IRON ORE¹

(Data in million metric tons of usable ore² unless otherwise noted)

Domestic Production and Use: In 2013, mines in Michigan and Minnesota shipped 99% of the usable ore produced in the United States, with an estimated value of \$5.0 billion. Eleven iron ore mines (10 open pits and 1 reclamation operation), 9 concentration plants, and 9 pelletizing plants operated during the year. Almost all ore was concentrated before shipment. Eight of the mines operated by three companies accounted for the majority of production. The United States was estimated to have produced and consumed 2% of the world's iron ore output.

<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013^e</u>
26.7	49.9	54.7	54.0	52
27.6	50.6	55.6	52.9	54
3.9	6.4	5.3	5.1	2.9
3.9	10.0	11.1	11.2	9.9
31.0	42.3	46.3	46.9	44
25.7	47.9	49.1	48.1	45
92.76	98.79	99.45	98.16	98.75
5.06	3.47	3.26	3.11	3.0
3,530	4,780	5,270	5,420	5,290
Е	E	E	E	E
	27.6 3.9 3.9 31.0 25.7 92.76 5.06 3,530	26.7 49.9 27.6 50.6 3.9 6.4 3.9 10.0 31.0 42.3 25.7 47.9 92.76 98.79 5.06 3.47 3,530 4,780	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Recycling: None (see Iron and Steel Scrap section).

Import Sources (2009-12): Canada, 74%; Brazil, 14%; and other, 12%.

<u>Tariff</u> : Item	Number	Normal Trade Relations 12–31–13
Concentrates	2601.11.0030	Free.
Coarse ores	2601.11.0060	Free.
Fine ores	2601.11.0090	Free.
Pellets	2601.12.0030	Free.
Briquettes	2601.12.0060	Free.
Sinter	2601.12.0090	Free.
Roasted Iron Pyrites	2601.20.0000	Free.

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

Government Stockpile: None.

Events, Trends, and Issues: U.S. iron ore production was slightly less in 2013 than that in 2012 owing to reduced consumption for steel production. Two production lines were idled at the Northshore Mine in Minnesota; the Empire Mine in Michigan was idled from April until September owing to reduced demand. A storage dome at a direct-reduced-iron (DRI) plant under construction in Louisiana collapsed, delaying production until 2014. A planned taconite mine in Minnesota was delayed until 2015 owing to lack of required funds.

An intent-to-mine notice was filed with the Wisconsin Department of Natural Resources in June, along with a bulksampling plan to be conducted in the Penokee Range in Ashland County, WI. A 3-million-ton-per-year pelletizing plant was under construction in Reynolds, IN, and was expected to be completed in the fourth quarter of 2014. A company announced plans to construct an iron nugget plant in Jamestown, ND, to produce 100,000 tons of iron nuggets using concentrates from Minnesota.

IRON ORE

Drought conditions in the Great Lakes region led to reduced carrying capacities for freighters transporting iron ore. The Port of Long Beach, CA, began exporting iron ore concentrates from a mine in Cedar City, UT, to China in March. In the second quarter of 2013, a private company began a 4-year process to transport a 5-million-ton stockpile of iron ore concentrates in Mobile, AL, to steel manufacturers in China.

Uncertainty regarding declining demand from Chinese steel manufacturers and announcements of productioncapacity increases at major Australian mines resulted in a 31% decrease in prices for iron fines sold in European and Asian markets in the first half of 2013. Cancellations and delays of proposed iron mine expansion plans in Australia, in addition to higher than expected consumption from China, led to price rebounding in the third quarter.

<u>World Mine Production and Reserves</u>: Mine production for China is based on crude ore, rather than usable ore, which is reported for the other countries. Iron ore reserves for Brazil and India have been revised based on new information from those countries.

	Mine production			Reserves ⁷	
	2012	<u>2013</u> e	Crude ore	Iron content	
United States	54	52	6,900	2,100	
Australia	521	530	35,000	17,000	
Brazil	398	398	31,000	16,000	
Canada	39	40	6,300	2,300	
China	1,310	1,320	23,000	7,200	
India	144	150	8,100	5,200	
Iran	37	37	2,500	1,400	
Kazakhstan	26	25	2,500	900	
Russia	105	102	25,000	14,000	
South Africa	63	67	1,000	650	
Sweden	23	26	_3,500	2,200	
Ukraine	82	80	⁸ 6,500	⁸ 2,300	
Venezuela	27	30	4,000	2,400	
Other countries	96	88	14,000	7,100	
World total (rounded)	2,930	2,950	170,000	81,000	

<u>World Resources</u>: U.S. resources are estimated to be about 27 billion tons of iron contained within 110 billion tons of iron ore. U.S. resources are mainly low-grade taconite-type ores from the Lake Superior district that require beneficiation and agglomeration prior to commercial use. World resources are estimated to exceed 230 billion tons of iron contained within greater than 800 billion tons of crude ore.

Substitutes: The only source of primary iron is iron ore, used directly as lump ore or converted to briquettes, concentrates, pellets, iron nuggets, DRI, or sinter. At some blast furnace operations, ferrous scrap may constitute as much as 7% of the blast furnace feedstock. Scrap, DRI, and iron nuggets are extensively used for steelmaking in electric arc furnaces and in iron and steel foundries, but scrap availability can be limited. Technological advancements have been made, which allow hematite to be recovered from tailings basins and pelletized.

^eEstimated. E Net exporter.

- 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 in sinter and pellets for blast furnaces.

⁴Defined as production + imports – exports + adjustments for industry stocks.

⁵Estimated from reported value of ore at mines.

⁶Defined as imports – exports + adjustments for Government and industry stock changes.

⁷See Appendix C for resource/reserve definitions and information concerning data sources.

⁸For Ukraine, reserves consist of the A+B categories of the former Soviet Union's reserves classification system.