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Product Carbon Footprint for hpetyxdkss

carboncalcpcf.com

Total Carbon Footprint

49.41 kg CO2e

Total Footprint (per unit)

49.41 kg CO2e

Carbon Intensity

49.41 kg CO2e/unit

Top Material Hotspot

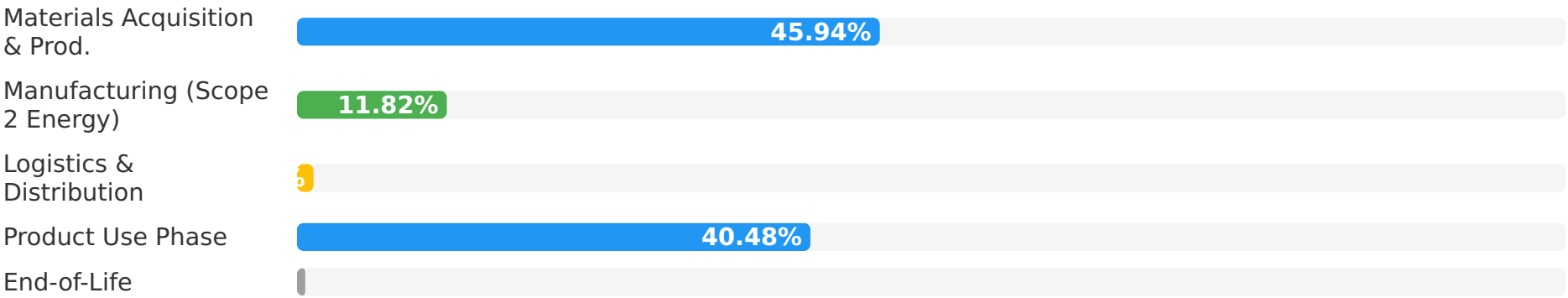
PCB (12.00 kg CO2e)

Primary Emission Scope

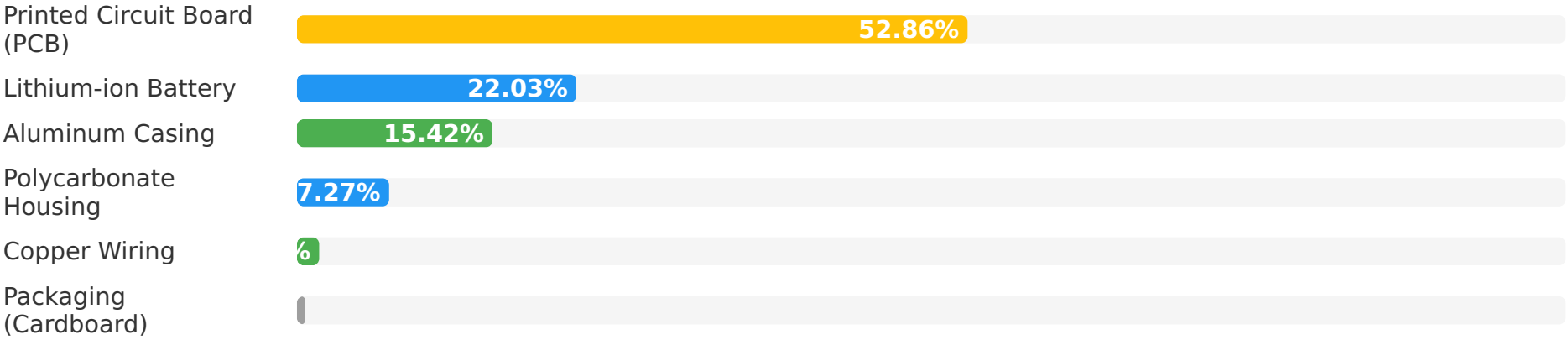
Scope 3 (88.18%)

Emission Breakdown

Lifecycle Stage Contribution



Material Composition vs. Carbon Impact (from 22.70 kg CO2e total materials)



Key Insights & Hotspots

Material Impact Dominance: Materials acquisition and production (Scope 3) account for 45.94% of the total footprint, with the Printed Circuit Board (PCB) being the single largest material hotspot at 12.00 kg CO2e.

Significant Use Phase Emissions: The product's use phase contributes substantially, representing 40.48% of the total PCF due to energy consumption over its lifespan.

Overall Scope 3 Importance: Value chain emissions (Scope 3) are the overwhelming majority, comprising 88.18% of the total carbon footprint, highlighting the need for supply chain engagement.

Recommended Decarbonization Actions

Supply Chain Engagement:

Work with PCB and Lithium-ion battery suppliers to investigate lower carbon manufacturing processes and explore alternative materials with reduced footprints.

Energy Efficiency in Use:

Focus on optimizing product energy consumption during the use phase. Implement power-saving modes, enhance component efficiency, and promote energy-efficient user behavior.

Renewable Energy Adoption:

Increase the use of renewable energy sources in manufacturing operations (Scope 2) in China to further reduce direct production emissions.

Circular Economy Initiatives:

Enhance recyclability beyond 60% and investigate robust take-back and refurbishment programs to minimize end-of-life impacts and maximize resource efficiency.

Logistics Optimization:

Optimize transportation routes, consider lower-emission freight modes (e.g., rail over road/air for long distances), and consolidate shipments to reduce logistics-related emissions.