

greenly

2025-09-13

Lyreco LCA

Life Cycle Assessment

The methodology in this report is based on ISO 14040

3.045.004 (sold in PL)

Summary



01 | Methodology



02 | Results

01

Methodology

Environmental Impact Assessment

Functional unit	<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 "500 page(s) of A4 paper for writing".</p>
Impact Indicator	<p>The impact is measured through the "IPCC 2013 GWP 100a" method.</p>
Electricity impact calculation method	<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>
Hypothesis	<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

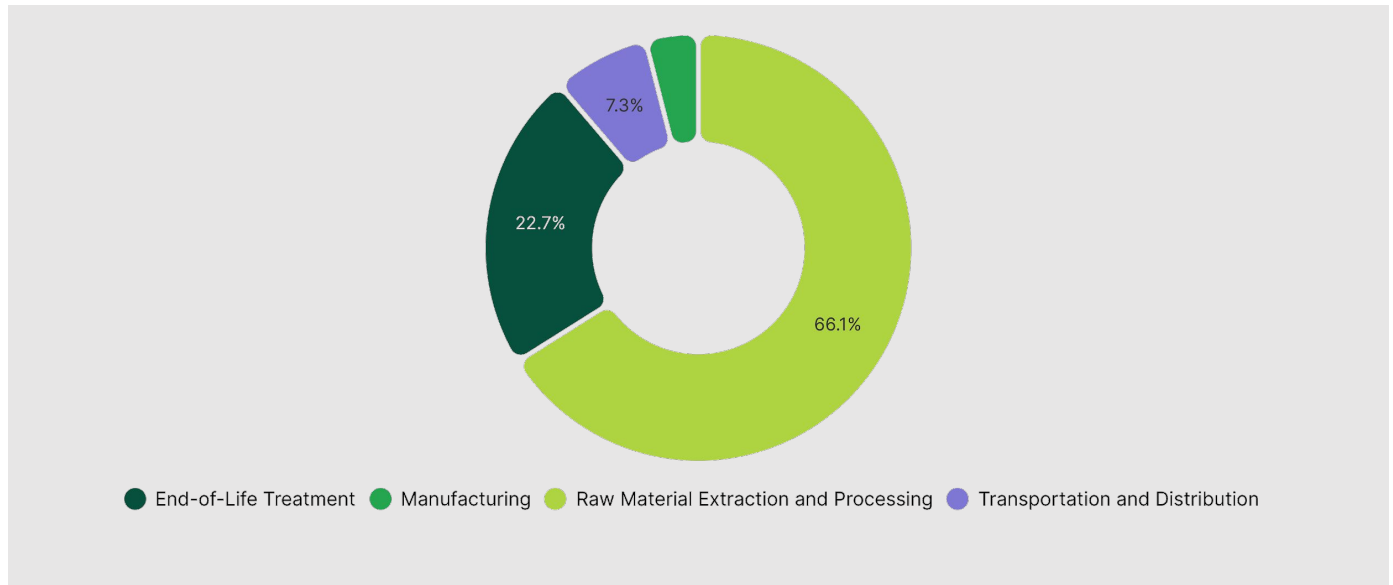
The impact of secondary packaging impact and writing utensils are excluded from this assessment.

02

Results

3.045.004 (sold in PL)

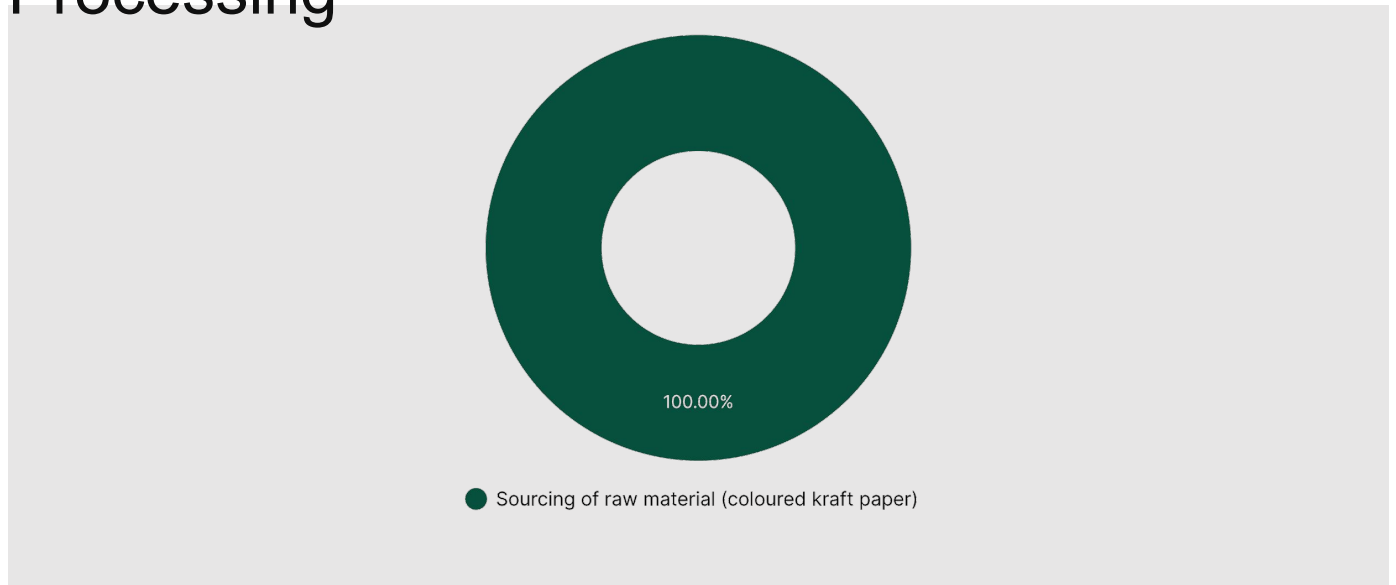
Climate Change



Step	Impact (kg CO ₂ eq)	Percentage (%)
Raw Material Extraction and Processing	4.27	66.07 %
End-of-Life Treatment	1.47	22.67 %
Transportation and Distribution	0.47	7.28 %
Manufacturing	0.26	3.98 %
TOTAL	6.47	100.00 %

3.045.004 (sold in PL)

Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
Sourcing of raw material (coloured kraft paper)	1	3.82	4.27	100.00 %
TOTAL			4.27	100.00 %

3.045.004 (sold in PL)

Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
Natural gas usage during material transformation (coloured kraft paper)	3	0.73	131.23	51.03 %
Electricity usage during material transformation (coloured kraft paper)	2	1.35	125.94	48.97 %
TOTAL			257.18	100.00 %

3.045.004 (sold in PL)

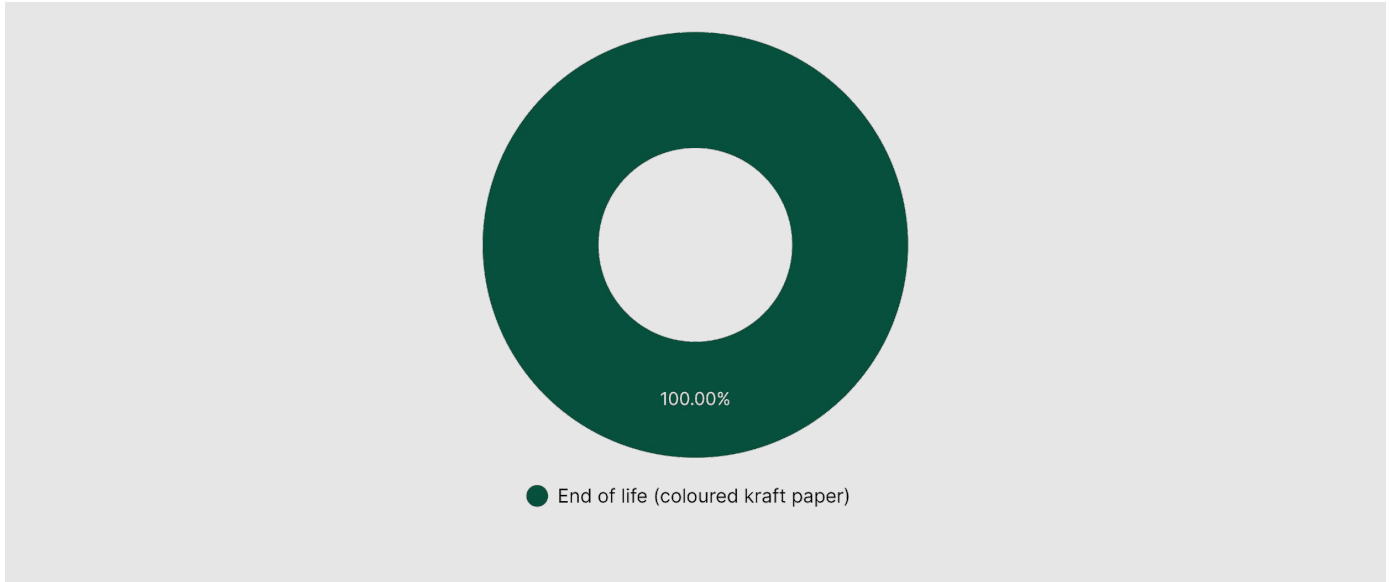
Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
Freight	4	2.54	471.02	100.00 %
TOTAL			471.02	100.00 %

3.045.004 (sold in PL)

Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (kg CO ₂ eq)	Percentage (%)
End of life (coloured kraft paper)	5	2.54	1.47	100.00 %
TOTAL			1.47	100.00 %

Contact us

Alexis Normand CEO

www.greenly.earth