Product Carbon Footprint for stmqqeqvwn

Comprehensive GHG Protocol Analysis for 1.0 unit (Factory Gate)

carboncalcpcf.com

Total Footprint

147.40

kgCO2e / unit

Carbon Intensity

147.40

kgCO2e / unit

Primary Emission Hotspot

Upstream Transport

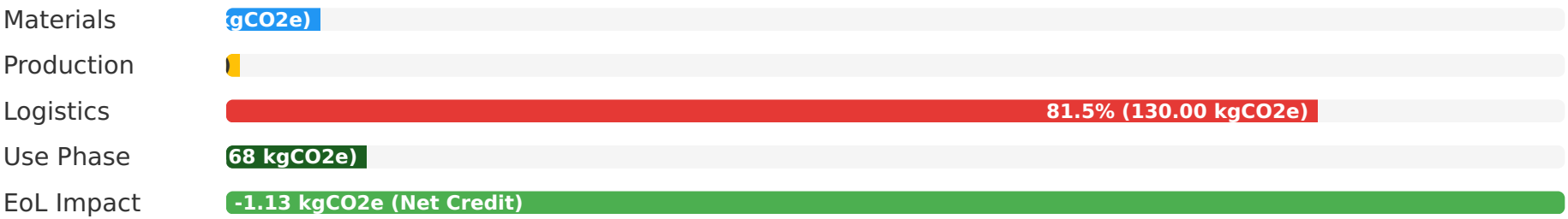
(81.5% of gross emissions)

EoL Emission Credit

-1.13

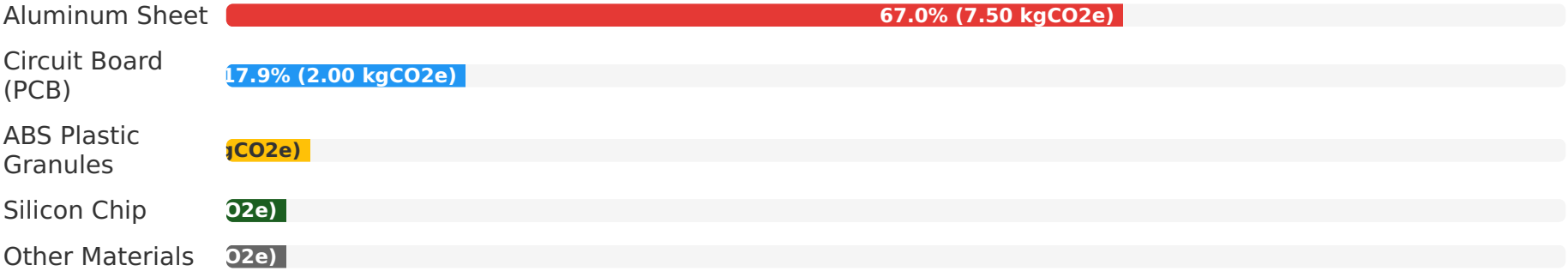
kgCO2e / unit (net reduction)

Lifecycle Stage Breakdown



*Percentages for positive emissions are relative to gross total (159.52 kgCO2e) before EoL credit.

Top Material Carbon Impact (by BOM)



*Percentages represent contribution to total material carbon (11.20 kgCO2e).

Highlights & Key Insights

- **Upstream Transportation Dominance:** The most significant hotspot is the upstream transport of components (120.00 kgCO2e), largely due to an illustrative long-distance HGV journey of 2000 km.
- **Material Impact from Aluminum:** Material acquisition, especially from Aluminum Sheet (7.50 kgCO2e), is a substantial contributor within the materials category, highlighting the impact of primary metal production.
- **Positive EoL Impact:** The product benefits from a net negative emission (-1.13 kgCO2e) in its End-of-Life phase, driven by high recyclability (80%) and an established take-back scheme.
- **Use Phase Energy Consumption:** The product's energy consumption during its 3-year lifespan accounts for 16.68 kgCO2e, making it a notable area for potential reduction through improved energy efficiency.

Recommended Action Plan

- **Optimize Supply Chain Logistics:** Investigate and implement strategies to reduce transport distances, shift to lower-emission modes (e.g., rail, sea), and localize sourcing where feasible to mitigate upstream transport emissions.
- **Enhance Material Circularity:** Leverage the strong recyclability by strengthening circular/take-back programs, increasing recycled content in materials, and exploring alternative, lower-carbon materials for high-impact components like aluminum.
- **Improve Product Energy Efficiency:** Focus on design improvements to reduce the product's energy consumption during its operational lifespan, directly addressing emissions from the use phase.
- **Refine Data Collection:** Prioritize collecting more granular and verified primary data for all lifecycle stages, particularly for supplier emissions and actual transport routes/loads, to enhance future PCF accuracy.