

**greenly**

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Lyreco LCA

# Life Cycle Assessment

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

6.290.295 (sold in CH)

# Summary



**01** | Methodology



**02** | Results

# 01

## Methodology

# Environmental Impact Assessment

<b>Functional unit</b>	<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).</p> <p>The functional unit of this analysis is "250 page(s) of A4 paper for writing".</p>
<b>Impact Indicator</b>	<p>The impact is measured through the "IPCC 2013 GWP 100a" method.</p>
<b>Electricity impact calculation method</b>	<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>
<b>Hypothesis</b>	<p>Manufacturing Processes and associated loss percentages are assumed based on materials in the product.</p> <p>The electricity is based on the average in the country of manufacturing.</p> <p>Transportation is based on the common routes between the country of manufacturing and the country of sale.</p> <p>No replacements during the lifetime, therefore there are no emissions corresponding to the usage phase.</p> <p>The End of Life is based on the average waste management process of the materials in the product.</p>

# Environmental Impact Assessment

## System Boundaries

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

## Exclusions

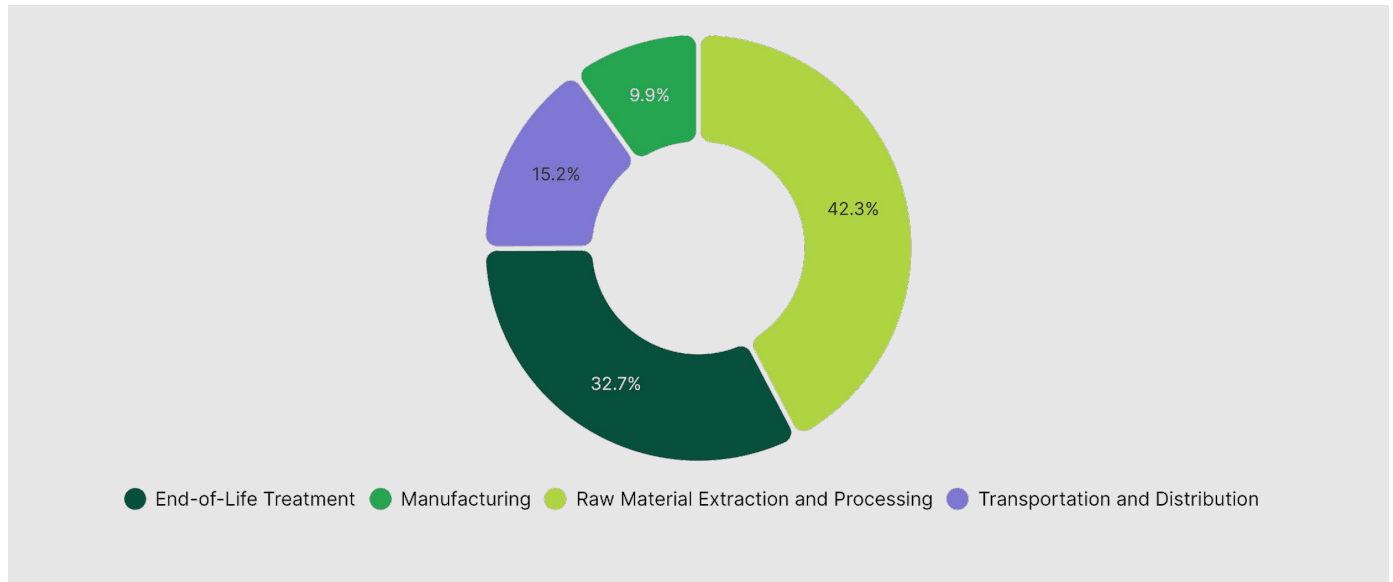
The impact of secondary packaging impact and writing utensils are excluded from this assessment.

# 02

## Results

6.290.295 (sold in CH)

# Climate Change



Step	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Raw Material Extraction and Processing	1.42	42.30 %
End-of-Life Treatment	1.1	32.66 %
Transportation and Distribution	0.51	15.18 %
Manufacturing	0.33	9.86 %
TOTAL	3.36	100.00 %

6.290.295 (sold in CH)

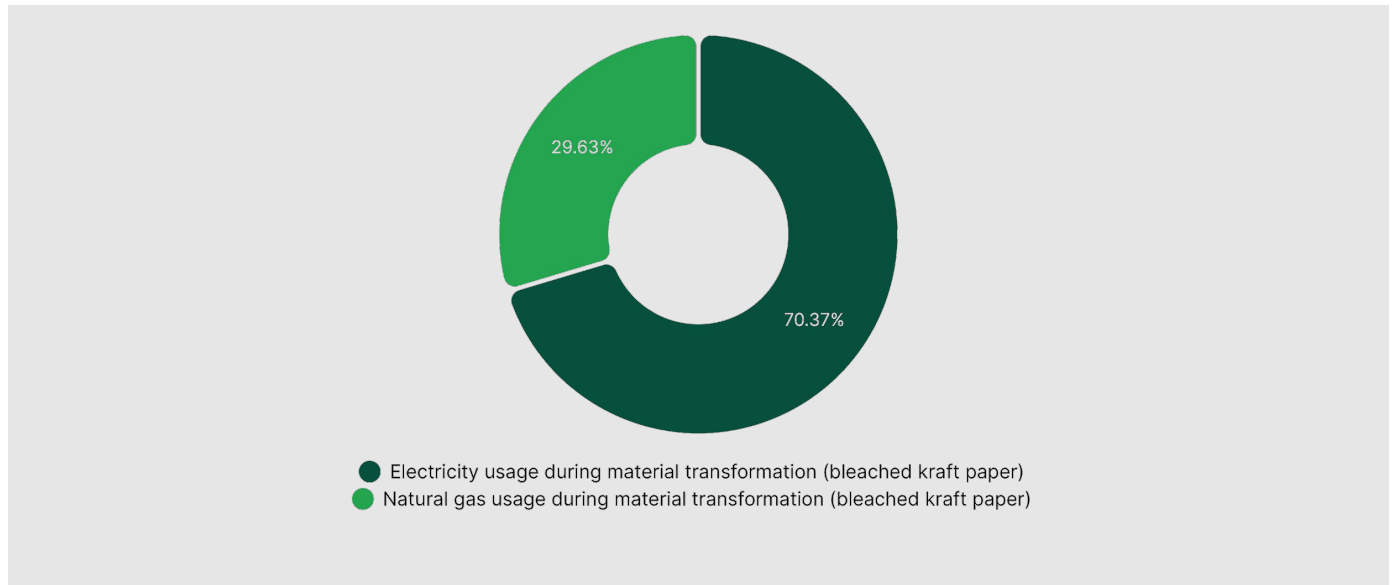
# Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (bleached kraft paper)	1	2.85	1.42	100.00 %
TOTAL			1.42	100.00 %

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# Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Electricity usage during material transformation (bleached kraft paper)	2	1.01	233.18	70.37 %
Natural gas usage during material transformation (bleached kraft paper)	3	0.54	98.18	29.63 %
TOTAL			331.36	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	4	1.9	510.07	100.00 %
TOTAL			510.07	100.00 %

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# Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
End of life (bleached kraft paper)	5	1.9	1.1	100.00 %
TOTAL			1.1	100.00 %

# Contact us

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