

kopnvelnos PCF Dashboard

Product Carbon Footprint Analysis

Total Cradle-to-Grave Footprint

17.48 kg CO₂e

Key Metrics

Total Product Footprint

17.48 kg CO2e

Functional Unit

1.0 unit

Top Material Hotspot

Aluminum Casing

(1.35 kgCO2e, 44.4% of materials)

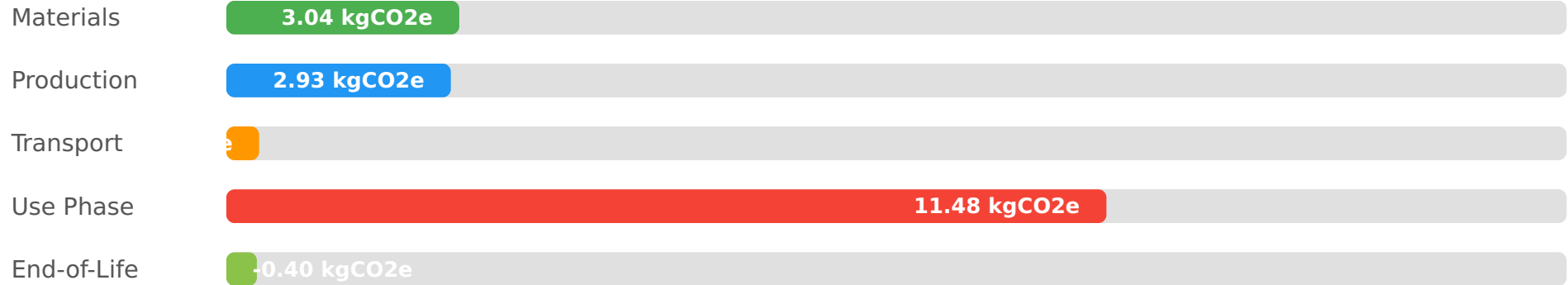
Primary Emission Scope

Scope 3

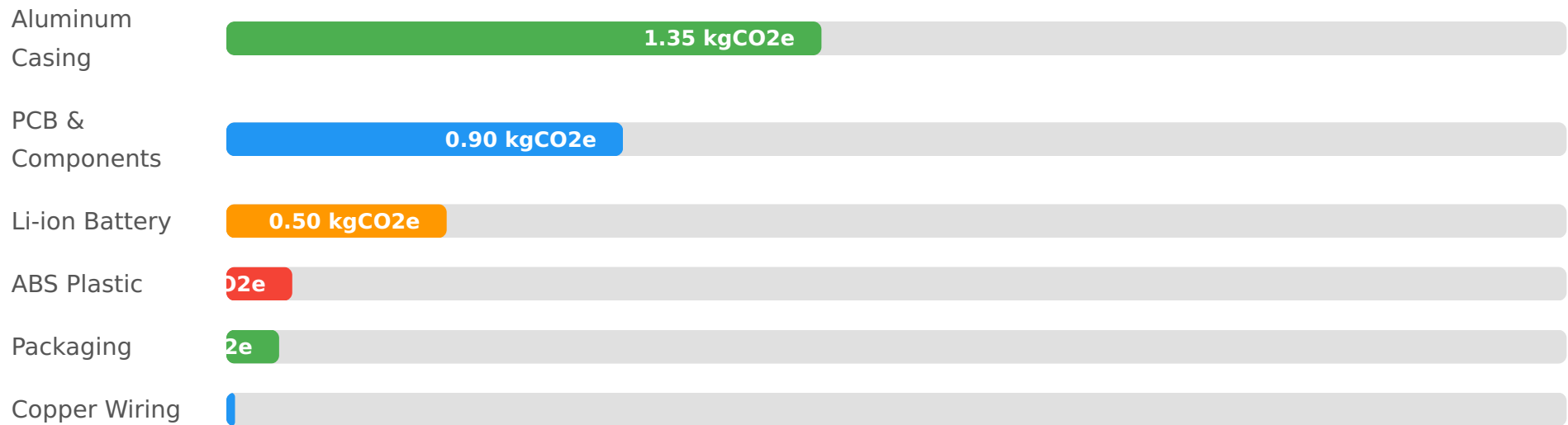
(14.55 kgCO2e, 83.2% of total)

Emissions Breakdown

Lifecycle Stages



Material Carbon Impact



Highlights: Key Impact Hotspots

- The **Use Phase** is the most significant carbon hotspot, accounting for approximately **65.7%** (11.48 kgCO₂e) of the total product carbon footprint. This is primarily due to energy consumption over the product's lifespan and the average European grid mix.
- **Materials Acquisition** represents a substantial impact at **17.4%** (3.04 kgCO₂e) of the footprint, with embodied emissions in components like aluminum casing and electronic parts being major contributors.
- **Production Energy** contributes approximately **16.8%** (2.93 kgCO₂e) of the total footprint. Despite 40% renewable energy use, the remaining reliance on the China grid mix significantly impacts this stage.

Action Plan: Recommendations for Emission Reduction

- ****Optimize Use Phase Energy Efficiency:**** Implement design innovations to reduce energy consumption (e.g., low-power modes, efficient components) and educate users on energy-saving practices.
- ****Increase Renewable Energy Sourcing for Production:**** Further boost renewable energy usage in manufacturing facilities, potentially through on-site generation or high-quality renewable energy certificates.
- ****Sustainable Material Sourcing:**** Explore lower-carbon alternative materials or increase the use of recycled content, especially for high-impact components like aluminum.
- ****Enhance Circular Economy Initiatives:**** Strengthen take-back programs to maximize material recovery and explore advanced recycling technologies.
- ****Optimize Logistics:**** Continuously review and improve transportation routes and modes, prioritizing lower-emission options such as rail, sea freight, or electric vehicles for last-mile delivery.