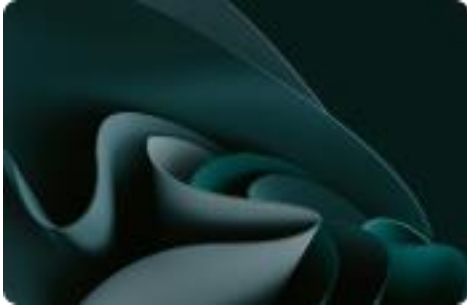


Life Cycle Analyses

LEDTREK 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

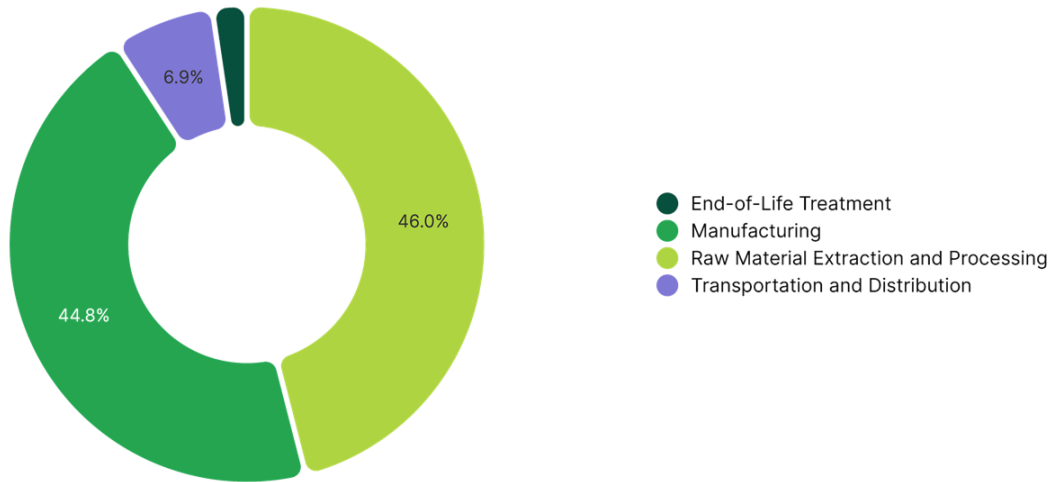
Num	Emission Factor	Source	Value	Unit
1	Polypropylene, granulate Market activity	ECOINVENT 3.10	3.516196993	kg
2	Aluminium, primary, ingot Ordinary transforming activity	ECOINVENT 3.10	7.605623188	kg
3	Acrylonitrile-butadiene-styrene copolymer Ordinary transforming activity	ECOINVENT 3.10	4.533718346	kg
4	Natural stone plate, cut Ordinary transforming activity	ECOINVENT 3.10	0.1200093679	kg
5	Steel, low-alloyed Ordinary transforming activity	ECOINVENT 3.10	2.203301567	kg
6	Electricity Total (Scope 2 & 3) People's Republic of China	IEA 2023	0.7231	kWh
7	Freight Boat From CN to FR Waste	WELOW EXPERTS 1.0	0.25227278	kg
8	polyethylene/polypropylene product Ordinary transforming activity	ECOINVENT 3.10	1.783532575	kg
9	Residues, MSW, waste plastic, consumer electronics Ordinary transforming activity	ECOINVENT 3.10	0.3620299477	kg
10	Waste reinforcement steel Ordinary transforming activity	ECOINVENT 3.10	0.06273427595	kg
11	market for inert waste	ECOINVENT 3.10	0.015324362	kg
12	Waste aluminium Ordinary transforming activity	ECOINVENT 3.10	0.02555404932	kg

02

Results

Desk lamp

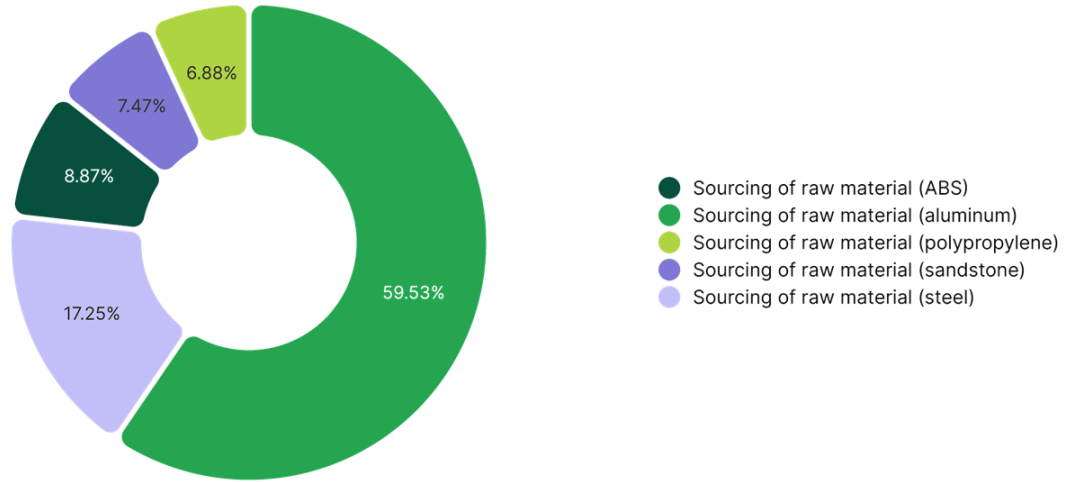
Climate Change



Step	Impact (kg CO ₂ eq)	Percentage (%)
Raw Material Extraction and Processing	2.61	46.00 %
Manufacturing	2.54	44.78 %
Transportation and Distribution	0.39	6.88 %
End-of-Life Treatment	0.13	2.34 %
TOTAL	5,68	100.00 %

Desk lamp

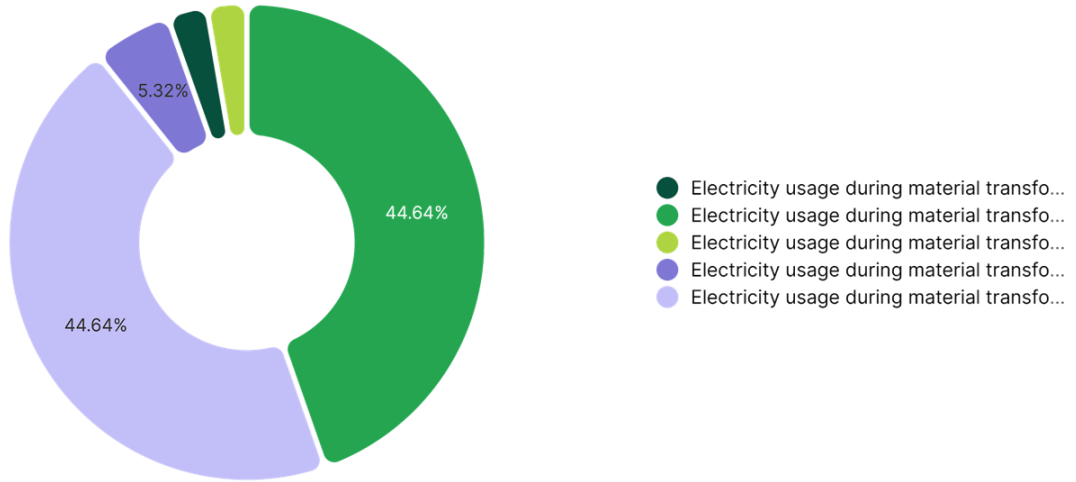
Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
Sourcing of raw material (aluminum)	2	0.2	1.56	59.53 %
Sourcing of raw material (steel)	5	0.2	0.45	17.25 %
Sourcing of raw material (ABS)	3	0.05	0.23	8.87 %
Sourcing of raw material (sandstone)	4	1.63	0.2	7.47 %
Sourcing of raw material (polypropylene)	1	0.05	0.18	6.88 %
TOTAL			2.61	100.00 %

Desk lamp

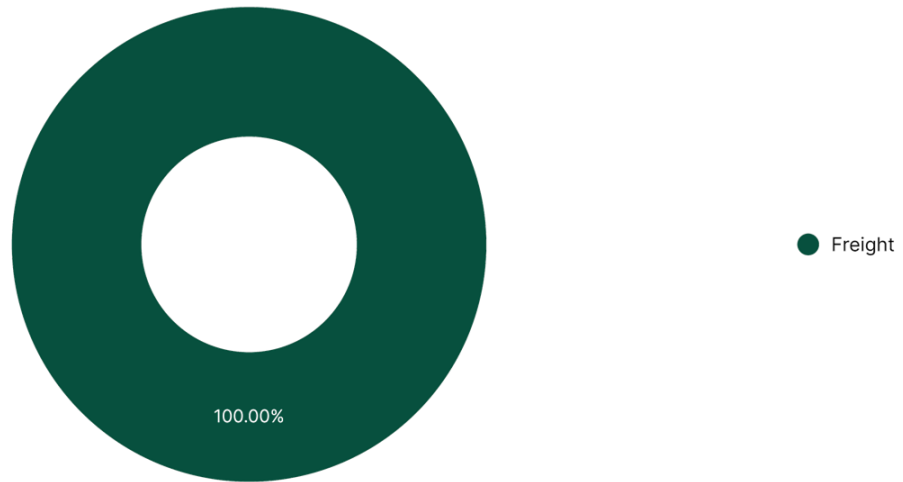
Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
Electricity usage during material transformation (aluminum)	6	1.57	1.14	44.64 %
Electricity usage during material transformation (steel)	6	1.57	1.14	44.64 %
Electricity usage during material transformation (sandstone)	6	0.19	0.14	5.32 %
Electricity usage during material transformation (polypropylene)	6	0.09	0.07	2.70 %
Electricity usage during material transformation (ABS)	6	0.09	0.07	2.70 %
TOTAL			2.54	100.00 %

Desk lamp

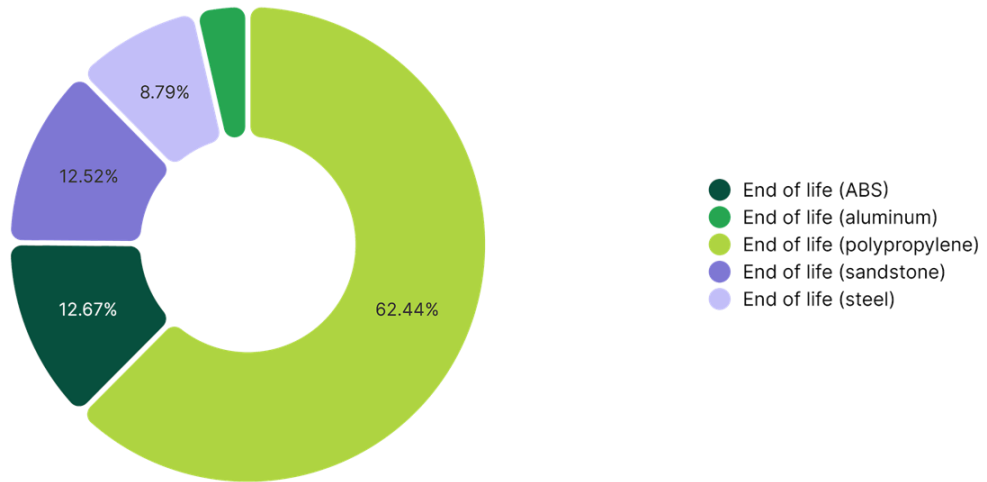
Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
Freight	7	1.55	391.02	100.00 %
TOTAL			391.02	100.00 %

Desk lamp

Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
End of life (polypropylene)	8	0.05	82.93	62.44 %
End of life (ABS)	9	0.05	16.83	12.67 %
End of life (sandstone)	11	1.09	16.63	12.52 %
End of life (steel)	10	0.19	11.67	8.79 %
End of life (aluminum)	12	0.19	4.75	3.58 %
TOTAL			132.82	100.00 %

