



Freedonia Focus Reports
US Collection

Recovered Metals: United States

February 2020



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About This Report

Scope

This report forecasts to 2023 US recovery of post-consumer metal from the municipal solid waste (MSW) stream in short tons. For comparison, this report also forecasts to 2023 the total generation of post-consumer metal in short tons. Total MSW metal recovery and generation are segmented by material in terms of:

- ferrous
- lead
- aluminum
- other nonferrous (generation only)

To illustrate historical trends, total metal recovery, generation, and the various segments are provided in annual series from 2008 to 2018.

Pre-consumer metal (industrial scrap) and lead from non-battery sources and non-vehicle batteries are excluded from the scope of this report. The following materials are excluded from this analysis because MSW volumes are considered negligible (less than 0.05% of the total volume) or a method for accurately quantifying these volumes has not been established:

- recovery of aluminum from nondurable and durable goods
- recovery of other nonferrous metals (such as copper, titanium, zinc, and brass)

Throughout this report, measures in tons refer to short tons.

Key macroeconomic indicators are also provided with quantified trends. Other various topics, including profiles of pertinent leading companies, are covered in this report. A full outline of report items by page is available in the Table of Contents.

Sources

Recovered Metals: United States (FF65055) represents the synthesis and analysis of data from various secondary, macroeconomic, and demographic sources, such as:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- intergovernmental and non-governmental organizations
- trade associations and their publications
- the business and trade press

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- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group

Specific sources and additional resources are listed in the Resources section of this publication for reference and to facilitate further research.

Industry Codes

Table 6 | NAICS & SIC Codes Related to MSW Metal Recovery

| NAICS/SCIAN 2017 | | SIC | |
|-----------------------------------------------|---------------------------------------------------|------------------------------------|-----------------------------------------------------------------------|
| North American Industry Classification System | | Standard Industrial Classification | |
| 331110 | Iron and Steel Mills and Ferroalloy Manufacturing | 3312 | Steel Works, Blast Furnaces (including Coke Ovens), and Rolling Mills |
| 331314 | Secondary Smelting and Alloying of Aluminum | 3341 | Secondary Smelting and Refining of Nonferrous Metals |
| 332431 | Metal Can Manufacturing | 3411 | Metal Cans |
| 335911 | Storage Battery Manufacturing | 3691 | Storage Batteries |
| 423930 | Recyclable Material Merchant Wholesalers | 4212 | Local Trucking Without Storage |
| 562111 | Solid Waste Collection | 4953 | Refuse Systems |
| 562920 | Materials Recovery Facilities | 5093 | Scrap and Waste Materials |

Source: US Census Bureau

Freedonia Methodology

The Freedonia Group, a subsidiary of MarketResearch.com, has been in business for more than 30 years and in that time has developed a comprehensive approach to data analysis that takes into account the variety of industries covered and the evolving needs of our customers.

Every industry presents different challenges in market sizing and forecasting, and this requires flexibility in methodology and approach. Freedonia methodology integrates a variety of quantitative and qualitative techniques to present the best overall picture of a market's current position as well as its future outlook: When published data are available, we make sure they are correct and representative of reality. We understand that published data often have flaws either in scope or quality, and adjustments are made accordingly. Where no data are available, we use various methodologies to develop market sizing (both top-down and bottom-up) and then triangulate those results to come up with the most accurate data series possible. Regardless of approach, we also talk to industry participants to verify both historical perspective and future growth opportunities.

Methods used in the preparation of Freedonia market research include, but are not limited to, the following activities: comprehensive data mining and evaluation, primary research, consensus forecasting and analysis, ratio analysis using key indicators, regression analysis,

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end use growth indices and intensity factors, purchase power parity adjustments for global data, consumer and end user surveys, market share and corporate sales analysis, product lifespan analysis, product or market life cycle analysis, graphical data modeling, long-term historical trend analysis, bottom-up and top-down demand modeling, and comparative market size ranking.

Freedonia quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or r^2 . The most stable data series relative to the trend carries an r^2 value of 1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast trend, including in the forecast year.

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Resources

The Freedonia Group

Freedonia Industry Studies

Global Batteries

Automotive Aftermarket for Batteries & Ignition System Components in North America

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Aluminum: United States

Beer: United States

Beverages: United States

Lead: United States

Municipal Solid Waste: United States

Recovered Glass: United States

Recovered Packaging: United States

Recovered Paper: United States

Sheet Metal: United States

Steel Mill Products: United States

Waste Management: United States

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Trade Publications

American Recycler

Recycling Today

Resource Recycling

Waste Dive

Waste Management World

Waste360

Agencies & Associations

The Aluminum Association

American Iron and Steel Institute

Association of Battery Recyclers

Container Recycling Institute

Institute of Scrap Recycling Industries

The Recycling Partnership

Steel Manufacturers Association

Steel Recycling Institute

United States Census Bureau

United States Environmental Protection Agency