Reconomy

Spotlight on:

Designing out disposables

Understanding the single-use hierarchy

Insight paper

Introduction

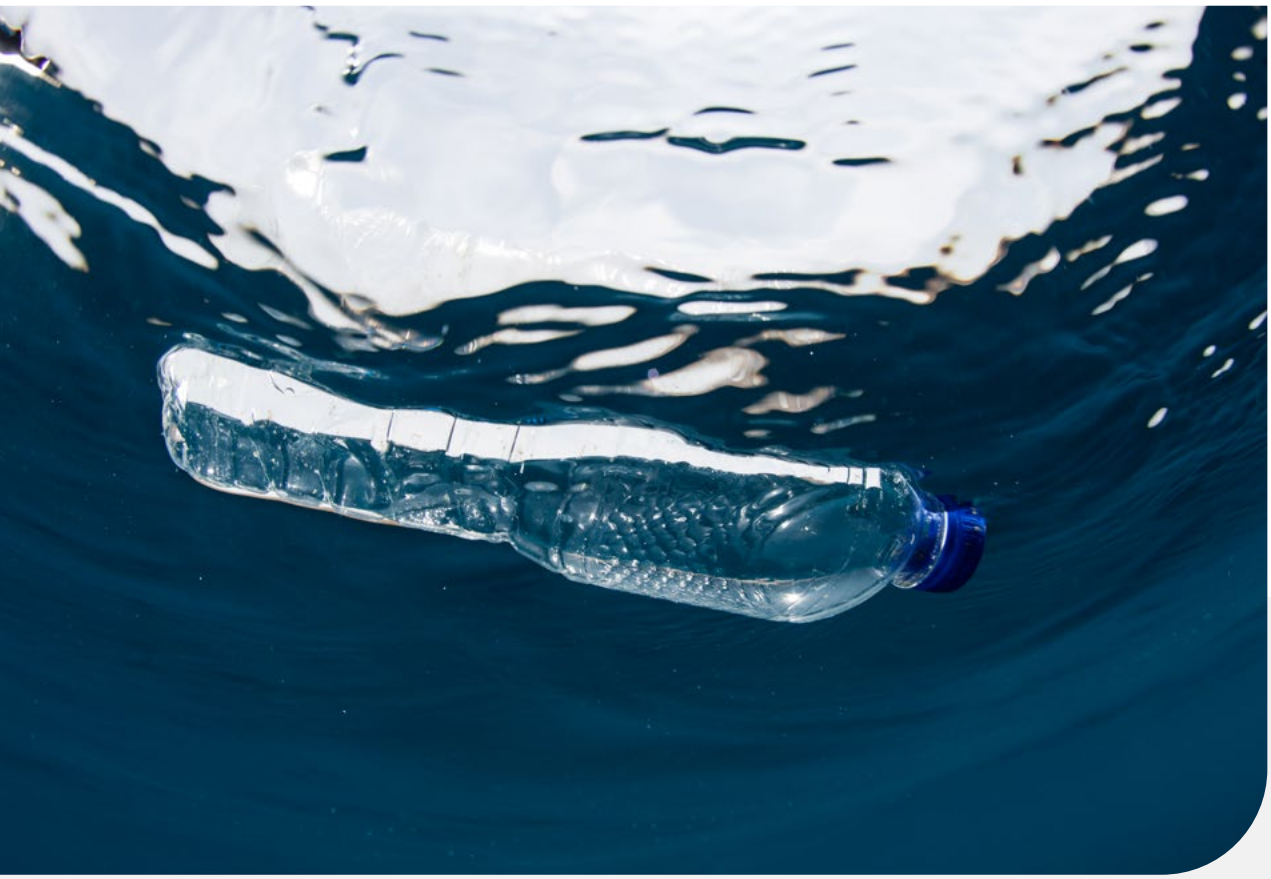
Ever since Blue Planet hit our screens back in 2017, single use, disposable packaging has been firmly in the spotlight. We were awoken to the realisation of how damaging our on-the-go, convenience culture has been to the planet.

The businesses most affected by this were in the retail and hospitality sectors. The issue was that almost overnight the consumer radically moved the goalposts. As a result of trying to meet these consumer demands as quickly as possible, and minimise any further brand or financial damage, many businesses ended up with suboptimal, tactical solutions.

At best the alternative disposables that were introduced were inefficient. In some cases, they have resulted in significant, secondary environmental impacts. The fact that these consequential impacts were not associated with plastic at the time meant that they were not overtly impacting upon the consumers' conscience and were overlooked.

However, with hindsight now on our side, these short-sighted switches have left us in a similar situation to where we were five years ago.

In this paper we explore the latest packaging legislation updates along with a breakdown of materials and how to choose the right one.



Current market

In April 2022 updates were released on the Extended Producer Responsibility (EPR) consultation response and the intended direction the Government is planning to take in relation to regulations.

Interestingly it was revealed that compostable and biodegradable packaging will now be required to add the 'do not recycle' label. Further in we explore and explain the limitations and misconceptions with this material and why new labeling has been mandated.

There has been various updates and releases of environmental legislation that tackles issues such as packaging and plastics (e.g. Single-use plastics directive) and the industry has been responding by moving towards more sustainable alternatives. The negative attention around plastics and the pollution problem demonised the material, and rightly so when specific types of plastic are used for certain applications (e.g. over packaging and unnecessary packaging).

It is important to acknowledge that plastic can play a sustainably useful role when selected and utilized appropriately.

Let's look at packaging. Plastic packaging is light, strong and does not consume many resources to produce or transport it. It also does a fantastic job at preserving the life of fresh foods.
The resource required to produce plastic is marginal in comparison to what is required to produce the food products they protect. When compared to alternatives in typical applications it can:

- Reduce energy costs by up to 40%
- Reduce waste by 75-85%
- Reduce emissions by 70%
- Reduce water pollution by up 90%

However, if only used for a single use, then disposed of, its positive merits are lost. If it is reused, in many cases it is a more sustainable option than wood or another bio-material.

While plastic plays an important role in certain areas, there are still concerns over the resources required to produce it as well as the polymer mixes and processing capacity. We are starting to see for those necessary plastics, a positive movement in the industry to replace oil and gas derived plastics for a more sustainable bio-based alternative which is derived from renewable resources such as biomass (bio-based is not the same as biodegradable. Bio-based plastics are fully or partially made from biological resources).

Choosing the right material

1. Eliminate, reduce and reuse

Consumer engagement in combating plastic and single use packaging has continued to rise. Reusable coffee cups and reusable water bottles have all gained popularity and are by far the most sustainable option, when regularly used, because they prevent waste in the first place. Businesses have a responsibility beyond the waste that is generated on-site. It includes the materials upstream as well as those that leave their premises and are disposed of by the consumer. Schemes that encourage reusable cups to be used, with incentives offered are all positive options for consumers.

2. Recycle

While waste prevention is always the ideal, if no other option is available, it is better to use coffee cups that can be recycled and collected separately. The introduction of coffee cup recycling collections and schemes is making this a much more desirable option. Valpak, a Reconomy Group company, partnered with Costa Coffee in 2018 to develop this scheme to increase the collection and recycling of paper cups in the UK. The National Cup Recycling Scheme makes the collection of paper cups commercially attractive to waste collectors by offering a financial incentive to collect.

Many assume that all disposables should be able to fall into this recycling category. If coffee cups or takeaway food containers are placed into any recycling bins they are surely being recycled right? Although many types of cups can be recycled, the extent to which they are recycled depends on the technology available in the area the material is collected. The reality is that cups need to be sorted into their separate types and formats to facilitate final reprocessing back into reusable products which isn't always possible.

To avoid waste ending up in landfill, being incinerated or leaking into our oceans we shouldn't be attempting to recycle poor quality items. The industry itself needs to work on manufacturing products that are more easily recyclable and that can be collected and processed in the UK. More consistent council collections are on the horizon which should help with this.

CASE STUDIES

Reusable food and drinks containers vs single use

The reusable option costs 1p per use, based on units costing £5.50 and being used 1,000 times. To buy 4,000 of these costs £21,840 with a ROI of less than one month. Compare this to single use at a cost of 22p per use plus 2p disposal cost. Not a positive environmental message either with this route due to limited recycling options. Cost each year is £338,221.

NATIONAL CUP RECYCLING SCHEME

The UK's largest paper cup recycling

The scheme sees major retailers working together to create a system for collecting and recycling paper cups - including everything from coffee cups to milkshake cups - and turning them into high quality products.

Click here to find out more

2.1 Compost

Compostable cutlery, cups and containers flooded the market in response to the hatred of plastic by consumers. This was seen as the sustainable alternative – the labelling told consumers these could be composted which sounded sustainable, right? Unfortunately, not always the case. The infrastructure we have in the UK isn't sufficient to collect and handle this. There are limited commercial compost facilities and many businesses were unaware of how to dispose of them correctly. Compostable refers to goods that can biodegrade in under 12 weeks in commercial composting conditions, to become nutrient rich fertiliser. It shouldn't be mistaken for biodegradable which is a vague term which does not inform us of timescales or conditions for an item to break down.

To ensure maximum benefit from compostable items, the compostables should be collected with food waste and sent to a composting facility (In-Vessel Composter or IVC). This is classified as recycling as the materials are turned into a new product of value.

It is important that your waste collector confirms that compostable packaging can be accepted by the processing facility. A lot of food waste is sent to Anaerobic Digestion (AD) plants, most of which are not designed to process any kind of packaging, including compostable packaging. Some AD plants however do have a composting phase, but most have tight limits on the volume of packaging entering the process.

If compostable packaging is sent to unsuitable AD plants, it will be removed along with all other packaging, at the front of the process and redirected to general waste where it will either go for disposal to landfill or is turned into Energy from Waste (EfW).

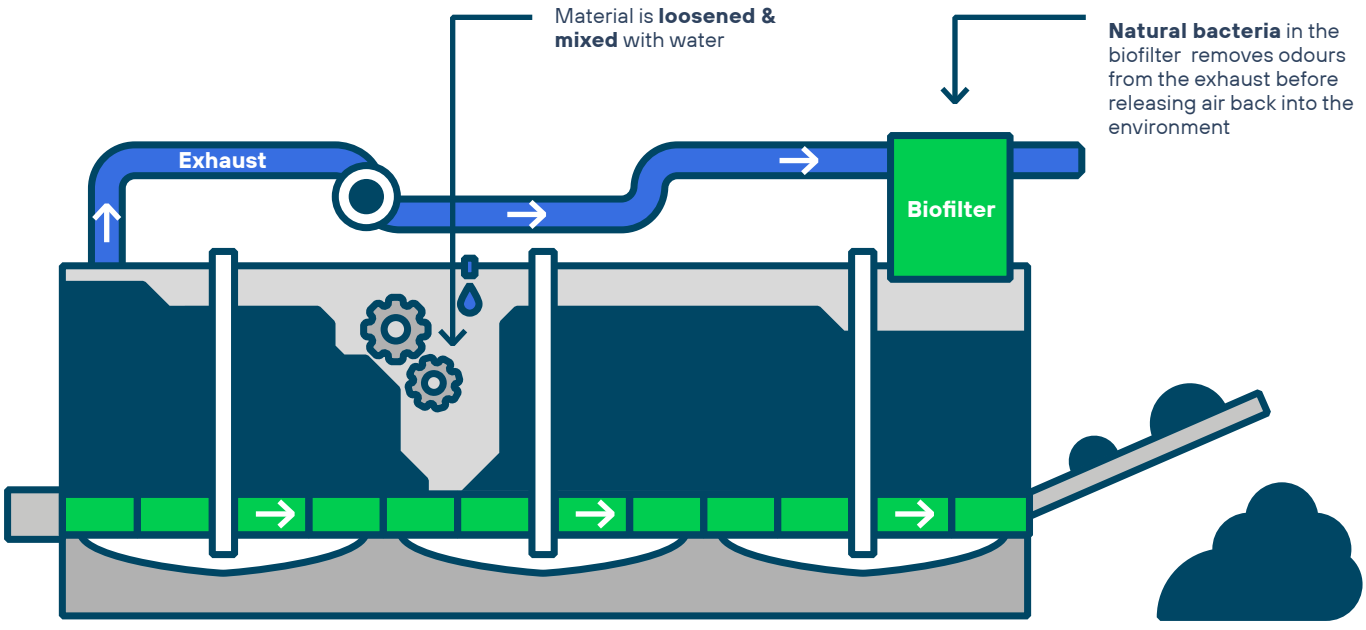
Term defined: Composting

Composting is an aerobic process where organisms naturally oxidise organic matter to produce a nutrient-rich fertiliser. The process produces CO_2 as a waste product.

When you see packaging that says 'compostable' this doesnt mean it can go in your garden composter.

Materials require industrial composting because the process they go through to break the materials down. Heaps are heated to between 50°C and 60°C and are controlled with the correct level of moisture and air. Ideally, these facilities should be certified as PAS100. There is limited number of these facilities in the UK.

In-vessel industrial composting



How long until it's gone?

A common misconception is that marine debris will decompose. However, packaging, including compostable is not expected to break down in this environment. Instead of decomposing the material will only break down into smaller fragments which means they are still polluting the environment and entering the food chain.

10 - 20 years

1 - 5 years

Undetermined

200 years

600 years

50 years

6 weeks

450 years

Choosing the right material

3. Recover

Where segregated waste collections are not available, the next best option is thermal treatment, also known as recovery, or EfW. Many compostable materials are made from plant-based rather than oil-based materials. If plant-based items are disposed of in a general waste bin they will be recovered which means energy is produced from the process. This is the next best environmentally friendly option. The reason is due to the lining of the cups being plant-based PLA (Polylactic Acid) which is often made from dextrose (sugar) derived from corn.

Whether it is landfilled or burnt, plant-based materials release no harmful VOCs into the environment which is a process known as the 'natural step'. The same goes for biodegradable materials. If collected separately and sent to a composting facility the material will break down, although it takes longer.

The least favourable option is single use, mixed polymer plastics. These are made from different types of plastics which is a challenge to recycle. If disposed of in a general waste bin, the material is sent to EfW instead of being exported, poorly processed and then potentially sent to landfill or worse leaked into the oceans.

Single use packaging hierarchy: a cup of coffee

Conclusion

The UK waste management infrastructure is not capable of delivering UK wide solutions for:

1. Compostable product collections
2. Recycling of all types of plastics
3. Recycling of items made up of a mix of materials such as tetra pak, crisp packets

To improve and stop these issues we need to:

1. Push more reuse models
2. Enhance the current UK infrastructure, to manage composting and recycling of all plastics
3. Ensure recyclability of the 'must haves' plastics
4. Branch our packaging to look at alternatives which are fully recyclable and easily managed in the UK infrastructure
5. Collaborate with the waste supply chain down the routes required to support customers

If you are interested to find out how to develop a strategy and roadmap to get your business to design out disposables get in touch today.

Get in touch

Are you ready to start your sustainable business future? Contact us today:

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