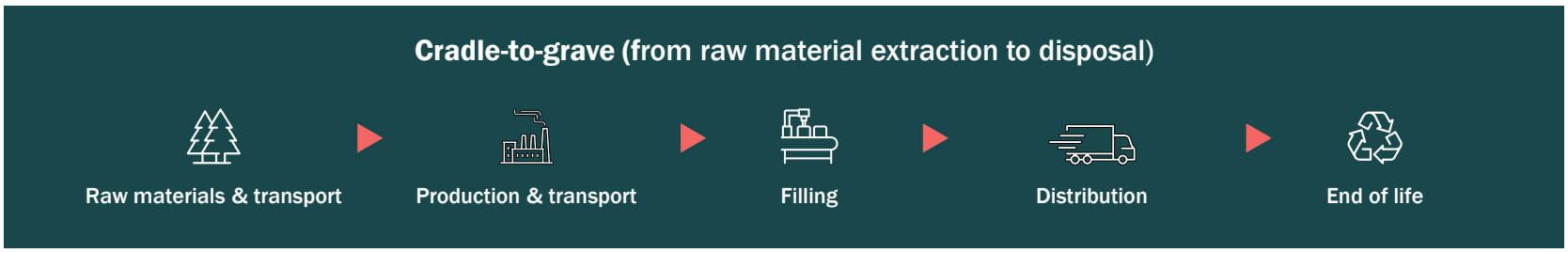
Anthesis

ELOPAK

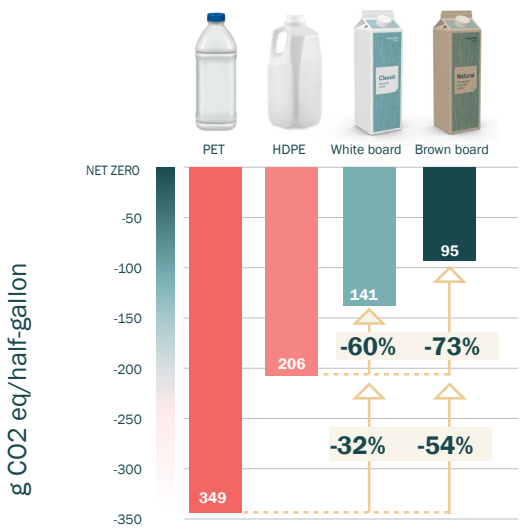


Summary of the comparative life cycle assessment of Elopak beverage cartons and alternative packaging solutions for fresh milk and fresh juice in North America (Canada and USA) – May 2021

A Life Cycle Assessment (LCA) is a tool to quantify the environmental impacts associated with a product, throughout its life cycle. The system boundary for each product system in this LCA was ''cradle-to-grave'', which comprises: the extraction/cultivation and processing of raw materials, manufacturing, forming and filling processes, end-of-life, and all transportation and waste stages.

An independent panel of experts carried out a critical review of the study to ensure compliance with the ISO standards for LCA (ISO 14040 and 14044).

In this LCA, it was assumed that plastic bottles contained post-consumer recycled content, 15% for HDPE bottles and 7,5%for PET bottles which was seen as a conservative assumption in respect of cartons (i.e. favoring competitor bottles to Elopak).



A key focus for this study was the Global Warming impact category, measured in carbon dioxide equivalent.

Over its full life cycle, the average Pure-Pak® carton presents a lower carbon footprint than a typical HDPE bottle or PET bottle used in the same way, in the North American market.

Overview of all impact categories assessed in the LCA, indicating where cartons perform better than plastic bottles

	Key Criteria	White carton	Natural brown carton	Key Comments
1	Global Warming	✓	✓✓	Significant CO_2e reduction versus PET and HDPE
2	Fine Particulate Matter Formation	✓	✓✓	Significant reduction versus PET and HDPE
3	Fossil Resource Scarcity	✓	✓✓	Significant reduction versus PET and HDPE
4	Fresh Water Eutrophication	✓	✓✓	Significant reduction versus PET and HDPE
5	Marine Eutrophication	✓	✓✓	Significant reduction versus PET and HDPE
6	Mineral Resource Scarcity	✓	✓✓	Significant reduction versus PET and HDPE
7	Terrestrial Acidification	✓	✓✓	Significant reduction versus PET and HDPE;
8	Stratospheric Ozone Depletion	✓	✓✓	Impact mostly from the paperboard production and the coating material production. Nylon production is one of the main contributors.
9	Ozone Formation Human Health	✗	✓✓	Impact mostly from fossil fuels-derived energy and direct emissions at paper mills during paperboard production in North America (white carton)
10	Ozone Formation Terrestrial Ecosystems	✗	✓✓	Impact mostly from fossil fuels-derived energy and direct emissions at papermills during paperboard production in North America (white carton)
11	Land Use	✗	✓✓	Forest-based products require some use of land, however, Elopak source only from responsibly managed forests, secured through third party verified certified or controlled sources.
12	Ionizing Radiation	✓	✗	Nuclear power in the grid electricity mix in Sweden (40% nuclear) where the brown paperboard is produced
13	Water Consumption	✗	✗	Cooling water for nuclear power plants in Sweden (brown paperboard) and paperboard production in North America (white carton)

Contact your Elopak sales representative if you wish to have a presentation of the complete results

Detailed information on the methodology, data sources, assumptions, references and results is available upon request.