carboncalcpcf.com

Product Carbon Footprint: mhfivqhxuk

Company: vsjpunhhls

Total Carbon Footprint

78.57 kg CO2e

78.57

Total PCF (kg CO2e)

4.44

Carbon Intensity (kg CO2e/kg)

Steel

Top Material Hotspot

Scope 3

Primary Emission Scope

Lifecycle Stage Breakdown

Positive contributions to the footprint:

Material Acquisition & Processing	57.70 kg CO2e (57.83%)
Manufacturing (Energy)	6.00 kg CO2e (6.01%)
Transportation	9.82 kg CO2e (9.84%)
Use Phase	26.25 kg CO2e (26.31%)

Net impact from End-of-Life (EoL) strategies:

End-of-Life (Net Savings)	-21.20 kg CO2e

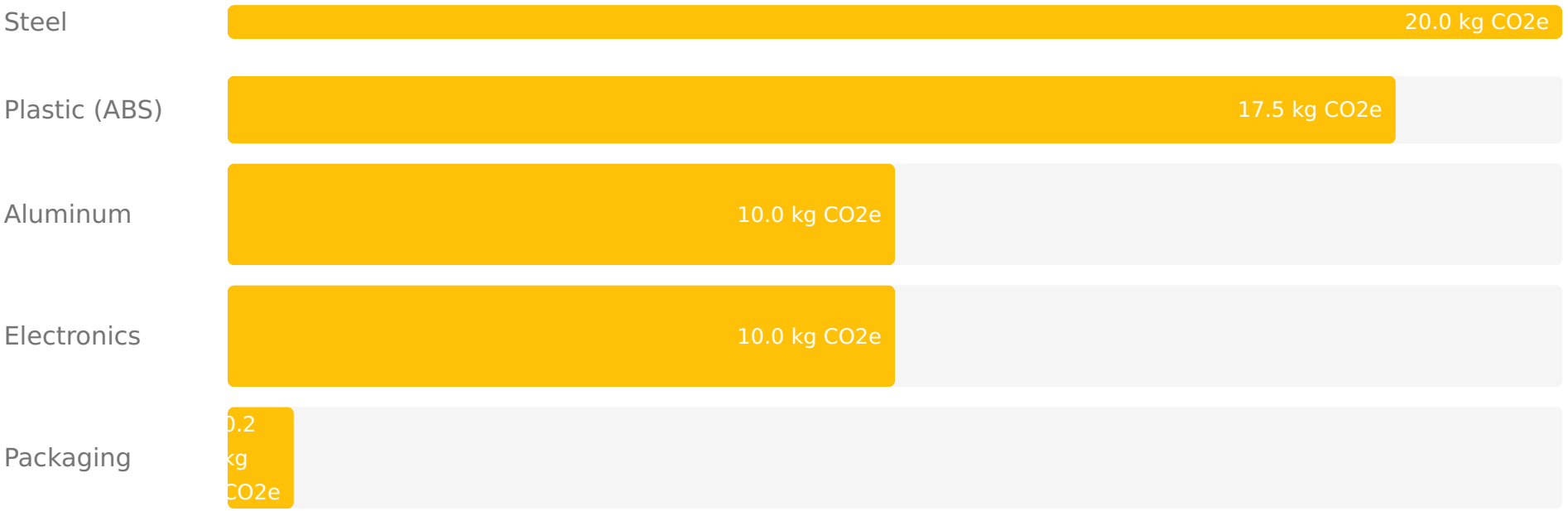
Key Insights & Hotspots

- **Material Acquisition & Processing:** At 57.70 kg CO2e, this stage is the largest contributor to the PCF, emphasizing the need for sustainable material sourcing.
- **Use Phase Emissions:** The energy consumed during the product's 7-year lifespan accounts for a significant 26.25 kg CO2e, pointing to the importance of energy efficiency.

- **End-of-Life Savings:** Robust recyclability (75%) and active take-back programs result in a substantial net saving of -21.20 kg CO2e, effectively reducing the overall footprint.

Material Composition vs. Carbon Impact

Carbon footprint from key materials:



*Percentage width relative to the highest material impact (Steel: 20.0 kg CO2e).

Recommendations for Decarbonization

2. **Material Decarbonization:** Prioritize sourcing lower-carbon alternative materials and increasing recycled content. Collaborate with suppliers to reduce embedded emissions of high-impact components.
4. **Manufacturing Optimization:** Invest further in renewable energy at production facilities in China beyond 50% and optimize processes for enhanced energy efficiency.
6. **Logistics Efficiency:** Explore modal shifts (e.g., road to rail), route optimization, and partner with logistics providers using fuel-efficient fleets or alternative fuels.
8. **Use Phase Engagement:** Educate consumers on energy-efficient product use. Consider product-as-a-service models or design for upgradeability to extend product lifespan.
10. **Circular Economy Enhancement:** Expand take-back and refurbishment programs. Implement design for disassembly to further increase effective recycling rates and reduce reliance on virgin materials.