

# Plastics: Sustainability Friend or Foe ?

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## Outline

- **Introduction to WRAP**
- **Plastics and the environment**
- **Bottle recycling**
- **Mixed plastics recycling**
- **Producer deals and metrics**
- **The food waste challenge**
- **Conclusions**



## ABOUT WRAP

WRAP helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.



# THE RESOURCE EFFICIENCY LOOP

**We will work with partners across the resource efficiency loop:**





# “Plastics are bad for the environment”





# Revealed: the waste of crazy packaging

Daily Mail 2007

*The Mail's campaign for weekly bin collections has highlighted the sheer amount of waste generated in modern Britain. One of the greatest contributors to this is the crazy amount of unnecessary packaging used by supermarkets and manufacturers. Here, we highlight ten of the worst offenders. And in the coming days we'll be urging readers to join the war on waste by revealing other examples of pointless packaging. HILARY FREEMAN reports.*

## FOUR-PACK OF SAINSBURY'S 'EAT AND KEEP' PEAR SELECTION

**Cost: £1.89**

**Packaging offences:** Each pear sits in its own compartment on a polystyrene tray, which is then covered by a moulded plastic lid. The whole ensemble is wrapped in clingfilm, with a label pasted over the top. In addition, two of the pears have metallic printed 'Ripen Me In The Fruit Bowl' stickers on them, just in case you aren't able to use your hands to tell which ones are ripe.





# It's war on store waste: Landmark case will force supermarkets to end needless packaging

Daily Mail 17th September 2010

**Sainsbury's in dock over beef joint that comes in plastic shrink-wrap, placed inside a plastic tray, with a plastic lid and finished with a cardboard sleeve**

A landmark prosecution will heap pressure on Britain's supermarkets to end hugely wasteful food packaging.

Sainsbury's is being taken to court for using excessive wrapping in a move that could open the door to a wave of similar charges being brought.

The store is the first supermarket to face official action over wasteful packaging.





“And of course the UK is rubbish at recycling plastics”





# Really?



# Plastics are very efficient packaging materials





And can be made more so....

**By their raw material selection**

**By their use**

**By their reuse**

**By their recycling**

**By their disposal**





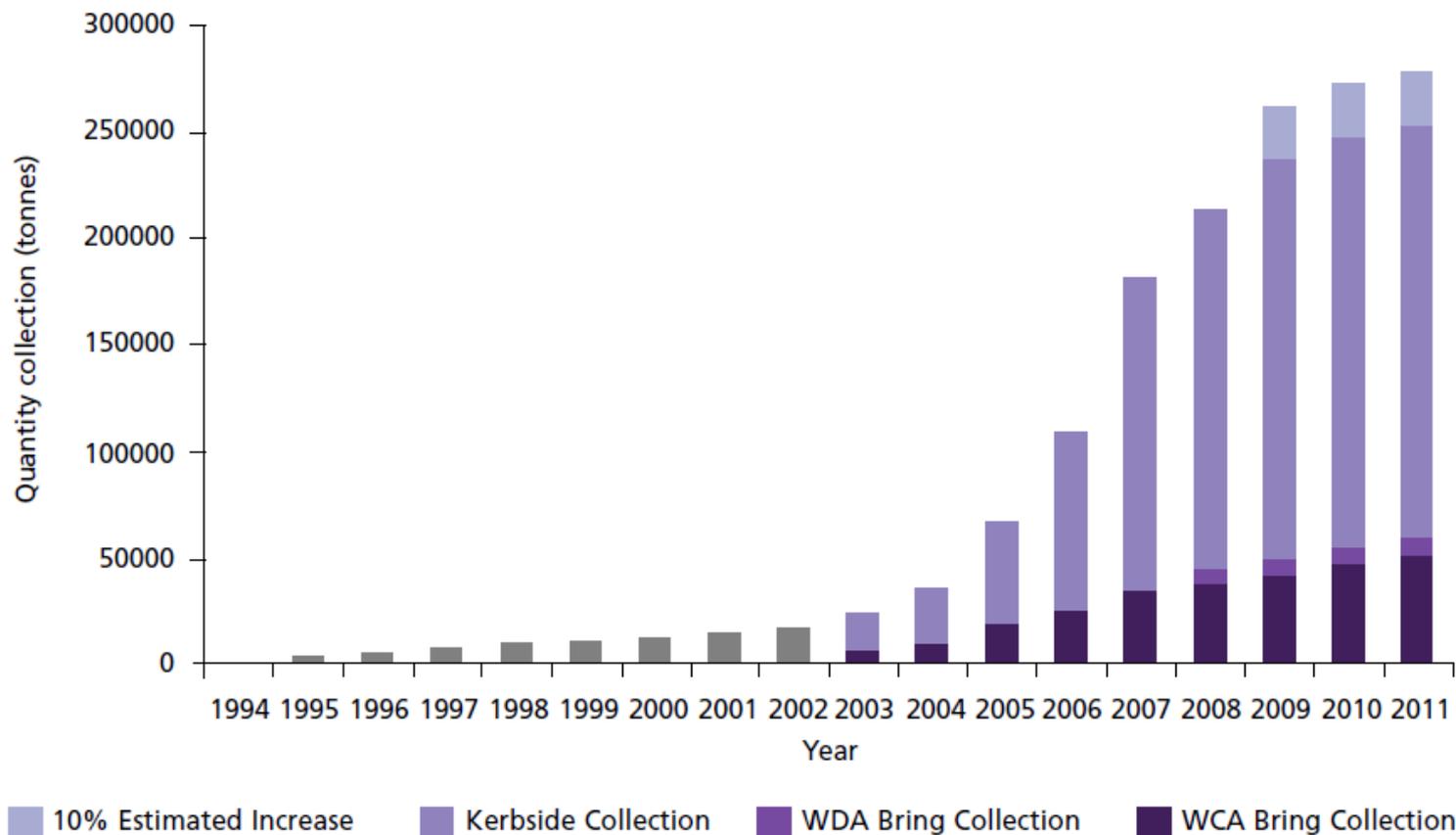
Plastics can also be:

- **High performance**
- **Transparent**
- **Lightweight**
- **Be coloured/printed**
- **Easily shaped**
- **Have good barrier properties**
- **Tough**
- **Expensive**





## UK Plastic Bottle Collection (2008 data)





## Reprocessing Capacity PET

**Substantial growth in the UK**

**3 Food grade PET plants**

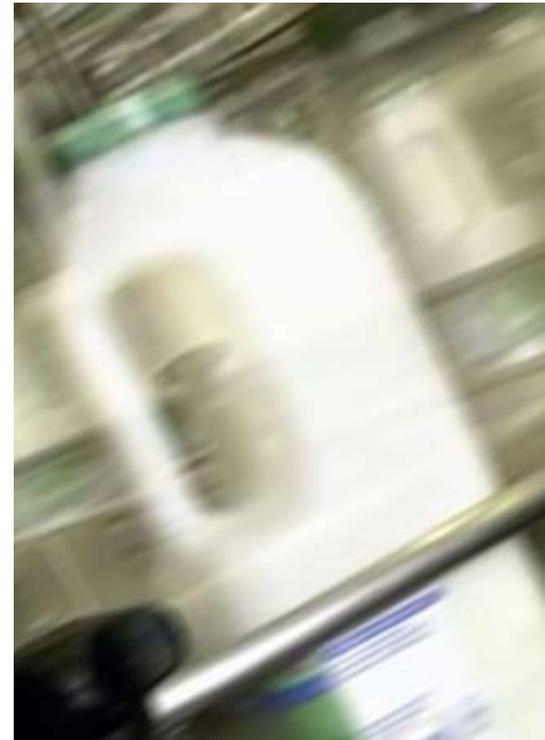
**More investment being planned**





## Reprocessing Capacity - HDPE

- **Now have 2 food grade HDPE plants**
- **More capacity planned**
- **UK dairy industry already use 10% recycled content will increase to 30% by 2015 and 50% by 2020**
- **No where else in the world does this happen!**



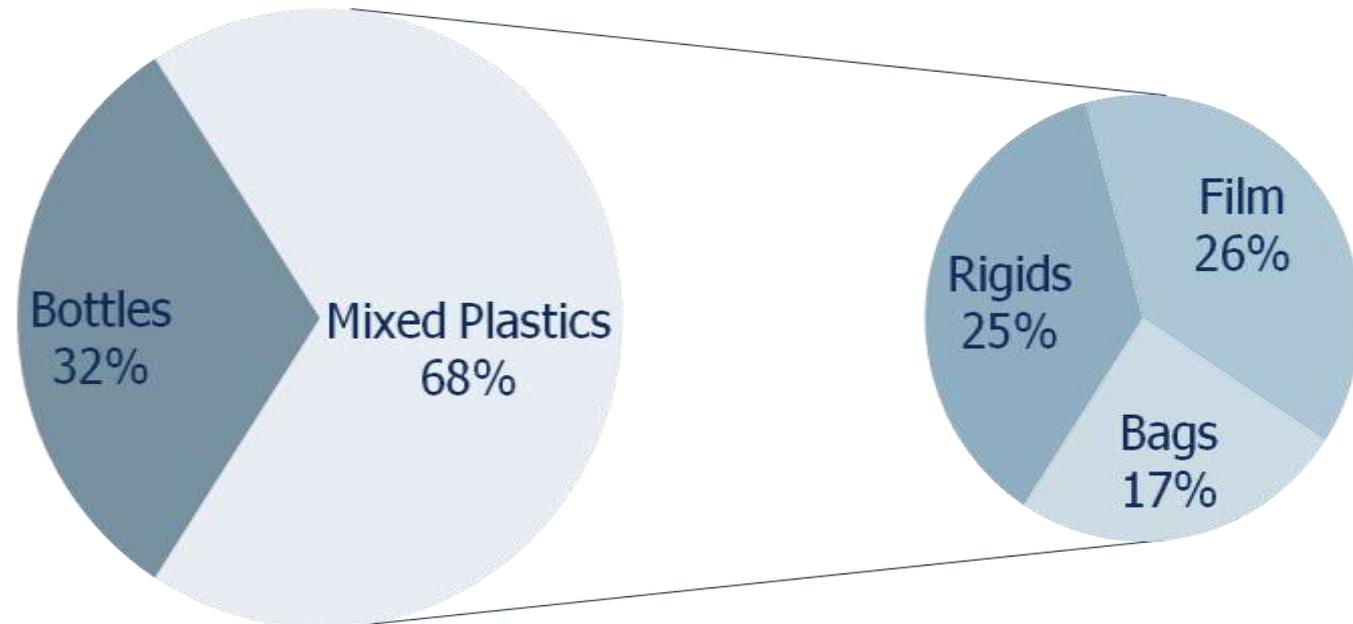


# **WHAT ABOUT THE OTHER PLASTICS PACKAGING?**



# Household Plastic Packaging

## Household Plastics Packaging (HPP) Total 1.5mt/a





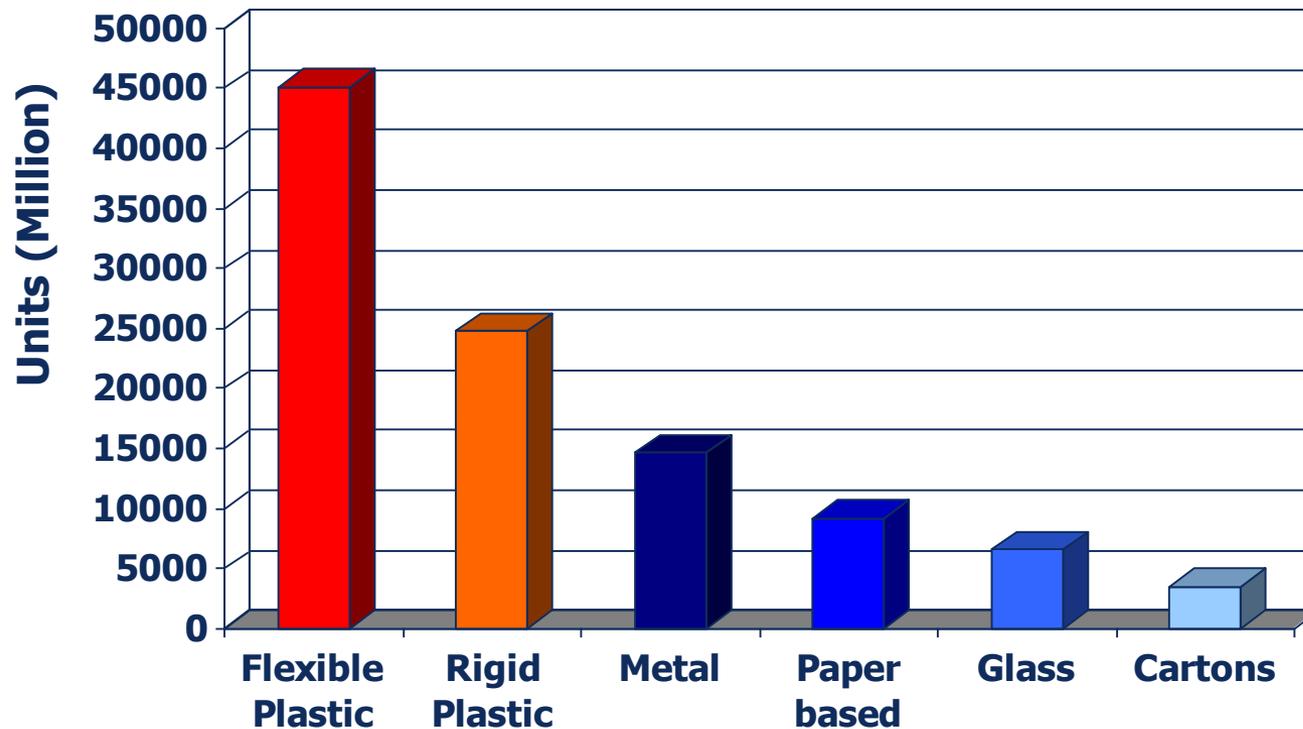
## What's in most people's bins





# What people see in their bins

Packaging by material : Units



Plastics packaging double all the others combined



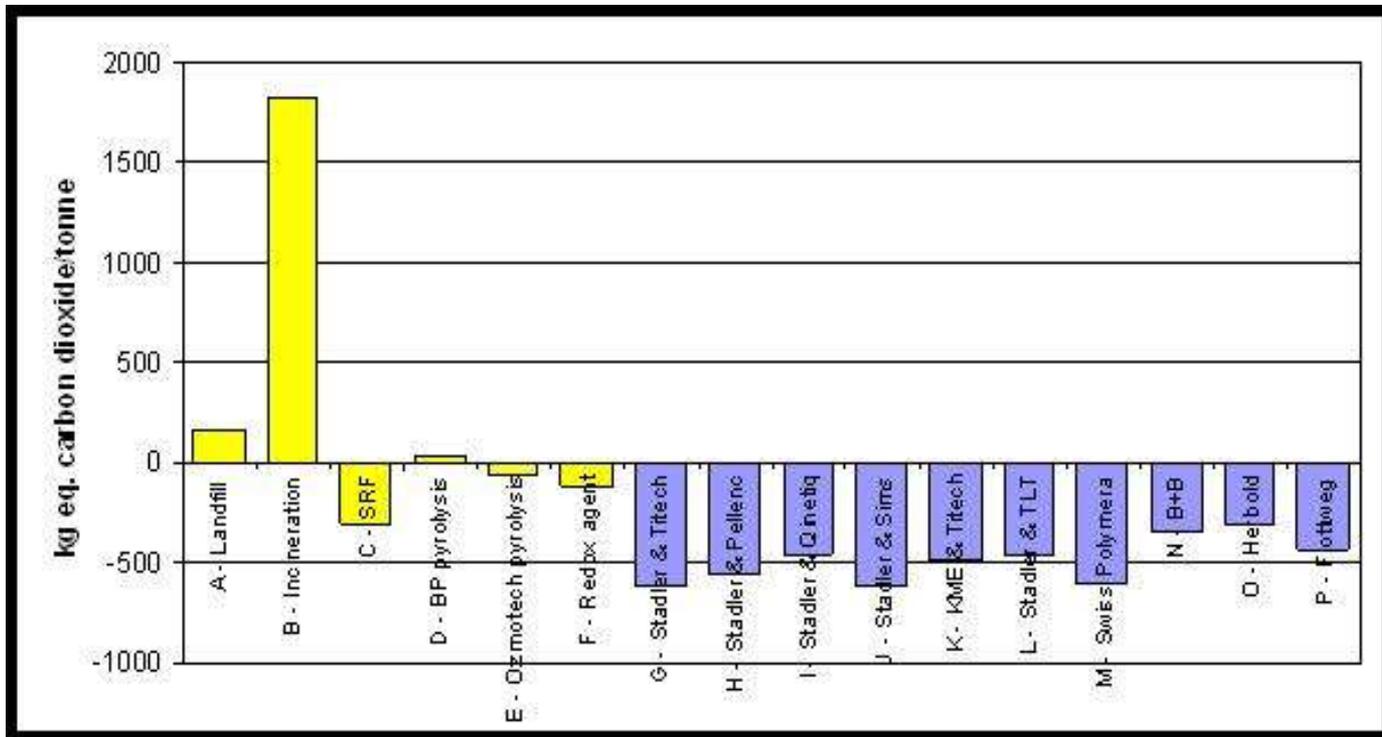
## Residents and mixed plastics recycling

# Yogurt Pots!



# Environmental driver for mixed plastics recycling

LCA relates to plastics only



Another year, another million tonnes land filled by the UK and lost to the UK economy



# Financial Drivers for Mixed Plastics Recycling

LFT

Tech  
costs

Higher  
resource  
costs

Scale now  
possible in  
UK



# Can collecting mixed plastics really save money?

## **Richmond to debate adding mixed plastic at kerbside**

Friday 03 September 2010 Councils News- Letsrecycle.com

By Chris Sloley

**A proposal to add mixed plastics and cardboard drinks cartons to kerbside collections in a bid to save £145,000-a-year on landfill disposal costs is set to be discussed by Richmond-upon-Thames council next week (September 6).**





# Products made from mixed plastics





## Products made from PET

- Food Grade PET flake (URRC process)
- Thermoformed Sheet products
- Strapping- Col PET





## Coloured HDPE bottle recycling

- Made excellent pellets
- MFR= 0.4 g/10min
- Feedstock yield 71%
- Main contaminants
  - paper and PET



100% rHDPE drainage pipe



## 1<sup>st</sup> Film Trial

- Difficult films rejected
- Still had too much gassing
- Process not commercial viable due to need for double extrusion



Lab evaluation

Wash waste





## Film Trials



## Successful recovery of materials

Commercial throughputs achieved with excellent odour removal, lighter shade & volatile removal





## WRAP and Mixed Plastics

- **Developed and demonstrated technologies**
- **Demonstrated business case for mixed plastics recycling**
- **Demonstrated the environmental case for mixed plastics recycling**
- **Now supporting the establishment recycling plants in the UK (Greenstar/WES)**



# PRODUCER DEALS AND METRICS



## Producer Deals

- **Courtauld 1+2**
- **Milk Road Map – rHPDE commitments**
- **PET and HDPE Categorisation**
- **Construction sector Half Waste to Landfill**
- **Others on their way**



## Courtauld Commitment – Phase 2

### **3 Targets, 3 years (2010-2012):**

#### Packaging Target

- Reduce carbon impact of packaging by 10%

#### Household Food & Drink Waste Target

- To reduce household food and drink wastes by 4%

#### Supply Chain Product Waste Target

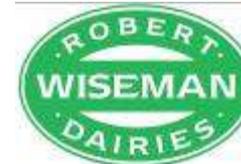
- To reduce traditional grocery product waste in the grocery supply chain by 5%



# Courtauld Commitment Phase 2 Signatories



MORRISONS



Sainsbury's



Waitrose





## Plastics Packaging and Sustainability Metrics

- 1. Tonnage (1994 - 2014)**
- 2. Carbon (c2006 – 2014 or 2020?)**
- 3. Total resource efficiency (2014? - onwards)**



Not just about packaging

- 1. Package + indirect implications (eg product loss)**
- 2. Product (sustainable production and consumption)**
- 3. Complete system impacts**

**“Sustainability” is going to get more complicated, do we have the tools?**



## Food Waste

**Understand food waste and implications**

**UK wastes 8.3million tonnes of food/year**

**Equals 20million tonnes of CO<sub>2</sub><sub>eq</sub> emissions**

**Food waste must be reduced along whole supply chain and then dealt with appropriately (anaerobic digestion etc)**



Food waste and plastics packaging

**Plastics packaging will increasingly need to:**

- **Reduce supply chain losses**
- **Extend product life (nutritional life)**
- **Assist portion control**
- **And not just in the developed world**

**Looks like a real business opportunity!**



## Conclusions

- **Plastics have had a very bad press**
- **Plastics can be made more sustainable in their own right**
- **Plastics will play an increasing role in delivering a sustainable future**
- **The UK has made huge strides and has done this through innovative approaches**
- **Maintaining and measuring progress is going to get harder: partnering will be more important**



# THANK YOU

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