

Update of the EU27 Stainless Steel Stock & Flow Model



Chair of Corporate Sustainability and Environmental Management Prof. Dr.-Ing. Simon Glöser-Chahoud



Model structure considering trade data and internal material flows



System boundary European stainless steel model

Primary import mainly calculated from difference between meltshop production and scrap usag while considering domestic raw material extraction

Accounting for trade balances along the entire value chain: intermadiates, final products, scrap

Closed mass balance by adjusting the EoL collection rate to reported production data



EU27 production and consumption

Meltshop production







EU27 in-use stocks and EoL material flows

Stocks in use

EoL material flows





EoL recycling rate and scrap input to production

Calculated EoL Recycling Rate of stainless steel

- % reentering the stainless steel cycle
- → rest goes mainly into the carbon steel cycle



Scrap input rates into melt shop production

- Recycling Input Rate (RIR): Stainless scrap input in production (new and old)
- Scrap Ratio (SR): Total scrap content (including carbon steel)



Recycling Input Rates



EU27 scrap utilization

- Distinction between "new" and "old" (EoL) scrap
- Or "internal" and "external" scrap
- EoL scrap is always external



Mass Flow

RGAKAD

Mass Flow Carbon Scrap

EU27 Stainless Steel Flows 2021



Mass Flow

& GAKA

Mass Flow Carbon Scrap

EU27 Stainless Steel Flows 2023





Contact data

TU Bergakademie Freiberg Faculty of Business Administration Chair of Business Administration, esp. Corporate Sustainability and Environmental Management Schloßplatz 1 D-09599 Freiberg

Prof. Dr.-Ing. Simon Glöser-Chahoud

Room: 2.208 Telefon: T: +49 3731 39 – 2742 **E-Mail: <u>Simon.Gloeser-Chahoud@bwl.tu-freiberg.de</u>** Office hours: by appointment (please register via email)

