carboncalcpcf.com

Product Carbon Footprint Dashboard for nxvyzvgsyj

Detailed analysis adhering to GHG Protocol for xkqylftwdf

22.612 kgCO2e per 1.0 unit

22.612 kgCO2e

Total Footprint (1.0 unit)

Factory Gate + Use/EoL

System Boundary

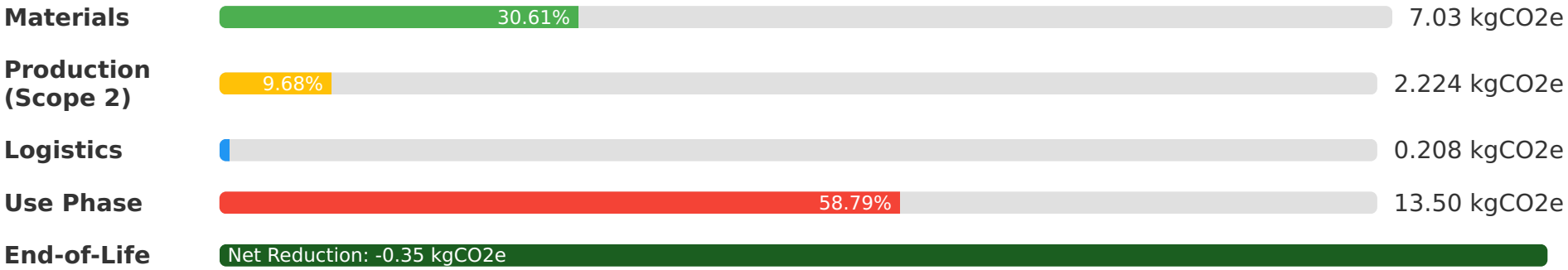
Aluminum Frame

Top Material Hotspot

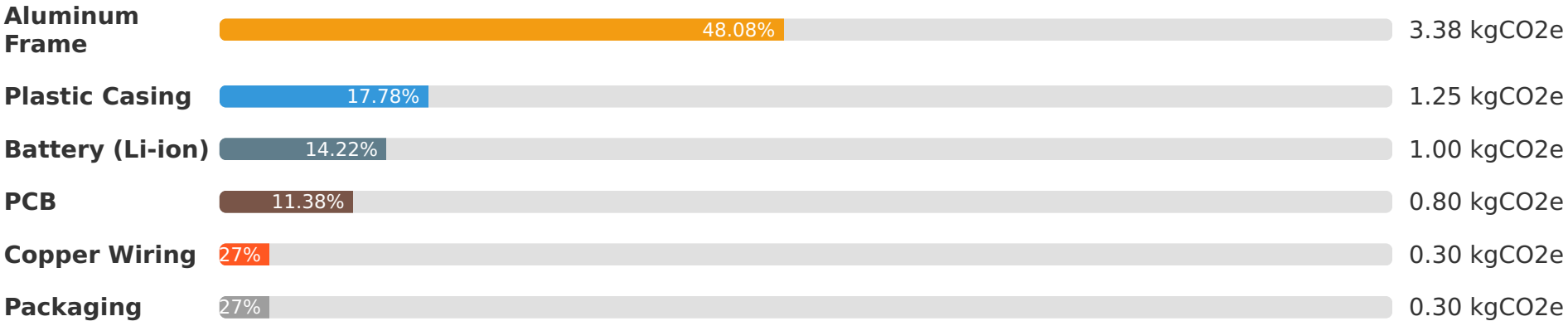
Scope 3 (Predominant)

Primary Emission Scope

Lifecycle Stage Breakdown



Material Carbon Impact (Illustrative)



Highlights & Key Insights

- The **Use Phase** (13.50 kgCO2e) is the largest emission hotspot, responsible for over half of the product's total carbon footprint.

- **Material Acquisition** (7.03 kgCO2e) is the second most significant contributor, with the Aluminum Frame showing the highest material impact.
- **Manufacturing (Scope 2)** emissions (2.224 kgCO2e) are substantial due to purchased electricity in China, emphasizing the importance of renewable energy.
- The **End-of-Life** stage results in a net reduction (-0.35 kgCO2e) due to high recyclability (70%) and active circular/take-back programs, demonstrating effective circular economy principles.

Recommendations for Reduction

- **Material Optimization:** Explore lower-carbon alternative materials, especially for aluminum and plastics; engage suppliers for primary data and design for reduced material intensity.
- **Energy Efficiency in Manufacturing:** Further optimize energy consumption and significantly increase the share of renewable energy at the China production facility.
- **Use Phase Efficiency:** Prioritize design improvements to reduce the product's energy consumption over its 5-year lifespan and provide user guidance for sustainable use.
- **Logistics Streamlining:** Shift to less carbon-intensive transport modes (e.g., sea or rail over air) for both inbound and outbound logistics, and optimize load factors.
- **Enhance Circularity:** Continuously improve recycling infrastructure and expand take-back programs (e.g., 'msyhwiiyje') to maximize material recovery and further minimize landfill contributions.