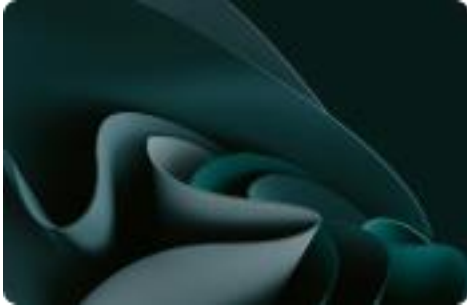


Life Cycle Analyses

MOBI4L



Summary



01 | Methodology



02 | Results

01

Methodology

Environmental Impact Assessment

<p>Functional unit</p>	<p>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.</p>
<p>Impact Indicator</p>	<p>The impact is measured through the "IPCC 2021 GWP100" method</p>
<p>Electricity impact calculation method</p>	<p>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.</p>
<p>Life Cycle Analyses</p>	<p>Cradle to grave</p>

Emission Factor Inventory

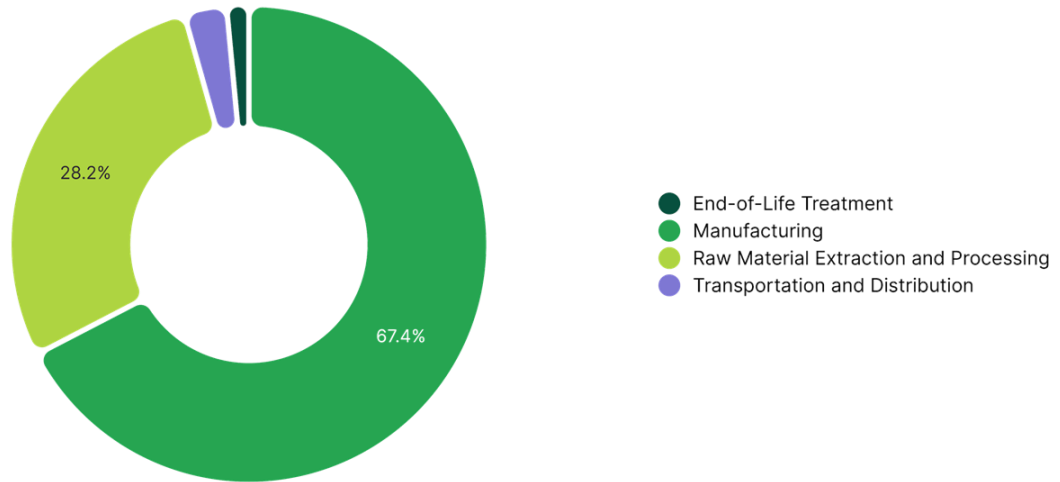
Num	Emission Factor	Source	Value	Unit
1	Steel, low-alloyed Ordinary transforming activity	ECOINVENT 3.10	2.20	kg
2	Polypropylene, granulate Market activity	ECOINVENT 3.10	3.52	kg
3	Electricity Total (Scope 2 & 3) People's Republic of China	IEA 2023	0.72	kWh
4	Freight Boat From CN to FR	WELOW EXPERTS 1.0	0.25	kg
5	Waste reinforcement steel Ordinary transforming activity	ECOINVENT 3.10	0.06	kg
6	Waste polyethylene/polypropylene product Ordinary transforming activity	ECOINVENT 3.10	1.78	kg

02

Results

Metallic shelves

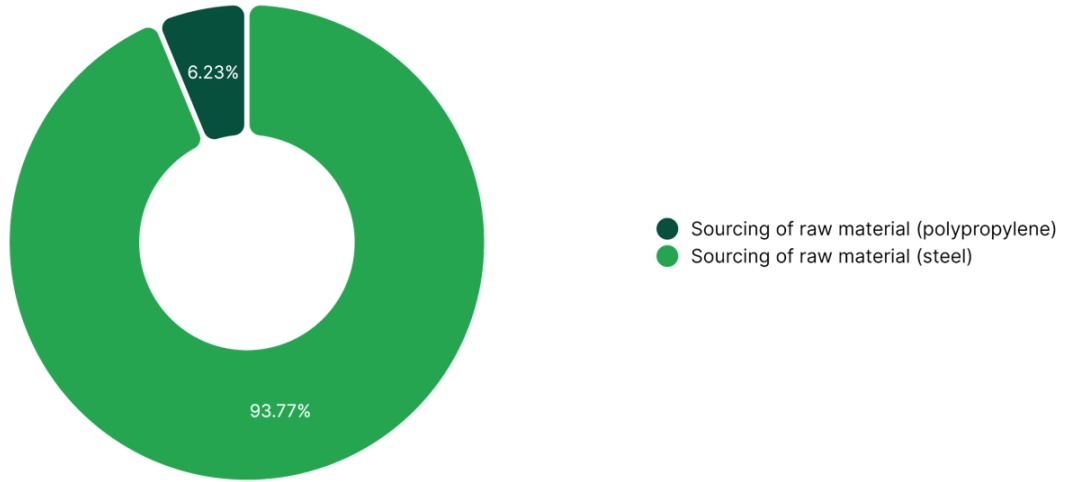
Climate Change



Step	Impact (kg CO ₂ eq)	Percentage (%)
Manufacturing	98.29	67.39 %
Raw Material Extraction and Processing	41.19	28.24 %
Transportation and Distribution	4.19	2.87 %
End-of-Life Treatment	2.18	1.50 %
TOTAL	145.85	100.00 %

Metalic shelves

Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Unité	Impact (kg CO ₂ eq)	Percentage (%)
Sourcing of raw material (steel)	1	17.53	kg	38.62	93.77 %
Sourcing of raw material (polypropylene)	2	0.73	kg	2.57	6.23 %

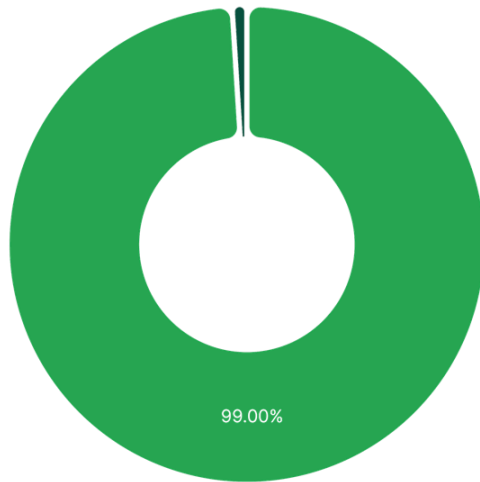
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TOTAL				41.19	100.00 %
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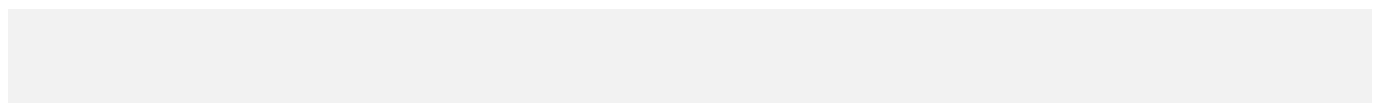
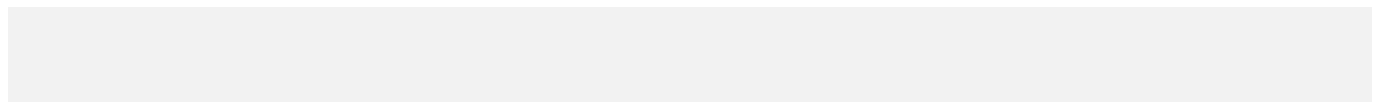
Metalic shelves

Climate Change - Manufacturing



- Electricity usage during material transfo...
- Electricity usage during material transfo...

Activity	Emission Factor Num	Quantity	Unité	Impact (kg CO ₂ eq)	Percentage (%)
Electricity usage during material transformation (steel)	3	134.57	kWh	97.31	99.00 %
Electricity usage during material transformation (polypropylene)	3	1.36	kWh	0.98	1.00 %



TOTAL				98.29	100.00 %
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Metalic shelves

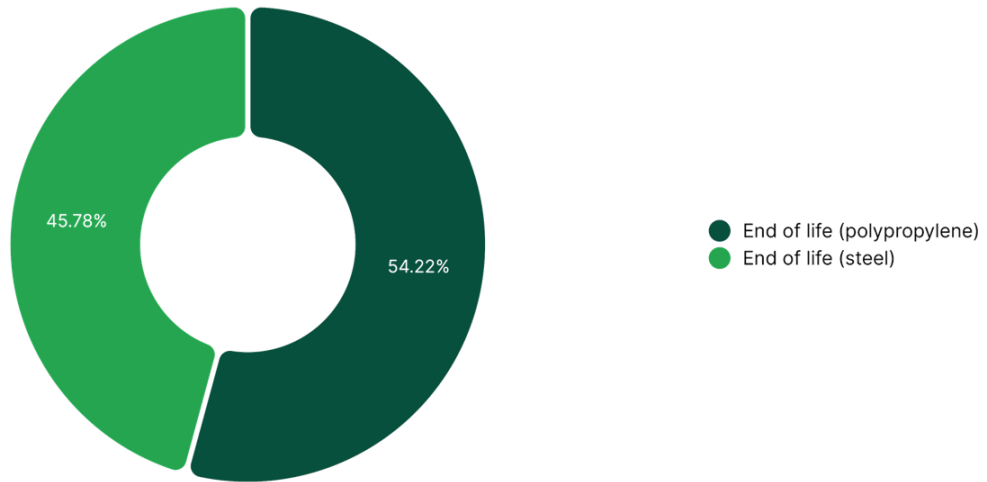
Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Unité	Impact (kg CO ₂ eq)	Percentage (%)	
Freight	4	16.6	kg	4.19	100.00 %	
TOTAL					4.19	100.00 %

Metallic shelves

Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Unité	Impact (kg CO ₂ eq)	Percentage (%)
End of life (polypropylene)	6	0.66	kg	1.18	54.22 %
End of life (steel)	5	15.94	kg	1	45.78 %

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TOTAL				2.18	100.00 %
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