



BLUE PLASTICS

Revolutionising plastics recycling one piece at a time

Blue Plastics March 2023

Circular chemistry conference

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PART OF THE SOLUTION TO END PLASTIC WASTE

Alliance to End Plastic Waste



THE ALLIANCE PRIZE 

CIRCULAR SOLUTIONS FOR FLEXIBLES

global challenge and alliance prize contest 2020 : US\$3 million for game-changing solutions to advance a **circular economy for flexibles.**

We, a dutch start-up, were selected as finalist!!!!
From more than 600 competing technologies

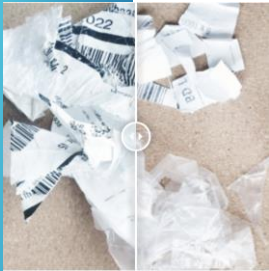




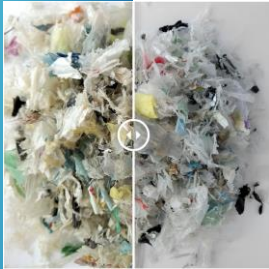
Household PE with red ink



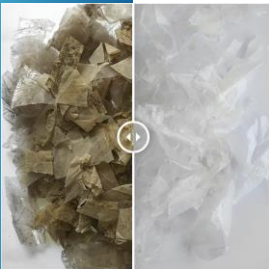
LDPE bag with print ink



LDPE packaging with paper labels



Household PE mix
precleaned with water



Agricultural LDPE with typical
impurities

Blue Plastics - CBT – Washing without water – Cleaning without damaging

Product

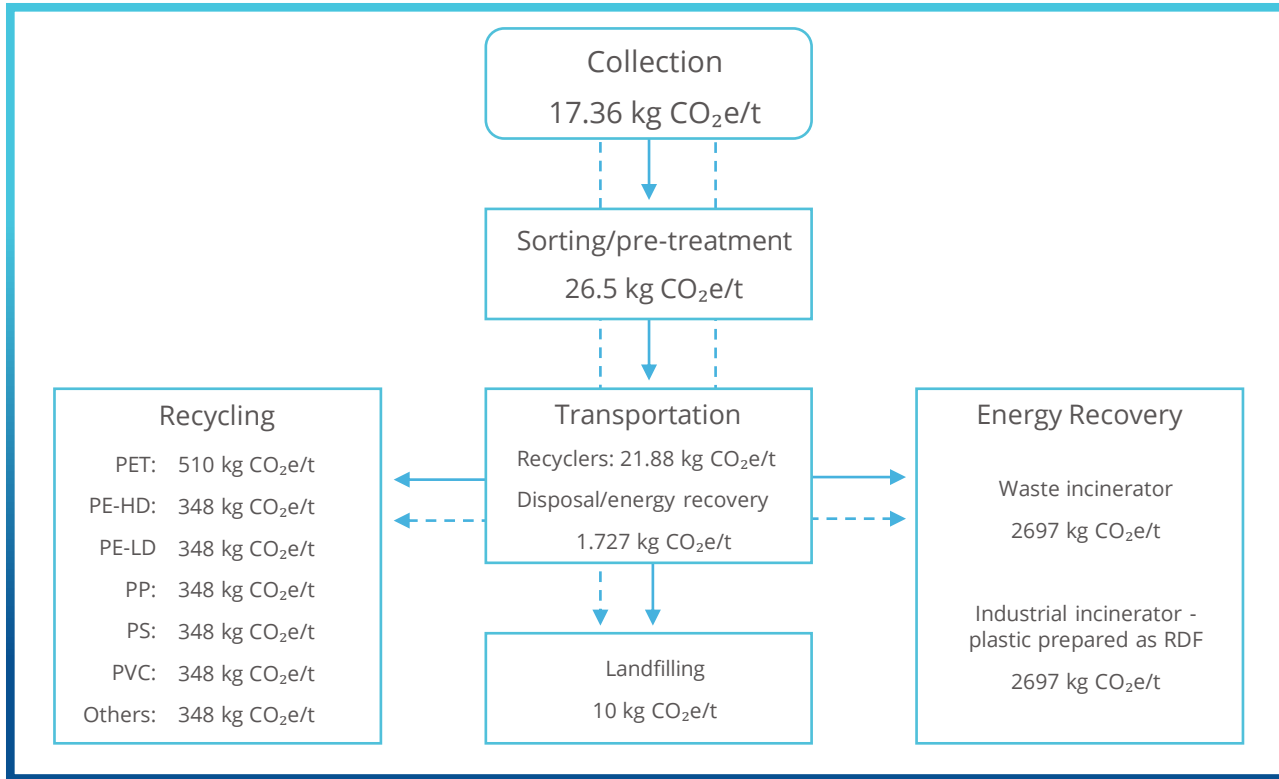
- No more odours/smell
- Clean from paints, inks and organic residues / oils
- 78% saving of CO2 footprint vs prime
- Circular use possible

Clean **B**lue **T**ech process (**CBT**)

- Solvent based washing
- Efficient washing and drying
- Closed loop use of the biodegradable solvent
- 70% less energy than hot water wash
- Removal of paper (stickers)



Direct GHG emissions



Avoided GHG emissions (-)

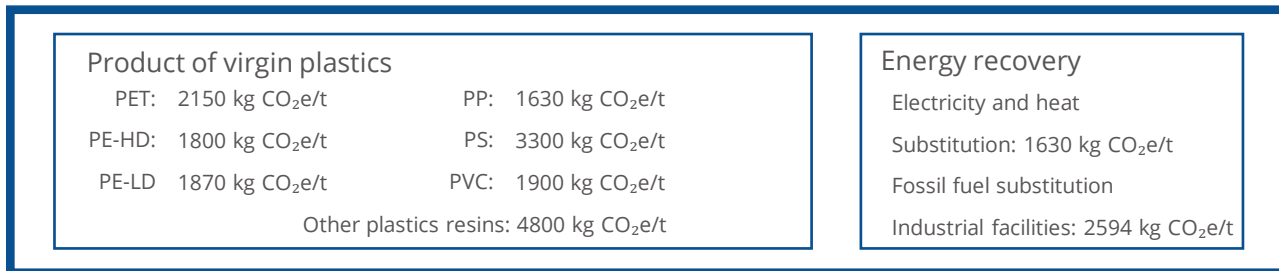


Figure 5: GHG emissions factors used along the plastic recycling value chain

All emission factor presented above correspond to 1 tonne of input plastic waste, except the operations of recycling and the production of virgin plastics where the emission factors refer to 1 tonne of output material.

Blue Plastics CO₂ Footprint

CO₂ balance

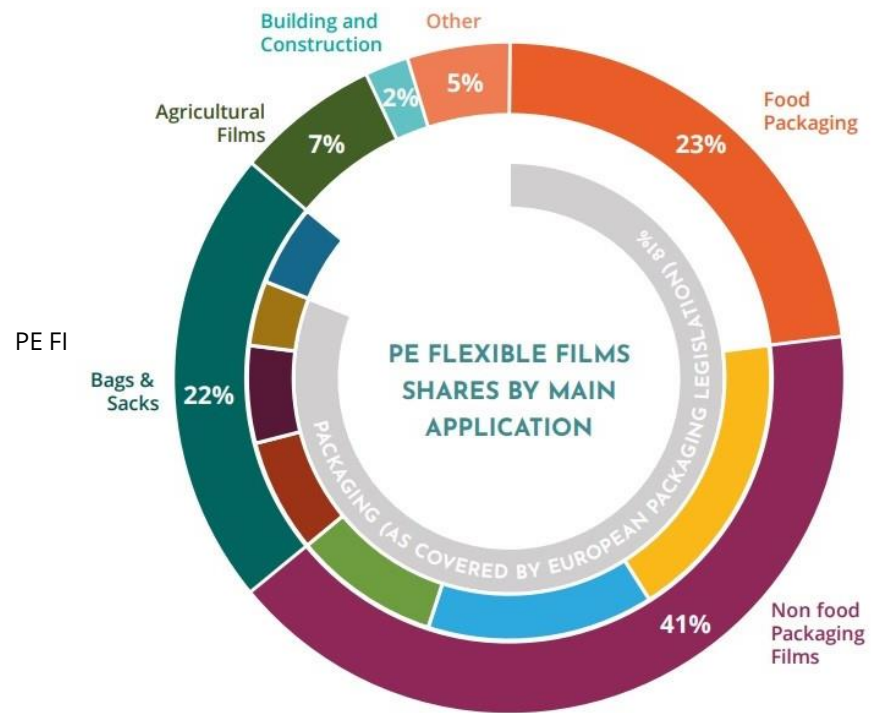
- Prime LDPE **1870 kg CO₂ e/t**
- Energy recovery/chemical recycling
 $17,36 + 26,5 + 1727 + 1870 = \mathbf{3640,86 \text{ kg CO}_2 \text{ e/t}}$
- Mechanical recycling
 $17,36 + 26,5 + 21,88 + 348 = \mathbf{413,74 \text{ kg CO}_2 \text{ e/t}}$

Blue Plastics 24kt Plant creditable savings

- > **35kt** CO₂ vs Prime
- > **77kt** CO₂ vs Chemical recycling

Deloitte Increased EU Plastics Recycling Targets:
Environmental, Economic and Social Impact Assessment





- | | |
|---|---|
| ● Refuse sacks | ● Heavy duty bag |
| ● Carrier bags | ● Film on reel |
| ● Other bags/sacks | ● Shrink film |
| | ● Stretch film |

Blue Plastics focus

Feed product selection

- The total converters demand for LDPE/LLDPE in the EU has a share of close to 18% of the total market. The EU converters' Demand for PE film remains stable in the last decade at a level of around 9 million tonnes.
- Non food transport packaging mostly mono structure e.g. low hanging fruit.
- Circular use possible – aim for prime replacing quality





European Union and Dutch recycling targets

Green deal

- Net zero emissions - 2050 (to be legislated).
- 50-55 percent emissions reductions from 1990 levels by 2030.

Plastic tax

- Revenue collection based on non recycled plastic consumption 10 - 15 major economies will be levied.
- Each to design own Plastics Tax - different state taxed.

Energy taxation Directive (ETD)

- Broad tax base now including aviation, maritime and fishing.
- Tax rates according to energy content and environmental content, not volume.
- Price signals reinforcing innovation and investment. Anti-fossil fuels.

Carbon Border Adjustment Mechanism (CBAM)

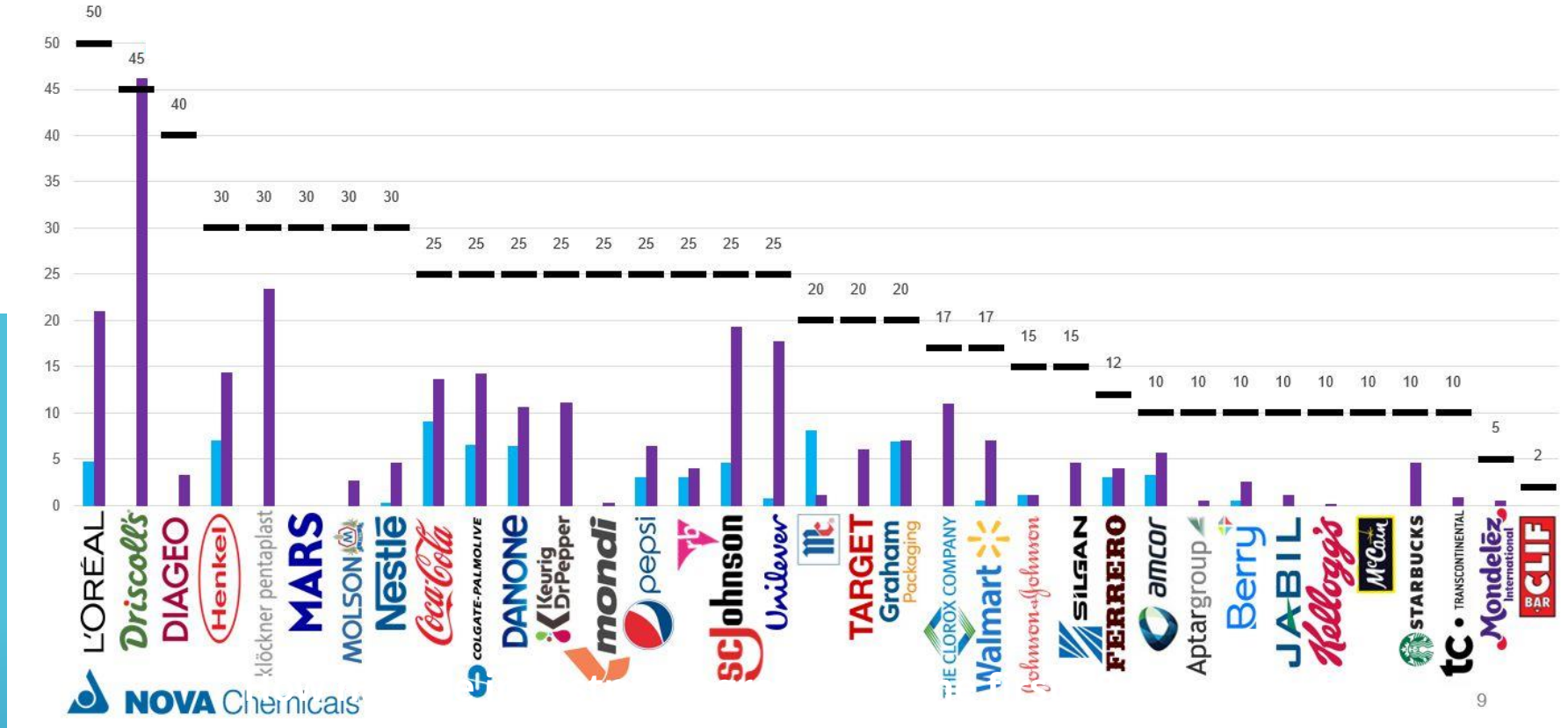
- Shadow ETS applied to certain high emissions imported covered goods.
- Aim: applies equivalent carbon costs between imports and locally produced goods.

Emissions Trading System (ETS)

- Pricing of carbon inside the EU with many sectors regulated through the ETS.
- Withdrawal of some free allocations in parallel with CBAM introduction.

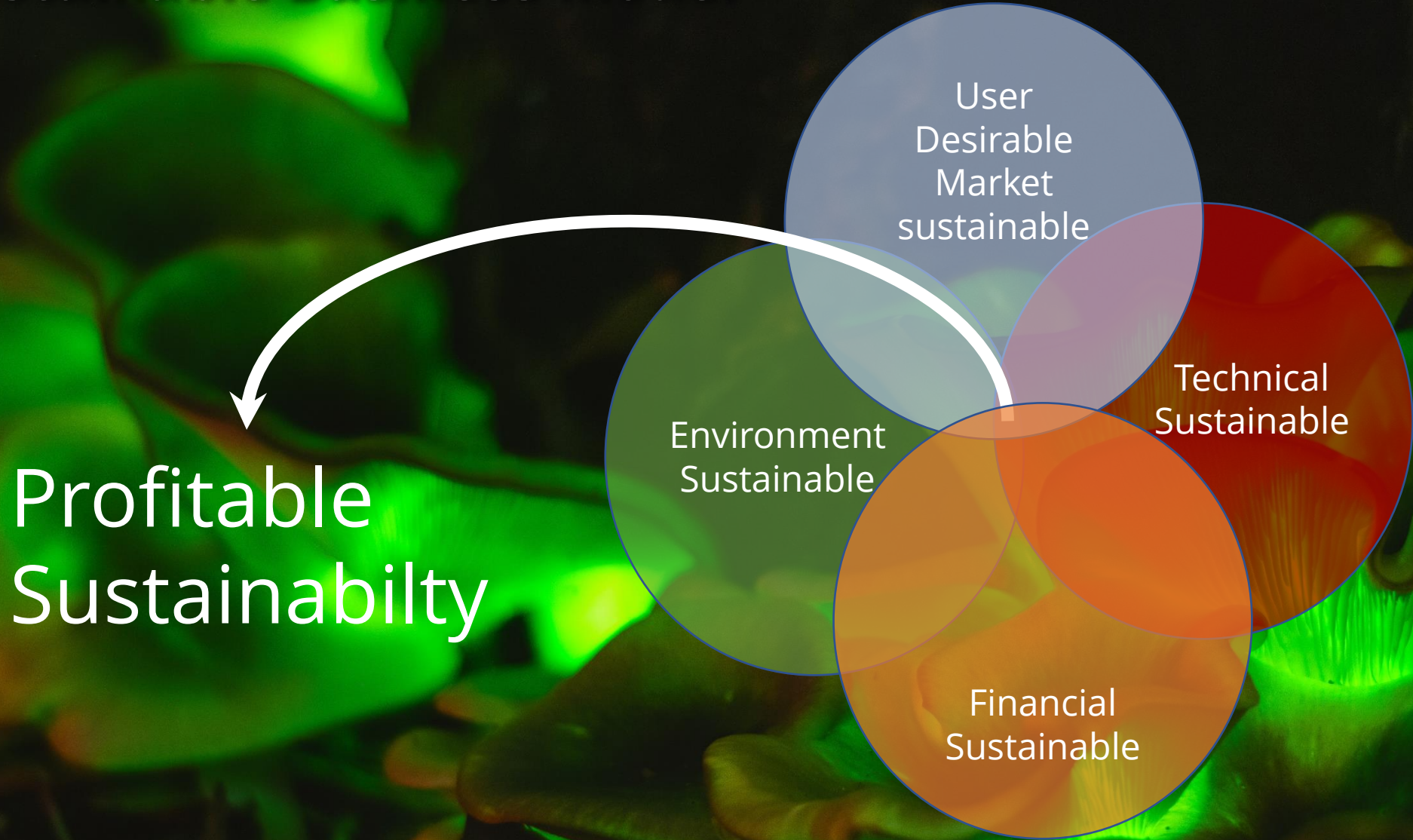
How has the industry progressed in the first 48 months?

● 2018 Post-consumer recycled content (% of total new plastic packaging weight)
 ● 2021 Post-consumer recycled (% of total new plastic packaging weight)
 - PCR incorporation goals



Industry movements

Sustainable Business model



Profitable
Sustainability



Blue Plastics focus

As start-up/scale-up you need to focus on your core strength/business

- Marketing / Sales / logistics
- Production / People / Environment
- Purchasing / Raw material / logistics
- Building / Permits / Support

Blue Plastics working towards a **CLEAN WORLD WITHOUT PLASTIC WASTE**

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