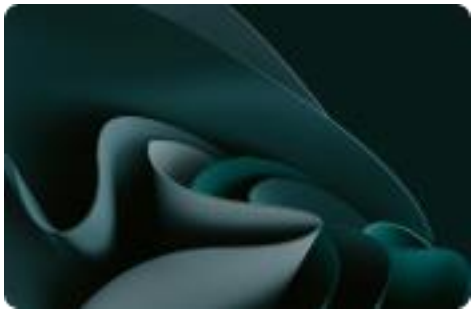
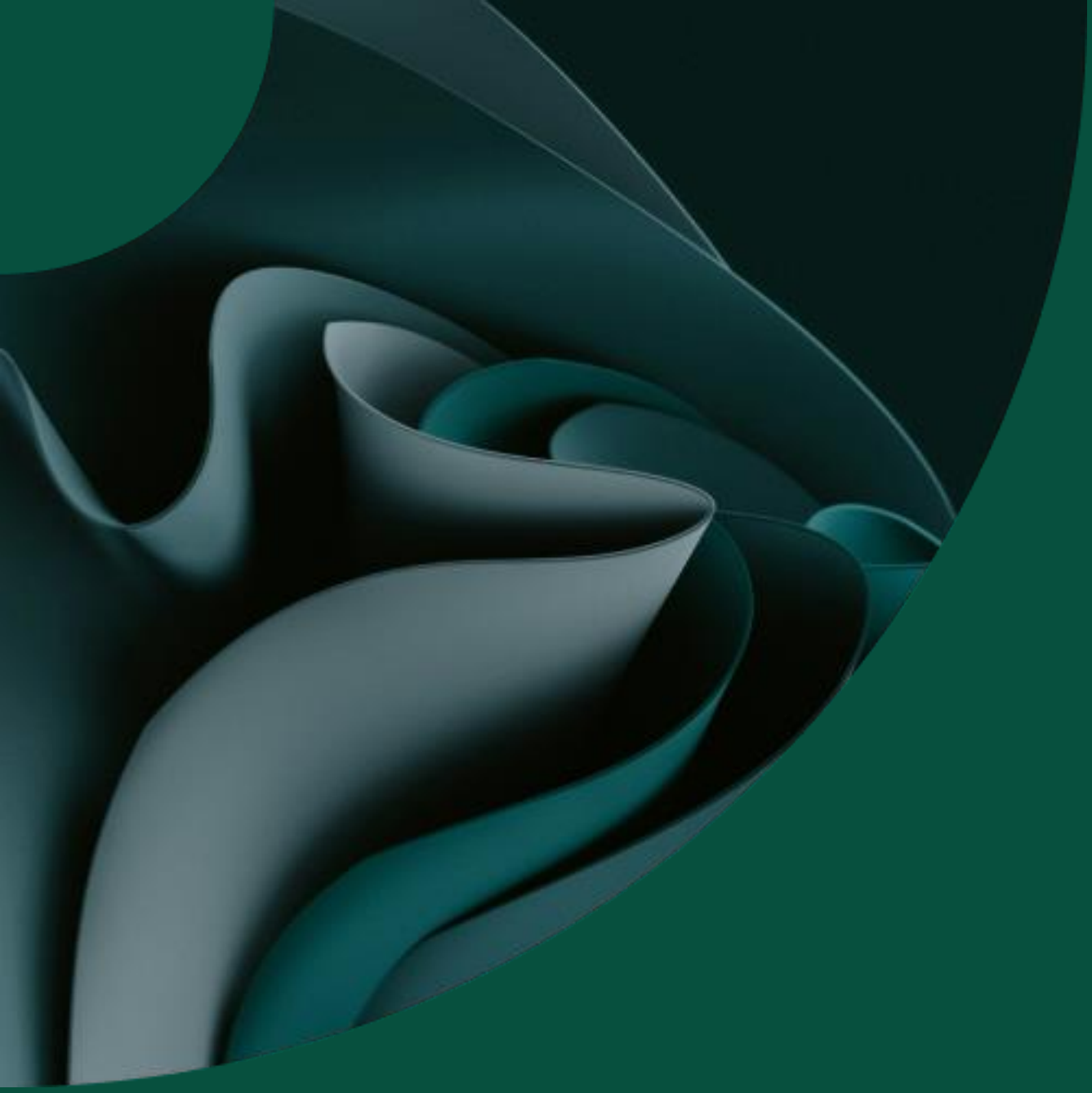
# Life Cycle Analyses

DKBOX LT

# Summary







# 01 Methodology

greenly

# 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 |

# Environmental Impact Assessment

| | |
|---|---|
| **System Boundaries** | |
| **Exclusions** | |

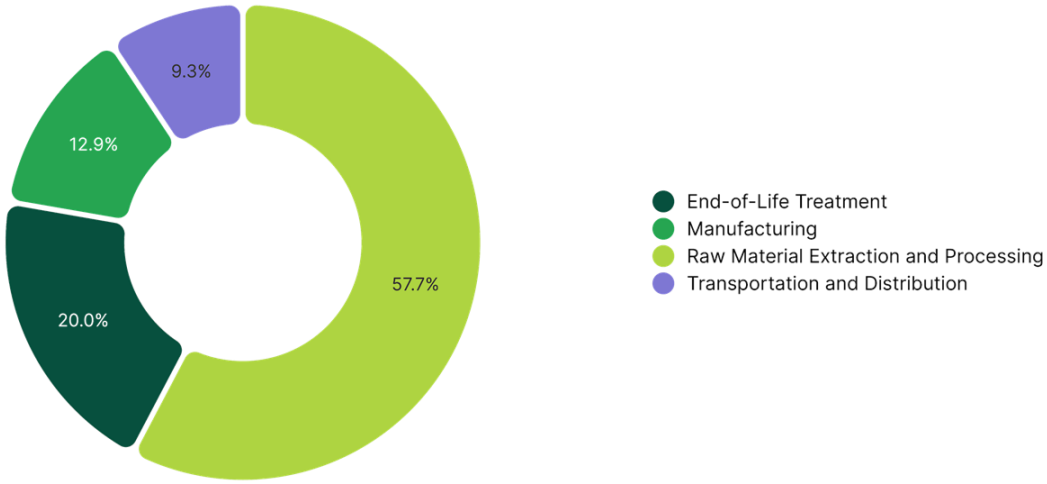
# Emission Factor Inventory

| Num | Emission Factor | Source | Value | Unit |
|---|---|---|---|---|
| 1 | Softwood lumber \| 1kg \| unspecified | BASE EMPREINTE ADEME 3.0 | 0.621811 | kg |
| 2 | Polyethylene terephthalate, granulate, amorphous \| Market activity | ECOINVENT 3.10 | 3.886261094 | 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 | Waste polyethylene/polypropylene product \| Ordinary manufacturing activity | ECOINVENT 3.10 | 1.783532575 | kg |
| 6 | Packaging - Wood - Average end of life in the EPR scheme - Impacts | BASE CARBONE ADEME 22.0 | 0.269 | kg |

# 02 Results

Workstation

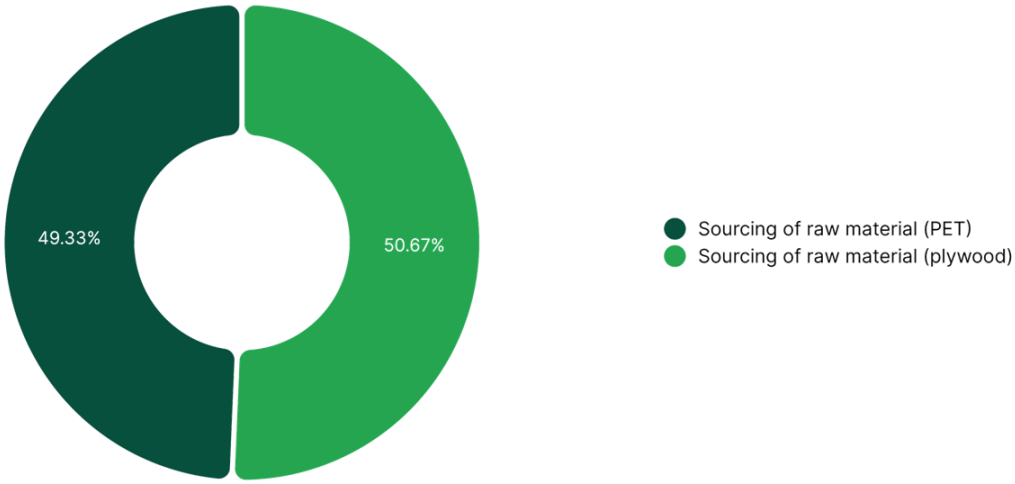
# Climate Change




| Step | Impact ($kg\ CO_2\ eq$) | Percentage (%) |
|---|---|---|
| Raw Material Extraction and Processing | 2.14 | 57.70 % |
| End-of-Life Treatment | 0.74 | 20.04 % |
| Manufacturing | 0.48 | 12.93 % |
| Transportation and Distribution | 0.35 | 9.33 % |
| | | |
| **TOTAL** | **3.7** | **100.00 %** |

Workstation

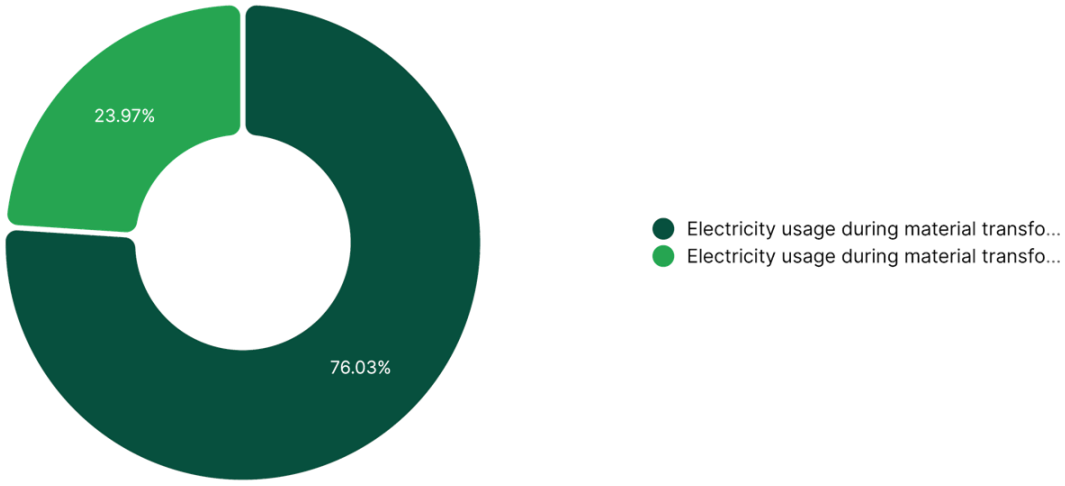
# Climate Change - Raw Material Extraction and Processing




| Activity | Emission Factor Num | Quantity | Impact (kg $CO_2$ eq) | Percentage (%) |
|---|---|---|---|---|
| Sourcing of raw material (plywood) | 1 | 1.74 | 1.08 | 50.67 % |
| Sourcing of raw material (PET) | 2 | 0.27 | 1.05 | 49.33 % |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 2.14 | 100.00 % |

Workstation

# Climate Change - Manufacturing




| Activity | Emission Factor Num | Quantity | Impact (g $CO_2$ eq) | Percentage (%) |
|---|---|---|---|---|
| Electricity usage during material transformation (PET) | 3 | 0.5 | 364.06 | 76.03 % |
| Electricity usage during material transformation (plywood) | 3 | 0.16 | 114.75 | 23.97 % |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 478.81 | 100.00 % |

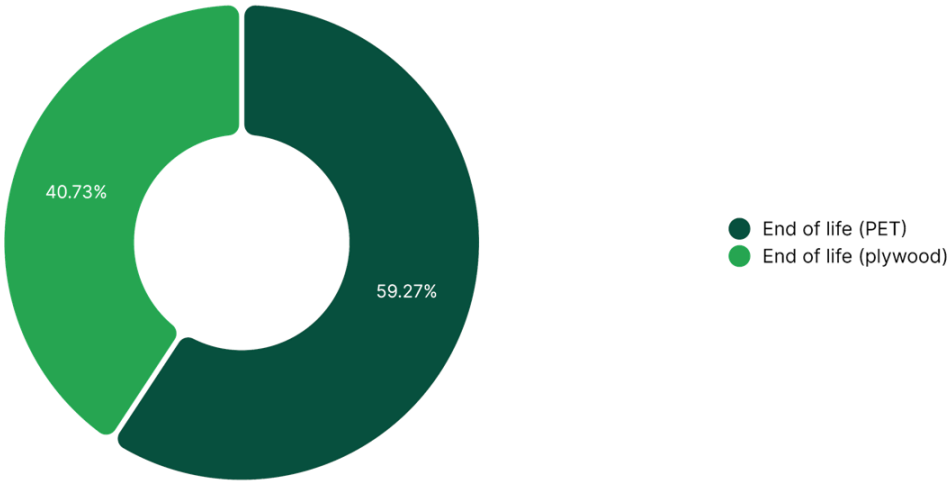
Workstation

# Climate Change - Transportation and Distribution


| Activity | Emission Factor Num | Quantity | Impact (g $CO_2$ eq) | Percentage (%) |
|---|---|---|---|---|
| Freight | 4 | 1.37 | 345.61 | 100.00 % |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 345.61 | 100.00 % |

Workstation

# Climate Change - End-of-Life Treatment




| Activity | Emission Factor Num | Quantity | Impact (g $CO_2$ eq) | Percentage (%) |
|---|---|---|---|---|
| End of life (PET) | 5 | 0.25 | 439.82 | 59.27 % |
| End of life (plywood) | 6 | 1.12 | 302.19 | 40.73 % |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 742.01 | 100.00 % |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