GREENPEACE x EVERYDAY PLASTIC

THE BIG PLASTIC COUNT RESULTS

HOW CITIZEN SCIENCE EXPOSED A SYSTEM INCAPABLE OF TACKLING THE PLASTIC CRISIS

Counting plastic for The Big Plastic Count
© Jack Taylor Gotch / Greenpeace.

Front page: Some of the plastic Daniel collected over the course of a year
© Ollie Harrop, 2018. Image courtesy of Everyday Plastic.

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EXECUTIVE SUMMARY

The world is in a plastic crisis and people across the UK are demanding change. Globally, over 350 million tonnes of plastic are created each year,[1] and the failure to manage the enormous waste is having disastrous effects on human health and ecosystems worldwide.

The UK produces the second largest amount of plastic waste per capita,[2] but it passes the buck to the Global South, exporting tonnes of trash for other people to deal with.

To address this crisis, Greenpeace and Everyday Plastic launched an investigation to get to grips with the scale of plastic use in the UK. The Big Plastic Count took place for one week in May 2022, with participants recording how much plastic packaging they threw in the bin or recycling, and what type. The results were then submitted to Greenpeace and Everyday Plastic for analysis.

An astonishing 248,957 people from 97,948 households across the UK took part in the count. This included 9,427 school students and 36 MPs.

"AN ASTONISHING 248,957 PEOPLE FROM 97,948 HOUSEHOLDS ACROSS THE UK TOOK PART IN THE COUNT."

Above: Plastic rubbish in a landfill site on Teeside, UK
© Ashley Cooper / Alamy.

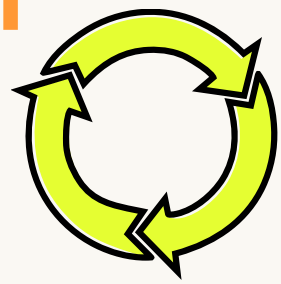
Key findings:

- **Nearly a quarter of a million people counted 6,437,813 pieces of plastic packaging waste in just one week.**
- **On average, each household threw away 66 pieces of plastic packaging in one week, which amounts to an estimated 3,432 pieces a year.**
- **If the totals for count week are assumed to be typical, this indicates that UK households are throwing away an estimated 1.85 billion pieces a week, or 96.57 billion pieces a year.**
- **The most commonly counted items were fruit and vegetable packaging (1.02 million pieces), closely followed by snack bags, packets and wrappers (1.01 million pieces), illustrating how difficult it is for shoppers to avoid packaging when purchasing these products.**
- **Only 12% of this plastic waste is likely to be recycled at reprocessing facilities in the UK. More of the UK's plastic waste (17%) is being shipped overseas than being recycled at home.**
- **Almost half of the UK's household plastic packaging waste (46%) is likely being incinerated, whilst the remaining 25% is buried in landfill.**
- **62% of the pieces of plastic recorded in the count are either not collected or poorly collected for recycling by UK local authorities, and likely to end up in landfill or incinerated.**

These figures paint a dire picture of the UK's plastic use and waste management systems. This is a turning point for plastics in Britain. More people than ever are aware of the scale of the problem and they want to see change. Fortunately, achievable and effective solutions to the crisis in the UK exist.

THE UK GOVERNMENT SHOULD ACT IMMEDIATELY AND DECISIVELY TO:

1



Set a target to almost entirely eliminate single-use plastic.

Setting a target to almost entirely eliminate single-use plastic in 15 years and introducing mandatory corporate reporting on plastic reduction will help create a level playing field for industry to transition to refill and reuse. This should be accompanied by a target to reduce single-use plastic by 50% by 2025. It is absolutely vital that these changes are inclusive. Reusable alternatives must be introduced simultaneously and be universally designed to work for everyone's needs, with any policy devised to deliver these reduction targets informed by the disabled community.

2

Ban plastic waste exports.

The government must ban plastic waste exports, starting with an immediate ban on all exports to non-OECD member countries and mixed plastic waste to OECD member countries. A complete ban should be in place by no later than 2025.

3

Implement an all-in Deposit Return Scheme and introduce Extended Producer Responsibility.

The government should implement an all-in Deposit Return Scheme (DRS) covering drinks containers for recycling and reuse. The scope of materials and deposit levels should be consistent across the UK.

4

Set an immediate moratorium on new incineration capacity.

The government must follow Scotland and Wales and end approvals for new incineration (also called 'energy-from-waste') facilities and prevent the replacement or upgrade of old plants that are near retirement, in order to support an overall reduction in incineration.

INTRODUCTION

In 2016, I decided to conduct what I thought would be a little experiment: storing every piece of plastic household waste that I generated for a whole year.

The catalysts were aplenty – I was seeing plastic pollution on my local beach, and packaging seemed out of control in my nearest supermarket. The tipping point however, was the fact that I was not offered recycling at my flat in Margate, Kent. If recycling wasn't available to me, then how effective could it actually be? And what part was I playing in the plastic crisis?

Twelve months later, my flat was stuffed with 22 bin bags full of plastic and the experiment wasn't looking so little. I knew I had a story to tell, but I needed help to tell it. Under the guidance of an earth scientist, myself and a team of 20 volunteers spent four days separating, counting, categorising, photographing and weighing every single piece of plastic. We covered the floor of a 2,000-capacity music venue with the waste that I had generated over a year. I learned that most of it would be incinerated or landfilled, and hardly any of it would have been recycled in the UK. Looking out over that sea of plastic was a shocking and visceral moment for me. For the first time, I felt fully connected to the wider plastic crisis and terrified of its impact.

Discovering my personal plastic footprint genuinely changed my life and motivated me to think bigger. Namely: how could I get as many members of the public as possible to engage directly with the amount of plastic they throw away? So I devised The Everyday Plastic Survey, a project which led to a partnership with Greenpeace and the UK's biggest nationwide investigation into household plastic waste: The Big Plastic Count.

“WE NEED TO REDUCE SINGLE-USE PLASTIC PACKAGING BY 50% BY 2025 AND URGENTLY TRANSITION TO REUSABLE PACKAGING WHICH CATERS TO EVERYONE’S NEEDS.”

Above: Some of the plastic Daniel collected over the course of a year
© Ollie Harrop, 2018. Image courtesy of Everyday Plastic.

In May 2022, almost 100,000 households across the country collected and sorted their plastic waste for an entire week, logging their results online with Greenpeace and Everyday Plastic. A plastic survey has never been carried out on this scale before, and this incredible piece of citizen science has allowed us to build a unique picture of household plastic habits.

By participating in The Big Plastic Count, hundreds of thousands of people have shared an experience similar to mine, and in the process recorded the disposal of nearly 6.5 million pieces of plastic. Furthermore, only 12% of this plastic waste is expected to be recycled in the UK, with the rest either put into landfill, incinerated or exported abroad, where other countries have to deal with our harmful waste.

The Big Plastic Count has galvanised the British public to investigate how much they throw away and what happens to their waste, empowering them to gather the crucial evidence presented in this report. These new figures lay bare the responsibility of the government, big brands and supermarkets to tackle this crisis, showing just how unavoidable plastic waste is for the UK public and why recycling is only part of the solution.

The government is currently deciding on legally binding waste reduction targets as part of the Environment Act, but a specific plastic waste reduction target hasn't been proposed. That's simply not good enough. We need to reduce single-use plastic packaging by 50% by 2025 and urgently transition to reusable packaging which caters to everyone's needs.

This level of reduction will cut plastic pollution in our natural environment, generate much lower amounts of plastic waste being exported, landfilled and incinerated, and improve recycling rates. What's more, reducing single-use plastic packaging can fight food waste,[3] transform shopping habits and stimulate innovation and new business models. The potential benefits are massive.

What began as a little experiment five years ago has grown far beyond what I imagined to be possible. The Big Plastic Count shows that the public understands the scale of the problem and wants to see ambitious action. The government and industry must rise to the challenge right now – there's no time to waste.

Daniel Webb
Founder & Director, Everyday Plastic

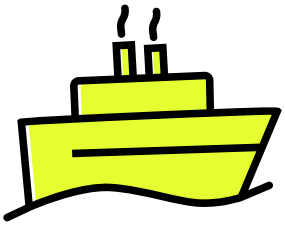
EVERYDAY PLASTIC

THE PLASTIC CRISIS

The scale of the plastic crisis is staggering. The world economy produces over 350 million tonnes of plastic every year,[4] outweighing the total mass of all living mammals on earth.[5] Worse still, researchers warn that chemical pollution threatens the stability of global ecosystems and human health,[6, 7] with traces of microplastics found in seabird eggs and even in human blood.[8, 9]

The extent of the problem is global. Plastic waste has been found all around the world, from the high Himalayas to the uninhabited Antarctic.[10 11] And with as much as 12.7 million tonnes entering the ocean every year, plastic pollution is having a devastating impact on marine ecosystems and the communities who depend on them.[12]

However, whilst the plastic crisis is a global problem, its causes and impacts are not evenly distributed. The UK



"THE UK EXPORTS 1,800 TONNES OF PLASTIC WASTE EVERY SINGLE DAY."

is second only to the USA in producing the most plastic waste per capita,[13] whilst passing the buck of its waste management to other countries by exporting 1,800 tonnes of plaste waste every single day.[14]

In 2020, the government announced that Britain was recycling 46% of its plastic. However, Greenpeace found that half of the plastic waste the UK government recorded as 'recycled' was in fact sent overseas for other countries to deal with.[15] The impact of these exports were documented last year, when Greenpeace investigators visited Turkey – a top destination for plastic waste exports, which received 40% of British plastic exports at the time. At ten sites

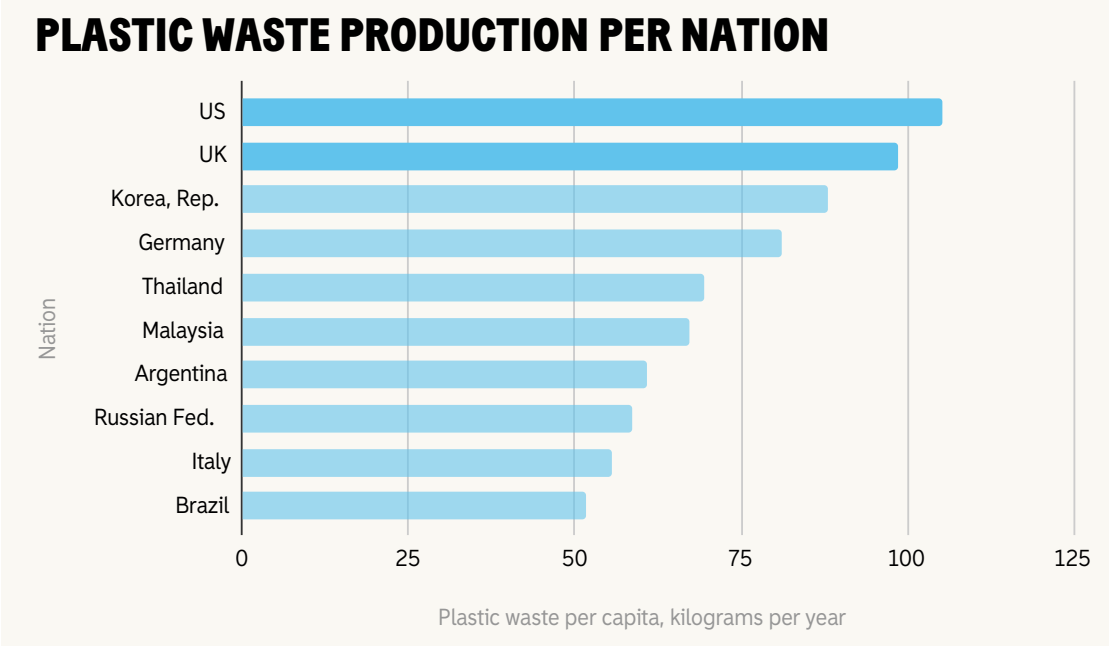


Figure 1: Plastic waste production per nation. Source: Forbes.com / Data from Science Advances.

Above: Plastic waste being burned in Malaysia © Nandakumar S. Haridas / Greenpeace.

around the outskirts of Adana in Southern Turkey, investigators documented illegal dumps of plastic waste – including packaging from products on sale in the UK – in fields, near rivers, on train tracks and by the roadside. In many cases, the plastic was on fire or had already been burned.[16] But despite this compelling evidence, the UK continues to consider all exported waste as recycled – bumping up its own targets whilst creating an environmental and human health crisis in Turkey and other countries around the world.[17] [18]

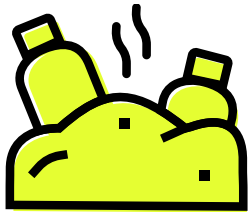
The need to export waste in the first place reflects not only the sheer volumes being produced, but that the UK's own recycling network lacks the capacity to process it. As such, plastic waste reduction is a clear priority.

Landfill and incineration in the UK

If plastic waste isn't being recycled in the UK or abroad, it is either dumped in landfill or incinerated. Both of these methods significantly impact ecosystems and local communities, while also releasing carbon emissions that contribute to the climate crisis.

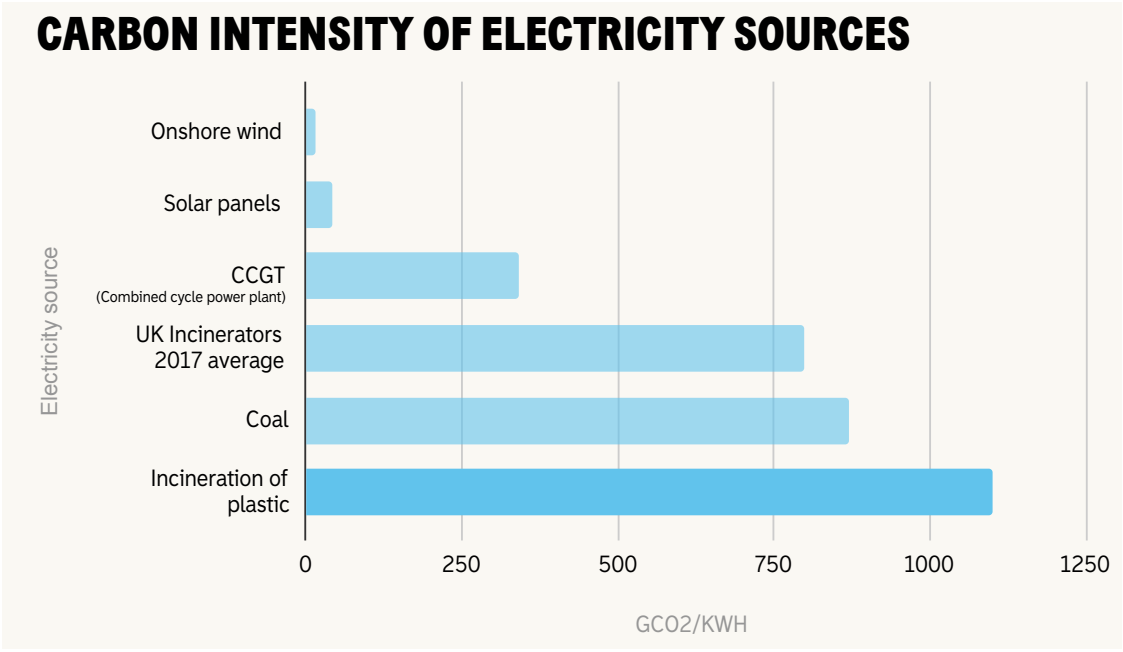
If plastic is left exposed to the elements in landfill sites, it slowly degrades in a number of harmful ways. Studies show that solar radiation causes the most commonly used plastics to release methane and ethylene into the atmosphere,[19] while wind and rain carry microplastics into surrounding areas.[20] Plastics in landfill sites also come into contact with other waste materials, some of which have the ability to turn microplastics into reservoirs of harmful chemicals.[21]

It's unsurprising then that landfill sites are bad news for neighbouring communities and natural environments.[22] Microplastics are often found in the bodies of aquatic animals near landfill, which is a particular problem in the UK, where coastal erosion is threatening the contents of over 1,000 landfill sites.[23] Worse still, proximity to landfill sites places workers and residents at risk of inhaling chemicals which potentially may cause acute or chronic illness.[24]



"PROXIMITY TO LANDFILL SITES PLACES WORKERS AND RESIDENTS AT RISK OF INHALING CHEMICALS WHICH POTENTIALLY MAY CAUSE ACUTE OR CHRONIC ILLNESS."

Below: A landfill site in Beddingham, East Sussex
© Jim Holden / Alamy.



Incinerating waste presents further health risks for local communities. Burning plastic releases a variety of toxic gases into the air, some of which act as carcinogens. State-of-the-art incinerators are supposed to remove these toxicants and prevent them from escaping, but a study of a modern incinerator found that dioxins and furans are still being emitted.[25]

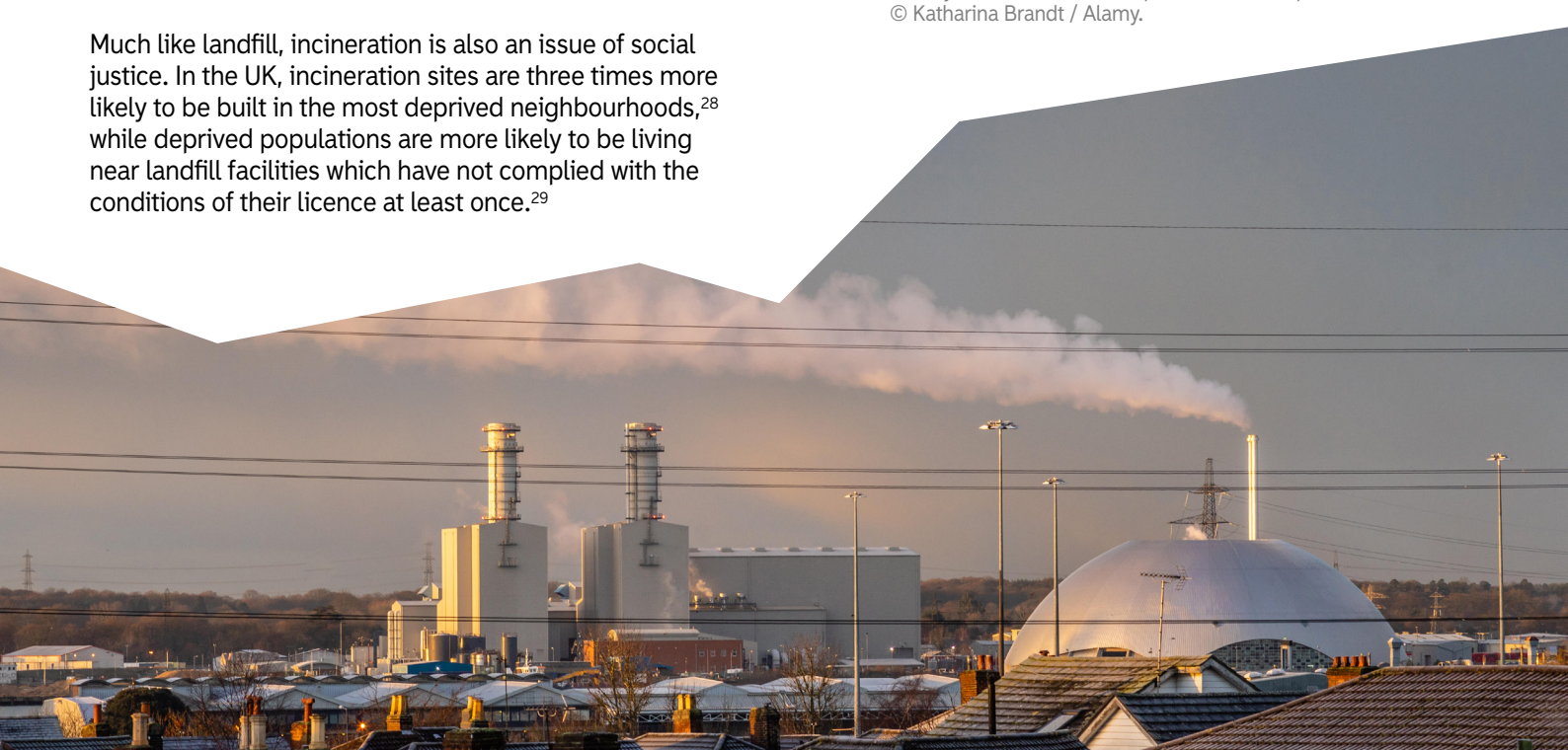
The energy from burning plastic is typically used to generate electricity. However, this is simply not sustainable. Plastic is made from fossil fuels; therefore the carbon footprint of the electricity made from burning it in 'energy from waste' incinerators represents one of the most carbon intensive sources of power on the planet, 70 times greater than onshore wind and even more carbon intensive than coal.[26] In fact, burning plastic is significantly more carbon intensive than keeping the same material at a landfill site, making incineration a potentially significant contributor to the climate crisis.[27]

Much like landfill, incineration is also an issue of social justice. In the UK, incineration sites are three times more likely to be built in the most deprived neighbourhoods,[28] while deprived populations are more likely to be living near landfill facilities which have not complied with the conditions of their licence at least once.[29]

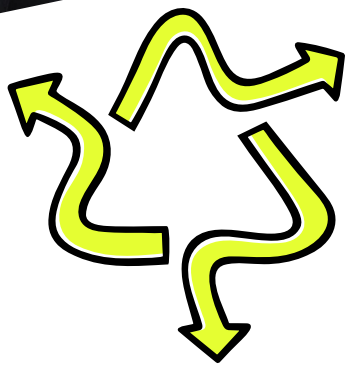
"THE CARBON FOOTPRINT OF THE ELECTRICITY MADE DURING INCINERATION IS GREATER THAN COAL AND OVER 70 TIMES GREATER THAN ONSHORE WIND."

Figure 2: The carbon intensity of electricity sources. Source: United Kingdom Without Incineration Network.[30]

Below: View over rooftops to the Marchwood Energy Recovery Facility, a waste incineration plant in Southampton
© Katharina Brandt / Alamy.



THE PRIME MINISTER HIMSELF ADMITTED THAT RECYCLING PLASTIC "DOESN'T BEGIN TO ADDRESS THE PROBLEM".



Is recycling the answer?

Since landfill and incineration have such severe drawbacks, it might seem like simply increasing recycling rates will solve everything. Unfortunately, that is not the case. Recycling is certainly an important component of plastic waste disposal, but there are insurmountable obstacles to recycling being the main solution.

Firstly, some types of plastic aren't recycled at all. Secondly, for the types that are, recyclability is not infinite. The process is only effective a very limited number of times before the quality is degraded to such an extent that the plastic has to be sent to landfill or incinerated.[31] Furthermore, most recycled plastic isn't of a high enough quality to be remade into packaging and is instead 'downcycled' into crates, traffic cones and fence posts. Therefore, if we continue to produce plastic packaging at our current rate, there will always be a need for huge amounts of new plastic, no matter how much we recycle.

It is clear that recycling, incineration and landfill are unable to provide the right answers to the plastic crisis. In 2021, the Prime Minister himself even admitted that recycling plastic "doesn't begin to address the problem" and acknowledged the need to "cut down".[32]

"RECYCLING IS ONLY EFFECTIVE A VERY LIMITED NUMBER OF TIMES BEFORE THE QUALITY IS DEGRADED."

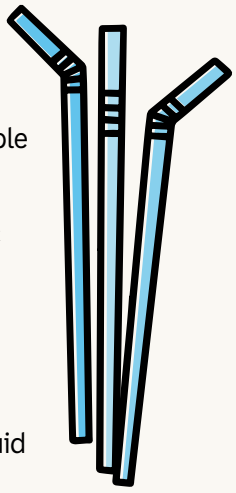
Top: © Number 10 / Flickr.
Bottom: © Jack Taylor Gotch / Greenpeace.

REUSEABLE / ECO*

- ✗ Either too rigid or it dissolves
- ✗ Expensive
- ✗ Hard to sanitise
- ✗ Some not safe with hot liquid
- ✗ Allergy risk, injury risk, choking hazard

*e.g. metal, paper, glass, silicone, acrylic, pasta, bamboo, biodegradable

SINGLE-USE



- ✓ Flexible
- ✓ Affordable
- ✓ Hygienic
- ✓ Safe
- ✓ Hot and cold liquid
- ✓ Hypoallergenic

The benefits of single-use plastic for disabled people compared to the drawbacks of alternative straws.

Below: © FLY:D / Unsplash.

Accessibility is key

We know that reducing plastic production is the way forward. However, the implementation of this reduction must cater to the needs of everyone.

For the 14.1 million disabled people living in the UK, single-use plastic can be an essential part of living independently.[33] Alternatives are not always affordable, appropriate or accessible. For example, many alternatives to plastic straws cannot be bent into position (a key requirement for some), and glass and metal straws can even pose injury risks.[34] The ban on plastic straws, introduced in England in 2020, was a clear example of disabled people's needs failing to be considered.

Therefore, whilst it is important to reduce plastic production, this must not be detrimental to disabled members of society. Rather, reusable alternatives must be designed with the needs of everyone in mind, and any decision to remove an item from production must be informed by the disabled community.

"THE BAN ON PLASTIC STRAWS WAS A CLEAR EXAMPLE OF DISABLED PEOPLE'S NEEDS FAILING TO BE CONSIDERED."

"REUSABLE ALTERNATIVES MUST BE DESIGNED WITH THE NEEDS OF EVERYONE IN MIND, AND ANY DECISION TO REMOVE AN ITEM FROM PRODUCTION MUST BE INFORMED BY THE DISABLED COMMUNITY."

THE GOVERNMENT'S RESPONSE:

All talk and no action

Despite the Prime Minister's assertion that the UK needs to cut down on plastic, there is still no sign of a significant policy to make this happen. In recent years, ministers have repeatedly made hollow promises, whilst missing opportunity after opportunity to take effective steps to alleviate the plastic crisis.

In 2018, the government made a series of pledges for plastic waste reduction. According to these pledges, plastic waste that causes marine pollution would be significantly reduced, recycling rates would be at 50% by 2020 and a Deposit Return Scheme (DRS) for plastic bottles would be introduced. However, implementation left a lot to be desired.

The government called its 2020 ban on plastic straws, stirrers and plastic-stemmed cotton buds "world-leading".[35] However, this piecemeal approach to plastic reduction does not measure up to the scale of action needed to tackle the plastic crisis – not forgetting the fact that the straw ban also failed to take the needs of disabled people into account. And whilst the 2015 levy on single-use plastic bags caused usage to drop by more than 95%,[36] sales of plastic so-called 'bags for life' have soared since then, with 1.58 billion sold by supermarkets in 2019.

It is clear that broader solutions are required to truly tackle this problem and earn 'world-leading' status, rather than a piecemeal approach that focuses on individual items.[37] Even the government's own figures admit that recycling rates are less than 50%, although our investigation has revealed this to be significantly lower for plastic packaging.[38]

"BROADER SOLUTIONS ARE REQUIRED TO TRULY TACKLE THIS PROBLEM AND EARN 'WORLD-LEADING' STATUS, RATHER THAN A PIECEMEAL APPROACH THAT FOCUSES ON INDIVIDUAL ITEMS."

Above: Plastic bottles and other rubbish floating in Leith Docks, Edinburgh © Will Rose / Greenpeace.

Right: A mute swan dives next to a plastic bag in the River Trent © Jack Perks / Greenpeace.

1.
BUY BOTTLE WITH SMALL CASH DEPOSIT

2.
RETURN EMPTY BOTTLE FOR CASH BACK

3.
RETURNED BOTTLES ARE REUSED AND RECYCLED

"OF THE 13 BILLION PLASTIC BOTTLES USED ANNUALLY IN THE UK, ONLY 7.5 BILLION ARE RECYCLED."

This incoherent strategy is exemplified by the government's failure to implement a DRS for plastic bottles. Of the 13 billion plastic bottles used annually in the UK, only 7.5 billion are recycled, leaving 5.5 billion littered, landfilled or incinerated.[39] DRS is a simple way to address this problem, giving back a small cash deposit to consumers who return their bottles and cans.

First announced by then environment secretary Michael Gove in 2018, a national DRS was a Conservative manifesto promise at the 2019 election. However, three years have passed and the scheme has now been delayed until 2024 at the earliest. Similar schemes are a success in many other countries, so arguments that more research or consultation is needed don't stack up.

What's more, Extended Producer Responsibility (EPR) rules have also been delayed and watered down.[40] EPR is a policy approach which shifts waste management responsibilities onto producers, incentivising waste reduction at the source through, for example, reuse-centred product design.[41] In 2021, the government announced that it would be introducing an EPR scheme, but just a year later in spring 2022, the policy was postponed and amended.

Rather than leading the way, this dither and delay is plunging the UK further into the plastic crisis. Indeed, it is estimated that current UK legislation only addresses four of the top 10 types of plastic pollution,[42] and plastic-specific figures were missing from the government's public consultation on forthcoming legally binding waste reduction targets. Instead, the government needs to take charge of the situation and set targets for drastically reduced plastic production, in harmony with support for initiatives like DRS and improved recycling.

Top: A DRS trial at a store in London © Kristian Buus / Greenpeace.

Bottom: Michael Gove meets Greenpeace campaigners in 2018 to receive a petition signed by over 300,000 people calling for a DRS in the UK © Will Rose / Greenpeace.

THE INDUSTRY'S RESPONSE:

Pledges and pacts but increasing plastic footprints

We know the world is already producing far more plastic than it can handle. Annual production more than doubled between 2000 and 2019 and, despite a small reduction in 2020 caused by the pandemic, plastic production is expected to double again by 2040.[43, 44]

Plastics are big business for several different sectors of the economy. Over 99% of plastic begins its life as oil and gas,[45] with the growth of plastic production leading fossil fuel companies like Exxon and Shell to invest tens of billions of dollars in new petrochemical plants and equipment.[46] The full lifecycle of plastic, including drilling, refining, production and eventual disposal, is highly carbon intensive, and it is estimated that emissions related to plastics could use 10-13% of the available carbon budget for 2050.[47]

"IT IS ESTIMATED THAT EMISSIONS FROM PLASTIC PRODUCTION AND INCINERATION COULD GROW TO THE EQUIVALENCE OF 615 FIVE-MEGAWATT COAL PLANTS."[48]

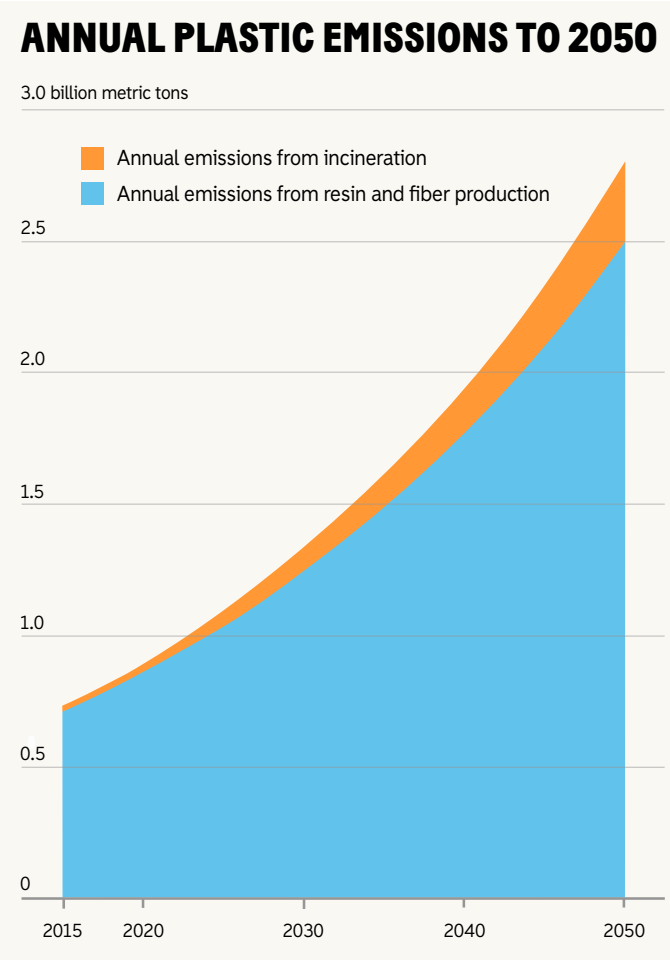


Figure 3: Annual plastic emissions to 2050. Source: CIEL.

Above: Pointless plastic in Sainsbury's
© Angela Glienicke / Greenpeace.

"THE TEN BIGGEST SUPERMARKETS USED NEARLY 900,000 TONNES OF PLASTIC PACKAGING IN 2019."

In the UK, this plastic boom is evident in every supermarket and newsagent up and down the country. The ten biggest supermarkets used nearly 900,000 tonnes of plastic packaging in 2019,[49] with packaging from brands they stock like Nestlé, PepsiCo, Procter & Gamble and Coca-Cola the most frequently identified in brand audits of plastic pollution around the world.[50] In 2019, UK households used 311,000 tonnes of plastic film – the kind that wraps bananas and cucumbers, very little of which is recyclable.[51]

In recent years, increased public awareness of the plastic crisis and negative publicity has caused some supermarkets to announce commitments to change their plastic use. These commitments have included increasing recycled content in plastic packaging and signing up to the 'Plastics Pact', whereby companies set themselves voluntary targets.[52] While these have been effective at generating positive news stories for the supermarkets, and in a couple of cases could yet yield results in the next few years, so far they've failed to reduce the amount of plastic in circulation. Instead, the plastic footprint of the top ten supermarkets actually increased between 2017 and 2019.[53] Not only this, but the pact's goal of cutting "problematic and unnecessary" plastics is unhelpful to millions of people because it is not disability-inclusive, and has no acknowledgment of the need to phase in reusable alternatives which are universally designed.

Now is not the time for warm words and inaction. We need to drastically reduce plastic production at the source. A number of companies have announced plans to move in the right direction. Sainsbury's and Aldi have pledged to reduce their single-use plastic use by 50% by 2025,[54] [55] while Coca-Cola intends to make at least 25% of its packaging reusable by 2030.[56] If we're going to address the plastic crisis, industry will have a major role to play in cleaning up its act, but the government needs to create a level playing field through legally binding single-use plastic reduction targets, so that all supermarkets and brands act rapidly.

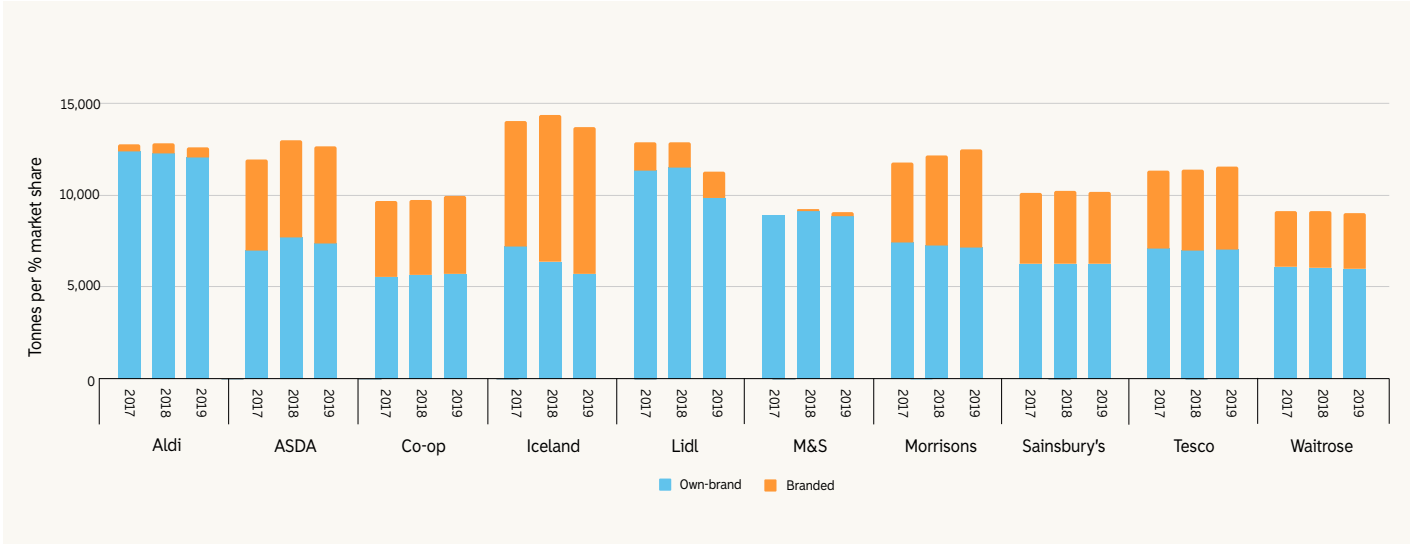


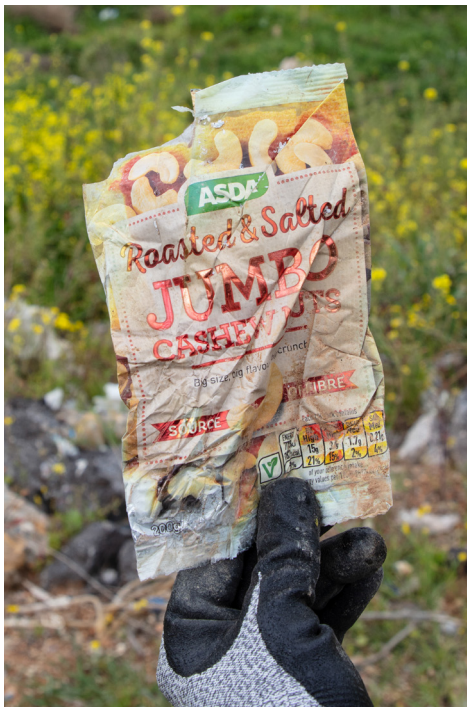
Figure 4: Plastic packaging placed on the market by the top 10 UK supermarkets per 1% market share, for both own-brand and branded products. Source: EIA & Greenpeace.

Above: A shopper takes the single-use plastic wrapping off the produce they bought at Tesco © John Cobb / Greenpeace.

IN 2021, PLASTIC WASTE FROM TESCO, ASDA, SAINSBURY'S, ALDI, M&S AND CO-OP WAS FOUND ILLEGALLY DUMPED AND BURNED IN TURKEY.

UNTIL SUPERMARKETS REDUCE THEIR PLASTIC FOOTPRINTS, THEY ARE COMPLICIT IN THE IMPACT THIS HAS ON LOCAL COMMUNITIES AND THE ENVIRONMENT.

Supermarket own-brand rubbish found in Karahan, Adana Province, Turkey by Greenpeace investigators. Since this investigation, Turkey has banned waste imports from the UK. © Caner Ozkan / Greenpeace.



THE BIG PLASTIC COUNT

Methodology

The Big Plastic Count is the UK's biggest ever investigation into household plastic waste. It expands on a citizen science experiment by Everyday Plastic founder Daniel Webb, who collected every piece of plastic packaging he used for a year.

Greenpeace partnered with Everyday Plastic to launch the experiment nationwide for one week in May 2022. The survey showed participants the scale of the crisis, providing them with insight into what happens to their plastic waste after they throw it away, and enabled them to contribute to an invaluable, unique dataset.

Everyday Plastic's methodology was streamlined to improve accessibility, with the number of plastic categories reduced from 102 to 19. This user-friendly format was key to encouraging as many people as possible to complete the count.

Survey participants were asked to count the plastic packaging they used and intended to throw away or recycle for one week.

Over the course of the seven-day count, participants tallied their plastic packaging according to this set of 19 categories, and at the end of the week they entered their results into The Big Plastic Count website.

"GREENPEACE PARTNERED WITH EVERYDAY PLASTIC TO LAUNCH THE EXPERIMENT NATIONWIDE FOR ONE WEEK IN MAY 2022."

1: Posters advertising The Big Plastic Count around London © JACK / BUILDHOLLYWOOD.
2: Big Plastic Count Youth Empowerment Day in London © Angela Christofilou / Greenpeace.
3: A Greenpeace volunteer in Sheffield Moor encourages the public to take part in The Big Plastic Count © Greenpeace.
4: Actor, director and activist Bonnie Wright gets counting © Bonnie Wright.

1-4: St Wulstan's Roman Catholic Primary School in Hyndburn takes part in the Big Plastic Count © Angela Christofilou / Greenpeace.
5: Big Plastic Count Youth Empowerment Day in London © Angela Christofilou / Greenpeace.

After submitting, each participant was sent their personal plastic footprint, revealing how much of their plastic waste was likely to be recycled, exported, incinerated or sent to landfill. The basis of those calculations is set out below.

Data was then accumulated to produce a national picture of the amount of plastic being used in households, which types are most prevalent and where all of this plastic is likely to end up. These results are set out on pages 21-23.

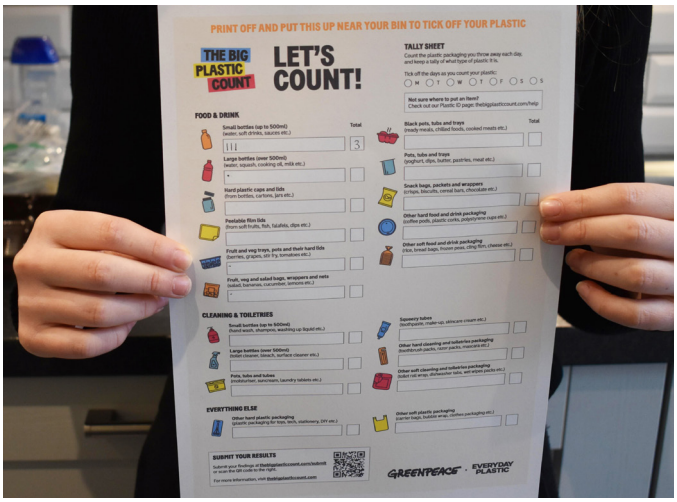
Calculations

In order to estimate the proportion of household plastic waste that is recycled, figures were taken from RECOUP's latest annual UK household plastic collection survey.[57] RECOUP conducts a survey of the household plastics collection and recycling operations of the UK's local authorities, including borough, district, city and county councils, as well as waste partnerships. It also consults the associated waste management companies, who provide estimates of the composition of collected plastics.

RECOUP groups plastics by three main recycling categories: plastic bottles; plastic pots, tubs and trays; and plastic film. It reports collection rates for each of these three categories (61%, 36% and 8% respectively). By mapping each of our 19 input categories to one of the three categories used by RECOUP, plus an additional fourth category for non-recyclables, and applying the relevant collection rate, we have calculated the amount of plastic that will be sent for recycling.

Some material is rejected for recycling after collection because the items are contaminated. RECOUP placed the average rejection rate at 13% in 2021 and 14% in 2020,[58] though in both years there was an extremely large range across different local authorities. For The Big Plastic Count calculations, we have chosen to use a very conservative 10% rejection rate, to acknowledge the variance in the rates reported across the UK. This means that 10% of the plastic collected for recycling is removed from the recycling path and placed into the fourth category for non-recyclables.

After some plastics are rejected for being unfit for recycling, the remaining material is either recycled in the UK or exported for recycling. In 2021, RECOUP reported that the proportion of material being recycled in the UK was 41%, leaving 59% to be exported.



1: A Greenpeace Speaker talks about The Big Plastic Count © Marie Jacquemin / Greenpeace.

2: Participants tracked their plastic waste using a special tally sheet, then logged their results online to create a personalised plastic footprint © Angela Glienicke / Greenpeace.

3: MP Theresa May pledges her support at The Big Plastic Count Youth Empowerment Day in the House of Commons © Greenpeace.

"AVERAGE WEIGHTS FOR EACH OF THE 19 CATEGORIES WERE BASED ON EVERYDAY PLASTIC'S PREVIOUS WORK ON HOUSEHOLD WASTE."

So what happens to the large volume of plastic waste that isn't recycled? The bottles, pots and film that either aren't collected or are rejected because they're contaminated, along with all of the plastic that's classified as non-recyclable from the outset, are disposed of in one of two ways: either landfill (35%) or incineration (65%).

In order to use the findings from the RECOUP report, we translated the number of items into weights. Average weights for each of the 19 categories were based on Everyday Plastic's previous work on household waste.[59]

The limitations of this approach

The Big Plastic Count doesn't have the information necessary to account for the recycling service that a household is receiving from its local authority, nor is it possible to make provision for the recycling habits of the participants (i.e. how much of what they could recycle do they actually place in the recycling). Hence, the collection rates for bottles, pots and film were taken from the national figures in the RECOUP survey.

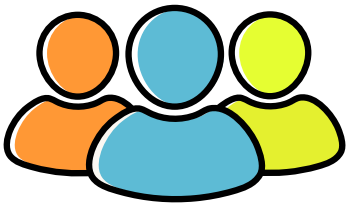
It has not been possible to include an assumption around any recyclables that may be recovered from the residual waste stream because reporting by local authorities on this is unclear.[60]

Due to the complexity surrounding different types of plastic film and whether they can be accepted into the recycling system, the proportion of recyclable film packaging has been estimated. This avoids potential errors from asking survey participants to identify if their film is recyclable or not. The proportion of recyclable film was taken from a 2019 report by WRAP, which calculated that recyclable low-density polyethylene (LDPE) makes up approximately one-third of all film.[61]

THE RESULTS

97,948

Number of submissions (households)



248,957

Number of participants (people)

6,437,813

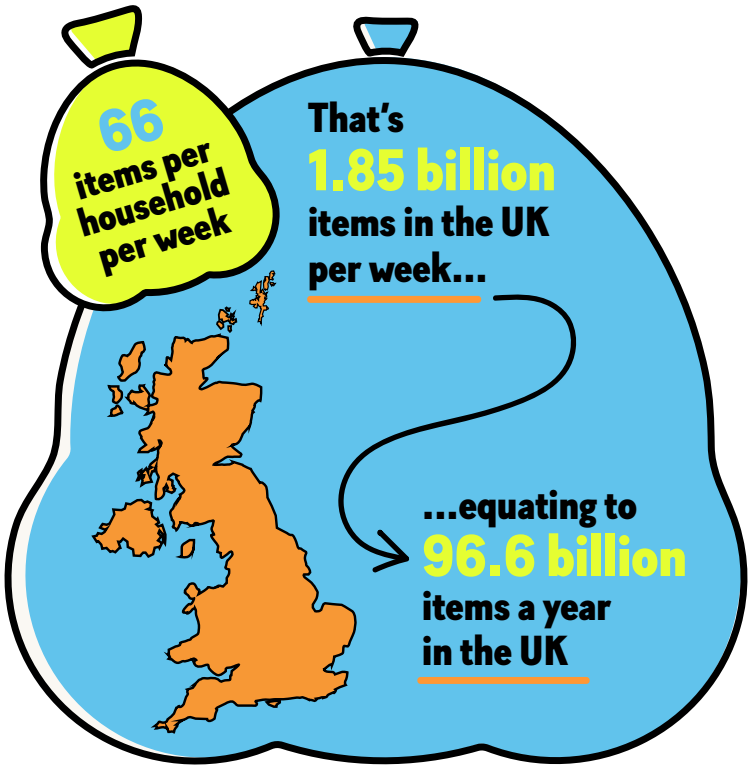
Total number of pieces counted

With one in every 262 UK households counting their plastic packaging waste for one week, the results of The Big Plastic Count provide an unparalleled insight into the scale of the country's plastic crisis.

The extent of engagement and participation in The Big Plastic Count indicates a deep and widespread public concern about the plastic crisis. The level of commitment required for homes to count and monitor their plastic waste for seven days and enter the results online should not be underestimated. Decision makers must take heed of the public's strong desire for change.

Over one week in May, nearly a quarter of a million people (**248,957**) from **97,948 UK households** counted **6,437,813 pieces of plastic** packaging waste. On average, each household threw away **66 pieces of plastic packaging in one week**, amounting to an estimated **3,432 pieces a year.**

Data of this scale give us perhaps the most valid estimation ever into how much plastic packaging is being thrown away by households up and down the country. If we assume that the weekly average is typical of every household in the UK, we can reasonably estimate that **households throw away 1.85 billion pieces of plastic packaging a week**, equating to **96.57 billion pieces a year in the UK alone.** It's worth bearing in mind that taking part in this activity likely incentivised the consumption and disposal of less plastic, making these figures conservative.



Quality checking the data

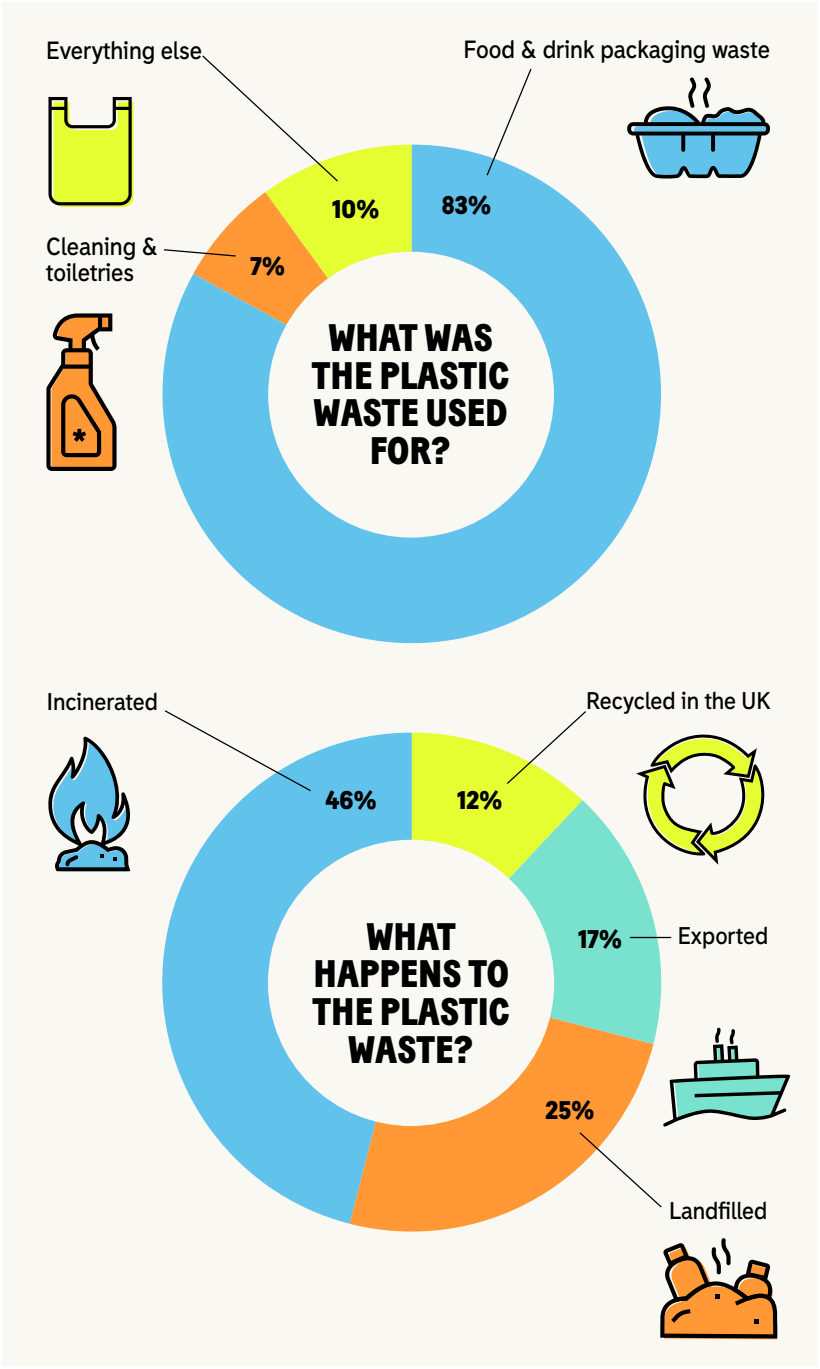
As with all large datasets, but of particular importance here due to the citizen data input approach, it has been necessary to quality check the data. This process has involved filtering outliers, removing incorrect inputs and undertaking an overall quality assurance review of the dataset. Of 107,192 total survey submissions, 9,244 were removed, resulting in a final dataset of 97,948 household entries.

“ONLY 12% OF THIS PLASTIC IS LIKELY TO BE RECYCLED IN THE UK, WHILST 17% IS SHIPPED OVERSEAS.”

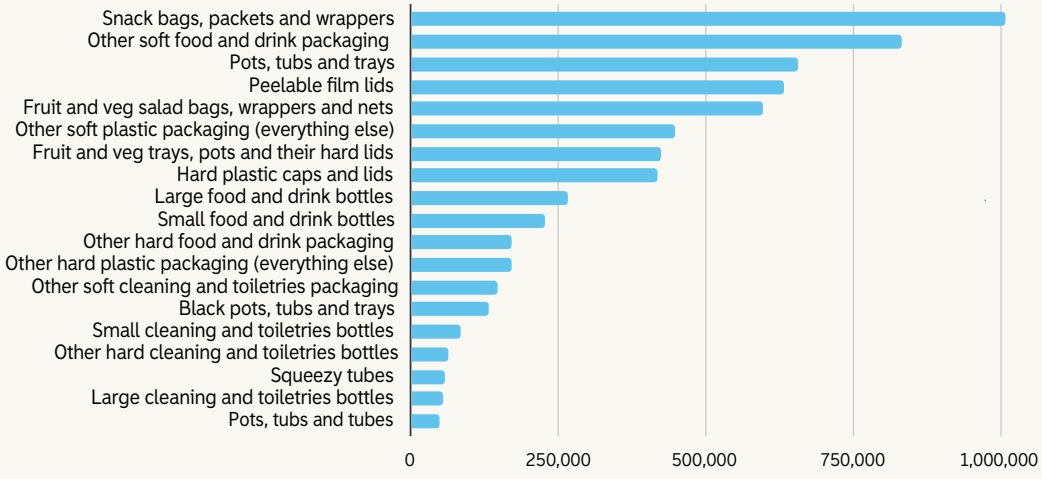
Food and drink packaging made up an overwhelming majority (**83%**) of the waste generated during the count. Whilst The Big Plastic Count did not monitor specific brands, the dominance of supermarkets across the UK grocery market [62] suggests that supermarket giants are responsible for a significant amount of this packaging waste.

The most commonly counted items were **fruit and vegetable packaging (1.02 million pieces)**, closely followed by **snack bags, packets and wrappers (1.01 million pieces)**. This illustrates just how difficult it is for shoppers to avoid plastic packaging. This is especially the case for people with disabilities or restricted mobility who may rely on pre-prepared food for their independence and quality of life.

These results reveal that enormous amounts of plastic are leaving UK homes every week. To make matters worse, only **12% of this plastic waste is likely to be recycled** at reprocessing facilities in the UK. In fact, more of the UK's plastic waste **(17%) is being shipped overseas** than being recycled at home, whilst almost half **(46%) of the UK's household plastic waste is being incinerated, with the remaining 25% buried in landfill.**



THE OVERALL QUANTITIES OF THE 19 CATEGORIES COUNTED



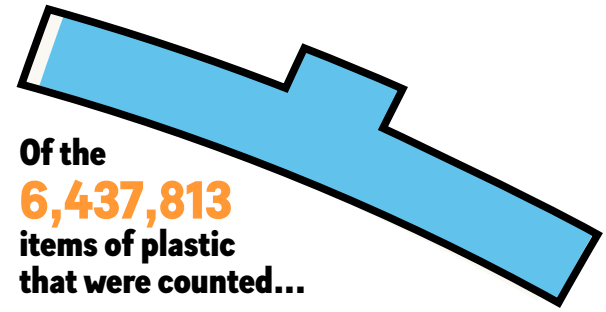
In total, participants counted 1.01 million pieces of packaging from snacks and 1.02 million from fruit & veg*

*Combined total of 'fruit and veg salad bags, wrappers and nets' and 'fruit and veg trays, pots and their hard lids'.

HOW MUCH OF THE PLASTIC WASTE WAS HARD OR SOFT PLASTIC PACKAGING?

A closer look at the evidence reveals why recycling systems are failing. The majority of the plastic packaging waste thrown away by UK households is not commonly collected for recycling at the kerbside. **62% of recorded pieces of plastic are either not collected or poorly collected by UK local authorities.**

Soft plastics and plastic film are notoriously difficult to recycle and accounted for the majority of pieces thrown away by participants (**57%**). **Only 13% of local authorities collect soft plastic** and this is often limited to a small number of soft plastic items, such as carrier bags, bread bags, banana bags and toilet roll wrappers. Many supermarkets are now offering an alternative disposal route for soft plastic, through the recent nationwide roll-out of soft plastic take-back schemes. Consumers are opting to use them instead of throwing away soft plastic packaging at home (although they are not always accessible for people with disabilities or mobility issues who are unable to visit a store in person). However, an investigation into Tesco's take-back scheme revealed that some plastic was being exported for incineration or landfill, rather than being recycled.[63]



"SOFT PLASTICS AND PLASTIC FILM ARE NOTORIOUSLY DIFFICULT TO RECYCLE AND ACCOUNTED FOR 57% OF PIECES THROWN AWAY BY PARTICIPANTS."

These stark findings provide overwhelming proof that the UK's recycling system is broken and simply cannot cope with the amount of plastic waste generated. This is compelling evidence of the urgent need to cut the amount of plastic packaging being produced in the first place – accompanied by the rapid introduction of universally designed alternatives. The findings also support a full ban on plastic waste exports, the immediate introduction of an all-in Deposit Return Scheme for plastic bottles and a moratorium on new incineration capacity. It's vital that the reduction of single-use packaging and transition to reusable alternatives is fully accessible, based on universal design principles and in consultation with disabled people, who continue to be excluded from conversations on plastic waste.[64]

With such a wealth of data, we plan to undertake more in-depth investigative analysis. The Big Plastic Count will gain further insight into who responded to the survey, and delve into potential bias and limitations within the dataset to further inform findings. We expect to present these findings in autumn 2022.

CONCLUSION

The results of The Big Plastic Count send a clear and urgent message: recycling is not enough – we must turn off the plastic tap. The UK's recycling systems cannot cope with the amount of plastic packaging waste leaving our homes – estimated to be a staggering 1.85 billion pieces per week – of which only 12% is likely to be recycled in the UK.

Too much focus is placed on recycling and making plastic recyclable, rather than reducing plastic in the first place. Recycling plastics is not the silver bullet that many think it is. A circular economy needs to be built around materials that can be reused and recycled many times over, which most plastic cannot.

How can the UK claim to be a world leader when it comes to managing our waste, yet produce more plastic waste per person[65] than any other country apart from the USA? The only solution to plastic pollution is stopping our reliance on plastic. This means rapidly transitioning to reusable packaging which caters to everyone's needs, including those with disabilities.

Relying on voluntary measures from producers is leading to inaction. Plastic packaging produced by supermarkets and retailers in the UK has continued to rise, despite voluntary public commitments to cut down.

What's more, the UK lags behind in the introduction of solutions. The government's long-awaited DRS (already in place in many European countries), as well as the promised new Extended Producer Responsibility requirements, have been repeatedly delayed. Instead, the UK relies on incinerators and landfill sites, both of which emit huge amounts of harmful greenhouse gases and air pollution, as well as exports. The Big Plastic Count results indicate that almost half (46%) of the UK's plastic waste is likely being incinerated, emitting millions of tonnes of C02 every year.

The UK's current reliance on exporting plastic is being increasingly challenged as countries are moving to protect themselves from imported plastic waste. Turkey is the latest country to do this, following China's National Sword policy in 2018. Even with the most ambitious recycling infrastructure targets and investment, the UK waste system won't be able to cope with the combination of more plastic production and the waste import bans ahead.

"AN ESTIMATED 1.85 BILLION PIECES OF PLASTIC ARE BEING THROWN AWAY IN THE UK EVERY WEEK – ONLY 12% OF WHICH IS LIKELY TO BE RECYCLED IN THE UK."

Below: Plaste waste fire in Dedepinari, Adana Province, Turkey © Caner Ozkan / Greenpeace.

An opportunity to set a stronger target under the Environment Act

Under the Environment Act, Defra has the power to set long-term, legally binding targets to tackle waste and transition to a circular economy. However, the current proposed target – to halve residual waste by 2042 – is insufficient and not in keeping with the scale and urgency of the problem. Plastic pollution in the UK cannot be overlooked in wider action to tackle waste and resource use. Ambitious action is needed now. The government must:

1

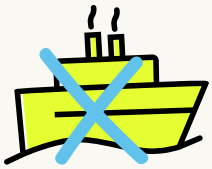
Set stand-alone targets to almost entirely eliminate single-use plastic

The government should set a stand-alone, long-term single-use plastic reduction target under the Environment Act. Setting a target to almost entirely eliminate single-use plastic by 2037 at the latest and introducing mandatory corporate reporting on plastic reduction will help create a level playing field for industry to transition to refill and reuse. However, given the urgency of the problem, this alone is not enough – a binding target on a shorter time frame is also needed, ensuring that ambitious action to reduce single-use plastic at source begins immediately.

Therefore, the long-term target should be accompanied by a binding short-term target to reduce single-use plastic by 50% by 2025. The government should specify that this 50% reduction should be achieved by making 25% of packaging reusable by 2025, rising to 50% by 2030.

It is absolutely vital that these changes are inclusive. Reusable alternatives must be introduced at the same time as single-use plastic products are reduced, to ensure that millions of people with disabilities continue to have needs met, without detriment to independence and quality of life. Reusable alternatives must be universally designed, with any policy devised to deliver these reduction targets informed by the disabled community.

2



Ban plastic waste exports

The government must ban plastic waste exports, starting with an immediate ban on all exports to non-OECD member countries and mixed plastic waste to OECD member countries. A complete ban should be in place by no later than 2025.

3

Immediately implement an all-in Deposit Return Scheme and introduce Extended Producer Responsibility

The government should immediately implement an all-in Deposit Return Scheme (DRS) covering drinks containers for recycling and reuse. The scope of materials and deposit levels should be consistent across the UK. As part of this, new Extended Producer Responsibility (EPR) requirements should be designed to increase reuse and reduction of packaging as well as recyclability. This should be achieved through a combination of: a) reuse and reduction targets and, b) modulation of fees to incentivise eco-design, reuse and reduction, and penalise single-use packaging.

4

Set an immediate moratorium on new incineration capacity

The government must follow Scotland and Wales and end approvals for new incineration (also called 'energy-from-waste') facilities and prevent the replacement or upgrade of old plants that are near retirement, in order to support an overall reduction in incineration. This would send a market signal to support more sustainable solutions for resource use, including reduction of material use, reuse, repair and recycling.

The Big Plastic Count has provided overwhelming evidence of the UK's plastic crisis. Neither this evidence, nor the 248,957 people who gathered it can be ignored. It is time for the government to act.

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