

US EPA ARCHIVE DOCUMENT



RECYCLING is WORKING

in the United States

Participating Organizations:

- U.S. Environmental Protection Agency
- National Recycling Coalition
- California Integrated Waste Management Board
- Delaware Economic Development Office
- Empire State Development (New York)
- Florida Department of Environmental Protection
- Illinois Department of Commerce and Community Affairs
- Indiana Department of Commerce
- Massachusetts Department of Economic Development
- Minnesota Office of Environmental Assistance
- Missouri Environmental Improvement and Energy Resources Authority
- Nebraska Department of Economic Development
- New Jersey Department of Environmental Protection
- Northeast Recycling Council
- Ohio Department of Natural Resources
- Pennsylvania Department of Environmental Protection
- Recycle Iowa (an initiative of the Iowa Department of Economic Development)
- Vermont Agency of Natural Resources
- Wisconsin Department of Natural Resources

The U.S. Recycling Economic Information (REI) Study is a groundbreaking national study that demonstrates the importance of recycling and reuse to the U.S. economy. The study, commissioned by the U.S. Environmental Protection Agency (EPA) and numerous states through a cooperative agreement with the National Recycling Coalition (NRC), clearly shows what many have known for a long time—that “Recycling is Working.”

By converting waste into valuable raw materials, recycling creates jobs, builds more competitive manufacturing industries, and adds significantly to the U.S. economy. Comprehensive national data on the economic impact of recycling and reuse is critical to the continued growth and success of the industry by:

- Demonstrating to the investment community that recycling is a viable, established industry with a proven track record.
- Assisting government agencies with strategic planning and policy decisions to ensure the continued growth of recycling.

- Identifying business opportunities for entrepreneurs based on emerging commodity areas and industry sectors.
- Providing recycling and reuse advocates with an important tool to help promote awareness and build support.

Key Findings of the Study

Recycling and Reuse Add Value to the U.S. Economy

The recycling and reuse industry is a significant force in the U.S. economy that makes a vital contribution to job creation and economic development. According to the study, the industry consists of approximately 56,000 establishments that employ

Summary of Estimates of Direct Economic Activity

Annual Payroll and Estimated Receipts are in \$1,000. Throughput is in thousands of tons.

Data Type	Industry Sector				Industry Total
	Recycling Collection	Recycling Processing	Recycling Manufacturing	Reuse and Remanufacturing	
Establishments	9,247	12,051	8,047	26,716	56,061
Employment	32,010	160,865	759,746	169,183	1,121,804
Annual Payroll	956,875	3,826,360	29,181,749	2,747,498	36,712,482
Estimated Receipts	1,974,516	41,753,902	178,390,423	14,182,531	236,301,371
Estimated Throughput ¹	191,082	191,082	157,545	N/A	N/A

1. Throughput is amount of recovered material recycled and includes manufacturing scrap sent for recycling. It excludes materials prepared for fuel use and in-house process scrap returned to the manufacturing process. Throughput estimates are summed to avoid triple counting at collection, processing, and manufacturing stages.

over 1.1 million people, generate an annual payroll of nearly \$37 billion, and gross over \$236 billion in annual revenues. Within the industry, the economic impact of the recycling manufacturing sector far exceeds the recycling collection, processing, and reuse sectors.

Local Recycling and Reuse Spur “Downstream” Economic Impacts

Recycling businesses collect, process, and broker recovered materials as well as manufacture and distribute products made with recovered materials. Investment in local recycling collection and processing, as well as strong government policies, spurs significant private sector investment in recycling

manufacturing and promotes economic growth.

The study also tallied the impact of recycling on other support industries such as accounting firms and office supply companies for a grand total of 1.4 million jobs “indirectly” supported by the recycling and reuse industry. These jobs have a payroll of \$52 billion and produce \$173 billion in receipts. Spending by employees of the recycling and reuse industry leads to another 1.5 million jobs with a payroll of \$41 billion and produces receipts of \$146 billion. The recycling and reuse industry also generated roughly \$12.9 billion in federal, state, and local tax revenues, with 80 percent going to federal and state government.

Contribution of Recycling and Reuse to Government Revenues

(in \$ millions)

Industry Sector	Direct Effects Revenues				Total Effects Revenues			
	Federal	State	Local	Total	Federal	State	Local	Total
Recycling Collection	200	100	100	400	300	200	100	600
Recycling Processing	700	400	300	1,400	1,700	800	600	3,200
Recycling Manufacturing	5,400	2,600	2,100	10,000	20,500	9,900	7,800	38,200
Reuse/Remanufacturing	600	300	200	1,200	2,100	1,000	800	3,900
Total	6,900	3,400	2,600	12,900	24,600	11,900	9,400	45,800

Other Benefits of Recycling

Recycling is good for the economy and the environment. Recycling’s benefits are found at every stage of the life cycle of a consumer product—from the mining of raw materials through use and final disposal. By redirecting waste to serve as raw materials for industry, recycling provides a number of important benefits:

- Reducing pollution and conserving natural resources.
- Saving energy by reducing the need to extract and process “virgin” raw materials to manufacture new products.
- Reducing greenhouse gases such as carbon dioxide, methane, and nitrous oxide.
- Stimulating the development of greener technologies.
- Avoiding the cost of waste disposal in landfills and incinerators.

Recycling is a Diverse Industry

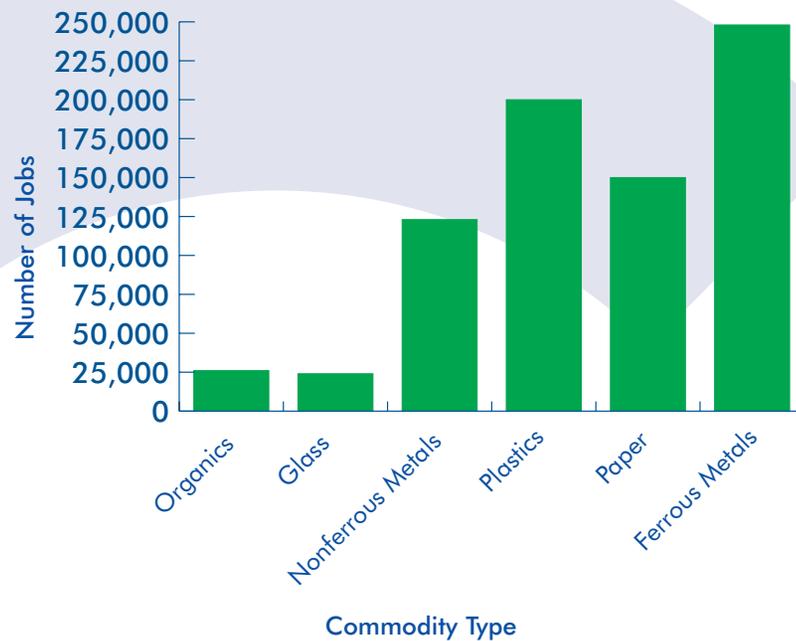
The recycling and reuse industry is an elaborate network of public sector institutions and private companies. In fact, the study identified 26 different types of recycling organizations (see below). Recycling is an integrated system that starts with collection of materials by individuals, businesses, and municipalities, involves processing of recycled materials, and leads to manufacturing of new products with recycled content.

Four major manufacturing industries account for over half of the economic activity of the industry: paper mills, steel mills, plastics converters, and iron and steel foundries. But the recycling industry also includes companies that are quickly finding a market niche, including computer demanufacturers, organics composters, and plastic lumber manufacturers.

Types of Recycling and Reuse Organizations

- Private and government staffed collection centers
- Compost and miscellaneous organics producers
- Material recovery facilities
- Recyclable material wholesalers
- Glass container manufacturing plants
- Other glass product producers
- Nonferrous secondary smelting and refining mills
- Nonferrous foundries and product producers
- Paper and paperboard mills/deinked market pulp producers
- Paper-based product manufacturers
- Pavement mix producers (asphalt and aggregate)
- Plastics reclaimers and converters
- Rubber product manufacturers
- Steel mills
- Iron and steel foundries

Recycling Manufacturing Industry Employment by Major Material Group



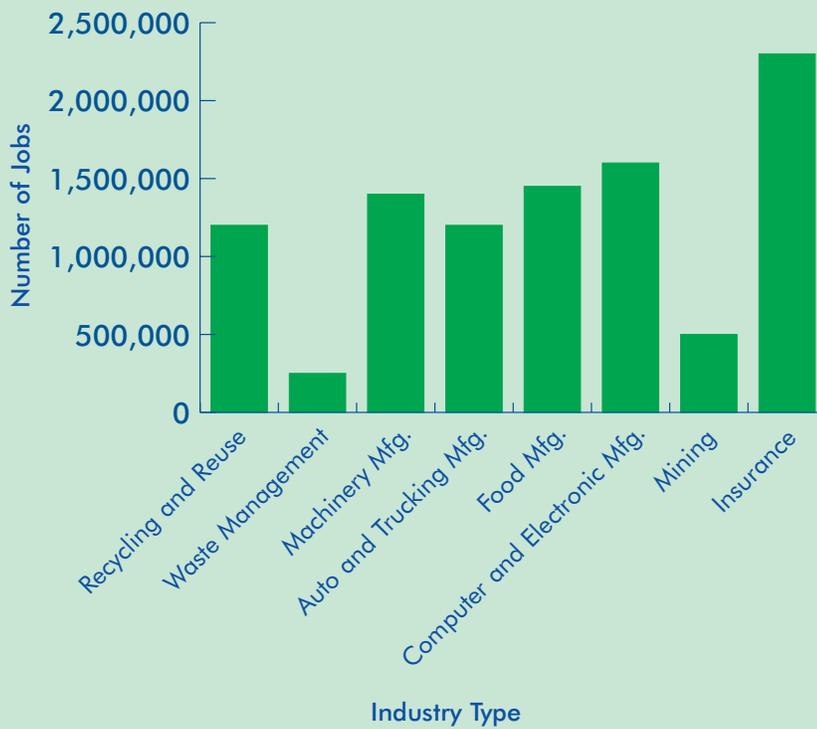
About The Study

The multi-year REI project utilizes the best available data from 1997–1999. The national study was accomplished through a comprehensive analysis of both existing economic data and reasonable estimates based on targeted surveys of recycling businesses and sophisticated economic modeling. For the first time, the national study allows for sound economic comparisons across different regions and states in the country.

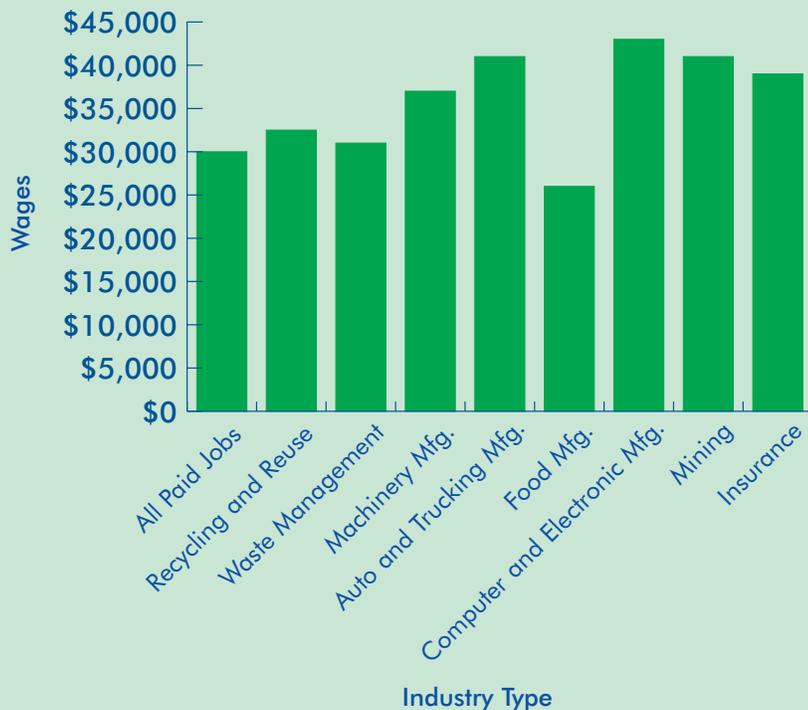
The study establishes an important benchmark of the economic impact of recycling and reuse. It lays the groundwork for future studies that could be conducted on a regular basis to track industry growth and trends.

- Computer and electronic appliance demanufacturers
- Used motor vehicle parts remanufacturers
- Retail used merchandise sales
- Tire retreaders
- Wood reuse organizations
- Materials exchange services

Comparison of Industry Employment



Comparison of Annual Wages per Job



Recycling and Reuse are Competitive with Other Major Industries

The materials collected for recycling should not be considered waste or garbage—they are valuable commodities that contribute significantly to our growing economy. The increasing supply of recyclables fuels manufacturing industries and makes them more competitive and sustainable.

As a driver of economic activity, the recycling industry compares favorably to other key industries, such as automobile manufacturing and mining. Of particular significance is that recycling far outpaces the waste management industry because recycling adds value to materials, contributing to a growing labor force. Many of these jobs are in inner-city urban areas where job creation is vital to the economy. In these and other areas, recycling provides a large number of jobs that generally pay above the average national wage.

A large number of jobs are also supported by the reuse industry. These range from more traditional thrift shops and antique dealers, to modern businesses such as computer demanufacturers and pallet rebuilders. As a whole, the reuse industry employs nearly 170,000 workers in more than 26,000 establishments nationwide. It supports an annual payroll of \$2.7 billion and generates approximately \$14.1 billion in revenues.

For More Information

For additional information on the REI study, see the following:

- EPA’s Jobs Through Recycling Program—www.epa.gov/jtr
- National Recycling Coalition—www.nrc-recycle.org

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