# Economic Impact Study U.S.-Based Scrap Recycling Industry (2013) Executive Summary

### www.isri.org/jobs

Scrap recycling is a major U.S.-based industry dedicated to transforming end-of-life products and industrial scrap into new commodity grade materials and driving economies by making the old, new again. Recognized as one of the world's first green industries, scrap recycling creates and supports jobs and has a positive impact on the environment by reducing greenhouse gas emissions, saving energy and protecting our natural resources. In 2013, the Institute of Scrap Recycling Industries (ISRI), Inc. retained the independent economic consulting firm of John Dunham and Associates to perform an economic impact analysis to document the size and scope of the scrap recycling industry in the United States and document its significant contribution to the U.S. economy, in terms of employment, tax generation and overall economic benefit.

The U.S. scrap recycling industry is not only a thriving economic engine, but also a pivotal player in environmental protection, resource conservation and sustainability. The industry recycled more than 135 million metric tons of materials in 2011, transforming outdated or obsolete scrap into useful raw materials needed to produce a range of new products. Recycling reduces greenhouse gas emissions by significantly saving the amount of energy needed to manufacture the products that we buy, build and use every day. The energy saved by recycling may then be used for other purposes, such as heating our homes and powering our automobiles.



In addition to being an environmental steward, the study confirmed that the U.S. scrap recycling industry plays a prominent role as an economic leader, job creator and major exporter. Specifically, the study found that the people and firms that purchase, process and broker old materials to be manufactured into new products in America provide 462,940 adults with good jobs in the United States<sup>2</sup> and generate more than \$87 billion annually in economic activity.

(\$ Million)	Direct	Supplier	Induced	Total	
Jobs	137,970	131,917	193,053	462,940	
Wages	\$9,586.20	\$7,948.42	\$9,265.54	\$26,800.16	
Economic Impact	\$34,691.38	\$24,366.92	\$28,337.88	\$87,396.19	

Based on the Economic Impact of the Scrap Recycling Industry in the United States (2013), produced for the Institute of Scrap Recycling Industries, Inc. by John Dunham and Associates, 2013.

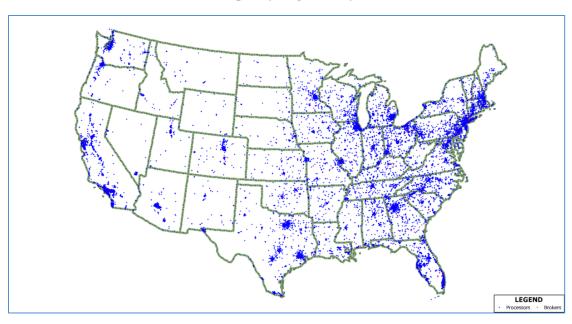


Data from The ISRI Scrap Yearbook 2012, Institute of Scrap Recycling Industries, Inc.

#### **Summary of Findings**

#### **Employment: Source of Green Jobs**

While many in the public policy world talk about the need for more *green jobs*, the scrap recycling industry has already been creating these environmentally friendly jobs and other opportunities here in the United States for decades. The study found that in 2013, 137,970 jobs are being supported by the manufacturing and brokerage operations of the scrap recycling industry in the United States.<sup>3</sup> These are good jobs paying an average of \$69,480 in wages and benefits to American workers. In addition to this, 324,970 jobs throughout the U.S. economy are indirectly supported by the scrap recycling industry through suppliers and the indirect impact of the industry's expenditures.<sup>4</sup>



**U.S. Scrap Recycling Industry Facilities** 

These are real people with real jobs -- not only in firms that process scrap materials into new, usable commodity inputs, but in firms that supply the industry with recycled materials, like auto yards and independent peddlers, as well as firms that supply machinery, trucks and services to processors. In addition, thousands of people in industries seemingly unrelated to scrap materials recycling, from servers in restaurants, to construction workers, to teachers in local schools, depend on the re-spending of the wages and taxes paid by scrap recycling industry to their workers and suppliers.

The economic benefits generated by the scrap recycling industry are widespread. Not only are scrap facilities located in every state throughout the country and in both urban and rural communities, but the firms that supply materials, good and service to processors and brokers are also located in every part of the country. This means that the U.S. scrap recycling industry provides good-paying jobs in every state in the union. The study results are broken down by state, congressional district and state legislative districts at www.isri.org/jobs.

Direct impacts are those associated with scrap processors and brokers. Supplier impacts are associated with firms providing goods and services to scrap recyclers and brokers, including peddlers, and induced impacts are those resulting from the re-spending of wages by workers in the direct and supplier sectors.



This includes firms involved in the purchasing, processing and brokering of scrap materials including ferrous and nonferrous metals, paper, electronics, rubber, plastics, glass and textiles.

#### **Overall Economic Activity**

The activities of the scrap recycling industry in the United States generate nearly \$87.4 billion annually in economic benefits here at home. All told, the U.S. scrap recycling industry accounts for 0.55% of the nation's total economic activity, making it similar in size to the cosmetics industry, the milk industry and the aircraft engine industry.

## Tax Revenues to Federal, State and Local Governments

The scrap recycling industry generates substantial revenues for state and local governments throughout the United States, as well as for the federal government.

- The industry generates about \$4.0 billion in state and local revenues annually, revenues that are used to help communities and people throughout the country.
- Another \$6.3 billion in federal taxes are paid annually by the industry and its employees.



#### **Export Activities: Creating Thousands of Jobs Here at Home**

Scrap commodities are among the nation's largest exports by value, and overall, exports account for 39% of the industry's economic activity. These exports create approximately 184,750 good green jobs in the United States and help strengthen the national economy. According to the study, in 2013, 56,364 jobs are directly supported by the export activities associated with the processing and brokerage operations of scrap recyclers operating in the United States. An additional 128,385 jobs are supported by supplier operations and through the indirect effects of scrap recycling exports. These jobs pay a total of \$6.8 billion in wages. All of this activity generates \$33.9 billion in economic benefits in the United States and contributes \$1.9 billion in tax revenues for the federal government and \$1.6 billion in state and local taxes.

#### Summary Table: Economic Impact of U.S. Scrap Recycling Exports

	Direct	Supplier	Induced	Total		
Jobs	56,364	52,081	76,304	184,750		
Wages	\$3,836,460,000	\$3,094,114,500	\$3,662,214,400	\$10,592,788,900		
Economic Impact	\$13,255,560,400	\$9,427,388,700	\$11,200,577,500	\$33,883,526,600		

This is because scrap materials that are intended for export must be collected, separated and prepared for transport out of the United States. The steps in this process provide well-paying U.S. jobs. In fact, were it not for these export markets, many materials, including post-consumer paper and electronics

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Bureau of Economic Analysis. GDP based on first quarter of 2013, third estimate value of \$15.984 trillion, see: Gross Domestic Product, First Quarter 2013 (third estimate); Corporate Profits, First Quarter 2013 (revised estimate), Bureau of Economic Analysis, June 26, 2013.

would probably not be recycled at all simply because there is no demand for them in the United States.<sup>7</sup> By opening up new markets, the nation's recycled materials producers create demand for materials that might otherwise end up in landfills.

In the case of electronic products, for example, there simply is not enough demand in the United States for the more expensive post consumer materials, including gold and titanium, that may be smelted out of circuit boards, capacitors and other electronic parts. On the other hand, countries like India, where demand for gold is particularly high, see value in these materials.<sup>8</sup>

The scrap industry is the first link in the global supply chain for the growing demand of all manner of commodities ranging from iron and steel to paper; nonferrous metals such as aluminum, copper, and zinc; plastics; electronics; rubber; and more. The result is economic and environmental sustainability for our nation and our world through the supply of high quality, environmentally friendly and energy saving raw materials to the global marketplace.

In 2012, the industry exported nearly \$27.8 billion in commodity grade scrap products to more than 160 countries, significantly helping the U.S. balance of trade. In fact, in terms of volume, scrap materials are



among the nation's largest commodity exports, in line with other important commodity export products like grain and corn, cotton, timber and petroleum. The scrap materials processed in the United States are exported to other countries for manufacture into new products. Rather than encouraging the use of virgin materials, America's recycled materials help reduce worldwide energy demand and greenhouse gases as well as the need to mine and harvest virgin materials

## **Economic Benefits of Exporting Scrap Commodities Are No Different Than Those That Occur Exporting Any Other Product**

International trade is an important part of the American economy. In 2012, nearly \$2.210 trillion in goods and services were exported from the United States, and about \$2.745 trillion were imported. More than 50 million Americans work for companies that engage in international trade, according to the U.S. Chamber of Commerce, and one in three manufacturing jobs depends on exports. The U.S.

The Benefits of International Trade and Investment, US Chamber of Commerce, on-line at: www.uschamber.com/trade



One reason that so much waste paper is sent to China for reprocessing is that wood pulp is very expensive in Asia. In the United States, on the other hand, integrated paper manufacturers use a mixture of pre- and post-consumer recycled paper as well as wood pulp from specially raised forests to manufacture paper products.

India accounted for over one-quarter of world gold demand in the 1<sup>st</sup> quarter of 2013, the last period for which data are available. Together, India and China accounted for about 54 percent of world demand. The United States, on the other hand accounted for just about 5 percent. About 9 percent of India's gold comes from recycled materials. See: <u>Gold Demand Trends: First Quarter 2013</u>, World Gold Council, May 2013.

US International Trade in Goods and Services: May 2013, Press Release, US Department of Commerce, Bureau of Economic Analysis, July 3, 2013. Available on-line at: www.bea.gov/newsreleases/international/trade/tradnewsrelease.htm

International Trade Association projects that U.S. exports supported an estimated 9.8 million jobs in 2012, up from 9.7 million in 2012.<sup>11</sup>

To suggest that the export of recycled commodities would somehow destroy jobs in the United States is no different than stating that the export of corn, or of coal or of cotton, somehow takes away American jobs. In fact, President Barack Obama, in his first State of the Union address to Congress, highlighted exports as a pillar of economic growth on which the country will depend in the future.<sup>12</sup>

#### **Economic and Job Impacts on a State-by-State Level**



Economic Contribution of Scrap Recycling Industry, 2013

	Direct			Suppliers			Induced			Total		
	Jobs	Wages	Output	Jobs	Wages	Output	Jobs	Wages	Output	Jobs	Wages	Output
Alabama			\$ 550,942	3,964 \$	222,933		2,647			8,876 \$		
Alaska			\$ 35,064	90 \$	8,327		135 \$			367 \$	26,270	
Arizona			\$ 729,610	2,009 \$	108,008		4,571			9,093 \$	525,407	
Arkansas			\$ 264,253	5,925 \$	339,642		1,026			8,312 \$	447,306	
California			\$ 4,118,439	14,729 \$	972,018		27,256			57,872 \$	3,638,745	
Colorado			\$ 494,280	1,242 \$	80,060		2,387			5,282 \$	344,666	
Connecticut			\$ 463,406	848 \$	62,275		1,879			4,380 \$	306,491	
Delaware			\$ 50,566	583 \$	43,153		149 \$			933 \$	63,322	
District of Columbia			\$ 27,670	7 \$	651		6 \$			74 \$	6,405	
Florida			\$ 1,453,857	5,102 \$	261,100		10,635			22,678 \$	1,160,220	
Georgia			\$ 1,199,851	8,465 \$	524,938		6,982		937,815	20,742 \$	1,158,759	
Hawaii			\$ 84,925	147 \$	7,478		307 \$	12,879	43,352	867 \$	46,460	
daho	493	\$ 40,206	\$ 193,982	295 \$	15,168	69,026	322 \$	11,188	35,297	1,110 \$	66,562	298,30
llinois	6,572	\$ 563,417	\$ 1,939,045	5,778 \$	378,495	1,243,829	12,688	667,541	2,008,433	25,038 \$	1,609,453	
ndiana	3,584	\$ 249,374	\$ 888,794	2,926 \$	153,571	558,293	4,557	183,943	574,220	11,067 \$	586,888	2,021,30
lowa	1,758	\$ 92,680	\$ 424,082	2,330 \$	124,138	526,548	1,193	46,009	141,297	5,281 \$	262,827	
Kansas	742	\$ 41,966	\$ 155,863	701 \$	33,183	160,162	548 9	21,346	66,250	1,991 \$	96,494	382,27
Kentucky			\$ 611,006	2,242 \$	131,845		2.651			7,436 \$	390,126	
Louisiana			\$ 345,721	1.290 \$	77.061		1,739			4.655 \$	254,331	
Maine			\$ 102,038	382 \$	19,002		500			1,460 \$	66,249	
Maryland			\$ 338,701	1,198 \$	74,673		1,644			4,284 \$	247,668	
Massachusetts			\$ 758.190	1.800 \$	127.568		4.027			8.812 \$	588,475	
Michigan			\$ 1,129,688	3.677 \$	200,902		7.780			16.445 \$	864.219	
Minnesota			\$ 564,156	3,371 \$	203,769		3,472			9.202 \$	517,986	
Mississippi			\$ 163.094	2,567 \$	130.836		639 9			4.017 \$	198,005	
Missouri			\$ 697,185	2,533 \$	137,908		2.892			8,288 \$	437,176	
Montana			\$ 42.298	2,333 \$ 182 \$	8.209		172			597 \$	26,487	
Nebraska				1,186 \$	64.000		706 9			2,753 \$		
Nevada			\$ 107,689				451 \$ 835 \$					
New Hampshire			\$ 154,185								107,107	
New Jersey			\$ 1,614,557	3,154 \$	222,046		7,406			16,255 \$	1,111,347	
New Mexico			\$ 110,564	321 \$	18,867		426			1,194 \$	64,705	
New York			\$ 1,878,547	4,520 \$	326,393		8,477			20,410 \$	1,379,793	
North Carolina			\$ 903,096	5,494 \$	312,583		5,027			15,223 \$	768,300	
North Dakota			\$ 41,662	179 \$	7,904		86 \$			423 \$	20,983	
Ohio			\$ 1,662,635	5,328 \$	287,998		9,953			22,463 \$	1,157,657	
Oklahoma			\$ 220,869	1,360 \$	71,317		974 \$			3,426 \$	165,770	
Oregon			\$ 473,750	1,553 \$	83,110		3,121			6,764 \$	353,013	
Pennsylvania			\$ 1,641,160	4,595 \$	297,223		8,232			19,314 \$	1,137,400	
Rhode Island			\$ 113,568	187 \$	10,485		398 \$			1,026 \$	59,232	
South Carolina			\$ 604,646	1,972 \$	103,612		3,601			7,754 \$	417,312	
South Dakota			\$ 26,912	215 \$	8,865		94 \$			514 \$	20,146	
Tennessee			\$ 884,165	3,375 \$	194,318		5,445			12,145 \$	689,829	
Texas	11,665	\$ 867,019	\$ 3,053,783	12,450 \$	781,921	2,605,382	19,595	961,355	3,059,596	43,710 \$	2,610,295	8,718,76
Utah			\$ 516,079	2,038 \$	99,591		2,808 \$		340,630	6,147 \$	309,067	
Vermont	258	\$ 13,641	\$ 44,530	143 \$	7,489	31,812	230 \$	9,023	26,287	631 \$	30,153	102,62
Virginia	2,546	\$ 159,283	\$ 612,760	2,506 \$	175,164	465,924	2,133	98,491	299,305	7,185 \$	432,938	1,377,98
Washington	2,592	\$ 249,286	\$ 861,761	2,447 \$	158,752	486,075	4,695	224,789	718,077	9,734 \$	632,826	
West Virginia			\$ 116,188	527 \$	44.357		477 9			1.716 \$	96,559	
Visconsin			\$ 1,007,896	3,243 \$	173,690		5.011			11,585 \$	596,590	
Wyoming			\$ 24.406	128 \$	15,917		68 \$			346 \$	25,781	
Fotal	137,970		\$ 34.691.383	131,917 \$	7.948.416		193,053	9,265,541		462.940 \$	26.800.156	

John Dunham and Associates: New York

The study also calculated the impact of the U.S.-based scrap recycling industry on a state by state basis (as well as by state legislative district). The table of the preceding page summarizes those impacts. Specific tables – by state, congressional district and state legislative district -- can be found at <a href="https://www.isri.org/jobs">www.isri.org/jobs</a>.



Jobs Supported by Exports 2012: An Update: February 26, 2013, International Trade Association. Available online at:

http://www.trade.gov/mas/ian/build/groups/public/@tg\_ian/documents/webcontent/tg\_ian\_004021.pdf

International Trade Administration, ITA News Letters. Available on-line at: http://trade.gov/press/publications/newsletters/ita\_0210/nei\_0210.asp

#### **Study Methodology**

The Scrap Recycling Industry Economic Impact Study estimates the economic contributions made by the various components of the scrap processing industry to the U.S. economy in 2013. John Dunham and Associates conducted this research, which was funded by the Institute of Scrap Recycling Industries, Inc. (ISRI). This work used standard econometric models maintained by the Minnesota IMPLAN Group. Data came from industry sources, government publications and Dun and Bradstreet, Inc. (D&B).

The study defines the scrap recycling industry as firms in the private sector involved in the processing and brokerage of scrap metals, plastics, rubber, paper, textiles, glass and electronics. The study measures the number of jobs in the sector, the wages paid to employees, the value added and total output.

The study also estimates taxes paid by the industry and its employees. Federal taxes include industry-specific excise and sales taxes, business and personal income taxes, FICA and unemployment insurance. State and local tax systems vary widely. Direct retail taxes include state and local sales taxes, license fees, and applicable gross receipt taxes. Processors pay real estate and personal property taxes, business income taxes and other business levies that vary in each state and municipality. All entities engaged in business activity generated by the industry pay similar taxes.

The economic impact study begins with an accounting of the direct employment in the processing of recycled scrap materials and the materials brokerage sectors. The data come from a variety of government and private sources. It is sometimes mistakenly thought that initial spending accounts for all of the impact of an economic activity or a product. For example, at first glance it may appear that consumer expenditures for a product are the sum total of the impact on the local economy. However, one economic activity always leads to a ripple effect whereby other sectors and industries benefit from this initial spending. This inter-industry effect of an economic activity can be assessed using multipliers from regional input-output models.

Industries are linked to each other when one industry buys from another to produce its own products. Each industry in turn makes purchases from a different mix of other industries, and so on. Employees in all industries extend the economic impact when they spend their earnings. Thus, economic activity started by the scrap recycling is linked to other industries in the state and national economies. The activities required to process a ton of scrap iron; from sorting, to cutting to baling, to shipping, generate the direct effects on the economy. Regional (or indirect) impacts occur when these activities require purchases of goods and services, such as machinery or electricity, from local or regional suppliers. Additional induced impacts occur when workers involved in direct and indirect activities spend their wages. The ratio between induced economic and direct impact is termed the multiplier. The framework in the chart above illustrates these linkages.

Once the direct impact of the industry has been calculated, the impact of supplier firms, and the "Induced Impact" of the re-spending by employees of industry and supplier firms, is calculated using an input/output model of the United States. The study calculates the impact on a national basis, by state, by congressional district and by state legislative district.

This method of analysis allows the impact of local production activities to be quantified in terms of final demand, earnings, and employment in the states and the nation as a whole. In the case of the ISRI model, only the most conservative estimate of the induced impact has been used.

Additional detail on the methodology used for this study can be found in www.isri.org/jobs.

