

carboncalpcf.com

Product Carbon Footprint Dashboard

Product: **rhrngl**
qrf

Quantity: **1.0**
unit

Standard: **GHG**
Protocol

Total Carbon
Footprint:

49.387 kg
CO2e

Total Footprint

49.387

kg CO2e

Carbon Intensity

49.387

kg CO2e / unit

Top Material Hotspot

Aluminum Enclosure

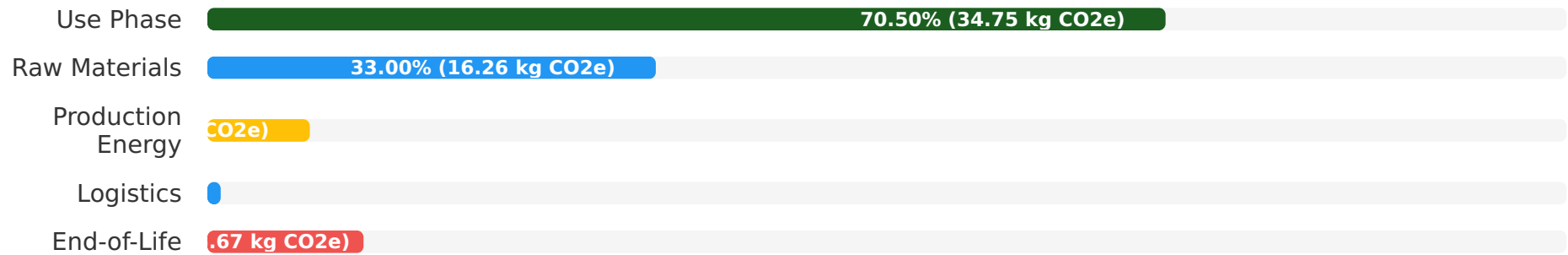
10.0 kg CO2e

Primary Emission Scope

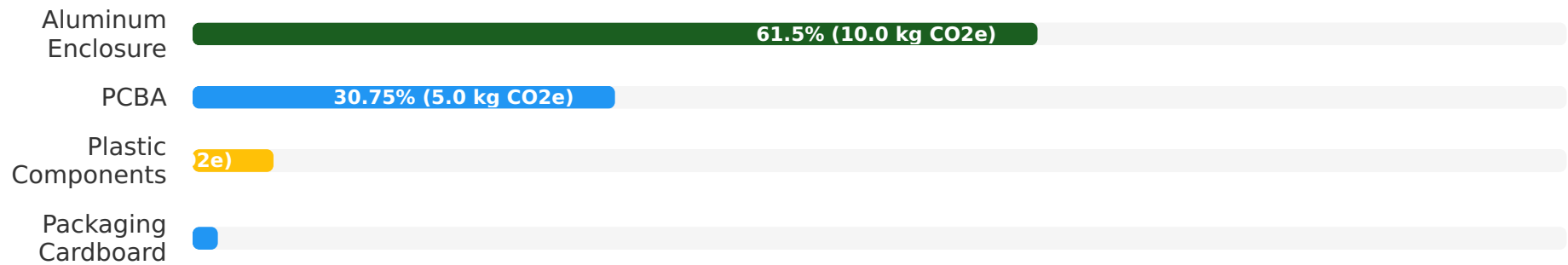
Scope 3

70.36% (Use Phase)

Lifecycle Emissions Breakdown



Material Carbon Impact



Key Highlights

- The **Use Phase** is the dominant emission hotspot, accounting for 70.50% of the total product carbon footprint due to its 7-year lifespan and energy consumption.
- **Raw Materials** contribute significantly at 33.00%, with the Aluminum Enclosure being the single largest material impact at 10.0 kg CO₂e.
- Even with 60% renewable energy, **Production Energy** (Scope 2) remains a notable contributor at 7.55% due to the carbon intensity of the remaining grid mix in China.

Recommendations for Decarbonization

1. **Improve Use Phase Energy Efficiency:** Prioritize R&D to significantly reduce the product's energy consumption during its operational lifespan through low-power components and software optimizations.
2. **Sustainable Material Sourcing:** Investigate alternative materials with lower embodied carbon, especially for the Aluminum Enclosure and PCBA, and prioritize suppliers using renewable energy.
3. **Enhance Production Energy Mix:** Strive for 100% renewable energy at the production facility through direct procurement, on-site generation, or high-quality RECs.
4. **Optimize Logistics:** Explore more efficient transport modes (e.g., rail) and partner with logistics providers committed to low-carbon fleets.
5. **Strengthen Circular Economy Initiatives:** Expand take-back and recycling programs to increase material recovery rates and design for disassembly and repairability.