



# Metal Waste Recycling: Collaborative Opportunities

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# Energy infrastructure

- We want to see a step change in the approaches taken by energy infrastructure stakeholders, moving away from linear materials flows towards circular economy decision making for materials and minerals.
- Government strategy and policy should enable this transition
- A circular economy within Scotland has the potential to create valuable economic opportunities
- Where appropriate and applied in the context of the climate and nature emergencies, we will pursue actions that minimise resource needs in the energy system, including demand reduction and energy efficiency.

# Summary of ZWS Outputs

Material Mapping	Report	<ul style="list-style-type: none"><li>• Final report received</li><li>• Design scheduled</li></ul>
Promoting circularity in offshore wind industry	Report	<ul style="list-style-type: none"><li>• Published</li></ul>
Steel reuse & recycling	Report (series)	<ul style="list-style-type: none"><li>• In-progress</li></ul>
Onshore wind decommissioning	Report	<ul style="list-style-type: none"><li>• Published</li></ul>
RSA Student Design Awards	Stakeholder Engagement	<ul style="list-style-type: none"><li>• Complete</li></ul>
Circular Batteries	Report	<ul style="list-style-type: none"><li>• In-progress</li></ul>
Circular Ports visioning document	Report	<ul style="list-style-type: none"><li>• Complete (to be published)</li></ul>



# ENERGY INFRASTRUCTURE MATERIALS MAPPING

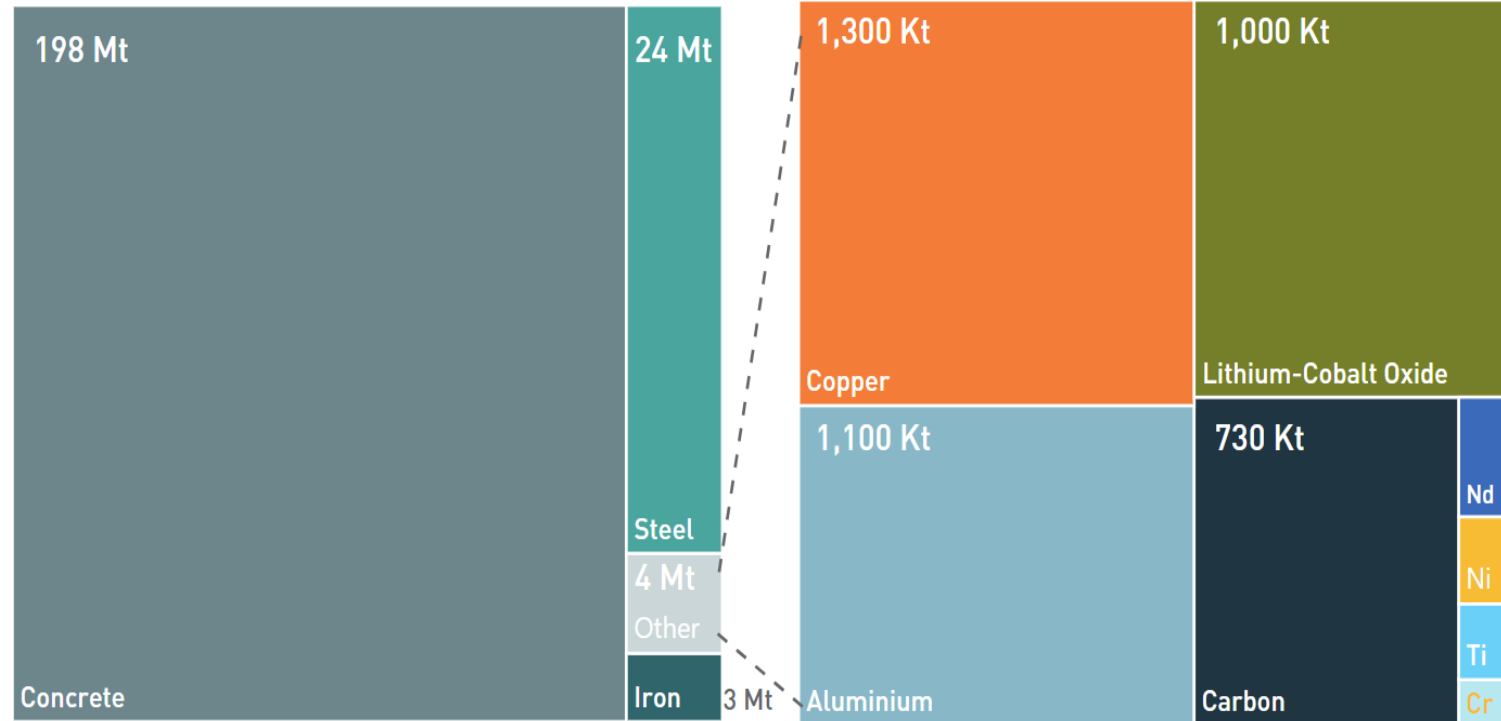


Figure 3.1 Proportion of selected materials required for installation and life extension by 2050

# Background

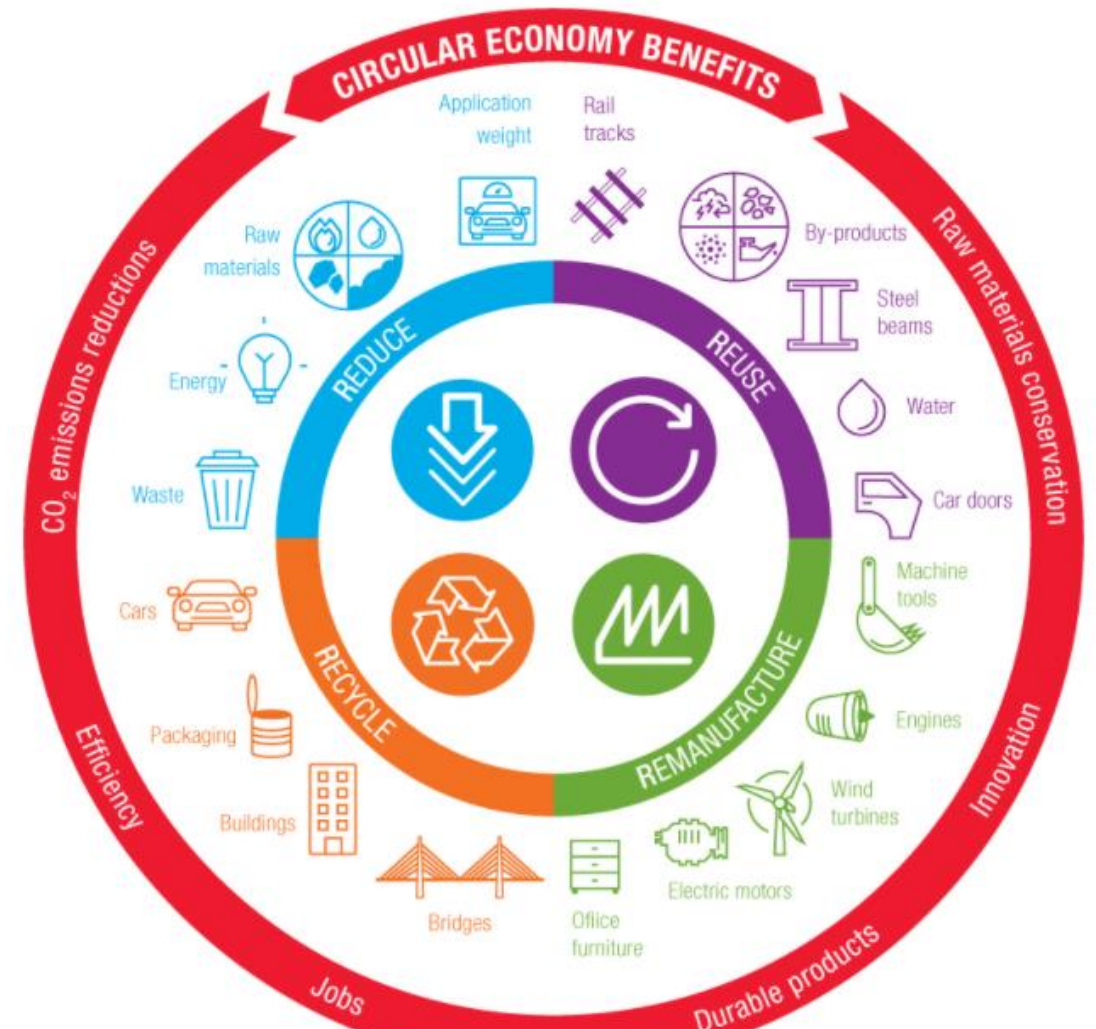
- Steel is a fundamental part of the Scottish economy and used in many objects and infrastructure we use on daily basis
- Scotland relies wholly on imports to meet its steel demand making our industries vulnerable to global supply chain constraints, while we export the scrap steel we produce each year





# Background – Steel and the CE

- Steel perfectly suited for a circular economy
- Steel components can be effectively reused, remanufactured and recycled
- Modern EAF operate using 100% scrap steel



From -World Steel Association, Steel in the CE

# Overview of the research undertaken

- A **market analysis** to estimate the size of the scrap steel market in Scotland, the current export destinations, and how these might change in the future;
- An **economic analysis** that assesses implications on jobs, gross value added (GVA) and profitability of recycling steel in a 300ktpa and 1Mtpa EAF in Scotland;
- An **assessment of the role of Scottish steel in the energy transition**, specifically examining whether it is possible to use old oil rigs to manufacture new wind turbines and any benefits for Scotland.
- A forthcoming **carbon assessment** of recycling steel using an EAF located in Scotland

## Summary

- Energy transition
  - High metals demand
  - Circular economy opportunities
  - Necessary collaboration
  - Realise ambition
- 
- ZWS publications later in 2022
  - We would welcome future collaboration on this topic to develop further insight





# Thank you.



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