



RWI – Leibniz-Institute for Economic Research

Steel Recycling in Germany and Europe: Indispensable for Society and the Environment

Steel recycling makes the German and European economies more sustainable and competitive. In a new study, the RWI shows that steel recycling creates jobs and added value. It reduces the costs of new steel production. And it makes companies less dependent on raw material imports. Furthermore, it is practically impossible to do without steel recycling: end-of-life steel scrap must be collected from the points of disposal (construction sites, production facilities, etc.) and processed for reuse as a recycled raw material.

What wealth does the industry generate?

In 2024, the German steel recycling industry generated a turnover of approximately €5.7 billion, employing around 14,700 people directly. If indirect employment is included, it secures around 36,700 jobs and contributes approximately €4.6 billion to the economy in terms of added value. Exports account for around 40% of turnover, underscoring the industry's international integration.

How much in environmental costs and raw materials are saved?

In Germany, recycled steel scrap accounted for 46% of steel production in 2024. In the EU, this share was 59% (both based on 2024 figures). The use of recycled steel significantly reduces the consumption of primary raw materials such as iron ore, coke, nickel and chromium, saving around €6.2 billion in environmental costs and raw materials in Germany in 2024, and as much as €28 billion across Europe. At €365 per tonne of steel scrap, the benefits in terms of cost savings significantly exceed the market price (€322 in 2024), demonstrating the additional benefits of steel recycling.

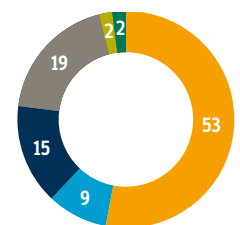
Savings in environmental costs and raw materials in 2024		
	Germany	Europe
Savings in iron ore/coke	€3.2 billion	€14.4 billion
Savings in nickel and chromium in stainless steel (approx. 1% of crude steel)	€0.5 billion	€2.3 billion
Savings in local environmental costs	€2.0 billion	€9 billion
Savings in local environmental costs	€0.5 billion	€2.3 billion
Total savings	€6.2 billion	€28.0 billion

How do user industries benefit?

Steel recycling increases the raw material independence of the user industries shown in the diagram and makes a key contribution to recycling along the value chains. More than half of steel scrap is currently used in the construction industry, with a further 19% used in the automotive industry.

Indirect use of steel scrap in user industries

- Construction industry
- Mechanical engineering
- Metal products
- Automotive industry
- Other vehicle manufacturing
- Electronics industry



Source: Model calculations based on data from the German Steel Association, BDSV, company data and information from expert discussions.

What are the challenges and opportunities for the future?

The steel industry is expected to demand more processed steel scrap. The reasons for this are climate-friendly manufacturing processes such as direct reduction and a higher proportion of electric arc furnaces. These require a higher proportion of steel scrap, especially high-quality scrap. Steel recycling is therefore an integral part of sustainable and economically efficient value chains. At the same time, the steel recycling industry faces challenges: bureaucratic approval procedures, high energy costs, and technical and economic challenges in quality assurance for processed steel scrap. European export bans on steel scrap can impair profitability and efficiency. Instead, improvements in collection, sorting and quality assurance must be made more worthwhile.