

Life Cycle Analyses

PMBASIC PL



Summary



01 | Methodology



02 | Results

01

Methodology

Environmental Impact Assessment

Functional unit

The functional unit is a quantified performance of a product system for use as a reference unit. One of the primary purposes of a functional unit is to provide a reference to which the input and output data are normalized (in a mathematical sense). Therefore, the functional unit shall be clearly defined and measurable.

Impact Indicator

The impact is measured through the "IPCC 2021 GWP100" method

Electricity impact calculation method

Following guidelines from the GHG Protocol, the impact of electricity is calculated using the location-based approach. This means that the emission factors used represent the average annual carbon intensity of the power grid in the country the processes take place in.

Life Cycle Analyses

Cradle to grave

Emission Factor Inventory

| Num | Emission Factor | Source | Value | Unit |
|-----|---|---------------------------|---------------|------|
| 1 | Steel, low-alloyed Ordinary transforming activity | ECOINVENT 3.10 | 2.364612691 | kg |
| 2 | Plastic Average Recycled | BASE EMPREINTE ADEME 23.4 | 0.202 | kg |
| 3 | Electricity Total (Scope 2 & 3) People's Republic of China | IEA 2023 | 0.7231 | kWh |
| 4 | Freight Boat From CN to FR | WELOW EXPERTS 1.0 | 0.25227278 | kg |
| 5 | Tinplate scrap, sorted Ordinary transforming activity Waste | ECOINVENT 3.10 | 0.03352378077 | kg |
| 6 | polyethylene/polypropylene product Ordinary transforming activity | ECOINVENT 3.10 | 1.783532575 | kg |

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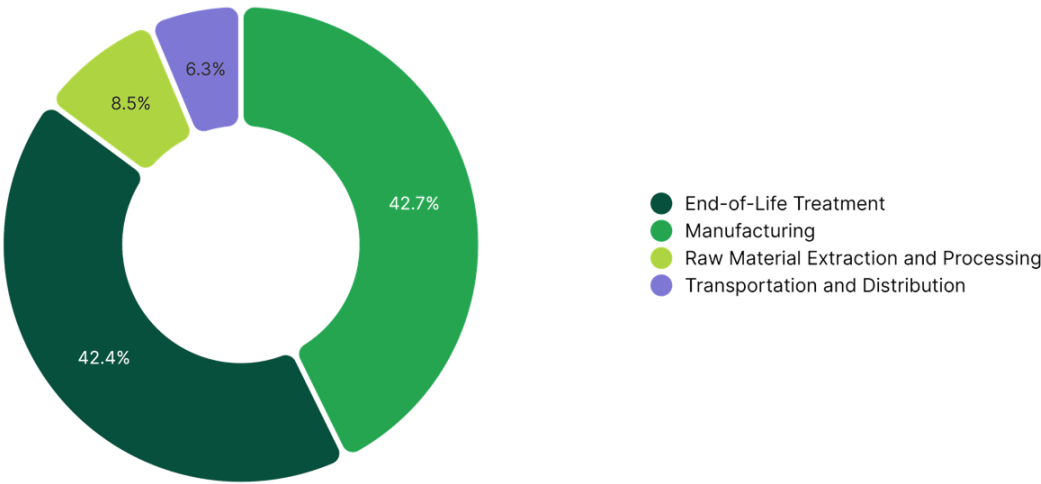
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02

Results

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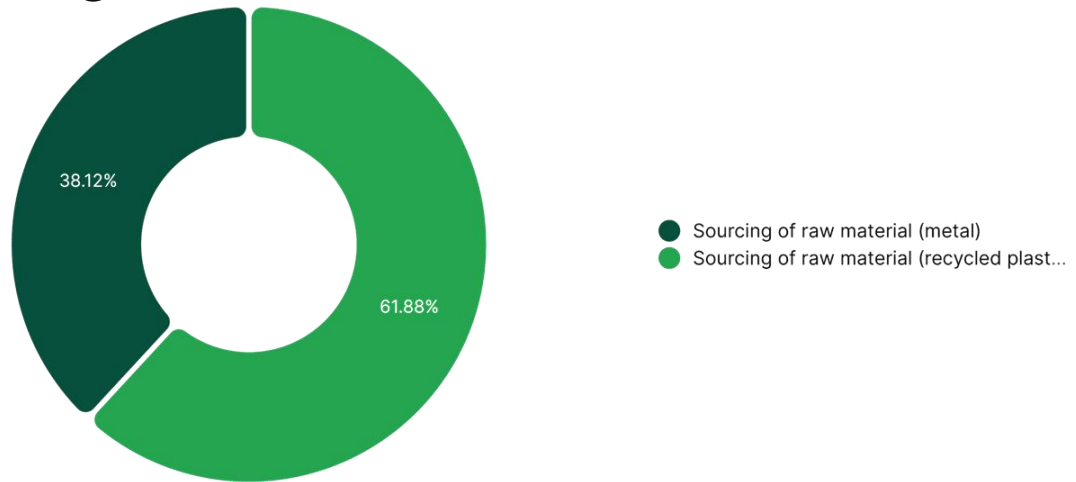
Climate Change



| Step | Impact (kg CO ₂ eq) | Percentage (%) |
|--|-----------------------------------|-------------------|
| Manufacturing | 0.85 | 42.72 % |
| End-of-Life Treatment | 0.85 | 42.43 % |
| Raw Material Extraction and Processing | 0.17 | 8.53 % |
| Transportation and Distribution | 0.13 | 6.31 % |
| | | |
| TOTAL | 2 | 100.00 % |

Hanger

Climate Change - Raw Material Extraction and Processing



| Activity | Emission Factor Num | Quantity | Impact (g CO ₂ eq) | Percentage (%) |
|---|---------------------|----------|-------------------------------|----------------|
| Sourcing of raw material (recycled plastic) | 2 | 0.52 | 105.55 | 61.88 % |
| Sourcing of raw material (metal) | 1 | 0.03 | 65.03 | 38.12 % |

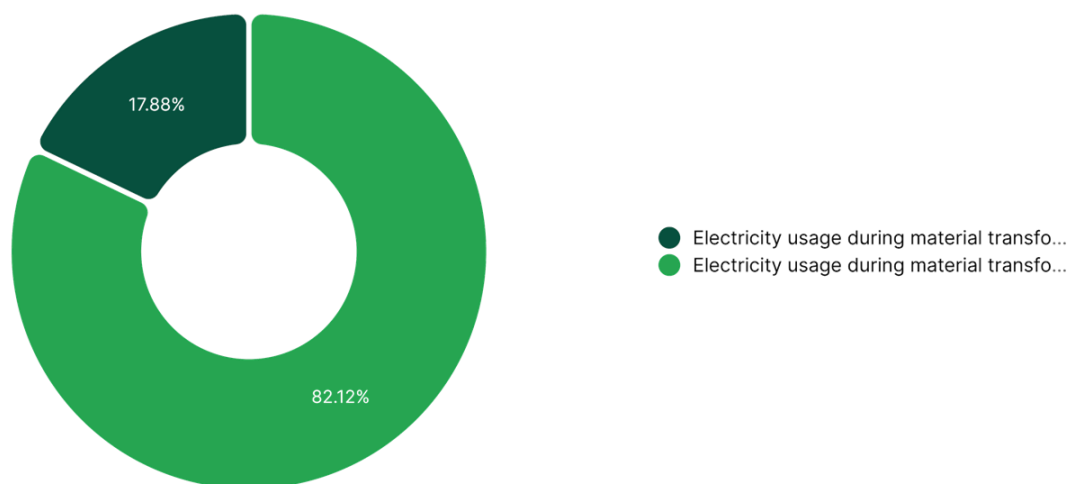
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| TOTAL | | | 170.57 | 100.00 % |
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Climate Change - Manufacturing

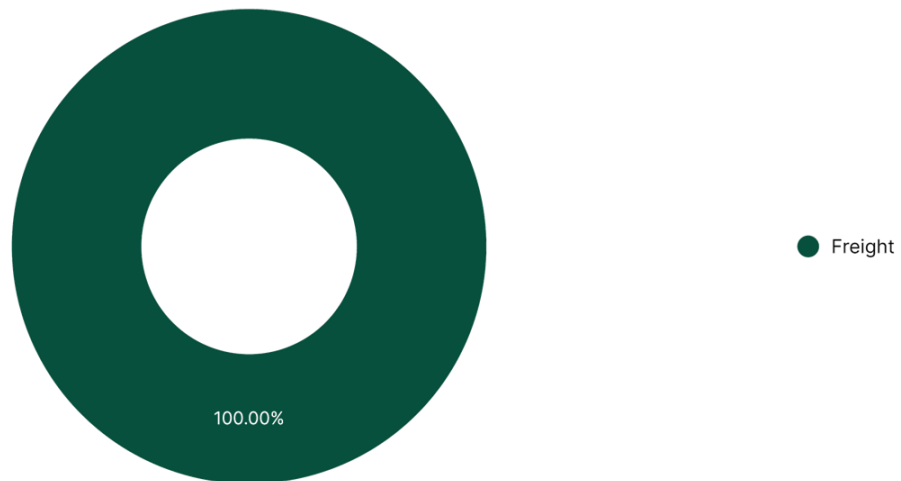


| Activity | Emission Factor Num | Quantity | Impact (g CO ₂ eq) | Percentage (%) |
|---|---------------------------|----------|----------------------------------|-------------------|
| Electricity usage during material transformation (recycled plastic) | 3 | 0.97 | 701.26 | 82.12 % |
| Electricity usage during material transformation (metal) | 3 | 0.21 | 152.65 | 17.88 % |

| | | |
|-------|--------|----------|
| TOTAL | 853.91 | 100.00 % |
|-------|--------|----------|

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Climate Change - Transportation and Distribution



| Activity | Emission Factor Num | Quantity | Impact (g CO ₂ eq) | Percentage (%) |
|----------|---------------------|----------|-------------------------------|----------------|
| Freight | 4 | 0.5 | 126.14 | 100.00 % |
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| TOTAL | | | 126.14 | 100.00 % |

Hanger

Climate Change - End-of-Life Treatment



| Activity | Emission Factor Num | Quantity | Impact (g CO ₂ eq) | Percentage (%) |
|--------------------------------|---------------------|----------|-------------------------------|----------------|
| End of life (recycled plastic) | 6 | 0.48 | 847.18 | 99.90 % |
| End of life (metal) | 5 | 0.03 | 0.84 | 0.10 % |
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| TOTAL | | | 848.02 | 100.00 % |

