

IRON AND STEEL SCRAP¹

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

Domestic Production and Use: In 2021, 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 \$27 billion, nearly double the \$14.0 billion in 2020 and 68% more than the \$15.8 billion in 2019. U.S. apparent consumption of steel, the leading end use for iron and steel scrap, was estimated to have increased by 18% to 98 million tons in 2021 from 82.9 million tons in 2020. 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.

During 2021, estimated raw steel production increased by 19% to 87 million tons, from 72.7 million tons in 2020, and net shipments of steel mill products were an estimated 88 million tons, up by 20% from 73.5 million tons in 2020.

Salient Statistics—United States:	2017	2018	2019	2020	2021^e
Production:					
Home scrap	5.6	5.8	5.3	4.8	4.2
Purchased scrap ²	55	59	55	53	55
Imports for consumption ³	4.6	5.0	4.3	4.5	6.2
Exports ³	15	17	18	17	19
Consumption:					
Reported	50	52	48	45	46
Apparent ⁴	50	52	49	45	46
Price, average, delivered, No. 1 heavy melting composite price, dollars per ton ⁵	265	326	249	228	435
Stocks, consumer, yearend	4.5	5.1	4.0	4.0	4.4
Employment, dealers, brokers, processors, number ^e	27,000	27,000	26,000	24,000	25,000
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 (2017–20): Canada, 70%; Mexico, 11%; the United Kingdom, 6%; Sweden, 5%; and other, 8%.

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Tariff:	Item	Number	Normal Trade Relations 12-31-21
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 2021, steel mill production capacity utilization rebounded from the lowest monthly rate since July 2009, reaching 54.6% in May 2020, into the normal historical range for operating rates reaching 76.6% in January and continuing to increase to 84.8% in the second half of 2021. Composite prices published for No. 1 heavy melting steel scrap increased significantly in 2021, rising from \$194.01 per ton in July 2020 to a peak of \$454.38 per ton in July 2021. The annual average price delivered in the first 8 months of 2021 increased to \$408.54 per ton compared with the full-year annual average of \$227.62 per ton in 2020, contributing to the significant increase in the total estimated value of domestic purchases and exports of iron and steel scrap in 2021.

In the first 8 months of 2021, Mexico and Turkey were the primary destinations for exports of ferrous scrap, by tonnage, accounting for 18% of total exports each, followed by Malaysia, 10%; Vietnam, 9%; and Bangladesh and Taiwan, 8% each. The value of exported scrap increased to an estimated \$8.1 billion in 2021 from \$4.8 billion in 2020. In the first 8 months of 2021, Canada was the leading source of imports of ferrous scrap, by tonnage, accounting for 67% of total imports, following by Mexico, 10%; the United Kingdom, 7%; the Netherlands, 6%; and Sweden, 3%.

The World Steel Association⁷ forecast global finished steel consumption to increase by 4.5% in 2021 and by 2.2% in 2022 owing to rebounding demand from the effects of the global COVID-19 pandemic. Global recovery started in late 2020, as manufacturing ramped up in developed countries, through the second half of 2021, when supply chain disruptions affected delivery and demand. These factors are expected to be relieved in 2022 and increase recovery momentum. The automotive sector was the leading cause of domestic increases in steel consumption.

World Mine Production and Reserves: Not applicable. See Iron and Steel and Iron Ore.

World Resources: Not applicable. See Iron and Steel and Iron Ore.

Substitutes: An estimated 3.5 million tons of direct-reduced iron was consumed in the United States in 2021 as a substitute for iron and steel scrap, up from 3.3 million tons in 2020.

⁰Estimated. E Net exporter.

¹See also Iron and Steel and Iron Ore.

²Defined as net receipts + exports – imports.

³Excludes used rails for rolling 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.

⁷World Steel Association, 2021, Short range outlook October 2021: Brussels, Belgium, World Steel Association press release, October 14, 8 p.