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 Michigan, Minnesota, and two other States in 2003 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 5% of the world's iron ore output and consumed about 7%.

Salient Statistics—United States:	<u> 1999</u>	2000	<u>2001</u>	<u>2002</u>	2003 ^e
Production, usable	57.7	63.1	46.2	51.6	50.0
Shipments	60.7	61.0	50.6	51.5	50.0
Imports for consumption	14.3	15.7	10.7	12.5	13.0
Exports	6.1	6.1	5.6	6.8	6.4
Consumption:					
Reported (ore and total agglomerate) ³	75.1	76.5	67.3	59.0	56.0
Apparent	70.1	70.2	62.0	57.9	56.1
Price, ⁴ U.S. dollars per metric ton	25.52	25.57	23.87	26.04	25.00
Stocks, mine, dock, and consuming					
plant, yearend, excluding byproduct ore	26.4	28.8	18.0	17.5	18.0
Employment, mine, concentrating and					
pelletizing plant, quarterly average, number	6,820	6,814	5,017	4,742	4,500
Net import reliance⁵ as a percentage of					
apparent consumption (iron in ore)	18	10	26	11	11

Recycling: None.

Import Sources (1999-2002): Canada, 47%; Brazil, 41%; Australia, 5%; Venezuela, 2%; and other, 5%.

Normal Trade Relations 12/31/03		
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!		

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

Government Stockpile: None.

Events, Trends, and Issues: Until 2003, conditions in China had little or no effect on conditions on the Mesabi iron Range in northeastern Minnesota. However, that situation has changed because of the tremendous increase in iron ore consumption in China. In 2003, one of the six iron ore producers in northeastern Minnesota closed. The operation had orders for pellets that sustained operations until May 2003. When those orders were filled, the producer filed for bankruptcy and ceased production. Late in the year, a U.S. company that owns and manages a number of North American iron ore mines joined forces with a Chinese steel producer and bought the mine. Pellet production was expected to resume in December.

China has become the dominant source of growth in demand for iron ore. About 98% of iron ore is used to produce pig iron and is the best indicator of iron ore consumption worldwide. In 1991, Japan, the world's leading pig-iron-producing country, produced 80 million tons. China was second with 68 million tons. In 1992, China became and remains the leading producing country; Japan is the second leading country. In 2002, China produced 170 million tons of pig iron, more than twice Japan's 81 million tons. China's share of world pig iron production in the first three quarters of 2002 was 28%; for the same period of 2003 its share rose to 31%. Japan's share of world pig iron production in the first three quarters of 2002 was 13%; for the same period in 2003, it remained at 13%.

IRON ORE

This extraordinary growth affected the large global producers long before it had an impact on a U.S. producer. The three largest iron ore producing companies in the world were investing large sums of money to increase production to satisfy future Chinese demand. How long China can continue its extraordinary growth is the primary issue for the future of the iron ore industry worldwide. Even if growth in Chinese iron ore consumption were to level off in the next few years, it will have had a major effect on the global iron ore industry.

Research and development on a value-added product was started in Minnesota. The purpose of the project was to determine if iron ore pellets produced in Minnesota could be converted to a form of iron that is chemically similar to pig iron and, therefore, could be used in steelmaking furnaces in integrated steelworks and minimills. The successful completion of the project could make the Mesabi Range producers more competitive.

World Mine Production, Reserves, and Reserve Base:6

			Crud	Crude ore		Iron content	
	Mine pr	Mine production		Reserve		Reserve	
	2002	2003 ^e	Reserves	base	Reserves	base	
United States	52	50	6,900	15,000	2,100	4,600	
Australia	183	190	18,000	40,000	11,000	25,000	
Brazil	212	215	7,600	19,000	4,800	12,000	
Canada	31	32	1,700	3,900	1,100	2,500	
China	231	240	21,000	46,000	7,000	15,000	
India	80	80	6,600	9,800	4,200	6,200	
Iran	11	11	1,800	2,500	1,000	1,500	
Kazakhstan	15	18	8,300	19,000	3,300	7,400	
Mauritania	10	10	700	1,500	400	1,000	
Russia	84	92	25,000	56,000	14,000	31,000	
South Africa	36	38	1,000	2,300	650	1,500	
Sweden	20	21	3,500	7,800	2,200	5,000	
Ukraine	59	63	30,000	68,000	9,000	20,000	
Venezuela	18	17	4,000	6,000	2,400	3,600	
Other countries	38	40	11,000	30,000	6,600	18,000	
World total (rounded)	1,080	1,120	150,000	330,000	70,000	150,000	

<u>World Resources</u>: 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 applomeration 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.