

**greenly**

2025-09-17

Lyreco LCA

# Life Cycle Assessment

*The methodology in this report is based on ISO 14040*

5470746 (sold in FI)

# 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). The functional unit of this analysis is "1 set(s) of bound pages of paper for the purpose of writing".</p>
<p><b>Impact Indicator</b></p>	<p>The impact is measured through the "IPCC 2013 GWP 100a" 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>Hypothesis</b></p>	

# Environmental Impact Assessment

## System Boundaries

The scope of this research includes the complete lifecycle of a notebook from raw material extraction to disposal options for each material, which is the cradle-to-grave perspective.

## Exclusions

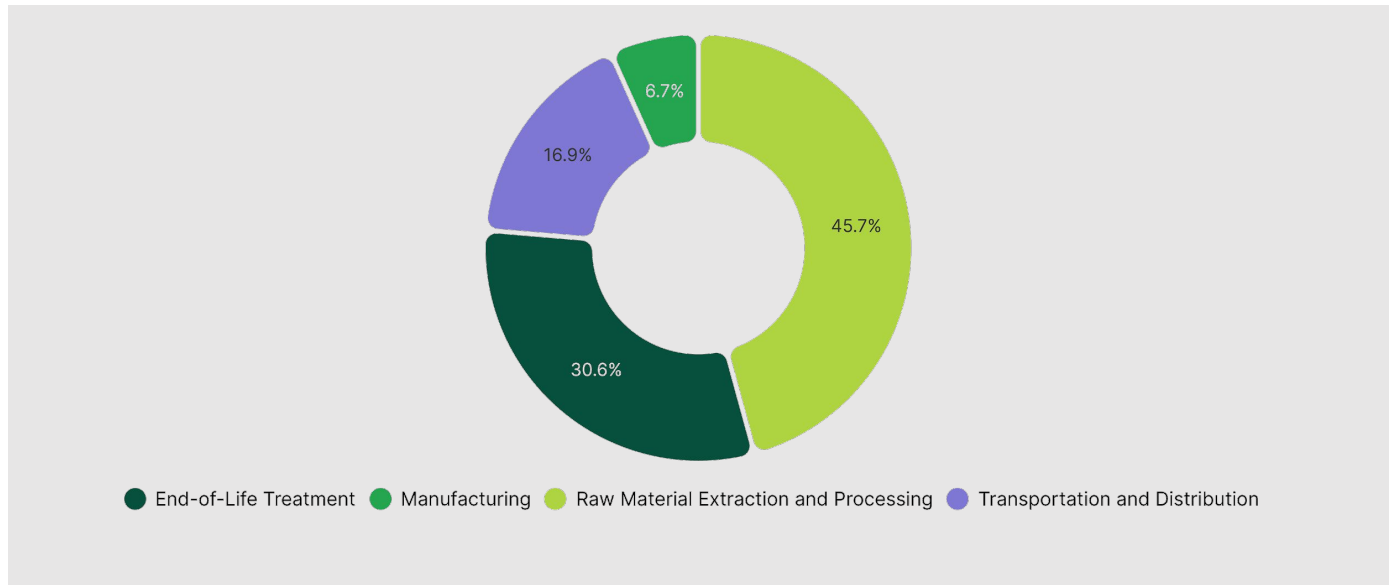
The impact of secondary packaging and writing utensils are excluded from this assessment.

# 02

## Results

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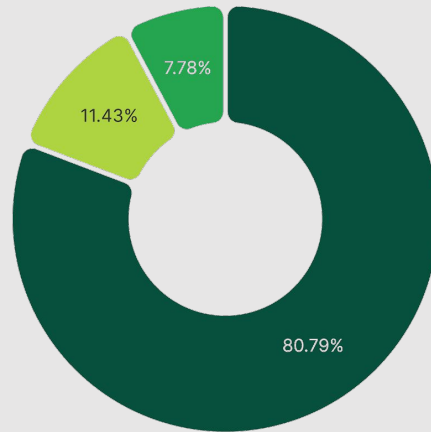
# Climate Change



Step	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Raw Material Extraction and Processing	237.88	45.75 %
End-of-Life Treatment	158.99	30.58 %
Transportation and Distribution	88.08	16.94 %
Manufacturing	35.03	6.74 %
<b>TOTAL</b>	<b>519.99</b>	<b>100.00 %</b>

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# Climate Change - Raw Material Extraction and Processing

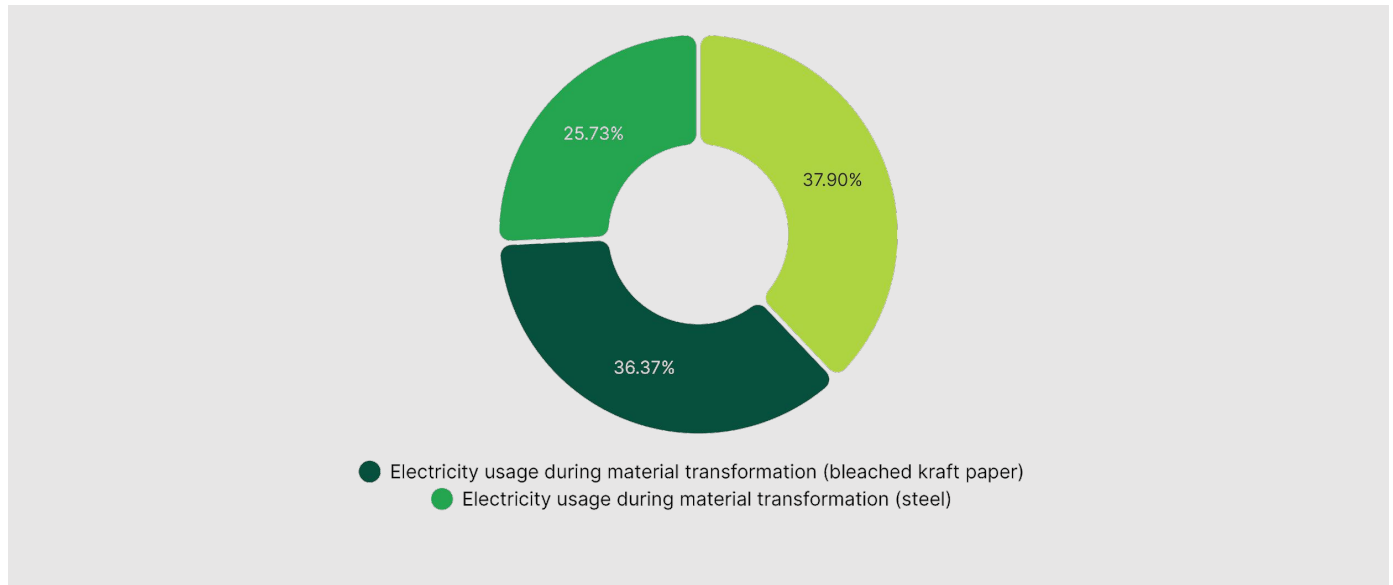


● Sourcing of raw material (bleached kraft paper) ● Sourcing of raw material (cardboard) ● Sourcing of raw material (steel)

Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (bleached kraft paper)	1	0.39	192.2	80.79 %
Sourcing of raw material (steel)	3	0.01	27.19	11.43 %
Sourcing of raw material (cardboard)	2	0.03	18.5	7.78 %
TOTAL			237.88	100.00 %

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# Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Natural gas usage during material transformation (bleached kraft paper)	5	0.07	13.28	37.90 %
Electricity usage during material transformation (bleached kraft paper)	4	0.14	12.74	36.37 %
Electricity usage during material transformation (steel)	4	0.1	9.01	25.73 %
TOTAL			35.03	100.00 %

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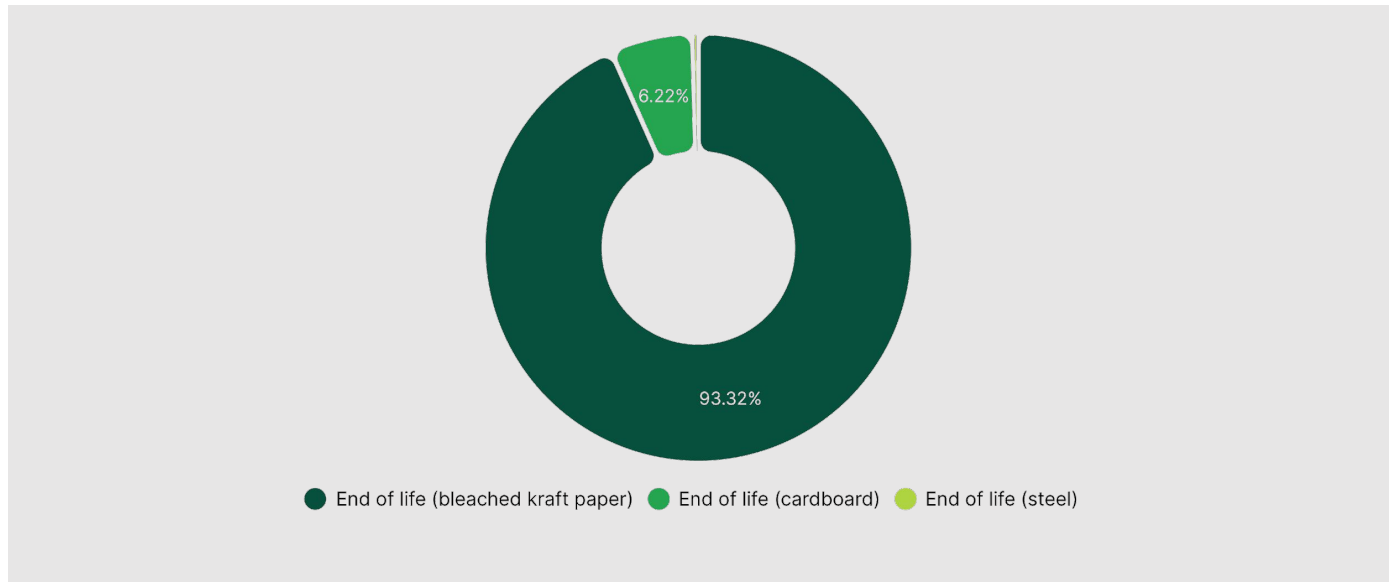
# Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Freight	6	0.29	88.08	100.00 %
TOTAL			88.08	100.00 %

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# Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
End of life (bleached kraft paper)	7	0.26	148.38	93.32 %
End of life (cardboard)	7	0.02	9.89	6.22 %
End of life (steel)	8	0.01	0.72	0.45 %
TOTAL			158.99	100.00 %

# Contact us

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[www.greenly.earth](http://www.greenly.earth)