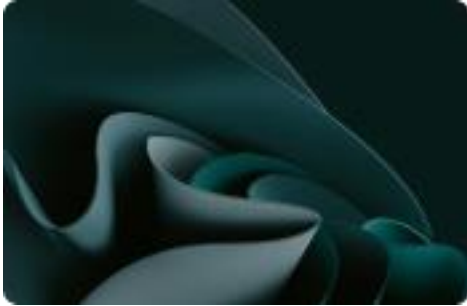


# Life Cycle Analyses

PMMUSIC N



# Summary



**01** | Methodology



**02** | Results

# 01

## Methodology

# Environmental Impact Assessment

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

# Emission Factor Inventory

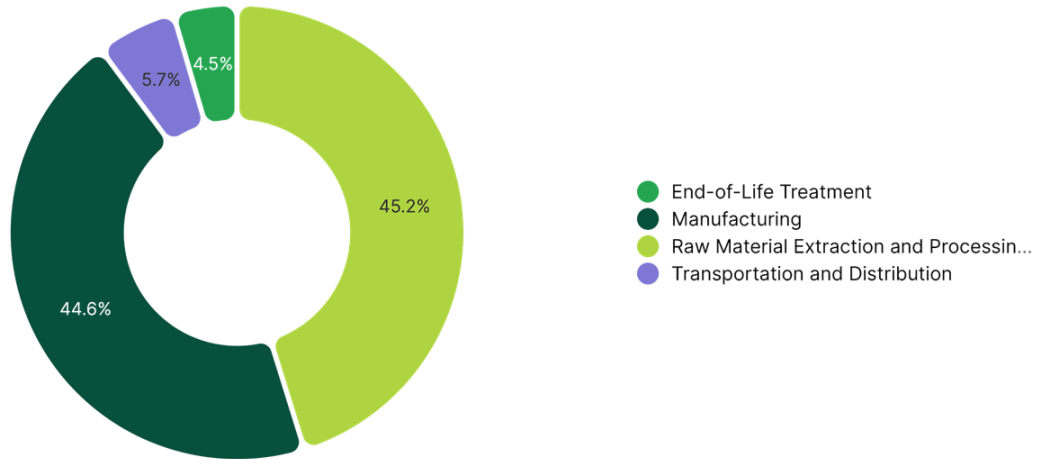
Num	Emission Factor	Source	Value	Unit
1	Polypropylene, granulate   Market activity	ECOINVENT 3.10	3.516196993	kg
2	market for cement, Portland	ECOINVENT 3.10	0.944058408	kg
3	Steel, low-alloyed   Ordinary transforming activity	ECOINVENT 3.10	2.203301567	kg
4	Hardwood lumber   1 inch   sustainable forestry   1kg   RER	BASE EMPREINTE ADEME 3.0	0.531144	kg
5	Acrylonitrile-butadiene-styrene copolymer   Ordinary transforming activity	ECOINVENT 3.10	4.533718346	kg
6	Electricity   Total (Scope 2 & 3)   People's Republic of China	IEA 2023	0.7231	kWh
7	Freight   Boat   From CN to FR	WELOW EXPERTS 1.0	0.25227278	kg
8	Waste reinforcement steel   Ordinary transforming activity	ECOINVENT 3.10	0.06273427595	kg
9	treatment of waste cement-fibre slab, dismantled, municipal incineration	ECOINVENT 3.10	0.015293826	kg
10	Packaging - Wood - Average end of life in the EPR scheme - Waste	BASE CARBONE ADEME 22.0	0.269	kg
11	polyethylene/polypropylene product   Ordinary	ECOINVENT 3.10	1.783532575	kg
12	Residues, MSWI, waste plastic, consumer electronics   Ordinary transforming activity	ECOINVENT 3.10	0.3620299477	kg

# 02

Results

Coat stand

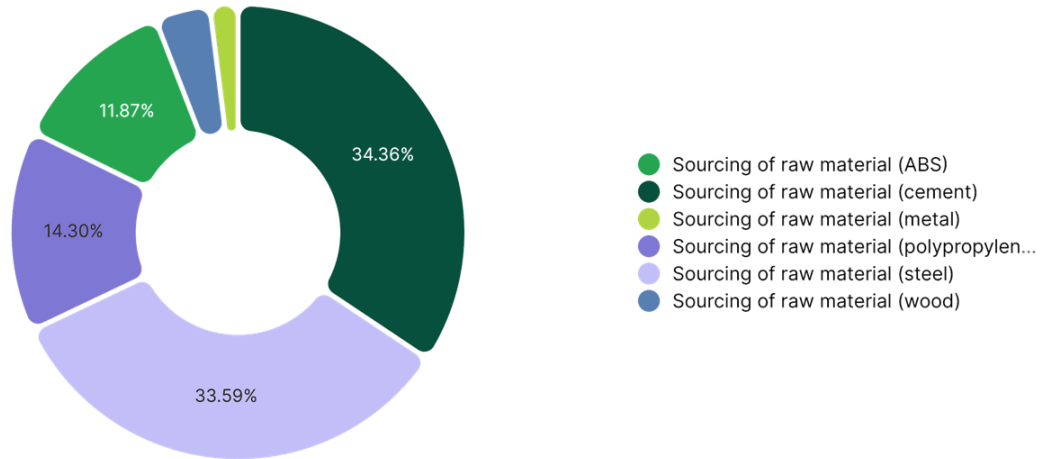
# Climate Change



Step	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Manufacturing	14.56	46.07 %
Raw Material Extraction and Processing	13.99	44.28 %
Transportation and Distribution	1.89	5.99 %
End-of-Life Treatment	1.16	3.66 %
<b>TOTAL</b>	<b>31,6</b>	<b>100.00 %</b>

Coat stand

# Climate Change - Raw Material Extraction and Processing

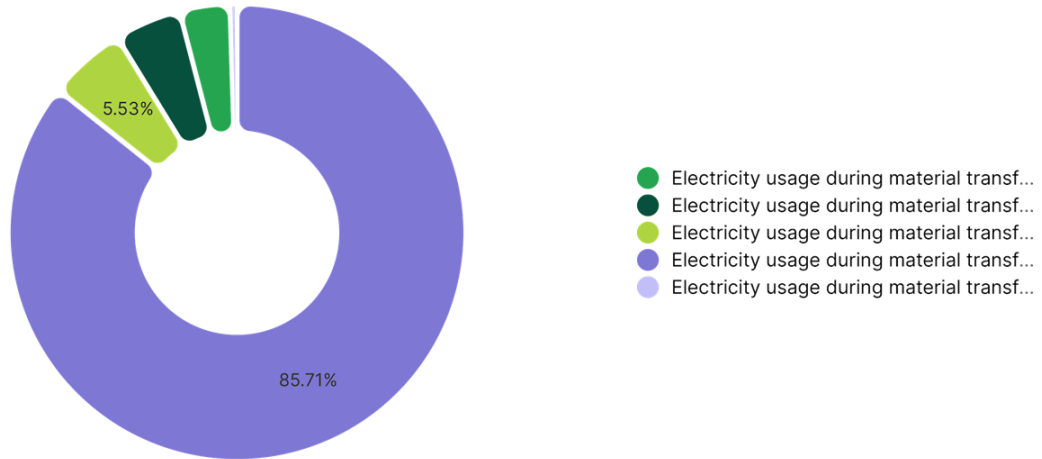


Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (cement)	2	6.41	6.05	43.27 %
Sourcing of raw material (steel)	3	2.48	5.45	38.97 %
Sourcing of raw material (polypropylene)	1	0.5	1.74	12.44 %
Sourcing of raw material (ABS)	5	0.08	0.37	2.67 %
Sourcing of raw material (wood)	4	0.7	0.37	2.65 %
TOTAL			13.99	100.00 %



Coat stand

# Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Electricity usage during material transformation (steel)	6	19	13.74	94.36 %
Electricity usage during material transformation (polypropylene)	6	0.92	0.66	4.56 %
Electricity usage during material transformation (ABS)	6	0.15	0.11	0.76 %
Electricity usage during material transformation (wood)	6	0.06	0.05	0.32 %

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TOTAL			14.56	100.00 %
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Coat stand

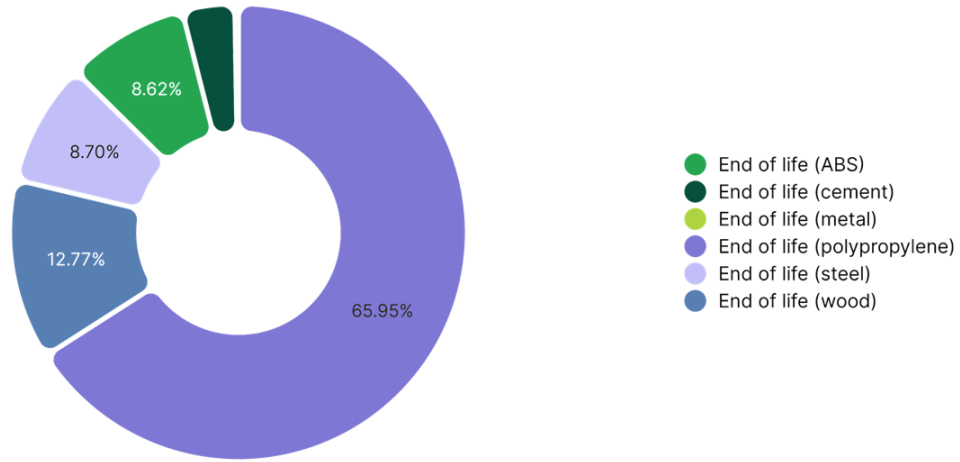
# Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Freight	7	7.5	1.89	100.00 %
TOTAL			1.89	100.00 %

Coat stand

# Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
End of life (polypropylene)	11	0.45	0.8	69.35 %
End of life (steel)	8	2.25	0.14	12.20 %
End of life (wood)	10	0.45	0.12	10.46 %
End of life (cement)	9	4.27	0.07	5.65 %
End of life (ABS)	12	0.08	0.03	2.35 %
TOTAL			1.16	100.00 %

