Product Carbon Footprint Analysis

for **etngdqyjmj**

Company: wgpjpdfjgj | Consultant: xkfhdlxokj

Total PCF: 77.10 kg CO2e / unit

Key Carbon Footprint Metrics

Total Footprint

77.10 kg CO2e

Footprint per Unit

77.10 kg CO2e

Primary Hotspot Category

Upstream Materials

Main Emission Scope

Scope 3

Detailed Emissions Breakdown

Lifecycle Stage Contributions

Scope 1 (Direct Emissions)	0.0 kg CO2e (0.00%)
Scope 2 (Purchased Electricity)	21.0 kg CO2e (27.24%)
Scope 3 Upstream (Materials)	56.05 kg CO2e (72.69%)
Scope 3 Downstream (Transport)	0.75 kg CO2e (0.97%)
Scope 3 Downstream (Use Phase & EoL)	-0.70 kg CO2e (Net Benefit)

Net Benefit: -0.70 kg CO2e

Total Product Carbon Footprint: 77.10 kg CO2e/unit

Material Carbon Impact Breakdown

Aluminum Alloy Sheet	30.0 kg CO2e (53.52%)
Circuit Board (PCB)	10.0 kg CO2e (17.84%)
Silicon Chip	10.0 kg CO2e (17.84%)
ABS Plastic Granules	5.25 kg CO2e (9.37%)
Copper Wiring	0.8 kg CO2e (1.43%)

Total Material Carbon Footprint: 56.05 kg CO2e/unit

Highlights: Key Emission Hotspots

- **Upstream Materials Dominance:** The extraction, processing, and manufacturing of raw materials account for a staggering 76.10% of the total product carbon footprint.
- **Production Energy Impact:** Purchased electricity for the manufacturing process contributes significantly, comprising 28.53% of the total footprint.
- **Aluminum and Silicon are Key Material Drivers:** Specifically, Aluminum Alloy Sheets (30.0 kg CO2e) and Circuit Boards/Silicon Chips (10.0 kg CO2e each) are the largest contributors within the materials category.

Action Plan: How to Reduce Emissions

- **Material Optimization:** Prioritize exploring lower-carbon alternatives, increasing recycled content, and designing for dematerialization, especially for aluminum and silicon components.
- **Boost Renewable Energy:** Significantly increase the percentage of renewable energy used in manufacturing facilities, particularly in China, to reduce Scope 2 emissions.
- **Enhance Circular Economy:** Expand and promote take-back and recycling programs to maximize material recovery and extend product lifespan, further leveraging end-of-life benefits.
- **Supply Chain Collaboration:** Engage with key material suppliers to gather primary data and collaborate on improving their emission performance.
- **Logistics Efficiency:** Optimize transportation routes and consider shifting to lower-emission transport modes where feasible to reduce downstream logistics impact.