

## IRON AND STEEL SCRAP<sup>1</sup>

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

**Domestic Production and Use:** Total value of domestic purchases (receipts of ferrous scrap by all domestic consumers from brokers, dealers, and other outside sources) and exports was estimated to be \$35.2 billion in 2011, up by 42% from that of 2010. U.S. apparent steel consumption, an indicator of economic growth, increased to about 91 million tons in 2011. Manufacturers of pig iron, raw steel, and steel castings accounted for about 88% of 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 12% to produce cast iron and steel products, such as motor blocks, pipe, and machinery parts. Relatively small quantities of 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 2011, raw steel production was an estimated 95 million tons, up about 18% from that of 2010; annual steel mill capability utilization was about 75% compared with 70% for 2010. Net shipments of steel mill products were estimated to have been about 89 million tons compared with 76 million tons for 2010.

<b>Salient Statistics—United States:</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011<sup>e</sup></b>
Production:					
Home scrap	12	12	10	10	11
Purchased scrap <sup>2</sup>	64	73	70	66	73
Imports for consumption <sup>3</sup>	4	4	3	4	4
Exports <sup>3</sup>	16	22	22	21	24
Consumption, reported	64	67	53	60	55
Price, average, dollars per metric ton delivered, No. 1 Heavy Melting composite price, Iron Age					
Average, Pittsburgh, Philadelphia, Chicago	249	349	208	319	500
Stocks, consumer, yearend	4.4	4.6	3.4	4.0	4.0
Employment, dealers, brokers, processors, number <sup>4</sup>	30,000	30,000	30,000	30,000	30,000
Net import reliance <sup>5</sup> 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.

In the United States, the primary source of old steel scrap was the automobile. The recycling rate for automobiles in 2010, the latest year for which statistics were available, was about 113%. This high recycling rate includes the impact of more than a three-quarter-million unit increase of vehicles in operation, as compared with those of 2009. A recycling rate greater than 100% is a result of the steel industry recycling more steel from automobiles than was used in the domestic production of new vehicles. In 2010, the automotive recycling industry recycled more than 13.5 million tons of steel from end-of-life vehicles through more than 300 car shredders, the equivalent of nearly 10.8 million automobiles. More than 8,200 vehicle dismantlers throughout North America resell parts.

The recycling rates for appliances and steel cans in 2010 were 90% and greater than 67%, respectively; this is the latest year for which statistics were available. Recycling rates for construction materials in 2010 were, as in 2009, about 98% for plates and beams and 70% for rebar and other materials. The recycling rates for appliance, can, and construction steel are expected to increase not only in the United States, but also 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.

Recycling of scrap plays an important role in the conservation of energy because the remelting of scrap requires much less energy than the production of iron or steel products from iron ore. 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, 20% prompt scrap (produced in steel-product manufacturing plants), and 22% home scrap (recirculating scrap from current operations).

**Import Sources (2007–10):** Canada, 77%; Mexico, 9%; United Kingdom, 6%; Sweden, 3%; and other, 5%.

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<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations <u>12-31-11</u></b>
Iron and steel waste and scrap:		
No. 1 Bundles	7204.41.0020	Free.
No. 1 Heavy Melting	7204.49.0020	Free.
No. 2 Heavy Melting	7204.49.0040	Free.
Shredded	7204.49.0070	Free.

**Depletion Allowance:** Not applicable.

**Government Stockpile:** None.

**Events, Trends, and Issues:** Hot-rolled steel prices increased steadily during 2011 to a high in March of about \$886 per metric ton, after which they decreased to \$630 in November 2011. During the first 5 months of 2011, prices of hot-rolled steel were higher than those in 2010. The producer price index for steel mill products increased to 222 in May 2011 from 153 in May 2009. Steel mill production capability utilization peaked at 76.2% in June 2011 from a low of 40.8% in April 2009.

Scrap prices fluctuated during the first half of 2011, between about \$336 and \$412 per ton. Composite prices published by Iron Age Scrap Price Bulletin for No. 1 Heavy Melting steel scrap delivered to purchasers in Chicago, IL, and Philadelphia and Pittsburgh, PA, averaged about \$399 per ton during the first 8 months of 2011. As reported by Iron Age Scrap Price Bulletin, the average price for nickel-bearing stainless steel scrap delivered to purchasers in Pittsburgh was about \$2,257 per ton during the first 10 months of 2011, which was 3.2% higher than the 2010 average price of \$2,187 per ton. The prices fluctuated widely between a low of \$1,737 per ton in October 2011 and a high of \$2,888 in late February and early March 2011. Exports of ferrous scrap increased in 2011 to an estimated 24 million tons from 21 million tons during 2010, mainly to Turkey, China, Taiwan, the Republic of Korea, and Canada, in descending order of export tonnage. Export scrap value increased from \$8.4 billion in 2010 to an estimated \$12 billion in 2011.

Continuing and growing concern about the European Union sovereign-debt and banking crisis have adversely affected steel consumer confidence; depressed steel demand, production, and prices; and, thus, caused ferrous scrap prices to fluctuate and possibly decrease considerably. Annual world steel consumption increase was expected to slow to 6.5% in 2011 and 5.4% in 2012, following 15% annual growth in 2010, according to the World Steel Association.

Growing economies of developing countries, such as China and India, have increased demand and prices of scrap iron and steel. The United States is the world's leading exporter of scrap metal, including steel, gold, platinum, and other precious metals. As prices of iron and steel scrap increased, eventually some people began to recognize the resale value of iron and steel bridges, construction materials, manhole covers, statues, storm drain grates, wire, and even a steam locomotive. For this reason, many States have developed guidelines for scrap buyers to identify sellers in an effort to prevent stolen goods from being processed.

**World Mine Production and Reserves:** Not applicable.

**World Resources:** Not applicable.

**Substitutes:** About 1.7 million tons of direct-reduced iron was used in the United States in 2011 as a substitute for iron and steel scrap, up from 1.6 million tons in 2010.

<sup>6</sup>Estimated. E Net exporter.

<sup>1</sup>See also Iron Ore and Iron and Steel.

<sup>2</sup>Receipts – shipments by consumers + exports – imports.

<sup>3</sup>Includes used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping.

<sup>4</sup>Estimated, based on 2002 Census of Wholesale Trade for 2007 through 2011.

<sup>5</sup>Defined as imports – exports + adjustments for Government and industry stock changes.