Plastic and waste management in the spotlight

Priorities to deliver global Climate Change mitigation

Aims and objectives

- **Lead and inform the continued development of plastics recycling and resource management.**

- **Be the UK's plastic value chain co-ordinators and the voice of reason.**

- **Educate the public and businesses on the recycling of plastics to protect the environment.**

- **To preserve and protect the physical and natural environment for the public benefit through the promotion of waste reduction and recycling of plastics**

European Association Of Plastics Recycling & Recovery Organisations

Aim: To exchange experiences and thus optimise national effectiveness through international co-operation

Activities of EPRO

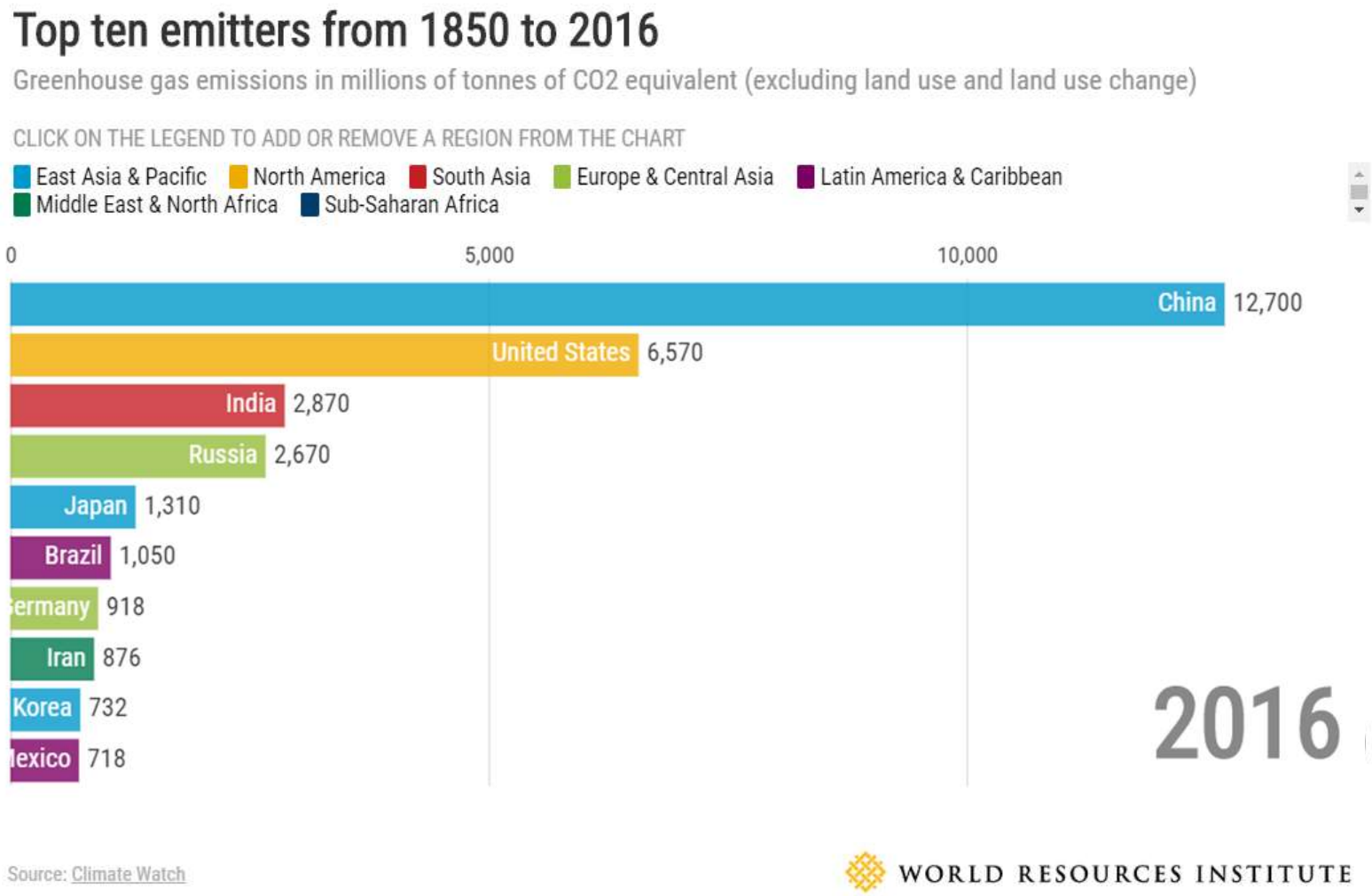
THE COLLINS WORD OF THE YEAR 2019 IS...

climate strike *noun*: a form of protest in which people absent themselves from education or work in order to join demonstrations demanding action to counter climate change

- **double down** *phrasal verb*: to reinforce one's commitment to a venture or idea in spite of opposition or risk
- **hopepunk** *noun*: a literary / artistic movement that celebrates the pursuit of positive aims in the face of adversity
- **rewilding** *noun*: the practice of returning areas of land to a wild state, including the reintroduction of animal species that are no longer naturally found there

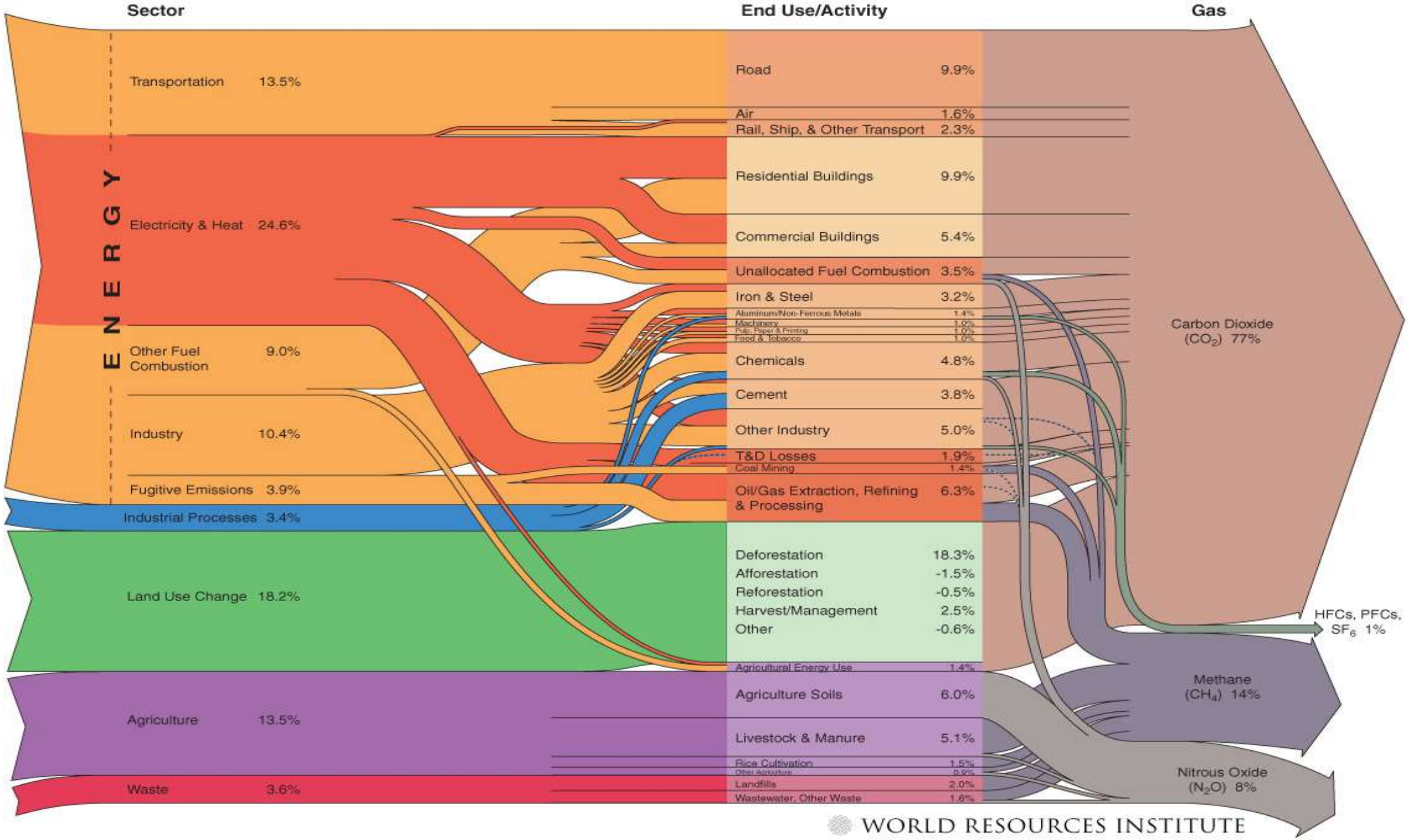
https://www.collinsdictionary.com/woty

Greenhouse Gas Emissions Over 165 Years



https://www.wri.org/resources/data-visualizations/greenhouse-gas-emissions-over-165-years

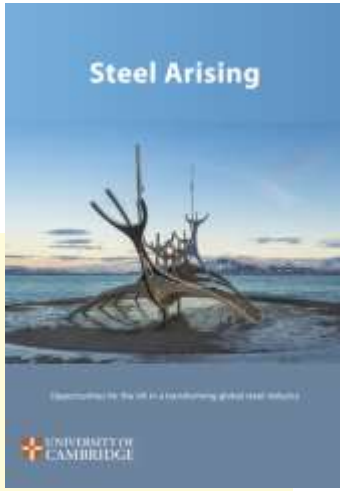
World GHG Emissions Flow Chart



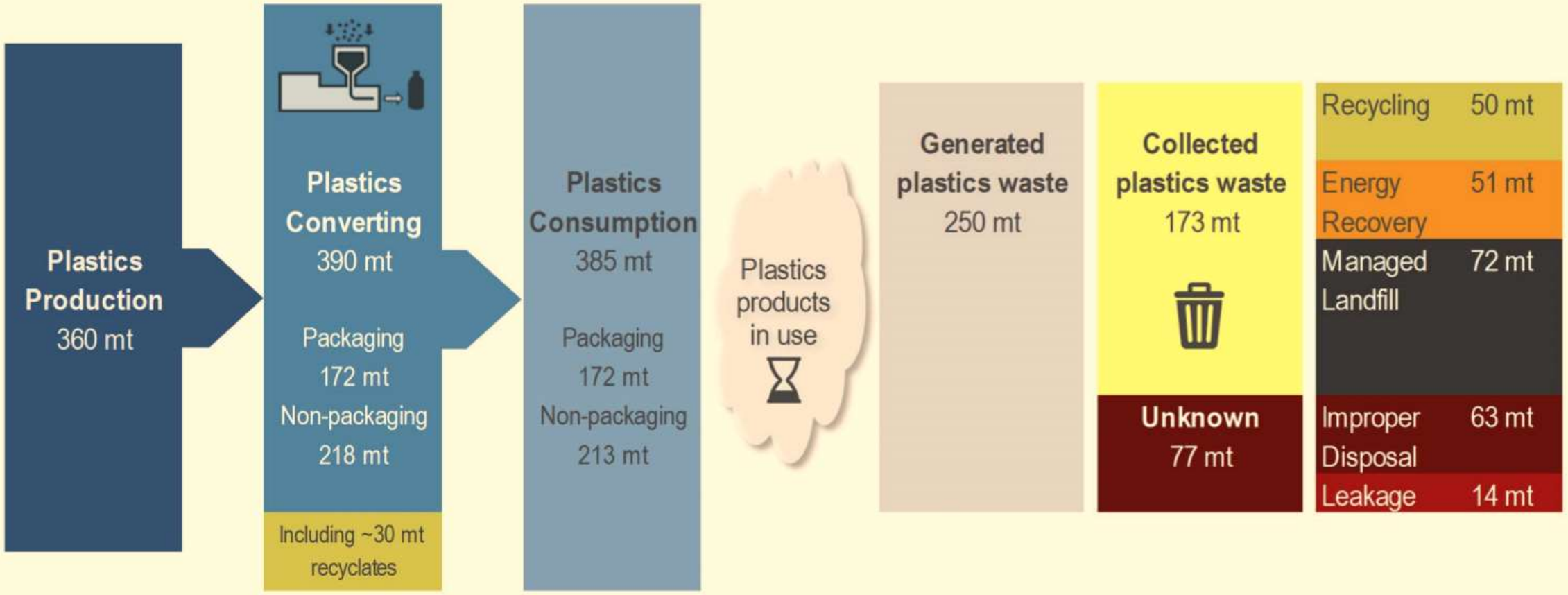
WORLD RESOURCES INSTITUTE

GLOBAL PLASTICS ALLIANCE

Global Plastics Flow



Linear global plastics flow chart from plastics production to plastics waste 2018



Where are the world's largest dumpsites?

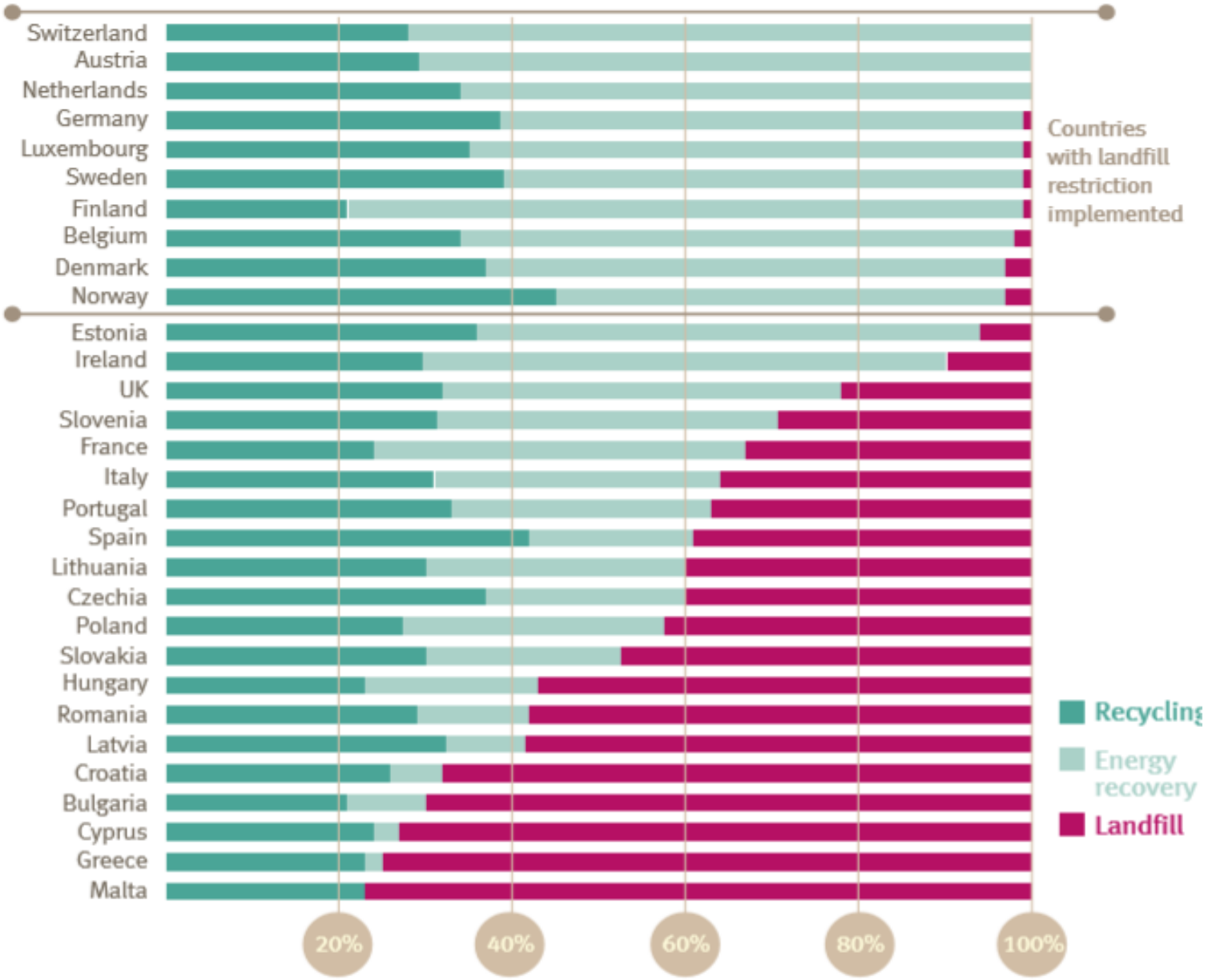
Projection: Peter's

Data: Redrawn from ISWA Roadmap to Closing Dumpsites

wasteaid UK


Billiard Ball

Plastic **post-consumer waste rates** of recycling, energy recovery and landfill per country in 2018



Plastics – the Facts 2019

An analysis of European plastics production, demand and waste data

PLASTICS SHAPE THE FUTURE

Waste Framework Directive

- Overarching legislative structure for the management of waste in EU countries (updated 2008)
- Includes the current plastics packaging recycling rate for the EU member states of **22.5%**
- Current target for all member states to reuse or recycle **50%** of their household waste by 2020
- UK household recycling rate - **~46%**
- Revised waste legislative framework entered into force in July 2018 - “ambitious yet realistic recycling rates”:
  - Recycling **55%** of municipal waste by **2025**, 60% by 2030 and 65% by 2035
  - Recycling **65%** of all packaging by **2025** and 70% by 2030
  - Recycling **50%** of plastic packaging by **2025**, and 55% by 2030
  - Reduce landfill to maximum of **10%** of municipal waste by **2030**

Legislation & Consultations - UK

- 25 Year Environment Plan - eradicate all avoidable plastic waste by 2042
- Single use plastics consultation – summary of responses 2018
- Resources & Waste Strategy – December 2018

Four Consultations

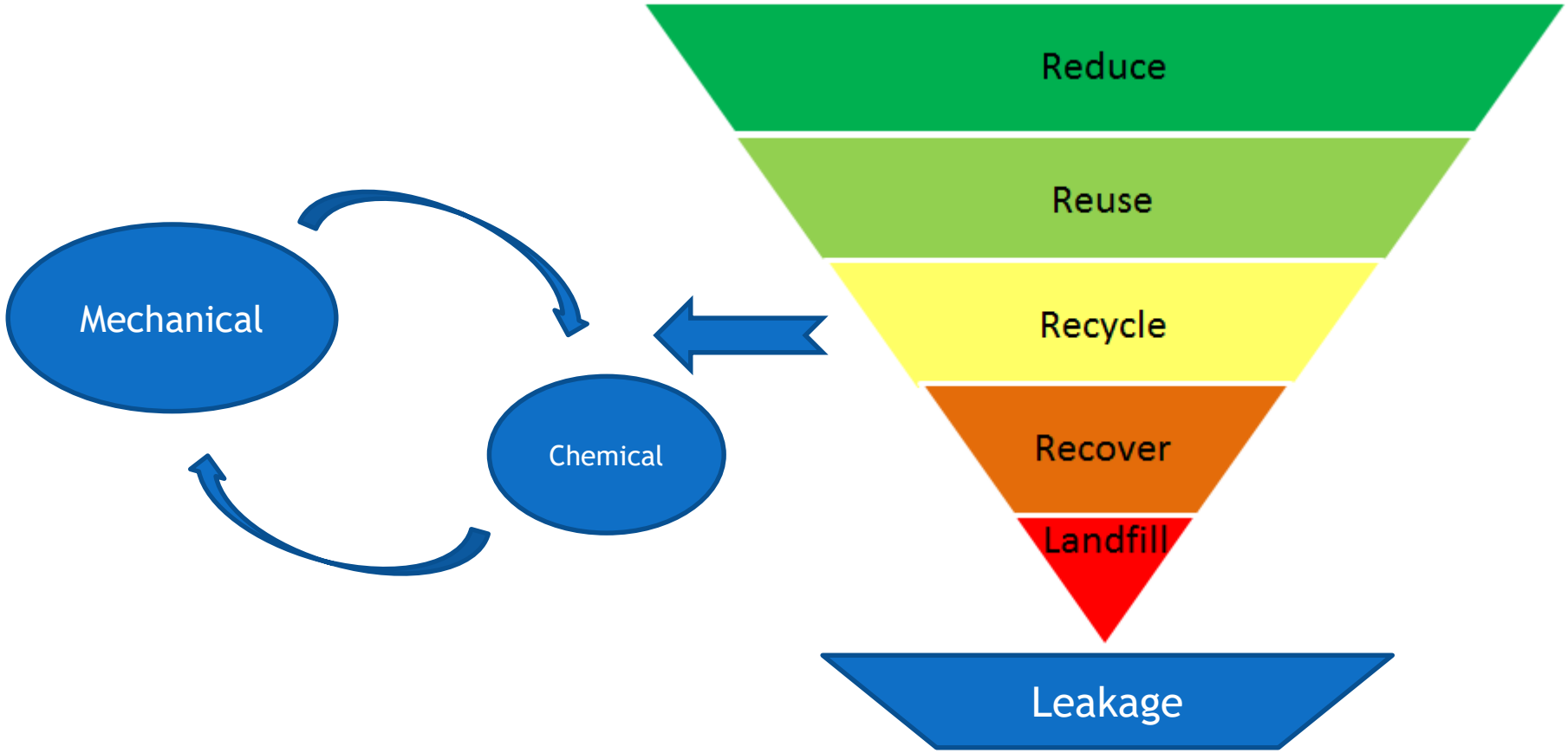
- Reforming UK packaging producer responsibility system
- Plastic packaging tax – 30% recycled content to avoid tax
- Consistency in household and business recycling collections in England
- Deposit Return Schemes

Principles

- Key principle - **full net cost** of managing packaging for costs of collection, transport, sorting, reprocessing and disposal of used packaging
- Also, funding consumer communication campaigns and the clean-up costs of littered and fly-tipped packaging
- Packaging is:
  - Designed to be recyclable (where practical and environmentally beneficial)
  - Labelled clearly to indicate whether it can be recycled or not
  - Every household can recycle a common set of dry recyclable materials and food waste

Waste Hierarchy

- Back to same product
- Virgin Plastic Replacement
- Other material replacement
- Additional Product



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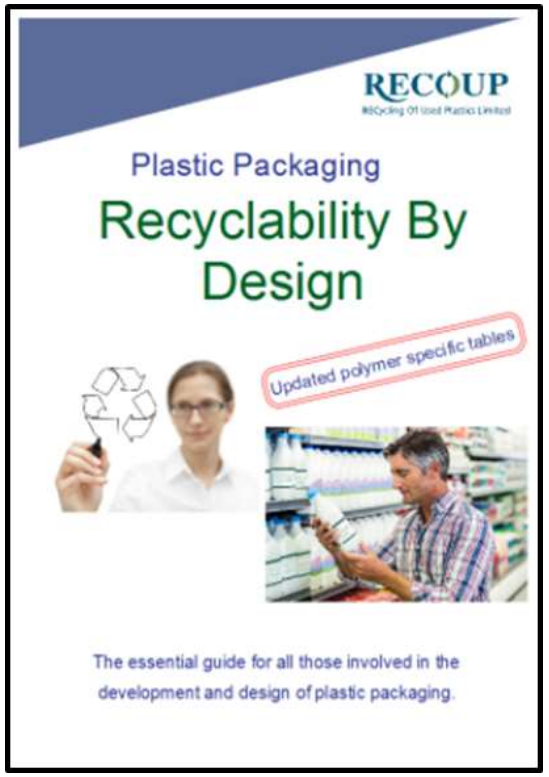
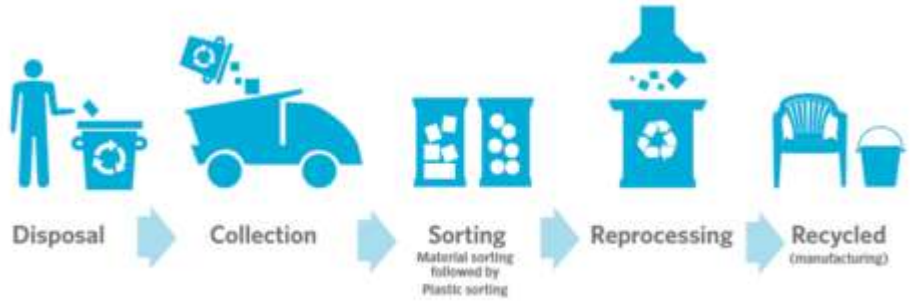




BIO-PLASTICS

- Bio-Degradable Plastics: Usually assumed to be compostable, but not always, and not under typical commercial composting conditions.
- Bio-Derived Plastics: Polymers derived from bio sourced materials such as corn, starch or food processing waste. Recyclable – same as traditional polymers
- Oxo-degradable plastics contain additives (usually metal salts), which accelerate their degradation when exposed to heat and/or light. They do not disappear, but leave micro-beads of polymer.

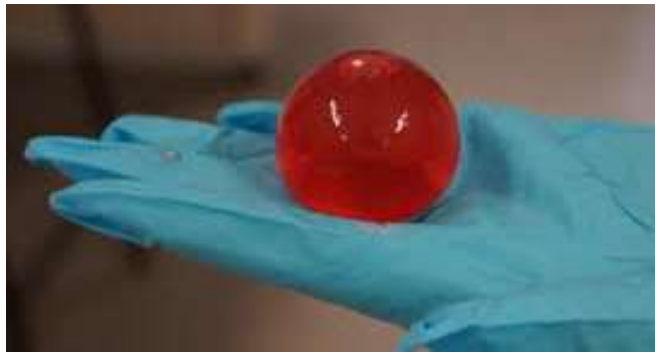
WHICH APPROACH IS RIGHT?

ALTERNATIVE MATERIALS

REFILLABLES

BIODEGRADABLES AND COMPOSTABLES

EDIBLE PACKAGING



RECYCLABILITY

TRANSPORTATION AND CO2 SAVINGS

WATER USAGE IN PRODUCTION

RAW MATERIAL SUPPLY

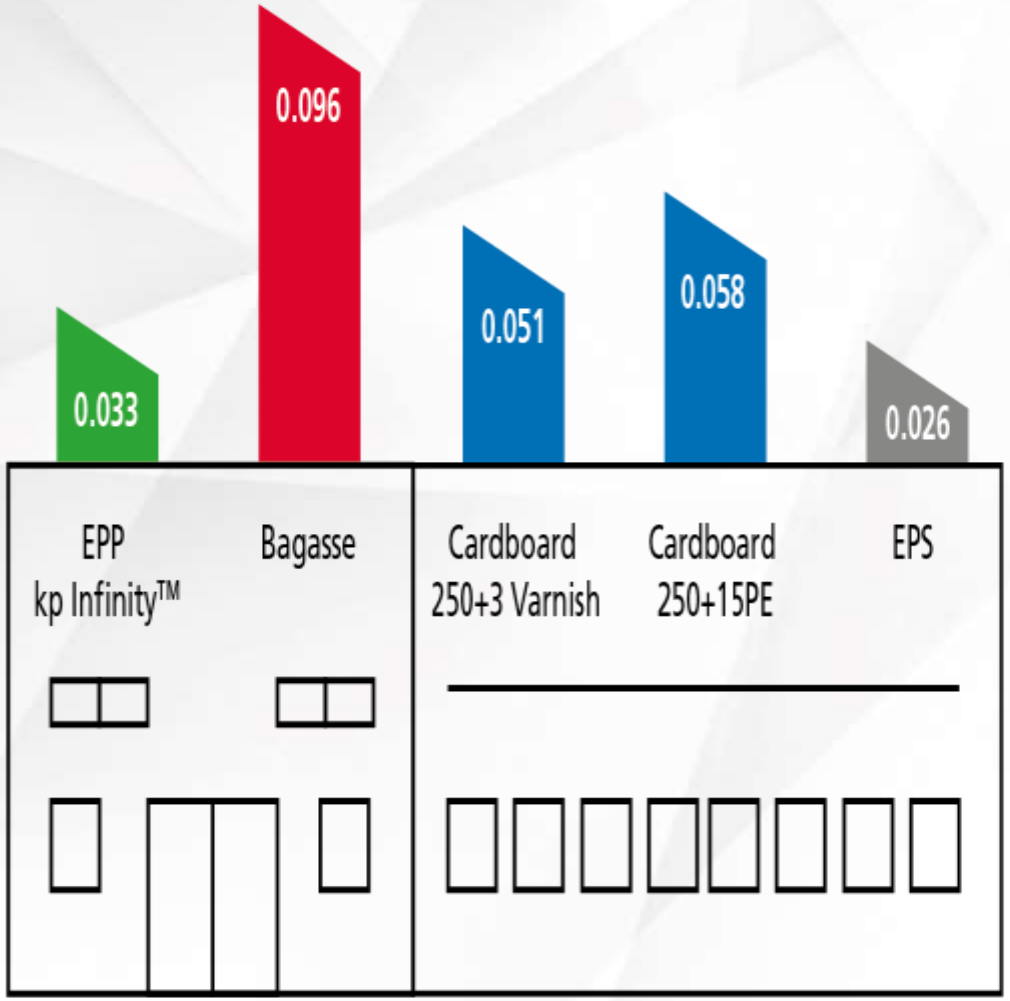
NET EFFECT ON THE NATURAL ENVIRONMENT

Comparison with alternative materials

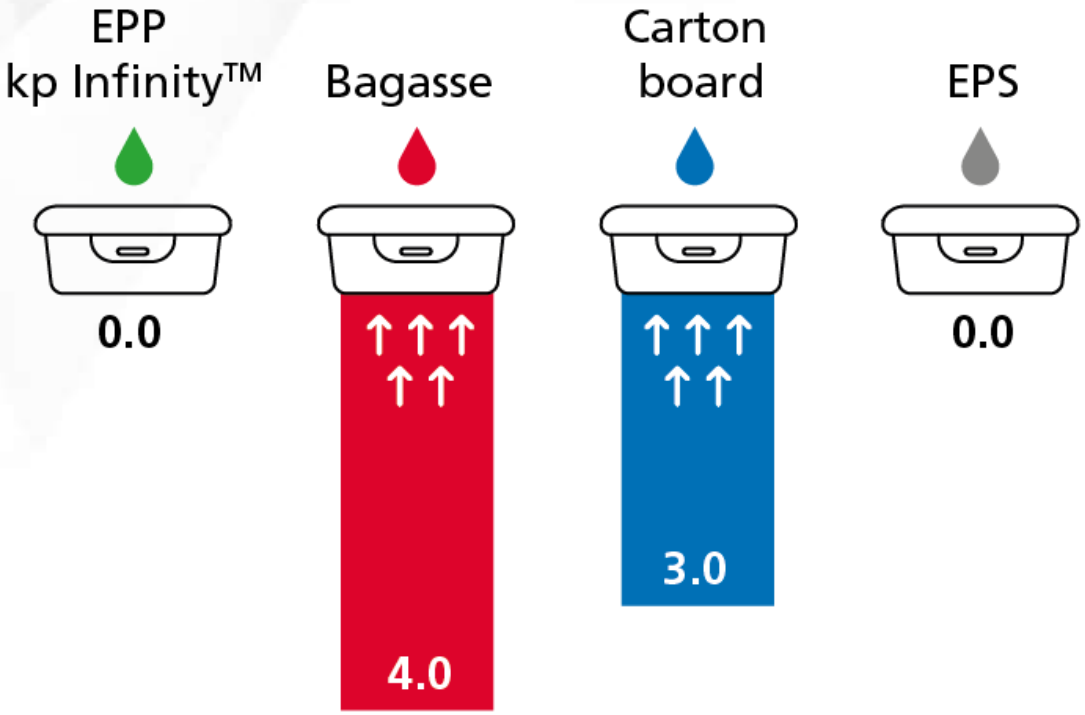
Properties	kp Infinity™	Bagasse	Carton board	EPS
Fully recyclable	Yes	No	Yes	No
Water resistant	Excellent	Poor	OK	Good
Resistant to acids and alkalis	Excellent	Poor	OK	Excellent
Lightweight	Good	Poor	OK	Excellent
Thermal protection	Excellent	Poor	Poor	Excellent
Resistant to hot oil	Excellent	Good	Good	Good
Microwaveable	Yes	No	No	No
Contains recyclate	No	No	No	No
Virgin material	Yes	Yes	Yes	Yes

Carbon emissions

Global Warming Potential (kg CO_2-Eq)

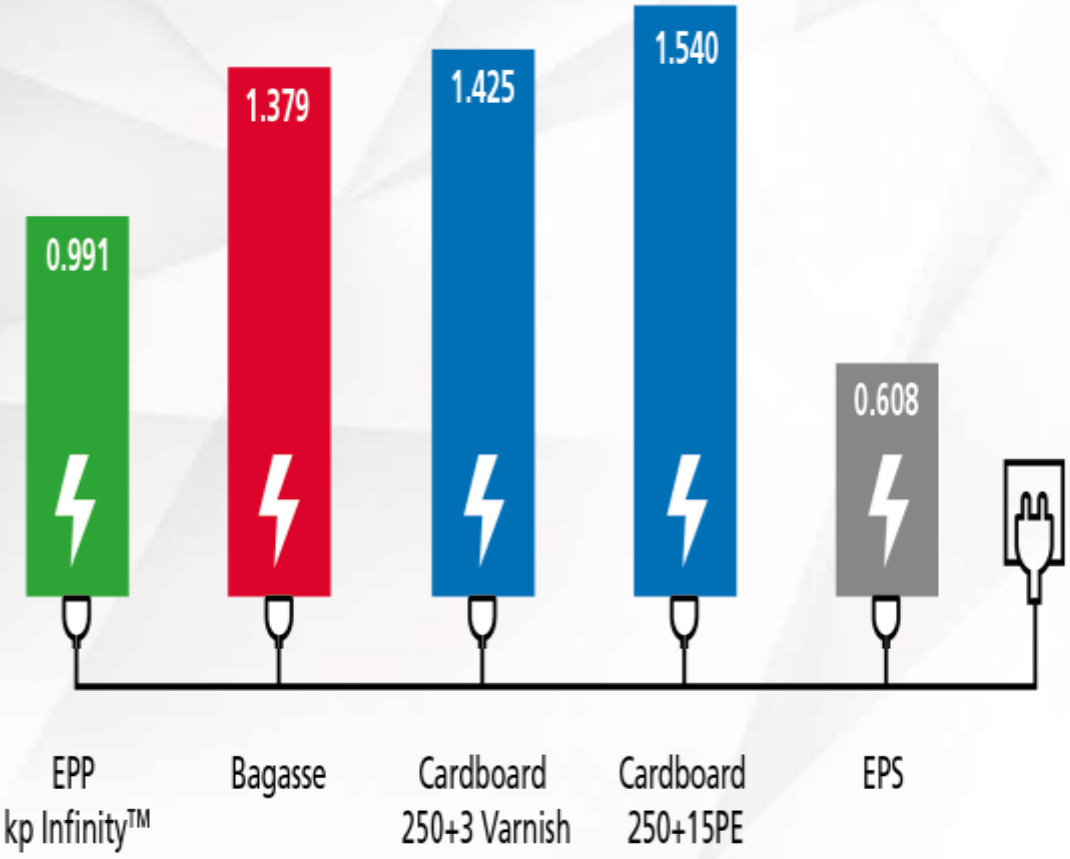


Water resistance



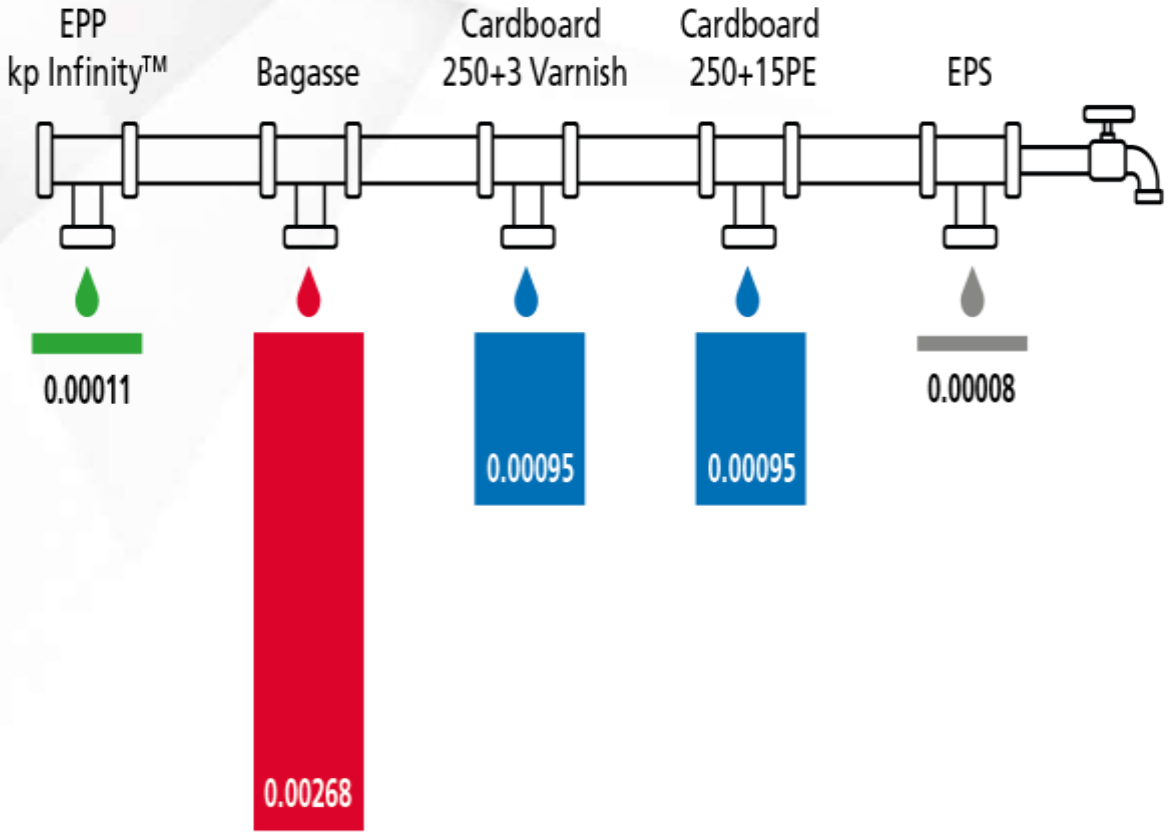
Energy use

Cumulative energy demand during the lifecycle (MJ-Eq)



Water use

Water use during the lifecycle (m^3)



QUINN PACKAGING

PLASTIC TRAY

CARDBOARD/PLASTIC LAMINATED TRAY

	PLASTIC TRAY	CARDBOARD TRAY
RECYCLED CONTENT	95% Recycled content	No recycled content. Produced from virgin pulp/trees.
RECYCLABILITY	100% Recyclable	Potentially Recyclable reliant on consumer intervention
CIRCULAR ECONOMY	Can be recycled back into itself. True circular economy.	Must be downcycled. (potentially energy recovery or landfill.)

UK Household Plastic Collections

99%
Plastic Bottles
387 Local Authorities

79%
Plastic Pots, Tubs & Trays
310 Local Authorities

17%
Film
69 Local Authorities

Pledge 2 Recycle PLASTICS

Tools and Support For Consumer Engagement

- **Free Toolkit -** Provides all resources needed to run a plastics recycling communications campaign
- **Plastic Info Hub** – education point for plastic and plastic recycling
- **Communication Visuals** – posters, social media, public transport ads, press ads, banners
- **Written Content** – for social media, websites & leaflets
- **Education pack** – assembly presentation and activities, factsheets, lesson plan, video

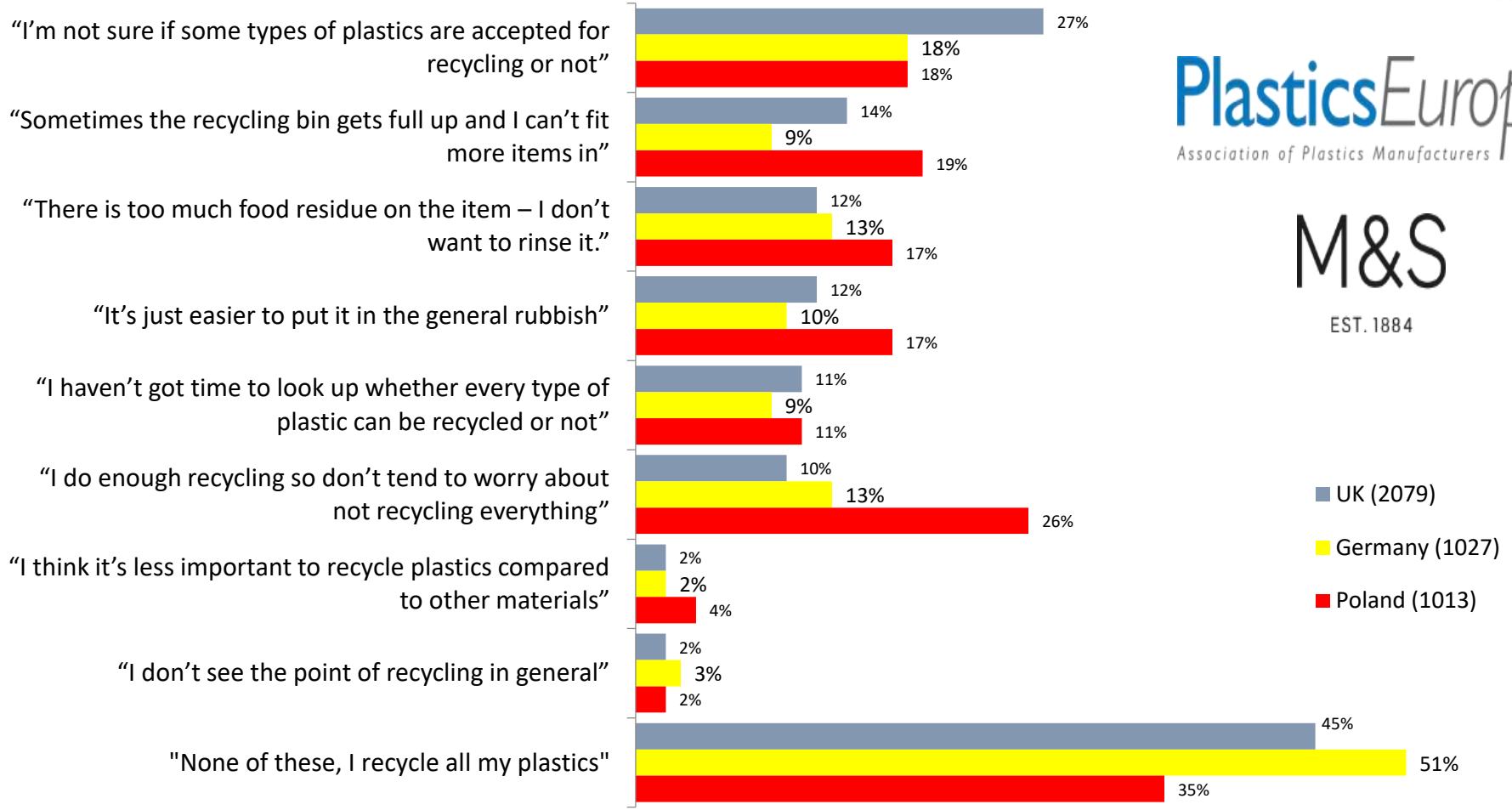

WATCH
ME
THINK

Plastics Recycling Consumer Insight Research

An International Comparison

PlasticsEurope
Association of Plastics Manufacturers

M&S
EST. 1884



Meeting the Plastic Packaging Recycled Content Challenge

UK Household Sorting & Reprocessing Capacity 2019

The Challenge

- Over **2,300,000 tonnes** of plastic packaging placed on the UK market each year – **1,500,000** tonnes consumer and **800,000 tonnes** non-consumer

RECOUP Research

- Current UK **MRF and PRF capacity**
- UK **Reprocessing capacity** including food grade material
- Planned **new infrastructure**
- **Modelling scenarios** to identify capacity gaps

Considerations

- ✓ Policy changes (recycled content)
- ✓ Plastic film and non bottle PET
- ✓ Food grade Polypropylene
- ✓ Reprocessing yield losses
- ✓ Deposit Return Scheme

Key Technologies

Mechanical Recycling

MRF and PRF sorting

Residual waste recovery

Energy from Waste

RDF and SRF

Chemical recycling

The Plastics Industry Awards 2019

Recycled Products

Summary

- **End of a year of change, start of …. A year of change**

- **Consider where single use plastic is genuinely not needed**
- **Evidence based approach to recyclability and sustainability**
- **Implement accepted eco-design principles**
- **Adopt agreed circular economy principles**

- **Good luck in Madrid next week !**

Plastic and waste management in the spotlight

Priorities to deliver global Climate Change mitigation

RECOUP

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