# IRON AND STEEL SCRAP[1]

(Data in million metric tons of metal unless otherwise noted)

**Domestic Production and Use:** In 2022, 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) and exports was estimated to be $23 billion, a 5% decrease from the $24.3 billion in 2021 and 74% more than the $13.2 billion in 2020. U.S. apparent consumption of steel, the leading end use for iron and steel scrap, was estimated to have decreased by 3% to 96 million tons in 2022 from 98.9 million tons in 2021. 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 2022, estimated raw steel production decreased by 4% to 82 million tons from 85.8 million tons in 2021, and net shipments of steel mill products were an estimated 82 million tons, down by 5% from 85.9 million tons in 2021.

| Salient Statistics—United States: | 2018 | 2019 | 2020 | 2021 | 2022[e] |
|---|---|---|---|---|---|
| Production: | | | | | |
| Home scrap | 5.8 | 5.3 | 5.1 | 4.7 | 4.7 |
| Purchased scrap[2] | 59 | 55 | 50 | 52 | 49 |
| Imports for consumption[3] | 5.0 | 4.3 | 4.5 | 5.3 | 4.8 |
| Exports[3] | 17 | 18 | 15 | 16 | 13 |
| Consumption: | | | | | |
| Reported | 52 | 47 | 45 | 46 | 44 |
| Apparent[4] | 52 | 48 | 45 | 46 | 46 |
| Price, average, delivered, No. 1 heavy melting composite price, dollars per metric ton[5] | 326 | 249 | 228 | 418 | 415 |
| Stocks, consumer, yearend | 5.1 | 3.9 | 3.9 | 4.4 | 4.6 |
| Employment, dealers, brokers, processors, number[e] | 27,000 | 26,000 | 24,500 | 25,300 | 24,000 |
| 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 of steel is recycled from automobiles annually, 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 (old, obsolete) scrap, 24% new scrap (produced in steel-product manufacturing plants), and 18% home scrap (recirculating scrap from current operations).

**Import Sources (2018–21):** Canada, 73%; Mexico, 12%; Netherlands, 5%; United Kingdom, 5%; and other, 5%.

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| Tariff: Item | Number | Normal Trade Relations 12–31–22 |
|---|---|---|
| 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 2022, steel mills maintained normal operating rates of 76% to 82% of production capacity utilization, as compared with the low monthly rate of 54.6% in May 2020. Rates fluctuated slightly from 79.8% in January to 81.9% in April before slowly declining to 76.4% in September. Average composite prices published for No. 1 heavy melting steel scrap increased from the previous high rate in 2021 of $457.66 per ton in November and December to the high for 2022 of $523.27 per ton in March, after which prices declined. The annual average price delivered in the first 9 months of 2022 decreased to $405.35 per ton compared with the full-year annual average of $408.34 per ton in 2021 and contributed to the 5% decrease in the total estimated value of domestic purchases and exports of iron and steel scrap in 2022.

In the first 9 months of 2022, Turkey was the primary destination for exports of ferrous scrap, by tonnage, accounting for 22% of total exports, followed by Mexico, 19%; Bangladesh, 12%; and India and Taiwan, 7% each. The value of exported scrap decreased to an estimated $5.8 billion in 2022 from $6.7 billion in 2021. In the first 9 months of 2022, Canada was the leading source of imports of ferrous scrap, by tonnage, accounting for 73% of total imports, followed by Mexico, 13%; the Netherlands and Sweden, 4% each; and the United Kingdom, 3%.

The World Steel Association[7] forecast global finished steel consumption to decrease by 2.3% in 2022 and increase by 1.0% in 2023. End-use consumption of steel products was expected to decline in 2022 following concurrent events affecting consumer demand, including the conflict in Ukraine, continuing coronavirus disease 2019 (COVID-19) mitigation measures in China, rising energy costs and interest rates, and global inflation.

**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 Iron Ore chapters.

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

**Substitutes:** An estimated 4.9 million tons of direct-reduced iron was consumed in the United States in 2022 as a substitute for iron and steel scrap, down from 5.0 million tons in 2021.

[e]Estimated. E Net exporter.

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

[2]Defined as net receipts + exports – imports.

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

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

[5]Source: Fastmarkets AMM.

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

[7]Source: World Steel Association, 2022, Short range outlook October 2022: Brussels, Belgium, World Steel Association press release, October 19, 6 p.