

## IRON ORE<sup>1</sup>

(Data in thousand metric tons, usable ore, unless otherwise specified)

**Domestic Production and Use:** In 2024, eight open pit iron ore mines (each with associated concentration and pelletizing plants) in Michigan, Minnesota, and Utah shipped 98% of domestic usable iron ore products for consumption in the steel industry in the United States. The remaining 2% of domestic iron ore products were consumed in nonsteel end uses. In 2024, the United States produced iron ore with an estimated value of \$5.5 billion, a 2% increase from \$5.37 billion in 2023. Four iron metallic plants—one direct-reduced iron (DRI) plant in Louisiana and three hot-briquetted iron (HBI) plants in Indiana, Ohio, and Texas—operated during the year to supply steelmaking raw materials with an estimated value of \$1.8 billion. The United States was estimated to have produced 1.8% and consumed 1.5% of the world's iron ore output.

<b>Salient Statistics—United States:</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024<sup>e</sup></b>
Production:					
Iron ore	37,200	47,900	40,100	44,700	48,000
Iron metallics	3,350	5,010	5,240	5,480	5,300
Shipments	37,400	47,600	40,400	46,400	45,000
Imports for consumption	3,240	3,740	3,040	3,540	2,600
Exports	10,400	14,400	11,400	11,100	10,000
Consumption, Apparent <sup>2</sup>	30,300	37,300	32,000	38,800	37,000
Price, average unit value reported by mines, dollars per metric ton	82.25	141.78	156.42	120.36	115
Stocks, mine, dock, and consuming plant, yearend	3,230	3,510	3,250	1,500	4,000
Employment, mine, concentrating and pelletizing plant, number	4,390	4,980	4,790	4,810	5,000
Net import reliance <sup>3</sup> as a percentage of apparent consumption	E	E	E	E	E

**Recycling:** None. See the Iron and Steel Scrap chapter.

**Import Sources (2020–23):** Brazil, 47%; Canada, 30%; Sweden, 13%; Bahrain, 3%; and other, 7%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–24</b>
	Iron ores and concentrates:		
	Concentrates	2601.11.0030	Free.
	Coarse ores	2601.11.0060	Free.
	Other 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:** Iron ore production in 2024 was estimated to have increased likely owing to replenishing stocks. Domestic iron ore production was estimated to be 48 million tons in 2024, a 7% increase from 44.7 million tons in 2023. Overall, global prices of iron ore decreased, with an average unit value of \$112.06 per ton in the first 9 months of 2024. Pig iron production and raw steel production were estimated to have remained unchanged at 22 million tons and 81 million tons, respectively, in 2024. The World Steel Association<sup>4</sup> estimated global finished steel demand decreased by 0.9% in 2024. Global end-use consumption of steel products was expected to decrease slightly in 2024 owing to global declines or slowdowns in the automotive sector, housing construction, and the manufacturing sector; these decreases were partly offset by investments in climate change mitigation, manufacturing facilities, and public infrastructure.

In February, one company received water permits that would allow for the construction, operation, and closure of a mine permitted for up to 11.5 million tons per year of iron ore mining and processing northeast of Reno, NV. The company also planned to include a colocated merchant pig iron plant at the mine site. In May, one company began production of direct-reduction (DR)-grade iron ore pellets in Hibbing, MN, using an upgrade of the plant's existing production technology that allows for a 4-million-ton-per-year production capacity of DR-grade iron ore pellets with a 67% iron or higher grade that are ideal for consumption in DRI production or in steelmaking furnaces as a higher quality feedstock.

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Development of one of the world's largest high-grade iron ore deposits, located in Guinea, was expected by yearend 2024 after its ownership was split into a partnership that included the Government of Guinea and multiple international steel companies. Production was expected to start in 2025, and a full production rate of 60 million tons per year was expected by 2028.

The China Iron and Steel Association, an organization that collects data and information on China's steelmaking industry, called for a cut in production in domestic steelmaking, citing rapidly declining prices and the need to balance supply with demand. Following the announcement, China's National Development and Reform Commission cited plans to continue focusing on decarbonization and energy reduction strategies, as well as support for high-quality steelmaking companies and cracking down on illegal or inefficient steelmaking capacity.

In June, Canada's Critical Minerals List was updated to include high-purity iron, citing the necessity of that mineral's role in decarbonization throughout the steel supply chain.

**World Mine Production and Reserves:** Reserves for Iran, Peru, Russia, South Africa, and the United States were revised based on company and Government reports.

	Mine production				Reserves <sup>5</sup>	
	Usable ore		Iron content		(million metric tons)	
	2023	2024 <sup>e</sup>	2023	2024 <sup>e</sup>	Crude ore	Iron content
United States	44,700	48,000	28,200	30,000	3,600	2,300
Australia	953,000	930,000	589,000	580,000	<sup>6</sup> 58,000	<sup>6</sup> 27,000
Brazil	445,000	440,000	280,000	280,000	34,000	15,000
Canada	59,400	54,000	35,700	32,000	6,000	2,300
Chile	18,100	18,000	11,400	11,000	NA	NA
China	278,000	270,000	174,000	170,000	20,000	6,900
India	278,000	270,000	172,000	170,000	5,500	3,400
Iran	<sup>e</sup> 85,400	90,000	<sup>e</sup> 55,900	59,000	3,800	1,500
Kazakhstan	28,900	30,000	8,890	9,200	2,500	900
Mauritania	14,100	15,000	8,790	9,400	NA	NA
Mexico	8,500	8,000	5,350	5,000	NA	NA
Peru	20,900	21,000	14,100	14,000	2,600	1,500
Russia	90,900	91,000	53,300	53,000	35,000	14,000
South Africa	63,200	66,000	40,200	42,000	930	590
Sweden	28,900	28,000	20,400	20,000	1,300	600
Turkey	16,800	18,000	10,100	11,000	150	99
Ukraine	<sup>e</sup> 41,700	42,000	<sup>e</sup> 26,100	26,000	<sup>7</sup> 6,500	<sup>7</sup> 2,300
Other countries	<u>52,300</u>	<u>64,000</u>	<u>29,900</u>	<u>37,000</u>	<u>17,000</u>	<u>8,500</u>
World total (rounded)	2,530,000	2,500,000	1,560,000	1,600,000	200,000	88,000

**World Resources:**<sup>5</sup> U.S. resources are estimated to be 110 billion tons of usable iron 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 prior to commercial use. World resources are estimated to be greater than 800 billion tons of iron ore containing more than 230 billion tons of iron.

**Substitutes:** The only source of primary iron is iron ore, used directly as direct-shipping ore or converted to briquettes, concentrates, DRI, iron nuggets, pellets, or sinter. DRI, iron nuggets, and scrap are extensively used for steelmaking in electric arc furnaces and in iron and steel foundries. Technological advancements have been made that allow hematite to be recovered from tailings basins and pelletized.

<sup>e</sup>Estimated. E Net exporter. NA Not available. — Zero.

<sup>1</sup>Data are for iron ore used as a raw material in steelmaking—excluding iron metalics such as DRI, HBI, and iron nuggets—unless otherwise specified. See also the Iron and Steel and the Iron and Steel Scrap chapters.

<sup>2</sup>Defined as production + imports – exports ± adjustments for industry stock changes.

<sup>3</sup>Defined as imports – exports ± adjustments for industry stock changes.

<sup>4</sup>Source: World Steel Association, 2024, worldsteel short range outlook October 2024: Brussels, Belgium, World Steel Association press release, October 14, 3 p.

<sup>5</sup>See Appendix C for resource and reserve definitions and information concerning data sources.

<sup>6</sup>For Australia, Joint Ore Reserves Committee-compliant or equivalent reserves were 23 billion tons of crude ore and 10 billion tons of iron content.

<sup>7</sup>For Ukraine, reserves consist of the A and B categories of the Soviet reserves classification system.