Reducing the impact of plastic on our environment

MOVING AWAY FROM HARD-TO-RECYCLE AND SINGLE-USE ITEMS

Consultation document

Ministry for the Environment
Manatū Mō Te Taiao

New Zealand Government

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Ministry for the Environment
Manatū Mō Te Taiao

Making Aotearoa New Zealand the most liveable place in the world

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Message from the Associate Minister for the Environment

Plastic waste is one of the greatest challenges of modern life. Nearly 70 per cent of New Zealanders have high concerns about the build-up of plastic in our environment, according to the 2020 Colmar Brunton *Better Futures* survey.

Yet despite our concern, we have one of the highest rates of per capita waste production in the developed world.

Our current recycling system is vulnerable, and we are only recovering a small volume of plastic waste for further use or recycling.

Too much of the plastic packaging and items we make are used only once and then thrown away. The recent flooding of Fox River, which exposed the closed Fox Glacier landfill, is a reminder that our current rates of consumption and disposal are not sustainable.

We can do better. The *Rethinking Plastics in Aotearoa New Zealand* report, produced by the Office of the Prime Minister's Chief Science Advisor, paints a vision for a new future. One based on best practice being standard practice, reuse being the new norm, and a New Zealand where significantly less plastic enters our environment as waste and litter.

It will take more than just one action to make this change. A long-term shift is required across several years and through the collective effort of individuals, communities, industry and business, academics, scientists and innovators, iwi, local and central government.

The Government can lead the change, taking clear and decisive action to drive change, increase recyclability and encourage reuse.

The Government has an ambitious work programme aimed at turning around our record on waste and moving us closer to a low-waste, sustainable and inclusive economy.

Over the past two years, our programme has included:

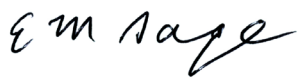
- investing in more onshore recycling infrastructure to recycle products for further use
- beginning to design a return scheme for beverage containers, to recover the many millions of containers used each year
- banning microbeads and single-use plastic shopping bags
- public education campaigns and work with business and industry to encourage behaviour change and reduce waste
- regulated product stewardship to manage certain harmful products at the end of their life – such as plastic packaging, tyres, e-waste and farm plastics
- a nationwide, historic landfill risk assessment, following the massive waste clean-up after flooding exposed the closed Fox Glacier landfill

- expanding and raising the levy on waste sent to landfill, to encourage waste reduction and fund further investment in minimising waste.

New Zealanders embraced the plastic bag ban in 2019. This started a public conversation about plastic waste, and a growing momentum among individuals and businesses motivated to do more.

This consultation document proposes that we take more action to phase out certain types of hard-to-recycle plastic packaging and some single-use plastic items. It encourages us to rethink the way we use plastic. For some, the change needed will be easy, but for others it will require significant shifts in behaviour.

Moving away from hard-to-recycle and single-use plastics will help clean up our towns, cities, beaches, moana and whenua. It will also improve the functioning of our resource recovery system, and reduce waste to landfill.



Hon Eugenie Sage
Associate Minister for the Environment

Glossary

Term	Definition
Basel Convention for Transboundary Movements of Hazardous Waste	The convention aims to protect human health and the environment from the dangers posed by hazardous and other waste, and regulates the international movement of those wastes. It requires prior informed consent from importing countries for transboundary movements of waste listed under the convention. The convention also aims to reduce the generation of hazardous and other waste, and requires environmentally sound management.
Biodegradable	Something that can decompose or break down naturally and in a way that is not harmful
Circular economy	An approach where resources are cycled through the economy (make, use, return) and waste is designed out of production.
Foamed plastic	A plastic converted into a sponge like mass, which may be flexible or rigid
Hard-to-recycle	Limited markets for recycling or technically difficult to recycle
Kaitiakitanga	Guardianship, protection of the environment
Lasering labels	An alternative to plastic produce stickers, which uses laser technology to etch a label onto the fruit or vegetable
Linear economy	Our current economic system of taking resources, making products and disposing of them
Mauri	The life force
Microbeads	Manufactured solid plastic particles less than one millimetre in dimension
Microplastics	Small plastic fragments less than 5mm in length
Moana	Ocean
Onshore recycling	Recycling that occurs in New Zealand
Oxo-degradable plastic	A type of plastic that contains an additive causing it to degrade quickly when exposed to light or oxygen.
Phase-out	A plan to stop using something. For the purpose of this document, a mandatory phase-out can also be described as a ban.
Plastic resin	Core ingredient for making plastic products (most resins are made from oil but some can be made from bio-based sources like cornstarch)
Product stewardship	Product stewardship is an approach to managing the environmental impacts of different products and materials. Product stewardship shares the responsibility for reducing a products environmental impact across producers, brand owners, importers, retailers and consumers.
Recycling stream	Materials collected for recycling (as opposed to materials sent to landfill)
Waste hierarchy	A framework for establishing the order of preference for different waste management options for a product
Waste minimisation	Reducing the amount of waste that we create
Whenua	Land
WMA	Waste Minimisation Act 2008. The Act encourages a reduction in the amount of waste we generate and dispose of in New Zealand.

Introduction

About this consultation

This consultation document seeks feedback on two proposals related to plastic design, use and disposal.

The proposals reflect a commitment by the Government in December 2019, in response to a report by the Office of the Prime Minister's Chief Science Advisor – *Rethinking Plastics in Aotearoa New Zealand*. This report set out recommendations for how we reduce the impact of plastics on our environment, yet retain some of the benefits that plastic offers to modern society.

Proposal 1: The Government is looking to move away from hard-to-recycle plastics, starting with a phase-out of:

- some polyvinyl chloride (PVC) and polystyrene packaging
- all oxo-degradable plastic products.

This is part of a long-term shift toward a more circular economy for plastics where packaging materials are made of higher value materials that are easier to recycle.

Proposal 2: The Government also seeks feedback on a phase-out of some single-use plastic items. Moving away from single-use items in the future will help to encourage reuse, reduce waste to landfill, and minimise harm to the environment from plastic litter.

Wording in this document

The two categories of plastic proposed for phase-out are: **hard-to-recycle plastics and some single-use plastic items**.

For ease of reading, these are also referred to as '**the targeted plastics**' or '**the targeted items**'.

Unless stated, the word polystyrene refers to both **hard polystyrene** and **expanded polystyrene**.

Work is already underway for a low-waste future

The proposals complement an existing work programme to reduce the impact of plastic on the environment and drive behaviour change. The programme has the following vision for New Zealand:

> We will combine sustainable patterns of production and consumption with a world-leading and resilient system for reducing, recycling and managing our waste responsibly. We will embrace kaitiakitanga (protecting and looking after the environment) and innovation to:
>
> - use and reuse resources efficiently, to reduce the amount of waste we produce
> - recycle or recover value from as much of our waste as possible
> - manage residual waste effectively to minimise the risk of environmental harm.

Projects that complement this policy proposal are listed in table 1. They represent the Government's wider progress toward a more circular economy. They also show that we need a system approach to rethink the way we use plastics, encourage behaviour change, and stimulate innovation.

Table 1: Waste and resource efficiency projects

Project	Description and outcomes
Designing a container return scheme (CRS) for beverage containers	We are funding a project to co-design a container return scheme (CRS) for New Zealand. Final recommendations are due in late 2020. If implemented in the future, a scheme could recover a range of containers for recycling and refilling, including high-value plastics like polyethylene terephthalate (PET, plastic type 1) and high-density polyethylene (HDPE, plastic type 2). After a decision on whether or not to implement a scheme, it would likely take a further two to three years before a scheme could be operational (2023). There would also be public consultation on the regulations to support it.
Regulated product stewardship for problematic waste materials (including plastic packaging)	Product stewardship schemes for packaging will ensure the plastic packaging that remains in use (ie, is not phased out) is supported by systems to collect and recycle the packaging materials for further use.
Expanding and increasing the waste disposal levy	A significant opportunity to improve New Zealand's performance on waste, by encouraging waste minimisation and investing in priorities such as onshore recycling, and research and development. The Government agreed on the levy changes in June 2020. Implementation dates to be confirmed when considering regulations in November 2020.
Implementing an amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Imports and exports of most mixed plastic waste will require a permit from the Environmental Protection Authority, and consent from the importing country before they can be shipped. This will improve environmental outcomes from exporting plastic waste for recycling, and encourage use of higher-value plastics. To be in place by early 2021.
New Zealand Plastic Packaging Declaration (NZPPD)	A pledge with businesses that commits signatories to a goal of 100% reusable, recyclable and compostable packaging by 2025.
Kerbside standardisation and labelling	Two ongoing projects: • working alongside local government and industry to achieve a more integrated and consistent kerbside collection system • working with industry to provide better on-product recycling labelling. Implementation dates to be confirmed.
National Plastics Action Plan	The plan will help coordinate new and existing projects, and take forward the recommendations in *Rethinking Plastics in Aotearoa New Zealand*. Final plan expected in early 2021.

Understanding the problem of plastics

The problem of plastics is vast and complex. Plastic is fundamental to our modern-day lives. It has many desirable properties – it is versatile, durable, flexible, affordable and lightweight. We use plastic for many things, for example in construction, clothing, food production and distribution, farming, healthcare and packaging.

However, badly managed waste plastics are significant sources of plastic entering the environment, whether from littering, illegal dumping or escaping from waste management systems.[1]

The focus of this document is on reducing the environmental impact of certain hard-to-recycle plastic types and some single-use plastic items.

Plastic types

There are seven main types of plastic:

1 = Polyethylene Terephthalate (PET) – often used for soft drink bottles

2 = High Density Polyethylene (HDPE) – often used for milk bottles

3 = Polyvinyl Chloride (PVC) – sometimes used for meat trays and biscuit trays

4 = Low Density Polyethylene (LDPE) – often used for soft plastics like bread bags

5 = Polypropylene (PP) – often used for ice cream containers

6 = Polystyrene (PS) – often used for yoghurt containers

6 = Expanded Polystyrene – often used for protective packaging and takeaway containers

7 = Other (a catch all for all other types of plastic) – includes plastic made from combining multiple material types, bio-plastics, biodegradable, compostable and oxo-degradable plastics.

Plastics: A major source of pollution

Millions of tonnes of plastic enter aquatic and marine ecosystems annually, potentially endangering wildlife and human health.

Regardless of the type of plastic, the ways it can harm the environment – and wildlife – are essentially the same if not sustainably managed.

Without change, global projections are that the ocean will contain more plastic than fish by 2050.

Plastic that enters the environment as litter may:

- enter waterways and move to the ocean, where it could form part of a giant marine garbage patch or be ingested by marine life
- break down to form microplastic (pieces less than 5 millimetres long)
- be consumed by wildlife that can, in turn, be eaten by humans[2]
- leach chemicals that can harm wildlife and ecosystems.

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1 Royal Society Te Apārangi (2019).

2 We note that the evidence on harm from human exposure through the food chain is not yet determined (Ministry for Primary Industries, 2019).

Plastic builds up in the environment

Many plastic items are lightweight and, if they escape the waste management system, can travel far from their original source. In the marine environment, plastic items accumulate on sandy beaches and the seabed, as well as in salt marshes, mangrove forests, deep sea trenches, sea ice and coral reefs.[3] There are concentrations of plastic waste out at sea in all the major oceans.[4]

Some plastics are denser than seawater and are more commonly found on the sea floor, while others can be dragged down to the sea floor by various means. Over time, plastic debris breaks down into smaller and smaller pieces.[5]

Recent reports of airborne plastic particles in falling snow in the remote Pyrenees, France highlights the pervasiveness of plastic litter.[6]

Picking up plastic

The *Our Marine Environment 2019* report (Ministry for the Environment and Statistics New Zealand) showed that our activities on land are polluting our marine environment. Plastic is the most common type of litter on our beaches. At six out of seven selected survey areas, unidentified hard plastic fragments were in the top two types of plastic litter by item count. This data was provided by the Sustainable Coastline's Litter Intelligence programme,[7] which found across all surveys that plastic litter makes up 60.9 per cent (by count, and 9.8 per cent by weight) of the items.

Manawatū River Source to Sea collected waste at sites around Palmerston North. It found over 80 per cent of the waste was some form of plastic, and 93 per cent was non-recyclable.[8]

Data collected by Keep New Zealand Beautiful (KNZB) in a 2018 National Litter Audit paints a similar picture for other regions. KNZB ranked plastic as the second most common item found per 1000 square metres nationwide. The top ranked litter item was cigarette butts, which contain plastic filters.

Plastic impacts the marine environment and wildlife

Plastic was found in the stomachs of New Zealand seabirds as early as 1960. A global review of published diet data for 135 seabird species between 1962 and 2012 found 59 percent of species had eaten plastic. When birds eat plastic, it can reduce their intake of nutrients, decrease reproduction, cause poisoning, create internal and external wounds, and block their digestive tracts.[9]

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3 National Oceanic and Atmospheric Administration Marine Debris Program (2016).

4 Royal Society Te Apārangi (2019).

5 Ministry for the Environment and Stats NZ (2019).

6 Carrington (2019).

7 The Litter Intelligence programme is a citizen science project that collates the results of litter surveys around New Zealand. It is run by Sustainable Coastlines and funded by the Waste Minimisation Fund.

8 Manawatū River Source to Sea (2019).

9 Wilcox, Van Sebille, Hardesy (2015).

As recently as June 2020, an albatross rescued in Wellington died due to plastic in its stomach that caused a blockage and prevented the bird from absorbing any nutrients from its food.[10] Fish can also accumulate plastic by eating smaller fish or plankton that have already ingested it.

The impact of plastic on wildlife and marine animals poses an economic threat to industries who rely on seafood, such as aquaculture and fisheries. It also removes access to food sources for New Zealanders and has wider social and cultural impacts[11].

Plastic and climate change

Despite concerns about plastic pollution and climate change, rapid growth in plastic production is projected.

Most plastic is made from fossil fuels, consuming around 4-8 per cent of global oil production. The plastic industry's consumption of oil is also projected to increase to 20 per cent of total annual oil production by 2025.[12]

Projections from 2017 indicate that plastics will be responsible for up to 15 per cent of the total 'carbon budget' by 2050 – more than air travel (currently around 2 per cent of emissions).[13]

Wider impact

As described by the Royal Society Te Apārangi, plastic pollution affects our recreational, cultural and spiritual values as New Zealanders. Build-up of plastic waste in our ecosystem can interfere with the mauri (life force) of our environment.[14]

Plastic pollution has the potential to damage the beauty of our natural environment. This has cultural and social impacts, as well as economic impact through loss of recreational opportunities in the future.

We need to change the way we use plastic

The amount of waste that New Zealanders send to landfill is increasing. Our current 'linear economy' involves taking resources and making something that we throw away when no longer useful.

Figure 1: The linear economy[15]

[10] Woolf (2020).

[11] Royal Society Te Apārangi (2019).

[12] World Economic Forum (2016).

[13] Geyer, Jambeck and Law (2017).

[14] Royal Society Te Apārangi (2019).

[15] Figures 1 and 2 sourced from *Rethinking Plastics in Aoteroa New Zealand* (2019).

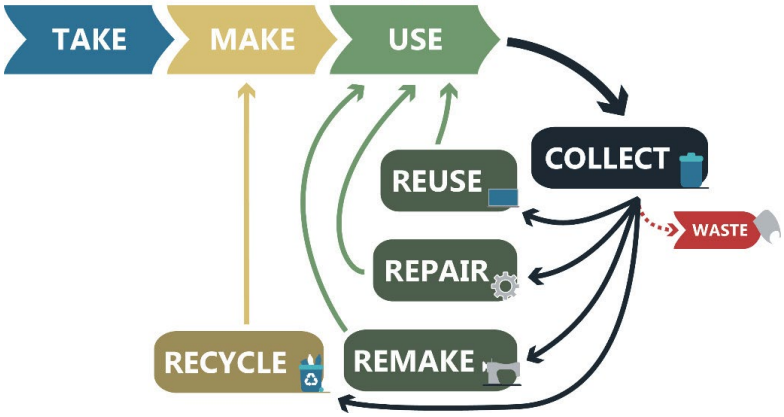
Rethinking Plastics: a vision of 2030

In December 2019, the Office of the Prime Minister's Chief Science Advisor released the *Rethinking Plastics in Aotearoa New Zealand* report (*Rethinking Plastics*). The report recommends a range of actions to tackle our plastic waste problem.

> *Rethinking Plastics* lays out an aspirational vision of Aotearoa in 2030:
>
> In this scenario, New Zealand is a world leader in reducing the plastic found in our environment, we are recycling onshore, and recycling is easy and accessible.
>
> There may still be some plastic waste but we only use plastic types 1 (PET), 2 (HDPE) and 5 (polypropylene) for clearly labelled packaging. This and other initiatives severely limit the amount of plastic waste we generate.

The report concludes that we need to treat plastic as a valuable resource that we recover for further use, or that we reuse, repair, recycle or repurpose as new products. Figure 2 shows this 'circular economy'.

Figure 2: The circular economy



A landmark report

Rethinking Plastics is a milestone in New Zealand's journey to tackle plastic waste. It involved a broad reference group of New Zealand stakeholders, who gave their collective support for the findings and recommendations.

The Government is currently formalising its response to *Rethinking Plastics*. This includes a future work programme and action plan based on the recommendations. In December 2019, at the launch of *Rethinking Plastics*, the Government announced a commitment to set goals to move away from hard-to-recycle plastics, starting with a phase-out of PVC (3) and polystyrene (6) packaging.

There is broad acknowledgement across the industry that the status quo is not working, and a move away from hard-to-recycle plastic packaging is necessary.

Problems with recyclability and design

There are seven main types of plastic. Each material (or resin type) has unique properties making them suitable for different applications.

Each type also has different recycling attributes and different values as commodities (see figure 3).

- Clear PET (1) and natural HDPE (2) have the highest recycling value and can be recycled internationally as well as onshore.
- Coloured PET (1), coloured HDPE (2), LDPE (4) and PP (5) are recyclable but have fewer markets and are lower in value. PP is close to being viable for onshore reprocessing.
- PVC (3) and polystyrene (6) packaging are low in quantity and difficult to recycle with very limited international markets. There are two types of polystyrene – hard polystyrene and expanded polystyrene (EPS).
- LDPE (4) is mainly used for making soft-plastic packaging and is difficult to replace with other materials.
- 'Other' (7) is a 'catch all' for plastic types that do not fit in the previous plastic types and vary widely in properties. Most type 7 plastics will not be recycled and will likely contaminate recycling streams.
- Plastic types 3, 4, 6 and 7 are generally lower in value due to the volume needed for recycling, the cost of collecting and sorting, and the types of products the recycled material are made into. In New Zealand, the most likely plastic materials to be recycled are plastic types 1, 2 and 5. This is because there is onshore reprocessing capability and good markets to create demand for these plastic types when recycled.[16]

[16] Office of the Prime Minister's Chief Science Advisor (2019).

Figure 3: Ease of recycling different types of plastic

Source: royalsociety.org.nz/plastics licensed under CC BY 3.0 NZ

Inconsistent kerbside collection

Kerbside recycling systems in New Zealand vary across regions. Some collect all plastic types and others collect only high-value materials with reliable markets. This is a common cause of public confusion. It also makes it difficult for recyclers to maintain clean streams of high-quality materials that are free from contamination and can be easily recycled.

Limited onshore recycling

We currently have limited onshore capability for recycling plastic. New Zealand exports around 35,000 tonnes of plastic waste annually for recycling (about 90 per cent of the plastics collected). Like other countries, we have faced changes to our domestic recycling industry in response to import restrictions and tighter controls in other countries. China's import restrictions have led to the removal of the largest recycling market in the world for low-value mixed plastics[17]. Similar measures by other countries to impose strict quality requirements, and the recent impact of COVID-19, have put more restraints on offshore processing capacity.

[17] Low-value mixed plastics are typically resin types 3 (polyvinyl chloride), 4 (low-density polyethylene), 6 (polystyrene) and 7 (other). The Basel amendment will require a permit for mixed exports of 3, 6 and 7.

How much are we recycling?

- Less than 20 per cent of plastic waste generated each year is recycled worldwide.[18]
- New Zealanders dispose of an estimated 159 grams of plastic waste per person each day.[19]
- We import around 575,000 tonnes of plastic resin per year.
- The annual volume of plastics recycled in New Zealand is about 45,000 tonnes, with around 25,000 tonnes collected from household sources.

Changing export markets

We expect further changes to export markets for hard-to-recycle plastic packaging. New Zealand, along with over 180 other countries, recently agreed on an amendment to include mixed plastic waste in the Basel Convention for Transboundary Movements of Hazardous Waste. New Zealand will implement the new requirements domestically by requiring exporters to apply for a permit from the Environmental Protection Authority to export most mixed plastic waste. This will increase the transparency of the trade in low-value plastic that is hard to recycle, and decrease the likelihood that residual waste from exports of mixed plastic will end up in the environment overseas. This will likely see further restriction for the trade of low-value and hard-to-recycle plastic packaging.

No packaging regulations or incentives

Estimates suggest that around 60 per cent of the plastic resin[20] imported to New Zealand is to make packaging.

There are no regulations or standards that packaging designers and producers must meet to ensure the products they sell into the New Zealand market can be effectively recycled, or to influence production of packaging and single-use items.

For many businesses, the type of packaging will be a commercial decision, based on the value they place on sustainability, as well as their access to good guidance. Research suggests that without fundamental redesign and innovation, around 30 per cent of plastic packaging globally will never be suitable for reuse or recycling[21].

Without incentives to reduce waste, some businesses will continue to use materials that are hard to recycle, even if this means the packaging will end up in landfill.

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18 Royal Society Te Apārangi (2019).

19 By comparison, Norway averages 26 grams of plastic waste per capita per day, Denmark 35 grams, Canada 58 grams, Australia 117 grams, Ireland 199 grams, the UK 266 grams and the United States 286 grams. See Royal Society, page 14.

20 Plastic resin is the core ingredient used to manufacture plastic products – traditionally resins are made from fossil fuel. In recent years, 'bioplastics' have emerged, which are made from plant sources like corn starch or sugarcane.

21 Ellen MacArthur Foundation (2017).

Hard-to-recycle plastics affect recycling and the environment

In the total plastic packaging waste stream, PVC (3) and polystyrene (6) are small volumes (estimated at 0.19 per cent and 2.47 per cent respectively[22]). However, they have a disproportionately large impact on our recycling system and environment.

Both material types have limited markets in New Zealand and internationally. Reliable access to offshore recycling markets for low-value plastic was already a problem before the COVID-19 pandemic. COVID-19 has created further disruption, making it more difficult to recycle these plastic types. This has encouraged waste operators to rethink the collection of hard-to-recycle plastics in kerbside recycling.

Oxo-degradable plastics (a subset of type 7) are not compostable (either at home or in a commercial facility). They contaminate the waste stream as they cannot be recycled, and degrade into microplastics that can enter the environment and ultimately the food chain (the extent of their toxicity is currently unknown).

We can reduce environmental harm through a recycling system that operates effectively and efficiently. These plastic types can be replaced in packaging with recyclable materials. Less hard-to-recycle plastic in the system will help to ensure that high-value packaging is recycled rather than sent to landfill.

PVC

PVC is a problem for recycling high-value PET (1) and is a contaminant in the recycling stream. By sight, PVC is not easy to distinguish from PET. This makes it difficult to separate from clear PET for further processing. It only takes a small concentration of PVC (0.005 per cent by weight) to significantly reduce quality in a batch of clear PET, and to devalue the recycled material.[23] PVC interferes with our ability to recycle the full amount of PET that households place in recycling bins.

Globally, there has also been concerns about the potential health impacts of PVC due to some chemical additives, which may be included in PVC to make it flexible.[24]

Polystyrene

Polystyrene (6) does not interfere with recycling in the same way as PVC, but is difficult to recycle due to limited offshore markets. Secondly, expanded polystyrene (EPS: 6) is a source of marine litter. Recent data from Sustainable Coastlines shows that foamed plastic containers, such as EPS, make up around 6.2 per cent of litter on New Zealand beaches.[25] This percentage may seem small but as EPS is lightweight, it is easily windblown. It also fragments easily, making it at high risk of causing microplastic pollution.[26]

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22 WasteMINZ TAO Forum (2020).

23 Ellen MacArthur Foundation (2017).

24 Ellen MacArthur Foundation (2017).

25 Ministry for the Environment and Stats NZ (2019).

26 Microplastics are extremely small pieces of plastic debris in the environment. We note that many types of plastic can break down into very small particles and become microplastics over time.

Some studies indicate that foamed plastic containers can take thousands of years to decompose, contaminating soil and water, and posing risk to wildlife from ingestion. There are also concerns about the potential health impacts from the toxins in polystyrene, and the carcinogenic chemicals in EPS and other foamed containers.[27]

Oxo-degradable plastic

Oxo-degradable plastics emerged in recent years as a way of alleviating public concern about the build-up of plastic in the environment.

They may be made of bio-based sources such as starch or sugarcane, or from traditional fossil fuel sources, and include additives to encourage degradation. The additives cause the plastic to become brittle and fragment into smaller pieces when exposed to heat, UV light or a combination of both.[28]

Use of oxo-degradable plastic is not widespread, but increasing. Common uses for oxo-degradable plastics include bin liners, refuse bags, straws, food and clothing packaging, plastic cups and cutlery. There is a risk that if we eliminate hard-to-recycle plastic packaging materials like PVC and polystyrene, some packaging suppliers may promote oxo-degradable plastics as an alternative option.

Oxo-degradable plastic is problematic because it:

- degrades into smaller plastic pieces (such as microplastics) but does not completely go away
- creates confusion for the public and businesses, who believe it causes less environmental harm than traditional plastic packaging
- contaminates waste streams such as organics and recycling collections[29]
- may have toxic effects on the environment because it has additives that encourage it to degrade.[30]

Problems with single-use plastic items

Globally, around 36 per cent of the plastic produced is packaging and single-use plastic items.[31] These items are particularly problematic as they are designed for one use (eg, for stirring a single drink) then thrown away.

They are often used for convenience or ‘on the go’, where there is a high risk of not being disposed properly, and entering the environment.

Single-use plastics affect the environment in terms of:

- the resources required for production (including raw materials, energy and water)
- disposal – whether through recycling or landfill, or littering.

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27 Ellen MacArthur Foundation (2017).

28 Parliamentary Commissioner for the Environment (2018).

29 WasteMINZ Organic Materials Sector Group (2019).

30 European Commission (2016).

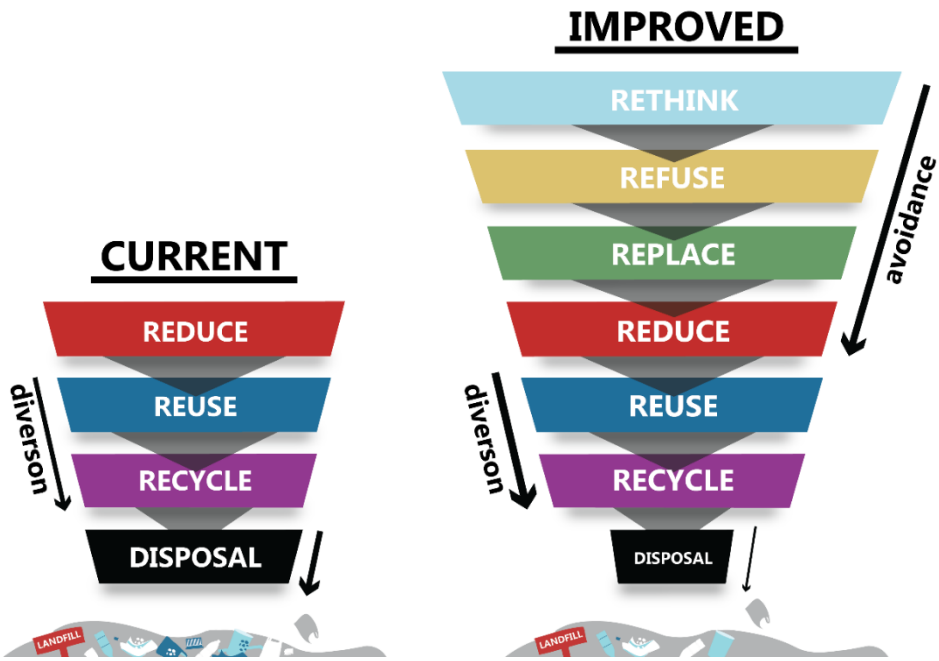
31 Office of the Prime Minister’s Chief Science Advisor (2019).

Single-use plastic items are often at higher risk of becoming litter, as they are low cost, ubiquitous, designed for minimal use, and the incentives to collect and recover the material for further use are low.

The Rethinking Plastics waste hierarchy

Rethinking Plastics challenges us to think past the traditional waste hierarchy (see figure 4) of reduce, reuse and recycle and to avoid waste altogether by rethinking, refusing and replacing.

Figure 4: ***Rethinking Plastics*: waste hierarchy (the 6 Rs)**



Source: Rethinking Plastics in Aotearoa New Zealand, Office of the Prime Minister's Chief Science Advisor 2019.

When a single-use plastic product is used, it bypasses the top layers of the hierarchy (including reuse). At that point, the best environmental option is to recycle the product. This can be inefficient (compared to reuse).

For many single-use products, recycling will not be possible as they are made from low-value and hard-to-recycle plastics; they are also small and not easily separated, sorted and cleaned for recycling.

The Fox River landfill incident

In March 2019, a storm hit the West Coast and washed out the closed Fox River landfill near Fox Glacier. This resulted in pollution leaking into the surrounding pristine natural environment. Volunteers and specialist teams retrieved an estimated 135,000 kilograms of waste, from 21 kilometres of river and 64 kilometres of coastline. It filled over 11,000 rubbish bags.[32]

This incident has highlighted that future problems (often inter-generational) can arise from current waste disposal, and that with plastic there is no such thing as 'away'.

[32] Office of the Prime Minister's Chief Science Advisor (2019).

Creating a culture of reuse

Continuing to pay the cost of cleaning up plastic pollution and litter is not sustainable.

As well as moving away from hard-to-recycle plastics, we need to produce less waste in the first place, which includes:

- refusing unnecessary single-use plastic items
- choosing reusable alternatives where possible.

Calls for action in New Zealand have grown. In 2019, after over 100,000 Kiwis signed a petition, the Government banned single-use plastic bags.[33] Recent moves include the 'Takeaways throwaways' petition on food and drink, which calls for a ban on single-use disposable food and drink tableware that contains plastic.

Rethinking Plastics make a strong case for change. Without change, we cannot maintain or enhance our global image as clean, green New Zealand, and the environmental harm from plastic will increase.

Summary of the current problem

The main issues with hard-to-recycle plastic packaging and single-use plastic items are that:

- overuse and reliance on single-use plastic is causing pollution
- not all plastic packaging or single-use items are designed for reuse or recycling
- some plastic types are hard to recycle due to limited markets onshore and internationally, which makes our recycling system less effective
- PVC, polystyrene and oxo-degradable plastics are hard-to-recycle and can be replaced by other materials in the production of plastic packaging and single-use items.

To drive change we need a system that:

- enables New Zealanders to use less plastic overall
- ensures that any plastics that are used can remain in circulation through reuse or recycling for as long as possible.

Question 1

Do you agree with the description in this document of the problems with hard-to-recycle plastic packaging and single-use plastic items? If not, why?

[33] Ministry for the Environment (2018).

Policy objectives

The main objective is to:

> reduce the impact on our resource recovery system and environment from hard-to-recycle plastic packaging and single-use items through significantly reducing the amount in use.

As a starting point, we will target PVC, polystyrene, oxo-degradable plastics and some single-use items for elimination.

This will help to achieve secondary objectives, including:

- lower risk of environmental damage including through litter and poor resource management
- less PVC contamination in our recycling stream, so high-value materials like PET can be recycled rather than sent to landfill[34]
- increasing the uptake of high-value packaging materials including PET, HDPE (2) and PP (5)
- improving the recyclability of plastic packaging
- better reflecting the waste hierarchy and a circular approach to resource management, by ensuring that the materials we use can be reused or recycled
- reducing public confusion and making it easier for New Zealanders to recycle right.

Question 2

Have we identified the correct objectives? If not, why?

International analysis

New Zealand is part of a global community tackling plastic pollution

Rethinking Plastics places New Zealand within a network of countries that are also taking action to stem the flow of plastic waste. We do not need to face these challenges alone, and can connect with international movements and learn from international examples. We also have an opportunity to lead and to demonstrate our approach to best practice, by removing packaging materials and items that are less likely to be recycled and more likely to end up as litter.

> "Aotearoa New Zealand is not the only country that needs to take transformative action and change our relationship with plastics – the issues related to the scale and disposability of plastic are global" – Office of the Prime Minister's Chief Science Advisor (2019)

[34] PVC and PET look very similar. If PVC is recycled in a batch of PET, it contaminates the recycled PET and devalues it. Some items that are also made from PVC (eg, meat trays) are not recycled consistently because the risk of contamination is too high.

The New Plastics Economy Global Commitment

The Ellen MacArthur Foundation and United Nations Environment Programme *New Plastics Economy* is a globally accepted framework that outlines a vision for a circular plastics economy.[35] The New Plastics Economy Global Commitment is a platform for likeminded organisations and governments to pledge their commitment to reducing plastic pollution. At the heart of the Global Commitment is a vision of an economy for plastic where it never becomes waste.

To achieve this, there are three key actions:

- eliminating problematic and unnecessary plastic items;
- innovating to ensure that the plastic we use is reusable, recyclable or compostable; and
- keeping plastic circulating within the system and out of the environment.

A shift away from hard-to-recycle plastic packaging will help New Zealand achieve its commitments.

How are other countries tackling hard-to-recycle packaging?

Concerns about the negative impact of hard-to-recycle plastic packaging including PVC and polystyrene have been circulating globally for a number of years. Some international measures target hard-to-recycle plastics, while others address packaging more generally. Measures also vary in terms of their approach between countries.

Overall, there is increasing momentum internationally toward measures that target single-use plastic items, increase producer responsibility through product stewardship, and create economic incentives for the use of recyclable plastics.

Below are some international measures to reduce plastic waste. A broader list is in appendix 1.

PVC bans

There are many overseas examples of banning or restricting the sale of PVC in certain applications. As early as 1991, Switzerland banned the use of PVC in mineral water bottles, soft drink and beer packaging, and Denmark agreed to phase out PVC over time.[36]

In 1997, the US city of Rahway, New Jersey banned the use of polystyrene and PVC for food packaging, such as takeaway cups and containers, citing problems with recyclability and the availability of alternatives.[37] Parts of New York have seen a similar ban. For health and safety reasons several countries have banned the use of PVC in infant toys, including Austria, Cyprus, Czech Republic, Denmark, Greece, Mexico and Norway.

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[35] The Ellen MacArthur Foundation is a charitable environmental organisation in the UK, with a circular economy focus. The UN Environment Programme coordinates the UN's environmental activities and assists developing countries in implementing environmentally sound policies and practices.

[36] Johnson (1996).

[37] City of Rahway, New Jersey (1997).

Most notably, in December 2019, South Korea banned PVC packaging, noting its harmful chemical emissions and low recycling rate.[38] Exemptions were made for products such as medicines, fish and meat products, or where alternatives are not readily available to support a phase-out.

Polystyrene bans

Polystyrene products, particularly foamed takeaway containers and cups (often associated with Styrofoam), feature heavily in plastic policies around the world. Many American states including Maine, and cities such as New York, San Diego and Washington DC have banned Styrofoam food containers or Styrofoam more broadly. Other American states are also working on polystyrene bans, including Maryland, Vermont, Colorado, New Jersey and Oregon.[39] The European Union has taken similar action. In 2019, the European Council adopted measures to ban a variety of problematic plastics, including EPS food and beverage containers and other single-use items such as cups, cutlery and plates.[40]

Australia has also signalled a move away from EPS tableware (among a number of other single-use plastics) in many of its states and territories over the next two to three years, including New South Wales, South Australia, the ACT and Queensland.

Phasing out polystyrene products due to litter problems, human health concerns and recycling contamination, is increasing globally as a step towards reducing plastic pollution. Appendix 1 lists more examples.

Oxo-degradable plastic interventions

Many jurisdictions (including New Zealand) have included oxo-degradable plastic bags in their plastic bag bans. Beyond shopping bags, oxo-degradable plastics are receiving increased attention from governments around the world as they are difficult to identify, are not recyclable and do not fully biodegrade.[41]

The European Commission has recommended EU-wide restrictions on oxo-degradable plastics. Some EU member states have already taken action, including France, Spain and Italy. Other countries such as Belgium, Hungary and Bulgaria have passed laws that prevent oxo-degradable plastics from being marketed as biodegradable. Sweden and the UK are also considering restrictions. In Australia, the ACT and New South Wales are considering action on these plastics, and the South Australian parliament will consider a ban on all such products in 2020/2021, following consultation in 2019.

Other pathways to reducing hard-to-recycle packaging

Taxes

The English and Scottish governments considered introducing a levy (or 'latte tax') on single-use cups, including polystyrene items.[42] Other jurisdictions have increased taxes on all plastics. India raised GST on plastic products from 12.5 per cent to 18 per cent. Initial evidence

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38 World Trade Organization (2019).

39 Ivanova (2019).

40 European Commission (2019).

41 European Bioplastics (2018).

42 Bussey (2019).

suggests that raising GST on all plastic products (including those with recycled content) had a negative impact on plastic recycling, by discouraging people from buying all plastic including recycled plastic, resulting in a need to amend the policy.[43]

France is looking at introducing similar economic incentives, with a proposed lower tax rate on packaging made from recycled content.[44] The UK recently published a proposal on a new tax on plastic packaging produced in, or imported into the UK that does not contain at least 30 per cent recycled plastic.[45] Likewise, Spain approved in May 2020 a new tax on the manufacture, import or acquisition of non-reusable plastic packaging from other EU countries for use in the Spanish market.[46] The UK, French and Spanish examples will make it less attractive to use hard-to-recycle plastic materials, as well as create further demand for recycled content.

Product stewardship

In a product stewardship scheme, those making, selling and using products share responsibility for recovering and recycling materials. This is under active consideration (or underway) in a number of countries, including New Zealand, as a tool for reducing harm from packaging waste.

Vinyl Council Australia operate a voluntary PVC stewardship scheme throughout their PVC (3) supply chain.[47] It focuses on minimising PVC waste, reducing emissions, and using recycled PVC products. As the scheme is voluntary, it does not capture all PVC packaging.

Germany's VerpackG is another example targeting hard-to-recycle packaging. It aims to share the cost of packaging disposal (through a calculated levy) between manufacturers and distributors of packaging, who must ensure they participate in a take-back scheme. It promotes recycling and reuse of materials, and ensures that environmental costs are shared according to the amount of packaging companies introduce into the German economy[48].

Plastic Pacts

Plastic Pacts represent an agreement between different actors in the system (brands, retailers, manufacturers, non-government organisations), often with government support. Support is growing for Plastic Pacts under the New Plastics Economy Global Commitment. Pacts are now in place in the UK, France, Chile, Netherlands, South Africa, Portugal and Europe.

Each pact has varying targets, commitments and activities to reduce the impact of plastic on the environment. The UK pact is notable as it was the first, and has led to a work programme, including identifying eight plastics to eliminate (PVC, polystyrene and oxo-degradable plastics all feature).

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43 Narayanan, Schroder, McCluskey (2019).

44 Reuters (2018).

45 HM Revenue and Customs (2020).

46 Planelles (2020).

47 Vinyl Council Australia (2018).

48 Der Grüne Punkt (2020).

Packaging targets

Australia's plan to tackle hard-to-recycle plastic sits beneath targets announced in 2018 for packaging. The 2025 National Packaging Targets include goals to increase the recyclability of plastic packaging, and to phase out unnecessary and problematic single-use plastic packaging.

Driving action towards the targets is the responsibility of the Australian Packaging Covenant Organisation (APCO). APCO's 2020/2021 programme includes an action plan to phase out EPS from food and beverage containers and EPS packaging fill. It also includes educating industry on other materials to consider for phase-out, including PVC and polystyrene.

We have attempted to cover a range of international examples here, and in appendix 1. This is not an exhaustive list; there are many more examples.

International bans on single-use plastic items

A growing number of countries are phasing out single-use items through regulation. Many (including New Zealand) have taken action on plastic shopping bags as a starting point. Building on this momentum, many countries are now looking at action on other single-use items such as straws, cutlery, plates and cups.

Table 2 lists recent policy interventions for single-use plastics. This list highlights a few widely referenced international examples. For more examples, see table 9 in appendix 1.

Table 2: Examples of phase-outs of single-use plastic items

Country	Items	Stage of proposal
Australia (various states including ACT, NSW, Queensland, SA, Western Australia)	Straws, cutlery, stirrers, plastic tableware	Various stages with bans in South Australia to be in place in the near future (date not confirmed due to COVID-19 but Bill introduced to SA parliament in April 2020).
Canada	Microbeads, plastic bags, straws, cutlery, plates, stirrers	Microbeads phased out in 2017 Intention signalled to phase out other items as early as 2021.
China	Cotton buds*, cutlery, tableware, straws	Varies by product, some phase-outs due to take effect from December 2020.
EU	Cotton buds, cutlery, plates, straws, stirrers, balloon sticks	Member states to act on EU directive – regulations come into force by July 2021.
France	Plates, cups, cotton buds, straws, cutlery, teabags, toys in fast food	Implementation dates vary. First phase in force in 2020 and all regulations by 2025.
UK	Cotton buds, straws, stirrers.	Regulations enacted in October 2020 (delayed from April 2020 due to COVID-19)

* Cotton buds often include a rod made wholly or partly of plastic, with cotton wrapped around one or both ends.

Options for shifting away from hard-to-recycle and single-use plastics

The Waste Minimisation Act 2008 (WMA) is New Zealand's main legislative framework for waste minimisation. The WMA encourages a reduction in the amount of waste we generate and dispose of. The aim is to protect the environment from harm and provide New Zealand with economic, social and cultural benefits.

Summary of options

Using international examples, and tools available under the WMA, we identified a range of voluntary and regulatory options to eliminate PVC and polystyrene packaging, oxo-degradable plastics and certain single-use items:

- option 1: voluntary agreement or pact with industry and business
- option 2: plastic reduction targets
- option 3: labelling requirements
- option 4: levy or tax
- option 5: product stewardship
- option 6: mandatory phase-out
- option 7: mandatory recycled content for hard-to-recycle packaging
- option 8: continue as usual and rely on voluntary action.

Option 1: Voluntary agreement with industry and business

This involves making a voluntary agreement or pact with industry, businesses and other stakeholders. It could include agreement to stop using certain plastic packaging types or items. The aim of a voluntary agreement is to get agreement between industry players on specific actions.

Points to consider

This option can be industry-led or include varying levels of government support. The agreement could be a stand-alone initiative (with the Government indicating it would regulate if this proved ineffective), or an interim measure while developing regulations.

Agreements allow flexibility for individual businesses to decide how to reduce the use of hard-to-recycle packaging and single-use items.

This option would require voluntary uptake by industry and business, and would only be effective with a broad range of signatories.

There is a risk that industry would not fully implement a voluntary scheme, and that companies who do may be disadvantaged financially compared to those who don't – we note that only a small proportion of businesses are currently signed up to the New Zealand Plastic Packaging Declaration (see below).

The costs and benefits of this option would depend on the nature of the agreement. The cost for Government and the public would depend on the size and nature of the Government's role in administering a pact.

The New Zealand Plastic Packaging Declaration

New Zealand has an existing pledge-based agreement known as the New Zealand Plastic Packaging Declaration (NZPPD). Over 20 businesses signed up to a goal of 100 per cent reusable, recyclable and compostable packaging by 2025.

To date the declaration has been useful in driving momentum towards reducing plastic waste.

Option 2: Plastic reduction targets

The Government could set targets for reducing our plastic use. This could include targets for hard-to-recycle packaging and single-use items (eg, New Zealand will phase out unrecyclable PVC packaging in food and beverage items by 2022).

Points to consider

Setting targets would provide a national direction or goal to guide industry action. This option may mobilise action across a wide range of stakeholders. Similar to a pact, it would allow flexibility for industry and business to make changes at their own pace.

This option does not necessarily translate to change without complementary policy interventions. On its own, it has no statutory force or enforcement mechanisms.

Option 3: Labelling requirements

A third option is to require labels for packaging and single-use items, to inform the public about recyclability or environmental harm.

The Government is investigating options for a nationally consistent labelling scheme to improve recycling information on all packaging (including plastic).

Points to consider

The main purpose of a recycling label is to give a clear and effective message about what people should do with the empty packaging when no longer needed, rather than to prevent unrecyclable products from becoming waste in the first place.

This would involve a symbol or message showing that the packaging 'is not recyclable' or 'must be sent to landfill' and could influence some producers to rethink their packaging. This could also affect what some consumers buy (especially with education).

Labelling could be either voluntary or mandatory. Section 23(1)(f) of the Waste Minimisation Act 2008 (WMA) allows for requirements for product labelling.

Labelling may influence a gradual reduction of some hard-to-recycle packaging such as PVC and polystyrene, but is less likely to eliminate the targeted plastics completely.

Labelling would be very impractical for some single-use products. For example, adding detailed information to a straw would likely require it to be larger, thus using more single-use plastic.

Option 4: Levy or tax

A levy or tax places an additional cost on a problematic item. This is a popular method internationally for reducing single-use items like plastic shopping bags or disposable coffee cups.

Points to consider

Under this option, consumers could still use the packaging or items if they paid an additional charge. This may be an effective way to reduce consumption, as it discourages people from using the items.

Levy funds would enable investment in the public good (eg, environmental projects), which will have some benefits. The funds from levies can be considerable. In Wales, the first three years of a plastic bag charge brought in an estimated NZ$34–$45 million. For the Irish plastic bag levy, NZ$151.6 million in revenue was collected into a central fund from 2002 to 2007.[49]

All levy options would place moderate and short-term costs on retailers. For the Irish levy, these were estimated to be NZ$2.1 million economy-wide.

A levy or tax would also bring new costs for public education, monitoring and enforcement. Additional costs would be involved in levy collection, enforcement, and the distribution of the funds. As the use of levied items declined, administrative costs would take a bigger portion of the funds.

Given the range of packaging and items targeted, levies would need to apply at different rates and in different ways.

Charging taxes or levies requires specific authorisation from Parliament. A tax can only be imposed by or under an Act. The WMA is silent about taxes or levies on products, and would need to be amended to authorise this approach. Section 23(1)(d) enables making regulations that impose fees payable for the 'management' of a product, but this would have to be linked to actual costs for waste treatment and disposal.

Option 5: Product stewardship

Product stewardship means producers, brand owners, importers, retailers, consumers, collectors, and re-processers take responsibility for the impact of products throughout their life cycle, to reduce environmental harm.

Voluntary product stewardship

New Zealand already has 15 voluntary schemes under way, accredited under the WMA. These schemes encourage voluntary action by producers and consumers for a range of products. They have moderately reduced waste, but voluntary schemes do not create a level playing field.

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[49] Convery, McDonnell, Ferreira (2007).

Regulated product stewardship

Regulated product stewardship is one tool available under the WMA to help reduce the environmental impact of products.

The Government has announced plastic packaging as a priority product under the WMA. The intention is to take a collaborative, co-design approach to develop product stewardship schemes to manage priority products throughout their lifecycle.

For plastic packaging, the sector will have three years to design a scheme, followed by consultation on the scheme and any regulations. Future consultation is needed on any regulations to give effect to schemes co-designed with stakeholders.

The declaration of priority products for plastic packaging includes all plastic resin codes. Hard-to-recycle plastic packaging items like PVC, polystyrene and oxo-degradable plastics would not be included in a regulated scheme, if already eliminated through a different measure.

Points to consider

The schemes could cover different types of plastic packaging, and can increase the recycling of high-value materials into new products.

Regulated stewardship will put some responsibility back on the packaging producer, and help create market incentives for better product design. One of the proposed guidelines for priority product schemes is that membership costs reflect the true costs for treatment, recycling or disposal of the product.

Product stewardship may not be the most efficient way of reducing or eliminating hard-to-recycle packaging and single-use items that we no longer want in the system.

A scheme for unrecyclable packaging and items could cost producers more than for a mandatory phase-out, but less than a tax or levy. Enforcement costs are likely to be similar.

Option 6: Mandatory phase-out – preferred option

A mandatory (by law) phase-out would apply to:

- PVC and polystyrene packaging
- oxo-degradable plastics
- some single-use items.

Section 23(1)(b) of the WMA provides for making regulations to *control or prohibit the manufacture or sale of products that contain specified materials.* Section 23 can be used to control or ban the distribution of products including to customers for free, because section 5(1) defines ‘sale’ as including distribution or delivery whether or not for valuable consideration.

This was the tool used to phase out single-use plastic shopping bags in 2018 (which took effect on 1 July 2019).

To make the regulations, the Minister for the Environment must be satisfied that:[50]

- a reasonably practicable alternative to the specified materials are available
- the benefits expected from the regulations are greater than the costs
- the regulations are consistent with New Zealand's international obligations
- the regulations are consistent with the purpose of the WMA.[51]

A mandatory phase-out is our preferred option as it most closely aligns with the Government's commitment in December 2019 to investigate a move away from hard-to-recycle plastic packaging, starting with a phase-out of PVC and polystyrene.

Points to consider

Once in place, consumers would no longer have access to the prohibited materials or items. This option is therefore an effective method for achieving the main objective.

It would allow for widespread action and could have a broad scope to maximise impact.

It may create opportunities for businesses and individuals to look more closely at the waste they create, and find other ways of reducing their impact on the environment. For example, cafes may stop offering certain single-use items altogether, or retailers and brands may look at whether they can offer a refill service.

A mandatory phase-out would bring new costs for public education, monitoring and enforcement. If introduced by Government, taxpayers would bear the costs.

Because a mandatory phase-out is ultimately a ban, it would require businesses and individuals to transition to using alternative products and packaging. Businesses may switch to other plastic materials like PET (1), HDPE (2) or polypropylene (5), which have good markets onshore and internationally. Alternatively, they may move to non-plastics like cardboard or glass (particularly for single-use items or takeaway packaging).

Businesses may need guidance to make informed decisions and reduce the risk of unintended consequences (eg, moving to other hard-to-recycle materials or an increase in food waste).

Option 7: Mandatory recycled content for hard-to-recycle packaging

This option would require manufacturers to include a percentage of recycled content in new plastic packaging.

Points to consider

This requirement could indirectly drive manufacturers away from hard-to-recycle plastics such as PVC and polystyrene.

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[50] Section 23(2)(b), (3)(b)(ii) and 3(b)(iii) of the Waste Minimisation Act 2008. Note that, before making the regulations, the Minister must also obtain and consider advice of the Waste Advisory Board and be satisfied that adequate consultation has occurred (section 23(3)(a) and (b)(i)).

[51] The purpose of the WMA is provided in section 3 of the Act and is to encourage waste minimisation and a decrease in waste disposal to protect the environment from harm and provide environmental, social, economic, and cultural benefits.

It would encourage demand for higher value materials that are suitable for new packaging and can safely incorporate recycled content, such as PET (1) and HDPE (2).

It may mean investing in infrastructure and innovation. It would also require a significant phase-in period. This would allow manufacturers to develop and test new packaging, and to gradually phase-in a recycled content percentage, while the manufacture and supply of New Zealand recycled content is scaled to meet demand.

Option 8: No change – continue voluntary action

The final option is to continue as usual, with a range of voluntary and ad hoc initiatives to reduce plastic waste. Some businesses may choose to move away from hard-to-recycle and single-use plastic on their own accord due to environmental concerns. Others will make a commercial decision based on the options available and the perceived cost.

Points to consider

Doing nothing is likely detrimental to our resource recovery system and the environment, and would have the following impacts:

- PVC in kerbside collection will continue to reduce the efficacy of PET recycling in New Zealand
- lack of certainty for business, local government and the resource recovery sector
- uptake of oxo-degradable plastics may increase
- potential increase in waste to landfill as international markets for low-value plastics diminish, or high cost for recyclers and exporters to meet changing international requirements
- reputational cost to New Zealand if unable to meet international commitments such as the New Plastics Economy Global Commitment
- businesses that have moved away from PVC and polystyrene may be disadvantaged and could return to using these, depending on market conditions
- single-use items will continue to appear as litter on land and in the marine environment.

Question 3

Do you agree that these are the correct options to consider? If not, why?

Assessing the options

We evaluated the options against the following criteria.

- Effectiveness – will the option advance an elimination (or significant reduction) in the use of PVC and polystyrene packaging, oxo-degradable plastics, and single-use items?
- Cost – can it be implemented without placing undue costs on the community, business or public funds?
- Alignment with strategic direction – will it help make progress towards our goals, including a more circular economy for plastics and targeting the top layers of the waste hierarchy (refuse, reduce, reuse)?
- Achievability – is it achievable without new legislation or amending the legislation?

Weighting the criteria

We applied the following weightings:

- triple weighting for effectiveness, as this reflects the main objective of the policy intervention
- double weighting for cost, because it is an important regulatory principle when considering regulation under the WMA
- single weighting for the remaining criteria.

Question 4

Have we identified the right criteria (including weightings) for evaluating options to shift away from PVC and polystyrene packaging, oxo-degradable plastics and some single-use items? If not, why?

Table 3 sets out the criteria against which we assessed the options.

Table 3: Criteria for assessing options to significantly reduce or eliminate hard-to-recycle packaging and single-use items

Assessment criterion	1. Voluntary agreement/pact	2. Reduction targets	3. Labelling requirements	4. Levy/tax	5. Product stewardship	6. Mandatory phase-out	7. Mandatory recycled content	8. No change (ad hoc voluntary action)
Effectiveness *(triple weighting)*	? Unknown	? Unknown	? Unknown	Somewhat (1 x 3 = 3)	Somewhat (1 x 3 = 3)	Yes (2 x 3 = 6)	Somewhat (1 x 3 = 3)	No (–1 x 2 = -2)
Cost *(double weighting)*	Somewhat (1 x 2 = 2)	Yes (2 x 2 = 4)	No = minus 1	Somewhat (1 x 2 = 2)	Somewhat (1 x 2 = 2)	Somewhat (1 x 2 = 2)	Somewhat (1 x 2 = 2)	? Unknown
Alignment with strategic direction	? Unknown	? Unknown	? Unknown	Somewhat	Somewhat	Yes	Yes	No
Achievable under current legislation	Somewhat	Somewhat	Yes	No	Yes	Yes	No	Yes
Weighted total score	3	5	1	5	8	10	5	–1
Ranking	6	3=	7	3 =	2	**1**	3 =	8

Scoring: Yes = 2 Somewhat = 1 ? Unknown or no evidence = 0 No = –1

Preferred option: Mandatory phase-out

Option 6 ranked as the highest option against the evaluation criteria. Compared to the others, this would be the most effective in eliminating the target plastics from our waste stream. It also addresses the top of the waste hierarchy (refuse and reduce), and would help move New Zealand closer to a circular economy for plastics.

This option would likely have higher costs (particularly at the outset) than voluntary options, but it would be more effective and have additional benefits in the long term. It aligns with a key principle of the New Plastics Economy Global Commitment: elimination of problematic and unnecessary plastics.

This option will also help us move towards higher value plastics (types 1, 2 and 5) that have reliable recycling markets. It sends a clear signal that hard-to-recycle packaging is not useful in our recycling system and does not align with best practice.

Why we are not considering other options further

We do not consider that the remaining options would feasibly progress the main objective:

> to reduce the impact on our resource recovery system and environment from hard-to-recycle plastic packaging and single-use items through significantly reducing the amount in use.
>
> Targeting PVC, polystyrene, oxo-degradable plastics and some single-use items for elimination as a starting point.

Lowest ranking: Options 8, 3 and 1

Option 8 is the status quo and the lowest ranked option. In our view, the current situation needs to change, for the reasons set out in the introduction and the summary of options.

Option 3: Labelling requirements are not feasible for phasing out single-use items. The cost of labelling a single-use item such as straw would outweigh any benefits. This option still gives businesses and consumers the option to use these packaging materials or items, as its purpose is to inform people about recyclability or environmental harm. Although clearer labelling will help consumers make informed purchasing decisions and recycle the right items, it is unlikely to drive a significant drop-off in hard-to-recycle packaging and single-use items.

Option 1: Voluntary agreements or pacts are not a preferred option on their own because there is uncertainty about the timing and extent of the impact it could achieve. They would rely on uptake by businesses and industry, and would be subject to late adopters and the unwilling. International experience also suggests these arrangements are most effective when backed by government regulation if they break down, or as a complementary measure. They could therefore act as a complementary action to a mandatory phase-out, to unify forward-leaning businesses.

Next highest ranking: Options 2, 4, 5 and 7

Options 2, 4 and 7 ranked as third equal, and Option 5 ranked second. We do not plan to take these options forward for the following reasons.

Option 2: Targets for plastic reduction could sit within a broader national strategy or action plan. This could be effective for meeting the objectives, particularly if work is coordinated across a range of stakeholders. Although the potential for mobilising action is strong, it is reliant on voluntary uptake and could not be more effective in eliminating the target plastics than a mandatory phase-out. Without supporting regulation, there is also limited ability to enforce targets and ensure that there are mechanisms in place to drive change.

Option 4: A levy or tax would likely help reduce the production and use of the target plastics, but at a slower rate than a mandatory phase-out. Ultimately, the target plastics are still available under this option, and can still contribute to the waste stream and litter. This option would also require new legislation, which would take time to develop.

Option 5: Product stewardship is a great mechanism for moving some products such as high-value plastic packaging towards a more circular economy, but it is not suitable for all products.

Single-use items such as produce stickers, cotton buds and straws are small, and great in number. They are not easily collected after use and the cost of administering a scheme would likely be high.

This option may make using hard-to-recycle materials more costly in the long term when compared with the current state, but ultimately it will not solve the problem of their poor recyclability.

Option 7: Setting targets for mandatory recycled content in packaging is something many countries are doing to drive demand for recycled plastic over new virgin materials. As oil prices are affected by COVID-19, it is more difficult for recycled plastic producers to compete against the price of new virgin plastic. We are unable to set mandatory targets within the current WMA framework, making this option difficult to achieve in the short to medium term. A review of the WMA is proposed for 2021 to increase the waste minimisation tools available under the Act.

Future role of these options

Although we consider these options unsuitable for eliminating the target plastics, they may all have a place in a future system as tools that could help New Zealand on its journey to a low waste future.

Product stewardship is an effective way to manage high-value plastic materials and materials like soft-plastic packaging that are not easily phased out (at this time).

Better labelling will help New Zealanders to know whether the products they buy are recyclable. A renewed New Zealand Waste Strategy or a Plastics Action Plan could include targets (including for plastic packaging); both are planned in the Government's waste and resource efficiency work programme.

What Option 6 will achieve

A mandatory phase-out will:

- create a level playing field for manufacturers, suppliers and retailers
- reduce contamination in kerbside recycling
- help to clarify public messaging about plastic materials accepted for recycling

- lead to less litter, and cleaner waterways and oceans
- move New Zealand closer to the goal of 100 per cent reusable, recyclable or compostable packaging by 2025
- boost our international reputation around plastic and help achieve our commitments under the New Plastics Economy Global Commitment
- better reflect the waste hierarchy and align with the *Rethinking Plastics* report.

Question 5

Do you agree with our assessment of the options, and our decision to take forward only one option (a mandatory phase-out)? If not, why?

Proposal 1:
Phase out hard-to-recycle plastics

The Government is proposing a phase-out of hard-to-recycle plastics including packaging made from PVC and Polystyrene and **all** oxo-degradable plastic products. The diagram below summarises the proposed phase-out. More detail is included in the sections below.

Stage 1 (soon – by January 2023)

All PVC food and beverage packaging
Some PS food and beverage packaging

All oxo-degradable plastic products

Stage 2 (later – by January 2025)

All PS food and beverage packaging not captured by stage 1
All other EPS packaging (eg, homewares, electronics)

Reducing the impact of PVC and polystyrene

Outline of proposal

The Government is proposing a mandatory phase-out (a ban) on the sale and manufacture of PVC and polystyrene plastic packaging in two stages under section 23(1)(b) of the WMA. This allows for *controlling or prohibiting the manufacture or sale of products containing specified materials*.

We propose to phase out the targeted plastics in two stages between now and 2025 as outlined below.

Stage 1 – soon (by January 2023)

We propose regulations under the WMA to:

- prohibit the sale and manufacture of **all food and beverage items that contain PVC packaging**
- prohibit the sale and manufacture of **some food and beverage items that contain polystyrene packaging**

The regulations will come into force no later than January 2023.

Stage 2 – later (by January 2025)

We propose regulations under the WMA to:

- prohibit the sale and manufacture of **all food and beverage items that contain polystyrene packaging not captured under stage 1**. This packaging is likely to be more difficult to replace or move away from in the short term
- a ban on **all expanded polystyrene (EPS) packaging**.

Stage 2 regulations will come into force no later than January 2025.

Question 6

Do you agree with the proposed phase-out of PVC and polystyrene packaging as set out in two stages (by 2023 and by 2025)? If not, why?

Scope

Due to its fast-moving nature, food and beverage packaging makes up a high proportion of the materials collected through kerbside recycling. We propose to target it as a starting point for driving change towards more sustainable materials. We consider the food and beverage industry to be mostly ready to embrace change (many companies are already moving to high-value materials).

The proposed phase-out of all EPS packaging reflects concerns about the environmental impact of EPS litter, as well as its difficulty to recycle.[52] EPS is also bulky, making it difficult to collect and transport, and it takes up space in landfill.[53]

Because regulations under section 23(1)(b) of the WMA can apply to the *sale of products,* a phase-out would capture products made onshore as well as those imported to New Zealand for sale.

We seek your feedback on specific items that should be covered by a mandatory phase-out (a ban). Table 4 lists the items in more detail.

Table 4: Proposed scope for stage 1 and 2 phase-outs

Soon: Stage 1 (by January 2023)	Later: Stage 2 (by January 2025)
PVC **All PVC** food and beverage packaging, including but not limited to: • meat trays • biscuit trays • soft packaging, wraps and sleeves • other rigid containers or trays. **Polystyrene** **Some polystyrene** food and beverage packaging including: • EPS containers (eg, clamshell takeaway containers) • EPS and polystyrene cups • meat trays • sushi packaging • other takeaway containers • hard polystyrene used for protective casing (eg, on some confectionary).	All remaining polystyrene food and beverage packaging, including but not limited to: • yoghurt packs and other chilled goods • bins made of expanded polystyrene (EPS). All EPS packaging for products, including but not limited to: • homeware • electronics • other consumer goods.

[52] There are recyclers in New Zealand who will take clean streams of EPS for recycling if collected and separated from other materials – this is a solution for recycling EPS used in other sectors, eg, construction.

[53] APCO (2019).

Question 7

Have we identified the right packaging items that would be covered by a phase-out of PVC and polystyrene packaging? If not, what would you include or leave out, and why?

Potential exemptions

There may be an exemption for packaging to meet export and import requirements. Any such exemption would cover packaging where there are no practical alternatives to maintain the quality or safety of the product for distribution. Either this would apply to the New Zealand importer/retailer from overseas, or to the overseas market (eg, EPS bins for transporting seafood to overseas markets for sale).

Out of scope

The proposed policy does not cover all applications for PVC and polystyrene. For example, the construction industry uses these in products such as wiring, downpipes and insulation. These tend to have a much longer life cycle than food packaging, and are less likely to appear in kerbside recycling.

We have not proposed to phase out all PVC and hard polystyrene packaging beyond that for food and beverages. We have limited information to understand the prevalence of these in wider use, or to determine the costs and benefits of a wider ban. We seek comment through consultation on whether to consider a broader phase-out of all PVC and polystyrene in stage 2 (by January 2025).

Question 8

Do you think we should include all PVC and hard polystyrene packaging in stage 2 of the phase-out (eg, not just food and beverage and EPS packaging)? Please explain your answer.

Question 9

What would be the likely costs or benefits of phasing out all PVC and polystyrene packaging (hard polystyrene and EPS) by 2025?

Alternatives for hard-to-recycle plastic packaging

In the long term, we would also like to see more reusable or refilling alternatives to single-use plastics. There is opportunity for New Zealand to rethink the use of some plastic packaging altogether, and to design innovative reuse models.

Table 5 lists some alternatives currently on the market, where packaging is still required.

Most of the PVC and polystyrene items proposed for phase-out have viable replacements. Where plastic packaging is in use, we want to encourage a shift towards higher-value and recyclable materials. For example, clear or natural plastics: PET, HDPE and PP.

Packaging with recycled content is preferable to new plastic (where feasible), and will reduce the waste footprint.

Table 5: Examples of alternatives for hard-to-recycle items made from PVC and polystyrene

Hard-to-recycle plastic item	Alternatives on market
PVC/PS meat tray	Clear PET meat tray
PVC biscuit tray	Clear PET biscuit tray
Rigid PVC containers	PET or PP containers
Foamed PS containers and takeaway packaging	PET, PP, cardboard or reusable containers
PVC/PS sushi packaging	PET, PP, cardboard or reusable containers
PS yoghurt six-packs*	PET or PP
EPS bins (poly bins)	Cardboard with wool insulation
EPS packaging (eg, homeware, electronics)	Moulded cardboard

PVC = polyvinyl chloride; PS = polystyrene; EPS = expanded polystyrene; PET = polyethylene terephthalate; PP = polypropylene

*PS has commercial appeal due to its 'snap' property. It may be replaceable with PET or PP.

Environmental impacts of alternatives

All packaging has an impact on the environment. Energy and resources are used in production, and there are environmental impacts at recycling or disposal. How we use, reuse and recycle packaging will influence its relative environmental impacts over the whole life cycle.

Rethinking Plastics concludes that we must take a full life-cycle approach to make informed decisions on the materials for individual applications. When comparing plastics with other materials there may be no clear preference – one material may have a lower effect on climate change (eg, requires less energy and resources to make) but be a higher risk for litter and microplastics.

We must also be careful before withdrawing from packaging altogether. Plastic packaging can extend the life of products, for example by protecting items while in transit, or keeping perishable items fresh for longer.[54]

Where plastic is used, we must maximise its value through reuse or recycling, and prevent it ending up as litter. The proposed phase-out will help to do away with packaging that cannot be recovered or recycled because it is uneconomic and there are few markets.

Transitioning to PET, HDPE or PP containers will (in most cases) reduce environmental impact, as these plastics are more likely to be recycled for use again.

Question 10

Do you believe there are practical alternatives to replace hard-to-recycle packaging (PVC, polystyrene and EPS)? If not, why?

[54] Office of the Prime Minister's Chief Science Advisor (2019).

Preventing harm from oxo-degradable plastics

Outline of proposal

The Government is proposing to phase out **all** oxo-degradable plastic in New Zealand. Section 23(1)(b) of the WMA allows for *controlling or prohibiting the manufacture or sale of products containing specified materials*. Oxo-degradable plastics are a problematic plastic material in the plastic type 7 category (other).

Oxo-degradable plastics are used for a wide range of packaging and single-use items, and harm the environment by fragmenting into smaller pieces of plastic. We therefore propose to apply the ban to **all** oxo-degradable plastics (not just packaging).

As with PVC and polystyrene, the phase-out would apply to items sold (at a cost) or given away with no charge.

Scope and timeframes

To align with stage 1 (for PVC and polystyrene), we propose the same phase-out date of January 2023 for all oxo-degradable plastics.

We are aware of oxo-degradable plastic items including bin liners, refuse bags, dog poo bags, straws, cutlery, single-use plastic cups, clothing and food and beverage packaging, agricultural film, and wrap. Consultation will help to identify the full range of products that will be in scope of a phase-out, and to analyse the costs and benefits.

Question 11

Do you agree with a mandatory phase-out of all oxo-degradable plastics by January 2023? If not, why?

Alternatives for oxo-degradable plastics

Alternatives will depend on the item being replaced, but for some items, we believe a transition to PET, HDPE, LDPE or PP plastics is viable. For single-use items such as straws and plastic cups, a re-usable alternative is preferable. If this is not possible, there are other alternatives such as paper or bamboo that if littered are more likely to degrade safely back into nature, and do not pose the same microplastic risk to wildlife.

Question 12

If you manufacture, import or sell oxo-degradable plastics, which items would a phase-out affect? Are there practical alternatives for these items? Please provide details.

Impacts of implementation

The impacts of a ban on PVC, polystyrene packaging, and oxo-degradable plastics will depend on how well businesses have already transitioned to other materials.

For businesses that need to use new materials, it will also depend on whether the cost is passed on to the public, and on the cost of the alternative packaging.

Initial research on takeaway containers suggests that the cost of switching from EPS[55] to cardboard or plant-based containers will increase the price between 7 and 10 cents (per container).

Likewise, there may be a cost in moving away from oxo-degradable plastics. An oxo-degradable straw costs about 2.5 cents; a paper straw costs 3 cents. For 1000 straws, this would equate to a $5 increase. On the other hand, some oxo-degradable items are more expensive than traditional plastics, and may therefore bring savings for businesses in the long term. Costs of alternatives depend on the material (eg, plastic or paper), the size of the item, and the supplier.

Some New Zealand manufacturers produce PVC, polystyrene and oxo-degradable plastic packaging and products. The impact of a phase-out will depend on the proportion of the targeted plastics they manufacture and sell, compared to other plastic packaging and items (ie, the percentage of the products they put in to market).

Table 6 outlines the potential costs and benefits.

Table 6: Estimated costs and benefits of a mandatory phase-out on PVC, polystyrene packaging and oxo-degradable plastics

Affected parties	Costs	Benefits	Impact
Environment The environment will be the main beneficiary of the policy.	N/A	Higher recyclability of the plastic packaging waste stream, which will likely reduce waste to landfill. More effective resource recovery and potentially more recycling may reduce reliance on raw materials. Less litter and a cleaner marine environment. Reduced risk of harm from poor management of low-value plastics. Progress towards a more circular economy for plastic. Potential for increased public awareness that leads to positive environmental behaviour (eg, taking reusable cups or lunch containers).	**High benefit**

[55] A price search shows EPS clamshell containers to be around 14 cents each.

Affected parties	Costs	Benefits	Impact
Packaging manufacturers Some NZ manufacturers will be affected. Many make other plastic packaging (or products) and would adjust to a phase-out in time.	Some may need to discontinue certain product lines, causing loss of revenue. Some may be unable to move to alternative materials without capital investment.	Opportunity to move into other packaging products or to increase sales of higher-value materials instead.	**Medium cost** for some. Smaller manufacturers may have higher impacts.
Importers and suppliers of packaging Many will import and supply other types of plastic packaging and products, and would adjust to a phase-out in time.	Those who can no longer sell the products in NZ may lose income.	Opportunity to increase sales of higher-value materials instead.	**Low-medium cost**
Retailers Some will need to transition to other materials. Others may have already moved away.	There may be a loss in income if unable to import and sell products that contain PVC or polystyrene packaging or oxo-degradable plastics. There may be a cost increase to move in-store items to other materials. The impact will depend on the extent to which retailers have already moved away. Some impacts from identifying the packaging for imported goods (in the absence of clear labelling)	Positive PR – 'doing the right thing'. Will help retailers (who are signatories) meet NZ Plastic Packaging Declaration (NZPPD) 2025 commitments The same rules for all mean no one is disadvantaged. Easier for retailers to influence packaging decisions through their supply chains.	**Low-medium benefit**
Brand owners Will affect some brand owners who use the targeted plastics to package their products. Based on the estimated volume of PVC and polystyrene in the NZ waste stream, we consider this would only affect a small number of food and beverage brands. We do not know the exact volume of oxo-degradable plastics in use but understand it to be low compared to higher value plastics (eg, PET and PP). Brands who sell other consumer goods like homewares and electronics may be affected by a phase-out of EPS packaging.	There may be a cost in moving to different materials. The impact will depend on whether any increase is passed on to the public. Early engagement with stakeholders suggests that for some brands this may be a large one-off cost due to infrastructure and testing requirements when changing food production lines. For other brands it could be between a few cents to a dollar per item (eg, a container may increase from 14 cents to over $1 depending on the materials).	Positive PR – brands seen as doing 'the right thing'. Will help brands (who are signatories) to meet NZPPD 2025 commitments around reusable, recyclable and compostable packaging. The same rules for all mean no one is disadvantaged.	Estimated impact is **low** cost for most brands and **medium-high** cost for others.

Affected parties	Costs	Benefits	Impact
Food outlets (takeaways, cafes, restaurants)	Costs may rise for outlets that need to replace packaging – the shopping bag ban indicates that businesses will adjust, and an adequate phase-in time will help mitigate cost impact. The impact will also depend on whether costs are absorbed or passed on to the public.	Positive PR – seen as doing 'the right thing' – potential increase in customer satisfaction The same rules for all mean no one is disadvantaged. Allowing reusable containers could result in a small cost saving.	**Low cost**
Local government Local government are responsible for: • waste management and recycling, including hard-to-recycle plastic packaging • litter clean-up.	May have costs from changing communications about kerbside recycling. We consider this negligible and many councils are already looking at moving away from collecting hard-to-recycle plastic.	Better waste management including less contamination in kerbside recycling. Cost saving from diverting materials from landfill, due to higher overall recyclability. Less litter (which may lower costs).	**Medium benefit**
Public	Potential for brands, retailers or food outlets to pass on costs to the public to cover alternative packaging. The cost will depend on the item replaced, and the alternative, and could vary from a few cents to around $1 per item (eg, a small increase on a pack of sushi).	Less confusion about kerbside recycling –packaging is more likely to be accepted in the system. Easier to make good packaging choices (eg, recyclable packaging). Less litter and a cleaner environment.	**Medium benefit**
Government The Government will need to oversee the regulatory changes, implementation, compliance and monitoring.	An initial cost for the regulatory change. Likely, a one-off cost for education and awareness to support implementation. Ongoing compliance and monitoring costs.	Will help New Zealand meet international obligations for sustainable trade and a circular economy.	**Medium cost** (over time costs may reduce as businesses adjust).
Waste industry (recyclers and re-processors) Material recovery facilities must either find end-markets for the plastic, or landfill any unrecyclable items. Recyclers want plastic materials separated into high-value, single streams for further processing.	N/A	Less hard-to-recycle plastic in the system will reduce cost for recyclers and improve the efficacy of collecting, sorting and recycling high-value plastic. Removing PVC as a contaminant from the recycling stream will make sorting and recycling high-value materials like PET easier. Potential savings from less material going to landfill due to contamination or lack of markets. Easier for recyclers/exporters to meet international requirements.	**High benefit**

Question 13

Have we identified the right costs and benefits of a mandatory phase-out of the targeted plastics? If not, why not? Please provide evidence to support your answer.

Costs and benefits

The main beneficiaries of a mandatory phase-out are the environment and our wider resource recovery sector including recyclers, re-processors and waste operators.

A phase-out will:

- help to clean up our kerbside recycling system, making it more likely that the materials collected can be recycled effectively
- save costs for local government and the waste industry, who will have less contamination and complexity in the recycling system, and less litter
- reduce confusion for retailers and brand owners, by removing some of the hard-to-recycle and harmful materials from the system, making it easier for them to invest in more sustainable materials.

Many New Zealand manufacturers, brands and businesses have already moved away from using PVC and polystyrene, in line with best practice and international trends.

Overall, the volume of the targeted plastics we understand to be manufactured and used in New Zealand is low compared to other types of plastic (eg, PVC and polystyrene made up 16 per cent of the resin imported into New Zealand in 2018). We are aware of large retailers who have also made a deliberate choice not to use or stock oxo-degradable plastics, due to the growing global concern.

For most businesses, local government and the public, we believe a move away from the targeted plastics would have a low impact. Businesses such as takeaway shops and cafes may have an initial cost as they transition to higher value materials. As with the plastic shopping bag ban, there may be upfront costs in moving to alternatives, but we expect businesses will adjust or pass that cost on to their customers. Many small businesses have been affected financially by COVID-19, and may require lead-in time to prepare for a transition to new packaging.

Early engagement with stakeholders suggests that for a small number of brands the impact may be much higher, as they upgrade production lines. Allowing for a longer lead-in will likely help alleviate cost impacts.

New Zealand's active plastics manufacturing sector will be affected by a phase-out of some hard-to-recycle plastics. However, the targeted plastics may be one of a number of products they manufacture. This policy proposal will not affect other products like EPS insulation and construction items, and PVC piping.

Question 14

How likely is it that phasing out the targeted plastics will have greater costs or benefits than those discussed here? Please provide details to explain your answer.

Limitations of analysis

This is only a preliminary assessment of the potential impacts of a mandatory phase-out for certain hard-to-recycle plastics. The analysis is informed by publicly available information, and information gathered through early engagement with stakeholders. Consultation will provide an opportunity to gather more information and test assumptions.

After consultation, we will analyse the full impact on the public and businesses (including the packaging industry, food and grocery sector, retailers and importers, and others). Information gathered through consultation may also inform a formal cost-benefit analysis.

Risks and unintended consequences

There is a risk that by removing the targeted plastics, it will lead to greater use of other hard-to-recycle materials (or materials not easily disposed of outside landfill). These include some bio-based plastics, some compostable and degradable packaging, and items made from multiple composites (eg, a cardboard tray with a plastic liner).

We plan to mitigate these risks by pairing the phase-out with best practice guidance on sustainable packaging. This is an opportunity to educate businesses and the public, and raise awareness of the environmental impact of different choices.

We also propose a staged approach, allowing extra time to find alternatives for more difficult items.

Lastly, we plan to target oxo-degradable plastics because an early move now will prevent harm in the future. These plastics are particularly problematic as they cannot be recycled, and they break down into microplastics, which are harmful to the land and marine environments.

Question 15

What would help to make it easier for you and your family, or your business/organisation to move away from hard-to-recycle plastic packaging and use higher value materials or reusable/refillable alternatives?

Proposal 2:
Take action on single-use plastic items

Single-use items for phase-out

The Government has identified a shortlist of single-use plastic items that are problematic in the waste or litter stream, and present an unnecessary use of plastic. The list is based on a range of considerations including early engagement with stakeholders, environmental harm, availability of alternatives, international precedent, and the potential impacts and risks of banning the item.

We now seek your feedback on a proposed phase-out of these items. Table 7 lists the items, and appendix 2 has further analysis, including environmental impacts and potential exemptions.

Table 7: Single-use plastic items to consider for phase-out

Item for phase-out	Proposed definition*	Alternatives
Plastic straws	Drinking straw made wholly or partly from plastic; not designed or intended for reuse. Exemptions will be considered to allow access to plastic straws for disabled persons and for medical purposes.	No straw Reusable metal or bamboo straws Edible straws Paper straws
Plastic cotton buds	A small rod made wholly or partly of plastic with cotton wrapped around one or both ends; not designed or intended for reuse.	Cotton buds with stems made from paper, bamboo or other materials Reusable cotton buds (replaceable heads)
Plastic drink stirrers	A short stick to stir drinks, made partly or wholly of plastic.	Wooden stirrers Reusable stirrers, eg, metal spoons
Single-use plastic tableware (plates/trays, bowls) **and cutlery**	Plastic tableware and cutlery intended for single use (including multi-packs).	Reusable plates, crockery and cutlery Paper, cardboard or bamboo alternatives
Single-use plastic produce bags	A lightweight bag under 70 microns thick, without handles, for carrying fruit and vegetables.	No bag Reusable produce bags made from, eg, hessian, hemp, cotton
Single-use plastic cups and lids (not including disposable coffee cups)	Single-use plastic cups and their lids, **made from hard-to-recycle plastics (plastics 3, 4, 6 and 7)**, including paper cups with plastic or wax linings, provided singly or in bulk-packs. Exemptions for single-use plastic cups made from recyclable plastics (1, 2 and 5). Note: does not include disposable coffee cups and their lids.	Reusable cups Paper cup Cups made from PET, HDPE or polypropylene could be exempt as these are more likely to be recyclable.
Non-compostable produce stickers	Any single-use sticker on fruit or vegetables that are sold in New Zealand and made partly or wholly of plastic that is not compostable.	Compostable stickers

*The definitions included above a proposed for the purpose of consultation only and are subject to change as required.

Question 16

What do you think about the proposed mandatory phase-out of some single-use plastic items (see table 7)?

- Please specify any items you would leave out or add, and explain why.

Outline of proposal

The Government is proposing a phase-out under section 23(1) (b) of the WMA, *to control or prohibit the manufacture or sale of products that contain specified materials* for up to seven single-use plastic items (see table 7).

Under the WMA, a phase-out would apply to items given away free (eg, a drink stirrer) as well as at a charge.

Until genuine marine degradable and home compostable alternatives are available, we propose that any phase-out includes items made of plastic that is 'degradable', including 'biodegradable', 'compostable' and 'oxo-degradable' unless otherwise stipulated. This is because oxo-degradable items are designed to degrade into microplastics, and biodegradable and compostable items rarely enter the type of environment they are designed to fully degrade in.[56]

Implementation and timing

We propose to phase out all items by 2025 at the latest, but seek your feedback to determine appropriate dates for each item. Some items may be easier to phase out than others. Dates for regulations to come into force could vary according to the item and the time needed by businesses to comply.

Question 17

Do the proposed definitions in table 7 make sense? If not, what would you change?

Question 18

What would be an appropriate phase-out period for single-use items? Please consider the impact of a shorter timeframe, versus a longer timeframe, and provide details where possible.

a) 12 months?

b) 18 months?

c) 2 years?

d) 3 years?

e) Other?

If you think some items may need different timeframes, please specify.

[56] 'Compostable' items generally require an industrial compost where the temperature is tightly controlled to ensure degradation. Home compost does not allow for this level of control.

Other problematic single-use items

Disposable coffee cups and wet wipes contain plastic and are particularly problematic as they are hard-to-recycle and create problems in the environment. Both products have reusable alternatives, although these may not always be accessible (eg, for mobile vendors, when travelling, or in healthcare). Plastic-free, single-use alternatives are not widely available.

At this time we do not propose a phase-out of disposable coffee cups (lined with plastic) or of wet wipes that contain plastic. Instead, we seek feedback through consultation on other options that may reduce use or encourage uptake of reusable alternatives. See below for more detail.

Single-use plastic coffee cups

Estimates suggest that New Zealanders use around 295 million disposable cups per year (including coffee cups). Most of the coffee cups available in New Zealand have a plastic lining. The lining made from either polyethylene (PE) or polylactic acid (PLA: a bio-based plastic) helps the cup to maintain its integrity when filled with hot liquids. The cup and liner are difficult to separate, making the cups hard to recycle. Only a small number of facilities (about 10) in New Zealand take compostable coffee cups, and those that do have voiced concerns about residual plastic in the compost.

We are seeking feedback through consultation on options to reduce the impact of disposable coffee cups on the environment. Options could include:

- investment to scale up reuse systems like cup-lending schemes Again Again and Cupcycling, who partner with cafes to offer customers a 'loan cup' from a fleet of reusable cups for a small refundable deposit
- investing in innovation and scaling up production of non-plastic alternatives. For example, a New Zealand based supplier recently launched a 100 per cent paper cup and lid (developed overseas) that is suitable for hot drinks
- public education campaigns to promote reusable alternatives
- exploring the feasibility of a scheme to collect and either recycle or compost cups (noting the current logistical and technical challenges to both recovering and processing of coffee cups).

Disposable coffee cups are ubiquitous, and these options could help to reduce environmental impact from the plastic-lined versions in the short term. Once alternatives are more widely available, we would like to work towards banning plastic-lined disposable coffee cups. Viable alternatives could include wider access to reuse schemes, as well as non-plastic alternatives.

Wet wipes that contain plastic

Many of the wet wipes currently sold in New Zealand contain plastic. These are problematic because people sometimes flush them down drains, where they can block sewerage systems and wastewater treatment plants.

The main alternatives are reusable cloths. Cotton pads are also available. Some wet wipes do not contain plastic, but these make up only a very small proportion of the market.

We are seeking feedback through consultation on options to reduce the impact of wet wipes (that contain plastic) on the environment. Options could include:

- mandating that labels include a clear and obvious ‘do not flush’ message, and information to highlight that the wipes contain plastic
- public education campaigns to encourage reduction in use and appropriate disposal
- a product stewardship approach – for example; in Europe producers will have to cover the cost of waste management, data gathering, and education and awareness associated with wet wipes from 31 December 2024[57]
- working with industry on a voluntary agreement to shift away from plastic as an ingredient in wet wipes.

Once non-plastic alternatives are more widely available, we would like to work towards banning plastic altogether as an ingredient in wet wipes.

Question 19

What options could we consider for reducing the use of single-use coffee cups (with any type of plastic lining) and wet wipes that contain plastic? You may wish to consider some of the options discussed in this consultation document or suggest other options.

Question 20

If you are a business involved with the manufacture, supply, or use of single-use plastic coffee cups or wet wipes (that contain plastic), what would enable you to transition away from plastic based materials in the future?

Question 21

What do you consider an appropriate timeframe for working toward a future phase out of plastic lined disposable coffee cups and wet wipes containing plastic?

Other items

We are aware of other items identified as problematic in the waste or litter stream that have not been included in table 7. Many of these, such as cigarette filters (cigarette butts were the top item collected in the KNZB 2018 litter audit), balloons, and glitter, would require a significant shift in behaviour. These items are less likely to have reusable or plastic-free alternatives. Consultation will help us to understand whether we have targeted the right items for phase-out.

Potential risks and unintended consequences

There may be unintended consequences for some items. There may also be an increase of other alternatives that still harm the environment. For example, it may take more resources to create a metal straw than a single-use plastic straw. Reusing a metal straw will lower the impact on the environment, but not using a straw at all is a positive net benefit for the environment. We propose to support any phase-out with best practice guidance and an education campaign aimed at businesses and the public.

[57] Council of the European Union (2019).

Impacts of implementation

Benefits

The main benefits of a single-use phase-out are for the environment.

The phase-out will:

- encourage the uptake of reusable options that if used many times will be environmentally beneficial compared with single-use plastics[58]
- reduce plastic litter, resulting in cleaner oceans and waterways.

Other benefits:

- Local government would have less cost due to less waste and litter to manage
- Businesses that manufacture, import, or supply alternative goods would benefit from an uptake in these
- Businesses that have already moved may see the benefit of a level-playing field.

Costs

The main costs fall to businesses that need to substitute single-use plastics with alternatives. Manufacturers and importers could have to stop production of certain products and either invest in manufacturing alternatives, or lose revenue.

The impact on businesses will depend on whether the alternatives are more expensive. Some will be cost-effective. For example, going without straws is a free alternative to single-use straws that also better reflects the waste hierarchy.

Some single-use items can be replaced by reusable alternatives (eg, replacing a drink stirrer with a metal spoon) that are likely to be cheaper in the long run. However, some alternatives may be more expensive. For example, a search found that wooden forks were double the price of plastic (6 cents per fork compared with 3 cents). Consumers may pay more if businesses choose to pass on the cost of alternatives.

Table 8 shows the potential impacts of a mandatory phase-out of single-use plastics. Appendix 2 lists the impacts on business for specific items.

We seek your feedback to inform the costs and benefits of a phase-out for each of the items in more detail, including any risks and unintended consequences.

[58] Office of the Prime Minister's Chief Science Advisor (2019).

Table 8: Estimated costs, benefits and impact of phasing out single-use items

Affected party	Costs	Benefits	Impact
Environment	If the alternatives become litter, there will be some cost. We expect this to be lower than the environmental cost of the targeted items: there will be a net benefit.	A significant benefit is expected from banning the items from the waste stream; this also stops them from becoming litter. A ban will encourage reuse and may stimulate other positive behaviour in waste minimisation and reuse.	High benefit
Manufacturers of alternatives The number of domestic manufacturers offering alternatives is expected to keep growing. This market offers scope for innovation.	In the long term, there may be more competition when makers of single-use items switch to greener alternatives.	In the short term, these manufacturers are well placed to capitalise on a phase-out.	Medium benefit
Importers and suppliers of single-use items In 2016, New Zealand imported nearly $1.9 billion of plastics and plastic articles. It is unknown what percentage is made up of the items targeted for phase-out.	Importers and suppliers of banned single-use items will need to deal in other products or relocate to other markets.	Potential for new, more sustainable lines of business.	Medium cost
Importers and suppliers of alternatives	In the long term, these businesses may face more competition from manufacturers of single-use items switching to production of greener alternatives.	In the short term, these businesses are well placed to capitalise on a phase-out.	Medium benefit
Retailers (including hospitality) Those offering single-use plastic items will need to switch to alternatives. For some items this could mean offering no alternative.	Retailers will need to meet any cost of moving to alternatives. These costs will likely be passed on to consumers.	Retailers may save money from eliminating non-essential items, eg, a café could stop offering drink stirrers (of any type).	Low cost
Public	Retailers may pass on the cost of alternatives to the consumer. The public may have a one-off cost to invest in reusable items such as straws, rather than single-use plastic straws. (Over time, reuse may result in a saving.)	Consumers may save money from eliminating non-essential items (eg, some cafes offer a discount on reusable cups or containers). Less litter may have positive economic impacts by protecting ecosystems, animals and marine life, and reducing impact on locations popular with tourists.	Low cost

Affected party	Costs	Benefits	Impact
Government The Government will need to oversee the regulatory changes	An initial cost for the regulatory change. Likely a one-off cost for education and awareness to support implementation. Ongoing compliance and monitoring costs.	Will help New Zealand to meet international obligations to reduce plastic pollution.	**Medium cost** (costs may reduce as businesses adjust).
Local government	The alternative products may enter the waste stream or be recycled, placing minor extra cost on waste or recycling operators.	The alternatives should better reflect a circular economy, reducing the material entering the waste stream or becoming litter.	Low benefit

Question 22

Have we identified the right costs and benefits of a mandatory phase-out of single-use plastic items? If not, why? Please provide evidence to support your answer and clarify whether your answer applies to a particular item, or all items.

Compliance, monitoring and enforcement of regulations

As part of the Ministry for the Environment's regulatory stewardship responsibilities, it may undertake compliance monitoring and enforcement (CME) to:

- determine the extent of compliance with phase-out rules
- investigate and determine the nature and extent of any non-compliance
- take appropriate enforcement action.

Under Section 76 of the WMA, the Secretary for the Environment can appoint enforcement officers to do this. CME includes compliance monitoring and auditing, as well as investigation and enforcement.

If there is an alleged breach or non-compliance, various enforcement tools may be used to bring about positive behaviour change, take corrective action and apply penalties. Enforcement outcomes will be proportionate to the seriousness of the non-compliance, following an investigation process.

Penalties in the WMA for non-compliance include:

- persons knowingly contravening regulations under section 23(1)(b) are liable for a fine of up to $100,000
- persons doing various acts to obstruct an enforcement officer or auditor's activities, or inciting another person to do these, are liable for a fine of up to $5000
- under section 67, for any of the above offences, a court can order the person to pay an additional penalty for commercial gain flowing from the offence.

The compliance and enforcement strategy would be transparent, evidence-informed, risk-based, responsive and proportionate to the risks or harms being managed. This will be supplemented by annual audits reflective of the level of resourcing within the Ministry and the level of assurance required.

Question 23

How should the proposals in this document be monitored for compliance?

How to give feedback

The Government welcomes your comments on this consultation.

This document sets out two separate proposals for phase-outs under the Waste Minimisation Act 2008.

- Proposal 1: phase out hard-to-recycle plastics
- Proposal 2: phase out single-use plastic items.

The consultation ends at 5 pm on 4 December 2020.

Answering the questions (making a submission)

The questions throughout this document seek your responses to these proposals. The full set of questions is listed below. They are a guide only, and all comments are welcome.

- Whether you simply answer the questions, or add more comments or information, this is known as **making a submission**.
- You may wish to respond to one proposal or to both. You do not have to answer all the questions.
- To ensure your point of view is clearly understood, you should explain your rationale and provide supporting evidence where appropriate.

How to give your feedback

There are two ways you can answer the questions or make further comment.

- **Complete the online form –** this is the preferred way to receive submissions.
- Write your own submission by:
  - either printing the questions and answer all or some of the questions, or
  - providing written feedback on what you think about the proposals (eg, not answer the questions but provide comments).

Sending your own submission

By post

Post to: Plastics Consultation, Ministry for the Environment, PO Box 10362, Wellington 6143. Please include:

- the title of the consultation (Reducing the impact of plastic on our environment)
- your name or organisation name
- postal address
- telephone number
- email address.

By email

Email your written submission to Plastics.Consultation@mfe.govt.nz as a:

- PDF
- Microsoft Word document.

Using the subject line: Plastics Consultation

Please include:

- the title of the consultation (Reducing the impact of plastic on our environment)
- your name or organisation name
- postal address
- telephone number
- email address

Submissions close at 5 pm on 4 December 2020.

Contact for queries

Phone: (04) 439 7400

Email: Plastics.Consultation@mfe.govt.nz

Postal: Plastics Consultation, Ministry for the Environment, PO Box 10362, Wellington 6143.

Publishing and releasing submissions

All or part of any written submission the Ministry for the Environment receives electronically or in printed form, including your name, may be published on our website, www.mfe.govt.nz. Unless you clearly specify otherwise in your submission, the Ministry will consider that you have consented to website posting of both your submission and your name.

Submissions may also be released to the public under the Official Information Act 1982 following requests to the Ministry for the Environment (including by email). Please advise if you object to the release of any information contained in your submission and, in particular, which part(s) you consider should be withheld, together with the reason(s) for withholding the information.

Any personal information you supply to the Ministry when making a submission will only be used by the Ministry in relation to the consultation covered in this document. You have the right to request access to or to correct any personal information you supply to the Ministry.

If you have any questions about the publishing and releasing of submissions, or if you would like to access or correct any personal information you have supplied, please email info@mfe.govt.nz.

Questions in this document

If you are posting your feedback, you may wish to print this list out and respond to the questions.

1. Do you agree with the description in this document of the problems with hard-to-recycle plastic packaging and single-use plastic items? If not, why?
2. Have we identified the correct objectives? If not, why?
3. Do you agree that these are the correct options to consider? If not, why?
4. Have we identified the right criteria (including weightings) for evaluating options to shift away from PVC and polystyrene packaging, oxo-degradable plastics and some single-use items? If not, why?
5. Do you agree with our assessment of the options, and our decision to take forward only one option (a mandatory phase-out)? If not, why?
6. Do you agree with the proposed phase-out of PVC and polystyrene packaging as set out in two stages (by 2023 and by 2025)? If not, why?
7. Have we identified the right packaging items that would be covered by a phase-out of PVC and polystyrene packaging? If not, what would you include or leave out, and why?
8. Do you think we should include all PVC and hard polystyrene packaging in stage 2 of the phase-out (eg, not just food and beverage and EPS packaging)? Please explain your answer.
9. What would be the likely costs or benefits of phasing out all PVC and polystyrene packaging (hard polystyrene and EPS) by 2025?
10. Do you believe there are practical alternatives to replace hard-to-recycle packaging (PVC, polystyrene and EPS)? If not, why?
11. Do you agree with a mandatory phase-out of all oxo-degradable plastics by January 2023? If not, why?
12. If you manufacture, import or sell oxo-degradable plastics, which items would a phase-out affect? Are there practical alternatives for these items? Please provide details.
13. Have we identified the right costs and benefits of a mandatory phase-out of the targeted plastics? If not, why not? Please provide evidence to support your answer.
14. How likely is it that phasing out the targeted plastics will have greater costs or benefits than those discussed here? Please provide details to explain your answer.
15. What would help to make it easier for you and your family, or your business/organisation to move away from hard-to-recycle plastic packaging and use higher value materials or reusable/refillable alternatives?
16. What do you think about the proposed mandatory phase-out of some single-use plastic items (see table 7)? Please specify any items you would leave out or add, and explain why.
17. Do the proposed definitions in table 7 make sense? If not, what would you change?

18. What would be an appropriate phase-out period for single-use items? Please consider the impact of a shorter timeframe, versus a longer timeframe, and provide details where possible.
    a) 12 months?
    b) 18 months?
    c) 2 years?
    d) 3 years?
    e) Other?

    If you think some items may need different timeframes, please specify.

19. What options could we consider for reducing the use of single-use coffee cups (with any type of plastic lining) and wet wipes that contain plastic? You may wish to consider some of the options discussed in this consultation document or suggest other options.
20. If you are a business involved with the manufacture, supply, or use of single-use plastic coffee cups or wet wipes (that contain plastic), what would enable you to transition away from plastic based materials in the future?
21. What do you consider an appropriate timeframe for working toward a future phase out of plastic lined disposable coffee cups and wet wipes containing plastic?
22. Have we identified the right costs and benefits of a mandatory phase-out of single-use plastic items? If not, why? Please provide evidence to support your answer and clarify whether your answer applies to a particular item, or all items.
23. How should the proposals in this document be monitored for compliance?

Appendix 1: International measures to address pollution from plastic packaging and single-use plastics

Table 9: International examples of initiatives to reduce plastic waste and pollution[59]

SU = single use, PVC = polyvinyl chloride, EPS = expanded polystyrene, PET = polyethylene terephthalate

Jurisdiction	Initiative	Impact on hard-to-recycle materials stream	Scope	Implementation date
Australia	National Packaging Targets for 2025 including 100 per cent reusable, recyclable and compostable packaging and phasing out of problematic and unnecessary single-use (SU) plastics Territorial governments consulting on phase-out of single-use plastics (generally in line with EU regulation): • Queensland • South Australia • Western Australia • ACT	Australian Packaging Covenant Organisation identified PVC and polystyrene as problematic materials	All packaging is targeted through the National Packaging Targets	Targets introduced in 2018
Queensland	Plastic Pollution Reduction Plan proposes a range of actions including potential bans on some SU items	n/a	Prohibition on straws, stirrers, plates and cutlery. Exemptions for 'integral packaging' (eg, straw on a juice box) and disability needs. Extending to coffee cups, plastic cups and heavyweight plastic bags in future.	1 July 2020 onwards

[59] The examples here are based on desktop research and cover a snapshot in time. They therefore may not reflect the final policy decisions by each jurisdiction.

Jurisdiction	Initiative	Impact on hard-to-recycle materials stream	Scope	Implementation date
ACT	*Plastic Reduction Bill* [in progress] proposes to phase out selected problematic SU plastics	Targets EPS and oxo-degradable plastics	Immediate: • SU cutlery • SU stirrers • SU EPS food + drink containers After 12 months: • SU fruit and veg 'barrier bags' • Oxo-degradable plastics • SU straws (some exemptions) Longer-term consideration: • Plastic-lined SU coffee cups/lids • SU tableware • Heavyweight SU plastic bags • Cotton ear buds	TBC
Western Australia	Government recently consulted on proposals to phase out a wide range of SU plastic items	n/a	Balloons, cotton buds, cutlery, plates, stirrers, fishing gear, takeaway coffee cups/lids and wet wipes.	TBC
South Australia	Proposed ban	Targets EPS and oxo-degradable plastics	Bill proposing ban on sale and distribution of: straws, stirrers, cutlery EPS cups/containers and all oxo-degradables	TBC – Bill went through parliament in April 2020 but implementation is on hold due to COVID-19
Canada	Proposed ban on SU plastic items by federal government – final policy proposal not confirmed	n/a	Microbeads, plastic bags, straws, cutlery, plates and stirrers	TBC – By 2021 has been indicated for some items
China	Phased approach to ban certain single-use use plastics nationwide by 2025 Non-degradable bags banned in major cities by Dec 2020, effective nationwide by 2022	EPS food containers, effective end of 2020	SU items (cotton buds, cutlery, tableware), EPS food containers	Varying – phased approach targeting specific items in certain industries and cities Overall target 2025

Jurisdiction	Initiative	Impact on hard-to-recycle materials stream	Scope	Implementation date
	Total ban on plastic and EPS tableware (plates, containers, cups) and SU cotton buds by Dec 2020 Restaurant industry to reduce SU plastic items by 30%. SU straws banned from industry by Dec 2020			Dec 2020 – SU plastic straws and cutlery, EPS containers used in restaurant industry, non-degradable bags (2020 some cities, 2022 nationwide)
European Union, European Commission	Directive (EU) 2019/904 on SU plastics. By July 2021, member states required to implement: • consumption reduction initiatives • market restrictions on plastic: cotton-buds, cutlery, plates, straws, beverage stirrers, balloon sticks, food and beverage containers made of EPS • product requirements (eg, plastic beverage bottles must contain 30% recycled plastic by 2030) • clear product marking/labelling requirements; extended producer responsibility	Market ban on EPS food and beverage containers and oxo-degradable plastics by 2021	EU-wide Implemented through laws, regulations and administrative provisions (as relevant to each member state, and as applicable to each provision) Directive applies to specified SU plastics common on EU beaches, including oxo-degradables and plastic fishing gear	2019
France	The French government has pledged to align with EU goals and transition to recycling 100% of its plastic by 2025 Includes: a deposit refund scheme for plastic bottles, a tax on plastic packaging without recycled content, tax incentives for landfill vs recycling, SUP bans, standardisation of recycling systems Voluntary National Pact on plastic packaging – Feb 2019	Certain SU items banned, starting in 2020 A lower VAT rate on bottles with recycled content	SU items including plates, cups, plastic cotton buds, straws, cutlery, teabags and toys in fast food, plastic packaging	Variable but overall targets by 2025 • 2020 – SU plastic plates, cups, cotton buds • 2021 – SU plastic straws and cutlery • 2022 – SU plastic teabags, and toys in fast food
Germany	Extensive product stewardship for packaging 'Verpack G', which applies a calculated levy between manufacturers and distributors of	Applies to all packaging introduced to the German market including hard-to-recycle	All packaging	2019

Jurisdiction	Initiative	Impact on hard-to-recycle materials stream	Scope	Implementation date
	packaging to provide takeback services for packaging put into the German market			
Scotland	Commitment to meet or exceed standards of the EU plastics directive including bans or restrictions on cutlery, plates, food and drink containers made of EPS by 2021	Will phase out EPS in food and beverage containers by 2021	EPS food and beverage containers	By 2021
Spain	*Circular Spain 2030* strategy Approved late May 2020 • From July 2021 plastics with non-plastic alternatives will be banned including plates, cutlery, cotton buds, straws and microbeads in cosmetic/cleaning products • Indirect tax on the manufacture, import and intra-community purchase of SU plastic containers • Tax on non-recyclable packaging	Tax on non-recyclable packaging	Plates, cutlery, cotton buds, straws, microbeads, SU plastic containers and hard-to-recycle packaging	Expected date mid-2021
South Korea	Regulation: • Classifies packaging materials by how easy they are to recycle • Works to phase out hard-to-recycle plastics	A focus on PVC, shrink packaging or coating, and coloured PET	Food and beverage plastic packaging with a focus on banning PVC and coloured PET Some exceptions for PVC where there are no alternatives	Announced 2018 Passed 2019 Fully implemented by Sept 2020
Switzerland	Ban on use of PVC in packaging of mineral water, soft drinks and beer	Targets PVC	PVC included in beverage bottles (water, soft drinks, beer)	1990
United Kingdom	Ban on SU plastics including plastic cotton buds, drink stirrers and straws Voluntary Plastic Pact under the New Plastics Economy Global Commitment Framework	Plastic pact targets hard-to-recycle plastics – identifies PVC and polystyrene as problematic materials to phase out	Plastic cotton buds, drink stirrers and straws	October 2020 Pact – ongoing till 2025

Jurisdiction	Initiative	Impact on hard-to-recycle materials stream	Scope	Implementation date
United States (state-wide)	Existing state-wide ban or fines			
California	Ban NB: In September 2019 a proposed ban on SU plastics by 2030 failed to progress to law	N/A	Plastic bags	Effective Nov 2016
Maine	Ban	Targets EPS	SU takeaway EPS containers	1 Jan 2021
Hawaii (Honolulu)	Ban	Targets EPS	Plastic cutlery, straws, utensils, and EPS cups/plates/containers	Effective Jan 2021
Vermont	Ban	Targets EPS	Retailers and restaurants banned from providing customers with SU plastic bags, stirrers, and EPS cups/containers	Effective July 2020
Colorado	Ban	Targets EPS	Food retailers and restaurants EPS take-out food packaging Banned stirrers Straws available on request Phase out plastic bags	Effective 1 January 2022
Maryland	Ban	Banned provision/use of EPS in certain industries Banned sales of EPS containers	EPS food service products (eg, cups, plates, bowls, trays, etc.) used in schools and food services 1 year implementation waiver	1 July 2020
Washington	Ban	Targets EPS	Prohibited sale, manufacture, and distribution of EPS food service products	1 June 2022
New Jersey	Ban	Targets EPS City of Rahway, New Jersey banned PVC and EPS in food packaging as early as 1997	EPS food service products Restricted use of plastic straws and banned SU plastic bags	January 2022

Appendix 2:
Analysis of single-use plastic items

This section analyses each of the single-use products proposed for phase-out in this consultation document.

Single-use (SU) plastic straws *These are popular for drinks in bars, cafes and restaurants.*	
Scale of the problem	It is estimated that New Zealanders use over 200 million plastic straws each year.[60] The 2019 Keep New Zealand Beautiful Litter Audit found 415 plastic straws out of 56,322 items, 13,908 made of plastic.[61] These straws weighed 238 grams from a total weight of over 293 kilograms, 54 kilograms of which was plastic. Each year Sustainable Coastlines picks up more than 23,200 plastic straws from Auckland beaches alone – they are the ninth most-prevalent item found in beach clean-ups.[62] Straws comprised 2% of the litter items found in the Palmy Plastic Pollution Challenge.[63] Plastic straws are lightweight and very prone to being moved by wind and waterways if not contained as waste.
International examples	Bans on SU plastic straws have taken effect or will take effect in several jurisdictions, eg: • the UK from October 2020 • China has banned non-degradable, disposable plastic straws in the catering industry from the end of 2020 • France from January 2021 • the EU from July 2021.
Potential exemptions	Some people require an SU plastic straw due to physical disabilities or conditions, such as cerebral palsy and multiple sclerosis. Plastic has a good combination of strength, flexibility and safety compared with, eg, paper (too soft) and metal (too hard). Depending on the submissions, similar exemptions could be considered to those in the English and EU regulations including: • allowing catering establishments to provide a plastic straw on request • straws needed for medical reasons or devices
Alternatives	Straws are not strictly necessary, and it is likely that many customers would not ask for them if not provided. Alternatives include paper straws and reusable straws made of metal, bamboo or silicon. Thicker plastic straws can be reusable, and the definition of 'single-use' may need a thickness component.
Impacts on business and the public if phased out	We consider the impact to be low. Hospitality businesses may even save money from not providing these straws. However, we note that alternative straws may have an additional cost, as well as providing plastic straws on request. Many businesses are already committed to non-plastic alternatives, including over 35 businesses as part of Straw Free Waiheke. Similar measures are in place on the waterfront in the Wellington CBD. Some food outlets may rely on straws, for example bubble tea merchants, where a straw is part of the experience of getting the tapioca bubbles from the cup. The difficulty in finding alternatives is reflected in regulations in Vancouver, Canada, which have allowed a one-year temporary exemption for bubble tea merchants to allow them time to source an alternative. A ban may affect a small number of NZ manufacturers and importers.

60 Auckland Council (2019).

61 Keep New Zealand Beautiful (2019).

62 Auckland Council (2019).

63 Manawatū River Source to Sea (2019).

Single-use plastic produce bags *These bags have no handles. They are popular for carrying fresh produce because they are resilient to moisture and can help separate purchases. The NZ ban on plastic shopping bags does not include these bags because the Waste Minimisation (Plastic Shopping Bags) Regulations 2018 define a "plastic shopping bag" as a bag that "has handles" (among other features).*	
Scale of the problem	The environmental impacts of these bags are similar to those of the banned plastic shopping bags. As with plastic straws, they are prone to being moved to the ocean by wind and waterways. Ocean Conservancy lists plastic bags alongside plastic cutlery as a "most deadly" item, and a threat to birds, turtles and marine mammals who mistake it for food. The 2018 Keep New Zealand Beautiful Litter Audit found 118 "supermarket type" lightweight plastic bags out of 56,322 items, 13,908 made of plastic.[64] They weighed 424 grams from a total weight of over 293 kilograms, 54 kilograms of which was plastic. It is not clear if these bags were the type already banned. Palmy's Plastic Pollution Challenge found that plastic bags (including, but not limited to produce bags) were in the top four litter items across the collection sites.[65] Other beach clean-up groups have reported a decrease in bags since the shopping bag ban in July 2021.
International examples	We are not aware of any governments specifically banning produce bags. A number of UK supermarket chains have voluntarily stopped providing plastic bags for produce and baked goods.
Potential exemptions	We do not proposed any exemptions.
Alternatives	We understand that consumers are generally happy to go without these bags once the option is removed from stores. Also, reusable produce bags are sold online and in store. Options include composite bags of hessian with other materials, and bags made of cotton, recycled fabric or jute. Some retailers also provide boxes for re-use. Paper shopping bags are available in some shops, but they are not as resilient if they get wet. Prices generally reflect how long the bags are likely to last.
Impacts on business and the public if phased out	We consider the impact on the public to be low – many shoppers have adjusted to using alternatives since the ban on plastic shopping bags. People on lower incomes may be disproportionately affected if they can't afford longer-life bags. Retailers could profit from not having to provide free bags and by selling alternatives. They are in a good position to help their customers adapt. Some retailers are investigating how to provide alternatives.

Single-use, plastic-stemmed cotton buds *These have a range of uses including removing makeup and cleaning (eg, jewellery, keyboards, ears).*	
Scale of the problem	In England, an estimated 1.8 billion plastic-stemmed cotton buds are used every year. About 10% of these are flushed down toilets and can end up in waterways and oceans and threaten precious marine wildlife.[66] We do not know exactly how many are used by New Zealanders each year. However, if the per capita rate is similar to England, this equates to around 164 million each year. If 10% of these are flushed, a significant number would likely end up in waterways and marine environments, posing a significant risk to wildlife and ecosystems. The Ministry for the Environment's Marine Environment 2019 report[67] showed the top two types of plastic waste for seven beach clean-up areas. At Waikanae Beach (near Gisborne) lollipop sticks and cotton buds were the second most common type of plastic litter, comprising 28% of the waste.

64 Keep New Zealand Beautiful (2019).

65 Manawatū River Source to Sea (2019).

66 Department for Environment, Food and Rural Affairs (2020).

67 Ministry for the Environment and Stats NZ (2019).

Single-use, plastic-stemmed cotton buds *These have a range of uses including removing makeup and cleaning (eg, jewellery, keyboards, ears).*	
International examples	Bans have taken effect or will take effect in several jurisdictions in the coming years including: • France from January 2020 • UK from October 2020 • China from the end of 2020 • EU from July 2021.
Potential exemptions	The English regulation has an exemption for medical, forensic and scientific purposes. If the alternatives below are not appropriate for these purposes, New Zealand could consider a similar exemption.
Alternatives	Alternatives include cotton buds with stems made from other materials including paper, metal and types of wood such as bamboo. Multi-use cotton buds are also available, ie, with replaceable heads.
Impacts on business and the public if phased out	Some supermarkets have already moved to biodegradable paper options, for roughly the same price as plastic. For this reason, we consider the likely impact to be minimal.

Single-use plastic drink stirrers *These are popular at cafes and other establishments to ensure drinks are well mixed.*	
Scale of the problem	In England, an estimated 316 million plastic stirrers are used every year.[68] We do not have NZ data but if the per capita rate is similar, this equates to over 28 million each year.
International examples	Bans have taken effect or will take effect in several jurisdictions including: • the UK from October 2020 • France from January 2021 • the EU from July 2021.
Potential exemptions	We are not aware of plastic being used to make multi-use stirrers, so we do not propose any exemptions. To avoid doubt, we do not consider a spoon to be a 'stirrer' in this context.
Alternatives	Alternatives include wooden stirrers and reusable utensils such as metal spoons. In our view, reusable alternatives are the most favourable as they reflect the highest tiers of the waste hierarchy: they avoid using new materials more than once. Single-use wooden stirrers may be packaged in single-use plastic, which goes directly to landfill. This solves one problem but creates another.
Impacts on business and the public if phased out	As wooden and reusable alternatives exist – and in many cases are in use – we consider the likely impact to be minimal. Businesses may even save money by offering only reusable stirrers.

[68] Department for Environment, Food and Rural Affairs (2020).

Single-use plastic tableware and cutlery *These plates, bowls and cutlery are popular for entertaining, particularly for large groups or outdoor events.*	
Scale of the problem	We do not know how many of these items are used in New Zealand each year. The 2019 Keep New Zealand Beautiful Litter Audit found 161 items classified as "(plastic) spoons/cutlery" out of 56,322 items, 13,908 of which were made of plastic.[69] These weighed 360 grams from a total weight of over 293 kilograms, 54 kilograms of which was plastic. Some estimates suggest 40 billion plastic cutlery items are used each year in the US – over 100 million every day.[70] If New Zealanders use plastic cutlery at a similar per capita rate, this equates to nearly 600 million items each year. Even if this was reduced by half, we would still use 300 million plastic cutlery items annually. Ocean Conservancy lists plastic cutlery alongside plastic bags as a "most deadly" item, and a threat to birds, turtles and marine mammals who mistake it for food. Plastic bags and utensils are second only to fishing gear as the "deadliest ocean trash".[71]
International examples	Regulatory interventions have taken effect or will take effect in several jurisdictions, eg: • France has banned single-use plastic plates sold in bulk from supermarkets from January 2020 and single-use plastic cutlery from January 2021. • The EU has banned single-use plastic plates and cutlery from July 2021. China has implemented bans: • By the end of 2022, non-degradable disposable plastic tableware is banned in the catering service in built-up areas and in scenic spots. By 2025, use of non-degradable disposable plastic tableware in the catering industry and cities should have decreased by 30%. • Disposable foam plastic (but not biodegradable) tableware is banned in key cities from the end of 2020, expanding to more areas by 2022.
Potential exemptions	Exemptions could be considered subject to information collected through consultation.
Alternatives	Reusable alternatives are readily available. As with other targeted items, we consider the 'first best' alternative to be reusable plates, bowls and cutlery. This practice avoids using new materials. Single-use alternatives are also available including paper, wood and bamboo.
Impacts on business and the public if phased out	Non-plastic alternatives tend to be more expensive, although by a decreasing margin as they become more mainstream. As alternatives are readily available we consider the impact to be minimal. There may be some larger impacts on a small number of local manufacturers.

69 Keep New Zealand Beautiful (2019).

70 Root (2019).

71 Ocean Conservancy (2020).

Single-use plastic cups *These are popular for entertaining, particularly for large groups or outdoor events. They are also common at watercoolers. Plastic-lined, single-use coffee cups are in this category.*	
Scale of the problem	The 2019 Keep New Zealand Beautiful Litter Audit found 422 items it classified as (plastic) "takeaway & cups" out of 56,322 items, 13,908 made of plastic.[72] These items weighed 2.5 kilograms from a total weight of over 293 kilograms, 54 kilograms of which was plastic. It is not clear how many of these items were cups. The Packaging Forum estimates we use 295 million hot and cold disposable cups every year.[73] Zero Waste Scotland estimates single-use disposable beverage cups generate around 4000 tonnes of waste in Scotland each year. An estimated 40,000 are littered in Scotland each year, making them one of the most commonly littered items.[74] The population of Scotland (around 5.5 million) is only slightly larger than that of New Zealand, suggesting the impacts could be in the same order of magnitude here.
International examples	Bans have taken effect or will take effect in several jurisdictions, eg, • France has banned single-use plastic cups sold in bulk at supermarkets, with a ban on takeaway cup lids to take effect from 2021 • At the time of writing, Scotland is consulting on a proposal to impose a small charge per cup – this targets "single-use disposable beverage cups". • The EU has banned single-use plastic cups from July 2021, including cups made of oxo-degradable plastic.
Potential exemptions	A phase-out would include cups made from hard-to-recycle plastics (types 3, 4, 6 and 7) including PVC, both types of polystyrene, and bio-based plastics and mixed materials. It is also intended to cover plastic- lined cups except for disposable coffee cups. Consultation may identify if this scope is too broad and if some types of cup do not yet have practical alternatives. We have not included disposable coffee cups (paper cups lined with plastic) in the proposed phase-out. We propose that an exemption could be made for cups made from high-value plastics like PET, HDPE and polypropylene that can be recycled.
Alternatives	Reusable cups are becoming more common at events, including personally owned cups, exchangeable cups and dine-in options. There are also paper cups, including those without plastic lining.
Impacts on business and the public if phased out	The impact would be low to medium for most businesses, especially if an exemption allows the use of recyclable plastic cups made from materials like PET and polypropylene. Manufacturers and importers of the targeted cups may experience higher impacts, especially if they are not able to transition to different materials.

[72] Keep New Zealand Beautiful (2019).

[73] Packaging Forum (2017).

[74] Scottish Government (2019).

Plastic produce stickers

Single-use plastic stickers on fruit and vegetables have a range of uses, including:

- *branding*
- *distinguishing similar items (eg, Braeburn and Royal Gala apples)*
- *showing country of origin*
- *tracking produce from source to market, which can uphold food safety requirements (eg, in the event of a recall)*
- *indicating qualities (eg, organically farmed).*

The stickers come in various forms, from the small stickers on individual apples to plastic tape around bunches of bananas.

Scale of the problem	Many produce stickers begin their lives in New Zealand each year. Hawkes Bay alone exports 2.4 billion apples, which are generally stickered. Kiwifruit exports are of similar magnitude. Although the stickers are small, over the entire economy their sheer numbers create a larger environmental issue. Currently, produce stickers are non-recyclable, non-biodegradable, and can contaminate compost. Produce destined for compost may be refused if it has stickers; if the stickers remain, compost products are contaminated with traces of plastic, potentially making compost unmarketable.
International examples	Government intervention is relatively rare at present. France has banned the use of fruit stickers from 1 January 2022, unless they have been manufactured with compostable materials or paper. In Britain, all major supermarkets have agreed to stop using the stickers by the end of 2020 (without government intervention).
Potential exemptions	We propose to allow compostable plastic stickers. In the long term, home compostable stickers would be preferable. However, we propose to allow single-use plastic stickers on NZ fruit for export. This is for two reasons: • the stickers are a useful way to increase traceability for food safety • compostable stickers can degrade during transport, which reduces traceability.
Alternatives	Alternatives include signposting at the point of display, stamping or lasering (using a laser to etch a label onto the skin of the fruit or vegetable). Compostable stickers are yet to be widely adopted, and may be slightly more expensive than non-compostable. Some alternatives do not achieve all the purposes of single-use plastic stickers. For example, signposting may be of limited use in helping checkout operators enter the correct code.
Impacts on business and the public if phased out	The impact on the public would be minimal, but may be medium to high on manufacturers, produce growers and business. The extra cost of moving to compostable stickers has been estimated at a few cents per unit. Fruit growers have expressed concerns about increased costs (for compostable stickers), and about marketing, traceability and assurance of food safety. All of Britain's major supermarket chains have agreed to phase out stickers on fruit and vegetables. Checkout operators have been trained to recognise different kinds of fruit, with cue cards at some tills. Other operators are moving to compostable stickers or considering lasering. The latter is already in use in parts of Europe. One Swedish supermarket estimates that by replacing fruit stickers with "natural branding" (lasering) it saves the equivalent of 200 kilometres of plastic 30 centimetres wide. It also creates 1% of the carbon emissions of producing the stickers. We understand lasering entails a significant upfront cost in the machine, but the ongoing costs are smaller than for stickering. Lasering may be more effective for some types of produce than for others. New Zealand does manufacture fruit stickers, and consultation feedback from domestic manufacturers will be important to determine the full impact on this industry. New Zealand also imports and exports stickered fruit, so we would need to consider the trade implications of a phase-out.

Wet wipes (containing plastic) *These are small, moistened, disposable cleaning cloths. Most of them contain plastic.*	
Scale of the problem	Wet wipes have a unique impact on the environment compared to the other items in this consultation document. For example: • Blocking sewerage systems: wet wipes are responsible for 93% of blockages in UK sewers, according to Water UK. In New Zealand, Auckland's Watercare has reported that 70% of blockages are caused by unsuitable items going down drains, with wipes making up around 40–45% of this. • Escaping into watery environments: – 5453 wet wipes were found in 116 square metres of the Thames river in April 2018[75] – almost one wet wipe every second flows through a Watercare treatment plant in Auckland – that's 53 million individual wet wipes weighing 700,000 kilograms.[76] Part of the problem is that wet wipes can be wrongly labelled 'flushable'. COVID-19 saw an increase in use, and some councils reported many more wastewater blockages. If wet wipes were replaced with non-disposable alternatives, there would be a reasonable benefit to the environment.
International examples	The EU Single Use Plastic (SUP) Directive requires an extended producer responsibility scheme (product stewardship) for wet wipes to be in place by the end of 2024, and measures to raise awareness of the environmental issues by mid-2021. In the UK, supermarket chain Holland and Barrett, and department store chain Selfridges ended the sale of wet wipes in 2019. We are not aware of any jurisdictions that have phased out wet wipes via regulation.
Alternatives	The main alternative is reusable cloths, particularly if made from natural fibres. Cotton pads are also available. There are also wet wipes that do not contain plastic. The industry body Water UK has introduced a 'fine to flush' symbol for wet wipes that have passed testing confirming that they do not contain plastic and will break down in the sewer system.
Impacts on business and the public if phased out	We are not proposing this item for phase-out and instead seek feedback on other options for reducing their environmental impact. If consumers switch to reusable alternatives en masse, retailers will lose an income stream. Most retailers of wet wipes will sell other products, so we would expect a reduction in the use of wet wipes to have little impact on their overall profit margin. Importers and manufacturers of wet wipes will feel a larger impact of any intervention aimed at this item. Wet wipes are widely used in the medical industry and are sometimes critical to the lifestyle of people with incontinence or disabled persons. Wider impacts on water use: one wet wipes manufacturer has argued that on average the wipes use 3 millilitres of liquid, and that the alternative – washing your hands – uses on average one litre of water.

[75] BBC (2018).

[76] Reymer (2020).

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