

html

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: zlwtfmnmrt

Total Cradle-to-Grave PCF

27.08 kg CO₂e

Key Metrics

Total Product Footprint

27.08 kg CO₂e

Carbon Intensity (per unit)

27.08 kg CO₂e/unit

Top Material Hotspot

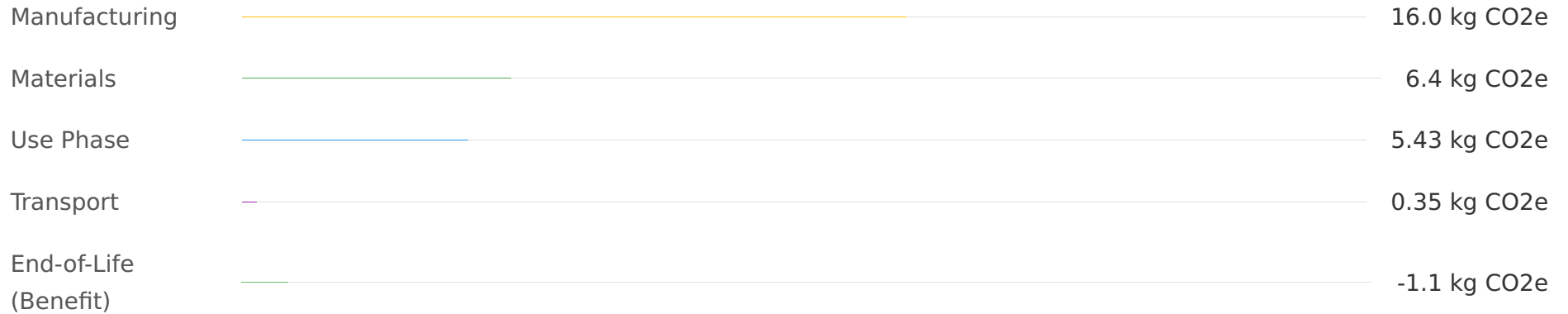
Aluminium (4.0 kg CO₂e)

Primary Emission Scope

Scope 2 (16.0 kg CO₂e)

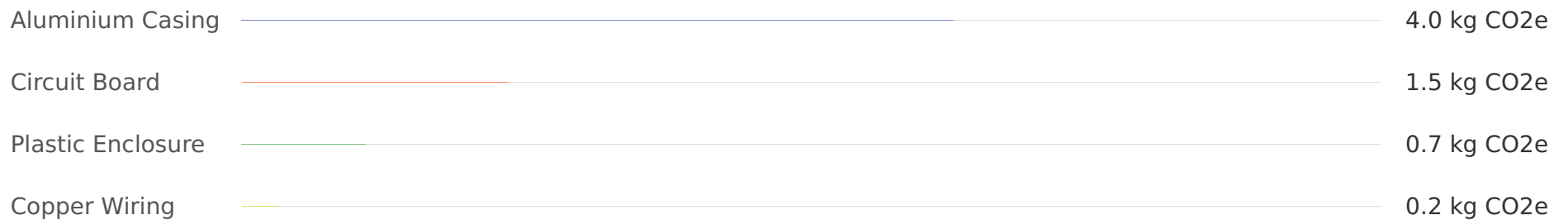
Emissions Breakdown

Lifecycle Stage Contributions



*Percentages calculated against total absolute PCF for visual representation.

Material Carbon Impact



*Percentages based on total material impact (6.4 kg CO2e).

Key Highlights

- Manufacturing energy in China (Scope 2) is the single largest contributor, accounting for 59.1% of the total carbon footprint, primarily due to the carbon intensity of the local electricity grid.
- Material acquisition, particularly Aluminium Casing, represents a significant upstream hotspot (23.6%), emphasizing the importance of sustainable material sourcing and design choices.
- The product's use phase contributes 20.1% of emissions, highlighting substantial opportunities for product redesign to reduce energy consumption during customer usage.
- A notable End-of-Life benefit of -1.1 kg CO₂e (4.1% reduction) is achieved through high recyclability (80%) and product return programs, demonstrating effective circular economy initiatives.

Recommended Action Plan for Reduction

- **Decarbonize Manufacturing:** Accelerate the transition to renewable energy sources and implement advanced energy efficiency measures at production facilities in China.
- **Optimize Material Selection:** Prioritize sourcing lower-carbon alternatives for high-impact components, particularly focusing on reducing the footprint associated with Aluminium.
- **Enhance Product Use-Phase Efficiency:** Implement design improvements to significantly reduce the energy consumption of zlwtfmnmrt during its 3-year lifespan.
- **Strengthen Circularity Programs:** Expand existing take-back and refurbishment initiatives to further extend product lifespan, enhance material recovery, and maximize avoided emissions.
- **Improve Data Granularity:** Conduct a detailed primary data collection effort for all lifecycle stages to refine emission factors, validate assumptions, and identify precise intervention points.