

Risky Business

What You Need To Know About...

Scrap Metal Recycling

Scrap Metal Recycling is a **\$20 billion** industry and recycles **120 million tons** per year ¹



Scrap metal recycling is the process of turning **used metal material** into **new products and resources** for manufacturing.

Scrap metals, in general, are divided into two basic categories:²

- **Ferrous scrap:**
Metal that contains iron
- **Nonferrous scrap:**
Metal that does not contain iron

Non-Ferrous Scrap Metal Facts:



x25,000

The United States annually recycles enough copper to provide the copper content for **25,000 Statues of Liberty**.



The United States provides **more than 20%** of the world supply of recovered copper.



Used aluminum cans are recycled and back on the grocery shelf in as little as **60 days**.



An estimated **85% to 90%** of all automotive aluminum is recovered and recycled.



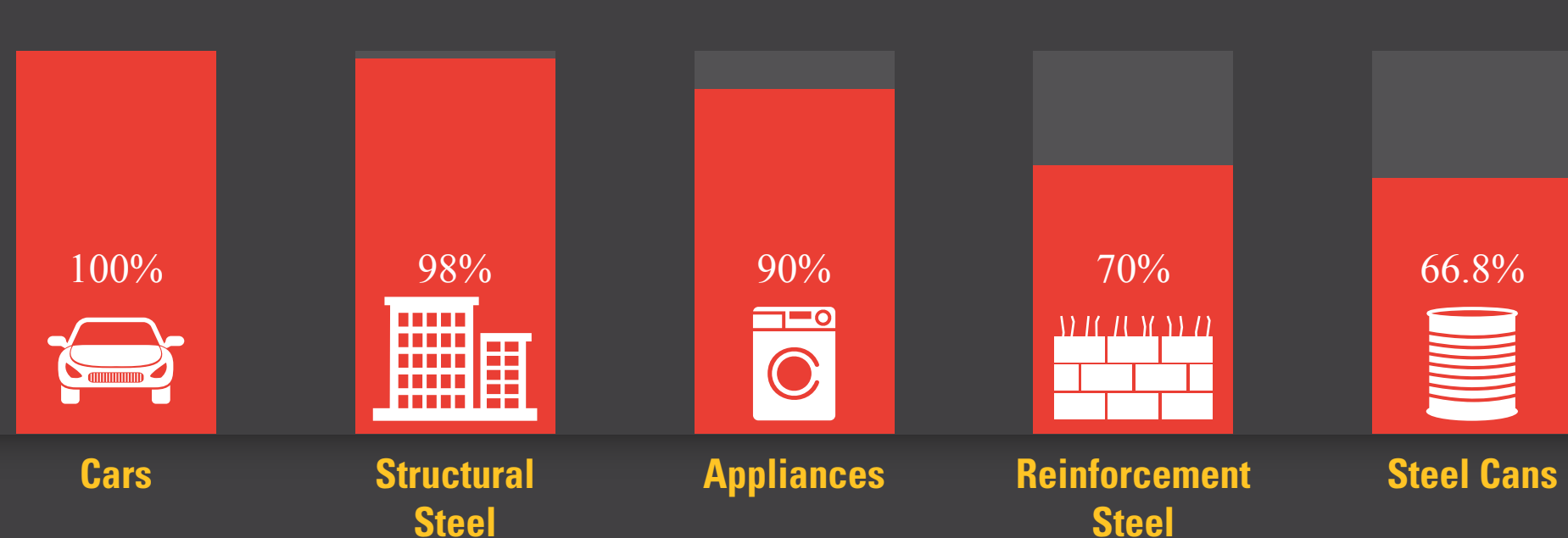
The United States annually processes more than **250 billion lbs.** of scrap material — the weight of more than 70 million cars.

Nonferrous scrap metal recovery in 2015 included (in metric tons):



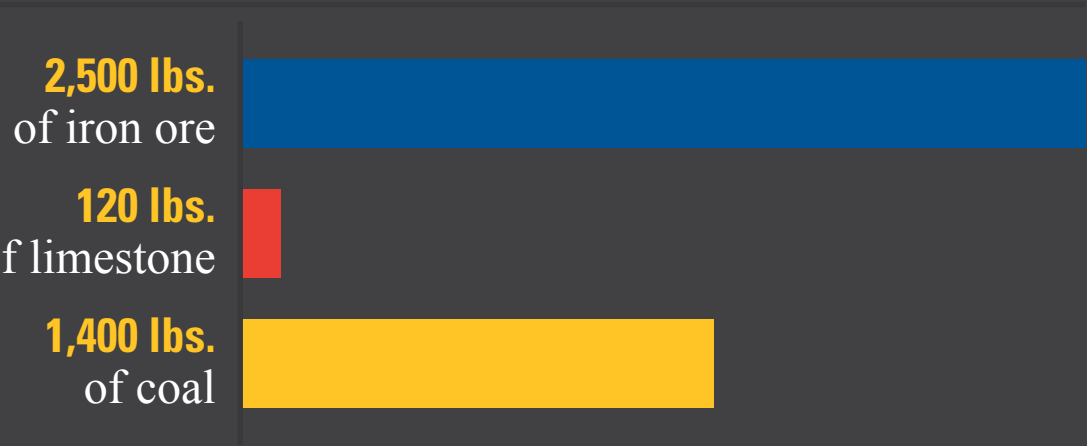
Ferrous Scrap Metal Facts:

Ferrous metals have a recovery rate as follows:³



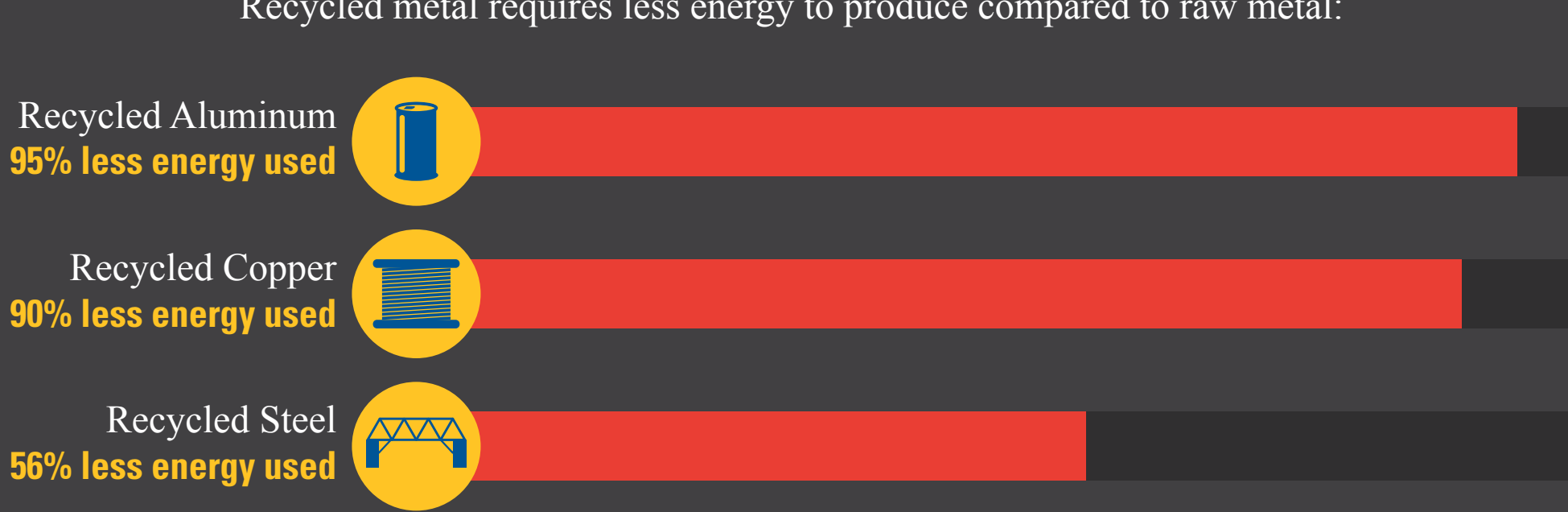
Benefits:

Recycling **1 ton** of steel conserves:



Recycling 1 ton of aluminum conserves **4 metric tons** of bauxite ore

Recycled metal requires less energy to produce compared to raw metal:



Diversion of materials from **landfills**



In the United States, domestically recycled aluminum cans saved the energy equivalent of **17 million barrels of gasoline** — enough to fuel more than one million vehicles on the road for 12 months.

Hazards:



Myth: It's a metal recycler...metal doesn't burn

Truth: Many flammable commodities are present and create a high potential for fire hazard such as: plastics, wood, tires, wire, oils, grease, lubricants, hydraulic and possibly undisclosed hazardous materials.

At least **282 fires** occurred at waste and recycling facilities between March 2016 to February 2017, as reported by Construction & Demolition Recycling.

41% of the reported fires occurred at waste transfer facilities and **27%** occurred at metal recycling facilities.

The states with the **most incidents** were California, New York, New Jersey, Virginia and Michigan.

Estimates project that there could be more than **1,500 waste or recycling fire incidents** occurring in the U.S. each year.⁴

Heavy scrap metal recycling equipment, with **high electrical requirements** and **hydraulic fluids** under **very high pressures**, can be hazardous.

Sparks, flames and arcs from damaged electric, grinding, cutting and friction can ignite flammable materials.

Large piles of oil coated scrap metal can **spontaneously ignite** when pressure is generated.



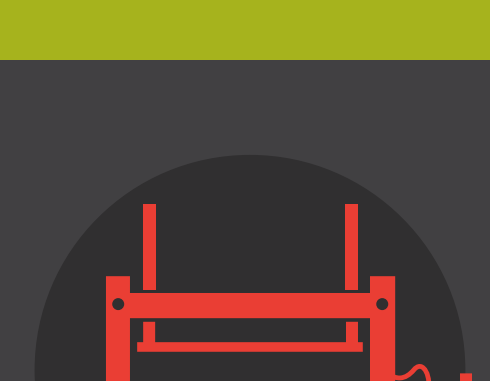
Loss Drivers:

- Hydraulic hose failure from physical abuse/overpressure resulting in fire and pump damage
- Damaged rams from jammed materials, over pressure and physical damage
- Shredders damaged by foreign objects and hard, oddly shaped metals
- Electrical motor failure from power surge, electrical shorts, damaged wiring, overloading and physical damage

Loss Prevention Tips:

- Inspect electrical system annually
- Establish Preventive Maintenance Program for all equipment
- Create formal housekeeping program, especially in equipment areas
- Provide employee training for all equipment/processes
- Train employees to inspect metal prior to shredding to remove potential hazards
- Perform equipment service/repairs by a trained technician

Equipment Costs:



Baler
\$35,000



Mobile Grapple
\$250,000



Shredder
\$100,000+

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References

¹ http://www.omnisource.com/metals_recycling/

² <https://www.thebalance.com/combustion-hazards-to-consider-when-recycling-scrap-metal-2877964>

³ <http://www.isri.org/>

⁴ <http://www.wastedive.com/news/study-at-least-282-fires-at-waste-and-recycling-facilities-during-one-year/439261/>