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Product Carbon Footprint: zkdvhpxyjt

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31.77 kg CO2e

Total Carbon Footprint

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31.77 kg CO2e

Carbon Intensity

47.42 kg CO2e/kg

Top Material Hotspot

Lithium-ion Battery

1.50 kg CO2e

Primary Emission Scope

Scope 3

93.75% of total PCF

Lifecycle Stage Breakdown

Materials Production	4.88 kg CO2e (14.56%)
Production Energy (Scope 2)	1.99 kg CO2e (5.92%)
Logistics (Transport)	0.41 kg CO2e (1.21%)
Use Phase	26.25 kg CO2e (78.31%)

End-of-Life Avoided Emissions: -1.76 kg CO2e

Robust recyclability results in a net positive contribution.

Key Highlights

- Use Phase Dominance:** The product's operational lifespan contributes the most significantly to the carbon footprint (26.25 kg CO2e), emphasizing the need for energy efficiency in usage.
- Material Impact:** Upstream emissions from raw material extraction and manufacturing, especially for the Lithium-ion battery and Circuit Board, represent the second largest hotspot (4.88 kg CO2e).
- Production Efficiency:** Despite 60% renewable energy use, purchased electricity during manufacturing (1.99 kg CO2e) remains a notable contributor, indicating further opportunities for reduction.

Material Carbon Impact (BOM)

Lithium-ion Battery	1.50 kg CO2e
Circuit Board (PCB)	1.25 kg CO2e
PC Plastic Housing	1.05 kg CO2e
Aluminium Casing	1.00 kg CO2e
Copper Wiring	0.08 kg CO2e

Action Plan: How to Reduce Emissions

- ✓ **Enhance Use Phase Efficiency:** Prioritize design improvements for zkdvhpxyjt to maximize energy efficiency throughout its 7-year operational lifespan.
- ✓ **Supplier Engagement for Materials:** Collaborate with material suppliers to identify and source lower-carbon alternatives, particularly for high-impact components like batteries and PCBs.
- ✓ **Optimize Production Energy:** Increase renewable energy procurement for manufacturing operations in China, aiming for 100% renewable energy to further cut Scope 2 emissions.