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LIFE CYCLE ASSESSMENT AND EPD FOR

FORPET BALTIC SIA

330ML CUP & LID

2023

SUMMARY

01

RESULTS OF IMPACT
ASSESSMENT

02

COMPARISON WITH
COMPETITORS





01

RESULTS OF IMPACT ASSESSMENT

RESULTS

GENERAL INFORMATION

Product description

PET cup and PET lid, are PET products that are made from up to 100 % recycled material and provide a meaningful alternative to the other plastic and paper products. They are more environmentally friendly and offer several economic benefits as well. Both products are foamed in the same manufacturing plant in Ventspils, Latvia.

Declared unit

The declared unit is one (1) PET cup and one (1) PET lid.

Software and method

SimaPro 9.4 (Ecoinvent v3.8)

IPCC 2021 GWP100 V1.00; CML-IA baseline; Pfister et al 2009 (Water Scarcity) V1.02; Cumulative Energy Demand (LHV) V1.00 / Cumulative energy demand; Selected LCI results, additional V1.04; EDIP 2003 V1.07 / Default

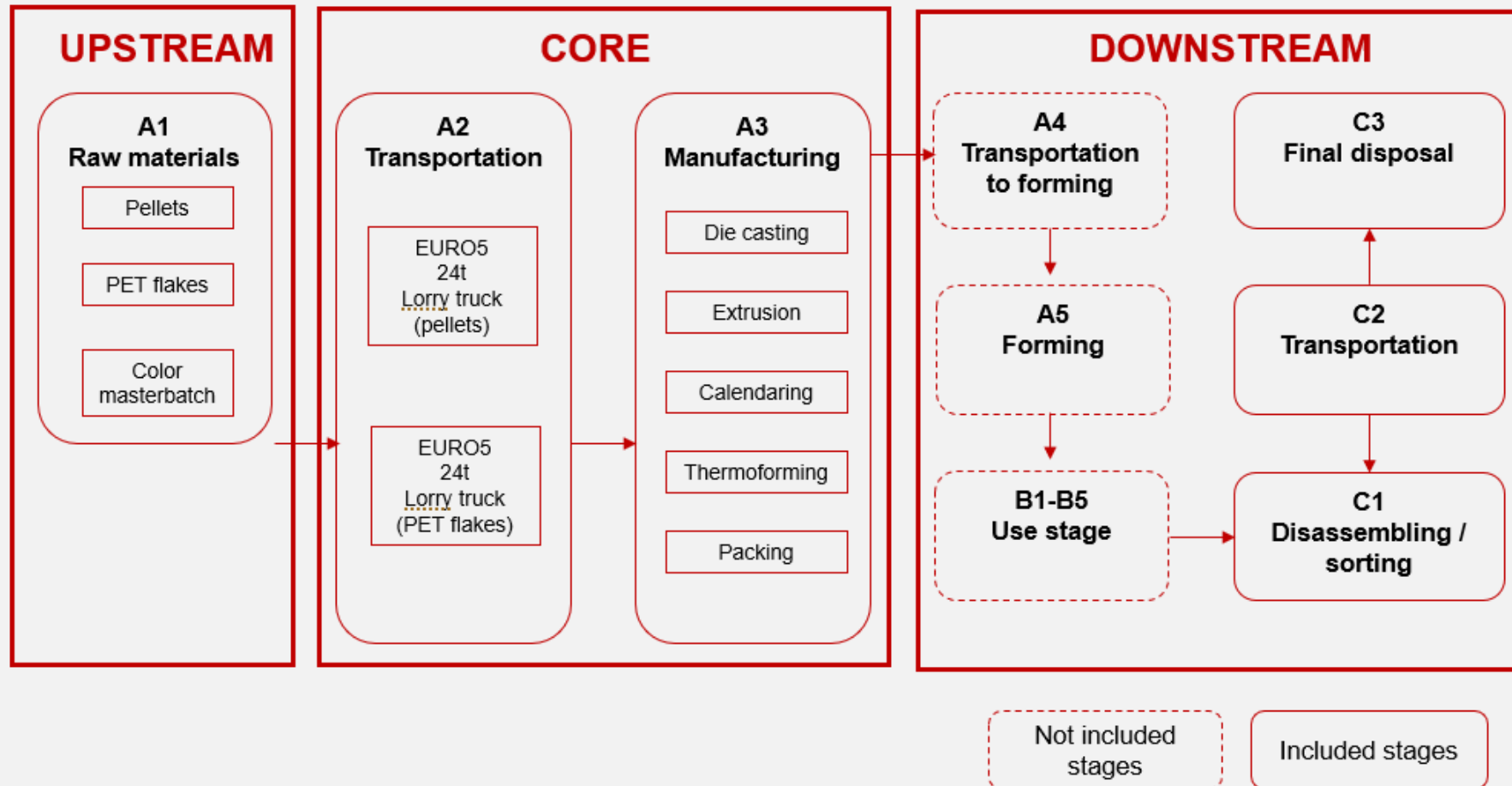


RESULTS

GENERAL INFORMATION

System boundaries

Cradle to gate with options. The LCA was carried out considering the product stage A1-A3 and modules C1–C3.



RESULTS

END-OF-LIFE SCENARIOS

01

EU27 scenario (main)

- 41% recycling
- 25.7 % landfill
- 33.4 % incineration

02

LV scenario

- 44.1 % recycled
- 25 % landfill
- 30.9 % exported

03

100% recycling scenario

- 100 % of the product
(including packaging)
is recycled

RESULTS

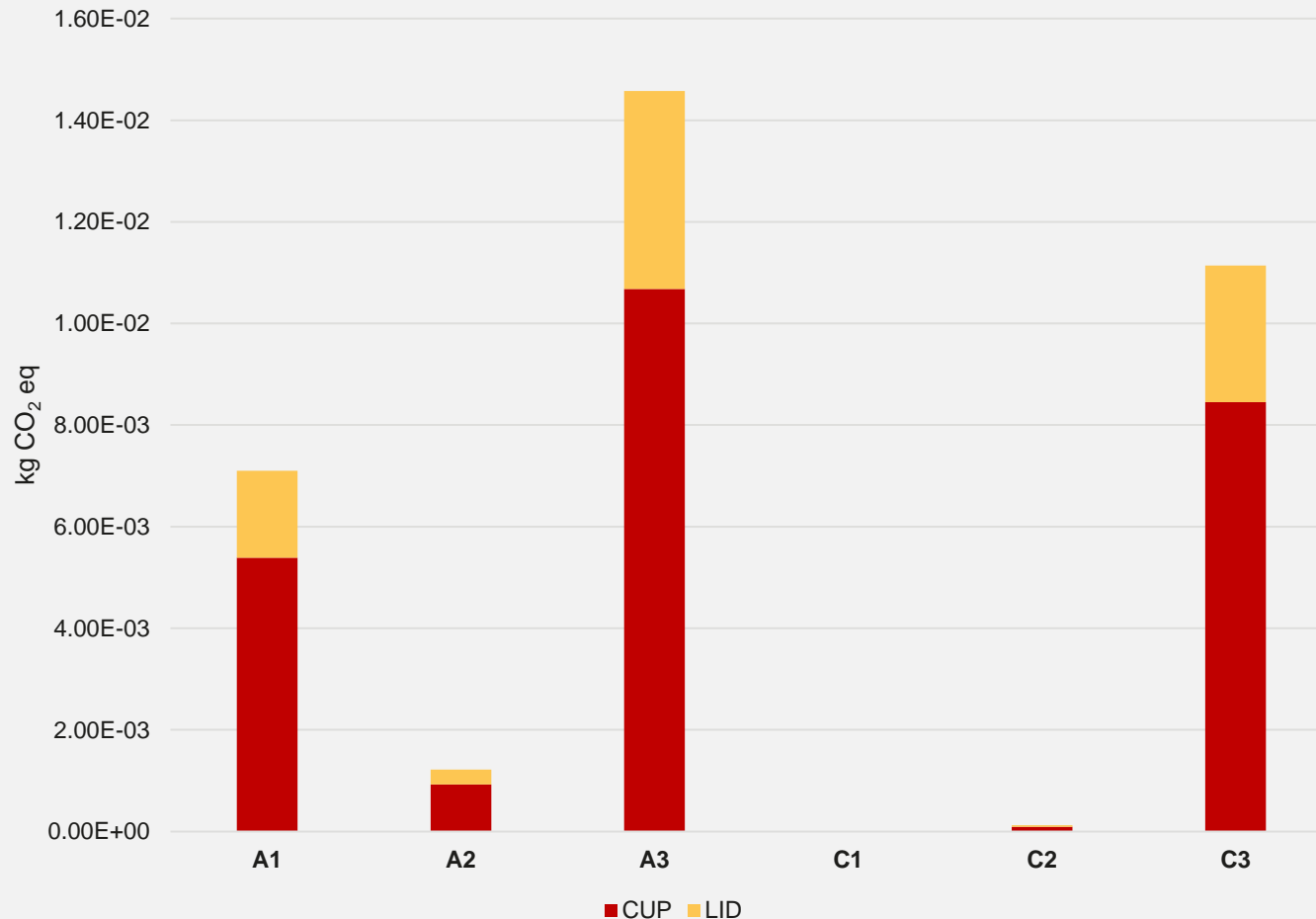
INTERPRETATION

- The impact on the various environmental impact categories in the life cycle of declared unit of both PET products is **primarily (>40%) driven** by the **Core stage (A2-A3), more precisely - Manufacturing (module A3)**.
- There are environmental impact categories, where other modules also has significant impact, e.g. module C3 in Cumulative energy demand, especially non-renewable – fossil impact category and module A3 in marine aquatic ecotoxicity impact category.
- Modules A2 and C2 takes on a minor role in overall PET products environmental impact. Additionally, module C1 does not give any impact, due to the assumption that for sorting and disassembling the product (lid and cup) energy is not needed.
- At the climate change level, the PET products deliver a total impact of **0.0342 kg CO₂ eq/DU**, **0.0255 kg CO₂ eq/DU** for the PET cup and **0.0086 kg CO₂ eq/DU** for the PET lid. The resulting value on climate change is driven mainly by the amount of fossil carbon emitted from the core or manufacturing (module A3).
- The **End-of-Life stage plays a significant role** in the environmental performance of the products in GWP environmental impact category (**32.97%**).

RESULTS

GLOBAL WARMING POTENTIAL

Climate change - Total



- Model for PET cup with lid with EU27 waste scenario is shown
- In Module A1, 74.76 % comes from PET cup and 25.24 % comes from PET lid
- In climate change impact category, most of the impact in Module A3 comes from packaging materials, in Module C3 from waste incineration and in Module A1 from pellets.



02

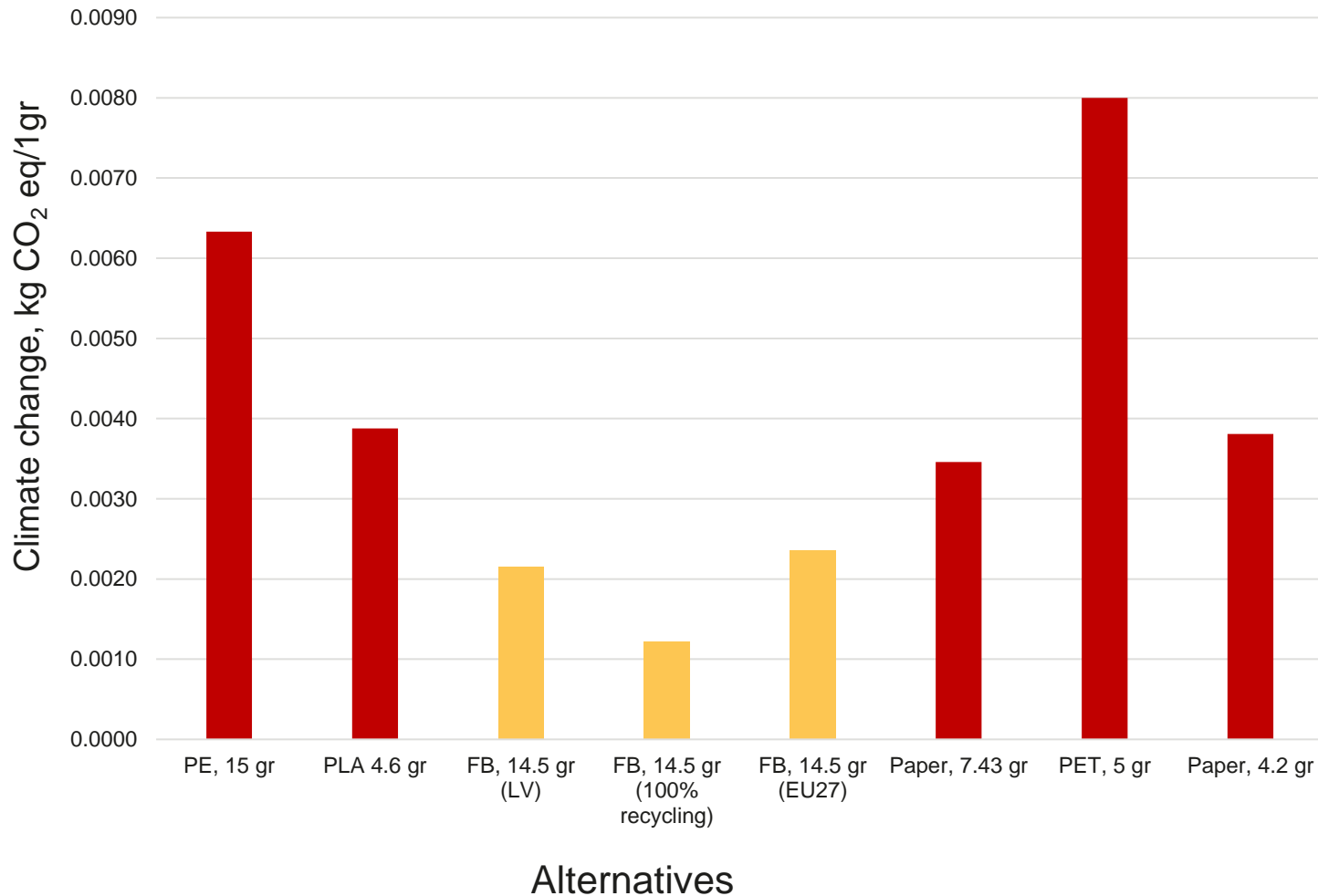
COMPARISON WITH COMPETITORS



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COMPARISON

ALTERNATIVES (1)



- PET cup and lid from Forpet Baltic has the least environmental impact compared to other alternatives based on kg CO₂ eq/1 gr
- Additionally, main PET product scenario has bigger environmental impact than other two developed scenarios, thus providing possibility for this PET product to have even less environmental impact



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