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Product Carbon Footprint: iypltklmvg

Commissioned by: xxtznotgjt | Consultant: wtlhnjvfrl
Standard: GHG Protocol | System Boundary: factory_gate (cradle-to-grave analysis)

TOTAL PCF (per unit)
81.78 kg CO2e

Total Footprint

81.78 kg CO2e

Top Material Hotspot

Aluminum Chassis
2.98 kg CO2e

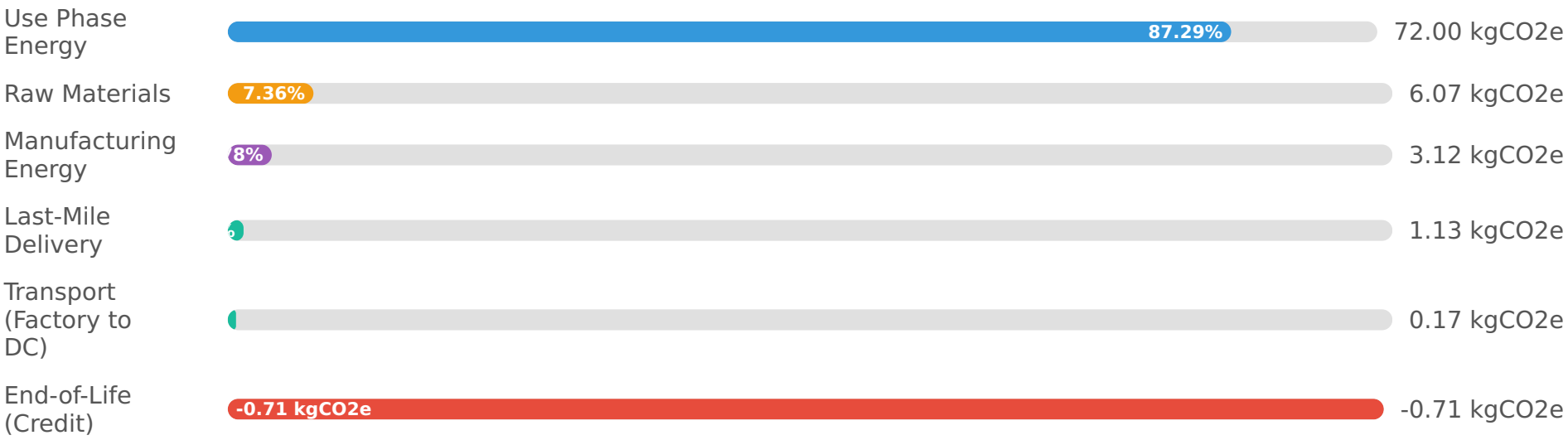
Primary Emission Scope

Scope 3 (Use Phase)
82.59%

Production Country

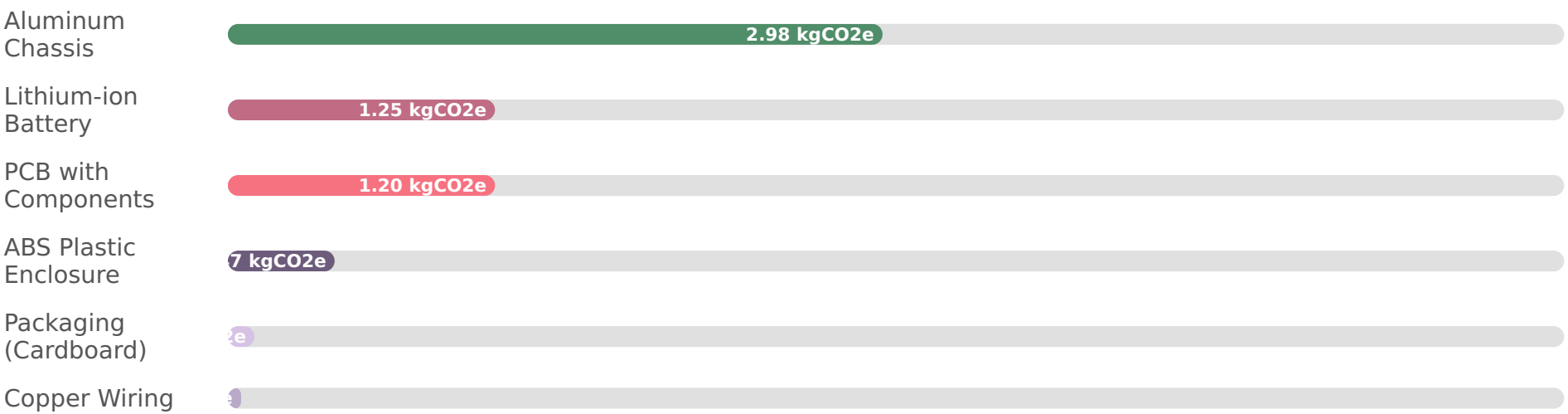
China

Lifecycle Stage Breakdown



*Percentages calculated based on sum of positive contributions (82.49 kg CO2e) for visual clarity. End-of-Life represents a net carbon credit.

Top Material Carbon Impact



*Percentages are relative to total material impact (6.07 kg CO2e).

Key Insights & Hotspots

- The **Use Phase** dominates the product's carbon footprint, contributing approximately 88.03% (72.00 kg CO2e) due to energy consumption over its 4-year lifespan.
- **Raw Material Acquisition** is the second largest hotspot, accounting for about 7.43% (6.07 kg CO2e) of the total PCF, with aluminum being the primary contributor among materials.
- A **net carbon credit** of -0.86% (-0.71 kg CO2e) is achieved at the End-of-Life stage, thanks to a high recyclability percentage (75%) and producer-managed take-back programs, demonstrating positive circular economy impacts.

Recommendations for Carbon Reduction

- **Optimize Use Phase Energy:** Prioritize design innovations for significant energy reduction during operation, including more efficient components and advanced power management.
- **Sustainable Material Sourcing:** Engage suppliers to procure lower-carbon materials, increase recycled content, and explore alternative sustainable choices for high-impact components.
- **Decarbonize Production:** Aim to increase renewable electricity adoption at the China-based manufacturing facility beyond 60% through PPAs or on-site generation.
- **Enhance Circularity Programs:** Strengthen take-back and recycling initiatives; consider design for disassembly and modularity to facilitate repair and refurbishment.
- **Supply Chain Transparency:** Collaborate with upstream suppliers to gather more primary data for precise Scope 3 calculations and targeted interventions.