



## Investment, Research and Innovation - Putting in Place the Enablers of Waste Management Development and Implementation in the UK

# The Smart Sustainable Plastic Packaging Challenge 2019 - 2025

To deploy £60m of public funding alongside £149m of private money using a combination of:

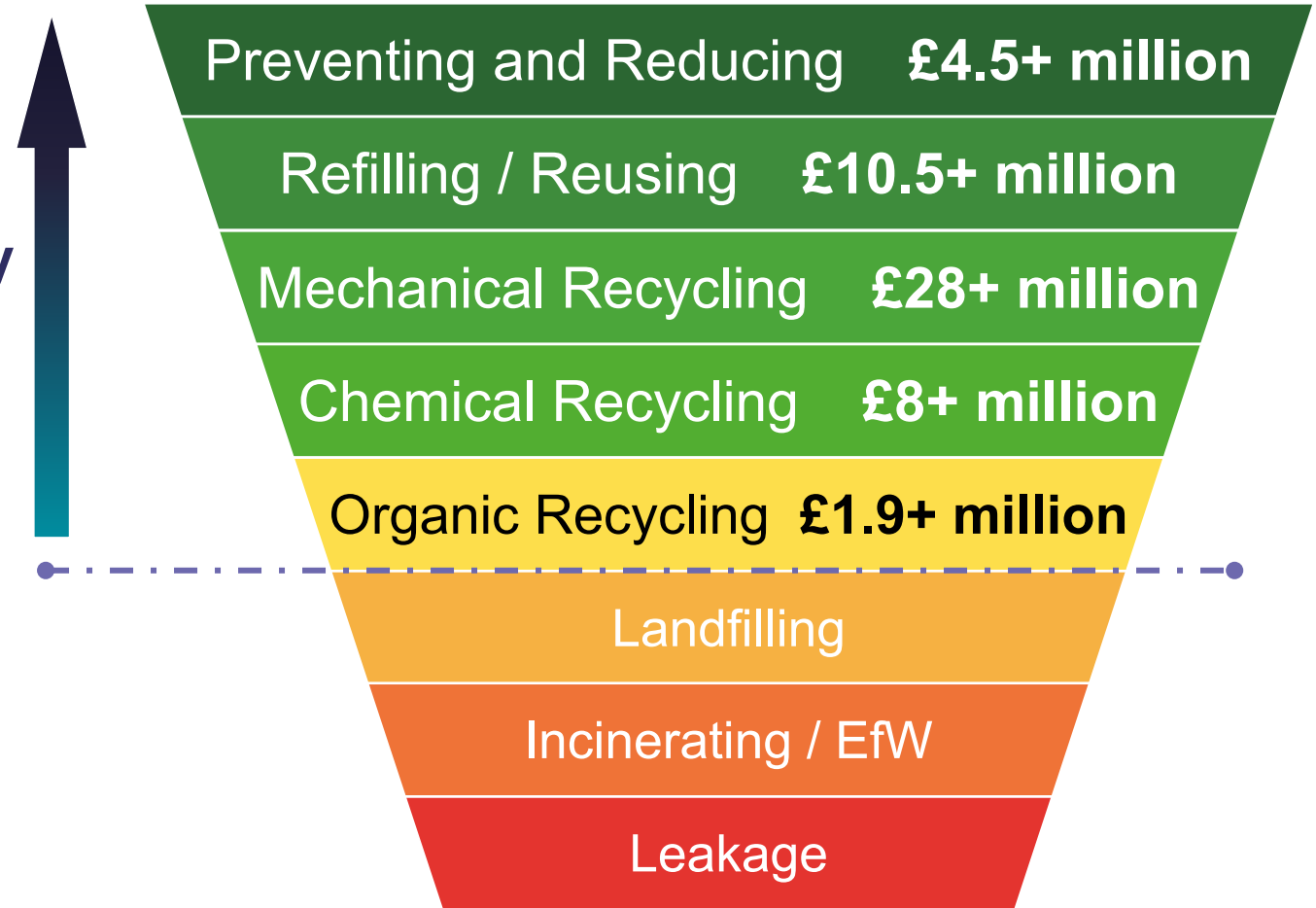
- **Early stage enabling research (~£8m)**
- **Collaborative R&D (~£12m)**
- **Large scale demonstrator projects (~£38m)**

Supporting **bold, ambitious innovation** to bring about wholesale change in the UK's ability to:

- **Reduce**
- **Reuse**
- **Recycle**

# SSPP Portfolio

- 8 Funding Competitions
- 57 funded projects to date
- Collaborative/multi-disciplinary
  - Recycling industry
  - Packaging industry
  - Brand and retailers
  - Academia
  - Not for profit
- Balanced approach





# Prevention

# Novel materials to prevent plastic waste



Notpla – a seaweed-derived coating as an alternative to the plastic laminates used on cardboard packaging



Xampla – a new plant-based, edible packaging film that could help to reduce the 855 billion single-use plastic sachets that become waste every year



## Reuse and Refill

# System change for refill / prefill

- Frictionless and compelling proposition for customers and the retail supply chain
  - Infrastructure
  - Finance
  - Benefits (especially carbon accounting)
- AND we need to change (deeply ingrained) habits

**Hence we want target high frequency, high volume purchases e.g. fresh milk**

**56.5 billion units of single-use plastic packaging sold annually in the UK**



# What do customers want? The 'Amazon Test'

- **Convenience**
- **Value**
- **Esteem\***

Must address at least one of these to be successful

Each part of the supply chain is effectively a customer - with a veto!

\* Rough translation

Expensive deposits?



Downloading apps and signing up with bank details?



Fiddly in-store dispensers?



Washing containers at home?



Remembering to bring containers shopping?

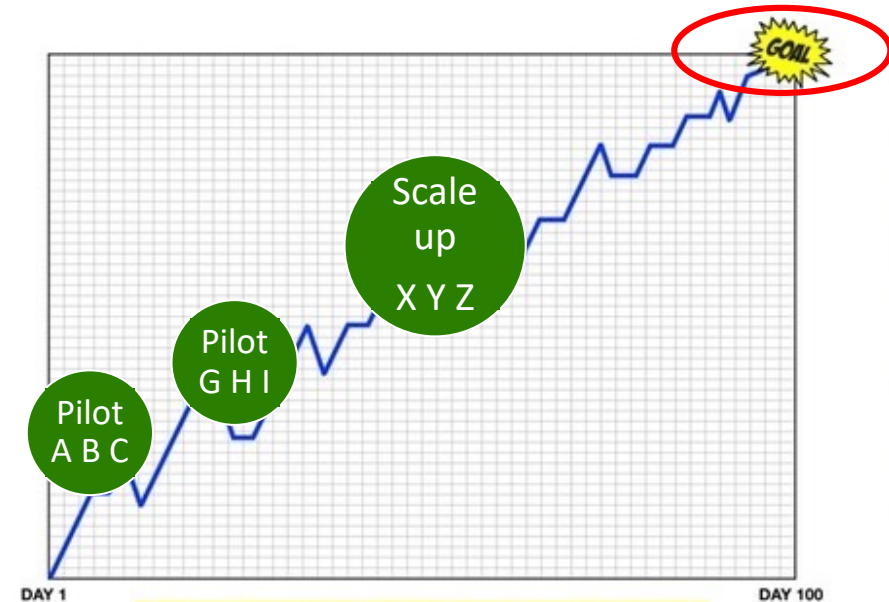
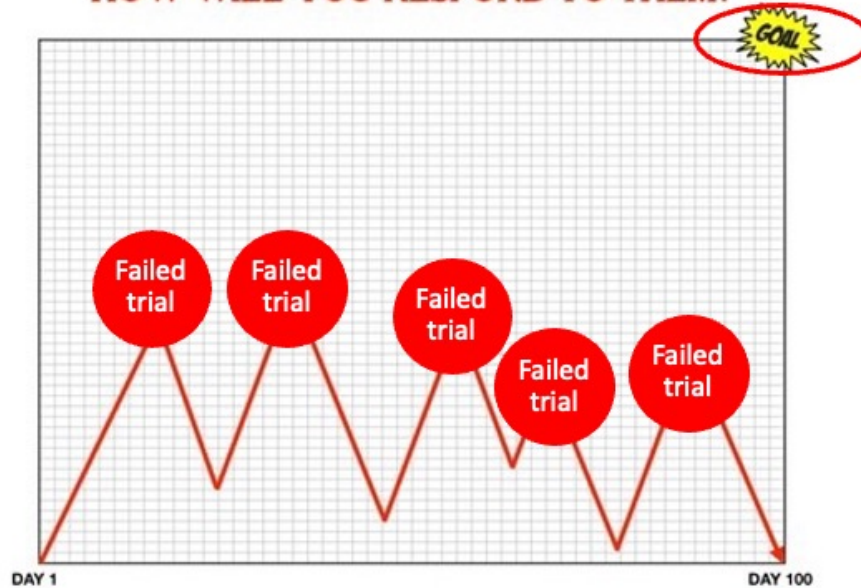




# System change is really hard



Setbacks will happen. The big question is:  
**HOW WILL YOU RESPOND TO THEM?**



**"Aim for PROGRESS, not perfection."**

No more wasted resources on isolated trials

# Prefill large-scale demonstrator: Reposit

A commercially, operationally, and environmentally scalable, data driven platform for the benefit of the stakeholders.

- **Brands** switch from single-use to standardised, smart, packaging-as-a-service
- **Retailers** sell products and facilitate return points
- **Consumers** use packaging-as-a-service, return it, reduce plastic & save money.



# Large-scale demonstrator: Unpackaged

THE REFILL  
COALITION



A Brambles Company



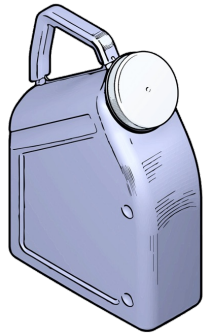
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# Making logistics work for refill

## STANDARDISED, OPTIMISED FOR LOGISTICS

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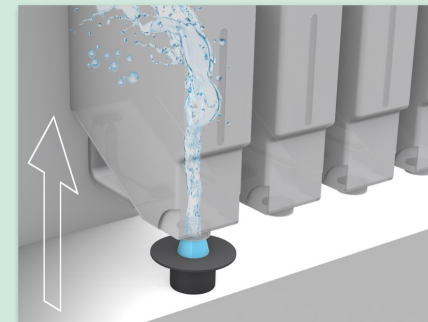
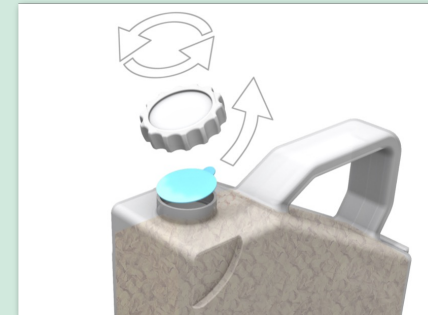
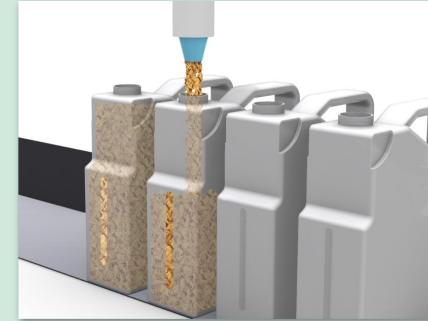


**In-store vessel**  
14.4 L



**Online vessel**  
3.25 L

- Design and material choice ensure that vessels will **withstand the supply chain** (lifetime = 60+ cycles)
- Flat base on vessel and wide aperture opening to enable **easy filling and washing**

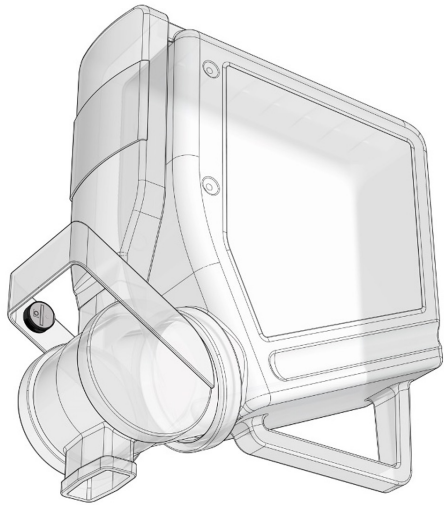


- **Standardised vessels** can be filled by manufacturers and suppliers in the same way
- **Tamper-proof seal** and standardised caps (readily available) for all vessels to ensure shelf life, freshness, safety and hygiene
- All vessels (in-store and online) can be cleaned at **universal service centre**

# Practical, logistics friendly in-store solution

## ATTRACTIVE IN-STORE FIXTURE

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# Launched October 2023 with Aldi



# Milk in refillable plastic

DAIRY

## Abel & Cole launches first refillable plastic milk bottle

By Grace Duncan | 13 October 2023



Source: Abel & Cole  
Its Club Zero milk product will join its growing refillable range, using packaging that will save Abel & Cole 450,000 single-use plastic milk bottles

MOST POPULAR

LATEST



Holland & Barrett removes CBD products over 10mg from sale after FSA guidance change



Supermarket fines proposed for missed HFSS targets under plans by Asda's 'nudge' partner



Oscar Mayer makes three appointments to senior management team



Aldi recruiting for 14 e-commerce team positions



Waitrose to update loyalty scheme to improve personalised rewards



# Mechanical Recycling



# Mechanical recycling – large scale demonstrators



Impact Recycling  
– Water based  
sortation of films



Fiberight – Recycling  
plastics from MRF  
reject streams



Berry Global – World  
first mechanical  
recycling plant for food-  
grade polypropylene

# More on films and flexibles...



- Flexcollect – The UK’s largest pilot of kerbside plastic film collection

- Ceflex – SSPP is one of the larger contributor’s to this multinational supply chain initiative



# Chemical recycling

# Chemical recycling: large scale demonstrator



20kt/a large-scale demonstrator, Wilton UK  
Open day 26<sup>th</sup>





## Packaging Data Collection and Management

# Packaging data will become increasingly important

## A Circular Economy for Packaging Data

Open 3P is an Open Standard for packaging data

Developed over the last 2.5 years, it will improve the quality, granularity and availability of packaging data for the whole packaging value chain for EPR, UK Plastic Packaging Tax, LCA, ESG reporting and more



Developed with input from 120+ people from 70+ organisations



Open and free to use under Apache License, Version 2.0



Robust governance mechanisms to keep it stable & relevant



# Help is at hand

Just launched.....



# GiNG

Open 3P  
aligned



User  
friendly



Complete  
control



Innovate  
UK

A background graphic with network nodes and lines, set against a yellow-to-orange gradient.

**Secure Data Sharing**  
*for the entire  
packaging value chain*



**What about preventing leakage?**



# “What gets measured gets done”

- Looking at potential for remote sensing and AI data processing to look for plastics aggregations and flows
- Potential to test effectiveness of policy interventions
- Assist with international agreements





**THANK YOU**

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[www.ukri.org/smart-sustainable-plastic-packaging-challenge/](http://www.ukri.org/smart-sustainable-plastic-packaging-challenge/)

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