Why is there plastic in the ocean? What effect does this have? What can we do about it?

RICS, 12 Great George Street, Parliament Square London, SW1P 3AD

Event page
Press Release

Thank you to all of our excellent speakers and to everyone who attended. This pack contains a summary with links to the full presentations.

For further information please contact Barry Turner, Director of Plastics & Flexible Packaging at the BPF.
bturner@bpf.co.uk
07785771880

Introduction

10.25 Chairperson's Introduction - Earl of Lindsay
10.30 Introduction from the BPF - Barry Turner, British Plastics Federation

Understanding the problem

10.35 Plastics in the Ocean: What Do We Know? - Professor Richard Thompson, University of Plymouth
11.00 Public Communication: From Plastics Pollution to Solutions - Dr Lesley Henderson Brunel University

Solutions

11.50 Innovative Behaviour Change #StreetsAhead campaign - Tracy Phipps, Brighton and Hove City Council & Gavin Ellis, Hubbub
12.10 Education in Schools - Lee Wray-Davies, Keep Britain Tidy
12.30 Operation Clean Sweep: Implementing Best Practice - Helen Jordan, BPF & Neil Parsons, Logoplaste
12.50 Achieving a Circular Economy in Flexible Packaging - Pascal Meyer, Amcor
14.10 Can our oceans greatest threat be humanity's richest opportunity? - David Katz, The Plastics Bank
14.30 Improving Technical Recycling Capacity in Developing Countries - Jean-Paul Bindelle, Engineers Without Borders
14.50 Tackling Plastics Waste at Source in Developing Countries - Zoë Lenkiewicz, Waste Aid
15.10 Propelling Plastics into a Circular Economy - Adrian Griffiths, Recycling Technologies
15.30 Turning conversations into action - Mark Pawsey MP & Barry Turner

BPF
British Plastics Federation

Introduction from the BPF - Barry Turner, British Plastics Federation

British Plastics Federation

Why this event?

- Lack of understanding of causes and sources of marine litter and waste
- Possible lack of awareness of required interventions and how these may need to differ depending where in the world you are.
- Lots of media profile but little in way of solutions

What we hope you will leave with

- A better understanding of causes and sources
- A better understanding of some of the solutions we could implement both now and in the future to prevent marine litter and waste
- A resolve to want to be a part of the process to eliminate all waste leaking into our oceans
- An understanding that the best way forward is via co-ordinated action

#BPFMarineLitter

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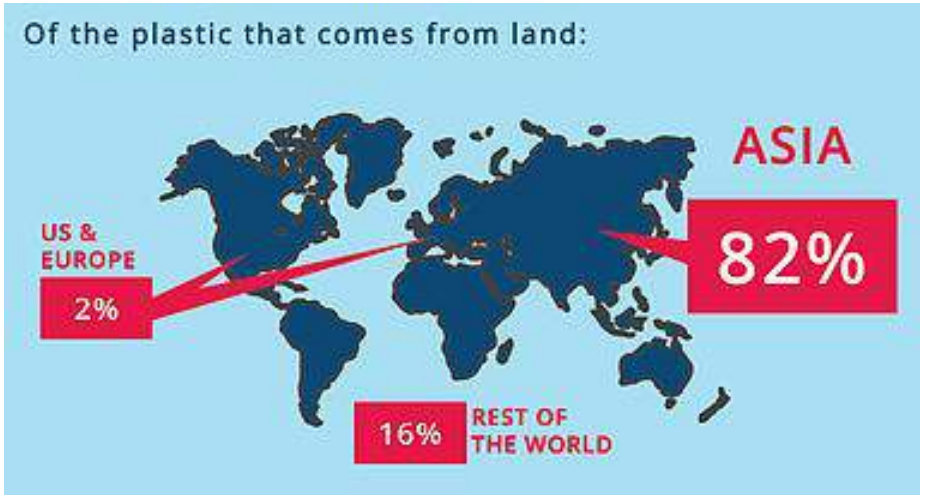
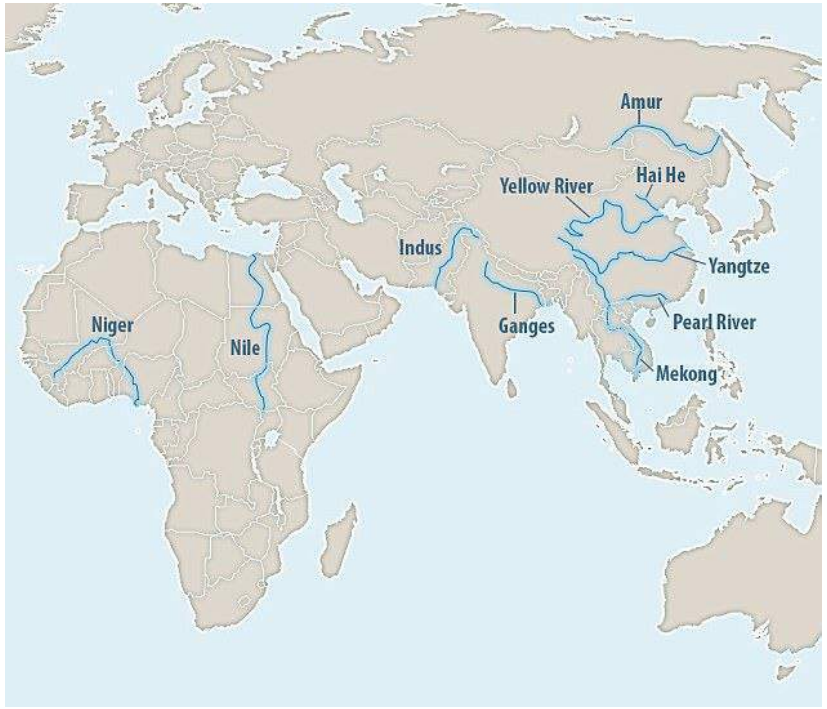
The sources of marine litter



Jambeck et al. 'Plastic waste inputs from land into the ocean'. Science



88–95% of plastic in the ocean comes from just 10 rivers

Schmidt, Krauth, Wagner 'Export of Plastic Debris by Rivers into the Sea', *Environ. Sci. Technol.* 2017.

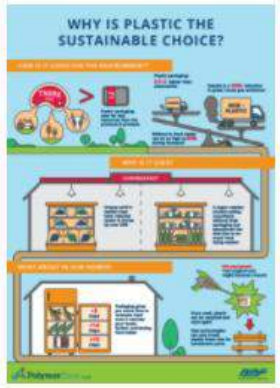
#BPFMarineLitter

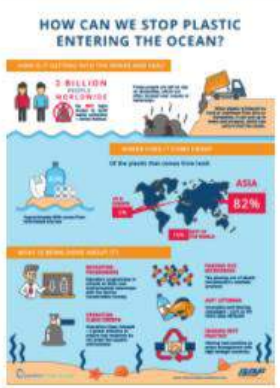
British Plastics Federation

The most likely items to be found

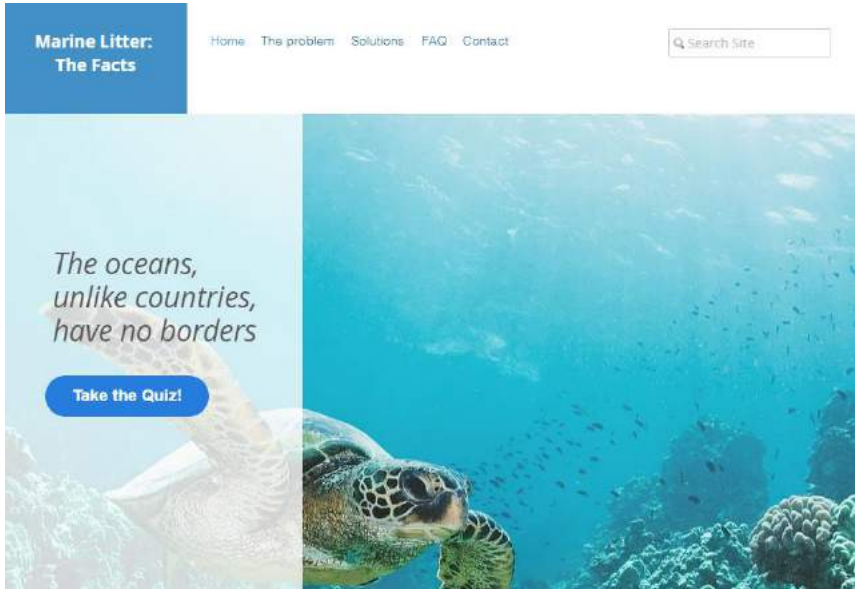
Items found on beaches	Items found underwater
Technical Report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. Marine Beach Litter in Europe. 2016	Project Aware – Dive Against Debris. Annual Review 2016.
Nets + ropes Plastic caps and lids Cigarette butts Crisp and sweet wrappers Lolly sticks String and cord < 1 cm diameter Cotton bud sticks Plastic drink bottles Plastic food containers	Fishing line Plastic fragments Fishing sinkers, lures, hooks Plastic food wrappers Beverage cans (aluminium) Beverage bottles (glass) Glass & ceramic fragments Plastic bags (grocery/retail) Plastic spoons, plates, forks, knives

Information available





www.polymerzone.co.uk

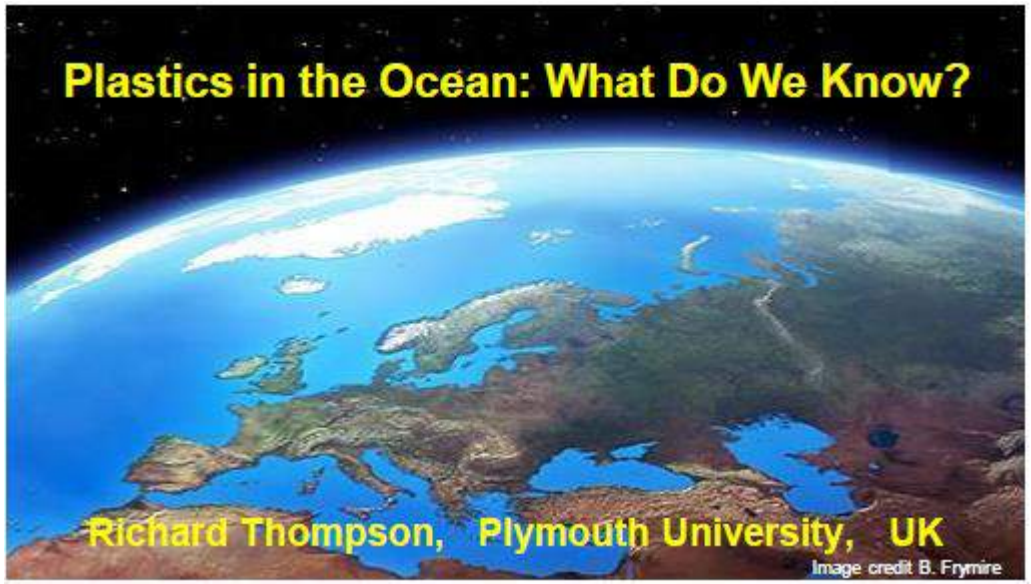


www.marinelitterthefacts.com

PolymerZone

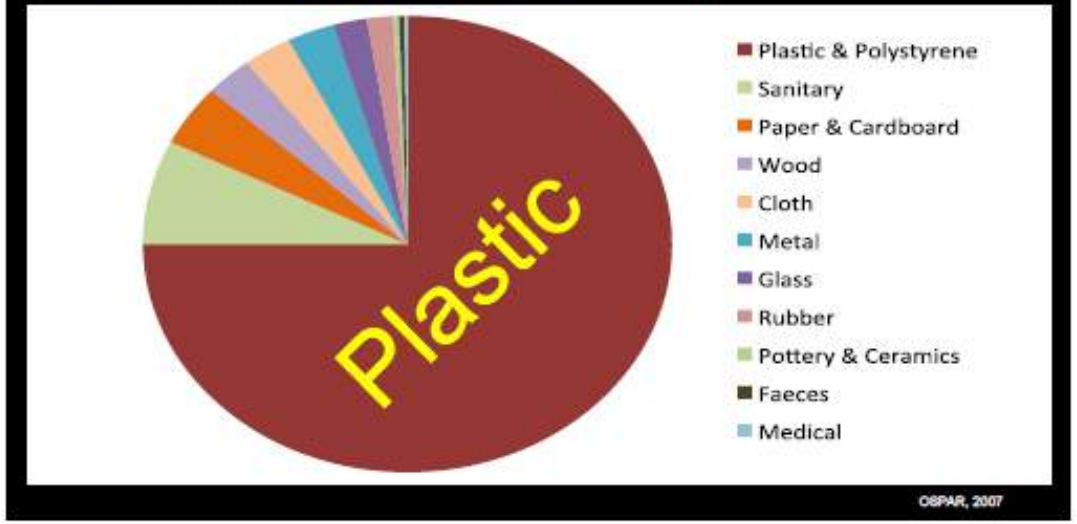
British Plastics Federation

Plastics in the Ocean: What Do We Know? - Professor Richard Thompson, University of Plymouth

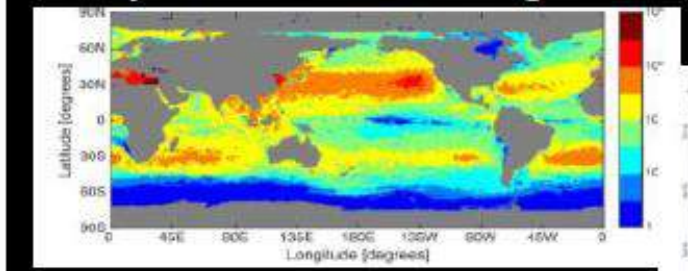


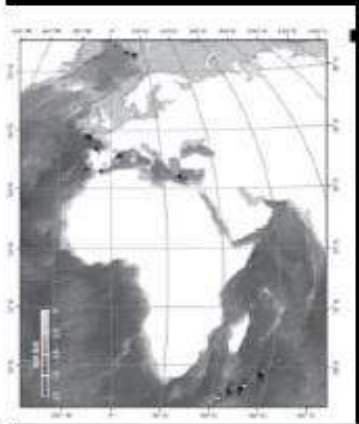
British Plastics Federation

Most marine litter is plastic



Microplastic contamination is global: surface to deep sea





Browne et al 2011, Woodall et al 2014
Van Sebille 2015, Lavender Law 2010

Effects on wildlife

Encounters:

> 300 papers

~ 700 Species

17 % threatened or near threatened IUCN status


Microplastics: numerous species ingest
10% of published encounters by species
Key research: Lusher/ Thompson / Browne / Murray /Cowie


How to keep the benefits – without the problems?


60 years of research and development
60 years of behavioural training - to throw away
LIFE


Shoreline debris
Around 50% is single-use items
(plastic packaging, convenience)
Together with Rope and netting,
Cigarette buts

Redirect the flow

Block the holes

Clean-up

Photo sources:
Success hacker, jschneid,

Potentially conflicting drivers
Can biodegradables reduce litter impacts?

'Biodegradables ?'
(EN 13432, ASTM D6400-99) = pre shredded plastic degrades in commercial composting plant in 180 days, 56 – 71 °C, 50-60% humidity, aerobic, pH 7-8

Resource IN

Waste OUT

Towards a more circular economy
1) Design for product life, and end-of-life 2) educate accordingly

Minimum material	√ yes	X no
Easy to recycle	√ yes	X no
Recycled content	√ yes	X no

Resource IN

Waste OUT

Essential to understand regional variation

Table 1. Waste estimates for 2010 for the top 20 countries ranked by mass of mismanaged plastic waste (in units of millions of metric tons per year). Econ classif.: economic classification; HIC: high income; UMI: upper middle income; LMI: lower middle income; LI: low income (World Bank definitions based on 2010 Gross National Income). Mismanaged waste is the sum of inadequately managed waste plus 2% littering. Total mismanaged plastic waste is calculated for populations within 50 km of the coast in the 192 countries considered. pop.: population; gen.: generation; ppd: person per day. MMT: million metric tons.

Rank	Country	Econ. classif.	Coastal pop. [millions]	Waste gen. rate [kg/ppd]	% plastic waste	% mismanaged waste	Mismanaged plastic waste [MMT/year]	% of total mismanaged plastic waste	Plastic marine debris [MMT/year]
1	China	UMI	262.9	1.10	11	76	8.82	27.7	1.32–3.53
2	Indonesia	LMI	187.2	0.52	11	83	3.22	10.1	0.48–1.29
3	Philippines	LMI	83.4	0.5	15	83	1.88	5.9	0.28–0.75
4	Vietnam	LMI	95.9	0.79	13	88	1.83	5.8	0.28–0.73
5	Sri Lanka	LMI	14.6	5.1	7	84	1.59	5.0	0.24–0.64
6	Thailand	UMI	26.0	1.2	12	75	1.03	3.2	0.15–0.41
7	Egypt	LMI	21.8	1.37	13	69	0.97	3.0	0.15–0.39
8	Malaysia	UMI	22.9	1.52	13	67	0.94	2.9	0.14–0.37
9	Nigeria	LMI	27.5	0.79	13	83	0.85	2.7	0.13–0.34
10	Bangladesh	LI	70.9	0.43	8	69	0.79	2.5	0.12–0.31
11	South Africa	UMI	12.9	2.0	12	56	0.63	2.0	0.09–0.25
12	India	LMI	187.5	0.34	3	87	0.60	1.9	0.09–0.24
13	Algeria	UMI	16.6	1.3	12	60	0.52	1.6	0.08–0.21
14	Turkey	UMI	34.0	1.77	12	15	0.49	1.5	0.07–0.19
15	Pakistan	LMI	14.6	0.79	13	88	0.48	1.5	0.07–0.19
16	Brazil	UMI	76.7	1.03	16	11	0.47	1.5	0.07–0.19
17	Burma	LI	19.0	0.44	17	89	0.46	1.4	0.07–0.18
18*	Morocco	LMI	17.3	1.46	5	68	0.31	1.0	0.05–0.12
19	North Korea	LI	17.3	0.6	9	90	0.30	1.0	0.05–0.12
20	United States	HIC	112.9	2.58	13	2	0.28	0.9	0.04–0.11

*If considered collectively, coastal European Union countries (23 total) would rank eighteenth on the list

Jambeck *et al.* 2015

Plastic Debris:

1) is a symptom of inefficient outdated business model
2) is not directly coupled to societal benefits
3) damages resources (economy, wildlife, services)
4) synergistic benefits (resource efficiency / waste reduction) achieved by product re-design
5) solutions exist – but there is no single solution
6) Focus on design for life and end of life
7) is a highly visible, accessible, emotive problem – harness this interest and focus it on better product design and better waste management

Richard Thompson - Thank you

SEA CHANGE WITH PLYMOUTH UNIVERSITY

Further information:

Download full slides here

Contact Richard Thompson here

www.plymouth.ac.uk

Public Communication: From Plastics Pollution to Solutions - Dr Lesley Henderson Brunel University

Further information:

Lesley Henderson's research is not yet publicly available. You can read more about her research here

www.brunel.ac.uk

British Plastics Federation

Innovative Behaviour Change #StreetsAhead campaign - Tracy Phipps, Brighton and Hove City Council & Gavin Ellis, Hubbub

British Plastics Federation

[StreetsAhead - Brighton]

[For Fish's Sake - London]

Further information:

Download full slides here

Contact Hubbub and Tracey Phipps at hello@hubbub.org.uk

www.hubbub.org.uk
www.brighton-hove.gov.uk

In 2017 Brighton & Hove City Council in partnership with Hubbub implemented an innovative behaviour change campaign called #StreetsAhead to engage the local community and prevent littering. #StreetsAhead builds on the success of Hubbub's Neat Streets campaigns which use the latest behaviour change research and thinking from around the world to prevent litter. From flash-mobs to talking bins, and from naked bin men to chewing gum art, Hubbub have tested many different playful ways to reduce litter and are constantly refining their approach and testing new ideas. The campaign had excellent support on social media. It was funded by fines paid by those who litter and enforcement of penalties is proving popular amongst concerned residents, with 88% of the people surveyed saying there should be stricter fines for those who litter.

Hubbub have also been running a campaign in London called For Fish's Sake which encourage London's residents, commuters and tourists to stem the flow of litter into the River Thames. Using 'grate art', voting bins, videos highlighting the local community and much more the campaign showed excellent results in the reduction of litter. The campaign was independently evaluated and found that office workers at London Bridge were 62% less likely to drop litter following the interventions.

Lessons learnt included:

- community engagement and collaboration are key
- people respond to people
- films of the local community bring the issue back to people's every day lives
- linking marine litter to everyday street litter works well
- bright and loud works well

In the future Hubbub will be extending the For Fish's Sake campaign to other parts of London and to other cities in the UK and beyond. Already the hashtag has been picked up as far afield as Australia.

Education in Schools - Lee Wray-Davies, Keep Britain Tidy

British Plastics Federation

Eco-Schools Global

- 19.5 million students
- 1.39 million teachers
- 52,700+ schools
- 67 countries

The largest educational programme on the planet

Eco-Schools England

- Over 18,300 registered Eco-Schools
- Working on *three* or *five* of our 9 Eco-Schools Topics:

School Grounds
Waste
Litter
Energy
Biodiversity
Healthy Living
Global Citizenship
Transport
Water

Further information:

Download full slides here
Contact Lee Wray- Davies:
eco-schools@keepbritaintidy.org

www.eco-schools.org.uk

Seven Step Framework

Plastic 'Theme'

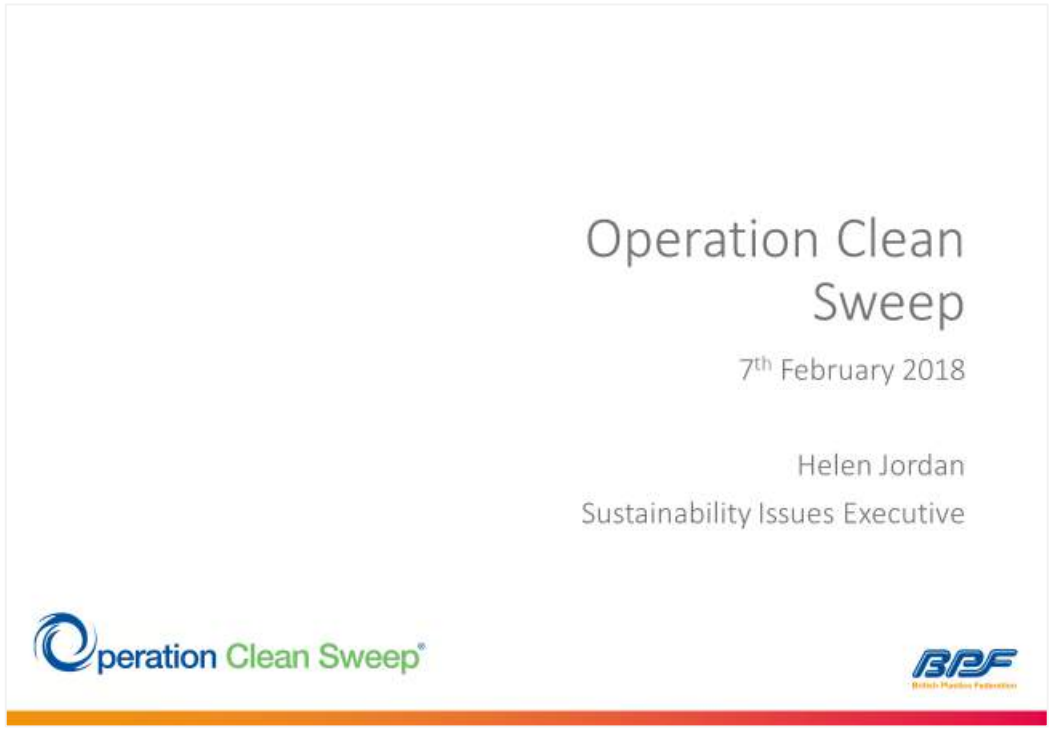
Wrigley Litter Less Campaign, Leicester

- 15 [illegible] together with litter they have collected
- Plastic bottles to be collected separately

Great British 'School' Clean

- 2nd March – 10,000 schools!

Operation Clean Sweep: Implementing Best Practice - Helen Jordan, BPF & Neil Parsons, Logoplaste



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Operation Clean Sweep®

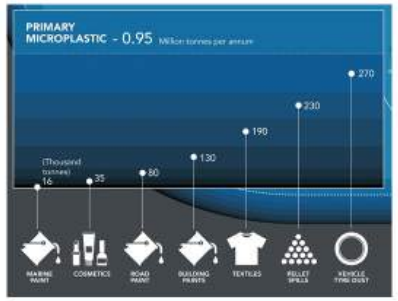
- Industry led initiative to ensure plastic flakes, pellets and powders are contained within sites.

34 Countries are signed up to Operation Clean Sweep

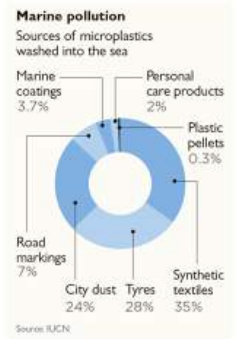
Operation Clean Sweep®

Microplastics

- Small pieces of plastic 5mm or less in size
- Sources of microplastics

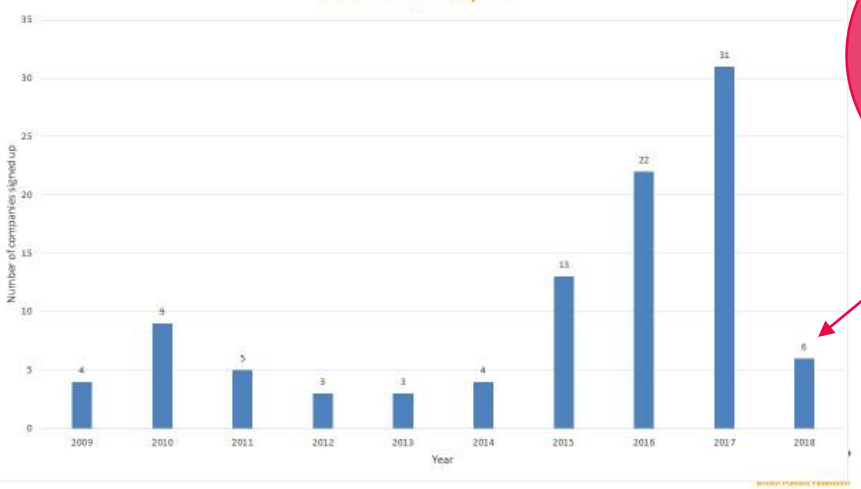


Source: Eunomia, 2016 Plastics in the Marine Environment. Where do they come from? Where do they go?



Source: Boucher, J and Friot D (2017) Primary Microplastics in the Oceans: A Global Evaluation of Sources. Gland, Switzerland: IUCN. 43pp

Number of Companies signed up to Operation Clean Sweep®



Over 100 companies are signed up to OCS In the UK

2018 figures are up to 7th Feb only

Survey results

92%
Did a check or audit – 56% did daily checks

95%
Had no spills or contained spills – all companies have taken action

85%
Trained their staff

32%
Had worked with the supply chain.

Five key steps to success

1.**Risk assessment**- where are the pellets coming from, where are they going , what are the vulnerable areas.

2.**Education and awareness** – delivery drivers and training of new procedures

3.**Containment** – drain protection ,catch trays , improvements to material handling systems

4.**Improved cleaning equipment** – portable vacuum cleaners

5. **Monitoring** – cleaning plans and self audits

PlasticsEurope Logoplaste BPF

New vacuum cleaners – mounted outside	Banned use of "driver" airlines	Fitted mesh screens over bunded drains	Six monthly inspection of transfer pipes	Employee engagement Quiz £100 prize
				
Suppliers engaged. Improved planning to tip max of 5 trucks per day.			Employee engagement – communication of the need and our efforts	
				

PlasticsEurope Logoplaste BPF

Catch Trays – placed at rear of delivery Vehicle	Catch Trays Silo Ports	Upgrade material delivery pipework	Silo skirts to contain pellets	Plastic containers inside silos
				
Information for drivers	High risk drains fitted with rubber sheeting	Drains opposite silos fitted with mesh covers	Silo ports enclosed to contain pellet loss and keep drivers dry !	
				

PlasticsEurope Logoplaste BPF

Benefits

Reduction in the amount of pellets lost – going onto the floor- at the raw material transfer process.

Significant reduction in the number of pellets entering the water system and land .

Employees engaged with increased awareness

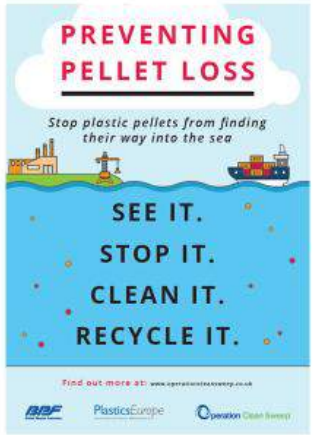
Lost cost solutions to a problem we have experienced for several years !

PlasticsEurope BPF

Resources for OCS supporters

New website with case studies and downloadable resources

Resources for OCS supporters



How can you get involved?

- Sign up at www.operationcleansweep.co.uk
- Share case studies
- Encourage your supply chain and customers to sign up to Operation Clean Sweep®.

Further information:

Helen Jordan's slides are available here
hjordan@bpf.co.uk
www.operationcleansweep.co.uk

Neil Parson's slides are available here
www.logoplaste.com

Achieving a Circular Economy in Flexible Packaging - Pascal Meyer, Amcor

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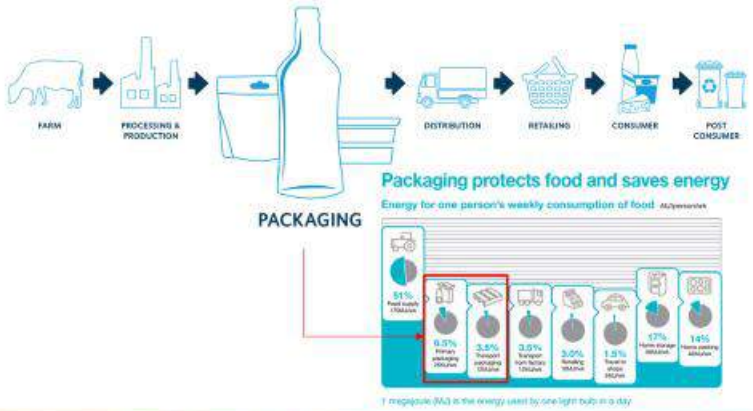
Packaging plays an important role



5 concrete examples as result of data collection within Austrian retailers

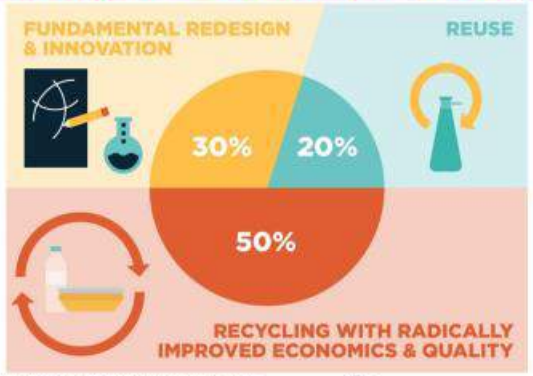
denkstatt

Recorded changes of food waste shares due to changes in packaging:

Sirloin steak:	34 %	→	18 %
"Bergbaron" cheese:	5 %	→	0.14 %
Yeast bun:	11 %	→	0.8 %
Garden cress:	42 %	→	3.4 %
Cucumber:	9.4 %	→	4.6 %

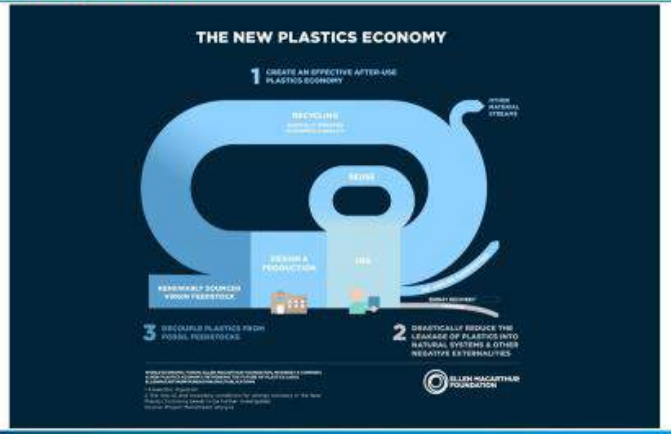
denkstatt 2015 Slide 10

Key levers to improve sustainability of plastic packaging

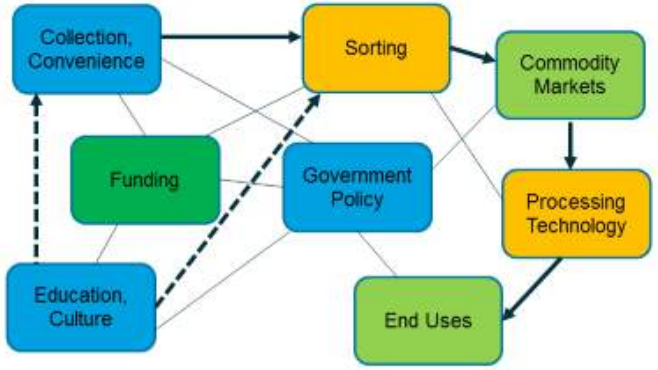


World Economic Forum and Ellen MacArthur Foundation
The New Plastics Economy – Catalysing action
(2017, www.newplasticseconomy.org).

The circularity vision



Elements of recycling / recovery systems



11 companies have made similar commitments

100% reusable, recyclable or compostable plastic packaging by 2025

follow their lead

Unilever, evian, ecover, Walmart, amcor, M&S, MARS, PEPSICO, L'ORÉAL, The Coca-Cola Company

Further information:

Download full slides here
Contact Pascal Meyer, Amcor
https://www.amcor.com/contact-us

www.amcor.com

Amcor partnerships address global challenges

World Food Programme

- Amcor technical guidance on materials and integrity of packaging for foods including lipid-based nutrient supplements for children under five, Super Cereal, and vegetable oil

New Plastics Economy

- With core partners in the Ellen McArthur Foundation, including MARS, Unilever, and Veolia, Amcor is re-thinking and re-designing the future of plastic packaging

Trash Free Seas Alliance

- The aim of the TFSA's current phase is to establish political and economic conditions necessary to accelerate waste management solutions to reduce marine debris

Earthwatch

- Since 2001 Amcor has sent employees on an annual science-based expedition. Since 2015, Amcor's Earthwatch expeditions have focused on the issue of marine debris.

EARTHWATCH INSTITUTE

Regional Sustainability Initiatives

Where Amcor's expertise is helping to identify and implement practical and economic recycling options for plastic packaging

MRFF
MATERIALS RECOVERY FOR THE FUTURE

- Cross industry effort lead by American Chemistry Council to develop recycling solutions for flexible packaging in US situation

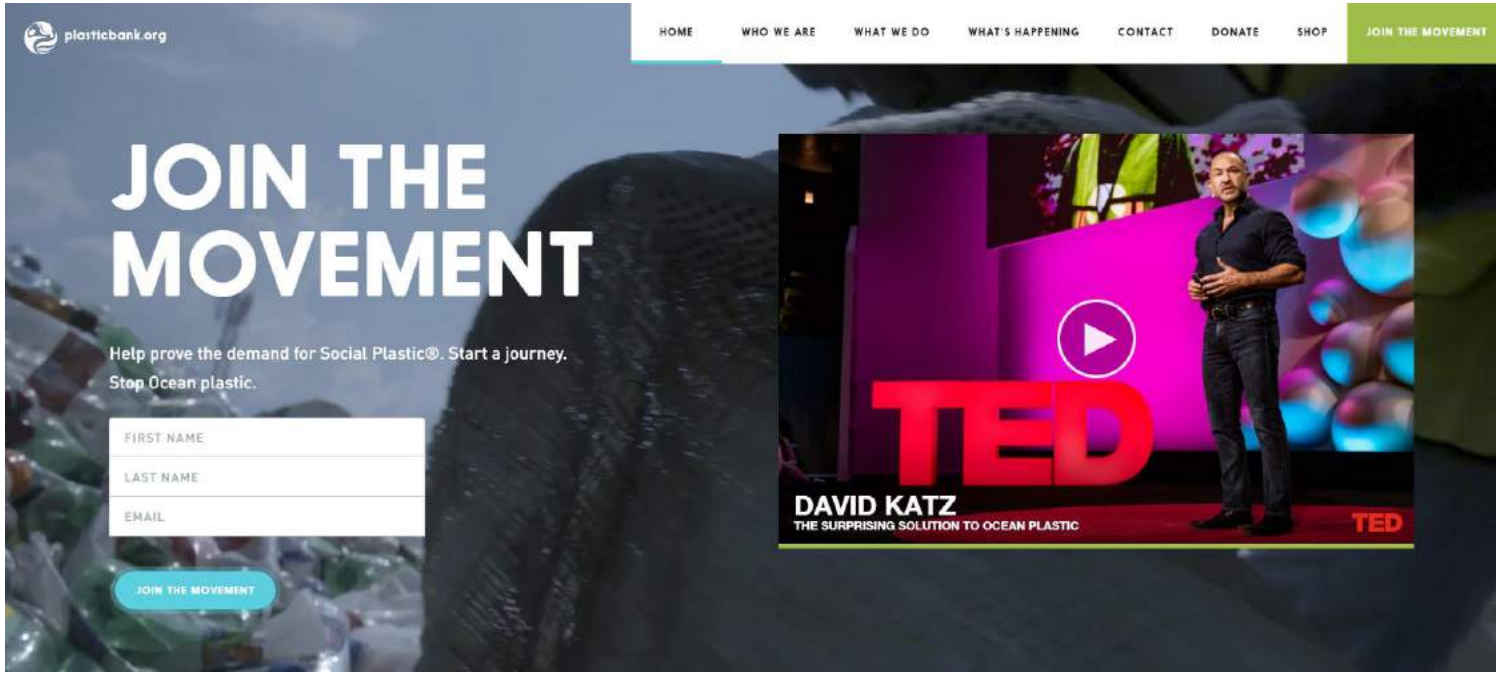
redcycle

- AUS & NZ scheme allowing consumers to return soft plastics for collection and use of recycled material in manufacture of plastic products (e.g. fitness equipment, outdoor furniture etc)

CEFLEX
A CIRCULAR ECONOMY FOR FLEXIBLE PACKAGING

- European collaboration across value chain to facilitate greater post-consumer flexible packaging recycling in more European countries

Can our oceans greatest threat be humanity's richest opportunity? - David Katz, The Plastics Bank



British Plastics Federation

The Plastic Bank enables people in developing countries to derive a stable source of income by collection plastic for recycling. The Plastic Bank connects them to a consistent global recycling market. By enabling the exchange of plastic for money, items or Blockchain secured digital tokens, they reveal the value in plastic. This empowers recycling ecosystems around the world and stops the flow of plastic into our oceans. All while helping people living in poverty build better futures. The value of Social Plastic® goes beyond the commodity price of plastic: a ladder of opportunity is created for the world's poor by providing access to income, goods and services and plastic is kept out of the ocean.

Interested companies and individuals can get involved in a variety of ways including purchasing Social Plastic®, purchasing products made from Social Plastic®, or making a donation. The Plastic Bank extracts 1 bottle from the environment for every $.01 US. So, $1000 USD will incentivise the extraction of 100,000 bottles.

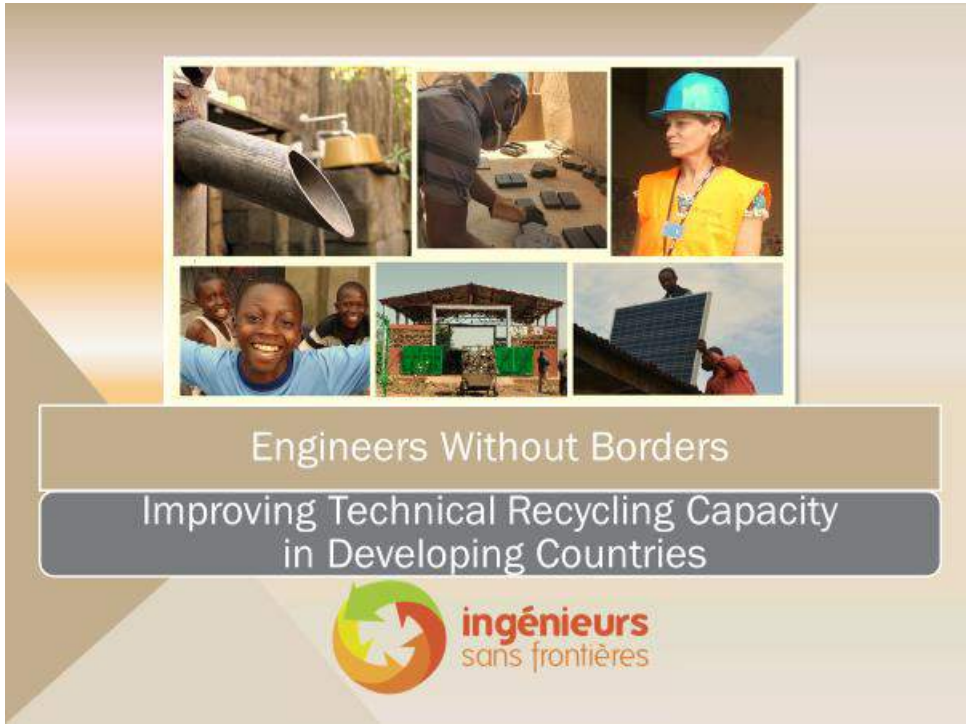
Find out more at: www.plasticbank.org

plasticbank.org

Further information:

Contact David Katz
https://www.plasticbank.org/contact/

Improving Technical Recycling Capacity in Developing Countries - Jean-Paul Bindelle, Engineers Without Borders



British Plastics Federation

What is ISF (Engineers without Borders)

- A Belgian NGO active since 1990
- Officially recognised NGO since 2000
- Fights against poverty in the world with projects
  - supporting local initiatives
  - with appropriable technical solutions
  - self supporting technical and economically on a long term

ingénieurs sans frontières

How do we recycle?

Recycling is a chain with several operations

1. Collection: the bags are collected throughout the city. Several tons per week are be treated to be competitive on the market
2. Preparation of the material: sorting, cutting, scrub => will allow the raw material to be used in machines without damaging them
3. Shredding
4. Washing and drying
5. Agglomeration
6. Industrial sales as raw material (pellets sorted, washed and clean) for manufacture of finished products

ingénieurs sans frontières

WHAT IS TECHNICALLY NEEDED

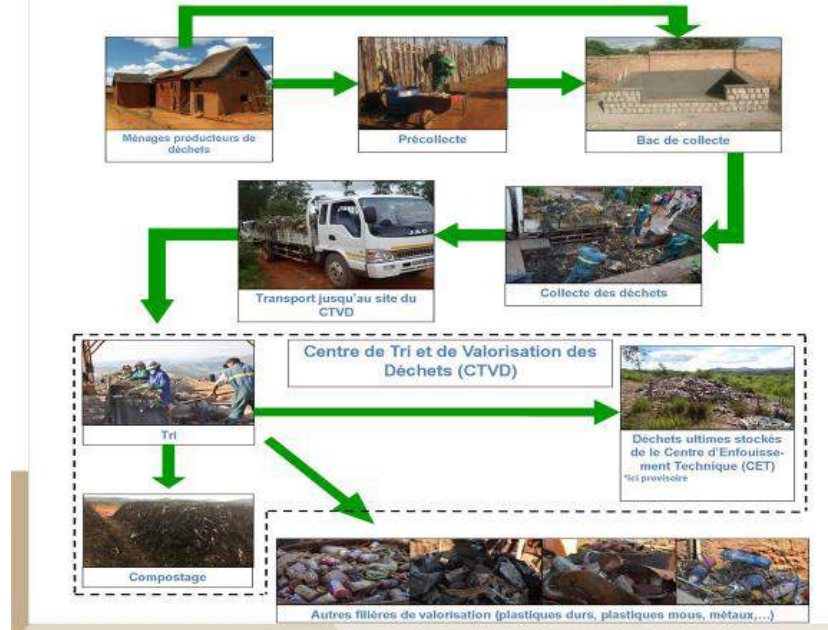
Machines at very low prices (recovery equipment, ...)

Technical simplicity (difficulty manufacturing parts, lack of technical qualification) mainly developed by North and South engineers and technicians

As much as possible, no be depending of the electricity because of lack of electricity.

Easy to be copied by the South → appropriable technologies are needed

ingénieurs sans frontières



WASTE MANAGEMENT. MADAGASCAR

DOWNTOWN

Before the program, wastes around the refuse bins on hundreds of meters

Refuse bins cleand up and rebuilt

Daily collection of the refuse bins

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PARTNERS

33

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Thanks for your attention !

Questions ?

ISF contacts :
http://www.isf-iai.be
info@isf-iai.be
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34

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ingénieurs sans frontières

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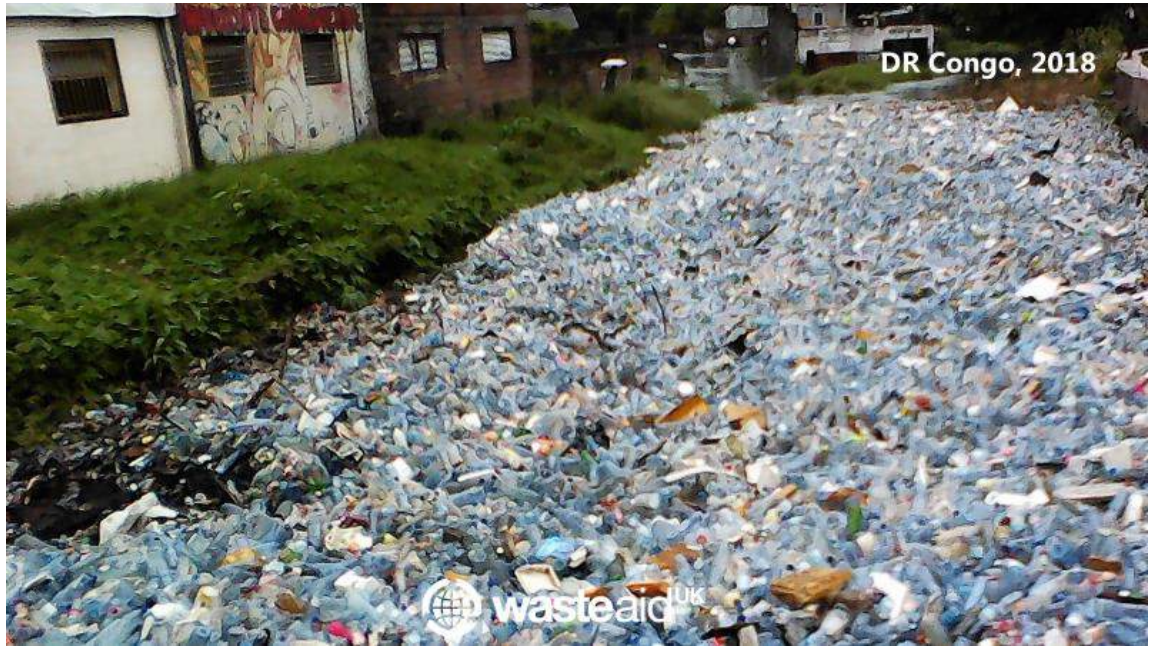
Tackling Plastics Waste at Source in Developing Countries - Zoë Lenkiewicz, WasteAid UK

British Plastics Federation

When people have no waste management service, they have no option other than to burn or dump their waste locally. In fact, there are 2 billion people in the world without decent waste collection and 3 billion without a proper waste disposal facility.

It is estimated that up to 70% of marine plastics come from unmanaged household waste in low-income countries. 38 of the 50 largest informal dumpsites in the world are on the coast, spilling waste directly into the sea. The health consequences of unmanaged waste are the most serious for children, who suffer from nutritional malabsorption and stunting by the age of 8, as well as respiratory problems and a significant increase in case of diarrhoea.

A United Nations / ISWA study found that, when all the costs to society are considered, it is 5 to 10 times cheaper to society to implement a sustainable waste management system than to do nothing.



The good news is that tackling waste, and moving to more circular based systems, can be an engine for sustainable development. Livelihoods from recycling generate a positive 'pull' to prevent plastic reaching the oceans. This 'pull' can sometimes be achieved by helping communities and industry work together to create demand for high quality post-consumer plastics.

We also need to engage on a community level to create markets for low grade material. The cost of transport fuel and fluctuating global markets can make a centralised recycling system collapse overnight. The transport cost for very low value materials often makes it uneconomical to recover.

We need to be supporting new circular economy business models and SMEs that are developing new product solutions from recycled plastics. There is an urgent need to act. While upstream design will ultimately help, that is a longer-term solution. We need to be collecting plastic now to make a difference now.

WasteAid UK works with communities where there is no waste management, to help turn waste into resource. We train people to analyse the waste materials polluting their environment, and help communities use the resources that are locally abundant. In this way they can turn the waste pollution problem into an economic opportunity.

The **Walk for WasteAid 2018** is taking place on 23 June, and everyone is invited to join. This year is a 25m trek across the 16 historic London bridges, to raise awareness and funds to help more communities keep more plastic out of the oceans. Sponsorship opportunities are available, please contact zoe@wasteaid.org.uk.

Further information:

Walk for WasteAid 2018 – more info and sponsorship

Zoe's full presentation and notes are available here

Contact Zoe Lenkiewicz zoe@wasteaid.org.uk

Propelling Plastics into a Circular Economy - Adrian Griffiths, Recycling Technologies

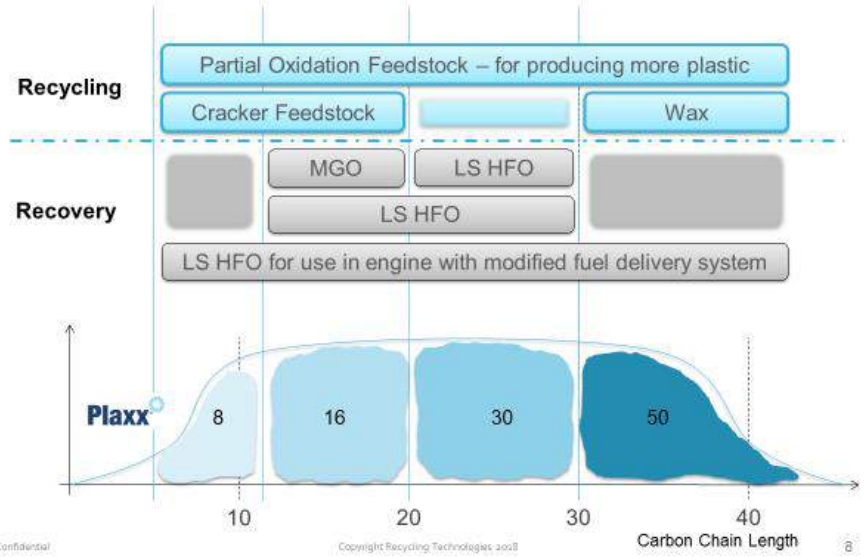
British Plastics Federation

Chemical Recycling – the RT7000

Recycling Technologies

Use of Plaxx® - many high value applications

Recycling Technologies

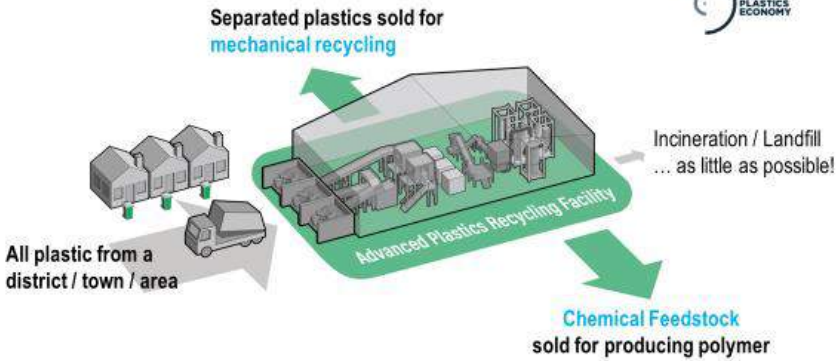


Project Lodestar

A blueprint for recycling >90% of plastic

Recycling Technologies

NEW PLASTICS ECONOMY



ZERO WASTE SCOTLAND · BINN GROUP · ecoidea · BOREALIS Keep Discovering · McKinsey&Company · TOMRA · Unilever · MARS · MULTI MATERIAL BC · greiner packaging · Coca-Cola · DANONE

Come and join us....

Recycling Technologies

"I was keen to invest in such a worthwhile project. I enjoy being part of something that could really change the way we deal with waste plastic."

MELISSA LEEKE INVESTOR

Further information:

Adrian's full presentation is available here

Contact http://recyclingtechnologies.co.uk/contact/

https://recyclingtechnologies.co.uk

Turning conversations into action - Mark Pawsey MP & Barry Turner

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British Plastics Federation

Proposed pledge on marine litter

Due to the harmful effects of all litter and waste in our oceans we the attendees of the BPF marine litter event held on the 7th February 2017 agree to take collaborative action to reduce waste and litter entering our oceans.

This will include measures to :

- PRN Reform: Collaborate to ensure the revision of and the extension of the UK producer responsibility system supports the achievement of a truly circular economy, the elimination of waste and minimises the impact on the wider environment.
- Littering & Environment: Work with all relevant stakeholders to develop effective best practice measures to curb litter and the effects of its leakage into the wider environment . This will include support and collaboration on anti-littering and behavioural change and education initiatives .
- Design: Seek to collaborate to ensure our products are designed to ensure resource efficiency and end of life considerations are fully taken into account.
- Waste management: Openly share and develop best practice to improve waste management systems in the developing world.

#BPFMarineLitter

British Plastics Federation

PRN Industry Roundtable

1. Everyone should play their part – this should result in the reduction or removal of the de minimis level to expand the number of obligated businesses (just as currently with batteries and all WEEE)
2. The system should financially reward recyclability
3. The system should financially reward inclusion of recycled content
4. Local authorities, businesses, and places of work should work towards a standard base recycling system, to provide certainty for all and allow the introduction of a universal labelling system.
5. The proceeds of the new PRN fund would be distributed by an independent body that should include cross-sector industry members to achieve desired outcomes – a precedent model of this is ENTRUST for the Landfill Tax.
6. All reprocessors and exporters of packaging waste must be obligated to be part of the system to ensure we measure the true recycling rates. Also, PERNs should be modified, not least to remove their inherent advantage over PRNs.

#BPFMarineLitter

BPF
British Plastics Federation

What the Pledge **could** lead to

- Setting up a forum to bring experts together from all stakeholders to coordinate action in the 4 areas of:
  - 1) Effective PRN reform
  - 2)Less litter and waste
  - 3)Ecodesign being the norm
  - 4)Effective waste management interventions **in developing nations**
- Ensuring future producer responsibility is more strategic and supports the changes we all need to see.
- Co-ordinated actions on education, littering, waste and behavioural change.
- For those items most likely to be littered examining whether there are better alternatives and if so taking steps to migrate to those.
- Promoting effective interventions in waste management to developing nations.