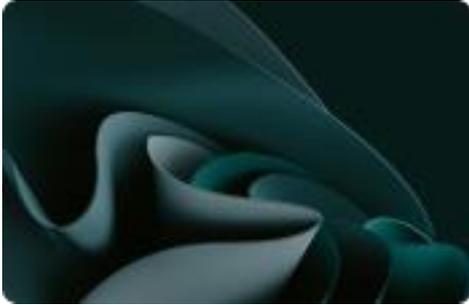


Life Cycle Analyses

PMFEST N



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

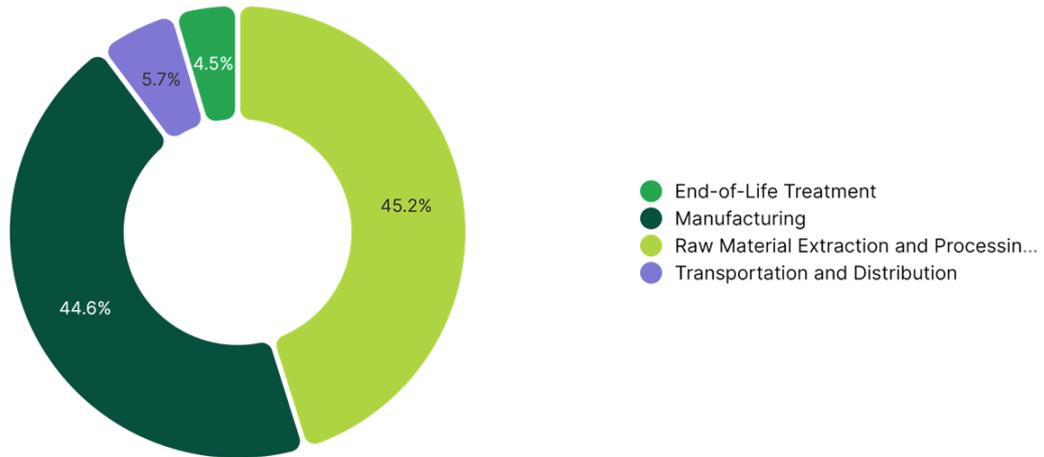
Num	Emission Factor	Source	Value	Unit
1	Steel, low-alloyed Ordinary transforming activity	ECOINVENT 3.10	2.203301567	kg
2	market for cement, Portland	ECOINVENT 3.10	0.944058408	kg
3	Acrylonitrile-butadiene-styrene copolymer Ordinary transforming activity	ECOINVENT 3.10	4.533718346	kg
4	Polypropylene, granulate Market activity	ECOINVENT 3.10	3.516196993	kg
5	Electricity Total (Scope 2 & 3) People's Republic of China	IEA 2023	0.7231	kWh
6	Freight Boat From CN to FR	WELOW EXPERTS 1.0	0.25227278	kg
7	Residues, MSWI, waste plastic, consumer electronics Ordinary transforming activity treatment of waste cement-	ECOINVENT 3.10	0.3620299477	kg
8	fibre slab, dismantled, municipal incineration	ECOINVENT 3.10	0.015293826	kg
9	Waste reinforcement steel Ordinary transforming activity Waste	ECOINVENT 3.10	0.06273427595	kg
10	polyethylene/polypropylene product Ordinary transforming activity	ECOINVENT 3.10	1.783532575	kg

02

Results

Coat stand

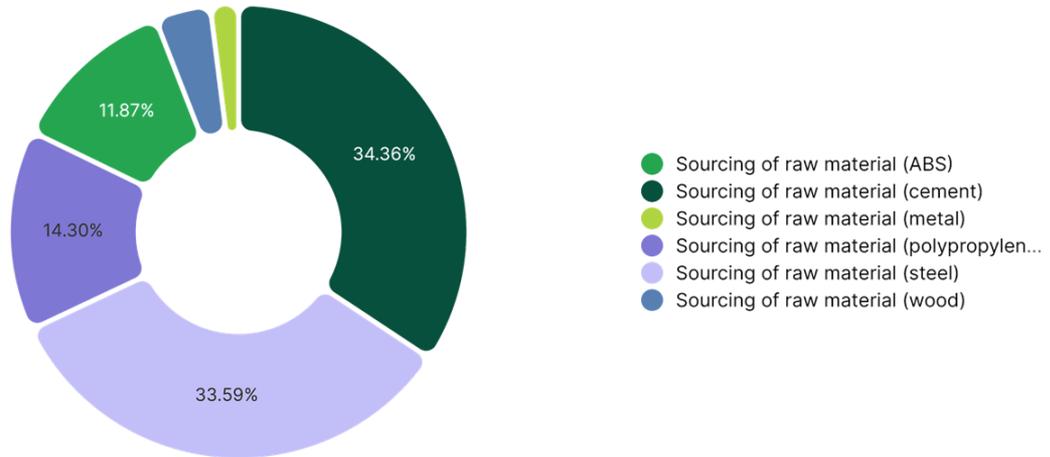
Climate Change



Step	Impact (kg CO ₂ eq)	Percentage (%)
Raw Material Extraction and Processing	12.56	46.16 %
Manufacturing	12.03	44.21 %
Transportation and Distribution	1.49	5.47 %
End-of-Life Treatment	1.13	4.16 %
TOTAL	{{totalImpact7}}	100.00 %

Coat stand

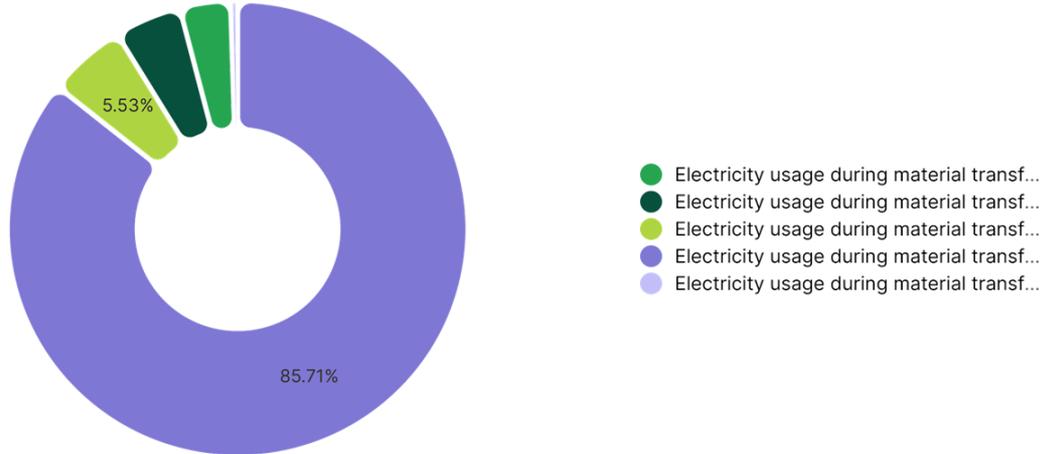
Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
Sourcing of raw material (cement)	2	4.96	4.68	37.25 %
Sourcing of raw material (steel)	1	1.95	4.29	34.16 %
Sourcing of raw material (polypropylene)	4	0.52	1.83	14.54 %
Sourcing of raw material (ABS)	3	0.39	1.77	14.06 %
TOTAL			12.56	100.00 %

Coat stand

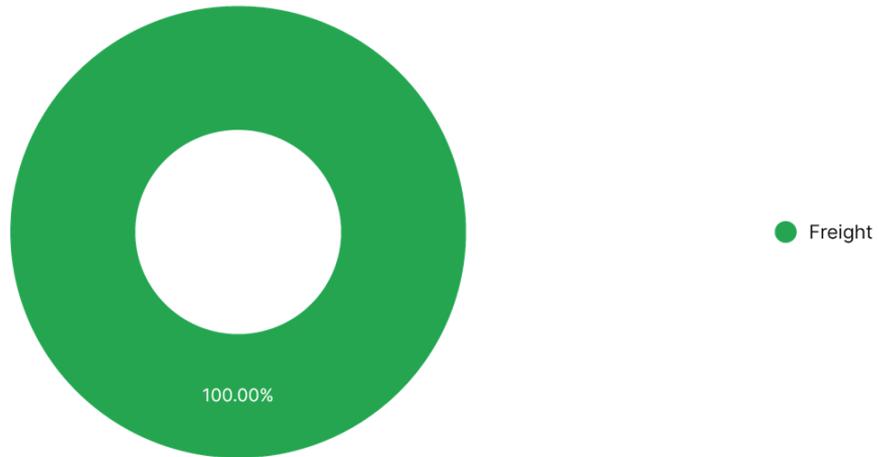
Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
Electricity usage during material transformation (steel)	5	14.95	10.81	89.86 %
Electricity usage during material transformation (polypropylene)	5	0.96	0.7	5.79 %
Electricity usage during material transformation (ABS)	5	0.72	0.52	4.35 %
TOTAL			12.03	100.00 %

Coat stand

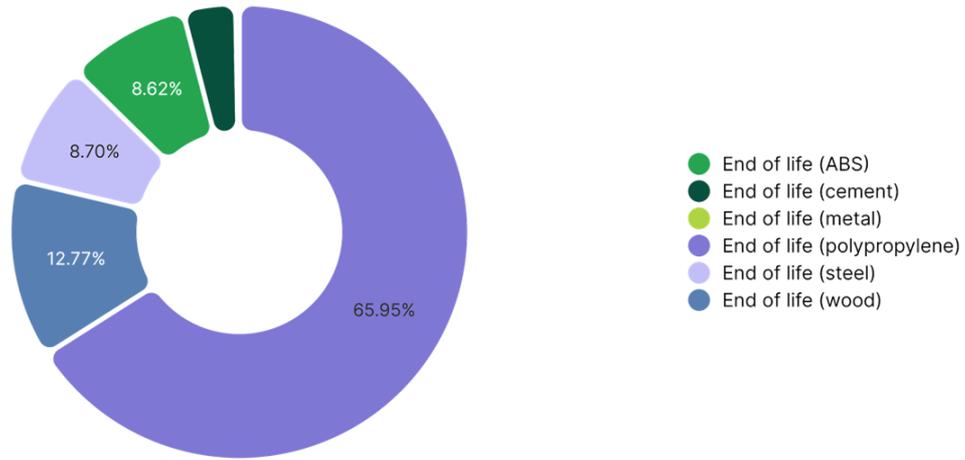
Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
Freight	6	5.9	1.49	100.00 %
TOTAL			1.49	100.00 %

Coat stand

Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
End of life (polypropylene)	10	0.47	0.84	74.40 %
End of life (ABS)	7	0.35	0.13	11.33 %
End of life (steel)	9	1.77	0.11	9.81 %
End of life (cement)	8	3.3	0.05	4.47 %
TOTAL			1.13	100.00 %

