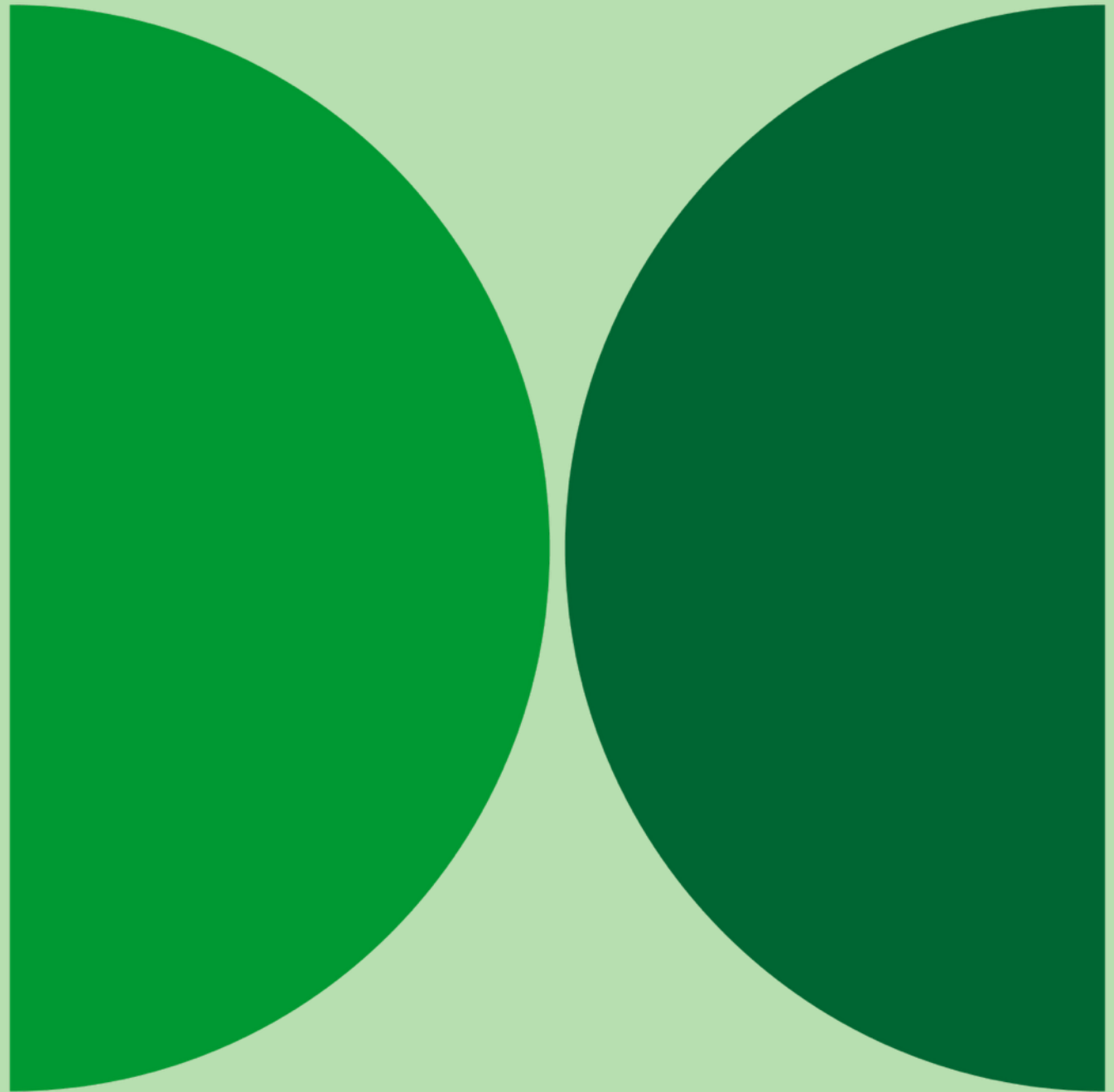


Innovations in the material cycle of waste containers

ESE / PWS

Reinier Den Boer & Sari Tirronen

7.10.2026

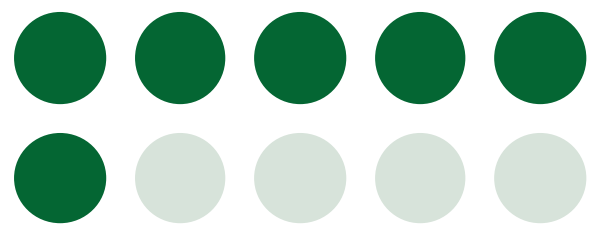




RECYCLING IN FINLAND



Wheely bin tenders in Finland



60%+

of Finns live in municipalities targeting carbon neutrality or –80% emissions by 2030

Waste containers tendered in Finland



0 tenders required recycled material

One 2025 tender only said recycled material could be used.

99%



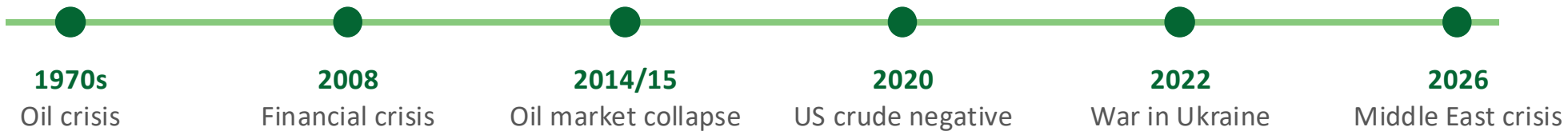
recycled material in the grey PWS container

Public procurement is key to the plastic circular economy!





Every oil shock becomes a plastics bottleneck.
Recycled plastics is more relevant now than ever





Closed loop

First in Finland to launch a closed loop for waste containers.

Locally harvested materials!



17 PARTNERSHIPS
FOR THE GOALS



fluor



FINNCONT[®]
CONTINUITY



1. Hand-dismantled. Quality-controlled.

Axles, wheels and every non-plastic part come off by hand at Kesrec — then the recyclate is quality-checked.



2. Shredded, stockpiled.

Dismantled containers are shredded, then piled by material.



3. Re-granulated and color-checked.

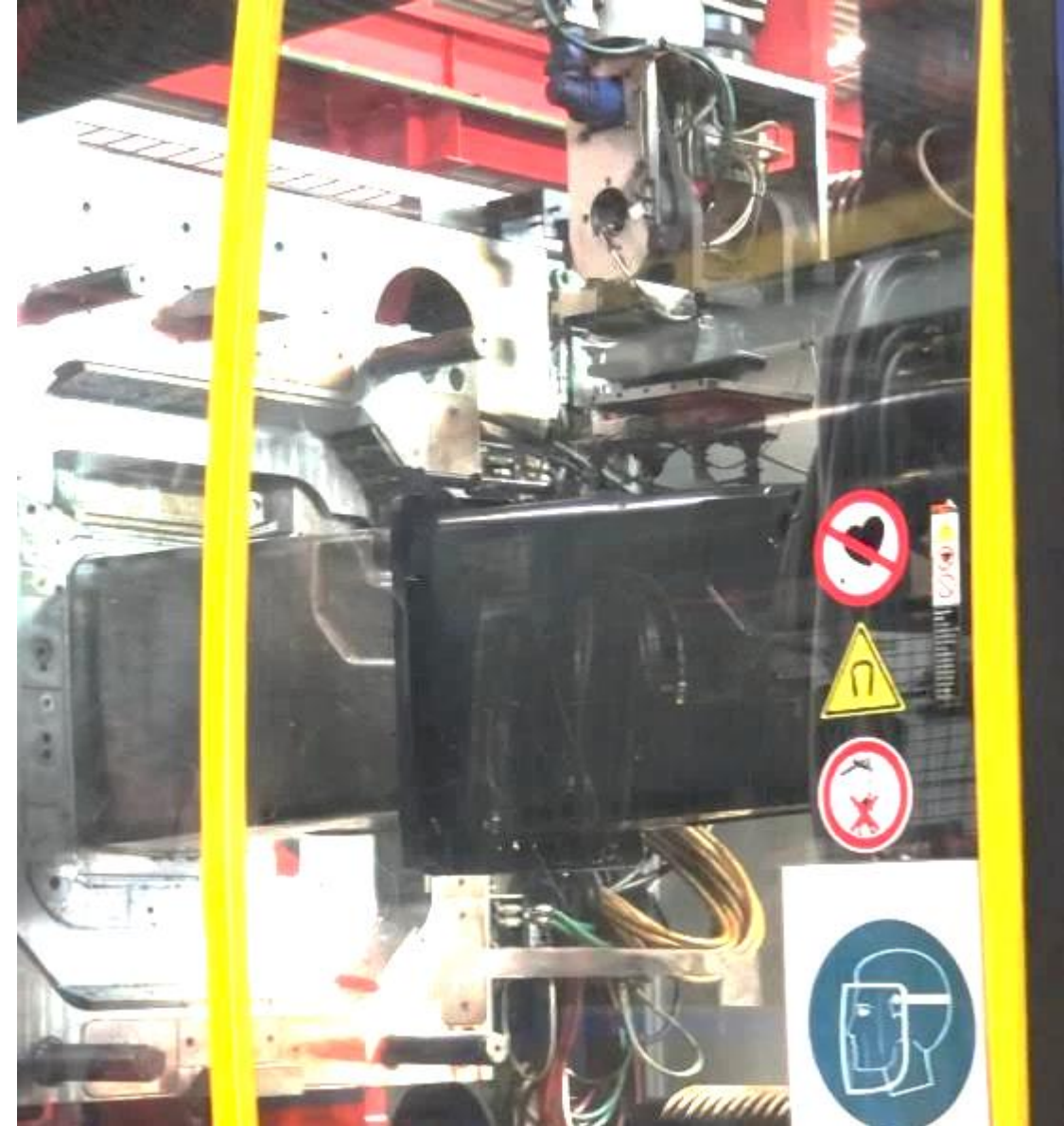
HDPE becomes pellets





4. We make recycling transparent!

New future-proof products are made from up to **99%** recycled plastic.





PRODUCT DEVELOPMENT & CIRCULAR ECONOMY



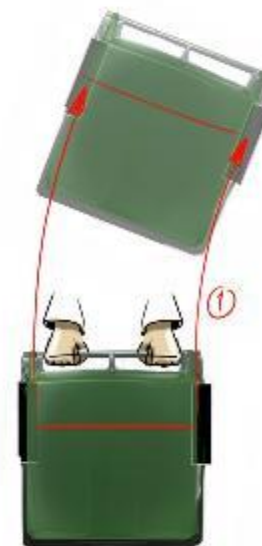
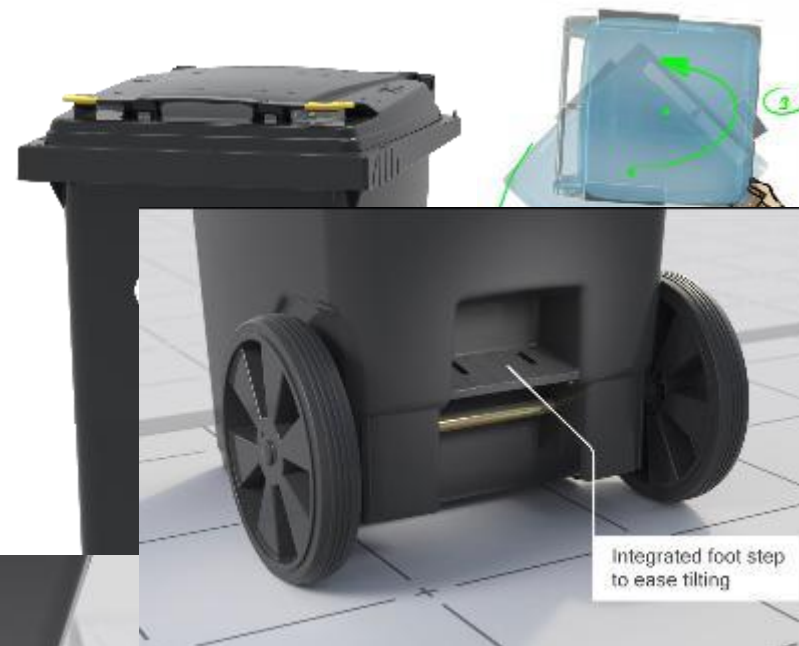


PWS Originals

Quattro Select



3-wheel 243L & 373L



PWS original 2005



Larger wheels to overcome obstacles

PWS original 2009





FlipLid

PWS Original
2019





ERGOSTEP®

Climbing the Curb

One small step

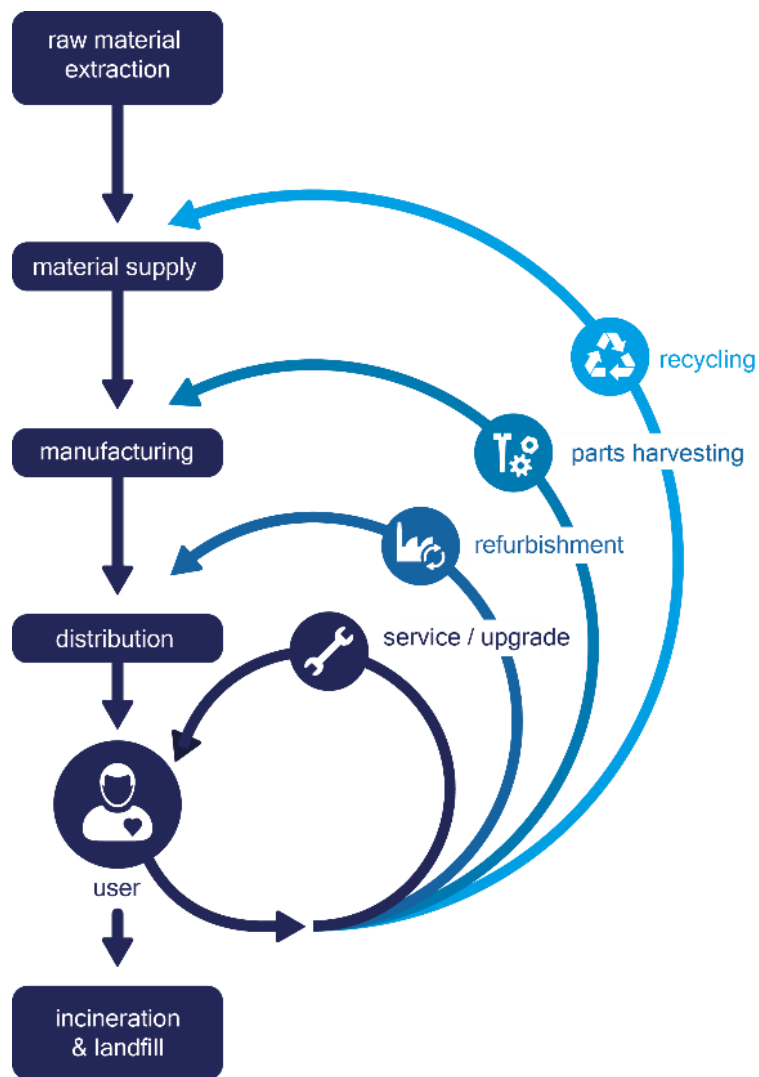
One big help

Relieves repetitive strain
on the shoulderds

Social responsibility

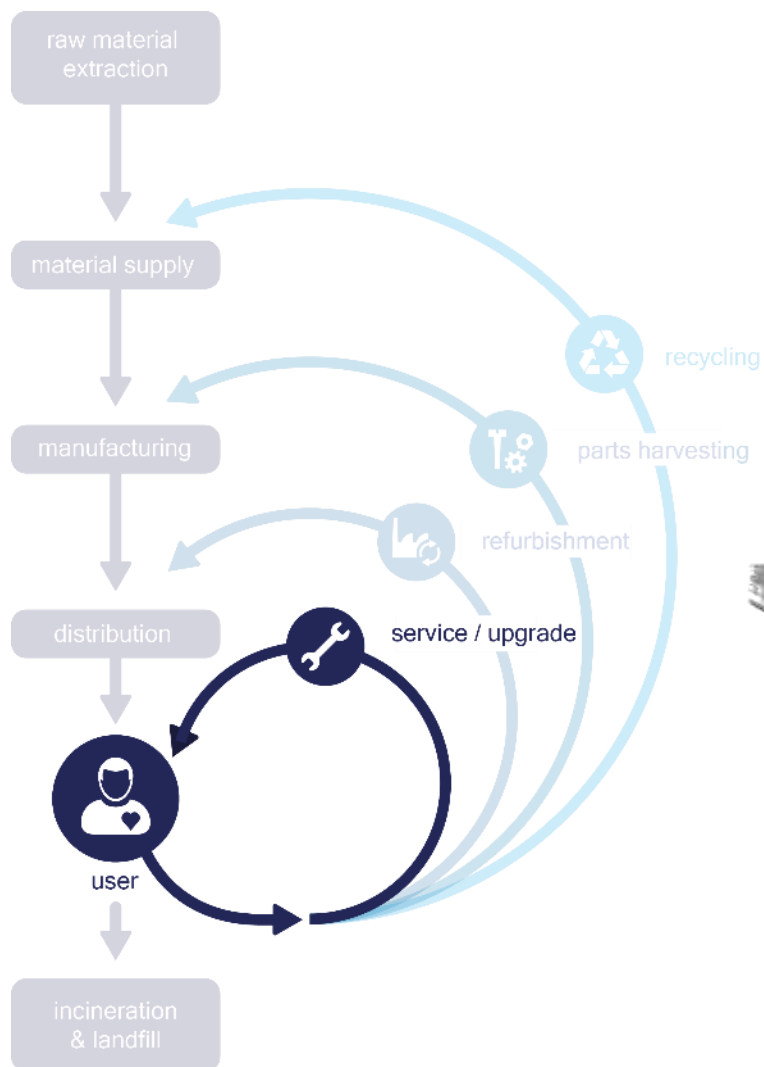


Circular economy





Adaptable to future needs

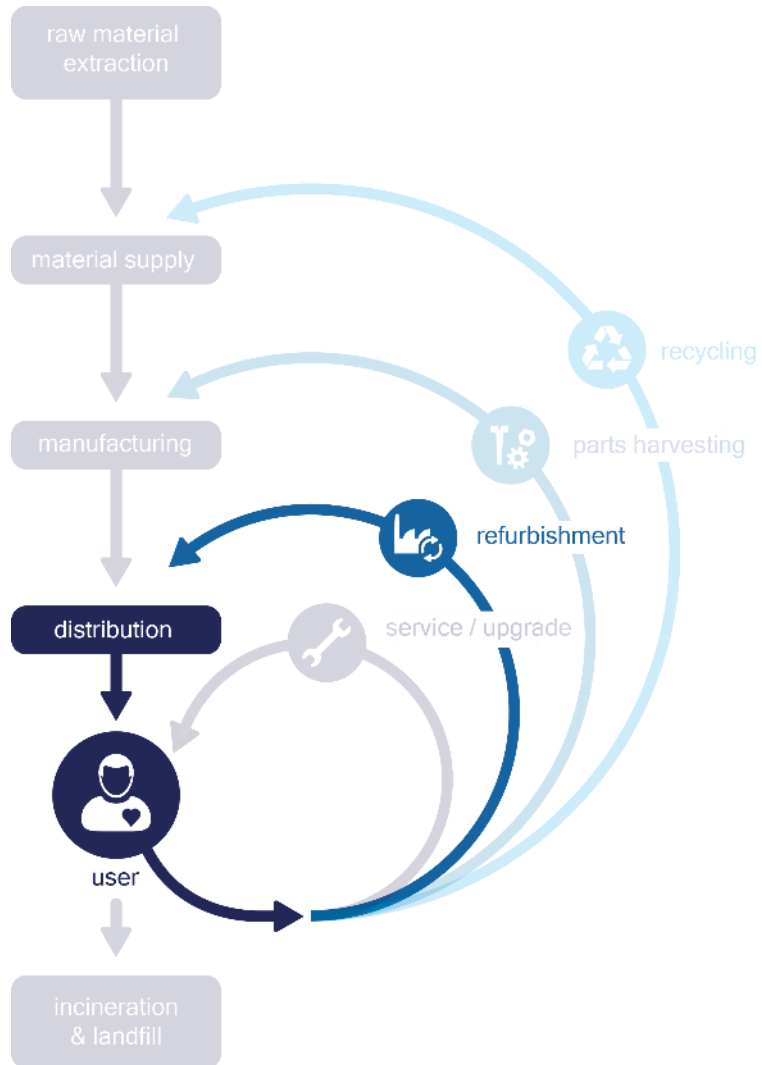


Longer life cycle





Designed for repair and reuse

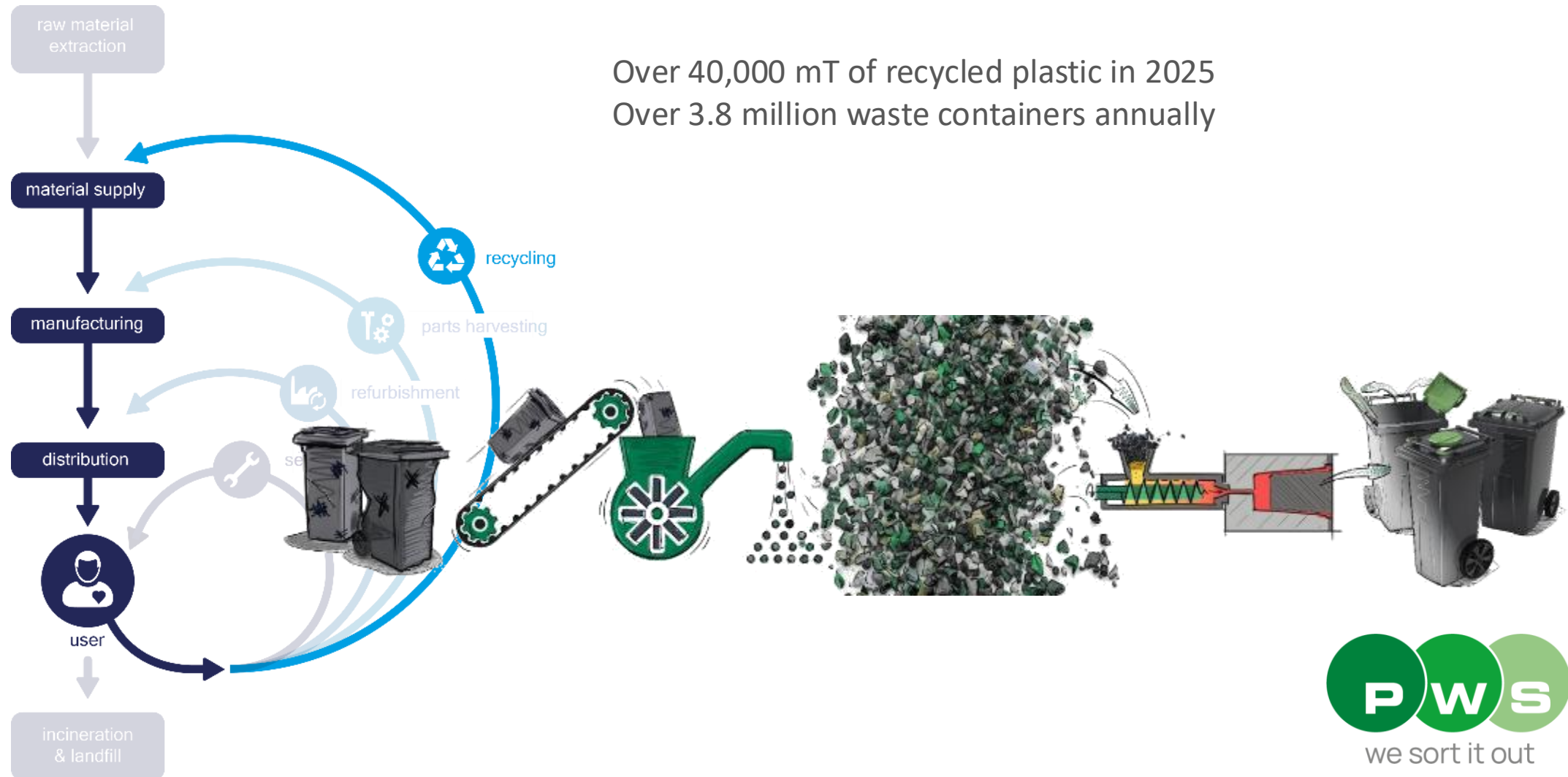


Retrofit new options to an existing container



The diagram illustrates a circular flow model for a product lifecycle. It begins with 'raw material extraction' (grey box), leading to 'material supply' (grey box), then 'manufacturing' (dark blue box), 'distribution' (dark blue box), and finally to the 'user' (dark blue circle with a person icon). From the 'user', the flow goes to 'incineration & landfill' (grey box). Several feedback loops are shown: a light blue loop for 'recycling' (with a recycling symbol) returning to 'material supply'; a dark blue loop for 'parts harvesting' (with a gear icon) returning to 'manufacturing'; a grey loop for 'refurbishment' (with a factory icon) returning to 'distribution'; and a grey loop for 'service / upgrade' (with a wrench icon) returning to 'user'.

Recycling, New waste containers from used containers





ESE research shows that HDPE can be recycled at least ten times, creating a material recycling window of 80–100 years.



Creating new containers from old containers while maintaining product quality





PureColour,

‘ GREY OF THE DAY’

"The shades of gray are created from the original colors of the recycled material without added pigments, which helps maintain the purity of the material."

CIRCULOGIC®





Weak demand and unclear rules hold back recycled plastics

Main bottlenecks

Tenders don't ask for recycled content

Rules are unpredictable

Shifting EU and national interpretation, delays investment

Recyclate quality is hard to prove

Recycled material struggles to compete on price

Tenders are silent on recycled content



Our view (on regulation)

Make it an award criterion

Recycled content scored in public tenders

One predictable EU rulebook

Technology-neutral, harmonised end-of-waste criteria

Common quality standards

Quality standards and traceability for recycled plastics

Include incineration in the EU ETS from 2031

Once incineration emissions have a cost, recycling becomes more economically attractive.

We put the option on the table

Where tenders are silent, we offer the recycled alternative

Innovations in the material cycle of waste containers

ESE / PWS

Reinier Den Boer & Sari Tirronen



Thank You ! Questions?