

**Recycling goes far, far beyond the bin** at the edge of the curb. In 2011 alone, more than 134 million metric tons of scrap metal, paper, plastic, glass, textiles, rubber and electronics, valued at between \$80 and \$100 billion, were manufactured into specification grade commodities by the scrap recycling industry in the United States. These commodities were sold as valuable feedstock material to industrial consumers in the United States and in more than 160 countries around the world and contributed nearly \$39.2 billion in export sales, significantly helping the U.S. trade balance.

The U.S.-based scrap recycling industry is a sophisticated, capital-intensive industry that directly employs 135,000 workers in the United States. As the first link in the manufacturing supply chain, scrap recycling has been integral to the U.S. economy, global trade and resource sustainability for more than 200 years.

U.S. Economy	Global Trade	Environment
<p><b>\$77 billion industry in 2010</b></p> <p><b>More than 135,000 employees</b></p> <p><b>150 million tons of scrap material recycled annually including:</b></p> <ul style="list-style-type: none"> <li>• 74 million tons of iron and steel</li> <li>• 46.8 million tons of paper</li> <li>• 4.6 million tons of aluminum</li> <li>• 1.9 million tons of copper</li> <li>• 1.4 million tons of stainless steel</li> <li>• 1.2 million tons of lead</li> <li>• 160,000 tons of zinc</li> <li>• 3.5 million tons of glass</li> <li>• 654,220 tons of plastic (bottles)</li> <li>• 3.5 million tons of electronics</li> <li>• 90 million tires</li> </ul> <p><b>Specification-grade scrap is a raw material feedstock for U.S. manufacturing:</b></p> <ul style="list-style-type: none"> <li>• 2 out of 3 pounds of steel made in the U.S. is manufactured using ferrous scrap.</li> <li>• 60% of the metals and alloys produced in the U.S. are made from nonferrous scrap.</li> <li>• More than 50% of the U.S. paper industry's needs are met through the use of scrap paper with nearly 200 U.S. paper mills using only recycled paper.</li> <li>• 33% of U.S. aluminum supply comes from recycled materials.</li> </ul> <p><b>Recent independent research shows there is enough material to meet domestic manufacturers' demand for recycled materials for the foreseeable future.</b></p>	<p>Scrap has been an important export commodity from the U.S. for more than a century.</p> <p><b>Over 54 million tons of scrap exported</b></p> <ul style="list-style-type: none"> <li>• 19.6 million tons of iron and steel</li> <li>• 18.9 million metric tons of paper</li> <li>• 1.9 million tons of aluminum</li> <li>• 1.9 million tons of nickel, stainless and alloy</li> <li>• 1.0 million tons of copper</li> <li>• 518,000 metric tons of plastic (bottles)</li> <li>• 44,000 metric tons of lead</li> <li>• 78,000 metric tons of zinc</li> <li>• 172,000 metric tons of rubber</li> </ul> <p><b>Scrap exported to 55 countries. Leading export destinations include:</b></p> <ul style="list-style-type: none"> <li>• China \$8.5 Billion</li> <li>• Canada \$3.0 Billion</li> <li>• South Korea \$1.7 Billion</li> <li>• Turkey \$1.5 Billion</li> <li>• Taiwan \$1.4 Billion</li> <li>• United Kingdom \$1.1 Billion</li> <li>• Mexico \$1.0 Billion</li> <li>• India \$0.8 Billion</li> <li>• Germany \$0.7 Billion</li> <li>• Italy \$0.7 Billion</li> <li>• Hong Kong \$0.7 Billion</li> <li>• Japan \$0.6 Billion</li> </ul>	<p>Reduces greenhouse gas emissions by requiring significantly less energy to manufacture products from recyclables than virgin materials and by avoiding landfilling.</p> <p><b>Energy saved using recycled materials is up to:</b></p> <ul style="list-style-type: none"> <li>• 92% for aluminum</li> <li>• 90% for copper</li> <li>• 87% for plastic</li> <li>• 68% for paper</li> <li>• 56% for steel</li> <li>• 34% for glass</li> </ul> <p><b>Scrap recycling conserves natural resources. Recycling one ton of:</b></p> <ul style="list-style-type: none"> <li>• Paper saves 3.3 cubic yards of landfill.</li> <li>• Steel conserves 2500 lbs. of iron ore, 1400 lbs. of coal and 120 lbs. of limestone.</li> <li>• Aluminum conserves more than 5 metric tons of bauxite ore and 14 megawatt hours of electricity.</li> </ul> <p><b>Diverts 150 million tons of materials away from landfills.</b></p> <p><b>Cleaner air and water results from safely removing potential hazardous materials and keeping them out of landfills.</b></p> <ul style="list-style-type: none"> <li>• Mercury switches removed from older automobiles</li> <li>• Lead recovered from computer monitors</li> <li>• Various harmful chemicals safely recycled from electronics.</li> </ul>



Voice of the Recycling Industry



**ISRI** Institute of Scrap Recycling Industries, Inc.

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The Institute of Scrap Recycling Industries, Inc. (ISRI) is the "Voice of the Recycling Industry." ISRI represents more than 1,600 companies in 21 chapters nationwide that process, broker, and consume scrap commodities, including metals, paper, plastics, glass, rubber, electronics, and textiles. With headquarters in Washington, D.C., the Institute provides education, advocacy, and compliance training, and promotes public awareness of the vital role recycling plays in the U.S. economy, global trade, the environment and sustainable development.

ISRI was formed in 1987 through a merger of the Institute of Scrap Iron and Steel (ISIS), founded in 1928, and the National Association of Recycling Industries (NARI), founded in 1913.

The U.S. scrap recycling industry is a sophisticated, capital intensive industry that completes the recycling chain between obsolete materials and new manufacturing. Scrap recyclers process more than 130 million tons of recyclable material each year into raw materials used in industrial manufacturing around the world. For more than 200 years, scrap recycling has been – and continues to be – integral to the U.S. economy, global trade, the environment, and sustainable development.

For more information about ISRI, please visit [isri.org](http://isri.org)

The JASON Project connects students with scientists and researchers in real- and near-real time, virtually and physically, to provide mentored, authentic and enriching science learning experiences.

JASON and its partners create these connections using multiple platforms and technologies, including award-winning, standards-based classroom curriculum developed with NOAA, NASA, National Geographic Society and others; after-school and out-of-school activities; camp experiences; and exploration programs for museums, aquariums, libraries and community centers. The result is a year-round continuum of classroom and out-of-classroom learning.

Founded in 1989 by Dr. Robert D. Ballard, JASON is a nonprofit organization managed by Sea Research Foundation, Inc. and governed by Sea Research and National Geographic Society.

For more information about The JASON Project, please visit [jason.org](http://jason.org)



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# SCRAP IS NOT WASTE.

Scrap is not waste and recycling is not disposal. Scrap is manufactured into valuable, specification-grade commodities that are used to make new products. Waste is material that has no further use and is land-filled or incinerated. Too often laws and regulations lump scrap and waste together, which can have the unintended consequence of making recycling more difficult for individuals and businesses. Recognizing the difference is critical to promoting sustainability in our communities.

# RECYCLING IS NOT DISPOSAL.

Who recycles your cars, appliances, even old buildings? Where do bridges, stadiums, and ocean liners go at the end of their lives? What happens to the billions of pounds of boxes used by grocers and retailers, the tons of leftover manufacturing material, and the millions of pounds of other recyclable items that reach the end of their useful life each year?

The majority of recyclable material generated in the United States ends its life and begins a new life at a for-profit professional scrap recycling facility. Scrap recycling is a \$90 billion industry in the United States that transforms obsolete materials from consumers, businesses, and manufacturers into useful raw material that are essential to the manufacturing of new products. The scrap industry's knowledge and expertise make recycling possible. Our investment and technology make it economically practical.

The U.S. scrap recycling industry is big business. Scrap facilities invest millions of dollars in sophisticated manufacturing equipment and

# RECYCLING: Much Bigger Than Just the Bin

machinery that is designed to process the scrap into commodity grade materials, to begin their new lives as buildings, ships, and consumer products. All of this is accomplished in a safe and environmentally responsible manner.

The industry provides jobs – over 135,000 jobs in scrap yards alone – and helps support hundreds of thousands more in related industries. It diverts over 150 million tons of material that would otherwise end up in landfills. The scrap industry also makes a substantial contribution to the U.S. balance of trade, exporting 230 billion in products to steel mills, foundries, smelters, paper mills and other manufacturers in over 55 countries.

Being “green” is good for business, too. Making new aluminum from old aluminum uses 95 percent less energy than producing the same product from ore. Recycling a ton of paper saves 17 trees, 79 gallons of oil, and 7000 gallons of water. These savings help keep costs down and help keep jobs here in the United States.

The same is true for all sorts of scrap materials. Used tires must be shredded and sorted, with the steel belts (tire wire) going back to the steel industry and the rubber being sent to industries that manufacture materials ranging from hoses to school playground cover. Empty corrugated boxes and roll-ends of newsprint

Ask most people about recycling and they think of getting their used cans, bottles, and newspapers to the curb for collection. Certainly, the curbside recycling handled by cities and counties across the country is a vital part of recycling, but it makes up less than half of the really big picture of recycling.

from printers are collected, then separated, sorted, and recycled to make new paper.

New products made from steel contain, on average, between 60 and 75 percent recycled steel. Figures like that give credibility to the steel industry as it stakes its claim on recycling. But the steel industry depends on scrap recyclers to process those old cars, buildings, and bridges into materials that can be melted and made into new beams, bolts, and sheet metal.

The scrap recycling industry doesn't stop there. We're constantly seeking new markets and developing new technologies to

improve efficiency and recover greater amounts of recyclable materials from products that have reached the end of their useful lives.

Recycling is not a single activity. It is a series of activities that when put together is a lot bigger than the recycling bin at your curb.

As the last step in a product's lifespan and the first step in manufacturing, the scrap recycling industry is an integral part of the global manufacturing supply chain.

## Steel Recycling: Cars Can Become Bridges



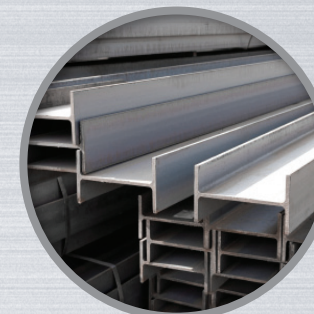
End of life cars are sold for scrap



They are inspected, removing any potentially hazardous materials, then shredded



Shredded steel is remelted...



...made into beams...



...used in the construction of a new bridge

## Paper Recycling: Recovered Paper Can Become Cardboard Boxes



Mixed paper is collected



The paper goes to a recycling facility and sorted by grade



...and is baled



Bales are supplied to paper mills to make new paper



...used to make new cardboard boxes

## RECYCLING SAVES ENERGY

Recycling saves impressive amounts of energy which, in turn, reduces greenhouse gas emissions

Recycling	Reduces Greenhouse Gas Emissions by (CO2 equivalent)	Which is the Energy Equivalent of
1 Car	8,811 lbs.	502 Gallons of Gasoline
1 Refrigerator	566 lbs.	36 Gallons of Gasoline
1 Computer & CRT Monitor	404 lbs.	27 Gallons of Gasoline
1 Washing Machine	397 lbs.	24 Gallons of Gasoline
4 Tires	323 lbs.	18 Gallons of Gasoline
1 Television	81 lbs.	8 Gallons of Gasoline
10 lbs. of Aluminum Cans	16 lbs.	7 Gallons of Gasoline
10 lbs. of Corrugated Box	40 lbs.	2 Gallons of Gasoline