Department
for Environment,
Food & Rural Affairs

The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020

Post Implementation Review

December 2025

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Presented to Parliament pursuant to Regulation 24 of The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020

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Contents

1. Introduction to the Post Implementation Review (PIR)

The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020 ('the Regulations') came into force on 1 October 2020. Regulation 24 contains review requirements including an obligation for the Secretary of State to review the regulatory provision of the Regulations from time to time and to publish a first report setting out the conclusions of the review within 5 years of coming into force, with then further reports to be published at least every 5 years. Regulation 24 requires the report to:

- Set out the objectives intended to be achieved by the regulatory provisions;
- Assess the extent to which those objectives are achieved;
- Assess whether those objectives remain appropriate; and, if so,
- Assess the extent to which they could be achieved in a way that involves less onerous regulatory provision.

This report fulfils the requirements of the standard PIR template and supplements it with a more detailed description of the Regulations, the methodology used for this review, and a more detailed analysis of whether the objectives and intended effects of the Regulations have been met.

1.1 The scope and scale of the PIR

The scope of the PIR is England only.

The original impact assessments and regulatory triage assessments estimated the equivalent annual net direct cost to businesses (EANDCB) at above the £5 million de minimis threshold. Therefore, a longer form PIR has been produced that is proportionate to the level of impact of the Regulations. This PIR has also been submitted to the Regulatory Policy Committee (RPC) for review, with the RPC Opinion to be published separately.

2. How effective have the Regulations been in achieving ts objectives?

2.1 Background

The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020 ('the Regulations') were introduced to address the environmental damage caused by three commonly used and littered single-use plastic items: plastic drinking straws, plastic drinks stirrers, and plastic-stemmed cotton buds. When littered or discarded incorrectly after use, they can cause damage to terrestrial and marine life and generate clean-up costs and externality costs, imposed on sectors such as tourism and fishing.[1]

In April 2018, the proposed bans on the distribution and/or sale of plastic straws, stirrers, and cotton buds in England were announced, subject to the outcome of consultation. The public consultation ran from October to December 2018, and the summary of responses and the Government response were published in May 2019. The Government response confirmed that the restrictions would be implemented in April 2020, with certain exemptions.

Prior to the introduction of these Regulations, the Government had previously implemented a ban on rinse-off personal care products containing microbeads, using the same powers.[2]

2.2 Policy Objectives and Intended Effects

The intended objectives of the bans on single-use plastic straws, stirrers, and plastic-stemmed cotton buds, as set out in their impact assessments[3] (and regulatory triage assessments[4]), are to:

- Help protect the environment for future generations;
- Improve the quality of the environment;
- Reduce harm to human health and wildlife including marine life;
- Aim for their substitutes, as a result of their ban, to be made from non-plastic biodegradable materials that decompose quicker and have lower life-cycle environmental impacts;
- Potentially increase business and consumer awareness of the environmental harms that these single-use plastic products can cause when incorrectly disposed of;
- Demonstrate the Government's commitment to reducing unnecessary plastic waste.

Only the bans and restrictions on plastic straws and cotton buds have exemptions in place under the Regulations:

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[1] Explanatory Memorandum to the Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiem_9780111196205_en_001.pdf

[2] The Environmental Protection (Microbeads) (England) Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1312/contents/made

[3] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57

[4] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf

- For the case of plastic straws, the Regulations ensure that suitable exemptions are in place for those who rely on using plastic straws so that they suffer no welfare costs due to lack of access. This includes medical use or relevant medical devices, retail pharmacies (when requested and not openly displayed), catering establishments (if provided upon request), when part of packaging, and in specific settings such as care homes, schools, early years providers, and prisons.
- For plastic-stemmed cotton buds, the exemptions aim to ensure those who require cotton buds for scientific purposes can access them, including plastic ones if needed.

2.3 Scientific Rationale for Intervention

Environmental Damage

The lightweight nature of plastic straws makes them particularly prone to becoming windblown, allowing them to travel great distances when improperly discarded.[5] This property means that plastic straws are more likely than heavier items to become litter, ending up in places far from their point of disposal. Their inherently single-use design further exacerbates the issue, as they are consumed and thrown away in large quantities, increasing the likelihood of environmental contamination.[6] Plastic straws are made from polypropylene, a type of plastic that is highly resistant to degradation.[10] [7]

Plastic stirrers, rigid single-use items commonly made from polypropylene or polystyrene, are commonly used for mixing drinks in indoor settings such as cafes, bars, and restaurants. Their low cost and convenience have led to widespread use.[8] Like plastic straws, the lightweight and single-use nature of plastic stirrers make them particularly prone to becoming litter when discarded improperly. They are often not recycled efficiently due to challenges in cleaning and general consumer behaviour. This means stirrers frequently end up in landfill, when they are not littered.[9]

Plastic-stemmed cotton buds, commonly used for personal hygiene, make-up application, and other cosmetic purposes, have been described as a significant environmental pollutant.[12] These buds often contain a polypropylene straw stem.[10] Improper disposal, such as flushing them down toilets, has contributed to their prevalence in waterways and oceans.[10] According to a survey, 6% of UK residents flush cotton-bud sticks down the toilet.[10] [12] Anglian Water has reported that cotton buds are one of the most commonly flushed items, aside from human waste.[10]

These plastic items made from polypropylene do not biodegrade.[9] Instead, they break down into smaller and smaller fragments, eventually becoming microplastics. Exposure to sunlight triggers the photo-degradation of polypropylene, primarily due to ultraviolet (UV) radiation, which breaks down chemical bonds and alters its molecular structure. Additionally, environmental factors like

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[5] Did plastic straw bans work? Yes, but not in the way you'd think. Available at: https://www.popsci.com/environment/plastic-straws-why/

[6] The macro-debris pollution in the shorelines of Lake Tana: First report on abundance, assessment, constituents, and potential sources. Available at: https://doi.org/10.1016/j.scitotenv.2021.149235

[7] On replacing single-use plastic with so-called biodegradable ones: The case with straws. Available at: https://doi.org/10.1016/j.envsci.2020.02.007

[8] A preliminary assessment of the economic, environmental and social impacts of a potential ban on plastic straws, plastic stem cotton buds and plastics drinks stirrers. Available at: https://www.resourcefutures.co.uk/wp-content/uploads/2021/07/14326_Plasticstrawsstemcottonbudsandstirrers-1.pdf

[9] A Plastic Future: Plastics Consumption and Waste Management in the UK. Available at: https://www.wwf.org.uk/sites/default/files/2018-03/WWF_Plastics_Consumption_Report_Final.pdf

[10] Press Releases – Think Before You Flush. Available at: https://thinkbeforeyouflush.org/press-releases/

wind, water currents, and abrasion physically fragment larger polypropylene pieces into microplastics. Microbial activity also contributes to this process; certain bacteria and fungi can colonise polypropylene, with some strains capable of metabolising the plastic, leading to further breakdown. Degradation processes include chain scission, where long polymer chains break into shorter segments, and oxidation, which involves reactions with oxygen that produce breakdown products. High temperatures can also cause thermal degradation, melting the polymer and allowing it to solidify into smaller fragments. Moreover, mechanical stress and abrasion in marine environments can accelerate the fragmentation of plastic items.[11] [12] [13] [14]

Human and Animal Health

In terms of human health, plastic straws, stirrers, and plastic-stemmed cotton buds are commonly made of polypropylene and break down into microplastics when improperly disposed of. These tiny plastic particles, defined as having a diameter less than 5mm,[15] persist in the environment, entering food chains and, ultimately, human bodies. Evidence suggests that microplastics are harmful to both the environment and human health, with potential risks ranging from physical damage to organs to chemical contamination as toxic substances adhere to the plastic particles.[16] [17] [18] [19] While research into the full extent of these health impacts is ongoing, the increasing presence of microplastics in drinking water, seafood, and other food sources raises significant concerns amongst the public.[20]

On harm to marine life, plastic straws pose a threat to marine wildlife once in the ocean, a fact that gained widespread public attention after a viral video showed a turtle suffering from a straw lodged in its nose.[21] Additionally, they can cause harm or death of marine life through ingestion or entanglement.[22] The same risk is true for both plastic stirrers and cotton buds, as plastic litter can pose severe risks to wildlife, including birds and other marine animals.[23] [24]

[11] Degradation-fragmentation of marine plastic waste and their environmental implications: A critical review. Available at: https://doi.org/10.1016/j.arabjc.2022.104262
[12] Microplastic degradation methods and corresponding degradation mechanism: Research status and future perspectives. Available at: https://doi.org/10.1016/j.jhazmat.2021.126377
[13] Understanding plastic degradation and microplastic formation in the environment: A review. Available at: https://doi.org/10.1016/j.envpol.2021.116554
[14] Degradation of microplastics in the environment. Available at: https://doi.org/10.1007/978-3-030-39041-9_10
[15] Microplastics – European Commission. Available at: https://doi.org/10.1016/j.scitotenv.2022.153730 https://environment.ec.europa.eu/topics/plastics/microplastics_en
[16] Human health concerns regarding microplastics in the aquatic environment - From marine to food systems. Available at: https://doi.org/10.1016/j.scitotenv.2022.153730
[17] Research on the influence of microplastics on marine life. Available at: https://iopscience.iop.org/article/10.1088/1755-1315/631/1/012006/pdf
[18] Microplastics: an emerging threat to food security and human health. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC7171031/
[19] Environmental Impacts of Microplastics and Nanoplastics: A Current Overview. Available at: https://doi.org/10.3389/fmicb.2021.768297
[20] Public attitudes towards microplastics: Perceptions, behaviors and policy implications. Available at: https://doi.org/10.1016/j.resconrec.2020.105096
[21] The bloody turtle video that sparked a plastic straw revolution. Available at: https://www.bbc.co.uk/future/article/20240402-the-turtle-video-that-sparked-a-plastic-straw-revolution
[22] Plastic in the Ocean Statistics 2025. Available at: https://www.condorferries.co.uk/plastic-in-the-ocean-statistics
[23] Microplastic release from the degradation of polypropylene feeding bottles during infant formula preparation. Available at: https://doi.org/10.1038/s43016-020-00171-y
[24] Sources of microplastics pollution in the marine environment: Importance of wastewater treatment plant and coastal landfill. Available at: https://doi.org/10.1016/j.marpolbul.2019.06.066

Paper alternatives to single-use plastic items such as those made with bamboo or recycled paper, are designed to be more environmentally friendly.[25] [26] Unlike plastic, which can take hundreds of years to break down, paper-based versions biodegrade quickly and are less harmful to marine wildlife.[27] A study found in the literature conducted a Life Cycle Assessment (LCA) to evaluate the environmental impacts of cotton buds, focusing on key categories such as climate change, particulate matter formation, fossil resource depletion, and element resource depletion. The results indicated that paper-based cotton buds generally performed better than plastic cotton buds made from polypropylene across all impact categories in the baseline scenario (climate change, particulate matter formation, fossil resource depletion, and element resource depletion). This trend held true across most sensitivity scenarios as well. However, in Scenario S4, which considered the indirect land-use changes associated with paper production, the polypropylene cotton buds performed better.[28]

2.4 Evidence Informing the PIR

This PIR draws on primary and secondary evidence to ascertain whether the Regulations have achieved the intended objectives.

Primary research was conducted by Ipsos on behalf of Defra between the 16th-20th May 2025. This consisted of an online survey with a nationally representative quota sample of 2,134 adults aged 16 to 75 across the UK, using Ipsos' online i:Omnibus platform. The sample was designed to reflect the UK population, using interlocking quotas on age within gender, region, and working status; after fieldwork the data was weighted to those same population distributions, plus social grade and education level, to ensure representativeness. This survey will be referred to as the Ipsos survey (2025) in this PIR. The survey questions were designed to explore the effect of the Regulations on the following outcomes set out in the impact assessments:

- Marine user benefits
- Marine non-user benefits
- Wellbeing benefits due to a cleaner marine environment
- Disutility cost from non-plastic substitutes

Other sources of primary evidence include site visits by Defra officials during enforcement activities accompanied by Trading Standards Officers, workshops and engagement with local authority Trading Standards Officers which provided anecdotal evidence, and a Defra-commissioned review of the 2023 bans and restrictions conducted by Technopolis, which yielded general findings on single-use plastic bans and helped inform this PIR.

Secondary evidence informing this PIR was obtained from publicly available secondary sources, including the Marine Conservation Society's Beachwatch reports and the annual Great British

[25] Wildlife-friendly alternatives to plastic cotton buds – Sustainability Victoria. Available at: https://www.sustainability.vic.gov.au/recycling-and-reducing-waste-at-home/avoid-waste/minimise-single-use-items/plastic-cotton-buds

[26] Paper Cotton Buds – Safe and Sound Health. Available at: https://www.safeandsoundhealth.co.uk/product/paper-cotton-buds/

[27] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57

[28] LCA of Single Use Plastic Products in Denmark. Available at: https://orbit.dtu.dk/en/publications/lca-of-single-use-plastic-products-in-denmark

Beach Clean litter survey,[29] [30] as well as government publications such as the 'Report on the impact of restrictions on the sale of single-use plastics on the operation of the UK Internal Market'[31] and the 'One year review of the impact of the plastic straw restrictions'.[32]

For the evaluation of costs and benefits, many of the same evidence sources that were used to inform prior impact assessments[33] and regulatory triage assessments[34] [35] were used again. More recent years of data have been used where this is available.

Data sources used include: ONS Earnings and Hours Worked[36], Resource Futures[37], WRAP Gate Fees[38], WRAP Carbon Waste and Resources Metric 2[39], Local Authority Collected Waste data[40]. Also, light touch desk-based research[41] was conducted to evaluate producer impacts and purchasing costs.

2.5 Protecting Our Environment for Future Generations and Improve the Quality of the Environment

Overall, the evidence demonstrates that there has been a reduction in plastic litter since the Regulations came into force, however it is not clear how far this change can be attributed to the Regulations. Beachwatch data from the Great British Beach Clean has demonstrated that there has been reduced plastic litter, particularly from plastic straws and plastic-stemmed cotton buds, found on beaches since the Regulations came into force, notably plastic-stemmed cotton buds moved out of the UK's top 10 most littered item list in 2021 and their presence on beaches reached its lowest levels in the Beach Clean's 28-year history.[42] None of the items under the

[29] Beachwatch 2024: What you found. Available at: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/beachwatch-2024-what-you-found/
[30] The results are in for our Great British Beach Clean 2021. Available at: https://www.mcsuk.org/news/the-results-are-in-for-our-great-british-beach-clean-2021/
[31] Report on the impact of restrictions on the sale of single-use plastics on the operation of the UK Internal Market. Available at: https://assets.publishing.service.gov.uk/media/67a9e9ea5dea3871ea1ceac4/Report_on_the_impact_of_restrictions_on_the_sale_of_single-use_plastics_on_the_operation_of_the_UK_Internal_Market_.pdf
[32] One year review of the impact of the plastic straw restrictions. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_002.pdf
[33] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[34] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[35] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf
[36] ONS, Earnings and hours worked, industry by four digit SIC: ASHE Table 16.5a Gross Hourly Pay 2024 provisional. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/industry4digitsic2007ashetable16
[37] Resource Futures (2018) A preliminary assessment of the economic, environmental and social impacts of a potential ban on plastic straws, plastic stem cotton buds, and plastic drink stirrers. Available at: https://www.resourcefutures.co.uk/wp-content/uploads/2021/07/14326_Plasticstrawsstemcottonbudsandstirrers-1.pdf
[38] WRAP UK Gate Fees Report 2023-2024. Available at: https://www.wrap.ngo/resources/report/uk-gate-fees-report-2023-24
[39] WRAP Carbon WARM Report 2025. Available at: https://www.wrap.ngo/resources/report/carbon-waste-and-resources-metric-carbonwarm2#download-file
[40] Local authority collected waste generation from annual results 2021/2022. Available at: https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables
[41] A review of various websites for UK based paper straws manufacturing: https://britishpaperstraws.co.uk/, , https://paperstrawslondon.com/, https://www.thepaperstraw.co/
[42] The results are in for our Great British Beach Clean 2021. Available at: https://www.mcsuk.org/news/the-results-are-in-for-our-great-british-beach-clean-2021/

Regulations appeared in the top litter categories by 2024.[43] English beaches supplied 651 of the 1,262 surveys in 2024,[44] with similar or higher shares in earlier years,[45] [46] so the aggregate UK data are strongly driven by results from England, providing reasonable confidence that the Regulations are contributing to lower amounts of shoreline plastic pollution.

The Ipsos survey (2025) found that 70% of respondents believe that the Regulations have contributed to improving the quality of the environment, and 71% of respondents believe it has contributed to protecting our environment for future generations (see Figure 1). Furthermore, around three-quarters of the respondents believe the bans are beneficial for the environment (see Figure 2). This data on public perceptions suggests that the bans and restrictions have positively contributed to protecting the environment for future generations and enhancing its overall quality.

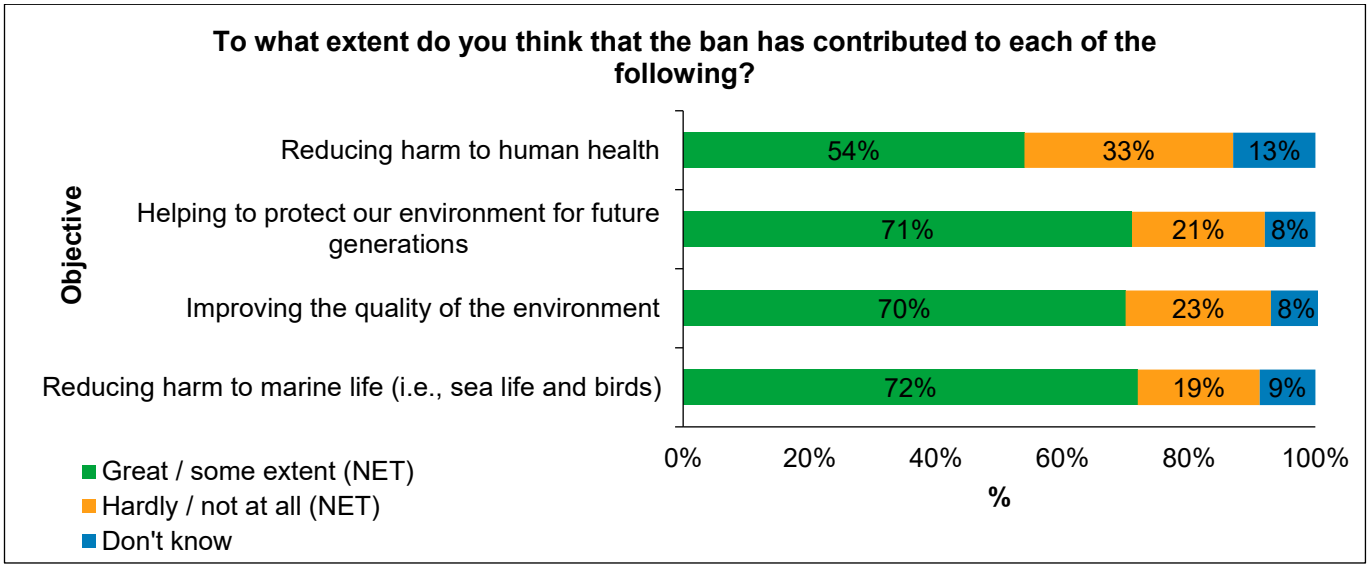

Figure 1: Extent to which participants think the Environmental Protection Regulations (2020) have contributed to each of its intended goals (n = 2,134).

[43] Beachwatch 2024: What you found. Available at: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/beachwatch-2024-what-you-found/
[44] Beachwatch 2024 Results. Available at: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/beachwatch-2024-what-you-found/#england
[45] Beachwatch 2023 Results. Available at: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/beachwatch-reports/beachwatch-2023-what-you-found/#england
[46] Beachwatch 2022 Results. Available at: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/beachwatch-reports/beachwatch-2022-what-you-found/#england

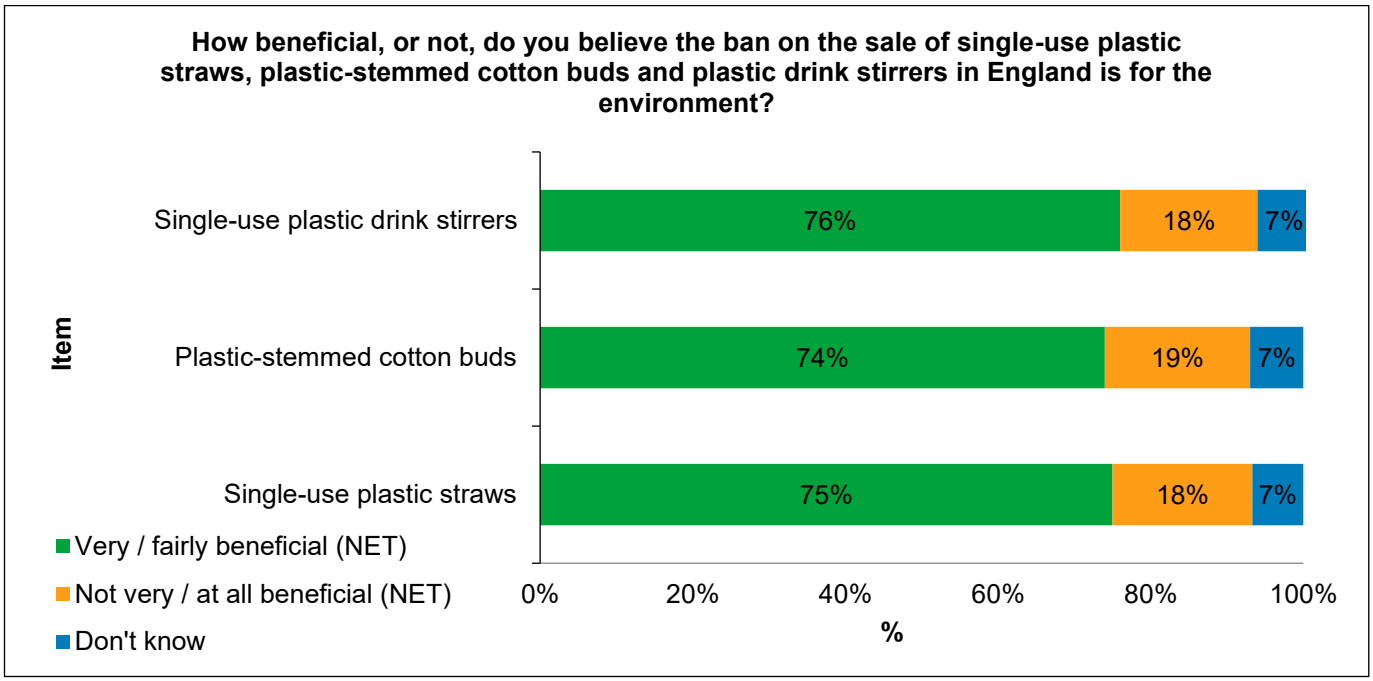

Figure 2: Extent to which respondents think the ban on the sale of single-use plastic straws, stirrers, plastic stemmed cotton buds and drink stirrers in England is beneficial for the environment (n = 2,134).

2.6 Reduce Harm to Human Health and Marine Life

There is some indication that the Regulations may have contributed to its stated objective of reducing harm to human health and marine life. Data from the Great British Beach Clean suggest a gradual decline in plastic litter, particularly in relation to the items targeted by the Regulations, since its implementation. Whilst this association cannot establish causality, it may point to a link between the Regulations and the observed environmental outcomes. Furthermore, findings from the Ipsos survey (2025) reveal that 54% of respondents believe that the ban has helped reduced harm to human life, and 72% believe that it has reduced harm to marine life. These perceptions provide insight into public sentiment around the Regulations. If the observed reduction in plastic litter continues, it is plausible that the rate at which microplastics enter the environment (and subsequently pose risks to human health) could decrease over time; this should lower the amount of microplastics entering waterways, soil, and the food chain, therefore reducing the long-term exposure risk to both humans and wildlife. However, further long-term follow-up studies are required to substantiate such outcomes.

2.7 Increased Use of Environmentally Friendly Materials and Investment in Alternatives

The Regulations intended to increase the use of alternative products that are made of environmentally friendly materials, that decompose quicker and have lower life-cycle impacts on the environment, in place of the banned or restricted plastic items. They also state that the Regulations may encourage investment by UK businesses in biodegradable alternatives. As set out in the impact assessment[47] and regulatory triage assessments[48] [49], popular plastic-free

[47] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[48] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[49] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf

alternatives to plastic straws, stirrers, and cotton buds are usually made of paper or wood. Paper and wooden alternatives to these banned items not only decompose much quicker than plastic, they are also cleaner to incinerate which generates environmental emissions savings.

The majority (85%) of respondents in the 2025 Ipsos survey report having used paper straws in the last 12 months, suggesting such alternatives are now widely available. Although we lack a comparable pre-2020 baseline, the survey response implies that many businesses have shifted procurement and are choosing to offer these products over single use plastic straws, and in doing so, probably invested more money towards environmentally friendly alternatives to meet regulatory requirements.

2.8 Raising Awareness of Environmental Harms

The evidence suggests that the Regulations may have contributed to consumer and business awareness of the environmental harms associated with improper disposal of plastic straws, stirrers, and cotton buds. Data from the Ipsos survey (2025) shows that 75% of respondents believe the bans on these items are beneficial to the environment (see figure 2), and 82% expressed concern about the environmental impact of plastic more broadly. These findings suggest a high level of public awareness; however, it remains unclear to what extent these attitudes can be directly attributed to the Regulations itself. Nonetheless, the survey responses provide crucial insight into the perceived effectiveness of the Regulations and its alignment with environmental concerns from the public.

Defra commissioned Technopolis to conduct a review of The Environmental Protection (Plastic Plates etc. and Polystyrene Containers etc.) (England) Regulations 2023, which includes the bans and restrictions on single-use plastic items implemented in 2023.[50] Through interviews with stakeholders from industry bodies, environmental non-governmental organisations (ENGOs), and Trading Standards, they found that both consumer and business environmental awareness had likely increased as a result of the single-use plastic bans. Although what was assessed was not the 2020 bans and restrictions that this PIR is concerned with, the report suggests that single-use plastic bans in general have increased consumer and business awareness of the environmental harms caused by improper disposal. Further, a report by the Office for the Internal Market (OIM) investigating the impact of these Regulations on the UK internal market found that the 2023 bans, in combination with these Regulations assessed in this PIR, helped to signal to businesses the overall shift in government policies, meaning businesses started to transition to alternatives faster and often in advance of bans coming into effect. This suggests that the Regulations, and other similar policies, had a positive effect on business awareness.[51]

2.9 Exemptions

One of the intended objectives in the Regulations, specifically relating to plastic straws, was to

[50] Evaluation of October 2023 Ban and Restrictions on Certain Single-use Plastic items in England. Available at: To Be Published Imminently

[51] Report on the impact of restrictions on the sale of single-use plastics on the operation of the UK Internal Market. Available at: https://assets.publishing.service.gov.uk/media/67a9e9ea5dea3871ea1ceac4/Report_on_the_impact_of_restrictions_on_the_sale_of_single-use_plastics_on_the_operation_of_the_UK_Internal_Market_.pdf

ensure that suitable exemptions are in place so those who require plastic straws suffer no welfare costs following a ban.

The Ipsos survey (2025) revealed that 56% of respondents who had purchased drinking straws in a local supermarket within the past 12 months reported that single-use plastic straws were still available at the point of purchase. This is a striking finding given the legislative restrictions in place, and it raises questions about the effectiveness of enforcement mechanisms. In hospitality settings, the survey found that 39% of individuals who had used a single-use plastic straw outside the home received one automatically with their drink, while a further 37% received one upon request. These figures suggest that despite the legal restrictions introduced in 2020, single-use plastic straws remain accessible in both retail and hospitality contexts.

This apparent availability of banned items may be attributed to several factors. Firstly, the Ipsos survey data is based on self-reported responses, which are inherently subject to recall bias — respondents may confuse biodegradable or compostable alternatives with traditional plastic straws. Respondents may misremember the type of straw or cotton bud they encountered, especially if the interaction was brief or occurred some time ago. For example, a respondent might confuse a bagasse plastic-free alternative with a banned plastic item or fail to notice subtle differences in product materials. Additionally, some respondents may not be fully aware of the legal distinctions or may conflate different types of products. However, qualitative evidence from stakeholder engagement conducted by Defra (2022) supports the notion that some businesses, particularly smaller hospitality venues, may not be fully compliant with the Regulations. The review found that while larger chains reported adherence to the rules (keeping plastic straws out of sight and only providing them upon request), there is anecdotal evidence that some smaller establishments continue to offer plastic straws more freely, possibly due to a lack of awareness or enforcement.[52]

Moreover, the 2022 one-year review of the plastic straw restrictions highlighted that some individuals who require plastic straws for medical or accessibility reasons were unaware of the exemptions that allow them to legally obtain these products through pharmacies or specific institutions. The review recommended improved communication strategies to ensure that those who need plastic straws are informed about how to access them legally.

The persistence of plastic straws in circulation also reflects broader challenges in enforcement. The Office for the Internal Market's 2025 report noted that while many businesses have voluntarily transitioned to alternatives, enforcement of the bans, particularly among SMEs, has been inconsistent. Some stakeholders reported that banned items such as plastic cutlery and polystyrene containers are still in use, especially in smaller, independent food outlets. This uneven compliance not only weakens the environmental impact of the Regulations but also creates an uneven playing field for businesses that do comply.

Nevertheless, the continued availability of plastic straws may inadvertently serve a critical function: ensuring that individuals who rely on them for medical or accessibility reasons are not excluded. The Ipsos survey data, alongside stakeholder feedback, suggests that while enforcement gaps exist, the exemptions are functioning to some extent in practice. Many individuals who require plastic straws report purchasing them independently and carrying them for use in hospitality settings, which aligns with the Regulations' intent to preserve access for those with legitimate needs.

[52] One year review of the impact of the plastic straw restrictions. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_002.pdf

In summary, while the survey data and stakeholder feedback point to ongoing challenges with enforcement and compliance, they also suggest that the exemptions may be partially fulfilling their intended purpose. However, the findings underscore the need for more robust enforcement, clearer guidance for businesses, and targeted communication to ensure that both the environmental and accessibility objectives of the Regulations are fully realised.

The same is true for the exemptions for plastic-stemmed cotton buds, as one of the intended objectives was to ensure that those who require cotton buds in scientific laboratories could access plastic-stemmed cotton buds if suitable alternatives to plastic were not available. 48% of the respondents from the Ipsos survey (2025) that purchased cotton buds in the last 12 months reported plastic versions being available in their local supermarket. While this raises concerns about enforcement and market compliance, it also suggests that the exemption criteria may be being met in practice.

There are no exemptions in place for plastic stirrers.

2.10 International Comparisons

Single-use plastic straws have also been subject to legislation in 17 other countries and 1 region, including Scotland and Wales, Canada, Chile, China, India, Indonesia, Maldives, New Zealand, and the European Union (EU).[53] Scotland became the first part of the UK to legislate on single-use plastics in 2019 when it banned plastic-stemmed cotton buds. In 2022 the ban was extended to straws, stirrers, cutlery, plates, balloon sticks, and expanded polystyrene food and drink containers, including their covers and lids.[54] [55] Wales introduced their ban in 2023, and included plastic straws, stirrers, cotton buds, plates, cutlery, expanded and extruded polystyrene food and drink containers, and balloon sticks as part of their Phase 1 single-use product bans.[56] Canada introduced their single-use plastic prohibition regulations in 2022, among other items, this includes single-use plastic straws and stirrers, though an exemption for straws is when they are packed with a beverage container, like a juice carton.[57] India have banned the manufacture, import, stocking, distribution, sale, and use of single-use plastic items that are deemed to have low utility and high littering potential across the country from 2022; straws, stirrers, and cotton buds are included as part of this regulation. From July 2021, among other single-use plastic items, the EU has banned plastic straws, stirrers, and cotton buds.

Cotton buds have only been banned in 8 other countries and 1 region (EU).[58] This includes Scotland, Wales, as well as China, Colombia, India, the EU, and the Maldives. Scotland and Wales have no exemptions to their ban on single-use plastic-stemmed cotton buds.[59] China introduced these bans through a three-phase programme to phase out single-use plastic items, the first of which was introduced in 2020 and included banning plastic straws in the catering

[53] Global criteria to address problematic, unnecessary and avoidable plastic products. Available at: https://pub.norden.org/temanord2024-508/
[54] The Environmental Protection (Cotton Buds) (Scotland) Regulations 2019. Available at: https://www.legislation.gov.uk/ssi/2019/271
[55] Action on single-use plastic – Scottish Government. Available at: https://www.gov.scot/news/action-on-single-use-plastic/
[56] Guidance - The Environmental Protection (Single-use Plastic Products) (Wales) Act 2023. Available at: https://www.gov.wales/environmental-protection-single-use-plastic-products-wales-act
[57] Single-use Plastics Prohibition Regulations: SOR/2022-138 – Canada Gazette. Available at: https://gazette.gc.ca/rp-pr/p2/2022/2022-06-22/html/sor-dors138-eng.html
[58] Global criteria to address problematic, unnecessary and avoidable plastic products. Available at: https://pub.norden.org/temanord2024-508/
[59] Guidance - The Environmental Protection (Single-use Plastic Products) (Wales) Act 2023. Available at: https://www.gov.wales/environmental-protection-single-use-plastic-products-wales-act

industry as well as the production and sale of disposable plastic cotton swabs.[60] Many countries have not expressly banned 'stirrers', and have instead banned single-use plastic cutlery and utensils more broadly, which encompasses stirrers. Cutlery and utensils have been banned or restricted in over 25 countries and 1 region.[61] Countries with bans include Canada, China, Colombia, Ecuador, India, Maldives, and New Zealand, and the EU. The Republic of Korea have a restriction.

There has been limited assessment of these policies around the world, making it difficult to comment on the success or failure of the bans enacted in different countries. However, informal conversations between Defra and international counterparts have highlighted that other countries have faced similar difficulties enforcing the bans, especially around the miss-labelling of single-use items and reusable. A report from the Global Plastics Policy Centre, based in the University of Portsmouth, identified a distinct lack of evidence for the effectiveness of plastic ban policies globally.[62] In most of these cases, it was uncertain as to whether there was no evidence of policy effectiveness recorded, or whether there was a lack of disclosure and public access to evidence. The OIM's 2025 review relied on surveys and stakeholder interviews as opposed to impact data, such as pre- and post- quantitative data on the volume of single-use plastics, which further demonstrates the lack of available data on the impact of the Regulations. Regardless, there is a significant data gap that impedes the robust assessment of the impact of single-use plastics bans.

3. Assessment of Impacts – Evaluation of Costs and Benefits

3.1 Market information – Straws, cotton buds and stirrers

3.1.1 Item consumption

The assumed consumption profile of straws, cotton buds and stirrers in England, prior to the introduction of the policies, is shown in Table 1 – as stated in the impact assessment[63] and regulatory triage assessments[64] [65] for the policies.

The straws impact assessment assumed a 10% decrease in consumption over the period 2018 to 2030.[66] This assumption was based on consultation respondents indicating that the overall straw use (regardless of being plastic or paper) was likely to continue to decrease in the future,

[60] New policy on plastic pollution control is released: production and sale of disposable foam plastic tableware will be banned by the end of the year – Ministry of Ecology and Environment (PRC). Available at: https://www-mee-gov-cn.translate.goog/ywdt/hjywnews/202001/t20200120_760555.shtml?_x_tr_sl=zh-CN&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc
[61] Global criteria to address problematic, unnecessary and avoidable plastic products. Available at: https://pub.norden.org/temanord2024-508/
[62] A global review of plastics policies to support improved decision making and public accountability. Available at: https://plasticspolicy.port.ac.uk/research/a-global-review-of-plastics-policies-to-support-improved-decision-making-and-public-accountability/
[63] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[64] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[65] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf
[66] Defra impact assessment assumption based on consultation responses

based on the existing falling trend. The regulatory triage assessments for cotton buds and stirrers made simplifying assumptions that consumption remained static.

Table 1: Total consumption of single-use straws, cotton buds and stirrers (all materials) in England prior to the policies.

Item	Units Consumed Per Year
Large straws	3,704,800,000
Carton straws	1,037,344,000
Cotton buds	1,780,000,000
Stirrers	315,750,000

Sources: Resource Futures for Defra, as stated in Defra Impact Assessment on the proposal to ban the supply of plastic drinking straws to the end user in England and Regulatory Triage Assessment's on proposals to ban the sale and supply of plastic stemmed cotton buds/stirrers in England.

3.1.2 Market shares

Table 2 below shows the share of the market that was originally assumed to be plastic, as stated in the impact assessment and regulatory triage assessments for the policies.

Table 2: Assumed plastic market shares for single-use straws, cotton buds and stirrers

Item	2018 (prior to implementation)	2020 (implementation year)	2024 (post implementation)
Straws	95%	42.2%	5.6%
Cotton buds	80%	25%	0%
Stirrers	50%	25%	0%

Source: Resource Futures and Defra modelling, as shown in Defra Impact Assessment on the proposal to ban the supply of plastic drinking straws to the end user in England and Regulatory Triage Assessment's on proposals to ban the sale and supply of plastic stemmed cotton buds/stirrers in England.

Despite the bans on single-use plastic straws, stirrers, and plastic-stemmed cotton buds in England, data from the Ipsos survey (2025) suggests that these items may still be available in some retail and hospitality settings. Among respondents who reported purchasing drinking straws in a local supermarket in the past 12 months, 56% said that single-use plastic straws were available at the time of purchase. Similarly, 48% of those who had purchased cotton buds reported seeing plastic-stemmed versions available. In hospitality settings, 39% of respondents who had used a single-use plastic straw outside the home said their drink automatically came with one.

These findings are unexpected, given that the sale and distribution of these items have been banned. In principle, the market share of these products should be zero. This discrepancy raises questions about the awareness that businesses have of the Regulations and the effectiveness of enforcement. It is important to note that the survey data is based on self-reported responses, which are subject to limitations mentioned in Section 2.9 Exemptions.

These limitations suggest that while the survey data provides useful insights into public perceptions and experiences, it may not offer a fully accurate picture of market compliance. The apparent availability of banned items could reflect either gaps in enforcement or misreporting by respondents. Further investigation, including observational audits or compliance checks, would be necessary to determine the true extent of market adherence to the bans.

If impact assessment projections were accurate, we would expect to see approximately 264 million plastic straws currently being consumed in England and a zero/negligible amount of plastic cotton buds and stirrers. The reason for the remaining plastic straw consumption would be due to the exemptions of the legislation. The Ipsos survey (2025) results suggest that, in practice, consumption of the banned items may remain higher than estimated in the impact assessment and regulatory triage assessments.

In the impact assessment[67] and regulatory triage assessments[68] [69], for cost and benefit calculations which include the total straws, buds or stirrers consumption figure, the impact of the ban was calculated using the difference in market share of the banned items between the ban and no ban scenario. This was also adjusted to account for the decline in market growth for straws. This resulted in the following profile of market shares (Table 3 to Table 5) applied to these calculations. The Ipsos survey (2025) results suggest that, in practice, the market shares of the banned items may remain higher than estimated in the impact assessment and regulatory triage assessments.

Table 3: Profile of market shares - straws (projections from IA and RTA's)

	2020	2021	2022	2023	2024
Ban	42.2%	9.1%	5.6%	5.6%	5.6%
No ban	50.0%	38.0%	26.0%	14.0%	8.0%
Difference	7.8%	28.9%	20.4%	8.4%	2.4%
Adjusted for total consumption	7.7%	28.2%	19.8%	8.1%	2.3%

Table 4: Profile of market shares - cotton buds (projections from IA and RTA's)

	2020	2021	2022	2023	2024
Ban	25.0%	0.0%	0.0%	0.0%	0.0%
No ban	30.0%	5.0%	1.0%	1.0%	1.0%
Difference	5.0%	5.0%	1.0%	1.0%	1.0%

[67] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[68] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[69] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf

Table 5: Profile of market shares – stirrers (projections from IA and RTA's)

	2020	2021	2022	2023	2024
Ban	25.0%	0.0%	0.0%	0.0%	0.0%
No ban	30.0%	20.0%	10.0%	5.0%	5.0%
Difference	5.0%	20.0%	10.0%	5.0%	5.0%

3.2 Costs

3.2.1 Business costs

Familiarisation Costs

Our ex-ante analyses have assumed that businesses would incur one-off familiarisation costs in the year of policy implementation. In the case of cotton buds and stirrers, these familiarisation costs were assumed to be very minimal and were conservatively covered under a one-off 'business implementation cost' to retailers of £0.1m in regulatory triage assessments[70] [71]. This one-off familiarisation cost was expected to be larger for straws, and a more in-depth analysis was conducted using assumptions of time to familiarise with regulation and ONS median hourly pay data (2018) for each Standard Industrial Classification (SIC) code. This resulted in an impact assessment estimate of £2.1m for the one-off familiarisation cost attributable to the straws ban.[72]

We are not aware of any evidence to suggest that familiarisation costs incurred in the implementation year were significantly different to the estimates presented in the impact assessment and, since these were one-off costs, we have not updated them with recent data.

In addition to one-off familiarisation costs, ongoing familiarisation costs (for example due to staff turnover) were estimated in the impact assessment for the straws policy.

We have updated the calculation for ongoing familiarisation costs with ONS median hourly pay data for 2024[73] and adjusted the wage uplift from 30% to 22% in line with the most recent advice from the RPC on this.

This results in a new estimate for ongoing annual costs of £791,378 (2024 prices) across all businesses for straws. The impact assessment estimate was £617,877 (2018 prices).

Producer Impacts

Research published by Resource Futures in 2018 found that the market for large straws in England was largely dominated by wholesalers supplying imported products. It also highlighted the lack of a significant domestic manufacturing base for plastic straws used in cartons. As a

[70] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[71] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf
[72] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[73] ONS, Earnings and hours worked, industry by four digit SIC: ASHE Table 16.5a Gross Hourly Pay 2024 provisional. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/industry4digitsic2007ashetable16

result, the impact assessment assumed that all straws were imported, and therefore no negative impact on producers (such as loss of profit) was anticipated from the restrictions on plastic straws.

However, desk-based research[74] conducted for this PIR suggests that since 2018, some UK-based paper straw producers have entered the market. This suggests that the policy on straws may have had a positive effect by encouraging domestic production of paper alternatives.

Similarly, the regulatory triage assessments for plastic cotton buds and stirrers indicated zero production impact, as these items were predominantly imported and there was minimal, if any, UK manufacturing. Desk-based research by Defra[75] suggests this remains the case.,

Purchasing Costs

The straws impact assessment noted the price differential between plastic and paper straws.

The assumed unit prices in the impact assessment were 0.25p per unit for carton paper straws and 2.5p per unit for large paper straws (2018 prices). Inflating these to 2024 prices results in a price of 0.33p for carton paper straws and 3.3p for large paper straws. The impact assessment noted that this price differential would have resulted in costs to businesses who would have not switched to paper straws voluntarily. It was expected that consumers would have absorbed the majority (60%) of the additional costs via higher prices.

Recent desk-based research suggests that paper straws are being sold by UK manufacturers from 3p each.[76] Since the prices of these UK manufactured straws aren't noticeably cheaper than the inflated IA unit cost assumptions, it is probable that economies of scale may not have yet developed on a significant basis for straws. Although businesses may find that it is now less expensive to purchase paper straws since they should now be able to purchase them directly from UK producers, as opposed to from wholesalers who have imported them and added a markup to the price.

The unit price of the plastic and alternative material buds/stirrers were very comparable – all estimated to be around 0.5p at the time of the regulatory triage assessments. As such, there was no evidence that businesses would face increased purchasing costs. It was noted as a possibility that an increase in demand for the paper items could increase costs in the short term. However, prior to the introduction of the policies there were already significant trends to move away from plastic items and towards paper. Given that the policies may create economies of scale in the paper straws/wooden stirrers industry it was also recognised that upper supply chain costs may fall, and these lower costs may be passed onto consumers. We do not have evidence to indicate how unit costs have changed following the bans.

3.2.2 Enforcement costs

Local authorities (LAs) were not issued funding for enforcement of the bans and restrictions on

[74] Light touch desk-based research conducted by Defra in December 2024.https://paperstrawslondon.com/ https://www.thepaperstraw.co/ https://www.thestrawbrothers.com/
[75] Light touch desk-based research conducted by Defra in December 2024. UK based cotton bud manufacturer https://www.cowens.co.uk/
[76] https://britishpaperstraws.co.uk/ Accessed 2024.

single-use plastic straws, cotton buds and stirrers. Defra estimated annual enforcement costs to be £0.09m for straws, £0.04m for cotton buds and £0.04m for drinks stirrers.[77] [78] [79]

A new burdens assessment for the Regulations was conducted in combination with the carrier bag charge increase due to the policies affecting the same business sectors and being enforced by the same authorities. The straws, cotton buds and stirrers policies had a net cost to local authorities of £1.25m over a ten year appraisal period[80], whereas the carrier bags regulation had a net saving to local authorities of £85.8m over ten years[81]. Overall, the combined net saving to local authorities was estimated to be £84.5m over ten years[82].

Benefits to local authorities included reduced litter clean-up costs and waste management cost savings.

Since no net additional costs were calculated for local authorities (mainly due to the significant savings from the plastic carrier bags regulation) issuing funding was not a requirement. The assessment also concluded that if any unexpected costs should arise, the benefits to local authorities should outweigh the costs to local authorities from these policies.

3.2.3 Waste Management Costs

As part of this review, we have calculated updated estimates of the waste management costs over the period 2020 to 2024 (ban implementation to most recent full year) using more recent data inputs. The impact assessment estimates of waste management costs were likely to be reasonable estimates, using a similar methodology to that set out below.

The paper and wooden alternatives to the plastic items are heavier, and as such their disposal is more costly since waste management costs such as landfill tax and landfill/incineration site gate fees are calculated by weight. Some of these items are disposed of in commercial establishments, whereas some are disposed of in public bins or households. As such, local authorities and businesses share the cost burden. The assumed splits of the cost burdens are shown in Table 6 below. These were informed by Resource Futures research for the purpose of the impact assessment, and we do not have updated evidence to suggest that these would have changed and so we have kept these assumptions the same in this PIR.

Table 6: Split of the cost burdens between Local Authority disposal and business disposal

Item	LA disposal cost split	Business disposal cost split
Straws	20%	80%
Cotton buds	90%	10%
Drink stirrers	10%	90%

Source: Resource Futures

[77] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[78] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[79] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf
[80] Undiscounted, 2018/19 prices
[81] Undiscounted, 2018/19 prices
[82] Undiscounted, 2018/19 prices

Defra's impact assessment assumption for straws, cotton buds and stirrers was that 71% goes to incineration and 29% goes to landfill. This was informed by English local authority collected waste annual results for the year 2016/17. We have since updated this to the latest available year of data, which is 2021/22 – this puts the split at 15% going to landfill and 85% going to incineration.

Waste gate fees have increased since the introduction of the Regulations. Table 7 shows the gate fees for year 2023/2024[83].

Table 7: Gate fees

	Median gate fee (£/tonne)	Mean gate fee (£/tonne)
Energy from Waste	112	110
Non-hazardous Landfill (excl. landfill tax)	24	27
Non-hazardous Landfill (incl. landfill tax)	126.10	129.10

Updating impact assessment and regulatory triage assessment analysis with the new landfill versus incineration splits and 2023 landfill and incineration gate fees and landfill tax, inflating to 2024 prices, discounting at a rate of 3.5% and then adjusting to account for market growth and the difference in market share of the banned items between the ban and no ban scenarios, results in the following waste management costs as shown in Table 8.

These costs suggest previous estimates of waste management costs were likely to be reasonable. If, as potentially indicated by the Ipsos survey (2025) results, market shares of the banned items remain higher than estimated in the impact assessments, waste management cost estimates (here and in the impact assessments) may be slight overestimates.

Table 8: Waste management costs over the period 2020 to 2024 (2024 prices and 2020 present value)

Item	Cost to business	Cost to government (LA's)	Landfill tax revenue
Straws	£179,483	£44,871	£29,209
Cotton buds	£477	£4,292	£621
Stirrers	£11,377	£1,264	£1,646

3.2.4 Disutility Costs

A non-monetised cost to consumers associated with the bans and restrictions, arising from the inconveniences associated with imperfect substitutes for these single-use items, has been framed in the Impact Assessment as a 'disutility cost'.

[83] WRAP Gate fees report 2023/2024

For plastic straws, disutility costs could arise from straws made from alternative materials like paper or wood becoming ‘soggy’ and degrade after prolonged periods, or unsuitable for consuming hot drinks. It was also thought with these other materials, there could be a risk of increased costs to businesses that serve particularly thick drinks, such as milkshakes or slushies, as businesses may need to compensate for this by offering customers two paper straws instead, for example. There was also a risk of disutility costs arising from the ban on plastic stirrers as stirrers not made from plastic could be flimsier, less precise, or poorly shaped for stirring. However, a Resource Futures report commissioned by Defra found that wooden based alternatives are just as good for use.[84] On plastic-stemmed cotton buds, there was a potential disutility cost to consumers due to cotton buds not made from plastic also being flimsier or less precise. Evidence from the same Resource Futures report found that ‘no evidence was identified that indicated the plastic-free alternatives were less effective than their plastic counters’. As the same plastic-free alternatives were available for both plastic stirrers and cotton buds, the same was assumed to be true.

To investigate this, the Ipsos survey (2025) conducted on behalf of Defra found that among respondents who have used paper straws, 47% reported dissatisfaction with their performance, with 22% being very dissatisfied and 25% being fairly dissatisfied. This made paper straws the most negatively rated alternative item in the survey, especially in comparison to other alternatives like wooden stirrers, which received a 77% net satisfaction rate. Although paper straws are a popular alternative, there are lots of other alternatives that respondents rate more highly (see Figure 3).

[84] A preliminary assessment of the economic, environmental and social impacts of a potential ban on plastic straws, plastic stem cotton buds and plastics drinks stirrers. Available at: https://www.resourcefutures.co.uk/wp-content/uploads/2021/07/14326_Plasticstrawsstemcottonbudsandstirrers-1.pdf

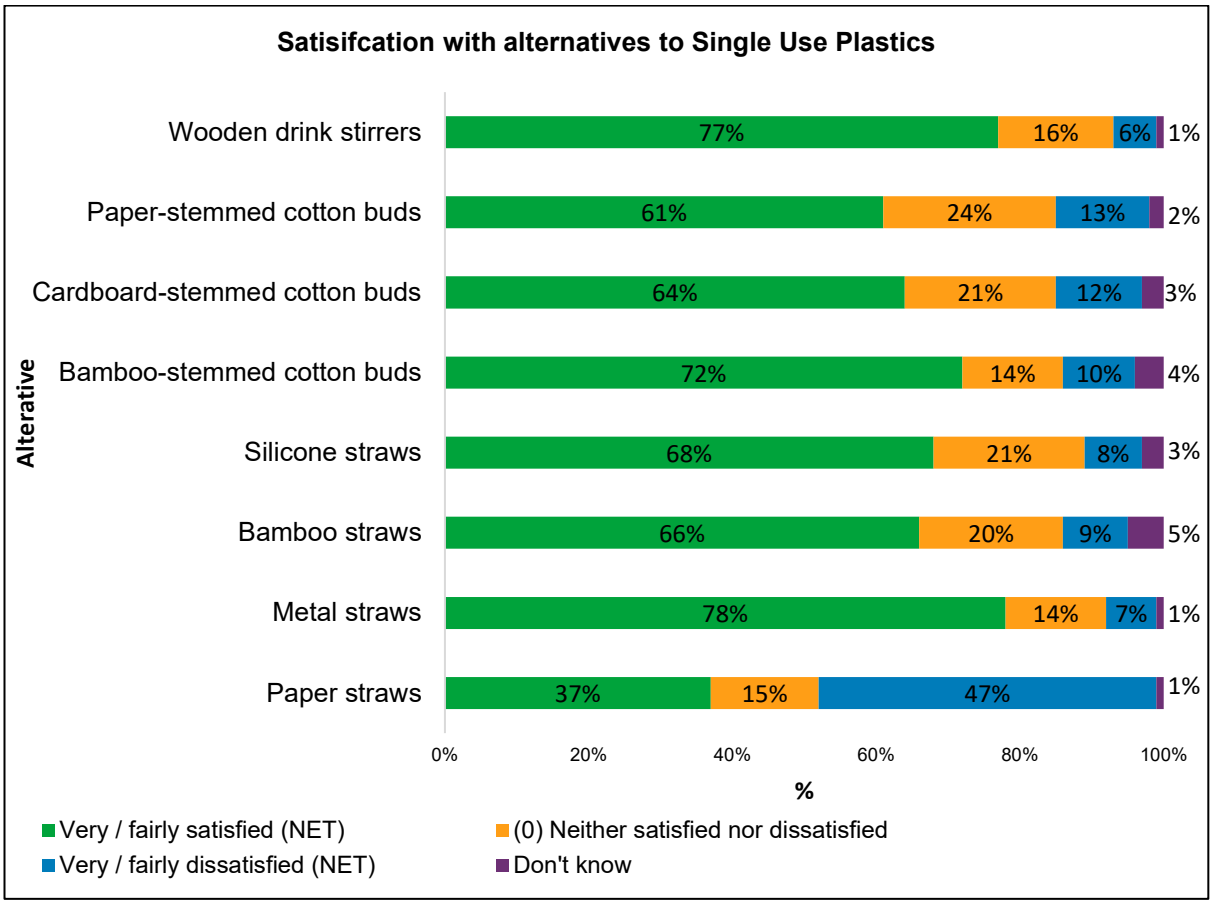

Figure 3: Extent to which respondents are satisfied with alternatives to single-use plastic items[i] (How satisfied or dissatisfied are you with the overall performance of each of the following for their intended purpose?). (n is equal to between 519 and 1,827 depending on item responded to)

In the impact assessment[85] and regulatory triage assessments[86] [87], it was argued disutility costs from non-plastic substitutes being inferior are of less concern than environmental considerations, and that consumers may gain a well-being benefit from using products more environmentally friendly than their single-use plastic counterparts. The consultation for these Regulations, conducted in 2019, provided evidence to demonstrate that the public showed overwhelming support to ban these items, with over 80% of respondents supporting a ban on plastic straws, 90% for a ban on plastic drink stirrers, and 89% on plastic cotton buds.[88]

[i] Paper straw: n = 1827
Plastic straws: n =1806
Metal straws: n = 1042
Bamboo straws: n = 523
Silicone straws: n = 519
Plastic-stemmed cotton buds: n = 1325
Bamboo-stemmed cotton buds: n= 534
Cardboard-stemmed cotton buds: n = 809
Paper-stemmed cotton buds: n = 931
Plastic stirrers: n = 1129
Wooden stirrers: n = 1376

[85] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[86] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[87] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf
[88] Consultation outcome: Single use plastic: banning the distribution and/or sale of plastic straws, stirrers and plastic-stemmed cotton buds in England. Available at: https://www.gov.uk/government/consultations/single-use-plastic-banning-the-distribution-andor-sale-of-plastic-straws-stirrers-and-plastic-stemmed-cotton-buds-in-england

Using the same reasoning as that of the impact assessment, the Ipsos survey (2025) found that three-quarters of survey respondents believe that each of the three bans is beneficial for the environment: 75% for plastic straws, 74% for plastic-stemmed cotton buds, and 76% for plastic stirrers (see Figure 2, p11), although lower figures than that of 2019, the statistics still show majority support for the bans and restrictions. Additionally, nearly 3 in 5 (58%) of survey respondents either strongly agreed (26%) or tended to agree (32%), with the statement: 'The environmental benefits from the ban on the sale of single-use plastic straws in England outweigh any reduced performance of paper straws as an alternative'. This continued support reinforces the assumption in the impact assessment, that any disutility costs associated with non-plastic alternatives are outweighed by environmental benefits and the well-being gains consumers derive from making more sustainable choices.

3.3 Benefits

3.3.1 Greenhouse Gas Emission Impacts

As part of this review, we have calculated updated estimates of the greenhouse gas emission impacts over the period 2020 to 2024 using updated data inputs.

We anticipated a net carbon emission saving as a result of the restriction and bans on single-use plastic straws, cotton buds and stirrers. Emissions impacts arise from differences in weight and emissions intensiveness between plastic and paper, or wood in the case of stirrers. Plastic straws, buds and stirrers are more emission intensive to produce and dispose of via incineration than their paper and wooden counterparts, so switching to paper and wood materials means there will be carbon emission savings attributable to the production and disposal via incineration of these items.

There are, however, additional carbon emissions (caused by fuel and landfill). Plastic straws, buds and stirrers are typically lighter than their paper and wooden counterparts, therefore a switch to paper and wood materials will require excess fuel during transportation of these items.

The consumption and market share estimates made in the impact assessment and regulatory triage assessments have been used for the updated calculations in this PIR. If, as potentially indicated by the Ipsos survey (2025) results, market shares of the banned items remain higher than estimated in the impact assessments, emissions impacts would be of a lower magnitude. Updated carbon metrics have been used for the calculations in this PIR.

Table 9 below shows the carbon metrics used in the impact assessment and regulatory triage assessments and Table 10 shows the carbon metrics used to update estimates for this Post Implementation Review.

The impact assessment and regulatory triage assessments used carbon factors provided by The Waste and Resources Action Programme (WRAP) in 2018. WRAP published their Carbon Waste and Resources Metric version 2[89] in 2025 – an updated version of these factors – which we use for disposal emissions. These factors provide the net impact, offsetting for the benefits of the outputs (for example any energy that is produced during incineration). In line with the analysis in the impact assessment and regulatory triage assessments, no carbon emission

[89] WRAP (2025) Carbon WARM 2. Available at: https://www.wrap.ngo/resources/report/carbon-waste-and-resources-metric-carbonwarm2#download-file

savings have been included from production, as the majority of production occurs abroad so is not included in UK production emission savings.

Table 9: Updated carbon factors

Waste stream	Energy from waste (tonnes CO2 eq per tonne material)	Landfill (tonnes CO2 eq per tonne material)
Plastics*	1.729	0.004
Paper	-0.194	1.160
Wood	-0.318	0.921

Source: WRAP Carbon WARM 2

*Value taken for rigid plastics

We use the most recent carbon factors, alongside updated landfill vs incineration splits (as detailed in the Waste Management Costs section) to calculate new estimates for the carbon emissions saved over the period 2020 to 2024.

As shown below, these emission savings estimates are an increase from those in the impact assessment and regulatory triage assessments – this is partly due to the update to the carbon factors, but also due to the updated landfill vs incineration split, which now assumes a higher proportion goes to incineration than landfill. This means that the benefit of incineration emissions is larger, and the cost of landfill emissions is smaller. If, as potentially indicated by the 2025 Ipsos survey results, market shares of the banned items remain higher than estimated in the impact assessments, greenhouse gas emission impacts estimates (here and in the impact assessment and regulatory triage assessments) may be slight overestimates.

Table 10: Net emission savings over the period 2020 to 2024

Item	Emission savings from IA and RTA analysis (over the period 2020 to 2024, tonnes CO2e)	Emission savings updated for PIR (over the period 2020 to 2024, tonnes CO2e)
Straws	740.9	2,474
Cotton buds	18.2	58.7
Stirrers	40.4	88.2

We have also calculated updated estimates of the monetised emissions impacts, following updates to carbon factors and a new single series carbon values in replacement of traded and non-traded series. The monetary impacts, cumulative for the period 2020 to 2024, are shown below.

Table 11: Monetised emissions impact over the period 2020 to 2024 (2024 prices, 2020 present value)

Item	Disposal landfill emission cost	Disposal incineration emission benefit	Fuel emissions cost
Straws	£172,860	£876,972	£2,120
Cotton buds	£3,880	£20,689	£10
Stirrers	£5,858	£30,897	£77

3.3.2 Benefits of reduced litter

Litter has significant negative effects. It costs the taxpayer money to clean it up and imposes other costs on society including visual pollution and environmental harm. Littered plastic straws, cotton buds and stirrers also pose a risk to wildlife, and if they enter the water system or marine environment they can easily be ingested by, or become entangled with, marine life, or washed up as litter on beaches.

Litter amenity benefit is the benefit that individuals derive from clean, litter-free environments. As a result of the policies, we anticipated an amenity benefit arising from reduced litter on beaches. This is because paper and wood are quicker to decompose than plastic, so will accumulate less as litter in the environment.

For the impact assessment and regulatory triage assessments, we used willingness to pay estimates to monetise the amenity benefit of reduced litter on beaches. We are not aware of any more recent willingness to pay estimates than those provided by the 2002 Eftec study[90] so we have not calculated updated amenity benefit estimates.

The impact assessment and regulatory triage assessments also monetised the clean-up cost savings associated with reduced coastal litter. A 2010 study[91] was cited for estimates of the annual cost to UK municipalities of removing litter from beaches and harbours. We are not aware of any more recent estimates than those provided by this study, so we have not calculated updated coastal cleanup cost savings.

Evidence suggests that the policies are likely to have been effective in reducing litter associated with the restricted/banned items and therefore it is likely that benefits arising from litter reductions will have been seen. For example, although still in the top 10 litter items, plastic cutlery, trays, and straws were recorded on 5% fewer beaches than in 2022, which could have been helped by the bans introduced between 2022 and 2023. There was also a 14% year on year decrease in the presence of cotton buds, demonstrating that policies banning single-use products work.[92] In the year following the supply restriction, cotton buds moved out of the UKs

[90] Eftec (2002), Valuation of Benefits to England and Wales of a Revised Bathing Water Quality Directive and Other Beach Characteristics Using the Choice Experiment Methodology
[91] Economic Impacts of Marine Litter – Kimo International. Available at: https://www.kimointernational.org/wp/wp-content/uploads/2017/09/KIMO_Economic-Impacts-of-Marine-Litter.pdf
[92] State of Beaches – Beachwatch report 2023. Available at: https://s3.eu-west-1.amazonaws.com/media.mcsuk.org/documents/2023_Beachwatch_Report_with_hyperlinks.pdf

top 10 most common littered items.[93] An average of six plastic cotton buds were found - the lowest in the 28-year history of the Great British Beach Clean – down from 15 in 2020.[94] By 2024, none of these items were among the top litter categories, suggesting a strong correlation between the bans and the reduction in plastic pollution.[95]

However, data from the 2025 Ipsos survey suggests that some of the banned items may still be available in some retail and hospitality settings, which could mean better enforcement of the bans may lead to further litter reduction benefits. If, as potentially indicated by the survey results, market shares of the banned items remain higher than estimated in the impact assessments, litter benefit estimates in the impact assessments may be slight overestimates.

Findings from the 2025 Ipsos survey highlight widespread public concern about plastic litter in the environment. According to the data, 42% of respondents viewed plastic litter as either a major (15%) or serious (27%) problem, while an additional 31% considered it a moderate issue. Only 2% believed it was not a problem at all. Although the survey did not specify the type of plastic or whether it referred to marine environments, these results indicate a general perception that plastic litter is an environmental and social concern.

The survey also explored how visible plastic litter affects public behaviour and their sense of safety and enjoyment of coastal environments. 57% of respondents reported that they would definitely (16%) or probably (41%) be deterred from visiting a beach if plastic litter were present. 61% of participants agreed with the statement, “I feel safer at the beach when there is less plastic litter present,” and 49% said they actively avoid beaches with high levels of plastic litter. These findings indicate that plastic pollution may negatively affect individuals’ sense of safety and enjoyment in coastal environments and may influence their recreational choices and perceptions of coastal areas. Evidence of reduced litter should therefore help improve people’s experiences.

Plastic Entanglement Reduction

It is estimated that 1% of plastic straws produced globally end up in the sea, where they contribute to the harm and death of sea creatures through ingestion or entanglement.[96] Evidence available in the literature suggests that plastic straws are consistently ranked among the top 10 most commonly found litter items on beaches, specifically as the seventh most frequent item.[97] Their widespread use in restaurants, bars, and cafes makes them particularly common in tourist-heavy areas, further increasing their prevalence in coastal environments.[98] There is limited direct evidence linking straws specifically to entanglement. However, straws are highlighted in public consciousness due to a widely circulated case involving a sea turtle with a plastic straw lodged in its nostril, which illustrates the type of entanglement and injury these

[93] Based on rubbish items found during Great British Beach Clean 2021. Available at: https://www.mcsuk.org/news/the-results-are-in-for-our-great-british-beach-clean-2021/#:~:text=Numbers%20of%20single%2Duse%20plastic,metres%20of%20UK%20beach%20surveyed.
[94] Great British Beach Clean 2021. Available at: https://www.mcsuk.org/news/the-results-are-in-for-our-great-british-beach-clean-2021
[95] Beachwatch 2024: What you found. Available at: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/beachwatch-2024-what-you-found/
[96] Plastic in the Ocean Statistics 2025. Available at: https://www.condorferries.co.uk/plastic-in-the-ocean-statistics#:~:text=8.3%20billion%20plastic%20straws%20pollute,for%20human%20consumption%20contains%20plastic.
[97] Plastic Straws Infographic The Last Straw - Calling Time on Plastic Straws. Available at: https://www.trvst.world/waste-recycling/plastic-pollution/plastic-straws-infographic/
[98] On single use plastic straws: Pre-ban findings on touristic beaches in Crete. Available at: https://doi.org/10.1016/j.marpolbul.2021.112790

items can cause.[99] While there is no direct evidence of plastic stirrers causing entanglement, they are commonly found in marine litter, which presents a known entanglement risk to marine fauna such as seabirds, turtles, and fish.[100] Plastic-stemmed cotton buds have been documented in the digestive tracts of marine animals and have been reported to cause both ingestion and entanglement-related injuries.[101]

The reduction of the single-use plastic items as litter present in marine environments demonstrated above since the ban came into place suggests that the Regulations has contributed to reducing the risk of plastic entanglement for marine animals.

Plastic Ingestion Reduction

Plastic straws are composed of polypropylene, a plastic which does not biodegrade but fragments into microplastics. These fragments have been found to persist in marine environments, entering food chains and posing ingestion risks to marine organisms and, ultimately, humans.[102] Similar to straws, stirrers made of polystyrene do not biodegrade and instead fragment into smaller particles. These microplastics have been shown to cause physical harm and chemical contamination through ingestion in marine organisms, although stirrer-specific ingestion data is not available.[103] Plastic stems from cotton buds have been identified in the stomachs of turtles and seabirds. These items break down into microplastics, contributing to ingestion risks throughout the marine food web.[104]

As above, the evidence suggests that there has been a reduction of single-use plastic straws, cotton buds, and overall plastic pollution present on beaches and marine environments. The reduction of plastic pollution in marine environments as a result of the Regulations could contribute to a reduced risk of plastic ingestion by marine animals.

Reduced Damage to Fisheries

No direct evidence was identified linking plastic straws, stirrers, or cotton buds specifically to quantifiable damage to UK fisheries. However, broader literature suggests that marine litter costs the EU fishing industry approximately €60 million annually.[105] Following this, any reduction in plastic litter could prevent thousands or millions of pounds each year to UK fisheries. As evidence suggests that there has been a reduction in littering of the banned items, it is assumed that there has been at least some reduced damage because of the policies.

3.4 Small and Micro Business Assessment (SaMBA)

Stakeholder feedback from a recent evaluation of the Environmental Protection (Plastic Plates etc. and Polystyrene Containers etc.) (England) Regulations 2023 (referred to as ‘the October

[99] Banning Plastic Straws: The Beginning of the War Against Plastics. Available at: https://lawpublications.barry.edu/ejejj/vol9/iss1/1/
[100] Single-use plastics – European Commission. Available at: https://environment.ec.europa.eu/topics/plastics/single-use-plastics_en
[101] Cotton buds—corporate change leads the way in the UK and Europe. Available at: https://doi.org/10.1017/S0030605317001326
[102] Human health concerns regarding microplastics in the aquatic environment - From marine to food systems. Available at: https://doi.org/10.1016/j.scitotenv.2022.153730
[103] Microplastics: an emerging threat to food security and human health. Available at: https://doi.org/10.1007/s13197-019-04138-1
[104] Research on the influence of microplastics on marine life. Available at: https://iopscience.iop.org/article/10.1088/1755-1315/631/1/012006/pdf
[105] European Commission estimate cited in Banning Plastic Straws: The Beginning of the War Against Plastics. Available at: https://lawpublications.barry.edu/ejejj/vol9/iss1/1/

2023 Regulations') suggested that levels of communication and guidance for smaller and medium sized enterprises could be increased in order to avoid inadvertent non-compliance. Businesses were given nearly 10 months to prepare for the October 2023 Regulations, the impending regulation was also communicated through channels such as newsletters, trade associations, direct mails from HM Revenue and Customs (HMRC), a consultation, and making the guidance available on GOV.UK. Yet, despite these efforts, reaching and engaging small businesses remains a challenge. It could be assumed that this may also have been the case for the 2020 bans, and this will be taken forward as a lesson learnt for future policy development.

Following the 2020 bans, we have not received any correspondence indicating that small and micro businesses (SaMBs) have been disproportionately impacted.

Straws

The impact assessment for straws[106] recognised that SaMBs that sold or offered plastic straws for free would be impacted by the regulation through higher purchasing costs, small additional transportation costs, and time costs for familiarising and complying with the rules around exemptions to the ban. Though, as reflected in the impact assessment, engagement with the British Retail Consortium (BRC) reflected that larger businesses are more likely to experience a higher proportion of transportation and purchasing costs due to the higher volume of straws they supply. It was noted as a risk that businesses still purchasing a proportion of their total stock of straws as plastic under the exemption may face a higher per unit cost for plastic straws than they would have previously due to making purchases in a smaller quantity and therefore no longer benefiting from economies of scale. This was expected to impact SaMBs disproportionately as a larger business would be more likely to continue ordering in bulk. Overall, some small specific costs were identified as potentially falling disproportionately on SaMBs.

An exemption for SaMBS was not considered necessary at the time of implementation, due to:

- SaMBs making up a large proportion of hospitality and retail units and therefore a significant proportion of the benefits of the ban not likely to be achieved without including these businesses in scope.
- The advanced notice and lead-in time for the ban, significant media attention, availability of alternatives and the low staff time requirement imposed by the exemptions.

This reasoning against an exemption still holds true for this PIR, especially as upfront costs will have already been incurred and material switches made.

Cotton buds and stirrers

The regulatory triage assessments for cotton buds[107] and stirrers[108] identified that the majority of plastic cotton buds and drinks stirrers were produced outside of England, and so producer costs were expected to be very small.

For cotton buds, the impact on SaMBs in the retail sector was also assessed to be very small since the retail market is dominated by own brand products from the main retailers Tesco, Sainsbury, Asda and WM Morrison, with Johnson and Johnson the leading non-supermarket

[106] Final stage IA for straws. Available at: https://www.legislation.gov.uk/uksi/2020/971/impacts/2020/57
[107] Final stage RTA for cotton buds. Available at: https://www.legislation.gov.uk/uksi/2020/971/pdfs/uksiod_20200971_en_001.pdf
[108] Final stage RTA for drinks stirrers. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111196205/pdfs/ukdsiod_9780111196205_en_001.pdf

brand. Health and beauty retailers such as Boots and Superdrug also have significant market share.

We do not have similar data on the size of businesses using stirrers. However, the regulatory triage assessment found that small and micro retailers are likely to purchase drinks stirrers from wholesalers, in this way acting more like consumers. The unit prices of plastic and paper/wooden based cotton buds and drink stirrers were similar (assessed to be around 0.5p at the time of producing the regulatory triage assessments) and therefore businesses were not expected to face higher purchasing costs as a result of switching from plastic to paper/wood. We do not have any updated evidence on item costs.

The assessment recognised that, despite similar unit prices, SaMBs that had not already made commitments to switch material may incur additional costs under a ban. These potential costs were identified as surplus plastic stock costs, staff administration costs and procurement costs of finding alternative suppliers.

An exemption for SaMBs was not considered necessary at the time of implementation, due to:

- Low material purchasing costs due to similar unit prices, only a proportion of which would be attributable to SaMBs
- The advanced notice and lead-in time for the ban, significant media attention, availability of alternatives and the low staff time requirement imposed by the exemptions.

This reasoning against an exemption still holds true for this PIR, especially as upfront costs will have already been incurred and material switches made.

4. Monitoring and Enforcement

4.1 Enforcement

As set out in The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020, Local Authority Trading Standards Services are the responsible enforcement agency for the bans and restrictions under these Regulations.[109] As discussed above, local authorities were not provided with additional funding from central government for enforcement of these Regulations. This is because of the calculations undertaken in the new burdens assessment from May 2021, discussed in Section 3.2.2 Enforcement costs. Overall, combined savings of £84.5m over ten years meant no additional funding was provided by central government for enforcement of the Regulations.

Given that the central government did not provide funding, Trading Standards Authorities have generally taken a reactive approach on their enforcement duties under these Regulations as it was considered the most effective way to enforce the bans and restrictions given limited resources. A reactive approach relies on intelligence and reporting from the public through the Trading Standards website to identify breaches, rather than a proactive approach which relies on routine visits and surveillance of shops. The Regulations were not expected to require proactive enforcement as, if the product is banned or restricted, and legitimate businesses no longer supply them, their supply should eventually be completely phased out of the UK market in retail stores. The carrier bag charge, for example, relied on reactive enforcement and the

[109] The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020. Available at: https://www.legislation.gov.uk/ukdsi/2020/9780111193631/data.pdf

supply of single-use carrier bags sold by main retailers in England has decreased by over 98% from 2014 to 2024. The same theory was applied to these Regulations. Though, with more medical, catering, and scientific exemptions, the same mechanism of reduction may not have been as successful as it was under the carrier bag charge.

To better understand the state of enforcement around the Regulations, but also the bans and restrictions around single-use plastic products covered by the October 2023 Regulations, Defra officials conducted a visit to a local authority with an enforcement officer in November 2024, observing a day of enforcement as well as a discussion on how Defra can assist with improving enforcement and compliance with the legislation. Using insights and challenges learned from the visit, Defra hosted a workshop shortly after to provide enforcement guidance to improve understanding of single-use plastic products and to improve enforcement efforts, as well as gather to insights from enforcement officers to better understand the challenges around enforcement, over 40 Trading Standards Officers (TSO) from various local authorities attended the workshop.

Through the site visit and the workshop, Defra officials found that only a few enforcement officers carry out proactive enforcements, including routine visits to corner shops and warehouses. As most officers do not conduct proactive enforcement, this has led to widespread non-compliance with the Regulations, particularly among small businesses. Enforcement officers expressed multiple challenges with carrying out more frequent enforcement visits, these include a lack of resources, confusion around the Regulations, and labelling of products. A lack of resources restricts the amount of time that enforcement officers can spend on performing proactive visits. We also learned there remains confusion around some of the Regulations, such as wording in the legislation that permits businesses to sell restricted items to other businesses, for example the sale of straws to consumers are banned in the context of retail settings but are allowed to be provided at catering establishments for those with medical disabilities who require one. Additionally, there is confusion around the labelling of ‘reusable’, ‘biobased’, or ‘biodegradable’ on single-use plastic items that are in scope of the restrictions or bans. This confusion around the Regulations and the labelling or products are two reasons often cited by businesses as an explanation for non-compliance. This non-compliance is also reflected in the Ipsos survey (2025), as a surprisingly high amount of the respondents still reported seeing the banned and restricted items in retail settings, 56% of supermarket customers who purchased straws in the past 12 months reported seeing plastic ones available, 48% of cotton-bud buyers noticed plastic-stemmed versions, and 39% of patrons reported automatically receiving a plastic straw in hospitality settings.

Additionally, in the previously mentioned Technopolis report, stakeholders, including industry bodies, ENGOs, and Trading Standards, were asked about challenges around monitoring and enforcement and similarly cited a lack of resources, as well as support on more targeted enforcement, and improving guidance. The Government also occasionally receives complaints from the public about noncompliant businesses, which are then referred to Trading Standards as they are the responsible enforcement body. The OIM’s 2025 review of the restrictions on the sale of single-use plastics on the UK internal market, through interview of stakeholders, also revealed similar findings, namely that there is a lack of compliance among small businesses.[110] The challenges around enforcement found by the OIM report were similar to that of the Defra site visit and workshop, in that local authorities cited a lack of funding for a lack of proactive

[110] Report on the impact of restrictions on the sale of single-use plastics on the operation of the UK Internal Market. Available at: https://assets.publishing.service.gov.uk/media/67a9e9ea5dea3871ea1ceac4/Report_on_the_impact_of_restrictions_on_the_sale_of_single-use_plastics_on_the_operation_of_the_UK_Internal_Market_.pdf

enforcement and the definitions around single-use plastic products and their alternatives were confusing, and led to accidental non-compliance. Stakeholders interviewed by the OIM suggested for improved education and awareness to improve compliance among businesses. This highlights that there are significant challenges to be addressed around enforcement.

4.2 Monitoring

Monitoring data on the supply of plastic straws, stirrers and cotton buds has been limited as it was assumed the supply of these items on the UK market would become negligibly low once the Regulations were implemented. Defra commissioned a survey by Ipsos in 2025 to understand the availability of the banned and restricted items covered by these Regulations to inform this review. The survey results, as discussed above, demonstrated that single-use plastic straws, stirrers, and cotton buds are still available for purchase in England, with respondents reporting that they've seen straws (56%) and cotton buds (48%) available in retail settings. Additionally, 39% of respondents reported that their drink came with a plastic straw in hospitality settings. Though an important caveat of these findings is it relies on self-reported responses, subject to the previously discussed limitations under Section 2.9 Exemptions. Other evidence sources used for obtaining monitoring data include engaging with local authority enforcement officers and primary evidence gathered through a citizens science approach. Evidence obtained for monitoring, gathered using a citizens science approach, includes the Marine Conservation Society's annual Great British Beach Clean, which informs the State of Beaches report. This report has highlighted that there are significant challenges around the availability of monitoring data, which has made the review of this Regulations' effectiveness challenging and required primary evidence to be gathered to inform this review.

5. Conclusion

This post implementation review has found evidence that suggests the Regulations are working as there has been an observable decrease in plastic litter in marine environments resulting from the bans and restrictions on plastic straws, stirrers and cotton buds, though we are unsure whether the observed decrease can be attributed to the Regulations. This is indicative that plastic litter from the banned and restricted items has reduced in all environments, including non-marine environments as well. Besides the evidence cited above, the Ipsos survey (2025) demonstrated that respondents believe the bans have contributed to broader environmental goals as 72% of respondents believe the bans have helped reduce harm to marine life, 70% believe they have improved environmental quality, and 71% believe the bans have protected the environment for future generations. This is a positive sign for these Regulations as a majority of the public believe these bans have at least contributed to achieving the policy objectives and intended effects.

Additionally, the Regulations have consistent, strong levels of support from the public, with the initial consultation for the Regulations from 2019 showing over 80% of respondents supporting a ban on plastic straws, 90% for stirrers, and 89% for plastic-stemmed cotton buds. The levels of support have continued after introduction as, in the Ipsos survey (2025), 75% of respondents believe a ban on single-use plastic straws is beneficial for the environment, 76% for stirrers, and 74% for plastic-stemmed cotton buds. While these figures suggest continued support, it is important to note that direct comparisons between the 2019 consultation and the 2025 Ipsos survey should be made with caution. The two sources differ in methodology which may influence the results and limit the extent to which changes in public opinion can be reliably

inferred. However, the slight decline in support may reflect a perception among the public that plastic litter has become less visible, potentially due to observed reductions in plastic waste.

Most of the cost benefit analysis from the impact assessment and regulatory triage assessments still stands, except for potentially higher shares of plastic items still in circulation (as indicated by the Ipsos survey) and some changes in waste management end destination due to increased EfW capacity. As set out in this review, the updated emission savings are higher than initially thought to be in the impact assessment and regulatory triage assessments, mostly due to the changes in waste management end destination but also due to updates to carbon factor data. We have not received significant concerns from businesses relating to costs.

This review has revealed the areas for improvement around these Regulations, particularly around monitoring and enforcement. The challenges around enforcement and monitoring are not unique to the UK, as demonstrated by the review from the Global Plastics Policy Centre, this is a challenge faced by legislators around the world. Through continued engagement with stakeholders, the Government hopes to continue to learn and understand the challenges around enforcement and monitoring to not only continue improving compliance under the Regulations, but on delivering future policies as well.

The recommendation of this review is to keep the Regulations and, subject to future ministerial and resourcing decisions, strengthen its monitoring and enforcement framework. Possible interventions include enhancing guidance and support for enforcement bodies, awareness campaigns targeted at small and micro businesses, and improving communication channels between the Government and businesses. These options will be explored further through standard governance processes. The recommendation remains to keep the Regulations because they have contributed and are still contributing to achieving their objectives and intended effects, such as protecting the environment for future generations through reducing plastic litter. The Regulations are still relevant to the Government’s commitment to transition to a circular economy. The Ipsos survey (2025) has also demonstrated strong levels of support from the public for these Regulations, and that improving the environment is an issue the public cares strongly for. For improvements to enforcement and monitoring, the engagement by Defra officials with local authorities have resulted in similar findings as the OIM review, which shows that this engagement is an appropriate starting point.

Annex: Post implementation review template

Title: The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations **PIR No:** PIR-63347	Post Implementation Review
	Date: 26/09/2025
Original IA/RPC No: RPC-4316(3)-DEFRA	**Type of regulation:** Domestic
Lead department or agency: Department for Environment, Food and Rural Affairs	**Type of review:** Statutory
Other departments or agencies: N/A	**Date measure came into force:** 01/10/2020
	Recommendation: Keep
Contact for enquiries: Plastics.Consultation@defra.gov.uk	**RPC Opinion: Green**

1. What were the policy objectives of the measure? (Maximum 5 lines)

The policy objectives of the Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020 are outlined below, for a more detailed discussion please refer to the supplementary report. The Regulations only cover England; therefore this post implementation review (PIR) only assesses whether these objectives were achieved in relation to England.

- Help protect the environment for future generations;
- Improve the quality of the environment;
- Reduce harm to human health and wildlife including marine life;
- Aim for their substitutes, as a result of their ban, to be made from non-plastic biodegradable materials that decompose quicker and have lower life-cycle environmental impacts;
- Potentially increase business and consumer awareness of the environmental harms that these single-use plastic products can cause when incorrectly disposed of;
- Demonstrate the Government's commitment to reducing unnecessary plastic waste.
- Ensure suitable exemptions are in place.

Review Clause(s)

In Oct 2020, when the Regulations came into force, Regulation 24 imposed a periodic review requirement for the Secretary of State to conduct a review and publish the findings within five years of the date on which the Regulations came into force, so 1 Oct 2025.

There is an additional review clause that requires the Secretary of State, as soon as it is practicable after a period of three years from when the Regulations come into force, conduct a review of the enforcement and civil sanctions provisions of the Regulations, and to publish and lay a copy of the report before Parliament.

This post implementation review contains a review of the enforcement and civil sanctions provisions; it will be laid in Parliament and published in the public domain to satisfy both requirements.

2. What evidence has informed the PIR? (Maximum 5 lines)

- A survey was commissioned by Defra and conducted by Ipsos on a nationally representative sample to explore the effect of the Regulations on a set of outcomes listed in the impact assessments.
- Defra officials conducted site visits and workshops with Trading Standards Officers which provided primary anecdotal evidence.
- Publicly available secondary sources, such as the Marine Conservation Society's Beachwatch reports, and government publications were also used.
- Many of the same evidence sources used in prior impact assessments and regulatory triage assessments were used to inform the evaluation of costs and benefits.
- Further details on the evidence used are provided in the supplementary report.

3. To what extent have the policy objectives been achieved? (Maximum 5 lines)

The available evidence does suggest that the Regulations are contributing to its policy objectives. For example, there has been an observed reduction in the levels of plastic litter for the items covered since the Regulations came into force, particularly in marine environments – an area of emphasis from the impact assessments. However, it is difficult to ascertain how direct that correlation is for the available evidence.

More detailed analysis and in-depth discussion are provided in the supplementary report.

Sign-off for Post Implementation Review: Chief economist/Head of Analysis and Minister

I have read the PIR and I am satisfied that it represents a fair and proportionate assessment of the impact of the measure.

Signed: Stacy Sharman Date: 09/07/2025

Signed: Mary Creagh CBE MP Date: 26/09/2025

Further information sheet

Please provide additional evidence in subsequent sheets, as required.

4. What were the original assumptions?(Maximum 5 lines)

It was assumed that England used around 4.7 billion plastic straws, 316 million plastic stirrers, and 1.8 billion plastic-stemmed cotton buds annually, with a noticeable share contributing to marine and beach litter. The ban, with exemptions in placed, was assumed to reduce consumption by around 95%.

Businesses and consumers would substitute plastic items for paper, wood, or other non-plastic alternatives, leaving demand the same.

Industry had already taken voluntary action to transition, but the Regulations would ensure a comprehensive and permanent transition by 2021.

As alternatives are more expensive, it was assumed that 60% of the extra cost would be passed onto consumers, resulting in a net cost to businesses of around £5 million per year, and a negligible enforcement cost.

The consultation yielded high levels of public support, with over 80% in support of the ban.

5. Were there any unintended consequences? (Maximum 5 lines)

It was found that there were significant levels of noncompliance with the Regulations, particularly from small and micro businesses. This noncompliance is due to a lack of proactive enforcement by Local Authority Trading Standards Services, who attributed a lack of resources and funding as one of the key challenges for proactive enforcement. No new burdens were provided to Local Authorities due to an assessment that combined the costs and savings of the carrier bag charge with these Regulations, and the net savings of the charge would offset the additional enforcement costs of these Regulations.

Further details and discussions, as well as potential next-steps are available in the supplementary report.

No other unintended consequences were identified.

6. Has the evidence identified any opportunities for reducing the burden on business? (Maximum 5 lines)

Defra officials are working to improve the enforcement and monitoring provisions of the Regulations to reduce any unfair business advantages resulting from noncompliance.

7. How does the UK approach compare with the implementation of similar measures internationally, including how EU member states implemented EU requirements that are comparable or now form part of retained EU law, or how other countries have implemented international agreements? (Maximum 5 lines)

England's ban on single-use plastic straws, stirrers, and plastic-stemmed cotton buds were implemented 9 months ahead of the EU's Single-Use Plastics Directive (SUPD) deadline, and became part of retained EU law, thought the Regulations cover less than that of the SUPD's wider list. Further items were banned and restricted under The Environmental Protection (Plastic Plates etc. and Polystyrene Containers etc.) (England) Regulations 2023.

Scotland were the first part of the UK to legislate on single-use plastics in 2019, banning plastic-stemmed cotton buds. In 2022, the ban was extended to cover straws and stirrers among other items. Wales introduced their ban in 2023, which covered single-use plastic straws, stirrers, and cotton buds among other items.

Single-use plastic straws are subject to restrictions in 17 other countries, while plastic-stemmed cotton buds only in 8 other countries.

On implementation, a report by the Global Plastics Policy Centre, based in the University of Portsmouth, identified a lack of evidence for the effectiveness of plastic ban policies globally.

International comparisons and a lack of monitoring data are discussed further in the supplementary report.

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