Government of **Western Australia**
Department of **Water and Environmental Regulation**

WA Plan for Plastics Stage 2

Implementing a phase-out of single-use plastics

Decision Regulatory Impact Statement

Department of Water and Environmental Regulation

September 2023

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September 2023

FIRST 115987

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Executive summary and recommendations

Western Australia's Plan for Plastics (WA Plan for Plastics) was first announced in November 2020 and fast-tracked in June 2021. The plan was released by the Government of Western Australia (State Government) in response to strong community support for comprehensive action to address the impacts of single-use and disposable plastics.

The plan is co-ordinated by the Department of Water and Environmental Regulation (the department) and is consistent with the waste hierarchy by prioritising avoidance of plastic and waste generation and improving the recovery of alternative products.

The plan includes two stages of regulations to ban the use of specified plastic products:

- Stage 1 regulations gazetted in December 2021 for: disposable plastic straws, plates, cutlery, stirrers, cups for cold beverages and all foods, thick plastic bags, expanded polystyrene food containers, unlidded takeaway food containers and bowls, and helium balloon releases.
- Stage 2 regulations by 1 March 2023 for: barrier/produce bags, microbeads, expanded plastic packaging, expanded polystyrene cups, coffee cups and lids, cotton buds with plastic stems, lids for cups/bowls/containers/plates, and degradable plastics (plastics designed to break up into fragments more rapidly under certain conditions).

It is estimated that Western Australians consume more than 700 million Stage 2 items each year, equating to more than 10 billion items over a 20-year period. Globally the use of disposable plastic has been increasing each decade. These actions have led to plastic being found everywhere as littered items and plastic fragments (called microplastics). The impacts of these plastics are broad reaching and include:

- environmental harm – damage to fauna, ecosystems, and biodiversity
- health – microplastics prevalent in the food chain and in our bodies
- waste – poor recycling rates and many items contaminating viable recycling streams
- resource loss – plastics designed for limited use and predominantly disposed to landfill
- climate – increased plastic production driving growing greenhouse gas emissions.

Objectives

Stage 2 of the plan aims to address the environmental, health and waste impacts of a range of common single-use plastics by reducing their use and supply in WA and encouraging reusable and certified compostable alternatives. In doing so, the plan aims to achieve positive, innovative outcomes for consumers, businesses and industry for our collective long-term future.

Options

While a range of options were considered in the Consultation Regulatory Impact Statement (RIS), two options are considered in detail in this Decision RIS:

- **Option 1 – no action:** considers the situation where no action is taken on single-use plastics and we have assumed that businesses would continue to use single-use plastics.
- **Option 2 – banning Stage 2 single-use plastics:** considers the implementation of a Stage 2 ban on single-use plastics over a staggered period commencing in February 2023.

Cost-benefit analysis

Given the broad range of items included in the proposed Stage 2 ban, the impact of banning or some other form of phase-down was assessed for each item individually. However, because of differing circumstances, a range of analysis approaches were used.

Most items were assessed quantitatively; however, containers with lids were assessed qualitatively because of a lack of data on numbers of impacted containers.

Quantitative analysis

While the quantitative analysis shows that the statewide ban delivers a lower net benefit than the base case for each of the three groups of products (as identified in Table 1), the department is confident that the unquantified benefit of removing persistent wastes from the environment means that the statewide ban is the preferred option.

Qualitative analysis of containers with lids and trays

Because of the complicated nature of items in scope, it is not possible to perform a material flows analysis. This is a result of the difficulty in separating the items within and out of scope.

Based on this analysis and consultation feedback, the department is confident that a ban is not only the most popular but also the most beneficial option for all the key stakeholder groups.

National impact

This Decision RIS assesses the impact that a statewide ban on single-use plastics may have on national and trans-Tasman markets. This section provides a qualitative assessment of the costs and benefits to the key stakeholder groups on a national scale.

There is an impact to businesses operating across the country and in New Zealand as they incur operational and transitional costs because of a lack harmonisation between jurisdictions. However:

- There is a proven demand in the market from consumers for more sustainably sourced products and brands with a focus on sustainability, and consumers are willing to pay extra for these products. The additional costs incurred by these businesses therefore can be passed on to consumers.
- Industries can follow the precedent set by the State Government and adopt the same approach across the country voluntarily, which may help smooth the transition process from disposable plastics to sustainable alternatives.

Consultation response

The State Government has consulted with the community, industry, government and retailers on possible actions to reduce single-use plastics and support the move to a circular economy over an extended period. Key stakeholder consultation started with an issues paper in 2019.

Stakeholders were provided multiple options to include input to the Consultation RIS for the Stage 2 ban. The key forms of consultation input were:

- consultation with other states/territories and New Zealand
- online surveys (targeted to community, businesses, and government/non-government organisations)
- community information sessions
- written submissions

The consultation found that the Stage 2 statewide ban of single-use plastics was overwhelmingly supported.

While some concerns were raised about elements of the proposed ban, the department considers that these concerns can be managed by:

- supporting the statewide ban with complementary measures such as education campaigns
- clarifying and amending the scope of the ban and relevant exemptions for some products
- adjusting the timing for the introduction of the ban for some products.

Recommendations

It is recommended that the department progress with the Stage 2 ban of single-use plastics.

It is further recommended that the scope of the ban and timing of its introduction for some items be adjusted to ensure the costs of the ban are minimised, while maintaining the benefits.

It is also recommended that the ban is supported by complementary measures for specific single-use plastic items.

Table 1 below details the recommendations and how they deviate from the Consultation RIS.

Table 1 Summary recommendations for the banned items

Group	Item	Recommended policy action	Recommended complementary measures
Fragmentable plastics (group 1)	Loose-fill expanded polystyrene (EPS) packaging and other expanded plastic equivalents including expanded polyethylene (EPE), expanded polypropylene (EPP) and bioplastic EPS	No change to loose-fill EPS scope No change to proposed six-month loose-fill EPS phase-out timeframe	Targeted retail/supply sector support and education
	Moulded EPS packaging and other expanded plastic equivalents including EPE, EPP and bioplastic EPS	No change to moulded EPS scope except to clarify that foamed wraps and sleeves not within scope Amend proposed 18-month timeframe for moulded EPS to 28 months to align with Australian Packaging Covenant Organisation's (APCO) July 2025 timeframe	Targeted retail/supply sector support and education
	Degradable plastic, including oxo-degradable and landfill degradable	No change to the scope No change to proposed six-month phase-out timeframe	Community and retailer education
Single-use plastics for food (group 2)	EPS cups and EPS in food and beverage packaging	No change in scope No change to proposed six-month phase-out timeframe	Community and retailer education
	Produce/barrier bags	The scope of barrier bag ban to apply only to fruit and vegetables No change to proposed 12-month phase-out timeframe	Community and retailer education, behavioural education campaign on bring-your-own (BYO) bags
	Hot beverage/soup cups – takeaway 'coffee' cups	No change to policy scope No change to proposed 12-month phase-out timeframe	Retailer education and training on alternatives and handling reusables and BYO Education to improve awareness on waste stream sorting and collection options for business Work with Waste Authority and industry on food organics and garden
	Lids for disposable hot and cold cups		

Group	Item	Recommended policy action	Recommended complementary measures
			organics (FOGO) processing
	Lids for takeaway food containers, trays, plates and bowls	Scope of ban to be reduced to ordered takeaway containers only Timeframe to be extended from 12 months to 18 months to allow business to adapt	Community and retailer education, behavioural education campaign on handling waste and BYO
	Containers with lids (including bowls)	Clarify the scope of the ban (focus is on single-serve food presented in a readily consumable format) Proposed 12-month phase-out for containers	Community and retailer education, behavioural education campaign on handling waste and BYO
	Trays (with or without lids)	Clarify the scope of the ban (focus is on single-serve food presented in a readily consumable format) Proposed 12-month phase-out for containers	Community and retailer education, behavioural education campaign on handling waste and BYO
Small or microplastics (group 3)	Microbeads	No change in scope No change to proposed six-month phase-out timeframe	Community and industry education on avoiding microbead use in non-banned product applications
	Plastic-stemmed cotton buds	Amend scope to allow plastic- stemmed cotton buds where part of a kit or if there is no other viable alternative No change to proposed six-month phase-out timeframe	Retailer and industry specific education

Source: DWER policy analysis, 2023 (unpublished)

Glossary of acronyms

APCO	Australian Packaging Covenant Organisation
AS	Australian standard
BYO	Bring-your-own
CBA	Cost-benefit analysis
COAG	Council of Australian Governments
DWER	Department of Water and Environmental Regulation
EPS	Expanded polystyrene
EPP	Expanded polypropylene
EPE	Expanded polyethylene
EUR	Euro
FOGO	Food organics and garden organics
GST	Goods and services tax
NPT	National Packaging Targets
NPV	Net present value
PET	Polyethylene terephthalate
PFAS	Polyfluoroalkyl substances
PLA	Polylactic acid
PHA	Polyhydroxyalkanoate
rPET	Recycled polyethylene terephthalate
RIS	Regulatory Impact Statement

Contents

Figures

Tables

1 Statement of the problem

Plastics have become part of everyday life. They are inexpensive, lightweight and convenient and are used in many applications across all business sectors. As a result of this, the consumption of plastics has been on the rise since their introduction. However, the single-use nature of many plastics can be inefficient and environmentally harmful. Single-use plastics are often used only once, frequently littered and mostly not recyclable. Plastic waste takes a long time to break down, if at all, and has a wide range of environmental, waste stream and human health impacts.

Consequently, there is now global attention on interventions designed to drive change in the way we use and avoid single-use plastics. Previous action introduced by the State Government targeting plastic impacts includes lightweight plastic shopping bag ban regulations (2018), the release of a Premier's Circular to reduce plastic in government procurement (2019) and the launch of a container deposit scheme (2020).

Single-use plastics are difficult to collect, sort and recycle. They are often consumed away from the home where collection options are limited and are contaminated by food. They are also often made from multiple polymer types and mixed materials or made from polymer types that have little or no value as recycled commodities, and can include small items unable to be sorted at recycling facilities (such as straws). Furthermore, current packaging designs and collection, and technical and commercial barriers substantially reduce the waste stream sorting for recycling in material recovery facilities.

In 2019, the public consultation identified several items with single-use characteristics that the public were keen to see the State Government take action. As a result, Stage 1 items targeted for banning included:

- disposable plastic plates, straws, stirrers and cutlery
- expanded polystyrene food containers
- thick plastic shopping bags
- unlidded cups, bowls and containers
- helium balloon releases.

The Stage 2 items under consideration are: barrier/produce bags, microbeads, expanded plastic packaging, expanded polystyrene cups, coffee cups and lids, cotton buds with plastic stems, lids for cups/bowls/containers/plates, and degradable plastics (plastics designed to break up into fragments more rapidly under certain conditions).

Broadly, the Stage 2 items in scope have been classified into three groups:

- Group 1 consists of fragmentable by design or construction plastics.
- Group 2 consists of single-use plastics for food and beverage items.
- Group 3 consists of small or microplastics.

1.1 The disposable plastic problem and rationale for government intervention

Environmental harm

Plastics are entering our land, waterways, and marine environments through deliberate littering and accidental release. Across the globe an estimated 8,000,000 tonnes of plastic leaks into our oceans each year (Jambeck et al., 2015), with up to 80 per cent of the plastic litter arriving from land-based sources and half of it is identifiable as single-use plastics (Rodger, 2020).

Plastic litter in the marine environment impacts through entanglement, ingestion, and chemical contamination, with wildlife considered most at risk being seabirds, turtles and marine mammals (Wilcox et al., 2016). Plastic fragments in the gut of wildlife are fed to their young, can impair their nutritional energy balance and affect their fertility and growth.

Plastic pollution is entering our rivers and estuaries, with increasing plastic concentrations being found in their water and shorelines. The Swan-Canning estuary is currently being studied by the Department of Water and Environmental Regulation (the department) and the Department of Biodiversity, Conservation and Attractions. Sampling started in 2021 to understand and track the prevalence, sources and potential impact of plastics.

The economic impact of long-lived plastic litter in the marine environment is also significant. In 2018, it is estimated plastic pollution cost between $6 billion and $19 billion globally from impacts on tourism, fisheries, and aquaculture (UNEP, 2021).

Microplastics and plastic additives in the food chain

In addition to the environmental impacts of macro-plastic litter, there is increasing concern about fragmented microplastics and plastic chemicals entering food chains and affecting the balance of ecosystems that are already under pressure.

Plastics have been found as far as Antarctica and in deep ocean trenches (Chiba et al, 2018). Rather than decomposing, plastic breaks up into ever-smaller fragments – micro and nano plastics – that are long lived, and chemical additives leach out. Scientists can identify their presence moving through food chains and entering our bodies. A recent study by the University of Newcastle estimated that the average weekly intake of plastics was about 5 g per person, depending on location, lifestyle, and diet (Senathirajah and Palanisami, 2019). A University of Queensland study (Dessì et al 2021) looked at a wide variety of store-bought rice and found a multitude of plastic polymers in samples.

Once within human bodies, these micro and nano plastics are migrating into bloodstream and organs. In pregnant women, they have been found to move through the placenta to the foetus (Wright and Kelly, 2017). How plastic particles impact the

human body is just beginning to be understood. From recent studies it has been found that micro and nano plastics:

- are capable of causing cellular damage (Danopoulous et al, 2022) and inflammation (Weber et al, 2022)
- carry chemical additives such as plasticisers, flame retardants and colorants, some of which are known to disrupt the body's hormonal activity or accumulate in the body (Gruber et al, 2022)
- can carry chemicals absorbed from the environment such as pesticides (Pinto da Costa, 2016).

We do not yet know the exposure thresholds that could trigger cellular damage or the degree to which chemical additives leach into the body. However, with the findings to date, it is recommended that we should reduce the use of plastics and thus their leaching into the natural environment.

Plastics and recycling

Single-use plastics are often consumed where disposal options are limited which means they are frequently disposed of in landfill-bound waste collections or littered, causing significant environmental impact. Those items that are received by recycling facilities are often contaminated (by food, drink, etc.) or contain small waste items, mixed materials or low-value polymers that make them difficult to sort and recycle.

In Australia, the design and disposal of product packaging has been targeted through the 2025 National Packaging Targets (NPTs; APCO, 2022). These voluntary targets, supported by Australian industry and governments, apply to all packaging that is made, used and sold in Australia. The Australian Packaging Covenant Organisation (APCO) facilitates the delivery of the following key targets:

- 100 per cent reusable, recyclable, or compostable packaging
- 70 per cent of plastic packaging being recycled or composted
- 50 per cent of average recycled content included in packaging (revised from 30 per cent in 2020)
- the phase-out of problematic and unnecessary single-use plastic packaging.

In Australia recycling of plastic polymers for packaging is stagnant, with only polyethylene terephthalate (PET) likely to meet plastic recycling APCO targets by 2025. The lack of recycling of plastic was also indicated in a recent study by the Minderoo Foundation (Minderoo Foundation, 2021) where the 100 largest plastic polymer producers were found to use virgin feedstock for 98 per cent of plastic production and only 2 per cent recycled polymers.

APCO concluded "bold interventions in policy, production, education and engagement" were needed to produce systemic change and meet reduction targets (APCO, 2021:4).

Single-use items are the most common use of plastics, consuming a third of global plastic produced (Minderoo Foundation, 2021). An estimated 95 per cent of the

material value of plastics in packaging is lost, equating to an annual value loss of $80 billion to $120 billion globally (Ellen MacArthur Foundation and McKinsey Company, 2016). Data from 2020 indicates that only 16 per cent of plastic packaging in Australia was recovered and returned to a circular pathway (APCO, 2021). This linear take-make-waste pathway in Australia leads to a loss of resources valued at about $360 million.

The Ellen MacArthur Foundation has championed circular models that cycle resources through industrial or biological pathways, beginning with products intentionally designed for reuse or refill, dismantling and repair. An increasing number of companies are committing to circularity for plastic products (Ellen MacArthur Foundation and McKinsey Company, 2016). However, single-use plastic production from virgin plastic is predicted to grow globally by 30 per cent by 2026 (Minderoo Foundation, 2021).

Climate impacts

The production, recycling and incineration of single-use plastics is a growing source of greenhouse gas emissions, with an estimated 1.8 billion tonnes of greenhouse gases emitted globally from these sources per year (University of California, 2019). Based on current trends, greenhouse gas emissions from plastics are predicted to climb to 19 per cent of global emissions by 2040 (UNEP, 2022).

Lifecycle analyses show the reusable alternatives to single-use plastics generate substantially less greenhouse gas emissions as well as other environmental impacts (UNEP, 2021).

Environmental impacts of products included in Stage 2

The items identified in the Stage 2 ban for plastics all have significant impacts on the natural environment. These impacts are well documented and are briefly summarised below.

Group 1 plastics (fragmentable by design or construction plastics):

- leach toxins into the natural environment
- are a common source of marine and estuarine litter
- are a high-risk source of microplastic pollution
- are hard to recycle economically and there are a limited number of Australian recyclers
- pose long-term risks to wildlife because of long-lived microplastics
- often create confusion for the community and businesses that are misled into believing they are purchasing a low-impact product.

Group 2 plastics (single-use plastics for food and beverage items):

- are lightweight flyaway plastics with a long lifetime in the environment
- have few recycling opportunities

- affect soil aeration, water penetration, and nutrient flow
- can contain polylactic acid (PLA) which contaminates PET recycling.
- pose long-term risks to wildlife because of long-lived microplastics
- can cause harm to wildlife through ingestion, entanglement, etc.

Group 3 plastics (small or microplastics):

- are another common source of marine litter and pollution
- pose long-term risks to wildlife because of long-lived microplastics
- can cause harm to marine wildlife in whole or fragmented forms.

1.2 Market failure

Market failures are an important consideration when assessing the case for government intervention. Markets take account of many of the costs and benefits of managing waste, providing incentives to reduce waste and recycle more.

Certain types of market failures in economic models can reduce the effectiveness of incentives, such as the complexity of environmental impacts (e.g. physical, chemical, biological), including the ingestion of plastics by wildlife and loss of amenity from litter.

The market failures associated with single-use plastics include those discussed below.

Weak incentives to recycle

Consumers of plastic packaged products do not have a strong financial incentive to recycle their residual packaging or dispose of it through the regular disposal systems. Consumers rarely receive financial rewards for disposing of these products appropriately.

In addition, the producers of single-use plastic goods do not bear the whole cost of disposing of the goods nor do they benefit from the value that arises from recycling instead of disposing of materials to landfill. This means that they are often incentivised to increase their use of non-recyclable materials to enhance attractiveness and presentation, and to avoid business costs of alternative non-plastic or compostable packaging.

Externalities

Littering negatively affects social amenity, human health (e.g. through toxins and proliferation of microplastics) and the environment (e.g. through animals' ingestion of plastic).

The cost of cleaning up litter is mostly borne by governments, not the producers of packaged goods. As such, the producers do not have a financial incentive to minimise impacts when packaging is littered. Likewise, the incentives faced by

consumers are mixed (externalities are weakly expressed through litter fines or social pressure).

These market failures can result in two undesirable outcomes:

- single-use plastics more often become litter
- plastic utensils, packaging and containers that are designed to be reused or recycled instead go to landfill.

Australian governments often intervene in markets to improve their efficiency and to achieve economic, social and environmental benefits.

Bans on single-use plastics are in effect in most states, with a varying range of plastics being banned across different states.

The cost of litter

Litter is waste that is improperly disposed of outside the regular disposal system. In an economic context, it is best described as a side effect of producing goods and services.

The need for policy intervention to prevent littering arises because several social costs associated with littering are inadequately priced by the producers and consumers of single-use items; that is, they are an externality. Consequently, those costs are borne by society and the clean-up costs are borne by ratepayers.

The costs of littering imposed on the economy and community include economic, visual and resource costs and environmental damage.

Economic costs

Several attempts have been made at estimating the cost of cleaning up litter in Australia; however, as this activity is undertaken by a combination of local governments across Australia as well as various state and territory departments, there is no reliable estimate of the total cost.

Sustainability Victoria estimates that $110 million was spent by Victorian local governments in 2019–20 (Sustainability Victoria, 2021). A similar per-person spend would equate to about $46 million for Western Australia. This estimate is not the full cost of litter because it does not consider the damage done to the environment, such as damage by animals and humans ingesting plastic or other forms of litter.

Environmental damage

Litter damages natural environments and harms terrestrial and riverine wildlife as well as the marine environment.

Visual costs

Litter is unsightly and attracts more litter, adversely affecting amenity and the environment.

Resource costs

Easily recyclable and valuable resources are lost to further useful applications when people litter. Even if littered items are subsequently collected, they are often too contaminated to be recycled.

The single-use plastic items included in the ban are some of the most common items found littered in the WA environment.

The cost of litter removal to minimise harm is borne largely by the State and local governments, as well as by volunteer community groups. Importantly, the costs of littering are only borne by producers of packaged goods to a limited extent, and those producers do not have a direct incentive to design their packaging to minimise its impact when littered. This is an example of a market failure.

1.3 Requirements for a Regulatory Impact Statement

A Stage 2 ban on single-use plastics requires an amendment to the Environmental Protection (Plastic Bags) Regulations 2018 which are prescribed under the *Environmental Protection Act 1986*. The regulations were previously amended to include the Stage 1 single-use plastic ban.

This legislative amendment requires a Regulatory Impact Statement (RIS) in line with the Better Regulation Program: Information Paper for Agencies (DTF, March 2020).

In addition, the Stage 2 ban requires an exemption under the *Mutual Recognition Act 1992* (Cwlth) (MR Act) and the *Trans-Tasman Mutual Recognition Act 1997* (Cwlth) (TTMR Act), as set out below. For these amendments to occur, an RIS is required for consideration by the Council of Australian Governments (COAG).

This Decision RIS (and the previous Consultation RIS) aims to fulfil the requirements of both regulatory bodies.

Mutual recognition principles

MR Act provisions

The MR Act applies to a state but only while it is a participating jurisdiction. WA is a participating jurisdiction and under section 4 of the MR Act, WA adopts the MR Act.

Section 9 of the MR Act sets out the mutual recognition principle in relation to goods. In summary, that principle is that, subject to Part 2, goods produced in or imported into one state, that may lawfully be sold in that state either generally or in particular circumstances may, because of the MR Act, be sold in another state either generally or particular circumstances without the necessity for compliance with further requirements as described in section 10. Those requirements include quality or performance standards, inspection requirements and labelling standards.

TTMR Act provisions

The TTMR Act applies to a state but only while it is a participating jurisdiction. WA is a participating jurisdiction and under section 4 of the TTMR Act, WA adopts the TTMR Act.

The principal purpose of the TTMR Act is to enact legislation for the purpose of recognising, within Australia, regulatory standards adopted in New Zealand regarding goods and occupations.

The TTMR Act contains provisions that are generally identical to the provisions in the MR Act except that:

(a) the MR Act refers to "the first state" whereas the TTMR Act refers to "New Zealand"

(b) the MR Act refers to "the second state" whereas the TTMR Act refers to "an Australian jurisdiction".

These Acts provide that sales of goods to which the principle applies are entitled to be sold and do not require compliance with further requirements of a type set out in the Acts that might otherwise be required under the laws of the importing jurisdiction[1]. Those requirements include quality or performance standards, inspection requirements and labelling standards.

The Environmental Protection (Prohibited Plastics and Balloons) Regulations 2018 prohibit the supply of the prescribed plastic items. This prohibition on supply may be considered to not align with the entitlement to sell goods under the MR Act or TTMR Act. For this reason, an exemption is required under the MR Act and TTMR Act.

The MR Act and TTMR Act provide for specific goods or laws to be permanently exempted from their scope by their inclusion in schedules to the MR Act or TTMR Act. The process for adding permanent exemptions requires:

- the relevant Ministerial Council to seek the unanimous agreement of the COAG to the exemption
- the making of regulations by the Australian Government to amend the relevant schedules to the MR Act and the TTMR Act
- the prior signification of consent to the amendments by all jurisdictions by Gazette notice.

The permanent exemption of the Stage 2 single-use plastics ban under the MR Act would follow the precedent set by the WA Container Deposit Scheme, which was exempted in 2019.

[1] See section 9 of the Commonwealth Mutual Recognition Act, 1992 www.legislation.gov.au/Details/C2021C00272/Download

Scope of the proposed mutual recognition exemption

The exemption would apply to the Stage 2 single-use plastics included in the Environmental Protection (Prohibited Plastics and Balloons) Regulations 2018, and includes:

- expanded plastic packaging
- rapidly degradable plastic products
- barrier/produce bags
- expanded polystyrene cups
- coffee cups and lids
- unlidded trays
- lids for cups, bowls, trays, plates and containers
- cotton buds with plastic stems
- microbeads.

Detailed overview of the scope of the mutual recognition exemption is provided in Appendix A.

2 Objectives of government action

Western Australia's Plan for Plastics (WA Plan for Plastics) builds on the vision of the Waste Avoidance and Resource Recovery Strategy 2030 for "Western Australia to become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste".

The plan promotes actions to reduce the impact of plastics that are consistent with the waste hierarchy that:

- prioritise avoiding single-use plastics
- replace single-use items with reusable alternatives, wherever possible
- promote non-plastic single-use alternatives that can be recovered, recycled, or composted, if it is not possible to use reusable items
- minimise litter or contamination of waste treatment facilities by not using single-use plastics.

Stage 2 of the plan aims to address the environmental, health and waste impacts of a range of common single-use plastics through reducing their use and supply in WA and encouraging reusable and certified compostable alternatives. In doing so, the plan aims to achieve positive, innovative outcomes for consumers, businesses, and industry for our collective long-term future.

To achieve this, it is recognised that not only does the sale and supply of single-use plastics need to be addressed but reuse pathways and waste management of plastics and alternative materials should also be examined. This ties in with the State Government's goal to transition all local governments in the Perth and Peel regions to food organics and garden organics (FOGO) collections by 2025. While current composting facilities cannot take compostable fibre-based packaging, for this to be achieved in the future, waste streams need to be 'cleaned' of contaminating plastics to enable cost-effective and technically effective treatments.

2.1 Current status of plastic regulations

Plastic regulations in WA have been split into two stages. Stage 1 regulations came into effect in July 2022, with a lead-in period from January 2022. The bans for cold beverage cups came into effect in October 2022.

Many of the items identified in the Stage 2 ban are facing action elsewhere in Australia or internationally. A summary of the jurisdictions shows the current status of different bans in various Australian states (section 2.2). This further proves that the single-use plastics are being increasingly recognised as a problem across Australia. Internationally, the Stage 2 items are being addressed through various regulatory action. Some of these are listed below.

- New Zealand committed to phasing out expanded polystyrene (EPS) food and beverage packaging, oxo- and photo-degradable plastic products and plastic-stemmed cotton buds by October 2022 and barrier bags by mid-2023. It has

also proposed a ban on all EPS packaging by 2025 and on single-use plastic cold cups and their lids, made from or lined with hard-to-recycle plastic types 3, 4, 6 and 7 (New Zealand Ministry for the Environment, 2022).

- France banned plastic produce bags for unprocessed fruit and vegetables (loose or pre-packaged by the retailer) under 1.5 kg from January 2022 under circular economy legislation (RFI, 2022). The ban in 2022 applies to 30 specific fruits and vegetables and will extend to more fragile or soft-ripe produce by 2026. Plastic single-use cups, including EPS cups, and cotton buds were banned in 2020 (RFI, 2020).
- The European Parliament in 2019 adopted a single-use plastic directive to its member nations to ban plastic-stemmed cotton buds, EPS cups and all products made of oxo-degradable plastic (European Commission, 2019).
- Ireland is legislating a EUR 20c levy on single-use coffee cups, like its approach to carry bags, and a total ban on disposable cup use by sit-in customers at cafes or restaurants (as part of a Circular Economy Bill). Recent polls have shown strong community support for a levy.
- In 2015 the US Congress passed the Microbead-Free Waters Act of 2015 prohibiting the manufacturing, packaging and distribution of rinse-off cosmetics containing plastic microbeads (US FDA, 2022).
- The European Parliament is currently consulting on microplastics, including microbeads, following a proposal by the European Chemicals Agency to restrict all intentionally added microplastics, including microbeads and biodegradable microplastics, to consumer or professional products (European Commission, 2022).
- The UK Government has passed a Plastic Packaging Tax that caps the manufacture and import of single-use and supply chain packaging, including EPS packaging and oxo-degradable plastic packaging, and taxes those with less than 30 per cent recycled content. The tax came into force in April 2022 (Gov UK, 2022).
- The Scottish and UK parliaments passed bans in 2019 and 2020 respectively on plastic-stemmed cotton buds (Gov UK, 2022).

2.2 Jurisdictional summary of the ban on Stage 2 items across Australia

The jurisdictional summary across Australia shows that the items in scope under a Stage 2 ban are all either subject to or will be subject to a ban. The variance in approaches between the states is because of a lack of a national harmonisation strategy which will be discussed in section 4.8.

WA (Current)	Single-use plastic item	VIC	SA	QLD	ACT	NSW	TAS	NT	Commonwealth All voluntary & industry led
Stage 1 End of 2021	Bowls		2023-25	Sep 2021	from 2023	Nov 2022	identified	2025	
	Cups for cold drinks & food		2023-25	2024	from 2023	identified			
	Cutlery	Feb 2023	Mar 2021	Sep 2021	July 2021	Nov 2022	identified	2025	
	Helium balloon releases	July 2021	2023-25	2011				2025	
	Plates	Feb 2023	2023-25	Sep 2021	from 2023	Nov 2022	identified	2025	
	EPS food containers	Feb 2023	Mar 2022	Sep 2021	Jul 2021	Nov 2022	identified	2025	Dec 2022
	Stirrers	Feb 2023	Mar 2021	Sep 2021	Jul 2021	Nov 2022		2025	
	Straws	Feb 2023	Mar 2021	Sep 2021	Jul 2022	Nov 2022	identified	2025	
	Thick plastic bags		2023-25	identified	from 2023	identified		2025	
Stage 2 End of 2022	Barrier/produce bags		2023	2024		identified			
	Microbeads			Sep 2023		Nov-2022		2025	Voluntary ban from 2016
	Oxo-degradable plastics	Feb 2023	Mar 2022	Sep 2024	Jul 2022	identified			APCO roadmap by July 2022
	EPS cups		Mar 2022	Sep 2021		Nov 2022			
	Takeaway coffee cups/lids		2024	identified	identified				
	Cold cup lids		2024	identified	identified	identified			
	Takeaway bowl & container lids		2024	identified		identified			
	Cotton buds with plastic shafts	Feb 2023	2023	Sep 2023	Jul 2022	Nov 2022			
	EPS packaging		Identified	Sep 2023-24				2025	APCO roadmap by July 2022

Similar ban identified and active
Partial or similar ban identified and under development
Item identified for future ban

Figure 1 Jurisdictional summary of bans on plastics (as at September 2022)

3 Options to address the problem

3.1 Policy options to address the Stage 2 items

While a range of options were considered in the Consultation RIS, two options are considered in detail as part of the scope for this Decision RIS. As set out below, the discussion of the consultation responses and the cost-benefit analysis (CBA) does consider a broader range of options that were set out in the Consultation RIS.

Option 1 - No action

Option 1 considers the situation where no action is taken on single-use plastics, and it is assumed that businesses would continue to use single-use plastics. This option would result in no additional costs or benefits to any of the identified stakeholder groups. Continued production and consumption of these plastic products will inevitably lead to the products ending up in the environment as litter or in landfill. This leads to long-term damage of the environment and loss of amenity through visible littering. There is also health damage associated with single-use plastics because of the presence of microplastics in the food chain and in our bodies.

Option 2 – Banning single-use plastics (Stage 2)

The Stage 2 ban on single-use plastics is proposed to be implemented over a staggered period starting in February 2023. Details on phase-in timeframes are set out in Section 6.

3.2 Other options that were previously considered

While only two options are considered in detail here, the earlier phases of consultation and the accompanying CBA considered a range of policy options. The consultation undertaken is set out in detail in section 5. Other options that were assessed include:

- establishing an education and behaviour change campaign
- incentivising sustainable alternatives
- introducing a levy on distributors
- establishing voluntary agreements with retailers.

Results of community consultation

Community consultation identified three preferred policy approaches (out of seven) for action on single-use plastics. These were:

1. designing single-use plastic items from sustainable materials (54 per cent)
2. banning the supply, sale or use of single-use plastics (47 per cent)
3. educating the community about single-use plastic impacts and where to find and use reusable alternatives (37 per cent).

The preferred policy option selected by the community was “designing single-use plastics from sustainable materials”. This outcome is supported by the regulations for Stage 1 bans allowing the use of more environmentally sustainable and recoverable materials, such as paper, for bowls, cups, and containers. These alternatives have been preferred alternatives by businesses.

Of the policy options considered to achieve this outcome, the banning of single-use plastics was identified as the most feasible approach with potential for greatest environmental benefit.

The CBA conducted on Stage 2 items considered five policy options against a base case option of no change. These six options are listed below.

1 no change (also referred to as the status quo or the base case)
2 education and behaviour change campaign
3 incentivise sustainable alternatives
4 introduction of levy on distributors
5 statewide ban
6 voluntary agreements with retailers.

A short description of each policy option is given below.

Education and behaviour change campaign

This option is extensively employed by government and non-government organisations to raise awareness and educate the community and industry on the issue of plastics. By doing so, the government aims to reduce the use and consumption of single-use plastics.

Incentivise sustainable alternatives

The State Government incentivises sustainable alternatives in an effort to promote their sale and distribution by industry and retailers. By incentivising alternatives, consumption and use of single-use plastics will be reduced.

Introduction of levy on distributors

Reduction in consumption and use of single-use plastics is achieved by introducing a levy on the items in scope. A levy can also bridge the gap between the cost of alternatives on the market.

Voluntary agreements

In this approach, a voluntary agreement would be developed with and implemented by signatory retailers to avoid consumption of plastics.

Statewide ban

A statewide unilateral ban on the items in scope will be enforced by the State Government to reduce usage and consumption of plastics across the state.

3.3 Proposed scope for each Stage 2 item

As a broad range of single-use plastic items are included in the proposed Stage 2 ban, the items have been grouped to allow a detailed analysis of advantages and disadvantages of banning each product.

Table 2 sets out the grouping of single-use plastic items in scope for the Stage 2 ban and each of the products are defined in detail Appendix A.

Table 2 Products in scope for the Stage 2 ban

Single-use plastic groups	Products
Group 1 plastics (fragmentable by design or construction plastics)	• EPS packaging • Degradable plastics
Group 2 plastics (single-use plastics for food and beverage items)	• EPS cups • Barrier/produce bags • Coffee cups and lids • Cup and bowl lids • Containers with lids • Trays
Group 3 plastics (small or microplastics)	• Cotton buds with plastic stems • Microbeads

The inclusion of containers with lids and trays

In the Stage 1 ban, single-use plastic containers without lids were banned. The inclusion of lids brings whole containers into the Stage 2 ban. It is worth considering these separately.

The inclusion of containers with lids will cover a broad range of products made from plastics, including square or cylindrical containers and bowls. Through the consultation process on the RIS for the Stage 2 ban it was identified that single-use plastic trays were not specifically included in the Stage 1 ban and, as a result, tray lids would be banned – but trays are not.

The department had previously included trays within the assessment of containers with lids but considers that for clarity and transparency, single-use plastic trays (both with and without lids) should be specifically included in the analysis.

Exemptions to item in scope

The scope of each of the product bans are detailed in Appendix A and the definition and any exemptions were refined based on consultation feedback from industry and other stakeholders. The exemptions for each item are listed in the relevant section of Appendix A.

4 Impact analysis

A CBA was undertaken on the items identified in the Stage 2 ban. The approach to the CBA and the results are summarised in the section below with further details provided in Appendix B.

4.1 Stakeholder identification

Items in Stage 2 of the ban are widely available convenience items. Therefore, the ban will impact the following types of businesses and organisations (and their suppliers):

- hospitality businesses, including takeaway food and drink businesses and event venues (e.g. stadiums)
- retailers
- government
- education institutions, including (public and private) schools, colleges, TAFEs, universities, student accommodation and childcare facilities
- medical and care facilities, including (public and private) hospitals, clinics, aged care and disability services
- other government services, including custodial services, community and housing
- not-for-profit clubs and associations (e.g. charities)
- suppliers and importers of plastic products
- waste and recycling facilities
- public and private event coordination businesses (e.g. festivals).

4.2 Approach to the impact analysis

Methodology

Given the broad range of items that are included in the proposed Stage 2 ban, the impact of banning or some other form of phase-down was assessed for each item individually. However, because of differing circumstances, a range of analysis approaches were used.

Table 3 below identifies the CBA approach to assess the impact of the various policy options on each group of single-use plastics. As shown in the table, all items were assessed quantitatively except for containers with lids and microbeads.

The quantitative CBA modelled up to six policy options, which aligned with the options considered in the Consultation RIS. These options were:

1 no change (also referred to as the status quo or the base case)

2 education and behaviour change campaign

3 incentivise sustainable alternatives

4 introduction of levy on distributors

5 statewide ban

6 voluntary agreements with retailers.

Of the items that were assessed quantitatively, some were not assessed against all six policy options because of lack of data and for some categories a subset of easily identified products was considered.

Table 3 Overview of policies assessed for each Stage 2 item

Single-use plastic groups	**Item**	**Analysis undertaken policy options assessed**
Group 1 plastics (fragmentable by design or construction plastics):	Expanded plastic packaging	Quantitative analysis of three options: • no change (base case) • education campaigns • statewide ban
	Degradable plastics Note: Assessment only includes oxo-degradable bin liners and dog waste bags	Quantitative analysis of four options: • no change (base case) • education campaigns • voluntary agreements • statewide ban
Group 2 plastics (single-use plastics for food and beverage items)	EPS cups and EPS meat trays	Quantitative analysis of all six options
	Barrier/produce bags	Quantitative analysis of all six options
	Coffee cups and lids	Quantitative analysis of all six options
	Cup and bowl lids	Quantitative analysis of all six options
	Containers and trays with lids	**Qualitative** analysis of two options: • no change (base case) • statewide ban
Group 3 plastics (small or microplastics)	Microbeads	**Not assessed**
	Plastic-stemmed cotton buds	Quantitative analysis of all six options

The two items that were not considered quantitatively are containers with lids and microbeads. Containers with lids and plastic trays were assessed qualitatively and this analysis is set out in section 4.5.

The impact of a statewide ban on microbeads was considered very small as a voluntary phase-out (the BeadRecede campaign) has been highly successful, and a 2020 survey of 8,100 products found that 99.3 per cent were microbead-free. As it appears that the ban would only impact a small number of products, a detailed analysis of the costs and benefits was seen to be unnecessary.

4.3 Approach to the quantitative CBA

A quantitative CBA was conducted before the publication of the Consultation RIS of the ban on Stage 2 items (Creational Consulting 2022, unpublished). The analysis attempts to quantify the full range of financial, social, and environmental impacts over an extended period (20 years).

The analysis uses the methodological steps listed below.

1. Estimate the current and future use of the target product and substitute products under the base case (no change option).
2. Estimate the use of the product and substitutes under each of the options considered (this is often referred to as material flows analysis).
3. Estimate the unit value of the costs and benefits that arise from changing from the target product to the substitute.
4. Multiply the change in product use (identified in step 2) by the unit values (identified in step 3) to identify the annual cost and benefit over the analysis period.
5. Calculate the net present value (NPV) of the costs and benefits over the analysis period.

The CBA assumes that consumer reactions to the ban on single-use plastics would be to reduce usage where possible; however, a shift to sustainable single-use alternatives is incorporated in the first five years of assessment.

For each of the banned items, the CBA models the consumption of the product under each option and then estimates the costs and benefits arising from the change in consumption. The analysis included a broad range of costs and benefits as provided in Table 4.

Table 4 Cost and benefits considered

Description	Cost	Benefit	Impacted group
Purchase price of disposable plastic items and plastic-free or low-plastic alternatives	✓		Individuals or groups of individuals
Cost recovery of disposable plastic items, and plastic-free or low-plastic alternatives		✓	Retailers
Profit margins for sale of disposable plastic items and their alternatives		✓	Distributors/retailers
Goods and services tax (GST) on overall sales		✓	State Government
Waste disposal costs	✓		Local government
Implementing legislative change	✓		State Government
Monitoring and compliance costs	✓		State Government/ distributors/retailers
Implementing education campaigns	✓		State Government
Levy imposed on disposable plastic items	✓		Distributors
Cost of market shift to plastic-free or low-plastic alternatives	✓		Distributors
Income from payment of levy on disposable plastic items		✓	State Government
Social cost of plastic	✓		Environment
Willingness to pay for reduced litter		✓	Environment

Source: Creational Consulting, 2022 (unpublished)

Core assumptions in the CBA common to all Stage 2 items were:

- quantified figures do not include interstate or overseas impacts
- all figures are scaled to 2022 monetary value
- the assessment does not include second order impacts such as water use or emissions.

Further information on base case assumptions is provided in Appendix B.

In undertaking the analysis, estimating the costs to business and government can be relatively easy. In contrast, estimating the environmental benefit that arises from reduced use of single-use plastics can be challenging.

For this CBA, the environmental benefit was estimated based on estimates of the community's willingness to pay for reductions in litter. The studies used in this CBA are historical and pre-date current understanding of marine litter and the creation of microplastics. For this reason, the values are low estimates of environmental damage that would be avoided by reducing plastic litter.

Limitations of the quantitative CBA

There are several limitations associated with the quantitative CBA undertaken on the Stage 2 items. Key limitations are listed below:

- The material flows analysis for the target product and substitute products can only be roughly estimated for each policy and are likely to have wide error margins.
- Market responses to bans (such as increased availability and reduced price of substitutes) can only be estimated.
- Rates for littering and incorrect disposal of plastics and substitutes are estimated. The propensity-to-litter value is based on research from 2010. People's understanding of litter and extensive education campaign in the intervening years mean that the propensity to litter has reduced.
- As noted above, the environmental benefits are estimated based on willingness to pay data. However, the data used does not differentiate between plastic or substitute (biodegradable) products. This results in the policy options for some items showing a negative impact on the environment even though it would reduce the presence of persistent litter in the environment.
- Impact of reduced fossil fuel production and greenhouse gases production from waste in litter is not included.

Because of these reasons, the quantitative CBA results presented in the next section must be interpreted alongside some qualitative factors. The interpretation and analysis of the CBA results is given below. The following section demonstrates why the statewide ban is the best option to tackle the plastic problem despite sometimes returning a lower NPV than the status quo.

4.4 Results of the quantitative CBA on Stage 2 items

A CBA was undertaken on the items proposed under the Stage 2 ban. The following sections summarise the results for each of the groups. Finally, some of the shortcomings of the analysis are described in detail.

Summary of quantitative CBA results on Stage 2 items

The results of the CBA are presented as NPV over a 20-year period. The results are summarised for each of the groups in Table 5, Table 6, and Table 7 respectively. The analysis shown here is based on a 3 per cent discount rate. The impact of alternative

discount rates is set out in section 4.6 and detailed results are presented in Appendix B.

Additionally, it is useful to summarise the distribution of costs and benefits among the identified stakeholder groups. These are presented in section 4.7.

CBA for group 1 items (fragmentable by design or construction plastics)

CBA information for the group 1 items is set out in Table 5 below. The results show the total cost and total benefit for both the products and summarise the results for no ban versus a statewide ban.

Table 5 Summary of CBA results and the cost-benefit ratio of the options

Policy Options	Cost impact ($ millions)	Benefit impact ($ millions)	Net impact ($ millions)	NPV – 20 years ($ millions)	NPV difference to base case ($ millions)
Status quo	-3,277.3	3,486.8	209.4	160.3	0.0
Statewide ban	-920.8	962.7	41.9	36.3	-124.1

Source: Marsden Jacob analysis of Creational Consulting's data, 2023 (unpublished)

CBA for group 2 items (single-use plastic food and beverage items)

The items used in the CBA for the group 2 items are bowls and cold cup lids, coffee cups and lids, EPS cups and meat trays, and produce bags. The remaining items subject to the ban, such as hot food cups, are not considered in this CBA as they have already been included in the Stage 1 ban. All six policy options have been considered for this group and the results for the base case and statewide ban are summarised below. The full results are presented in Appendix B.

Table 6 Summary of CBA results and the cost-benefit ratio of the options

Policy options	Cost impact ($ millions)	Benefit impact ($ millions)	Net impact ($ millions)	NPV – 20 years ($ millions)	NPV difference to base case ($ millions)
Status quo	-808.7	855.6	46.9	35.7	0.0
Statewide ban	-505.8	532.9	27.1	18.7	-14.0

Source: Marsden Jacob analysis of Creational Consulting's data, 2023 (unpublished)

CBA for group 3 items (small or microplastics)

The CBA results shown below for the group 3 items only include cotton buds with plastic stems. Microbeads were not considered in the CBA for two reasons. Firstly, the data on microbeads is scarce and hard to quantify. Secondly, phasing out microbeads is already undertaken voluntarily at an industry level across the state. Therefore, there will be minimum costs associated with the ban.

For the group 3 items, all the policy options have been considered and the results are summarised below and the full results are presented in Appendix B.

Table 7 Summary of CBA results and the cost-benefit ratio of the options

Policy options	Cost impact ($ millions)	Benefit impact ($ millions)	Net impact ($ millions)	NPV – 20 years ($ millions)	NPV difference to base case ($ millions)
Status quo	-7.9	8.5	0.5	0.4	0.0
Statewide ban	-13.7	-7.3	-21.0	-16.8	-17.2

Source: Marsden Jacob analysis of Creational Consulting's data, 2023 (unpublished)

Analysis of the CBA results

While the quantitative analysis shows that the statewide ban delivers a lower net benefit than the base case for each of the three groups of products, the department is confident that the unquantified benefit of removing persistent wastes from the environment means that the statewide ban is the preferred option.

These results were included in the Consultation RIS and the feedback from all stakeholder groups (discussed in detail in section 5) was that the statewide ban was the preferred option.

4.5 Containers with lids and trays

In Stage 1, single-use plastic containers without lids were banned. The inclusion of lids brings whole containers into the Stage 2 ban. It is worth considering these separately in this RIS.

This will cover a broad range of products made from plastics including square or cylindrical containers, and bowls and trays (either with or without lids).

The scope for containers with lids is constrained by the lids scope, which is focused on takeaway containers, and there are exemptions for catering for multiple servings presented in the one container and where further preparation is required/food is not presented in a ready-to-consume meal form. As a result, the items in scope of the ban are extremely specific. Because of the specificity of the ban, undertaking a material flows analysis and a quantitative CBA is currently impossible. To ensure suitable assessment, a qualitative CBA has been undertaken where the costs and benefits associated with the ban are described in detail and justification for the preferred policy option of a statewide ban is presented.

Specific examples of items within and out of the scope are presented in Appendix A – Containers with lids.

Suggested alternatives to the banned items in scope

The table below suggests alternatives to the banned items.

Table 8 Alternatives to the banned items

Single-use alternatives	Reusable alternative
• Sugarcane/bagasse • Bamboo • Cardboard • Aluminium (foil lid) • Alternatives that meet AS 5810-2010 (biodegradable plastics – biodegradable plastics suitable for home composting) • Alternatives that meet AS 4736-2006 (biodegradable plastics suitable for composting and other microbial treatment)	• Consumers bring own container (e.g. reusable plastic Tupperware, stainless steel, glass, ceramic/china)

Source: DWER policy advice, 2023 (unpublished)

CBA for container with lids

A CBA for the banned items and suggested alternatives is a suitable way to understand who bears the costs and who stands to benefit from proposed regulations and policy approaches. The following sections will provide details on the options considered and the associated costs and benefits.

Options considered

For this CBA two options were considered. These options are:

- option 1 – no change
- option 2 – statewide ban

Under option 1, it is assumed that no action is taken to reduce the usage of single-use plastic takeaway containers made of single-use plastics in WA. Based on this option, it can be safely assumed that consumption of plastic containers will continue, which leads to more plastic in landfill and the environment. Option 2 considers a situation where the items in scope are subject to a statewide ban like the Stage 1 and other Stage 2 items.

Costs and benefits

Table 9 below describes the costs and benefits of a statewide ban on containers with lids.

Table 9 Costs and benefits associated with the ban of ordered takeaway containers

Stakeholders	Costs	Benefits
Government	• Administrative • Compliance and monitoring • Education campaign	• Less plastic in the economy and fewer clean-ups required
Industry • Manufacturers • Distributors • Retailers • Waste sector	• There are no Australian manufacturers of the identified banned items • Costs arise as a result of retailers and distributors having to source alternatives	• Consumer willingness to pay means the costs can be passed on through to the customers • Reduction in waste to landfill, with a potential increase in compostable waste
Consumers	• Increased price of goods because of a higher cost of alternatives	• Willing to bear high costs to reduce plastic usage
Society	-	• Environmental benefits
Environment	-	• Less plastic in the environment

Source: Marsden Jacob analysis, 2023 (unpublished)

Attempts to quantify the number of items impacted

To undertake a quantitative CBA, it is necessary to estimate the current and future use of the target product and substitute products under the base case.

The Australian Plastics Flows and Fates 2019–20 report by Envisage Works (2021) attempts to estimate the consumption of plastic items in WA for the year 2019–20. This report estimates that in 2019–20 the use of EPS/polystyrene beverage and food containers, EPS food trays and on-shelf food containers and PET thermoformed punnets or clamshells was roughly about 1,920 tonnes by weight, or a total of 160 million units. This equates to about 61.4 units/person.

A single-use plastic consumption report by Blue Environment (2022) estimated the consumption of lids in scope to be roughly about 60 units/person for the year 2020–21. This provides further evidence to the prevalence and usage of the items in scope within the WA community.

Limitations

Because of the complicated nature of the items in scope, it is not possible to perform a material flows analysis. This is because of difficulty in separating the items within and out of scope. Other limitations relating to quantifying environmental benefits, willingness to pay to reduce litter and market response to bans apply to these items as well.

Because of the constraints mentioned previously with doing a quantitative analysis, the following sections will summarise the results of a qualitative CBA.

Analysis

Based on this analysis and consultation feedback, the department is confident a ban is not only the most feasible approach with potential for greatest environmental benefit but also the most beneficial option for each of the key stakeholder groups. Key points the department considered in reaching this conclusion are:

- alternatives to the banned items are already in use and available in the market
- while single-use plastic containers and trays are imported, there may be some Australian manufacturers of the alternatives
- there is strong public support towards moving away from plastic for takeaway containers
- benefits to the environment and society are high
- there may be some costs to retailers, but these costs can be safely assumed to be passed through to consumers.
- the consumers have shown high willingness to pay, which can offset the costs passed on by industry and retailers. The quantified CBA used a relatively conservative value of $2,025 per tonne in 2021-22 dollars. However, analysis used interstate (Marsden Jacob, 2022) can be adjusted to WA's number of households and propensity-to-litter value, to give a value of $26,182 per tonne in 2021-22 dollars
- secondary benefits such as improved circular economy arise when moving away from single-use plastic products
- costs are high for the no-change option and there are minimal benefits.

4.6 Sensitivity analysis

A sensitivity analysis was undertaken on the results of the CBA presented in section 4.4. The primary aim of the sensitivity analysis was to ensure that the CBA results were robust and not subjected to any analytical errors. To perform this analysis, the sensitivity of NPV to different discount rates was tested. The different discount rates used in the analysis were 3 per cent, 7 per cent and 10 per cent.

The limitations of the CBA results and their implications were detailed in section 4.4. Because of the limitations mentioned, the results provided in the sensitivity analysis should not be used as a decision-making tool. The sensitivity analysis results act to prove that CBA results are robust and void of systematic errors. As mentioned previously, the CBA results alongside a qualitative valuation of benefits to society from reduced plastic in the environment, indicate that a statewide ban is the best option to tackle the problem.

The table below summarises the results of the sensitivity analysis.

Table 10 Summary of sensitivity analysis on NPV of base case vs statewide ban

Single-use plastic group	Items	Policy option	NPV at discount rate of 3% ($ millions)	NPV at discount rate of 7% ($ millions)	NPV at discount rate of 10% ($ millions)
Group 1	EPS packaging	No change	153.2	113.3	93.5
		Statewide ban	24.8	22.7	21.4
	Degradables	No change	7.1	5.2	4.3
		Statewide ban	11.5	8.4	6.8
Group 2	Bowls and cold cup lids	No change	4.9	3.6	2.9
		Statewide ban	3.4	1.6	0.7
	Coffee cups and lids	No change	23.8	17.5	14.4
		Statewide ban	18.6	13.6	11.1
	Produce bags	No change	2.2	1.6	1.3
		Statewide ban	-6.1	-5.2	-4.8
Group 3	Plastic-stemmed cotton buds	No change	0.4	0.3	0.2
		Statewide ban	-16.8	-13.1	-11.2

Source: Marsden Jacob analysis of Creational Consulting data, 2023 (unpublished)

From the tables above, it is evident that the quantitative results provided by the CBA are robust. However, as mentioned in the above sections, these results must be used along with the appropriate qualitative valuation of other unquantified benefits for the decision-making process. When these other unquantified benefits are accounted for, it is clear the statewide ban is the best-performing option.

4.7 Distributional impacts

In addition to performing CBA and sensitivity analyses, it is useful to summarise the distribution of costs and benefits among the identified stakeholder groups. The tables below summarise the distributional impacts of a statewide ban relative to the base case.

Table 11 Summary of distributional impacts for group 1 items ($ millions over 20 years)

Stakeholder group	Base case (No change)	Statewide ban
State Government	0.0	-121.31
Local government	0.0	-0.06
Distributors/manufacturers	0.0	-100.31
Retail, hospitality	0.0	-1,641.14
WA community	0.0	1,741.45
Environment	0.0	-2.69
Overall	**0.0**	**-124.06**

Source: Marsden Jacob analysis of Creational Consulting's data, 2023 (unpublished)

Table 12 Summary of distributional impacts for group 2 items ($ millions over 20 years)

Stakeholder group	Base case (No change)	Statewide ban
State Government	0.0	-28.92
Local government	0.0	0.95
Distributors/manufacturers	0.0	-11.09
Retail, hospitality	0.0	-181.66
WA community	0.0	192.44
Environment	0.0	14.19
Overall	**0.0**	**-14.09**

Source: Marsden Jacob analysis of Creational Consulting's data, 2023 (unpublished)

Table 13 Summary of distributional impacts for group 3 items ($ millions over 20 years)

Stakeholder group	Base case (No change)	Statewide ban
State Government	0.0	-4.5
Local government	0.0	-0.0
Distributors/manufacturers	0.0	0.0
Retail, hospitality	0.0	0.7
WA community	0.0	-0.8
Environment	0.0	-12.7
Overall	**0.0**	**-17.2**

Source: Marsden Jacob analysis of Creational Consulting's data, 2023 (unpublished)

From the tables above, it is evident that the largest beneficiaries of the ban are the WA community and the environment. The industry sector bears the most significant costs, while the State Government also bears some costs. The most likely market response is that commercial businesses will pass on the costs to the end consumers. These costs can be safely passed on since the community has shown a high willingness to pay to reduce consumption of single-use plastics.

4.8 National impact assessment

This Decision RIS is required to assess the impact that a statewide ban on single-use plastics may have on national and trans-Tasman markets. This section provides a qualitative assessment of the costs and benefits to the key stakeholder groups on a national scale.

Stakeholder impacts

The impact analysis of the Stage 2 ban on single-use plastics on stakeholder groups considered where the impact was most likely to be felt in geographic terms (i.e. within WA or within other Australian states and territories or New Zealand). The impacts identified are shown in Table 14.

Table 14 Stakeholder identification for national impact analysis

Stakeholders	Impact within WA	Impact in other Australian states and territories or New Zealand
State, Australian and New Zealand governments	• Costs to State Government from education campaigns and enforcement	• Negligible impacts on other governments
Local government	• Reduced waste disposal costs relating to plastic bags	• Negligible impacts on other local governments

Manufacturers	• Zero – no local manufacturers of single-use plastics	• Some (limited) benefit as all manufacturers of single-use plastics appears to be international. Some alternatives may be manufactured locally (e.g. paper bags)
Distributors	• Some transitional costs • Some costs to hold multiple product lines	• Limited transitional costs beyond those captured in the CBA
Retailers, hospitality, hospitals	• Some transitional costs for all businesses • Larger businesses (that operate across multiple states) may have larger impacts from differing requirements in different jurisdictions	• Negligible impacts on small interstate business • Some impact on larger businesses from differing requirements in different jurisdictions
Waste sector	• Slight reduction in waste to landfill • Slight reduction in some recyclables • Slight increase in compostable waste – many are likely to go to landfill in the short term, but can be diverted to composting of FOGO stream	• Negligible impacts on interstate waste business
Community	• 'Feel-good' benefit from reduced plastic littering • Some increased costs	• Some benefit where retailers move to new highest standard. • Potentially a small 'feel-good' benefit from reduced litter in WA
Environment	• Benefit from reduced plastic litter	• Potentially a small benefit from reduced plastic litter movement in oceans

Source: Marsden Jacob analysis, 2023 (unpublished)

The impacts on stakeholders within WA were captured and accounted for in the CBA. As it was determined that there will be negligible impact on small interstate retailers and distributers, the national impact analysis primarily focuses on a small number of stakeholder groups.

Impacts on key stakeholder groups

The stakeholder groups requiring further consideration of the impact of the Stage 2 statewide ban on single-use plastics in WA are:

- the State, Australian and New Zealand governments

- larger retailers, hospitality businesses and hospitals such as national and international businesses operating across the country and in New Zealand
- community and the environment.

Table 15 summarises the costs and benefits or opportunities associated with the statewide ban for each of the identified stakeholders.

Table 15 Summary of costs, benefits, and opportunities to the key stakeholders

Stakeholder	Costs	Benefits/opportunities
State, Australian, and New Zealand governments	• Costs are negligible or non-existent	• Opportunity to harmonise their respective plastic bans with WA • Opportunity to support industry in helping to transition to sustainable alternatives • Opportunity to help ease the regulatory burden on industry
Larger retailers, hospitality, hospitals operating across multiple jurisdictions	• Transitional costs • Operational costs • Costs relating to infrastructural changes	• Consumer demand for sustainable alternatives to plastics • Consumer willingness to pay means costs can be passed on through to consumer
Community and the environment	• Increased costs of products because of the alternatives being more expensive	• Evidence of willingness to pay to avoid littering, and to move away from single-use plastics • Reduced litter, preservation of natural environment

Source: Marsden Jacob analysis, 2023 (unpublished)

State, Australian and New Zealand governments

Costs attributed to the New Zealand and Australian governments as well as other state or territory governments appear to be negligible. While there will be some costs attributed to the State Government (such as monitoring and enforcement and an education strategy), these are accounted for in the CBA.

Similarly, there are limited benefits expected to fall to the State, Australian and New Zealand governments. A successful implementation of a statewide ban in WA can lead to other jurisdictional bodies following suit by harmonising their strategy towards banning plastics to the approach taken by WA. This would lead to a reduction in transitional costs and operational costs on national and international businesses operating in these jurisdictions, thus easing the regulatory burden. This approach can lead to greater action by industry in banning disposable plastics.

Potential impacts on New Zealand

Market research indicates that the items covered under the single-use plastics ban are not manufactured in New Zealand. Hence, there will be minimal direct impacts on manufacturers located in New Zealand. Like Australia, impacts will be mainly felt by

larger retailers operating in the region. The impacts faced by larger retailers and potential path forward are described in the following section.

Larger retailers (including hospitality businesses and hospitals) operating across multiple jurisdictions

Businesses operating across multiple jurisdictions will incur some transitional and operational costs to ensure that their products align with the new WA requirements. However, these businesses have not been able to quantify the projected impacts.

Consumer research has shown that there is a high demand from consumers for sustainable alternatives to single-use plastics. The ban in WA, and the requirement to look for alternatives to single-use plastics, will provide some benefits (as consumers are willing to pay for sustainable alternatives) as those multijurisdictional corporations make the required changes.

While a consensus on a national approach was not reached, most of the items identified in the ban are already subject to a partial or total ban or have been considered for a future ban in other Australian jurisdictions (Figure 1).

Large businesses may adopt one of two different strategies to align with the WA ban:

- The first strategy would be to consider the bans proposed in all the jurisdictions in which they operate, including WA, and make the level of change needed to adhere to all of them. This would mean they would apply the same set of changes across all jurisdictions, reflecting the most advanced policy.
- The second strategy would be to treat WA as an outlier and make localised changes. This would mean businesses would need to make individual changes based on the jurisdiction as bans come into place.

The costs imposed on the business as a result of changes would probably be passed on to consumers, noting that consumers have shown a willingness to pay to reduce litter and to see less plastic in the environment.

Community and the environment

It is assumed that any additional costs incurred by industry resulting from the requirement to use alternative, more sustainable products will be passed on to the community through increased prices. However, the community has shown that they are willing to pay the increased price if it results in preservation of the natural environment.

Both the community and the environment benefit from reduced littering and less plastic being disposed to landfill.

Summary of national impact assessment

There is an impact to businesses operating across the country and in New Zealand as they incur operational and transitional costs because of a lack of harmonisation between jurisdictions.

There is a proven demand in the market from consumers for more sustainably sourced products and brands with a focus on sustainability, and consumers are willing to pay extra for these products. The additional costs incurred by these businesses therefore can be passed on to consumers.

Industries can follow the precedent set by the State Government and adopt the same approach across the country voluntarily, which may help smooth the transition process from disposable plastics to sustainable alternatives.

Limitations of the analysis

There is a lack of current and consistent nationwide data on various market information so this analysis is primarily qualitative.

Consultation feedback indicates that retailers and businesses were unable to quantify the projected impacts.

5 Consultation

The State Government has consulted the community, industry, and retailers on possible actions to reduce single-use plastics and support the move to a circular economy over an extended period.

Key related actions that were consulted on earlier include the WA ban on lightweight plastic bags (implemented in 2018) and the Container Deposit Scheme for beverage containers (which started in 2020).

Consultation on the ban on single-use plastics is summarised below. The consultation summaries are divided into three sections:

- Section 5.1 summarises the consultation on possible bans to single-use plastics.
- Section 5.2 summarises the consultation completed as part of the implementation of the Stage 1 ban and to satisfy the requirements of a Consultation RIS.
- Section 5.3 summarises the findings from the consultation done as part of the Stage 2 ban.

5.1 Issues paper

Consultation on possible bans to single-use plastics started with the department's release of an issues paper titled *Let's not draw the short straw* in April 2019 (DWER, 2019). Consultation with the community and stakeholders was carried out through a combination of an online survey, written submissions, community workshops and stakeholder workshops.

The consultation attracted 9,464 submissions, including:

- 8,378 responses to an online survey
- 55 individually written submissions
- 702 pro forma submissions from an online petition
- 329 people attending community workshops held across WA.

Feedback from the consultation identified strong community support for government regulation, alongside sustainable product design and education campaigns, with 98 per cent of respondents indicating support for extensive action to reduce single-use plastic.

Submissions and a summary of the online survey responses were made publicly available on the consultation website, followed by a consultation summary report compiling the feedback received on the issues paper. The responses to the issues paper consultation and corresponding report can be found on the department's website.

A key finding of this consultation was:

> Community support to reduce single-use plastics is high and building over time. The community would like to see actions taken by the Government to mitigate the impacts of single-use plastics (DWER, 2020:11).

Of the single-use plastic items included in the issues paper, there was strong support to reduce the impact of several items. The department provided an overview of how each single-use plastic was prioritised across each information stream, noting that the priorities changed as more information was provided and discussed (Figure 2).

Single-use plastic items	Survey	Written	Workshop
Balloon releases	Low	High	High
Balloons	Low	Low	Medium
Barrier/produce bags	Medium	Medium	Medium
Cigarette butts/filters	Low	Medium	High
Cotton buds with plastic shafts	Low	Low	Low
Cutlery, plates, stirrers	Medium	High	Medium
Drinking straws	High	High	High
Fishing gear	Low	Medium	High
Lightweight plastic bags	High	Low	Medium
Lightweight plastic bags combined*	High	High	High
Microbeads	High	Medium	Medium
Plastic beverage containers	High	Medium	Medium
Plastic packaging	High	High	High
Polystyrene	Medium	Low	Low
Prepacked fruit and vegetable	High	Medium	High
Takeaway coffee cups/lids	High	Medium	Low
Takeaway food containers	Medium	Medium	Low
Thicker plastic bags	Low	High	Low
Wet or baby wipes	Low	Low	Low

High Medium Low

*Data for barrier/produce bags and lightweight plastic bags have been combined

Figure 2 Single-use plastic priority rating for each information stream

Source: DWER, 2020

5.2 WA Plan for Plastics and Stage 1

Informed by this community input, the WA Plan for Plastics was developed and released in 2020, announcing a staged approach with four core strategies identified. These strategies included “introducing regulation to support the phase-out of targeted single-use plastics” (DWER, 2021:2).

The Plan for Plastics was fast-tracked in 2021 to reflect community concern and to implement change required urgent environmental benefit. Actions for the short term (2020–21) and medium term (2021–22) are outlined in Table 16. It is noted that this table is historic and some minor changes in scope or timings have arisen since it was produced.

Table 16 Summary of actions on identified single-use plastic items which required regulatory actions

Single-use plastic item	Action
Short-term actions	
Plates	• Develop new plastics regulations – statewide phase-out by late 2021 • Develop a targeted education campaign and behaviour change program to support the implementation of regulations • Implement a Plastic Free Places program
Bowls	
Stirrers	
Takeaway polystyrene food containers	
Cutlery	
Cups	
Thick plastic bags	
Plastic straws	• Establish a Plastic Straws Working Group in February 2021 to inform future actions, including regulatory action and exemptions by late 2021
Helium balloon releases	• Develop new plastics regulations – statewide phase-out by late 2021 • Develop a targeted education campaign and behaviour change program to support the implementation of regulatory actions
Medium-term actions	
Microbeads	• Amend plastics regulations – statewide phase-out by late 2022
Coffee cups/lids	
Polystyrene cups	
Cotton buds with plastic stems	
Barrier/produce bags	• Amend plastics regulations – statewide phase-out by late 2022 • Develop a targeted education campaign and behaviour change program to support the implementation of regulatory actions. • Implement a Plastic Free Places program
Polystyrene packaging	• Amend plastics regulations – statewide phase-out by late 2022
Oxo-degradable plastics	• Amend plastics regulations – statewide phase-out by late 2022

Source: Adapted from DWER 2021.

A timeline overview was also provided, from the initial banning of lightweight plastic bags in July 2018 to the proposed Stage 2 ban in late 2022 (Figure 3).

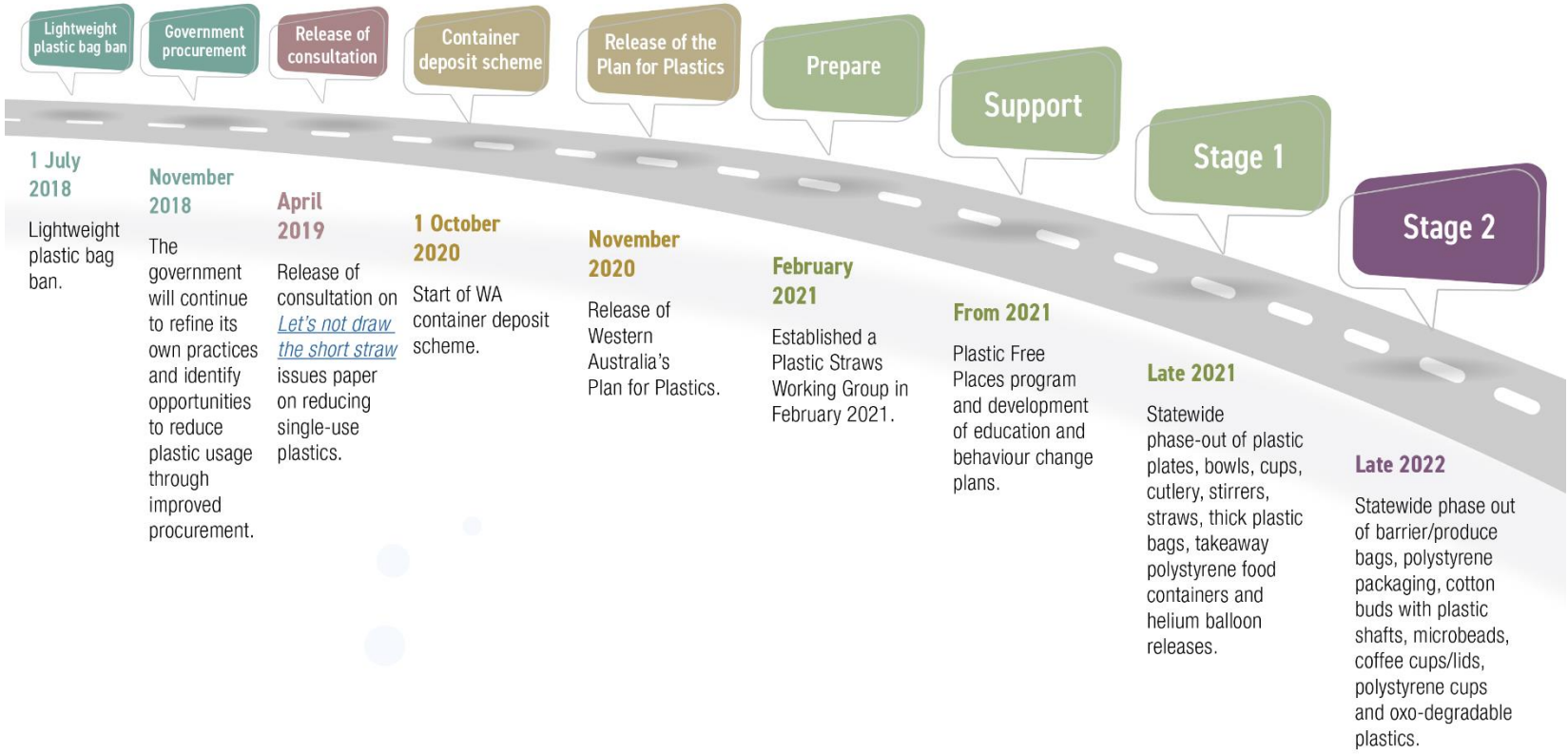

Figure 3 Timeline overview of single-use plastics ban

Source: DWER, 2021.

5.3 Stage 2 consultation

Overview of consultation undertaken

Stakeholders were given multiple options to provide input to the Consultation RIS. The key forms of consultation input were:

- consultation with other states/territories and New Zealand
- online survey – three online surveys for Stage 2 of the WA Plan for Plastics, which were split to target community, businesses, and government/non-government organisations
- community information sessions
- written submissions.

An overview of each of the consultation methods, along with summaries for key themes, is provided below.

Consultation with other states/territories and New Zealand

Throughout the development of the WA Plan for Plastics and both the Stage 1 and Stage 2 bans, WA has participated in an inter-governmental working group to ensure other states and territories, as well as New Zealand, are aware of the proposed reforms and have had the opportunity to provide input.

Online survey

The online survey results are summarised in the following tables.

Table 17 Distribution of responses received by stakeholder group

Target group	Responses received
Community	435
Businesses/retailers	28
Government/non-government organisations	13

Table 18 Percentage of answers provided by the target group regarding the ban

Item	Question	Target group's highest chosen answer and percentage of total respondents who chose the answer.		
		Community	**Business**	**Government/Non-government**
Barrier bags	Ban is the preferred policy option	Yes – 88.74	Yes – 68.42	Yes – 84.62
	Are the enforcement delays appropriate?	Too slow – 77.47	Too soon – 73.68	Too slow – 46.15
Coffee cups/lids	Ban is the preferred policy option	Yes – 88.97	Yes – 65	Yes – 84.62
	Are the enforcement delays appropriate?	Too slow – 75.40	Too soon – 65	About right – 46.15
Lids for containers, bowls and cups	Ban is the preferred policy option	Yes – 85.06	Yes – 52.94	Yes – 76.92
	Are the enforcement delays appropriate?	Too slow – 68.28	Too soon – 58.82	About right – 46.15
Cotton buds with plastic stems	Ban is the preferred policy option	Yes – 82.76	Yes – 100	Yes – 90
	Are the enforcement delays appropriate?	Too slow – 67.13	About right – 60	About right – 38.46
Microbeads	Ban is the preferred policy option	Yes – 82.07	Yes – 100	Yes – 100
	Are the enforcement delays appropriate?	Too slow – 60.69	About right – 100	About right – 53.85
EPS cups	Ban is the preferred policy option	Yes – 83.91	Yes – 100	Yes – 84.62
	Are the enforcement delays appropriate?	Too slow – 68.97	About right – 71.42	About right – 53.85
EPS meat trays	Ban is the preferred policy option	Yes – 83.22	Yes – 85.71	Yes – 90
	Are the enforcement delays appropriate?	Too slow – 64.60	About right – 57.14	About right – 38.46
EPS packaging	Ban is the preferred policy option	Yes – 81.38	Yes – 76.92	Yes – 72.72
	Are the enforcement delays appropriate?	Too slow – 62.99	Too soon – 38.46	About right – 38.46
Degradable plastic	Ban is the preferred policy option	Yes – 81.84	Yes – 71.42	Yes – 90.91
	Are the enforcement delays appropriate?	Too slow – 58.39	Too soon – 50.00	About right – 61.54

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

From the results of the online survey, the community, businesses and government/non-government groups unanimously agree that the ban is the preferred option to address the problems created by the items in scope for the Stage 2 ban. The difference in opinion among the groups arose when discussing the enforcement timings. The proposed approach is seeking to balance community expectations and industry.

Community workshops and information sessions

Eight public workshops involving 226 participants were held online to enable interstate participants to attend.

The main categories of stakeholders attending are shown in Figure 4:

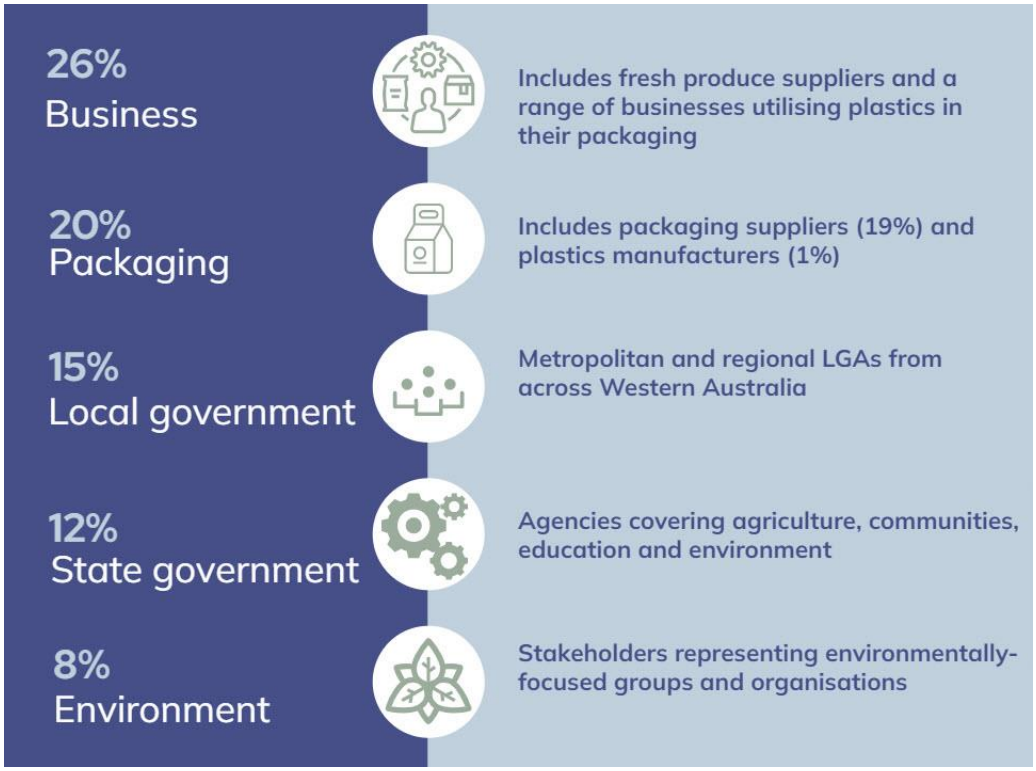

Figure 4 Demographics of participants for the community workshops

Source: DWER policy advice, 2023 (unpublished)

The workshops were structured to identify and discuss concerns/barriers to implementation, ideas to addressing these concerns/barriers, and the support needed to meet the requirements and changes.

Themes that emerged in the comments provided by workshop participants were:

- readiness of industry for the reforms
- cost to retailers/customers of alternative product
- assistance for industry relating to certification to ensure products are compliant
- safety of alternatives and reusable products

- availability of alternatives
- environmental benefits.

While a range of concerns were identified, it is important to note that all stakeholder groups represented at the workshops were generally supportive of the proposed Stage 2 bans.

Key insights arising from the workshops were:

- Industry and retail stakeholders were generally supportive of moving away from single-use plastics with greater consideration of the implications and difficulties to be overcome.
- Not aligning with national and interstate processes, and confusion and lack of knowledge of the ban were the two main causes for concern within workshop participants.
- Many concerns revolved around being ready in time for the transition.
- Similar concerns remain in the community to those expressed in the Stage 1 consultation period (e.g. cost, availability of alternative products, the need for clear and precise definitions and specifications, the need for accessible support mechanisms and the environmental impact of the ban).
- The engagement process was appropriate. Participants indicated that the workshops along with the other submission methods were a suitable consultation approach.

Written submissions

The written submissions received as part of the consultation Stage 2 plastics ban were analysed in detail. The general breakdown of the demographics of the respondents is given below.

A total of 35 written submissions were received; 26 were received from industry, three from community members, four from not-for-profits and two from government.

Table 19 summarises the submissions made for each of the product types against common categories of comments.

In the table the green shaded cells indicate themes that received support from groups typically holding opposing views on actions relating to plastic. The red-shaded cells indicate multiple responses in support of the theme.

Table 19 Summary of written responses received as part of the consultation.

Theme items	Support for ban	Proposed timelines	Scope clarity	Reduce scope	Expand scope	Other legislation	Financial impacts	Environmental impacts	Health impacts	Support needed	Education needed
Degradable plastics	Support from industry, local government, community and not-for-profits	Community requested the ban happen ASAP	Community felt definitions were unclear	Local government requested an exemption for dog poo bags	Community and not-for-profits requested non-compostable dog poo bags be banned	Industry and not-for-profit commented that NPTs aim to phase out fragmentable technologies from July 2022	Few comments	Few comments	Few comments	Community requested clear labelling	Community requested education on alternatives
EPS packaging	Support from industry, local government, community and not-for-profits	Industry requests more time or non-compliant stock will be landfilled	Industry felt it was unclear if expanded polyethylene (EPE) and expanded polypropylene (EPP) are included in the ban	Industry requested consideration of imported products	Community and not-for-profits requested an end to exemptions	Conflicting comments from industry regarding alignment with APCO regulations	Industry was concerned that alternatives cost more	Not-for-profits noted that EPS is a ubiquitous item on WA beaches	Community noted the health impacts of polystyrene	Community requested there be support to transition to alternatives (e.g. incentives, product development)	Community requested general education on the effectiveness of alternatives
			Industry was unclear if 45 kg is with or without packaging							Community and industry requested clear guidance regarding unsold stock at the time of the ban	
		Community support to accelerate timelines	Not-for-profits and community were unclear if the ban applies to imported products	Industry requested exemptions for large TVs	Community and not-for-profits requested business-to-business applications be included in the ban		Industry was concerned that there is a higher risk of breakage without EPS			Community and industry requested requirements for a business to work with a supplier to rectify a situation where EPS was received in an order by mistake	
Barrier bags	Support from industry, local government, community and not-for-profits	Community requested that timelines be accelerated	Community and industry confusion over definition of barrier bags	Industry and local government strongly supported an exemption for compostable barrier bags	Community and not-for-profits requested the ban include pre-packaged produce	Industry was concerned that food safety legislation contradicts the ban	Industry submissions were concerned about increased labour costs and costs of alternatives	Community and not-for-profit cited the positive impact of the ban on litter	Industry and community submissions expressed concern over food safety and contamination	Not-for-profits, community and industry submissions requested support for businesses to transition to alternatives	Not-for-profits, community and industry requested widespread behaviour change campaigns

Theme items	Support for ban	Proposed timelines	Scope clarity	Reduce scope	Expand scope	Other legislation	Financial impacts	Environmental impacts	Health impacts	Support needed	Education needed
								Industry cited a greater environmental impact of alternatives		Community and industry submissions highlighted the need for suitable alternatives	
		Industry requests more time				Community was concerned that food safety legislation should allow for bring-your-own (BYO) alternatives	Community submissions said that cost is not an excuse	Industry, not-for-profits and community submissions were concerned over the use of other plastic items instead (e.g. glove)	Industry, community and not-for-profits noted concerns over a shift to pre-packaged produce and impacts on health	Community and industry submissions highlighted difficulties in creating uptake of BYO containers	Community and industry requested education on alternatives
										Community submissions highlighted the need to make it easy for customers	
										Community submissions requested more availability of loose produce	
Lids for takeaway food containers	Support from industry, local government, community and not-for-profits	Industry requests more time	Industry, not-for-profits and community were confused whether containers and lids were included in the ban	Industry requested exemptions for bakery trays, sushi trays and sandwich wedges	Community submissions requested pre-packaged food be included in the ban	Industry requested the ban align with NPTs to allow recyclable packaging	Industry and community submissions expressed concerns about the increased cost to consumers	Community submissions were concerned that compostable alternatives are still single use.	Industry commented on the presence of polyfluoroalkyl substances (PFAS) in compostable alternatives	Community support for government to assist in scaling up reusable container network schemes	Community and industry requested education on alternatives
							Industry submissions highlighted an increased cost of packaging			Community and industry requests to support businesses to access affordable alternatives	
							Industry and community were concerned about the on-premises/off-premises divide	Industry and community were concerned that retailers will shift to packaging off premise,		Community submissions requesting businesses allow BYO containers	Community and industry requested best practices for BYO and

Theme items	Support for ban	Proposed timelines	Scope clarity	Reduce scope	Expand scope	Other legislation	Financial impacts	Environmental impacts	Health impacts	Support needed	Education needed
							and difficulties for smaller businesses	increasing packaging		Community submissions requesting the business to supply alternatives	reusable containers
					Not-for-profit and community submissions requested a ban on industrially compostable alternatives		Industry submissions were concerned about the lack of transparent packaging either reducing sales or increasing labour costs	Industry submissions were concerned over increased food waste and reduced shelf life of products	Community and industry commented on food safety implications if no lid is provided	Community requests for food delivery services to receive support to transition	Community requested education on safety of reusables
										Community requests for wider access to FOGO and not-for-profit requests for clarity on acceptance in FOGO	
Hot beverage cups & lids	Support from industry, local government, community and not-for-profits	Community support to accelerate timelines	Industry and not-for profits felt scope is clear	Industry requested exemptions for recyclable cups	Community support for all exemptions to be removed	Local government commented that some cafes are only licensed for takeaway	Not-for-profits and industry were concerned that reusables cost more	Community, industry and not-for-profits expressed concern that industrially compostable plastics do not break down in landfill or the environment	Not-for-profit and industry were concerned about the presence of PFAS in compostable alternatives	Community, local government, not-for-profits and industry agree that reuse schemes need to be incentivised and supported	Community, local government and not-for-profits agree that education and promotion of reuse schemes is important
		Some Industry support for proposed timelines	Community felt there would be confusion over what is and is not allowed	Industry and not-for-profits requested lined paperboard lids be exempt	Community and not-for-profits requested a ban on compostable cups	Industry requested the ban align with NPTs	Industry was concerned about supply chain issues	Community, industry, local government and not-for-profit submissions were concerned that compostable alternatives are still single use	Industry and community were concerned about a higher risk of burns with fibre-based lids	Industry, community and not-for-profits agreed that better composting infrastructure is needed to support the shift to compostable	General education including labelling, signage and environmental and health impacts was requested
		General industry requests for more time	Industry requested more clarity on certification of inks and stickers				Industry was concerned that single-use alternatives cost more				Community strongly supported promotion and support of BYO cups
EPS cups and EPS food and	Support from industry, local government, community and not-for-profits	Community and not-for-profits support timeframes	Industry felt it is unclear if EPS trays can be used for frozen	Industry requested exemption for EPS protective	Community and not-for-profit support for pre-packaged food	Not-for-profits noted that NPTs phase-out for EPS was	Industry was concerned about the cost to transition	Not-for-profits noted that EPS is a ubiquitous item on WA beaches	Community noted the health impacts of polystyrene	Community and local government agreed that better	Community requested education and transparency on the material

Theme items	Support for ban	Proposed timelines	Scope clarity	Reduce scope	Expand scope	Other legislation	Financial impacts	Environmental impacts	Health impacts	Support needed	Education needed
beverage packaging			seafood products	sleeve around perishable fruit	be included in the ban	scheduled for 2022				infrastructure is needed to support the shift to alternatives (recycling & composting)	
					Community requested PET alternatives be included in the ban					Community submissions requested businesses allow BYO containers	Community requested education on the human health impacts of polystyrene
										Community, industry and not-for-profits request financial support for businesses to transition to alternatives	
		Industry requests for more time			Not-for-profits requested business-to-consumer packaging boxes be included in the ban if no cold chain issue	Industry requests that the ban adheres to NPTs – addressing any non-compliant parties at end of 2025	Local government notes that the ban will have a positive impact on recycling			Community requested support for reuse schemes	Community and industry requested general education and advertising including information on alternatives
										Community requested to support businesses to access affordable alternatives	
Microbeads	Support from industry, local government, community and not-for-profits	Community requested the ban happen ASAP	Few comments	Industry requested the scope is defined by item not material	Not-for-profits and community requested the scope is expanded and exemptions removed	Industry commented the ban aligns with other legislation	Few comments	Few comments	Few comments	Community requested labelling is regulated	Community requested education on the health and environmental impacts of microbeads
Cotton buds	Support from industry, local government, community and not- for-profits	Community requested the ban happen ASAP	Industry felt it was unclear whether Rapid Antigen Test swabs and cotton buds (or just the shaft) were included in the ban	Few comments	Not-for-profits and community requested the scope be expanded and exemptions removed	Industry commented the ban aligns with other legislation	Few comments	Few comments	Few comments	Industry requested more transparency of materials	Community requested general education

Note: Green cells indicate themes that received support from groups that typically hold opposing views. Red cells indicate large number of responses indicating support for the theme.

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 20 summarises the key points (other than support for the ban) that were raised through the consultation. In response to the comments the table also proposes any changes to the scope or timing of the ban and complementary policies that would maximise the benefits of the ban while reducing the negative impact on stakeholders.

Appendix C sets out a summary of the submissions made about each of the items included in the proposed Stage 2 ban as well as the department's response to queries and concerns raised.

Outcomes of the consultation

The consultation found that the Stage 2 statewide ban of single-use plastics was overwhelmingly supported.

While some concerns were raised about elements of the proposed ban, the department considers that these concerns can be managed by:

- supporting the statewide ban with complementary measures such as education campaigns
- clarifying the scope of the ban and relevant exemptions for some products
- adjusting the timing for the introduction of the ban for some products.

Table 20 Summary of consultation outcomes and identified complementary measures.

Group	Item	Key points from stakeholder consultation	Recommended Policy Action	Recommended complementary measures
Fragmentable plastics (group 1)	Loose-fill EPS packaging and other expanded plastic equivalents including EPE, EPP and bioplastic EPS	• Confusion over the regulatory scope • Understanding what is expanded plastic and finding genuine alternatives • Proposed regulatory timeframe falls after APCO voluntary 100 per cent phase-out date of December 2022	• No change to loose-fill EPS scope • No change to proposed six-month loose-fill EPS phase-out timeframe	• Targeted retail/supply sector support and education
	Moulded EPS packaging and other expanded plastic equivalents including EPE, EPP and bioplastic EPS	• Timeframe too short as voluntary phase-out still occurring in 2024–25 • Clear definitions needed for exempt fragile and precision products aligned with APCO • Proposed regulatory timeframe is out of alignment with APCO's moulded EPS roadmap with 80 per cent voluntary phase-out by December 2023 and 100 per cent by July 2025	• No change to moulded EPS scope except to clarify that foamed wraps and sleeves not within scope • Amend proposed 18-month timeframe for moulded EPS to 28 months to align with APCO's July 2025 timeframe	• Targeted retail/supply sector support and education
	Degradable plastic, including oxo-degradable and landfill degradable	• Lack of awareness of all degradable plastic applications	• No change to the scope • No change to proposed six-month phase-out timeframe	• Community and retailer education
Single-use plastics for food (group 2)	EPS cups and EPS in food and beverage packaging	• No identified barriers to banning these items • Support to extend the ban to pre-packaged EPS food items (e.g. supermarket shelf items)	• No change in scope • No change to proposed six-month phase-out timeframe	
	Produce/barrier bags	• Deli counter adaptation to alternatives may be difficult because of contamination issues and oily produce • Shelf-life concern for wet or leafy produce • Paper bag suits over-the-counter service and self-serve model, but not pre-packed items for display • Compostable plastic bags helpful for FOGO home caddies	• The scope of barrier bag ban to be reduced to apply only to fruit and vegetables • No change to proposed 12-month phase-out timeframe	• Community and retailer education, behavioural education campaign on BYO bags
	Hot beverage/soup cups – takeaway 'coffee' cups Lids for disposable hot and cold cups	• Understanding alternatives and their permitted linings • Achieving Australian standard (AS) composting certification for disposable cups • Inadequacy of waste collection services and composting infrastructure to deal with banned items and clarity of community waste messaging	• No change to policy scope • No change to proposed 12-month phase-out timeframe	• Retailer education and training on alternatives and handling reusables and BYO • Education to improve awareness on waste stream sorting and collection options for business. • Seek legal advice on whether to remove business liability for BYO containers and cups (as done in South Australia) • Work with Waste Authority and industry on FOGO processing
	Lids for takeaway food containers, trays, plates and bowls	• Non-plastic lids limit transparency of packaging and viewing of the food which may impact sales • Potential for leakage from non-plastic disposable packaging • Definitions are not clear for the application of the ban • Ban captures non-takeaway containers where food may be stored and not eaten immediately after purchase • Risk to businesses from contaminated BYO containers	• Scope of ban to be reduced to ordered takeaway containers only • Scope of ban to not apply to permit plastic lids on pre-packed foodware • Timeframe to be extended from 12 months to 18 months to allow business to adapt	• Community and retailer education, behavioural education campaign on handling waste and BYO items • Seek legal advice on whether to remove business liability for BYO containers and cups (as done in South Australia)

Group	Item	Key points from stakeholder consultation	Recommended Policy Action	Recommended complementary measures
	Unlidded trays	• Confusion around scope of containers included in the ban	• Clarify the scope of the ban (focus is on single-serve food presented in a readily consumable format) • Proposed 12-month phase-out for containers	• Community and retailer education, behavioural education campaign on handling waste and BYO items
Small or microplastics (group 3)	Microbeads	• National voluntary actions achieved about 96 per cent phase-out. WA ban will capture remainder • Scope too narrow and does not improve on previous national voluntary actions • The national phase-out was limited to cleaning and personal care applications. Microbeads are also used in industrial and non-rinse-off settings	• No change in scope • No change to proposed six-month phase-out timeframe	• Community and industry education on avoiding microbead use in non-banned product applications
	Plastic-stemmed cotton buds	• Scope does not capture synthetic cotton • Scope too limited to restrict all medical, scientific, and forensic uses	• Amend scope to allow plastic-stemmed cotton buds where part of a kit or if there is no other viable alternative • No change to proposed six-month phase-out timeframe	• Retailer and industry specific education

6 Implementation

6.1 What and when

The amended Environmental Protection (Prohibited Plastics and Balloons) Regulations 2018 will be tabled in the WA Parliament in early 2023 and the Stage 2 single-use plastics ban will start on a staggered timeframe reflected in Table 21 below.

Table 21 Commencement schedule

Group	Single-use plastic type	Planned phase-out timing (date)	Planned phase-out timing (lead time)
Fragmentable plastics (group 1)	Loose-fill EPS packaging	1 September 2023	Six months after the regulations start
	Moulded EPS packaging	1 July 2025	28 months after the regulations start (to align with APCO's timeframe)
	Degradable plastics designed to fragment	1 September 2023	Six months after the regulations start
Single-use plastics for food (group 2)	EPS cups and food and packaging	1 September 2023	Six months after the regulations start
	Produce/barrier bags	1 March 2024	12 months after the regulations start
	Hot beverage/soup cups - takeaway coffee cups	1 March 2024	12 months after the regulations start
	Lids for disposable hot and cold cups	1 March 2024	12 months after the regulations start
	Lids for disposable bowls, takeaway food containers, plates and trays	1 September 2024	18 months after the regulations start
	Trays	1 March 2024	12 months after the regulations start
Small or microplastics (group 3)	Microbeads	1 September 2023	Six months after the regulations start
	Plastic-stemmed cotton buds	1 September 2023	Six months after the regulations start

6.2 How the preferred option would be implemented and enforced

The department recognises that the proposed changes will require a phase-in period and that some retailers may not be fully aware of the changes despite the extensive consultation. For this reason, the department proposes to implement the bans in a phased approach that was developed in consultation with industry. In addition, the

department's focus will be on educating and assisting industry during the first few years of the ban.

Education and assistance approach

Stage 2 is being supported through a Plastic Free Places program delivered by the Boomerang Alliance and a comprehensive supplier and retailer education and engagement program, as well as community education programs coordinated by the department.

6.3 Review of the regulations

The Environmental Protection Act includes a provision for a review every five years. In addition, the Minister can review and/or amend the regulations at any time. This allows alignment with any multi-jurisdictional review of restrictions on single-use plastics.

The department plans to undertake a full review of the Stage 2 single-use plastics ban within five years of its implementation. The review would evaluate the ban and consider the need for adjustments or amendments to the scope of the ban based on feedback from the full range of stakeholders. The review would consider:

- the effectiveness of the ban – whether the proposed objectives are being achieved, whether there have been any unintended consequences, and/or the status of monitoring compliance
- lessons learnt from the implementation processes to help with efficiency of any future bans relating to plastics or other products.

To better understand the full range of economic impacts, a full review could also include a formal economic review. In many cases, this would be a preferred option as it helps quantify many of the unknowns in terms of the impacts described in the above sections.

Evaluation and review of the Stage 2 regulation implementation will include continued monitoring of consumption and litter generation. This information will confirm whether the ban is having the desired effect. Data will reveal community trends and attitudes toward purchases and consumption of sustainable single-use alternatives. Monitoring can also include national usage, the effects on distributors and retailers, and market behaviour to inform an understanding of market impacts.

Appendix A – Definition of proposed products

Group 1 fragmentable by design or construction plastics

Expanded polystyrene (EPS), expanded plastics and degradable plastics (also known as fragmentable plastic) contaminate kerbside waste collections, are unable to be recycled, and have a high impact when littered because of their fragmentable nature.

Under the National Plastics Plan 2021, the Australian Packaging Covenant Organisation (APCO) has identified these plastics as part of a group of problematic and unnecessary single-use plastic packaging types for immediate action and set a target to phase out problematic and unnecessary single-use plastic packaging by 2025 (APCO, 2020).

In addition, the Australian Government has set interim targets through the National Plastics Plan, including roadmaps for industry-led phase-outs of:

- EPS loose-fill packaging and moulded product packaging fill by June 2022
- EPS consumer food and beverage service containers by December 2022
- plastic packaging products with additive fragmentable technology that do not meet relevant compostable standards by December 2022.

Expanded plastic/polystyrene packaging

EPS packaging in a loose-fill (void fill, e.g. ‘peanuts’) and a moulded form are used for product-packaging applications from business to business and business to consumer. Aligned with APCO’s targets, the proposed phase-out targets the latter. They also acknowledge that other similar expanded plastic packaging products like expanded polyethylene (EPE) and expanded polypropylene (EPP) are not appropriate alternatives because they are even more problematic to recycle than EPS and similarly litter prone. Most applications have single-use or reusable alternatives with similar functionality already in use by product manufacturers.

EPS packaging is in use by both local product manufacturers and suppliers and is imported with goods from interstate or overseas manufacturers or by suppliers to WA retailers. Banned items under the Prohibited Plastics Regulations would include imported goods bought by a customer from a WA retailer or an interstate or international manufacturer or supplier via an online purchase.

The following table identifies EPS packaging that would be included in the proposed ban.

Table 22 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• EPS loose-fill packaging (void or cushioning packaging) • Other EPS-like foamed plastics loose fill used for packaging that serve a similar function to EPS	• Moulded packaging for fragile and precision products. • Products over 45 kg in weight • Business-to-business applications include transportation of fresh or frozen produce such as fish, meat, fruit and vegetables between businesses or specialist packaging such as medical applications with transporting organs or pharmaceuticals
• EPS moulded packaging for light product protection (below 45 kg) • Other EPS-like foamed plastics used for packaging that serve a similar function to EPS	
Note: EPS packaging for food and beverage items is also to be phased out and is listed under single-use food and drinkware items.	

Source: DWER policy advice, 2023 (unpublished)

Degradable plastics designed to fragment

Oxo-degradable and other degradable-type plastics have become a concern as our understanding of microplastics and plastic additives has grown. The additives themselves can undermine their recyclability and their 'degradable' label causes confusion and subsequent waste stream contamination. Jurisdictions in Australia and Europe are now moving to address this problematic plastic in products and packaging through regulations and education. All these plastic types will be included in the ban (Table 23).

Table 23 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• All degradable plastics with an additive designed to cause the plastic to break up into fragments more rapidly under certain conditions • Includes any degradable plastic items in Stage 1 or 2 regulations	Nil identified

Source: DWER policy advice, 2023 (unpublished)

Group 2 single-use plastic food and beverage items

EPS cups and food and packaging

EPS is used in disposable cups, in food packaging typically for serving meat, fish or sushi, and in pre-packaged noodle cups. It is also used at market stalls where baked goods are pre-packaged on EPS trays. Table 24 identifies the different EPS products to be included in the proposed ban.

Table 24 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• EPS 'foam' cups for food and beverage packaging, dine-in or takeaway • All remaining EPS trays not covered in the Stage 1 ban	• Pre-packaged EPS cups and bowls holding non- perishable 'instant' type meals found on supermarket shelves, such as instant noodle cups • Business-to-consumer packaging boxes for cold chain home delivery boxes and pre-prepared meals

Source: DWER policy advice, 2023 (unpublished)

Produce/barrier bags

Produce bags, also called barrier bags, are the 'soft' plastic bags without handles used to carry unpackaged perishable and non-perishable food. They are typically, but not always, offered by retailers on rolls that customers or staff rip off and use to pack fresh produce offered at shelves or bread racks, behind deli counters or from dry bulk produce bins. Some barrier bags are outside the scope of the ban (Table 25).

Table 25 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• Loose fruit and vegetables	• Bread and bakery products, dairy servings such as cheeses • Cold cured meats such as ham and salami • Self-serve bulk produce such as cereals, nuts and confectionery • Where necessary to meet Food Standards requirements such as to manage the risk of contamination or leakage from raw, fresh or non-cured meat or fish • Pre-packaged produce packaged off the premises in bags including 'grape bags' (unsealed bags with handles used for packaging perishable products offered as a whole item on shelf)

Source: DWER policy advice, 2023 (unpublished)

Hot beverage/soup cups/takeaway 'coffee' cups

The takeaway coffee cup is a high-volume item in use, combining WA's love of coffee and the freedom to move. However, these are lined with plastic to allow them to contain liquids. These coffee cups cannot be recycled through the yellow-topped kerbside recycling bin and are a common contaminant of recycling streams.

Some plastic-lined takeaway cups have been manufactured to enable them to be down-cycled through a specialised process. It requires the cup to be deposited in a specific collection bin which can pose problems for such a takeaway item, which is typically walked away from the retailer. Such schemes do not support the preferred behaviour to use reusable cups.

Reusable hot cup schemes are also underway in WA and the adoption of these by retail businesses and consumers will greatly assist the transition away from the single-use plastic coffee cup.

Some paperboard takeaway cups are lined with polylactic acid (PLA; a bioplastic) and are certified compostable to the AS 4736-2006. These cups can return to soil via a hot industrial composting facility through food organics and garden organics (FOGO) bins for households with this kerbside service. Large volumes of these cups will cause issues for FOGO composters in the short term but ultimately it will produce a clean stream of cups for biological cycling. When littered, these cups should not persist in the environment long-term, unlike non-AS certified compostable plastic-lined paperboard cups. Therefore, these cups are not included in the scope of the ban (Table 26).

Table 26 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• Disposable plastic-lined coffee cups with or without lids	• Polymer-lined paperboard cups that are certified to the Australian composting standards

Source: DWER policy advice, 2023 (unpublished)

Lids for disposable hot and cold cups

When evaluating stakeholder feedback to finalise the regulations for Stage 1, the decision about phasing out lids for disposable cold cups was deferred to Stage 2 because of the complexity of issues raised and to provide industry with additional time to develop alternative options.

In addition to the issues raised earlier in this document, lids for any allowed single-use cups must be compatible with the disposal options anticipated for the cups. As non-plastic fibre-based cup lids are already in use and available, it is anticipated that any lids containing plastics will be banned (Table 27).

Issues with plastic-lined lids include:

- Bioplastics certified as compostable (e.g. PLA and Polyhydroxyalkanoate [PHA]) can significantly impact existing polyethylene terephthalate (PET) recycling processes because they are visually indistinguishable from PET and chemically contaminate PET at low concentrations. This could be a significant issue if such bioplastic lids were disposed of through yellow-top bins.
- When littered in the environment they persist and fragment like conventional plastics.

There is some industry concern that the alternative non-plastic products do not function adequately, particularly for hot beverages; however, some fibre-based products have heat tolerances of up to 120°C and are in use by businesses without any health or safety concerns.

Table 27 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• Lids for hot and cold beverage cups which are made partly or wholly from plastic, including plastic-lined paperboard	• Nil identified

Source: DWER policy advice, 2023 (unpublished)

Lids for disposable bowls, plates, trays and takeaway food containers

Lids for any allowed single-use containers must be compatible with the disposal options anticipated for the container. As non-plastic fibre-based lids are already in use and available, it is proposed that any lids containing plastics will be banned.

Issues with plastic-lined lids include:

- Bioplastics certified as compostable (e.g. PLA and PHA) can significantly impact existing PET recycling processes. This is because they are visually indistinguishable from PET and chemically contaminate PET at low concentrations. This could be a significant issue if such bioplastic lids were disposed of through yellow-top bins
- When littered in the environment they persist and fragment like conventional plastics.

There is some industry concern that the alternative non-plastic products do not function adequately particularly for hot foods; however, some fibre-based products have heat tolerances of up to 120°C and are in use by businesses without any health or safety concerns. A final concern raised was on the impact on shelf life of food (both in store and once at home) if the lid-container seal is not airtight.

Table 28 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• Lids for disposable bowls, plates, trays and food containers • Coupled with the Stage 1 ban on containers, bowls, plates, containers and lids will both be banned • Focus the ban on food presented in a readily consumable format, and not pre-prepared food)	• Plastic-lined paperboard bowl lids and takeaway food container lids certified to Australian composting standards AS 4736:2006 and/or AS5810:2010 • Lids on food containers and bowls for catering (multiple servings presented in the one container) and where further preparation is required/food is not presented in a ready-to-consume meal form

	•

Source: DWER policy advice, 2023 (unpublished)

The inclusion of lids in Stage 2 impacts on containers with lids – that were exempt in Stage 1 (Table 28).

Containers with lids

Under the Stage 1 ban single-use plastic containers without lids were banned. The inclusion of lids (listed above) brings the containers into the ban too.

It is worth considering these separately although they may not be listed separately in the regulations.

This will cover a broad range of products made from plastics including square or cylindrical containers, bowls and trays.

The scope is constrained by the lids scope above (the focus is on takeaway containers) and there are exemptions for catering (multiple servings presented in the one container) and where further preparation is required/food is not presented in a ready to consume meal form (Table 29).

Table 29 Items inside and outside the scope of the ban

Inside scope – proposed for regulation	Out of scope – not proposed for regulation
• Takeaway food that is presented as a single serving in a ready-to-eat container	• Catering (multiple servings presented in the one container) • Where further preparation is required/food is not presented in a ready-to-consume meal form

Source: DWER policy advice, 2023 (unpublished)

We note that some containers may fall under the ban or under the exemptions based on their use.

For example, polypropylene microwavable containers may or may not be banned and some examples are shown in Table 30.

Table 30 Examples of containers with lids falling within or outside the ban

Source	Use	Banned	Logic
Supermarket or deli counter	Olives/dips/cheeses	No	Further preparation is required
Takeaway lunch bar	Fried rice/lasagne/etc.	Yes	Takeaway food that is ready to be consumed and not pre-prepared
Restaurant	Left over portion of meal ‘doggy bag’	Yes	Takeaway that is ready to be consumed

Source: Marsden Jacob analysis based on discussions with DWER, 2023 (unpublished)

Group 3 small or microplastics

Microbeads

In 2016, environment ministers across Australia agreed to support a voluntary industry phase-out for plastic microbeads found in rinse-off personal care, cosmetic and cleaning products sold in Australia. The voluntary phase-out was led by Accord Australasia (Accord) and overseen by the Australian Government Department of Climate Change, Energy, Environment and Water and the NSW Environment Protection Authority (BeadRecede, 2022). These items were identified because of the high risk for pollution; they readily enter the wastewater system and wastewater treatment plants are not able to remove these contaminants.

The voluntary phase-out through the BeadRecede campaign has been largely successful for these products. An independent assessment of these products in 2020 (RSPCA, 2022) found that:

- of about 8,100 unique products inspected, 99.3 per cent were microbead-free
- for the 0.7 per cent of products containing microbeads, facial scrubs, facial cleansers and face masks were the most common product types using microbeads as an ingredient
- there were no microbeads present in cleaning products or in oral hygiene products surveyed, such as mouthwash and toothpaste.

Table 31 identifies those items that will be included in the proposed ban.

Table 31 Items inside and outside the scope of the ban

In scope – proposed for regulation	Out of scope – not proposed for regulation
• Cleaning products in commercial, industrial and residential settings including indoor and outdoor applications • Hair-care products – colour dye, shampoo and conditioner, shaving cream and styling including hair sprays, styling gels, styling pastes and similar • Oral hygiene – mouthwash, toothpaste, tooth-whitening products • Skincare products – hand cleaner, body wash/scrub such as cleansers and exfoliants and facial scrubs, cleansers and masks	• ‘Wash-off’ products such as sunscreen ‘wipe-off’ makeup products • Leave-on personal care products such as moisturisers, deodorants, makeup and lipsticks • Printing applications – printer toners, textile printing • Craft glitter • Microbead products in industrial and medical applications (with the exception of cleaning products)

Source: DWER policy advice, 2023 (unpublished)

Plastic-stemmed cotton buds

Given the widespread availability of cotton buds with compostable stems, the State Government proposes a ban that eliminates this single-use plastic product, except where its properties are essential.

This includes degradable plastic and bioplastic materials because cotton buds are a littered item in the environment and not effectively screened out by wastewater treatment.

Plastic-stemmed cotton buds may be required for medical, scientific, forensic and law-enforcement purposes, such as swabs for testing or gathering and retaining long-term evidence. In these cases, the rigid, inert properties can be essential. Cotton buds required for these purposes will not be included in the ban (Table 32).

Table 32 Items inside and outside the scope of the ban

In scope – proposed for regulation	Out of scope – not proposed for regulation
• Plastic-stemmed cotton buds for general use	• Cotton buds and swabs for medical, scientific, forensic and law enforcement purposes

Source: DWER policy advice, 2023 (unpublished)

Appendix B – Cost-benefit analysis

Cost-benefit analysis for group 1 items (fragmentable by design or construction plastics)

The quantified cost-benefit analysis (CBA) for items as part of the group 1 (fragmentable by design or construction) plastics was conducted on moulded and loose EPS packaging and dog waste bags and bin liners. These items were chosen as practical examples of degradable plastics in everyday use.

As only some forms of intervention were considered to be appropriate for these products, options 1, 5, and 6 were considered for moulded and loose-fill EPS packaging (Table 33). Options 1, 2, 5, and 6 were considered for degradable plastics (Source: Creational Consulting, 2022 [Unpublished]) (Table 34).

Table 33 Loose-fill and moulded packaging CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-3097.63	3297.71	200.08	153.23	0.00	1.06
Statewide ban	-735.35	762.15	26.81	24.79	-128.44	1.04
Voluntary agreements	-2172.77	2288.81	116.04	91.16	-62.07	1.05

Note: NPV stands for net present value
Source: Creational Consulting, 2022 (Unpublished)

Table 34 Degradable bin liners and dog waste bags CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-179.7	189.1	9.4	7.1	0.00	1.05
Education/ behaviour change	-182.4	191.7	9.2	6.9	-0.2	1.05
Statewide ban	-185.5	200.5	15.1	11.5	4.4	1.08
Voluntary agreements	-198.2	195.5	-2.7	-2.2	-9.3	0.99

Source: Creational Consulting, 2022 (Unpublished)

CBA for group 2 items (single-use plastic food and beverage items)

The items used in the CBA for the group 2 items are bowls and cold cups lids, coffee cups and lids, and produce bags. The other items that are subject to the ban such as

EPS cups, hot beverage cups were considered in the existing CBA done for Stage 1 ban. All six policy options have been considered for this group and the results for the items relevant to the Stage 2 ban are shown in the tables below.

Table 35 EPS trays for meat, seafood, and fresh produce CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-17.11	18.29	1.18	0.89	0.00	1.07
Education/ behaviour change	-19.53	20.95	1.42	1.08	0.19	1.07
Incentivise alternatives	-21.43	23.09	1.66	1.27	0.37	1.08
Distributor levy	-137.42	133.12	-4.30	-3.27	-4.17	0.97
Statewide ban	-24.09	26.16	2.06	1.59	0.70	1.09
Voluntary agreements	-17.65	18.98	1.33	1.02	0.12	1.08

Source: Creational Consulting, 2022 (Unpublished)

Table 36 EPS cups CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-81.76	87.97	6.21	4.70	0.00	1.08
Education/behaviour change	-86.37	84.12	-2.25	-2.30	-4.00	0.97
Incentivise alternatives	-79.06	73.39	-5.66	-5.20	-6.91	0.93
Distributor levy	-168.96	146.00	-22.96	-19.43	-21.14	0.86
Statewide ban	-43.13	47.34	4.21	2.83	1.12	1.10
Voluntary agreements	-82.47	68.47	-14.01	-10.98	-12.68	0.83

Source: Creational Consulting, 2022 (Unpublished)

Table 37 Lids for cups, bowls and containers CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-127.47	133.96	6.49	4.92	0.00	1.05
Education/ behaviour change	-138.31	134.27	-4.04	-3.66	-8.58	0.97
Incentivise alternatives	-144.23	131.58	-12.64	-10.48	-15.39	0.91
Distributor levy	-283.43	256.38	-27.04	-22.56	-27.48	0.90
Statewide ban	-79.76	85.40	5.64	3.42	-1.50	1.07
Voluntary agreements	-125.99	116.30	-9.69	-7.80	-12.72	0.92

Source: Creational Consulting, 2022 (Unpublished)

Table 38 Coffee cups/lids CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-556.04	587.30	31.26	23.83	0.00	1.06
Education/ behaviour change	-563.32	584.53	21.21	15.64	-8.19	1.04
Incentivise alternatives	-550.18	565.31	15.13	10.96	-12.87	1.03
Distributor levy	-2459.01	2374.42	-84.59	-66.68	-90.52	0.97
Statewide ban	-347.42	371.67	24.25	18.56	-5.27	1.07
Voluntary agreements	-473.39	486.19	12.80	9.62	-14.21	1.03

Source: Creational Consulting, 2022 (Unpublished)

Table 39 Barrier bags CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-43.44	46.36	2.92	2.23	0.00	1.07
Education/ behaviour change	-52.92	44.77	-8.15	-6.89	-9.12	0.85
Incentivise alternatives	-56.34	40.68	-15.65	-12.79	-15.02	0.72
Distributor levy	-377.09	338.11	-38.99	-31.70	-33.93	0.90
Statewide ban	-35.49	28.53	-6.96	-6.07	-8.30	0.80
Voluntary agreements	-53.06	38.35	-14.70	-11.58	-13.81	0.72

Source: Creational Consulting, 2022 (Unpublished)

CBA for group 3 items (small or microplastics)

The CBA for the group 3 items only considered cotton buds with plastic stems, and results are presented in Table 40. Microbeads were not considered for the CBA for two reasons. Firstly, the data on microbeads is scarce and hard to quantify. Secondly, phasing out of microbeads is already undertaken voluntarily at an industry level across the state. Therefore, there will be minimum costs associated with the ban.

Table 40 Cotton buds with plastic stems CBA results

Policy	Cost impact	Benefit impact	Net impact	NPV – 20 years	NPV to base case	Cost-benefit ratio
Status quo	-22.25	22.79	0.53	0.41	0.00	1.02
Education/ behaviour change	-15.55	5.36	-10.19	-8.21	-8.62	0.34
Incentivise alternatives	-19.92	-2.34	-22.26	-17.56	-17.97	0.12
Distributor levy	-48.07	20.18	-27.89	-23.10	-23.51	0.42
Statewide ban	-13.72	-7.27	-20.99	-16.78	-17.18	0.53
Voluntary agreements	-22.90	2.58	-20.32	-15.74	-16.15	0.11

Source: Creational Consulting, 2022 (unpublished)

Appendix C – Summary of written submissions

The written submission has been separated into three groups as set out in the beginning of this document. Summaries of each of the group is provided below.

Summary of written submissions on group 1 products

Table 41 Summary of written submissions on expanded plastic/expanded polystyrene (EPS) packaging

Theme	Submission group	Summary of comment	Department response
Support ban	Not-for-profit, local government, industry	Support the ban	The Department of Water and Environmental Regulation (the department) proposes to: • progress with ban • not change the loose-fill EPS scope • not change the proposed six-month loose-fill EPS phase-out timeframe • not change the moulded EPS scope except to clarify that foamed wraps and sleeves are not within scope • amend proposed 18-month timeframe for moulded EPS to 28 months to align with the Australian Packaging Covenant Organisation's (APCO) July 2025 timeframe
Timeframes	Industry	Need more time or non-compliant stock will be landfilled	
	Not-for-profit	Timeframes are appropriate	
Alternatives	Not-for-profit	Alternatives exist but a ban on existing EPS is needed for these to be used at scale	
	Industry	No alternatives available	
Unclear scope	Industry	Unclear if veterinary pharmaceutical packaging will be in scope or out of scope	
	Industry	Unclear definitions of fragile and precision products	
	Industry	Unclear if the ban applies to drop-ship-vendor arrangements	
	Not-for-profit	Unclear if the ban applies to imported products	
Expand scope	Not-for-profit	End exemptions in 2025	
	Not-for-profit	Include business to business applications	
Reduce scope/ proposed exemptions	Industry	Exempt large TVs from the ban	
Other legislation	Industry	The ban aligns with other legislation	
Business impacts	Industry	Higher risk of breakage without EPS	

	Industry	Business will need to change packaging nationwide	• provide targeted retail/supply sector support and education (both loose-fill and moulded EPS)
Consumer impacts	Industry	Reduced availability of affordable homeware	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 42 Summary of written submissions on degradable plastics

Theme	**Submission group**	**Summary of comment**	**Department response**
Support ban	Industry, local government, community, not-for-profit	Support the proposed ban	The department proposes to: • progress with ban • not change the scope • not change the proposed six-month phase-out timeframe • provide community and retailer education
Scope	Not-for-profit, local government	Support scope	
	Industry	Include agricultural plastics	
	Not-for-profit	Unclear if oxo-degradable masterbatches/additive mixes banned	
	Industry	Define items rather than material	
	Local government	Exempt dog poo bags	
	Not-for-profit	Do not exempt dog poo bags	
Other legislation	Industry and not-for-profit	Align with National Plastics Plan, phase out by July 2022	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Summary of written submissions on group 2 products

Table 43 Summary of written submissions on EPS food and drink containers

Theme	Submission group	Summary of comment	Department response
Support ban	Not-for-profit and industry	Support ban	The department proposes to: • progress with ban • no change the scope • no change the proposed six-month phase-out
Support scope	Industry	Support scope	
Expand scope	Not-for-profit	Ban EPS business to consumer packaging boxes if no cold chain issue	
	Not for profit	Ban pre-packaged EPS food packaging	
Reduce scope/ proposed exemptions	Industry	Exempt EPS protective sleeve around perishable fruit	
Other legislation	Not-for-profit	National Packaging Targets (NPT) plan to phase out EPS packaging faster than WA ban	
	Industry	NPTs address non-compliant parties at the end of 2025	
Infrastructure	Local government	Positive impact on recycling	
Timeframes appropriate	Not-for-profit	Timeframes appropriate	
Timeframes inappropriate	Industry	Farmers may need more than six months to find alternatives	
Other policy instruments	Industry	Provide financial support for transition	
	Local government	Product stewardship to ensure alternatives are recyclable	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 44 Summary of written submissions on barrier bags

Theme	Submission group	Summary of comment	Department response
Support ban	Not-for-profit, local government, and industry	General support for ban, often qualified with proposed exemptions ("I support the ban so long as it doesn't affect my business").	The department proposes to: • progress with ban • clarify the reduced scope of barrier bag ban to apply only to unpackaged or loose fruit and vegetables • provide community and retailer education and behavioural education campaign on bring-your-own (BYO) bags
Support scope	Not-for-profit	A ban on barrier bags is important and will result in a decline in litter.	
Unclear scope	Industry	Foil-lined paper bag – in scope or out of scope?	
	Industry	Bakery bags – in scope or out of scope?	
	Industry	Paper bags with plastic additives (e.g. mushroom bag) in scope or out of scope?	
Reduce scope/ proposed exemptions	Industry and local government	Exempt compostable barrier bags	
	Industry	Exempt ban on barrier bags for deli items (cheeses and seafood)	
	Industry	Exempt foil-lined paper bag	
	Industry	Exempt flower bags	
Alternatives are worse	Industry	Other plastic items will be used instead (e.g. glove instead of a barrier bag in deli items)	
	Industry	Paper alternatives are not recyclable and have a higher environmental impact.	
	Industry	Paper alternatives pose a food safety risk	
	Industry	Reusable alternatives have a higher environmental impact.	
	Industry	Reusable alternatives are not adopted by customers – they don't bring their own container	
	Industry	Reusable alternatives pose a food safety risk	
On-premises/off-premises	Not-for-profit	Include pre-packaged produce in the ban and support implementation	

		of alternatives to barrier bags	
	Industry	Businesses will shift to pre-packaged produce made off premise. This will increase the environmental impact while reducing access to affordable fresh produce.	
Other legislation	Industry	APCO NPTs contradict ban	
	Industry	Food safety requirements contradict ban	
Business impacts	Industry	Alternatives cost more money	
Behaviour change	Not-for-profit and industry	Support behaviour change to transition to reusable bags	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 45 Summary of written submissions on hot beverage cups

Theme	Submission group	Summary of comment	Department response
Support ban	Community, not-for-profit, industry, local government	Support ban	The department proposes to: • progress with ban • not change the scope • not change the proposed 12-month phase-out • provide retailer education and training on alternatives and handling reusables and BYO • provide education to improve awareness on waste stream sorting and collection options for business • seek legal advice on whether to remove business liability for BYO containers and
Certification	Industry	Enough time to certify	
	Industry	Not enough time to certify	
Clear scope	Industry and not-for-profit	Scope is clear	
Reduce scope/ proposed exemptions	Industry	Allow recyclable cups	
Expand scope	Community and not-for-profit	Phase out compostable cups	
Reuse scheme	Community	Reusable alternatives already exist	
	Not-for-profit	Need communications to drive reuse	
	Not-for-profit and industry	Government needs to support and incentivise reuse	
Alternatives are worse	Not-for-profit, local government, industry	Shift from one single-use to another is not an optimal outcome	

	Industry	Reusable options don't get reused enough	cups (as done in South Australia) • work with Waste Authority and industry on FOGO processing
	Industry and not-for-profit	Polylactic acid (PLA) unsuitable alternative	
	Not-for-profit	Polyfluoroalkyl substances (PFAS) in AS-certified paperboard cups	
Other legislation	Industry	Align with NPTs	
Business impacts	Industry	Alternatives cost more	
Infrastructure	Industry and not-for-profit	Composting infrastructure inadequate in WA to support shift to compostable	
	Industry	Infrastructure should support composting and recycling of coffee cups	
Labelling	Not-for-profit	Home compostable and industrial compostable labelling is an issue	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 46 Summary of written submissions on beverage lids

Theme	Submission group	Summary of comment	Department response
Support ban	Industry, local government, community, not-for profit	Support the proposed ban	The department proposes to: • progress with ban • no change the scope • not change the proposed 12-month phase-out • provide retailer education and training on alternatives and handling reusables and BYO • provide education to improve awareness on waste stream sorting and collection options for business • work with Waste Authority and
Support scope	Industry, local government, not-for-profit	Support the scope	
Clear scope	Industry and not-for-profit	Scope is clear	
Reuse scheme	Industry, local government, not-for-profit	Promote reuse	
Expand Scope	Industry	Regulate for PFAS	
Reduce scope/proposed exemptions	Industry and not-for-profit	Allow PLA-lined paperboard lids	
	Industry	Allow recycled PET (rPET) lids	
Alternatives are worse	Industry and not-for-profit	Alternatives contain PFAS	
	Industry	Higher risk of burns	
Other legislation	Industry	Align with NPTs	

	Industry	WA ban inconsistent – PLA allowed in some instances and not others	industry on FOGO processing
Business Impacts	Industry	Alternatives more expensive	
	Industry	Liability for burns, increased risk to business	
	Industry	Supply issues	
Infrastructure	Industry and not-for-profit	Recycling infrastructure already exists	
	Not-for-profit	Composting infrastructure doesn't match composting certification and can cause confusion	
Circular economy	Industry	Remove all single use	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 47 Summary of written submissions on lids for containers (including bowls and trays)

Theme	Submission group	Summary of comment	Department response
Support ban	Local government and industry	Support ban but note need for promotion of reusables	The department proposes to: • progress with ban • clarify the scope of the ban (focus is on single-serve food presented in a readily consumable format, and not pre-prepared food) • extend proposed phase-out to 18 months. • provide community and retailer education, behavioral education campaign on handling waste and BYO
Unclear scope	Not-for-profit	Unclear that lids and containers are banned	
	Industry	Unclear what constitutes a lid	
	Industry	Unclear where food delivery services intersect with the ban – if delivered to a customer's door, where is off-premises?	
	Industry	Unclear what constitutes reusability	
Expand scope	Not-for-profit	Don't allow lined paperboard because it does not break down in the environment	
	Industry	Prefer no ban; however, prefer a complete move to reusables than a shift from one disposable to another	

Reduce scope/proposed exemptions	Not-for-profit	Allow compostable plastics because they have better functionality than fibre-based alternatives	
	Industry	Allow recyclable packaging	
	Industry	Exempt bakery trays	
	Industry	Exempt sushi trays	
	Industry	Exempt sandwich wedges	
Alternatives are worse	Industry	Alternatives are not recyclable	
	Not-for-profit	Other plastics may be used to ensure a good seal – e.g. cling film	
	Industry	Contamination/hygiene/ food safety	
	Industry	Compostable alternatives can't be reused	
On-premises/off-premises	Industry	On-premises/off-premises rules are confusing for customers	
	Industry	Ban is easy to avoid by packing off-premises	
	Industry	On-premises/off-premises creates difficulties for smaller businesses	
	Industry	On-premises/off-premises creates difficulties for regional businesses	
Other legislation	Industry	Follow NPTs for plastic food lids and containers	
	Industry	Ensure retailers remain liable for food safety issues	
Business impacts	Industry	Increased cost of packaging	
	Industry	Food waste/reduced shelf life	
	Industry	Customers unable to see product, therefore won't purchase	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Summary of written submissions on group 3 products

Table 48 Summary of written submissions for microbeads

Theme	Submission group	Summary of comment	Department response
Support ban	Not -or-profit, industry, local government	Support ban	The department proposes to: • progress with ban • not change the scope • provide community and industry education on avoiding microbead use in non-banned product applications
Scope	Industry	Define the scope by item not material	
	Not-for-profit	Expand the scope beyond the voluntary agreement	
Alternatives	Not-for-profit	Alternatives exist for items beyond the scope of the ban	
Other legislation	Industry	Ban aligns with other legislation	
Business impacts	Industry	Heavy reliance on suppliers to disclose presence of microbeads, industry asking supplier to disclose presence	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

Table 49 Summary of written submissions for cotton buds

Theme	Submission group	Summary of comment	Department response
Support ban	Not-for-profit, local government and industry	Support the ban	The department proposes to: • progress with ban • amend scope to allow plastic-stemmed cotton buds where part of a kit or if there is no other viable alternative • not change the proposed six-month phase-out timeframe • provide retailer and industry specific education
Scope	Industry	Unclear if cotton bud itself is included in the ban or just the stem	
	Not-for-profit	Review exemptions in 2025	
	Industry	Unclear if Rapid Antigen Test swabs included in the ban	
	Not-for-profit	Include lollipop sticks in the ban	
Alternatives	Not for profit	Government should invest in trials of alternatives in medical settings	
Other legislation	Industry	Ban aligns with other legislation	

Source: Consultation analysis by Christine Parfitt, 2023 (unpublished)

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