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Power Bank 100W Carbon Footprint

Product Carbon Footprint Analysis Report

Generated by carboncalcpkf.com - June 8, 2026

10.21 kg CO₂e

Total PCF (Cradle-to-Gate)

10.21 kg

Total Footprint (per unit)

Cradle-to-Gate

System Boundary

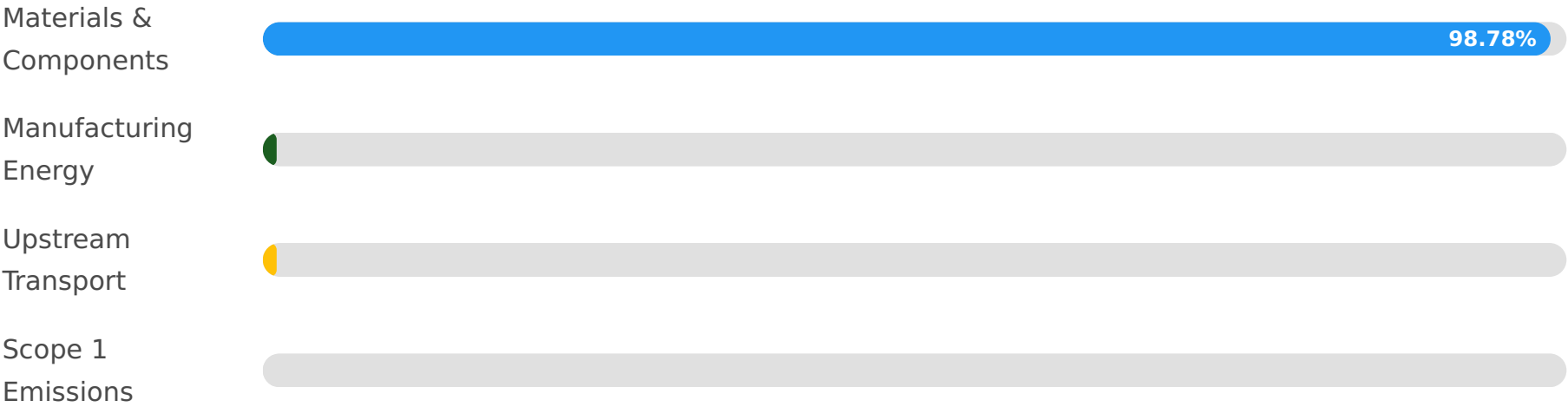
Li-ion Cells

Top Material Hotspot (73.5%)

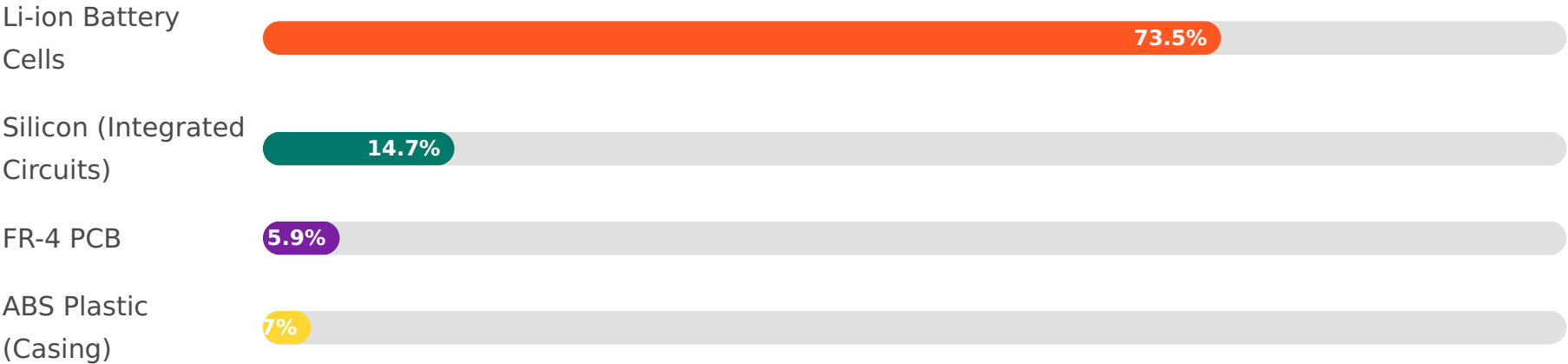
Scope 3

Primary Emission Scope (98.8%)

Emissions Breakdown by Lifecycle Stage



Top Material Carbon Impact Hotspots



Key Highlights

- The Power Bank 100W has a cradle-to-gate carbon footprint of **10.21 kg CO2e per unit**, primarily driven by upstream activities.
- **Scope 3 emissions dominate** the footprint, accounting for approximately 98.8% of total emissions, with Purchased Goods and Services being the leading category.
- **Li-ion Battery Cells are the single largest hotspot**, contributing about 73.5% of the total PCF due to energy-intensive material extraction and production processes.

Recommendations for Emission Reduction

- **Engage with Battery Suppliers:** Focus on improving energy efficiency and promoting renewable energy use in battery cell manufacturing.
- **Prioritize Material Circularity:** Increase the use of recycled content for plastics (ABS/PC) and metals to reduce embodied emissions.
- **Optimize Component Design:** Design for durability and repairability to extend product lifespan, amortizing embodied emissions over a longer period.
- **Green Manufacturing:** Ensure the final assembly plant procures 100% renewable electricity to eliminate Scope 2 emissions.
- **Supply Chain Transparency:** Collaborate closely with key suppliers for primary data collection and joint emission reduction initiatives.