table 1).

For more extensive coverage of the minerals industry of Iran, see the 1998 Minerals Yearbook, volume III, Mineral Industries of Africa and the Middle East.

TABLE 1  
IRAN: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1995	1996	1997 e/	1998	1999 e/	
<b>METALS</b>						
<b>Aluminum:</b>						
Bauxite, gross weight	148,000	150,000	150,000	336,000 r/	912,451 3/	
Metal, primary ingot	119,400	80,100	92,300	123,759 r/	137,421 3/	
Arsenic, orpiment and realgar, concentrates e/	500	500	492	500	500	
<b>Chromium, chromite, mine output, concentrate 4/</b>						
Gross weight	371,100	130,220	168,984 3/	313,937 r/	311,235 3/	
Cr <sub>2</sub> O <sub>3</sub> content e/	181,840	63,800	82,800	138,000 r/	137,000	
<b>Copper:</b>						
<b>Mine output:</b>						
<b>Ore mined (1% to 1.2% Cu):</b>						
Gross weight	thousand tons	13,150	14,150	14,200	13,740 r/	13,770 3/
Cu content e/		120,000	120,000	117,300	137,000 r/	138,000
<b>Concentrate (29% to 35% Cu):</b>						
Gross weight e/		325,000	320,000	320,000	378,504 r/ 3/	381,346 3/
Cu content		102,200	107,600 e/	108,000	128,300 r/	131,000 3/
<b>Metal:</b>						
Smelter output, blister/anode		106,100	99,100	99,000	150,000 r/	154,000 3/
Refined output, cathode		90,400	99,200	103,300	129,000 r/	131,700 3/
Gold, mine output, Au content 5/	kilograms	630	640	684 3/	856 r/	930 3/
<b>Iron and steel:</b>						
<b>Ore and concentrate:</b>						
Gross weight	thousand tons	9,080 e/	9,850	12,750	10,536 r/	10,776 3/
Fe content e/	do.	4,500	4,800	6,300	5,200 r/	5,300
<b>Metal:</b>						
Pig iron	do.	1,532	1,867	2,053 3/	2,087 r/	2,147 3/
Direct-reduced iron	do.	3,301	3,778	4,380 3/	3,690 r/	4,120 3/
Ferrosilicon		11,900	10,500	11,450 3/	13,745	13,680 3/
Ferrosilicon e/		10	20	20	20	15
Steel, crude, ingots and castings	thousand tons	4,696	5,415	6,322 3/	5,608 r/	6,277 3/
<b>Lead:</b>						
<b>Mine output, concentrate (56% to 60% Pb):</b>						
Gross weight e/		30,000	30,000	37,000	21,216 r/ 3/	22,000
Pb content		15,900	15,700 e/	18,200	11,000 r/	11,000
Refinery output, includes secondary		45,200	46,900	49,400	47,000	47,000
<b>Manganese, mine output, (30% to 35% Mn):</b>						
Gross weight		99,332	100,000	135,000	101,390 r/	104,096 3/
Mn content e/		32,000	32,000	40,000	30,500 r/	31,000
<b>Molybdenum, mine output, concentrate (56% Mo): e/</b>						
Gross weight		1,600	1,600	1,800	4,350 r/ 3/	4,906 3/
Mo content		560	560	600	1,400 r/	1,600
Silver, mine output, Ag content e/		60	40 r/	30 r/	19 r/ 3/	21 3/
<b>Zinc:</b>						
<b>Mine output, concentrate (50 to 55% Zn):</b>						
Gross weight e/		290,000	152,000	132,000	160,000	160,000
Zn content		145,100	76,300	76,500	80,000 e/	80,000
Metal		--	--	14,000	23,000 e/	23,000
<b>INDUSTRIAL MINERALS</b>						
<b>Asbestos: e/</b>						
Concentrate, (3% to 8% marketable fiber)		65,000	65,000	86,200	45,000 r/	40,000
Marketable fiber		4,500	4,500	4,300	2,258 r/ 3/	2,000
Barite		150,000	150,000 e/	181,174 3/	187,677 r/	183,850 3/
Boron, borax e/		500	500	420	2,086 r/ 3/	3,663 3/
Cement, hydraulic e/	thousand tons	16,300	18,350	19,250	19,000	19,000
<b>Clays:</b>						
Bauxite and refractory clays e/		220,000	220,000	215,000	215,000	220,000
Bentonite		54,789	85,000	105,300 3/	83,279 r/ 3/	64,957 3/
<b>Other: e/</b>						
Industrial clays		250,000	300,000	350,000	450,000	400,000
Kaolin		250,000	350,000	510,000	582,485 r/ 3/	837,277 3/
Total		500,000	650,000	860,000	1,030,000 r/	1,237,000
Diatomite e/		90	90	90	600 r/	4,350 3/
Feldspar		80,000 e/	106,000	125,000 3/	185,709 r/	239,779 3/

See footnotes at end of table.

TABLE 1--Continued  
 IRAN: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1995	1996	1997 e/	1998	1999 e/
<b>INDUSTRIAL MINERALS--Continued</b>					
Fluorspar, fluorite	20,163	20,000 e/	20,000	25,904 r/	18,387 3/
Gemstones, turquoise e/ kilograms	5,000	5,000	5,000	6,000 r/ 3/	20,000 3/
Gypsum thousand tons	8,230	8,570	8,900	11,843 r	10,834 3/
Industrial or glass sand (quartzite and silica) e/	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Lime e/ thousand tons	20,000 r/	20,000 r/	25,000 r/	27,368 r/ 3/	21,382 3/
Magnesite e/	55,000	55,000	55,000	109,597 r/ 3/	141,081 3/
Mica e/	3,000	3,000	3,000	1,084 r/ 3/	1,425 3/
Nitrogen:					
N content of ammonia	715,400	882,000	879,800 3/	1,034,000 e/	1,000,000
N content of urea	421,800	552,900	610,500 3/	800,000 e/	800,000
Perlite e/	6,000	6,000	10,000 r/	13,320 r/ 3/	15,069 3/
Pigments, mineral, natural iron oxide e/	2,500	2,500	2,500	2,500 r/ 3/	2,500 3/
Pumice and related volcanic materials e/	200,000	200,000	200,000	150,000	150,000
Salt	936,000	1,000,000 e/	1,180,000	1,911,800 r/ 3/	1,600,000 3/
Sodium compound, caustic soda e/	15,000	15,000	15,000	20,000	20,000
Stone: e/					
Construction and building, crushed, n.e.s. thousand tons	4,800	4,800	4,800	4,300	4,300
Dimension and decorative:					
Granite do.	20	20	20	181 r/ 3/	195 3/
Marble:					
Blocks do.	4,500	4,500	4,500	6,000	6,400
Crushed do.	450	450	450	500	500
Slabs do.	50	50	50	100	100
Travertine:					
Blocks do.	500	500	500	516 r/ 3/	435 3/
Crushed and slabs do.	70	70	70	100	65
Total do.	5,590	5,590	5,590	7,200 r/	7,500
Dolomite do.	243 3/	200	200	475 r/	286 3/
Limestone do.	28,000	32,000	33,000	33,000	33,000
Strontium, celestite e/	20,000	20,000	20,000	20,000	1,650 3/
Sulfates, natural: e/					
Aluminum potassium sulfate (alum)	12,000	12,000	12,000	12,000	12,000
Sodium sulfate	280,000	315,000 3/	480,000	264,973 r/	308,093 3/
Sulfur: e/					
Byproduct of petroleum and natural gas	840,000	840,000	850,000	1,280,000 r/	1,302,000 3/
Byproduct of metallurgical processing, S content of acid	50,000	50,000	50,000	50,000	48,000
Total	890,000	890,000	900,000	1,330,000 r/	1,350,000
Talc e/	20,000	20,000	20,000	20,000	20,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal thousand tons	1,640	1,840	1,750	1,711 r/	1,507 3/
Coke e/ do.	700	700	800	22,000 r/ 3/	20,000
Gas, natural:					
Gross million cubic meters	79,600	86,000	82,600 r/	89,000	90,600
Dry do.	36,600	39,077	47,000 r/	50,000 r/	51,000
Natural gas plant liquids e/ thousand 42-gallon barrels	23,500	23,500	22,000	23,000 r/	24,000
Petroleum:					
Crude do.	1,329,700	1,345,390	1,337,360 3/	1,325,000	1,300,000
Refinery products: e/					
Liquefied petroleum gases do.	24,000	23,000	14,500 r/	15,700 r/	15,000
Motor gasoline do.	54,425 3/	54,400	54,500	65,700 r/	60,000
Jet fuel do.	9,000	10,200	10,000	13,000 r/	11,000
Kerosene do.	36,000	35,800	36,000	40,000 r/	36,000
Distillate fuel oil do.	104,828 3/	108,800	109,000	136,000 r/	120,000
Residual fuel oil do.	93,367 3/	98,600	98,000	163,000 r/	140,000
Other do.	45,000	64,200	64,000	61,000 r/	60,000
Total do.	366,620	395,000	386,000 r/	494,400 r/	442,000

e/ Estimated. r/ Revised.

1/ Table includes data available through September 15, 2000.

2/ Data are for Iranian years ending March 21 of that stated, except data for natural gas, plant liquids, and petroleum, which are for Gregorian calendar years.

3/ Reported figure.

4/ Chromite content of concentrate estimated to be 48% to 50% Cr<sub>2</sub>O for 1995 through 1997 and 42% to 45% Cr<sub>2</sub>O<sub>3</sub> for 1998 and 1999.

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