html

carboncalcpcf.com

Product Carbon Footprint Analysis

Product: wgqpxetzkw

Total Estimated PCF: **14.15 kg CO2e** per unit

Conducted by: qxefgklugx for qyufpffdqr | Standard: GHG Protocol

Total Footprint

14.15 kg CO2e

For 1.0 unit (cradle-to-grave)

Carbon Intensity

14.15 kg CO2e/unit

Per functional unit

Top Material Hotspot

Lithium-ion Battery

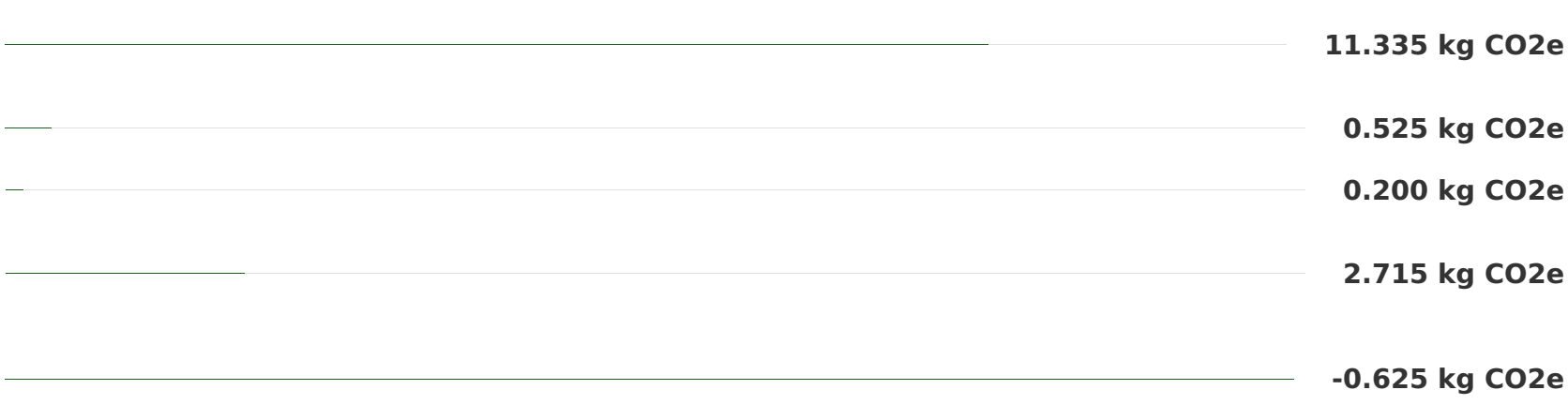
Accounts for 8.00 kg CO2e

Primary Emission Scope

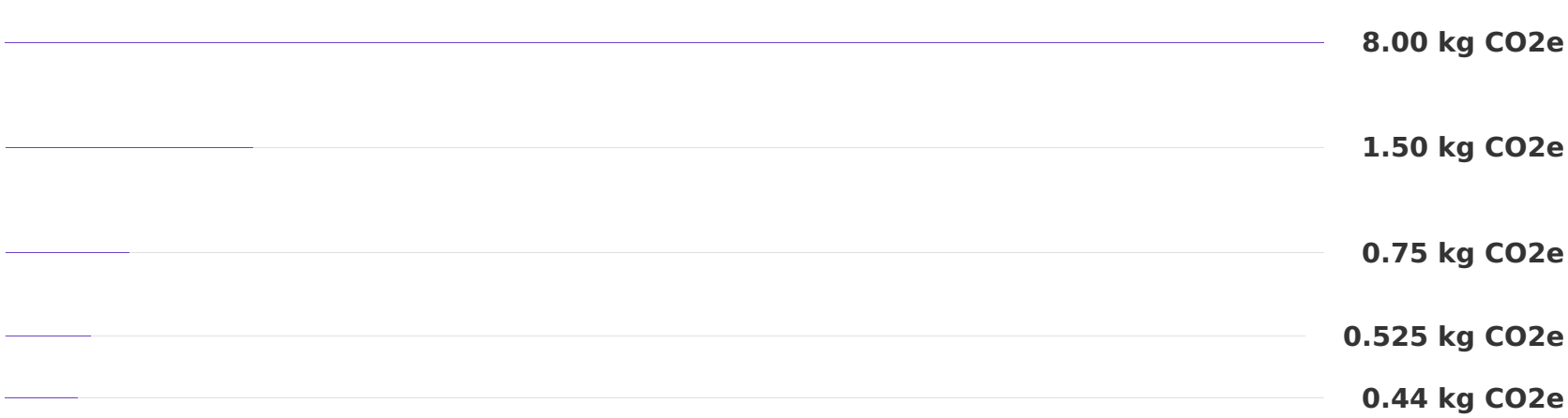
Scope 3

Value chain indirect emissions

Lifecycle Stage Breakdown



Top Material Carbon Impact



Highlights & Key Insights

Raw Material Acquisition is the overwhelming hotspot, accounting for ~80% of the total PCF, primarily driven by the Lithium-ion Battery and other specialized electronic components.

The Use Phase contributes a significant ~19% to the total PCF, stemming from the electricity consumption during the product's 3-year operational lifespan.

A robust recyclability rate (75%) and formal take-back programs lead to a net carbon benefit at the End-of-Life stage, effectively offsetting a portion of upstream emissions.

Recommendations for Carbon Reduction

Supply Chain Engagement: Prioritize collaboration with high-impact component suppliers (e.g., batteries, PCBs) to drive decarbonization and acquire primary emission data.

Material Optimization: Explore incorporating recycled content in plastics and metals, and investigate bio-based or renewable material alternatives for product components.

Renewable Energy Procurement: Increase the percentage of renewable energy utilized in manufacturing operations, aiming to surpass the current 50% usage.

Energy Efficiency in Use: Implement design improvements and user guidance to significantly reduce the product's energy consumption during its active use phase.

Enhance Circularity: Further strengthen and promote existing take-back programs and integrate design-for-disassembly principles for improved repairability and material recovery.

Life Cycle Extension: Focus on designing for greater product durability and longevity to extend lifespan, thereby amortizing embodied emissions over a longer period.