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Product Carbon Footprint (PCF) Analysis

for **huypxgjesd**

Total Product Carbon Footprint:

41.02 kg CO₂e

Key Metrics & Overview

Total Footprint

41.02 kg CO₂e

for 1.0 unit

Carbon Intensity

41.02 kg CO₂e/unit

System Boundary: factory_gate

Top Lifecycle Hotspot

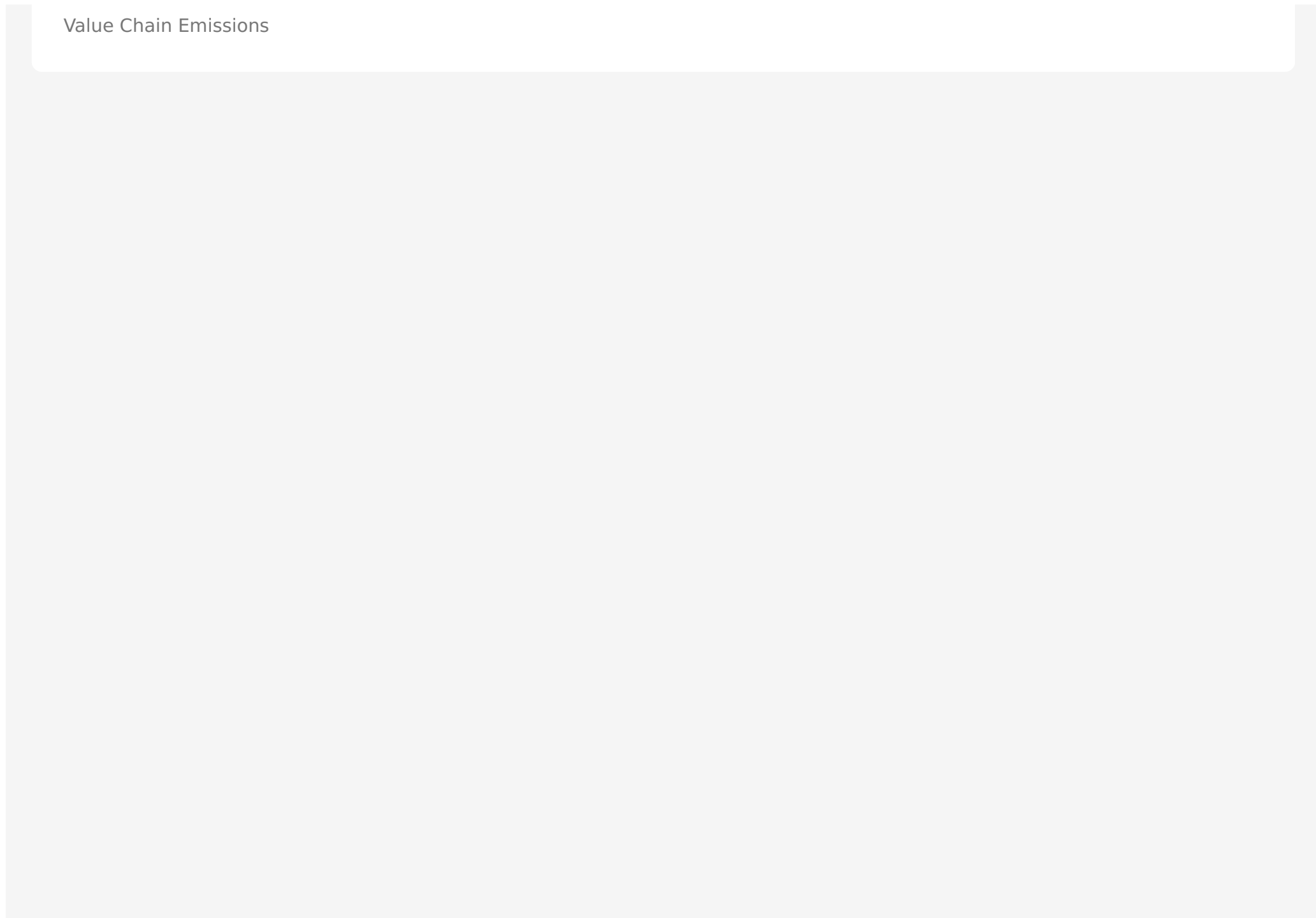
Use Phase

29.00 kg CO₂e (70.7%)

Primary Emission Scope

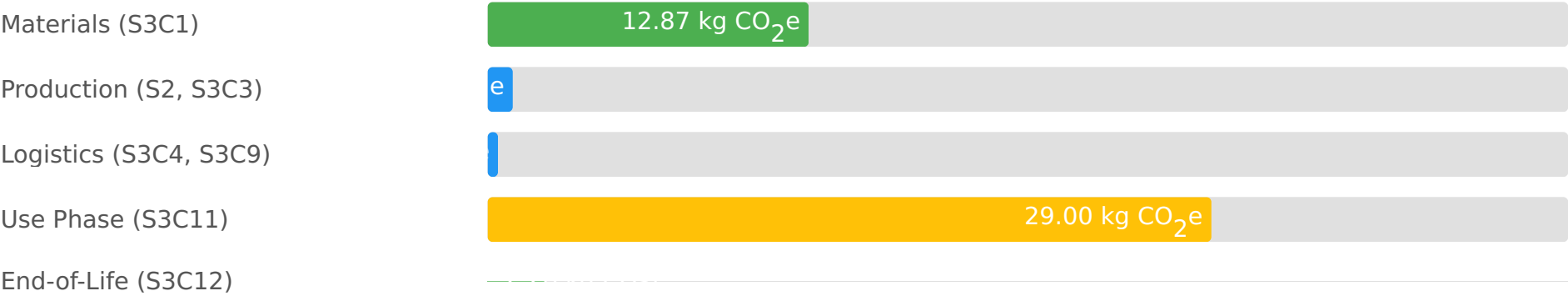
Scope 3

Value Chain Emissions

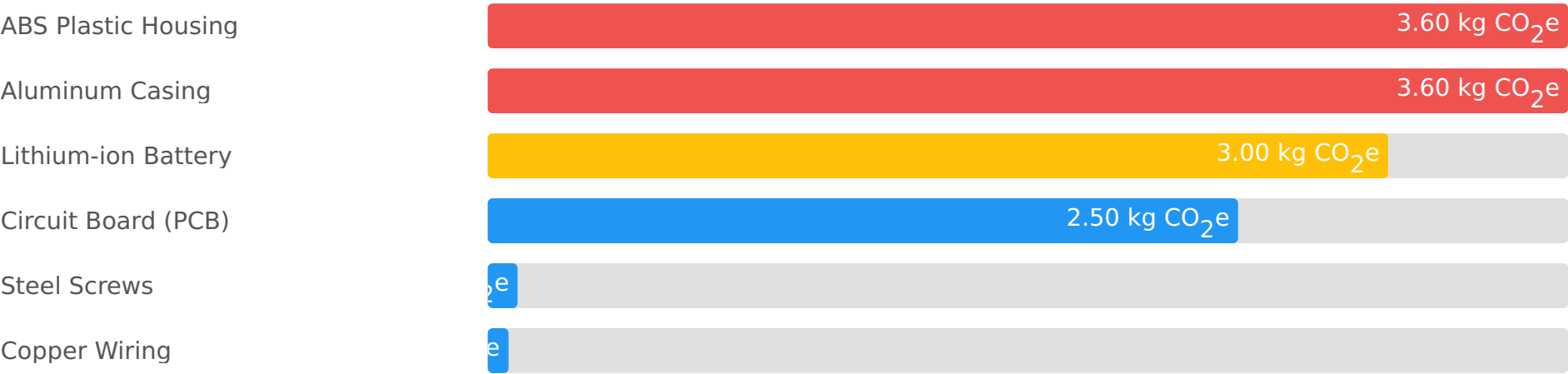


Detailed Emission Breakdown

Lifecycle Stage Contributions



Top Material Carbon Impact



Key Highlights

- The **Use Phase** is the dominant emission hotspot, contributing approximately 70.7% (29.00 kg CO₂e) of the total PCF, primarily due to product energy consumption over its lifespan.
- **Material Acquisition**, particularly for ABS Plastic and Aluminum, represents a significant impact, accounting for 31.4% (12.87 kg CO₂e) of the total footprint.
- An effective **End-of-Life strategy**, with 80% recyclability and established take-back programs, yields a net carbon credit of -2.28 kg CO₂e, demonstrating the positive impact of circular economy initiatives.

Recommendations for Reduction

1. **Optimizing Use Phase:** Focus on energy-efficient design for huypxgjesd to reduce its energy consumption (10 kWh/year) during its 5-year lifespan.
2. **Sustainable Material Sourcing:** Explore lower-carbon alternatives or materials with higher recycled content for key components like ABS Plastic and Aluminum.
3. **Enhancing Renewable Energy:** Further increase renewable energy procurement beyond the current 70% at the production facility in China to reduce Scope 2 emissions.

4. **Strengthening Circularity:** Continue investing in and expanding take-back and recycling programs to maximize material recovery and further enhance End-of-Life carbon credits.

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