

IRON AND STEEL SCRAP¹

(Data in million metric tons, metal, unless otherwise specified)

Domestic Production and Use: In 2023, the total value of domestic purchases of iron and steel scrap (receipts of ferrous scrap by all domestic consumers from brokers, dealers, and other outside sources) was an estimated \$19.5 billion, a 19% decrease from \$24.1 billion in 2022. Manufacturers of pig iron, raw steel, and steel castings accounted for almost all scrap consumption by the domestic steel industry, using scrap together with pig iron and direct-reduced iron to produce steel products for the appliance, construction, container, machinery, oil and gas, transportation, and various other consumer industries. The ferrous castings industry consumed most of the remaining scrap to produce cast iron and steel products. Relatively small quantities of steel scrap were used for producing ferroalloys, for the precipitation of copper, and by the chemical industry; these uses collectively totaled less than 1 million tons.

In 2023, estimated raw steel production was essentially unchanged at 80 million tons from 80.5 million tons in 2022, and net shipments of steel mill products in 2023 were an estimated 77 million tons, unchanged from those in 2022. U.S. apparent consumption of steel, the leading end use for iron and steel scrap, was estimated to have decreased by 4% to 93 million tons in 2023 from 96.9 million tons in 2022.

Salient Statistics—United States:	2019	2020	2021	2022	2023^e
Production:					
Home scrap	5.3	5.1	4.7	^e 4.7	5.1
Purchased scrap ²	55	50	59	^e 59	58
Imports for consumption ³	4.3	4.5	5.3	4.7	4.7
Exports ³	18	15	20	20	18
Consumption:					
Reported	47	45	48	^e 48	48
Apparent ⁴	48	45	48	^e 48	50
Price, average, delivered, No. 1 heavy melting composite price, dollars per metric ton ⁵	249	228	419	379	313
Stocks, consumer, yearend	3.9	4.0	4.4	^e 4.6	4.3
Employment, dealers, brokers, processors, number ^e	26,000	24,500	26,200	26,600	26,400
Net import reliance ⁶ as a percentage of reported consumption	E	E	E	E	E

Recycling: Recycled iron and steel scrap is a vital raw material for the production of new steel and cast-iron products. The steel and foundry industries in the United States have been structured to recycle scrap and, as a result, are highly dependent upon scrap. Recycling 1 ton of steel conserves 1.1 tons of iron ore, 0.6 ton of coking coal, and 0.05 ton of limestone. Recycling of scrap also conserves energy because the remelting of scrap requires much less energy than the production of iron or steel products from iron ore.

Overall, the scrap recycling rate in the United States has averaged between 80% and 90% during the past decade, with automobiles making up the primary source of old steel scrap. Recycling of automobiles is nearly 100% each year, with rates fluctuating slightly owing to the rate of new vehicle production and general economic trends. More than 15 million tons per year of steel is recycled from automobiles, the equivalent of approximately 12 million cars, from more than 7,000 vehicle dismantlers and 350 car shredders in North America. The recycling of steel from automobiles is estimated to save the equivalent energy necessary to power 18 million homes every year.

Recycling rates, which fluctuate annually, were estimated to be 98% for structural steel from construction, 88% for appliances, 71% for rebar and reinforcement steel, and 70% for steel packaging. The recycling rates for appliance, can, and construction steel are expected to increase in the United States and in emerging industrial countries at an even greater rate. Public interest in recycling continues, and recycling is becoming more profitable and convenient as environmental regulations for primary production increase. Also, consumption of iron and steel scrap by remelting reduces the burden on landfill disposal facilities and prevents the accumulation of abandoned steel products in the environment.

Recycled scrap consists of approximately 58% post-consumer scrap (old, obsolete scrap), 24% new scrap (scrap produced in steel-product manufacturing plants), and 18% home scrap (recirculating scrap from current operations).

Import Sources (2018–21): Canada, 72%; Mexico, 12%; Netherlands, 5%; Sweden, 4%; and other, 7%.

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<u>Tariff:</u> Item	<u>Number</u>	<u>Normal Trade Relations</u> <u>12-31-23</u>
Ferrous waste and scrap:		
Stainless steel	7204.21.0000	Free.
Turnings, shavings, chips, milling waste, sawdust, filings, trimmings, and stampings:		
No. 1 bundles	7204.41.0020	Free.
No. 2 bundles	7204.41.0040	Free.
Borings, shovelings, and turnings	7204.41.0060	Free.
Other	7204.41.0080	Free.
Other:		
No. 1 heavy melting	7204.49.0020	Free.
No. 2 heavy melting	7204.49.0040	Free.
Cut plate and structural	7204.49.0060	Free.
Shredded	7204.49.0070	Free.
Remelting scrap ingots	7204.50.0000	Free.
Powders, of pig iron, spiegeleisen, iron, or steel:		
Alloy steel	7205.21.0000	Free.
Other	7205.29.0000	Free.

Depletion Allowance: Not applicable.

Government Stockpile: None.

Events, Trends, and Issues: In the first 9 months of 2023, steel mills maintained normal operating rates of 73% to 78% of production capacity utilization, as compared with 70% to 80% in 2022 and more than the low monthly rate of 55% in May 2020 during the coronavirus disease 2019 (COVID-19) pandemic. Average composite prices published for No. 1 heavy melting steel scrap decreased from the previous high rate of \$523.27 per ton in March 2022 to a low of \$298.54 in June and July 2023. The annual average price delivered in the first 9 months of 2023 decreased to \$334.45 per ton compared with the full-year annual average of \$379.19 per ton in 2022.

In the first 9 months of 2023, Turkey was the primary destination for exports of ferrous scrap, by tonnage, accounting for 27% of total exports, followed by Mexico, 16%; Bangladesh, 10%; India, 10%; and Taiwan, 8%. The value of exported scrap decreased to an estimated \$5.6 billion in 2023 from \$7.4 billion in 2022. In the first 9 months of 2023, Canada was the leading source of imports of ferrous scrap, by tonnage, accounting for 71% of total imports, followed by Mexico, 14%; Sweden, 5%; and the Netherlands and Germany, 3% each.

The World Steel Association⁷ forecast global finished steel consumption to increase by 1.8% in 2023 and increase by 1.9% in 2024. End-use consumption of steel products was expected to only increase slightly in 2023 following concurrent events affecting consumer demand, including the conflict in Ukraine, monetary tightening, and rising interest rates. In the United States, the apparent consumption of finished steel products was estimated to have decreased slightly in 2023 owing to interest rate increases; however, consumption was expected to increase by 1.6% in 2024. The 2022 Inflation Reduction Act and the 2021 Bipartisan Infrastructure Law were attributed to increased activity in the commercial building and automotive sectors.

World Production and Reserves: Because scrap is not mined, the concept of reserves does not apply. World production data for scrap were not available. See the Iron and Steel and the Iron Ore chapters.

World Resources: Not applicable. See the Iron Ore chapter.

Substitutes: An estimated 5.3 million tons of direct-reduced iron was consumed in the United States in 2023 as a substitute for iron and steel scrap, up from 5.2 million tons in 2022.

⁰Estimated. E Net exporter.

¹See also the Iron and Steel, Iron and Steel Slag, and Iron Ore chapters.

²Defined as net receipts + exports – imports.

³Excludes used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping.

⁴Defined as home scrap + purchased scrap + imports – exports ± adjustments for industry stock changes.

⁵Source: Fastmarkets AMM.

⁶Defined as imports – exports ± adjustments for industry stock changes.

⁷Source: World Steel Association, 2023, Short range outlook October 2023: Brussels, Belgium, World Steel Association press release, October 7, 7 p.