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Product Carbon Footprint for dsdsmnsmmk

Total Lifecycle Footprint

32.46 kg CO₂e/unit

Total Footprint

32.46 kg CO₂e

Carbon Intensity

34.16 kg CO₂e/kg

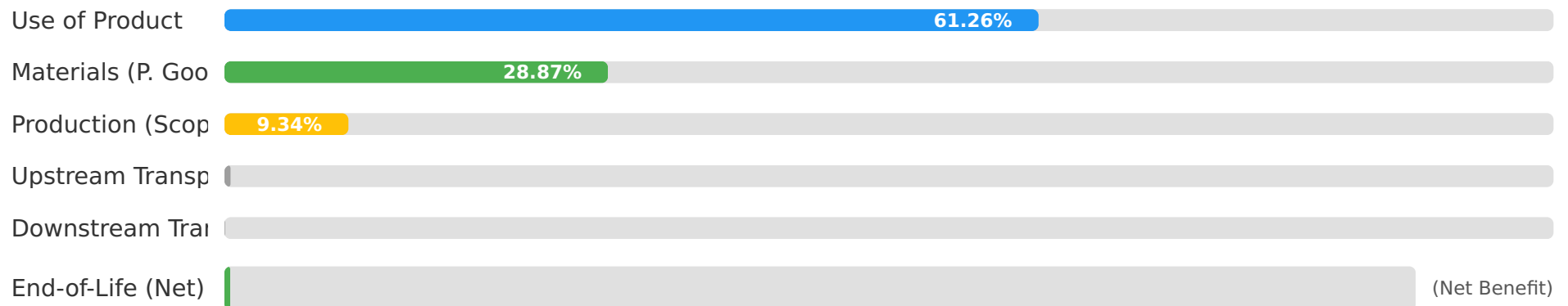
Top Material Hotspot

Aluminum Casing

Primary Emission Scope

Scope 3 (Use Phase)

Lifecycle Impact Breakdown



Material Carbon Hotspots

63.7%

Aluminum
Casing

26.5%

Circuit Board

7.4%

Plastic Housing

2.4%

Packaging

Total Material Impact: 9.43 kg CO₂e

Highlights & Key Insights

- The **Use Phase** accounts for the largest portion of the carbon footprint, totaling 20.0 kg CO₂e per unit, primarily due to electricity consumption over the product's lifespan.
- **Material acquisition**, especially the Aluminum Casing and Circuit Board, represents a significant upstream hotspot, contributing 9.43 kg CO₂e per unit.
- A robust 70% recyclability and established take-back scheme contribute to a **net benefit (-0.19 kg CO₂e)** at the End-of-Life stage, indicating effective circularity efforts.

Recommendations for Reduction

- **Enhance Energy Efficiency:** Prioritize design improvements to drastically reduce energy consumption during the product's 5-year use phase.
- **Sustainable Material Innovation:** Explore lower-carbon alternatives for the aluminum casing and circuit board, and implement design-for-disassembly principles.
- **Boost Circular Economy:** Maximize the effectiveness of the take-back scheme by promoting repair, refurbishment, and remanufacturing to extend product lifespans.
- **Decarbonize Production:** Increase renewable energy adoption beyond 50% at the Chinese production facility to further cut Scope 2 emissions.
- **Optimize Logistics:** Investigate shorter supply chain routes and shifts to lower-emission transportation modes for both inbound and last-mile deliveries.