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Product Carbon Footprint Analysis

Dashboard for ****iyjtxynorq**** by teonhyggrh

Total Estimated Footprint: **60.32 kg CO2e**

Total Footprint

60.32

kg CO2e

Carbon Intensity

60.32

kg CO2e / unit

Top Emission Hotspot

Downstream Transport

63.4% of total PCF

Recyclability Rate

60

%

Lifecycle Stage Breakdown

Material Acquisition	13.51% (8.81 kg CO2e)
Manufacturing Energy	9.43% (6.15 kg CO2e)
Upstream Transportation	0.22% (0.144 kg CO2e)
Downstream Transportation	58.60% (38.22 kg CO2e)
Use Phase	18.25% (11.90 kg CO2e)

Note: Lifecycle breakdown percentages represent positive contributions. End-of-Life phase provided a net credit of -4.904 kg CO2e.

Material Carbon Impact



Key Insights

- **Downstream Transportation is the dominant hotspot (63.4%)**, primarily due to long-distance shipping from China to Europe and last-mile delivery.
- The **Use Phase contributes significantly (19.7%)**, driven by the product's energy consumption over its 5-year lifespan.
- **Material Acquisition (14.6%)**, particularly the Printed Circuit Board, represents a notable impact.
- **Manufacturing Energy (10.2%)** is influenced by reliance on the Chinese grid despite 40% renewable energy use.
- A strong **End-of-Life recycling credit (-8.1%)** highlights the effectiveness of take-back and refurbishment programs.

Recommendations

- 1. Logistics Optimization:** Explore lower-emission freight (sea/rail), consolidate shipments, and consider electric vehicles for last-mile delivery.
- 2. Energy Efficiency in Use:** Improve product energy efficiency and encourage renewable energy use by end-users.
- 3. Sustainable Material Sourcing:** Prioritize materials with lower embodied carbon, increase recycled content, and focus on high-impact components like PCBs.
- 4. Renewable Energy Adoption:** Increase renewable energy procurement or on-site generation at the Chinese manufacturing facility.
- 5. Circular Economy Initiatives:** Expand and promote existing take-back and refurbishment programs to maximize product lifespan and material recovery.