IRON ORE1

(Data in million metric tons of usable ore, 2 unless noted)

<u>Domestic Production and Use:</u> The value of usable ore shipped from mines in Minnesota, Michigan, and two other States in 2002 was estimated at \$1.2 billion. Eleven iron ore production complexes with 11 mines, 8 concentration plants, and 8 pelletizing plants were in operation during the year. The mines included 11 open pits and no underground operations. Virtually all ore was concentrated before shipment. Eight mines operated by five companies accounted for 99% of production. The United States produced 4% of the world's iron ore output and consumed about 6%.

Salient Statistics—United States:	<u>1998</u>	<u> 1999</u>	<u>2000</u>	<u>2001</u>	2002 ^e
Production, usable	62.9	57.7	63.1	46.2	50.0
Shipments	63.2	60.7	61.0	50.6	50.0
Imports for consumption	16.9	14.3	15.7	10.7	10.0
Exports	6.0	6.1	6.1	5.6	6.0
Consumption:					
Reported (ore and total agglomerate) ³	78.2	75.1	76.5	67.3	60.0
Apparent	71.1	70.1	70.2	62.0	56.0
Price, ⁴ U.S. dollars per metric ton	31.14	25.52	25.57	23.87	23.00
Stocks, mine, dock, and consuming					
plant, yearend, excluding byproduct ore	30.6	26.4	28.8	18.0	16.0
Employment, mine, concentrating and					
pelletizing plant, quarterly average, number	7,290	6,820	6,814	5,017	5,000
Net import reliance ⁵ as a percentage of					
apparent consumption (iron in ore)	12	18	10	28	11

Recycling: None.

Import Sources (1998-2001): Canada, 49%; Brazil, 38%; Australia, 5%; Venezuela, 3%; and other, 5%.

Number	Normal Trade Relations 12/31/02		
2601.11.0030	Free.		
2601.11.0060	Free.		
2601.11.0090	Free.		
2601.12.0030	Free.		
2601.12.0060	Free.		
2601.12.0090	Free.		
	2601.11.0030 2601.11.0060 2601.11.0090 2601.12.0030 2601.12.0060		

Depletion Allowance: 15% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Worldwide, nearly all iron ore is used in steelmaking. In the United States, as an example, steelmaking accounts for about 98% of iron ore consumption. Annual world production of iron ore is usually about a billion tons and, although iron ore was produced in about 50 countries, the 7 largest of these countries produced more than 80% of the world total, and no other country had as much as a 5% share.

A large portion, about 475 million tons per year, of world iron ore production is exported because much iron ore is not consumed in the country in which it is produced. Australia and Brazil, for example, rank first and second, respectively, in world production (Fe content) but 6th and 15th, respectively, in pig iron production (China produces more ore than any other nation, but its ore is low grade). The vast majority of exports are seaborne.

Iron ore consumption data are available for the United States, but not for the rest of the world. Because almost all iron ore is consumed in blast furnaces, the product of the blast furnace, pig iron, is used as the indicator of iron ore consumption. Iron ore consumption, as well as production, is concentrated in a few countries. Pig iron production also is concentrated in a few countries. Pig iron was produced in more than 50 countries with the top 5 pig iron producing countries accounting for almost 60% of world production. No other country has as much as 5%. World pig iron production was about 580 metric million tons in 2001.

IRON ORE

China has been the world's largest iron ore consuming nation since 1992 and, in recent years, has attained a dominant position. In 1990, Japan, China, and the United States, in that order, were the largest consumers. From 1990 through 2001, United States annual apparent consumption of iron ore fell from 71 million tons to 51 million tons. For that same period, Japan's apparent consumption increased slightly, rising from 125 million tons to 126 million tons. China's apparent consumption of iron ore, however, rose from 98 million tons to 194 million tons, a 97% increase. Chinese iron ore imports have also grown enormously, rising from 41 million tons in 1995 to 92 million tons in 2001. Moreover, Chinese consumption is expected to continue growing. According to various forecasts by organizations in the iron ore industry and the iron and steel industry, Chinese annual imports in 2005 should be at least 45 million tons higher than the 92 million tons imported in 2001.

World Mine Production, Reserves, and Reserve Base:6

			Crude	e ore	ore Iron o		
	Mine p	Mine production		Reserve		Reserve	
	<u>2001</u>	2002 ^e	Reserves	base	Reserves	base	
United States	46	50	6,900	15,000	2,100	4,600	
Australia	180	190	18,000	40,000	11,000	25,000	
Brazil	210	220	7,600	19,000	4,800	12,000	
Canada	29	35	1,700	3,900	1,100	2,500	
China	220	230	21,000	46,000	7,000	15,000	
India	79	80	6,600	9,800	4,200	6,200	
Kazakhstan	14	16	8,300	19,000	3,300	7,400	
Mauritania	10	10	700	1,500	400	1,000	
Russia	83	88	25,000	56,000	14,000	31,000	
South Africa	35	37	1,000	2,300	650	1,500	
Sweden	20	20	3,500	7,800	2,200	5,000	
Ukraine	55	60	30,000	68,000	9,000	20,000	
Other countries	<u>78</u>	80	<u> 17,000</u>	38,000	<u>10,000</u>	23,000	
World total (rounded)	1,060	1,100	150,000	330,000	70,000	160,000	

World Resources: World resources are estimated to exceed 800 billion tons of crude ore containing more than 230 billion tons of iron. U.S. resources are estimated to be about 110 billion tons of ore containing about 27 billion tons of iron. U.S. resources are mainly low-grade taconite-type ores from the Lake Superior district that require beneficiation and agglomeration for commercial use.

<u>Substitutes</u>: Iron ore is the only source of primary iron. In some operations, ferrous scrap constitutes as much as 7% of the blast furnace burden. Scrap is extensively used in steelmaking and in iron and steel foundries.

eEstimated.

¹See also Iron and Steel and Iron and Steel Scrap.

²Agglomerates, concentrates, direct-shipping ore, and byproduct ore for consumption.

³Includes weight of lime, flue dust, and other additives used in producing sinter for blast furnaces. Consumption data are not entirely comparable to those of 1987 and earlier years owing to changes in data collection.

⁴Calculated from value of ore at mines.

⁵Defined as imports - exports + adjustments for Government and industry stock changes.

⁶See Appendix C for definitions.