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Department of Climate Change, Energy, the Environment and Water

Reform of packaging regulation

Consultation paper

Department of Climate Change, Energy, the Environment and Water

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Acknowledgement of Country

Our department recognises the First Peoples of this nation and their ongoing connection to culture and country. We acknowledge Aboriginal and Torres Strait Islander Peoples as the Traditional Owners, Custodians and Lore Keepers of the world's oldest living culture and pay respects to their Elders past, and present.

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Executive summary

The Australian Government is working to reform Australia's packaging regulations to minimise packaging waste and pollution and build a circular economy for packaging. Under a circular economy, packaging would be designed to reduce waste, be recyclable and use recycled content, and used packaging would be collected and reused, or recycled back into packaging or other valuable products.

To inform how to best reform packaging regulations, we are consulting on various options to better understand their impacts, benefits and costs. We would like to hear from all stakeholders involved or interested in the production, use and recovery of packaging in Australia.

We know that Australia's current national co-regulatory framework for packaging under the *National Environment Protection (Used Packaging Materials) Measure 2011* (NEPM) is not effectively managing the impacts of packaging on our environment, or delivering an effective system for industry. Currently, businesses with an annual turnover of $5 million or more that produce or sell packaging or packaged products in Australia can meet their obligations through two main pathways:

- becoming a Signatory to the Australian Packaging Covenant (the Covenant) and becoming member of the Australian Packaging Covenant Organisation (APCO) or
- reporting to their state or territory government agency under the NEPM.

An independent review in 2021 found that while the Covenant operates effectively as a voluntary stewardship initiative, there have been significant failures in the implementation and enforcement of the regulatory arrangements. Furthermore, APCO has confirmed that the current industry-led national packaging targets to sustainably design, recover and reuse more packaging will not be achieved under the current system.

In 2021-22, just over half of the total packaging placed on market was recovered (recycled, composted or used for energy), with the rest being sent to landfill. We know that packaging consumption is increasing and, without reforms to Australia's packaging regulations, the amount of packaging sent to landfill and leaking into the environment is also expected to grow. Plastic packaging is particularly problematic, with the lowest recovery rate (20%) (APCO 2024a) and representing a significant portion of the litter collected by Clean Up Australia in 2022-23. Plastics accounted for over 80% of litter, much of which was plastic packaging.

While APCO considers 86% of packaging has good recyclability, this varies significantly across packaging types. For example, only 42% of plastic packaging has good recyclability. Further there is only 49% average recycled content in all packaging. This drops to 8% for plastics packaging. Design decisions impact recycling and waste management sectors and the environment, and the costs to manage used packaging and the litter it generates often falls to the taxpayer, local governments, waste and recycling industry, and volunteers.

Recycling used packaging is also hampered by gaps in recycling capacity and a lack of end markets for recycled materials. A lack of end markets is a key barrier to investment in recycling infrastructure, with virgin plastic cheaper to use than recycled plastic. Confusion about how to recycle used

packaging also leads to a reduction in recycling rates. However, there are no mandatory recycling labelling requirements to inform consumers how they should dispose and recycle used packaging.

While Australian businesses and governments have made significant investments and shown world -leading innovation in sustainability by taking responsibility for our waste over recent years, the existing regulatory arrangements for packaging, as currently implemented, cannot deliver the scale of change required to reduce the environmental impacts of packaging.

Transitioning Australia to a circular economy for packaging will improve sustainable production and consumption of our packaging, improve end of life management and reduce the environmental impacts of packaging. Valuable resources would be kept in the economy and out of landfill, with a reduced need for virgin resources.

This reform seeks to support the transition to, and maintenance of, a circular economy for packaging in Australia, where packaging is designed to reduce waste and be recyclable, is collected and recycled at scale, and circulated in the economy for as long as possible at its highest value and best use. Further detail on the objective and principles for reform are in section 4.

We are seeking views on three potential options for reforming packaging regulations (further detailed in section 5). These are:

- Option 1 – Strengthening administration of the co-regulatory arrangement
- Option 2 – National mandatory requirements for packaging
- Option 3 – An extended producer responsibility scheme for packaging.

Option 1 would improve existing arrangements through stronger compliance and enforcement and education programs to minimise those businesses that are not taking responsibility for their packaging. Options 2 and 3 would put in place national legislation to achieve a single set of requirements for all regulated entities. Option 2 relies on mandatory requirements on regulated entities, whereas Option 3 develops an extended producer responsibility scheme with financial incentives to drive change. This scheme would charge variable fees for packaging placed on the market which would increase the government's fiscal capacity to consider further funding to support system-wide improvements to transition to a circular economy for packaging.

Section 5.8 of the consultation paper outlines the packaging obligations that could apply to varying extents across the options to regulated entities, including to:

- Improve packaging design – to make packaging safer, reduce waste and improve recyclability.
- Improve recyclability labelling – so consumers understand what can and cannot be recycled and businesses are accountable for their packaging choices.
- Recycled content thresholds – to support increased take up of recycled content and create markets for recovered materials.

Section 6 provides a preliminary assessment of the options by considering how they meet the reform principles, and the expected costs and benefits for each key stakeholder group. Section 7 outlines the questions we are seeking particular feedback on.

We are seeking your feedback to better understand how reform of Australia's packaging regulations can minimise waste and pollution and build a circular economy for packaging.

1. Introduction

This consultation paper invites interested parties to provide feedback on options to reform Australia's packaging regulation. The aim of the reform is to reduce the environmental impacts of packaging by minimising waste and pollution through a circular economy for packaging.

The Department of Climate Change, Energy, the Environment and Water (the department) is seeking views on reforming packaging regulation in Australia from a wide range of groups and individuals across the packaging system, including producers, brand owners, packaging importers and retailers, and waste collection and resource recovery businesses, as well as state and local governments, small businesses, consumers and advocacy groups.

This consultation will inform further government consideration and decisions, including an impact analysis, and will help ensure advice to the Australian Government (the government) on packaging regulatory reform is accompanied by robust analysis, data and an accurate overview of the effects of proposed policies on the community. It will assist in identifying the costs and benefits of policy changes and impacts on different groups.

The consultation paper builds on the department's previous stakeholder engagement and seeks views on reform objectives and areas of focus including designing packaging to reduce waste and for recyclability, recyclability labelling and recycled content thresholds. It presents three potential reform options:

- Option 1: Strengthening administration of the co-regulatory arrangement
- Option 2: National mandatory requirements for packaging
- Option 3: An extended producer responsibility scheme for packaging.

The department is seeking the views and technical expertise of stakeholders to:

- Ensure reform objectives and obligations are ambitious and feasible, with consideration of impacts to businesses, governments and communities, as well as material flows, system capacity, and infrastructure.
- Inform the assessment of potential reform options, including benefits and costs.
- Inform the development of potential mandatory obligations, thresholds, design requirements, and reform implementation, including timeframes.
- Inform appropriate roles and obligations for industry along the whole supply chain.
- Inform economic modelling and analysis ahead of a final impact analysis.

A summary of feedback from this consultation will be published on the department's website. This feedback along with further analysis will inform the development of an impact analysis on the options for packaging reform for consideration by government.

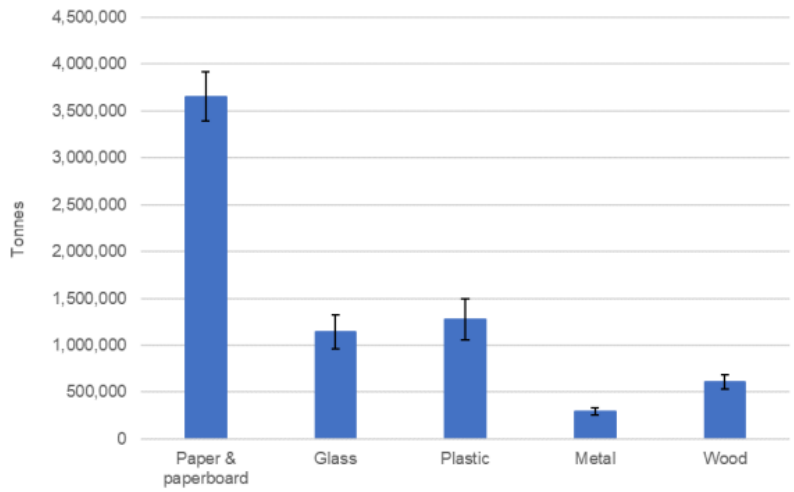
2. Background

2.1 Packaging in Australia

Packaging is prevalent in our economy and plays a critical role in the everyday lives of Australians. For example, packaging is vital to the transport, sale and storage of food and helps minimise food waste by preserving the shelf life of products. Most consumer products come in some form of packaging and most industries rely on packaging to move materials and products within supply chains and to consumers. Packaging also helps to provide consumers important information about the products it contains.

In 2021–22, 6.98 million tonnes of packaging was placed on the Australian market (refer Figure 1). Around half was paper and paperboard packaging (52.3%). The next most prevalent packaging was plastic (18.3%), followed by glass (16.4%), wood (8.8%), and metal packaging (4.3%) (APCO 2024a). Over half of the packaging placed on the market was manufactured locally from a combination of locally sourced and imported materials (APCO 2024b).

Figure 1: Packaging placed on market in 2021-22 by material group



Source: APCO 2024a, p.26

2.2 Current regulation of packaging in Australia

Since 1999, Australia has had a national co-regulatory arrangement that sets out how governments and businesses across Australia share the responsibility for managing the environmental impacts of packaging.

The arrangement, established under the *National Environmental Protection (Used Packaging Materials) Measure 2011* (NEPM), requires businesses with an annual turnover of $5 million or more that produce or sell packaging and/or packaged products in Australia to:

- Become a Signatory to the Australian Packaging Covenant (the Covenant) (APCO 2024g), the voluntary industry-led packaging product stewardship scheme administered by the Australian Packaging Covenant Organisation (APCO). Businesses that choose to sign up as an APCO member are subject to obligations set out under the Covenant that contribute to collective national efforts in managing used packaging. Or,
- Meet obligations required by laws and other arrangements of participating states and territories implementing the NEPM.

More information on the co-regulatory arrangement for packaging is at Appendix A.

2.3 Review of the national co-regulatory arrangement

In 2021, the department commissioned the first independent statutory review of the co-regulatory arrangement, to evaluate and report on whether the environmental protection goals were being achieved (the Independent Review). A final written report was provided to the Australian Government on 6 September 2021 (mpconsulting 2021).

The Independent Review found that while the Covenant operates effectively as a voluntary stewardship initiative, there have been significant failures in the implementation and enforcement of the regulatory arrangements. This has created a lack of clarity for brand owners regarding their liability and obligations, enabled free riders, reduced industry confidence and participation, and resulted in limited or no data collection to measure and report on performance. The Independent Review made nine recommendations to address these issues as part of a reformed scheme.

In December 2022, the Australian Government (2022) provided a response to the Independent Review and endorsed the need for reform of Australia's packaging regulation.

More information on the Independent Review and the government's response is at Appendix A.

2.4 Related domestic and international initiatives

Several interventions are being led by the Australian and state and territory governments that will complement reform of packaging regulation in Australia. Together, with the packaging reforms, these will help deliver a comprehensive systems-based approach to managing the environmental impacts of packaging and include:

- the harmonisation of kerbside recycling collections, including actions to remove soft plastics from landfill and recycle them at scale
- the harmonisation of state and territory Container Deposit Schemes
- the harmonisation of problematic single use plastic product phase-outs
- the promotion of the use of recycled content in new products.

The Australian Government is also working with key stakeholders across the packaging supply chain on initiatives to increase Australia's domestic recycling capacity.

2.4.1 Circular economy

Globally, governments, businesses, and communities have also recognised the need to take responsibility for waste and transition from a linear economy (take, make and dispose) to one that is circular, where the value of resources is maintained for as long as possible to reduce waste, carbon emissions and increase material efficiency. Australia is also transitioning to a more circular economy. As well as state and territory action on circularity, the Australian Government is developing a National Circular Economy Framework to set the pace and direction for Australia's transition. This will help drive our net zero, nature positive and economic growth agendas.

2.4.2 Plastics

A reformed packaging system is an important contributor to Australia's efforts to address plastic pollution. Packaging, including plastic packaging, represents a significant proportion of our litter.

The Australian Government is also working closely with other national governments to negotiate an international legally binding instrument to end plastic pollution, including in the marine environment (the instrument). Through these negotiations, the government seeks an instrument that covers the full lifecycle of plastics, promotes a safe circular economy, accelerates international efforts to remove harmful chemicals from plastics, and includes globally binding obligations to complement Australia's national-level actions.

Globally binding obligations will be important to ensure all nations play their part, and alongside a nationally reformed packaging system, will provide regulatory certainty for Australia's circular economy.

For more information on related domestic actions underway to transition Australia to a circular economy see Appendix B.

2.4.3 International best practice

In considering reforms for packaging regulation in Australia, we are assessing the relevance of a variety of tools being considered and implemented around the world. These tools have been designed to achieve the objective of a circular economy, reductions in packaging materials going to landfill, and increases in recycling, including:

- incentivising sustainable design, including the use of eco-modulated fees
- promoting recyclability and use of recycled materials
- mandating recovery and recycling
- requiring uptake of reuse and refill systems
- taxing the use of virgin materials
- banning certain materials or packaging types.

Best practice approaches being adopted involve Extended Producer Responsibility (EPR) schemes that shift financial responsibility for waste packaging from taxpayers to the businesses who produce and profit from those products.

Box 1 and Box 2 provide case studies of approaches being taken in the European Union and Canada, respectively.

Box 1: Case study - Packaging and Packaging Waste Regulation

This year, the European Parliament (2024) adopted new measures to make packaging more sustainable and reduce packaging waste in the European Union. The Packaging and Packaging Waste Regulation (PPWR) promotes sustainable packaging through EPR systems, with eco-modulated fees that incentivise packaging design for recyclability.

Measures under the PPWR aim to:

- Reduce the amount of packaging placed on the market.
- Prevent the generation of packaging waste, through packaging minimisation and increased reuse.
- Increase the use of recycled content in plastic packaging.

The regulation sets mandatory targets for packaging reduction, recyclability, recycling rates, reuse, and the use of recycled content.

Packaging recyclability will be assessed against performance grades A, B, and C. From 2030, recyclability performance will be based on design for recycling criteria, and from 2035, packaging will also be assessed on whether it is 'recycled at scale'. From 2030, packaging that is rated as technically non-recyclable (below performance grade C) cannot be placed on the market. From 2038, this restriction will include performance grade C.

Box 2: Case study - Recycled content and labelling requirements

To increase recycling and reduce the impacts of plastic packaging, the Government of Canada (2023) is proposing requirements for the use of recycled content in plastic packaging, and recyclability labelling rules for plastic packaging.

Under the new rules, liable businesses will need to meet minimum thresholds for recycled content in their plastic packaging by 2030.

Mandatory requirements for recyclability labelling on plastic and compostable packaging will be set. Plastic packaging will need to meet collection, sorting, and reprocessing thresholds before displaying a 'recyclable' label. Packaging will not be able to make claims of compostability unless certified.

These new requirements will exist alongside and complement existing local EPR policies in Canada.

3. What is the problem?

The current co-regulatory arrangement for packaging in Australia has been proven to be ineffective (mpconsulting 2021; APCO 2023b). This coupled with the predominately linear economy model for packaging (take, make and dispose) in Australia is adversely impacting the environment, human health and the economy through:

- High volumes of packaging going to landfill and leakage into the environment, causing harm to wildlife, marine life and ecosystems.
- The inefficient use of natural resources and generation of significant waste.

Inaction will mean that as packaging volumes continue to grow, these environmental impacts will increase. Applying APCO's projected 3.6% annual growth rates for packaging from 2020-2025 (2023a), there could be more than 12 million tonnes of packaging placed on the market each year by 2040 (DCCEEW 2024c). This growth will be driven by population growth and the continuation of existing consumption habits, which favour convenience and fast-moving goods.

3.1 Landfilled packaging and litter are impacting our environment

In Australia, in 2021–22, only 56% of the 6.98 million tonnes of packaging placed on the market was recovered (recycled, composted or used for energy). For plastic packaging, only 20% was recovered. 3 million tonnes of packaging went to landfill (APCO 2024a).

Our analysis suggests that currently landfilled packaging generates $340 million in environmental costs a year, in the form of emissions, energy usage, water usage, soil contamination and water pollution (DCCEEW 2024c). Packaging waste sent to landfill has been estimated to have a potential unrealised value of $900 million (APCO 2024a).

Packaging is a significant contributor to litter. Clean Up Australia's Litter Report FY23 found packaging accounted for over 55% of litter reported during 2022-23. It is also a significant contributor to plastic pollution. Just under a third of plastic consumed in Australia in 2021-22 (31%) was in the form of packaging (O'Farrell et al. 2024). Further, Clean Up Australia found plastics accounted for 81% of litter in 2022-23, much of which was plastic packaging (soft plastics, food packaging and beverage containers) (Clean Up Australia 2023). Reducing the environmental impacts of packaging is critical to address plastic pollution.

Plastic is largely made from fossil fuels and can take hundreds of years to break down in our environment. Over 800 animal species are already known to be affected by marine plastic pollution (Convention on Biological Biodiversity 2016), with the impact of litter on Australia's marine wildlife identified as a key threatening process under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Almost all Australians (91%) agree they are concerned about the environmental impact of packaging (Pact 2021) while:

- 78% of Australians support banning plastic which cannot be recycled in a kerbside bin (Anderson & Gbor 2024)
- 82% of Australians value sustainable packaging (Toluna 2021)
- 52% of online shoppers in Australia would be happy for items they order to arrive without added delivery packaging because they think it's better for the planet (Amazon 2023)
- 80% of Australians believe that businesses that produce/use plastic packaging should be responsible for reducing plastic waste (Anderson & Gbor 2024).

3.2 Too much packaging is placed on the market and not enough is designed for recyclability

Packaging producers, brand owners and retailers usually design their packaging to be attractive, convenient, durable and to protect the product rather than focussing on end-of-life considerations. Some of these design functions and properties add economic benefit or are cosmetic, while others may be performance requirements outlined by public and worker health and safety legislation. In 2021–22, while 86% of packaging placed on market was classified as having good recycling potential, this varied significantly across material types. For plastic packaging only 42% placed on the market was classified as having good recycling potential (APCO 2024a).

Poor design leads to excess packaging, or unnecessary and problematic packaging formats which pose significant difficulty for the downstream recycling and waste management sectors and a high burden on the environment. The costs of managing the packaging at its end-of-life are seldom considered, leading to environmental externalities and a lack of incentive to design packaging to reduce its environmental burden. It can also impact the value of recyclate generated from these materials. These costs include the collection, sorting, transport, reprocessing and landfilling of packaging waste, which in Australia are typically borne by taxpayers through local governments' administration of the kerbside collection system, and litter clean-ups.

3.3 More collection and recycling capacity is needed

The government has taken steps to generate investment in processing and recycling capacity, including the $250 million Recycling Modernisation Fund (RMF). The RMF is expected to see over $1 billion of investment in recycling infrastructure with contributions from the states and territories and industry, however capacity gaps remain. For plastics alone (packaging and non-packaging plastics) the estimated reprocessing gap between plastics placed on market and current and anticipated capacity coming online in 2026-27 is 61%. This figure includes capacity from anticipated advanced recycling projects identified in 2021-22 that are yet to come online, meaning this capacity gap in reality is likely to be greater (O'Farrell et al. 2024). APCO (2024b) estimates $810 million in investment is required to achieve the infrastructure needs associated with achieving National Packaging Target 2 for 70% of plastic packaging to be recycled or composted.

The recycling industry has also identified a lack of end markets for recycled material as a barrier to securing investment in recycling infrastructure.

Box 3 provides a case study of the challenges for soft plastics packaging.

Box 3: Case study - soft plastics packaging

Soft plastics, or flexible plastics, from consumers are challenging to recycle. They can be recycled, but the system is complex and not yet available at scale.

In 2021–22, 528,000 tonnes of flexible plastic packaging, representing 41% of all plastic packaging, was placed on the Australian market. In the same year, only 62,000 tonnes (11.7%) of flexible plastic packaging was recovered, dominated by film recovery from business-to-business applications (APCO 2024a).

These low recovery rates are due to several factors. Soft plastics are frequently contaminated with food and the complexity and variability of soft plastic feedstocks makes the material less suitable for established mechanical recycling pathways. There is also no national collection system, as soft plastics are not widely collected in kerbside recycling systems. Australia previously had a voluntary industry scheme called REDcycle which collected soft plastics for recycling primarily through in-store drop offs at major supermarkets. The collapse of REDcycle in 2022 highlighted several issues across the supply chain including limited reprocessing and recycling capacity and limited end markets.

Advanced chemical recycling presents an opportunity to recycle soft plastics at scale while maintaining their value (such as applications in food-grade packaging), however there is no commercial-scale advanced recycling capacity currently operating in Australia. In 2022, industry reported an expected capacity of 545,000 tonnes of advanced recycling across five projects in development, but these are yet to come online (O'Farrell et al. 2024).

Significant capital requirements, absence of at-scale collection pathways, and under-developed end-markets for recycled polymers combine to reduce investment confidence. The high costs of recyclate and lack of recycling capacity results in virgin resin being far cheaper and more readily available in comparison.

Whole of supply chain requirements needed to drive soft plastics collection and recycling at scale will be considered as part of a soft plastics pathway, commissioned by all environment ministers in June 2024 as part of the kerbside harmonisation roadmap to be developed by the end of 2024 (DCCEEW 2024b).

3.4 Market development for used packaging materials is slow

In 2021–22, 49% of packaging placed on the market in Australia was produced with virgin material, with 60% sourced from overseas, either as raw materials or finished product. Plastic packaging has the highest usage of virgin materials, comprising 92% of the total plastic packaging placed on the market (APCO 2024a).

In the current linear economy, recycled materials struggle to compete with virgin feedstocks due to their comparatively high cost and lower availability. For many materials, the costs of collection, sorting and reprocessing outweigh the value of the recycled product. Consultation with industry has indicated that for the majority of materials, virgin materials are cheaper than recyclate. Stakeholders have raised the cost difference between recycled and virgin plastics as a barrier to the take up of recycled plastics, with recycled plastic resin being over 50% more expensive in some cases (DCCEEW 2024c).

Global demand for recyclate is increasing in recognition of the environmental benefits of using recyclate, such as reduced emissions (AMCS WWF Blue Environment 2023). This demand can be expected to continue to grow given a range of commitments to bring in recycled content mandates in other jurisdictions (EU 2019; UK Government 2021; CA Government 2020; Maine Government 2022). Australia's packaging system needs to be ready to respond to these global regulatory and market developments.

Data on prices in the packaging supply chain is lacking and would help identify and monitor market imbalances. For example, the market for recycled plastic resin has fluctuated in response to demand and supply changes in recent years (Staub 2024). We anticipate plastic recyclate costs to reduce over the long term as markets stabilise and system capability increases.

Together with fluctuations in the supply of recycled content, and challenges in tracing recycled content origins and quality, high levels of contamination can reduce the quality, consistency, and value of recycled materials, contributing to poor market outcomes. Kerbside recycling systems represent the largest collection pathway for post-consumer packaging waste in Australia. A 2022 audit of kerbside recycling bins found an average contamination level of 14% (Pickin et al. 2022). Nevertheless, stakeholders have indicated that domestic recycling, with shorter and less complex supply chains, has greater transparency and provides increased industry confidence in the quality of recycled materials, over other internationally sourced materials.

3.5 Recycling outcomes are impacted by complex and opaque information

Cleanaway's Recycling Behaviours Report (Cleanaway 2024) found that consumer knowledge around recycling remains a major issue. The survey found:

- 28% of Australians said they find recycling confusing
- 35% believe it is difficult to find clear recycling instructions
- 40% indicated they want clearer product labelling.

In Australia there are currently no mandatory recycling labelling requirements for consumer packaging. The Australasian Recycling Label (ARL) is a voluntary label available to APCO members.

There are also concerns that a significant proportion of the claims made by businesses may be 'greenwashing' and based on false or misleading information or have no reasonable basis. An internet review conducted by the Australian Competition and Consumer Commission (ACCC 2023a) on greenwashing found that of the 247 businesses reviewed, 57% were identified as having made concerning claims about their environmental credentials. Greenwashing of packaging may include incorrect labelling of an item as "100% recyclable" or "100% plastic free", leading to incorrect disposal and the contamination of waste streams.

A lack of national harmonisation in Australia's kerbside collection system is also a contributor to this issue. Insufficient or inconsistent information around what can be accepted in the kerbside mixed recycling bin leads to the incorrect disposal of waste causing the contamination of other recyclable

material and material is lost to landfill. A national roadmap to improve the consistency of kerbside collections will be considered by environment ministers in 2024.

4. Objectives and need for government intervention

4.1 Objective

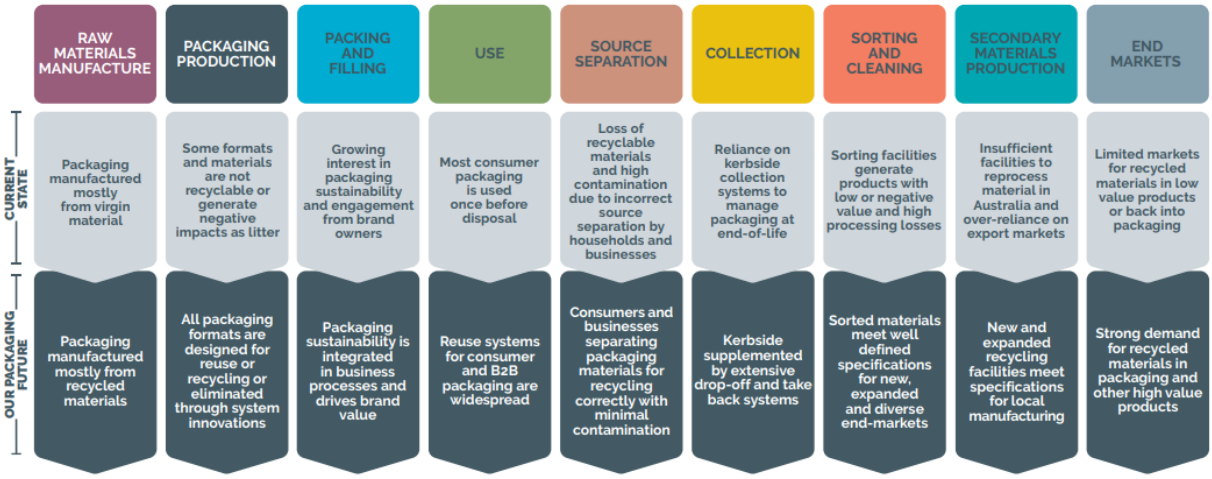
The objective of the reform is to reduce the environmental impacts of packaging by establishing an approach that:

- Supports the transition to, and maintenance of, a circular economy for packaging in Australia: packaging is designed to reduce waste and be recyclable, is collected and recycled at scale, and circulated in the economy for as long as possible at its highest value and best use.
- Has clear obligations, is consistently operationalised nationally and requires all regulated entities to participate.
- Is supported by administrative and reporting systems that minimise regulatory burden on the regulated community and can provide relevant information on the impact of the regulation.

A circular economy for packaging is a way of achieving sustainable production and consumption of our packaging. Removing problematic and unnecessary packaging, reducing excessive packaging and sustainably designed packaging and stronger collection and recycling systems would allow us to reduce the environmental impacts of packaging and our carbon footprint, and sustainably manage packaging at the end of its life. Valuable resources would be kept in the economy and out of landfill, with a reduced need for virgin resources.

Figure 2 below, from APCO's vision for Australia's packaging future, highlights what a circular economy for packaging would mean across the packaging supply chain.

Figure 2: Transforming the packaging supply chain



Source: APCO 2020a, p.10

4.1.1 Principles for reform

To underpin a strong and effective circular economy for packaging that is accepted and trusted both domestically and internationally, reform should deliver:

- Nationally consistent obligations and requirements to ensure a level playing field and increase certainty for businesses producing packaging and placing it on the market.
- Clear obligations for industry to support effective action and investment across the packaging life cycle.
- A system where industry takes responsibility for the packaging it places on market.
- Flexibility to accommodate innovation in packaging design and recycling technologies.
- Measurable, enforceable and enforced obligations to sustain industry and community confidence.
- A system that contributes to Australia meeting its international obligations.
- A system that is based on global best practice, while accounting for Australia's geographic and market context.
- A system aligned with global standards to maintain and increase industry access to global markets and alignment with global supply chains.

4.1.2 Outcomes for reform

The reform will seek to achieve the following outcomes to deliver a fit-for-purpose circular packaging system (Table 1):

Table 1: Key outcomes for reform

1	**Waste from packaging is reduced**
a	The use of virgin materials in packaging is reduced
b	The amount of packaging placed on market per capita is reduced
c	The amount of packaging sent to landfill per capita is reduced
d	Problematic and unnecessary packaging is eliminated
2	**Packaging materials are kept in use and circulated at their highest value**
a	Packaging is designed for recyclability
b	The amount of recycled content in packaging is increased through design and strengthened end markets
c	Recyclable packaging is collected, recycled and reprocessed
d	Chemicals of concern in packaging are eliminated, phased-down or minimised

4.2 Why is intervention needed?

4.2.1 The current co-regulatory arrangement is not working

The Independent Review (mpconsulting 2021) identified significant failures in the implementation and enforcement of the current co-regulatory arrangement. It found:

- The NEPM has not been consistently implemented or operationalised by state and territory governments.
- There is confusion among brand owners regarding their liability and obligations under the co-regulatory arrangement.
- The NEPM lacks specific targets or key performance indicators to assist with the measurement of the environment protection goal and data is not consistently collected or reported against the goal, presenting challenges for assessing its effectiveness.
- Limited (or absent) monitoring and enforcement has undermined confidence in the co-regulatory arrangement, enabled free riders and disincentivised participation in the Covenant.
- A lack of coordinated funding of the co-regulatory arrangement has undermined its effective implementation and outcomes.

The Independent Review also noted that different obligations are currently imposed on brand owners based on whether they choose to be Signatories to the Covenant or to be regulated under relevant state and territory arrangements. Different approaches to the administration of state and territory arrangements across jurisdictions has also created the opportunity for some to avoid their obligations (free riders). It also noted that there is no dedicated funding for implementation or monitoring of the co-regulatory arrangement. It made nine recommendations for a reformed packaging scheme (see Appendix A).

Targeted consultation undertaken by the department on options to reform packaging regulation have identified the following views:

- Stakeholders strongly supported mandating design standards in line with international best practice.
- Stakeholders were supportive of banning hazardous chemicals in packaging, noting the importance of also identifying emerging chemicals of concern.
- Stakeholders favoured a recyclability criteria evaluation tool which is transparent and aligned to international standards and Australia's recycling capabilities.
- Stakeholders favoured mandating a recycling label like the ARL.
- Industry stakeholders did not support mandatory obligations for reuse systems due to their cost and need to be underpinned by large-scale system changes but noted opportunities for reuse in business-to-business (B2B) settings.
- Views were mixed on the need for materials recovery facilities' (MRF) output standards to drive higher quality outputs: mandatory recycled content thresholds were viewed as being able to achieve higher quality recycled content.
- Stakeholders noted the lack of reprocessing infrastructure due to high economic and capital expenditure costs, and contamination of kerbside recycling collections due to poor recycling behaviours.

- Stakeholders support recycled content but were concerned about the lack of developed domestic end markets and the availability of quality recyclate, with significant support for incentivising domestic recycled content use.

4.2.2 Government intervention could address market failures to move towards packaging circularity

APCO's review (2023b) of progress towards the industry-led National Packaging Targets (NPTs) found that the targets will not be met by 2025 as intended, and that voluntary actions will not achieve the scale required to significantly improve sustainability outcomes for packaging and transition to a circular economy for packaging. Table 2 shows Australia progress against the NPTs since 2017-18.

Table 2: 2025 National Packaging Targets progress to 2021-22

Target description	2017-18 result	2018-19 result	2019-20 result	2020-21 result	2021-22 result
100% of all Australia's packaging will be reusable, recyclable or compostable by 2025 or earlier	88%	89%	86%	86%	84%
70% of Australia's plastic packaging will be recycled or composted by 2025	16%	18%	16%	18%	20%
50% average recycled content will be included across all packaging by 2025	35%	38%	39%	39%	40%
The phase-out of problematic and unnecessary single-use plastics packaging	Baseline	-41%	-31%	-28%	-33%

Source: APCO 2023b, p.13

While Australian businesses and governments have made significant investments and shown world-leading innovation in sustainability by taking responsibility for our waste over recent years, the existing regulatory arrangements for packaging, as currently implemented, cannot deliver the scale of change required to transition to a circular economy for packaging.

Further action is needed to address the issues identified in the Independent Review and to transition markets faster. We need to reduce waste by designing out problematic and unnecessary packaging and non-recyclable packaging, and implementing safe and sustainable alternatives to packaging that cannot be recycled at scale. We need to support the creation of stable end markets for recycled content. Intervention is needed to ensure all parts of the supply chain are working together to create a circular economy for packaging.

Reform is an opportunity to put in place a nationally consistent, whole of supply chain approach that consider roles and obligations for all sectors across the packaging life cycle from design and manufacturing to collection, sortation, recycling and reprocessing. It could also ensure domestic actions are aligned with international best practice in an Australian context, including future measures under the new global instrument to end plastic pollution. Strengthened regulation can drive investment, minimise waste, and support circular economy outcomes, industries, and jobs.

4.3 How success will be measured

An outline of how we could measure the success of any future government intervention against outcomes of the reform are outlined in Table 3.

Table 3: Measuring success of intervention

No.	Outcome	Success measure
1	Waste from packaging is reduced	
a	The use of virgin materials in packaging is reduced	Decrease in the percentage of virgin materials used in packaging production
b	The amount of packaging placed on market per capita is reduced	Decrease in the total volume of packaging placed on the market per capita
c	The amount of packaging sent to landfill per capita is reduced	Decrease the volume of packaging sent to landfill per capita
d	Problematic and unnecessary packaging is eliminated	Decrease in the volume/removal of problematic and unnecessary packaging placed on market
2	Packaging materials are kept in use and circulated at their highest value	
a	Packaging is designed for recyclability	Increase in the percentage of packaging which meets recyclability criteria
b	The amount of recycled content in packaging is increased	Increase in the percentage of recycled content used in packaging
c	Recyclable packaging is collected, recycled and reprocessed	Increase the recycling rate of packaging materials
d	Chemicals of concern in packaging are eliminated, phased-down or minimised	Decrease in the use of chemicals of concern detected in packaging

5. Policy options being considered

5.1 Packaging reform options overview

In response to the Independent Review (mpconsulting 2021) and ongoing targeted consultations with industry, several potential options to reform packaging regulation are under consideration:

- Option 1: Strengthening administration of the co-regulatory arrangement
- Option 2: National mandatory requirements for packaging circularity
- Option 3: An extended producer responsibility scheme for packaging.

These options aim to progress the objective and outcomes defined in section 4 through various strengthened regulatory and financial arrangements. They will be assessed against a base case that represents the status quo and will be used as a baseline in assessing the costs and benefits of reform options.

A non-regulatory option, as required by the Australian Government guide to policy impact analysis (OIA 2023), has not be included as would not be a viable option given the pre-existing regulatory framework. However, Option 1 considers reform opportunities of existing arrangements that do not require regulatory amendment.

A reformed scheme under Options 2 and 3 would likely take a couple of years to develop and implement. Box 4 describes the potential for early regulation to help deliver certainty for industry while reform progresses.

Box 4: Providing regulatory certainty while a reformed scheme is developed and implemented

For Options 2 and 3, the department is interested in your views on whether earlier regulation on some aspects would help provide certainty for industry in the meantime, noting any action, including early action, would need to be agreed by government.

An example could be introducing initial nationally consistent, mandatory requirements, to set a clear direction for initial action, with timeframes for implementation to be settled subject to further consultation.

Table 4 provides an overview of the key features for each option. The options, including the base case, are further described in sections 5.2 to 5.5.

Table 4: Key features of each option – roles, responsibilities and financial arrangements

Parameter	Option 1	Option 2	Option 3
Key elements	The co-regulatory arrangement remains unchanged. APCO implements its 2030 Strategic Plan to support Industry to meet the Covenant goals. Stronger compliance and enforcement of the NEPM to reduce free riders. Increased education to support behaviour change and increased participation by industry and the community.	Commonwealth legislation mandates packaging requirements on individual regulated entities including: • bans on problematic materials and chemicals of concern • progressive bans of packaging to mandate minimum recyclability performance • minimum recycled content thresholds. Current co-regulatory arrangement ceases.	The government establishes a national EPR regulated packaging scheme with industry-level outcomes and mandated requirements on regulated entities. Commonwealth legislation implements the EPR packaging scheme managed by an administrator. Scheme fees, and EPR fees based on packaging placed on the market. EPR fees could support administrator and industry to deliver EPR outcomes. Mandatory obligations are similar to those in Option 2, with the exception of progressive bans, which would not be implemented.
Scheme	Continues as per the co-regulatory arrangement.	The government administers mandatory requirements on individual regulated entities.	Scheme administrator manages the scheme and could make recommendations on eco-modulated fees, and undertakes coordinated action to support meeting scheme outcomes.
Regulated entities	Roles and responsibilities would continue as set out in the co-regulatory arrangement (see section 2.2).	Regulated entities must register with the government and comply with all mandatory requirements.	Regulated entities must report to the administrator on how they met obligations and liabilities.
Government	As above	The government administers and regulates mandatory requirements, including compliance and enforcement.	The government: • sets scheme outcomes and monitors scheme administrator performance • establishes and oversees the scheme administrator. It could also oversee scheme funding distribution • undertakes compliance and enforcement.
Industry	As above	No industry level actions and targets. An industry body/ies could provide technical support to assist individual regulated entities meet mandatory requirements.	Engages with administrator to develop activities, producer responsibility organisations could support regulated entities to meet EPR scheme obligations.

Parameter	Option 1	Option 2	Option 3
Funding arrangements	No change. APCO continues to set membership fees and introduces eco-modulated fees from 2027 to incentivise improvements in packaging recyclability.	The government may impose cost recovery fees on regulated entities to cover the administration of the arrangement. No collective funding mechanism to support industry to meet mandatory obligations or invest in packaging supply chain improvements.	EPR provides funding mechanisms through an eco-modulated fee structure that could support whole of supply chain actions. Regulated entities would be responsible for complying with regulatory and financial requirements under the scheme.
Reporting and data sharing	Annual reporting by industry to APCO and jurisdictions, confirming liability, compliance and to provide data to support the arrangements.	Annual reporting to government by each regulated entity, confirming liability, compliance and to provide data to support the arrangements.	Annual reporting to government or scheme administrator by each regulated entity, confirming liability, compliance and to provide data to support the arrangements. Data sharing arrangements established between the government and administrator.
Benefits	Administrative arrangements are already established. Flexible implementation for APCO members. Supportive of existing industry efforts.	Clear and understandable national mandatory requirements that will have a direct and tangible impact on packaging recyclability and end market development. Reduces free riders impacting on meeting NPTs.	Eco-modulated EPR scheme incentivises and supports industry wide action across the whole supply chain. Flexible implementation on design by industry and adaptation to emerging international approaches. Reduces free riders impacting on achieving scheme outcomes. Consistent reporting and data analysis and management.

Parameter	Option 1	Option 2	Option 3
Risks	Ongoing systemic issues remain. Greater compliance and enforcement remain a challenge. Free riders may remain in the system impacting industry scheme participation and confidence.	Mandatory obligations can impact flexibility to adapt and innovate, may introduce unintended detrimental consequences. Regulated entities may choose to pay non-compliance penalty instead of bearing operational cost of complying with new mandatory obligations. No scheme administrator responsible for delivering industry wide actions and outcomes. Lack of coordinated industry support impacts awareness and understanding of obligations, compliance, quality of reporting and increases business costs.	Industry may struggle to adjust to new EPR scheme and administrator if overly complex. It will take time to grow end markets and maintain demand for recycled materials. High EPR fees could create barriers for industry participation. Low fees could see regulated entities absorb cost rather than improve packaging recyclability. Misalignment of Australian and international approaches could result in additional costs and impact competition.

5.2 The Base Case

Business-as-usual for managing packaging waste in Australia is the co-regulatory arrangement established by the NEPM and the Covenant.

5.2.1 Key elements of the Base Case

The current situation includes the following key elements:

- The Covenant supported industry-led packaging stewardship scheme administered by APCO
- Delivering on National Packaging Targets (NPTs)
- Participating state and territory implementation of the NEPM.

Further information on the key elements of the base case are included at Appendix A and Table 5.

In August 2024, APCO released a proposed 2030 Strategic Plan (2024b), which implements the Covenant on a five-year horizon. This Plan, which is subject to endorsement by environment ministers, sets out a pathway for industry to take on greater responsibility for delivering the increase in recycling needed to support the delivery of the NPTs and goals of the Covenant. Potential changes to the business-as-usual scenario due to the new actions and fee model outlined in the Plan are not yet fully understood.

Table 5: Base case governance and funding arrangements

Parameter	Description
Scheme	Maintain the existing co-regulatory arrangement.
Regulated entities	Roles and responsibilities continue as set out under the existing co-regulatory arrangement (see Appendix A for more detail).
Government	As above.
Industry	As above.
Funding arrangements	APCO has its own funding model as prescribed by the Covenant, and state and territory governments fund the implementation, compliance and enforcement of the NEPM in their jurisdiction. From 2027, APCO intends to charge its members a base fee to cover administration of the Covenant, as well as an eco-modulated fee to incentivise design for reduction, reuse and recovery, and provide funding to improve downstream processes. APCO has indicated it will consult with its members on the eco-modulated fee model in 2025-26.
Reporting and data sharing	Regulated entities continue to report annually to governments and APCO to confirm liability, ensure compliance and provide data to support the arrangements.

5.3 Option 1: Strengthening administration of the co-regulatory arrangement

Improvements to packaging sustainability would be achieved by strengthening the administration of the current co-regulatory arrangement. This option does not seek to vary the NEPM to address all the identified shortcomings of the co-regulatory arrangement, such as inconsistent objectives of the

NEPM and the Covenant. To do so would require comprehensive change to the regulatory model which are addressed in other options. Option 1 also incorporates measures APCO intends to introduce under its Strategic Plan to deliver the goals of the Covenant and accelerate Australia's achievement towards the NPTs.

5.3.1 Key elements of Option 1

Option 1 includes the following key elements to progress packaging reform:

- Maintain the Covenant and the NPTs.
- APCO to implement its 2030 APCO Strategic Plan (2024b).
- The Australian Government works with state and territories to strengthen compliance and enforcement action by jurisdictions to increase participation in the Covenant and address free riders.
- Education targeting industry and consumers to increase participation and encourage behaviour change.

5.3.1.1 Australian Packaging Covenant and the National Packaging Targets

Option 1 retains the Covenant and its two goals – optimising resource recovery of packaging and preventing the impacts of litter. Signatories to the Covenant would need to continue to meet their obligations, including submitting an action plan that sets out what the Signatory proposes to do to contribute to the Covenant's aim, reporting on its performance against its action plan annually, and implementing policies or procedures to buy products made from recycled materials.

The goals of the Covenant and the NPTs, established in 2018 to drive a sustainable approach to packaging in Australia, would remain. APCO would implement its proposed 2030 Strategic Plan (APCO 2024b).

The government would continue to work with APCO to develop and advance best practice targets, guidance, and action plans to address improved packaging design and recovery.

5.3.1.2 Strengthened compliance and enforcement action

Option 1 calls for governments to better coordinate and strengthen compliance and enforcement efforts under the NEPM to address free riders and maximise industry participation in the Covenant. This would require governments and APCO to work closely together to identify potentially liable parties and coordinate efforts to ensure compliance. A strengthened arrangement could be delivered through a formal agreement which clarifies roles and responsibilities to increase efficiency and effectiveness.

Option 1 could also include governments and APCO working towards an improved data sharing framework that is supported by effective monitoring and enforcement. Improvements in data consistency would enable more reliable analysis to better inform policy decisions by governments and APCO.

5.3.1.3 Education to encourage industry and community participation

Option 1 could include increased education to support behaviour change and increased participation by industry and the community.

Industry education could increase industry awareness of their obligations under the current co-regulatory arrangement and the benefits of becoming a Signatory to the Covenant. Together with improved compliance and enforcement, this would seek to minimise free riders and ensure resourcing towards system capability developed through the 2030 Strategic Plan and the Covenant is not diminished. Community education and behaviour change efforts could increase community participation in the arrangements.

Table 6 provides a summary of governance and funding arrangements while Table 7 provides an overview of the benefits and risks for Option 1.

Table 6: Option 1 governance and funding arrangements

Parameter	Description
Scheme	Maintain the existing co-regulatory arrangement.
Regulated entities	Roles and responsibilities would continue as set out under the existing co-regulatory arrangement (see Appendix A for more detail).
Government	As above.
Industry	As above.
Funding arrangements	Funding arrangements would remain unchanged – APCO would have its own funding model as prescribed by the Covenant, and state and territory governments fund the implementation, compliance and enforcement of the NEPM in their jurisdiction. From 2027, APCO intends to charge its members a base fee to cover administration of the Covenant, as well as an eco-modulated fee to incentivise design for reduction, reuse and recovery, and provide funding to improve downstream processes. APCO has indicated it will consult with its members on the eco-modulated fee model in 2025-26.
Reporting and data sharing	Regulated entities would report annually to governments and APCO to confirm liability, ensure compliance and provide data to support the arrangements.

Table 7: Option 1 benefits and risks

Parameter	Description
Benefits	• Administrative arrangements are already established, requiring the least change. • Supports flexible implementation for APCO members under APCO's proposed eco-modulation. • Supports existing industry efforts under the Covenant and NPTs. • Greater compliance and enforcement would reduce free riders.
Risks	• Ongoing systemic issues identified in the Independent Review remain and are likely to continue to undermine the effectiveness of the co-regulatory arrangement. • There is no mechanism to introduce nationally consistent mandatory obligations, including recycled content thresholds. • Greater compliance and enforcement remain a challenge, and free riders may remain in the system – jurisdictions' resource constraints and need to balance competing priorities, identified in the Independent Review, may not be addressed. • Industry scheme participation remains at risk - if robust monitoring, compliance and enforcement systems cannot operate in all participating jurisdictions, there is no financial disincentive for free riders, or APCO members leaving the Covenant. • Education campaigns would require additional funding and resourcing.

5.4 Option 2: National mandatory requirements for packaging

Option 2 would establish a nationally consistent suite of mandatory requirements that would apply to all packaging placed on the Australian market. In this option, packaging regulatory reform would be based on mandatory requirements placed on individual regulated entities introduced under Commonwealth legislation.

The NEPM would be revoked, and state and territory governments would make any necessary changes to legislation that supports the NEPM in their jurisdiction, and the co-regulatory arrangement would cease.

Industry education could raise awareness of any new regulatory obligations. Community education and behaviour change efforts could increase community participation in the arrangements. As part of this consultation, the government is seeking stakeholder feedback on whether additional industry support would be desirable under this option, and whether this industry support should be part of the regulatory arrangement or operate independently.

5.4.1 Mandatory requirements

Packaging regulatory reform would be achieved by implementing mandatory requirements for packaging, including:

- Requirements for packaging to be designed to be recycled at scale, implemented through:
    - Early bans on some problematic packaging formats, chemicals of concern and additives.
    - Progressive bans of packaging to mandate minimum recyclability performance.
- Minimum recycled content thresholds.
- Mandatory recyclability labelling.

See sections 5.8 to 5.11 below for further information on implementing packaging obligations through mandatory requirements under this option.

Table 8 provides a summary of governance and funding arrangements while Table 9 provides an overview of the benefits and risks for Option 2.

Table 8: Option 2 governance and funding arrangements

Parameter	Description
Scheme	There is no regulated product stewardship scheme under this option, with mandatory requirements applying directly to regulated entities.
Regulated entities	Each regulated entity would be responsible for complying with mandatory requirements. Regulated entities would be expected to register and demonstrate compliance with the mandatory obligations through annual reporting. Additional obligations could also be placed on actors further down the packaging supply chain to meet the reform objectives (e.g. mandatory data provision and/or minimum performance standards).

Parameter	Description
Government	The government would establish and administer the mandatory requirements and regulatory framework, including compliance monitoring and enforcement, and reporting, audit and data collection activities. State and territory governments could also have a role in supporting some of these activities.
Industry	An industry body/ies could provide technical support to assist individual regulated entities meet mandatory requirements.
Funding arrangements	No financial mechanisms would be available to support regulatory obligations. Each regulated entity would need to fund activities to ensure compliance with mandatory requirements, consistent with other regulatory based business costs. Possible cost recovery from industry for government administration of arrangements only.
Reporting and data sharing	Regulated entities would report annually to the government to confirm liability, ensure compliance and provide data to support the arrangements.

Table 9: Option 2 benefits and risks

Parameter	Description
Benefits	• Clear and understandable requirements for industry, applied nationally. • Targets the packaging causing the most problems, removing those from market. • Improved consumer recycling awareness and behaviours through education and mandatory on-pack recyclability labelling, increasing recycling rates and improving the quality of kerbside waste streams. • End markets for recycled content are established driving demand for recycled material and supporting improvements in collection and recycling capacity.
Risks	• Bans are a blunt tool that can reduce industry's ability to innovate – they impose challenges on addressing some packaging types such as packaging which is problematic but still required for some applications. • Progressive bans could cause unintended consequences of businesses moving to alternative materials that are not fit-for-purpose or that end up in landfill. An example under current single-use plastic bans, implemented at the state and territory level, is the growing use of compostable alternatives without collection and processing facilities available at scale, resulting in these materials often ending up in landfill. • Without a regulated scheme and scheme administrator, there is no entity responsible for delivering industry-level actions and outcomes, such as targets. This will likely undermine existing collective industry progress and efforts led by APCO. • No financial mechanism to support the collection and disbursement of funds for investment in collection, reprocessing and recycling systems. • Compliance burden falls on individual businesses risking increased non-compliance. This risk is likely to be exacerbated for regulated small to medium sized businesses.

5.5 Option 3: An extended producer responsibility scheme for packaging

Option 3 would introduce a national EPR scheme (Box 5) for packaging using a mix of financial mechanisms and regulatory obligations established under Commonwealth legislation. The NEPM would be revoked, and state and territory governments would make any necessary changes to legislation that supports the NEPM in their jurisdiction, and the co-regulatory arrangement would cease.

As for Option 2, industry education could raise awareness of any new regulatory obligations. Community education and behaviour change efforts could increase community participation in the arrangements.

Box 5: What is Extended Producer Responsibility?

Extended Producer Responsibility (EPR) is a policy approach that makes producers responsible for their products along the entire lifecycle by shifting financial or operational responsibility to them (OECD 2024). EPR involves the provision of incentives (typically in the form of fees) to encourage producers to take into account the full lifecycle and environmental impacts caused by their products, many of which are currently borne by governments and taxpayers. In financial EPR, producers pay fees based on the recyclability of their products to cover collection and recycling services operated by the public sector.

EPR has been found to be successful in improving data and understanding of material flows, ensuring sufficient funding to manage products at end-of-life, and increasing material recovery and recycling rates.

In addition to holding producers responsible for the end-of-life impacts of their products through EPR, eco-modulation offers a more advanced mechanism to incentivise circular outcomes and disincentivise product characteristics which impede recyclability or cause environmental harm. Eco-modulation can both hold producers accountable for the costs of recovering their products and influence changes in product design or function to improve recyclability, reuse, or other circularity outcomes.

5.5.1 Key elements

Option 3 has the following key elements which are addressed in turn below:

- Mandatory requirements
- Eco-modulated fees
- System funding
- Scheme outcomes.

5.5.1.1 Mandatory requirements

Mandatory obligations would also apply under Option 3, including recycled content thresholds, bans on a limited number of materials or additives which impede recycling (e.g. carbon black, oxo-degradables and PFAS) and mandatory recyclability labelling. However, Option 3 would not implement the progressive bans proposed under Option 2.

5.5.1.2 Eco-modulated EPR fees

Under Option 3 regulated entities would pay eco-modulated fees based on the material type and volume they place on the market. EPR fees would provide a financial incentive for businesses to reduce their use of unnecessary or excessive packaging. Fees could also be used to improve the recyclability of packaging by linking them to a recyclability grading framework through fee modulation. This would encourage businesses to consider end of life impacts when making packaging design and material decisions and increase packaging recyclability (see section 5.9 below for more information on design criteria and recyclability).

Different potential approaches to EPR fee modulation are outlined in Box 6, while Box 7 highlights how Container Deposit Schemes incentivise downstream processing and recovery of eligible containers.

Box 6: Possible approaches to EPR fee modulation using high density polyethylene (HDPE) bottles as an example

POM = Volume of packaging Placed on Market

Basic modulation

- Each material would be allocated a fee amount which would be multiplied by the volume of that material placed on the market.
    - Basic fee = (POM x HDPE fee)

Advanced modulation

- All packaging would be evaluated for recyclability based on its material, additives, labels, chemicals, and other components which may prevent recyclability.
- A grade would then be assigned, with more recyclable packaging receiving a higher grade and lower fees (see section 5.9).
- Grades would be used to determine the fee for that type of packaging placed on the market, depending on the volume of packaging placed on the market.
    - A HDPE bottle falls that is coloured and uses labels that impede recycling and inks that are toxic will fall into a lower category and be charged the higher fee of that category (see Box 9: Design elements under consideration for restriction or to be disincentivised).
- Fees paid by regulated entities would be based on the grade the packaging falls into and proportionate to the volume of packaging placed on market.
- Advanced modulation recognises the impact that all packaging components can have on the downstream management of a product's packaging and allows producers to make more changes to the design of their packaging to improve its recyclability while still being financial liable for the cost of managing these materials in the supply chain.
    - EPR Fee = HDPE Bottle (grade A – food contact) fee x POM)

Eco-modulated fees could further be adjusted to incentivise other improvements to packaging placed on the market. For example, an additional fee component could be applied for the use of problematic chemicals that impede recyclability, and fees reduced for the use of additional recycled content in excess of the mandated minimums.

Box 7: Container Deposit Schemes (CDS) - case study in effective product stewardship

The Australian Government supports CDS as an effective way to reduce litter and increase resource recovery. State and Territory CDS operate as product stewardship schemes whereby beverage suppliers pay a fee for each container they place on the market. This funds the collection and sortation of those containers which are then sold for recycling. Liable parties are required to pay 10 cents for each container to cover the deposit amount, as well as an additional 2-4 cents per container to cover the operating costs of the schemes.

CDS provides a financial incentive to consumers to return used packaging. Consumers receive a 10-cent refund for each eligible beverage container they return to a CDS collection point. Schemes also facilitate the donation of refunds to charities and community groups. CDS is very popular in Australia and has successfully increased the recycling rate of beverage containers, reduced litter, reduced the cost of kerbside collection and sorting, and provided industry with a reliable source of clean, high value recycled materials that can be reprocessed into new products.

Soon, all Australian jurisdictions will operate CDS. When the Tasmanian scheme commences in 2025, Australia will be the first continent with full coverage of CDS. In 2021, all Australian environment ministers agreed to further improve the schemes by harmonising containers (size and products), refund amounts, container approvals, and community education efforts, ensuring consistent recycling collection strategies across all jurisdictions.

The government is considering the interaction between established CDS and Commonwealth packaging reform, including liability, financial obligations, design, and labelling. The government will continue to work with state and territory governments, and industry, to ensure obligations for businesses are not duplicative.

5.5.1.3 System funding

Fees collected from industry could form the revenue of the EPR scheme, subject to further government consideration. This revenue would be subject to appropriate governance arrangements and could be allocated across the supply chain by the scheme administrator to deliver outcomes identified and agreed by the government. Scheme revenue could be used to fund:

- gaps in collection, sorting, recycling, and reprocessing capacity
- litter reduction strategies
- research and development, including innovation to replace problematic packaging formats
- technical support to assist with compliance
- consumer education to support the transition to, and maintenance of a circular economy for packaging.

Scheme funding could also cover the costs of administering the scheme. International examples have demonstrated the success that can be achieved by EPR for packaging such as Germany, France, Italy, and Belgium (Gendell & Stoner 2021), which have seen a significant increase in recycling rates since its introduction.

5.5.1.4 Scheme outcomes

The government could set industry-level outcomes for collection, recycling and recovery, reuse, recyclability and consumer education to enhance the effectiveness of EPR to increase packaging

circularity. The scheme administrator would be responsible for these outcomes and would use scheme revenue collected from producers to achieve them.

Table 10 provides a summary of governance and funding arrangements while Table 11 provides an overview of the benefits and risks for Option 3.

Table 10: Option 3 governance and funding arrangements

Parameter	Description
Scheme	The scheme administrator would be responsible for administering the scheme, which could include recommending updates to fee settings, and undertake coordinated collective action to meet scheme outcomes set by the government. This includes providing support to industry. Given the scheme administrator's potential spread of responsibilities, engagement across the entire supply chain would be important to underpin effective action.
Regulated entities	Regulated entities would be responsible for complying with the mandatory requirements and any additional regulatory (e.g. data reporting) and financial requirements (e.g. paying EPR fees) under the scheme. Additional obligations could also be placed on actors further down the packaging supply chain to support the reform objectives (e.g. mandatory data provision and/or minimum performance standards).
Government	The government would be responsible for setting scheme outcomes, establishing and overseeing the scheme administrator and compliance and enforcement. It could also oversee scheme funding distribution. State and territory governments could also have a role in supporting assurance and data collection activities.
Industry	In addition to participating in the regulated scheme, industry could choose to take collective action (e.g. through a PRO or other industry mechanisms) on a shared product, material or industry area to augment the work of the scheme administrator and support regulated entities with meeting mandatory requirements (e.g. incorporating the minimum amount of recycled content into their packaging). Coordination of PROs' activities could be undertaken by the scheme administrator.
Funding arrangements	EPR provides funding mechanisms to support whole of supply chain actions, including research and development, litter reduction and consumer education. Eco-modulated fees would be paid by regulated entities based on the packaging they place on the market. Possible cost recovery for the Australian Government administration of arrangements.
Reporting and data sharing	Regulated entities would report annually to the government or scheme administrator to confirm liability, ensure compliance and provide data to support the arrangements.

Table 11: Option 3 benefits and risks

Parameter	Description
Benefits	• Stronger behavioural incentives to support recyclable design and packaging reduction. Fee modulation can also support incentivising other improvements to packaging, such as the use of recycled content beyond minimum threshold levels. • Flexibility for regulated entities in determining how they prioritise packaging design criteria to improve recyclability and reduce eco-modulated fees. • Greater flexibility to accommodate innovation in packaging design and recycling technologies. • Scalable revenue to support the closing of capability and capacity gaps in the packaging system. • Alignment with emerging international best practice and opportunity to increase the influence of EPR across the international packaging market. • Supports industry wide action and outcomes through setting scheme outcomes for the administrator. These could include outcomes for collection, recycling or education which can be harmonised on a national level. • Nationally consistent approach limits free riding. • Improved consumer recycling awareness and behaviours through education and mandatory on-pack recyclability labelling, increasing recycling rates and improving the quality of kerbside waste streams. • End markets for recycled content are established driving demand for recycled material and supporting improvements in collection and recycling capacity.
Risks	• EPR fee system would be complex and could create initial barriers to entry for new producers, and challenges in compliance and enforcement. • Inappropriate fee setting can limit change or produce unwanted outcomes - EPR fees must be high enough to incentivise producers to improve their packaging and not simply absorb the additional cost, but not so high as to push producers to use alternative materials with unintended market and environmental consequences. • Advanced eco-modulated fees could provide more granular behavioural incentives; however, they would carry greater administrative costs that would need to be recovered. The basic approach to modulating EPR fees outlined in Box 6Box 6 could reduce administrative costs, although it would be less effective at shifting behaviour towards higher grade packaging. • Misalignment of Australian and international approaches could result in additional costs and impact competition.

5.6 Regulated entities and liability across the options

Under the current co-regulatory arrangements, the Independent Review found there is a lack of clarity of the businesses intended to be captured (recommendation 3) and their obligations (recommendation 4). The four main issues were identified that contribute to a lack of clarity are:

- The definition of ‘brand owner’ differs between jurisdictions, creating complexity for businesses operating across Australia.
- The concept of liable brand owner obligations is linked to the concept of ‘consumer packaging’ causing confusion whether current obligations cover both business-to-business and business-to-consumer packaging.

- A lack of clarity regarding the operation of the $5 million annual turnover threshold.
- The total number of brand owners captured by the co-regulatory arrangement is not fully understood.

All the proposed options would seek to clarify who are the regulated entities in the packaging supply chain and ensure entities better understand their obligations. It is likely that all parties regulated under the current system would be captured, with potential for additional parties based on tonnage and activities performed in the supply chain. **Option 1** would achieve this through increased compliance monitoring and enforcement.

Options 2 and 3 would also ensure consistency of definitions as Commonwealth legislation would establish nationally consistent definitions. Liability to comply with the proposed regulatory obligations could be determined based on annual turnover thresholds and/or volume of packaging (tonnage) and the nature of the activities undertaken by an entity along the whole supply chain. Regulated entities could be liable for one or more category of obligations depending on their business activities. Categories of obligations could include data sharing and reporting, EPR fees, packaging design obligations and traceability.

For example, small businesses below the annual turnover and/or tonnage threshold may be required to comply with only data and reporting obligations, whereas businesses placing large quantities of packaging on the Australian market could be liable for data and reporting, EPR fees and packaging design obligations.

5.7 Scope of packaging across the options

Under Options 2 and 3 all packaging placed on the Australian market would be regulated including business-to-consumer and business-to-business packaging, and domestically manufactured and imported packaging. Exclusion from regulation would need to be tied to an evidence-based justification.

5.8 Packaging obligations across the options overview

This section outlines the packaging obligations that could apply to regulated entities under the options, including:

- Improve packaging design – to make packaging safer, reduce waste and improve recyclability.
- Improve recyclability labelling – so consumers understand what can and cannot be recycled and businesses are accountable for their packaging choices.
- Recycled content thresholds – to support increased take up of recycled content and create markets for recovered materials.

Table 13 details the key features of these packaging obligations under each of the options. The listed packaging obligations, as well as other obligations that may be necessary, are further described below.

Table 12: Key features of packaging obligations under each reform option

Packaging obligation	Option 1	Option 2	Option 3
Design for recyclability	No mandatory requirements for design for recyclability under the NEPM. No change to existing arrangements. Additional industry guidance could be used to encourage best practice design. Covenant Signatories already commit to optimise the design and recovery of their packaging including reducing chemicals of concern and report annually. Eliminating hazardous materials is one of the ten Sustainable Packaging Principles in the Sustainable Packaging Guidelines that support the Covenant. From 2027, APCO eco-modulated fees creates economic incentives to design packaging for greater recyclability.	Commonwealth legislated: • Limited bans on problematic packaging materials, additives or chemicals known to impede recyclability, starting with a limited set of problematic packaging inputs (e.g. carbon black, oxo-degradables, PFAS). • Progressively ban packaging which does not meet a minimum percentage recyclability threshold.	First ban on a limited set of problematic packaging as per Option 2 AND Link EPR fees to recyclability grading of packaging placed on market (e.g. the more problematic to recycle, the higher the fee).
Labelling	Would continue current arrangements. Under the current co-regulatory arrangement for packaging, the government supports the use of the ARL as a world-leading education tool designed to help households recycle correctly and assist brand owners to design packaging that can be recycled.	Clear and consistent recyclability labelling would be mandatory for regulated entities to include on-pack consumer packaging. This will indicate to consumers how the packaging should be disposed of.	As for Option 2. Labelling information could also be required to reflect a recyclability grade (see section 5.9 on a draft recyclability grading to be recommended to government). This could be on-pack or using a QR code to allow consumers to make more informed decisions by communicating the whole-of-life impact of packaging.

Packaging obligation	Option 1	Option 2	Option 3
Recycled content	No mandatory requirement for recycled content under the legislation that gives effect to the NEPM. No change to existing arrangements. Additional industry guidance could be used to encourage use of recycled content. Covenant Signatories must already report annually on the use of recycled materials as one of seven criteria of the Packaging Sustainability Framework (APCO 2020b). From 2027, APCO eco-modulated fees creates economic incentives to use more recycled materials in packaging.	Commonwealth legislated minimum recycled content requirements for packaging placed on the Australian market. Each regulated entity would be responsible for meeting minimum recycled content thresholds.	As for Option 2. In addition, bonuses applied to EPR fees could further incentivise regulated entities to use recycled content in packaging at rates which exceed minimum thresholds.
Other	Would continue current arrangements.	Other obligations may be necessary, including collection and recycling obligations.	Other obligations may be necessary, including collection and recycling obligations.

5.9 Improving design

Designing packaging to reduce waste and improve recyclability contributes significantly towards a circular economy for packaging in Australia. Sustainable packaging design reduces problematic and unnecessary packaging materials that create waste and impede recycling, increases resource recovery through better quality and higher value packaging materials, and circulates materials in the economy at their highest value. By ensuring recyclability of packaging wherever possible (see Box 8 for how this could be defined), design interventions also support other downstream actions to harmonise collections, reduce contamination, and develop robust domestic end markets for recyclate and products containing recycled content.

Box 8: Defining 'recyclability'

In improving design requirements for packaging, the department is considering how the definition of recyclability should be determined. As Australia moves from a traditional recycling and litter prevention approach towards a circular economy for packaging, the existence of sustainable end markets is relevant when considering whether a material is recyclable in practice in Australia. Currently, packaging is considered 'recyclable' if it is accepted through kerbside or commercial collection or Container Deposit Schemes in more than 80% of Local Government Areas (ARL 2024).

Design interventions should prioritise packaging that can be recovered through kerbside collection as this provides the most convenience for consumers and operates at scale across the country. Where packaging cannot be recovered through kerbside collection, alternative collection schemes could allow regulated entities to demonstrate their packaging can be recycled, provided the scheme meets certain conditions of scale and access, and meets minimum recycling outcomes.

Any design obligations must be developed with consideration of essential functions for packaging, ambition for global best practice design, and the unique and varying geographic challenges and recovery capabilities throughout Australia. Once the recyclability of packaging is consistently high, the supply chain can be further optimised through the addition of future sustainability criteria, such as the minimisation of emissions or water usage, and food waste.

In implementing design obligations, the government could consider exemptions or transitional arrangements for essential packaging where it cannot meet requirements without compromising its functional requirements. This may include packaging required to meet pharmaceutical safety standards or to guarantee food safety and security in certain circumstances. Another option is to progressively ban non-recyclable packaging or additives over time if industry fails to take sufficient action to improve circularity (Option 2). Box 9 outlines potential design elements that could be banned or disincentivised.

For design for recyclability obligations to be implemented and enforced effectively, the government would need to develop criteria and tools to assess circularity and recyclability and determine the correct recyclability label, as well as technical design requirements to determine a grading and allow compliance monitoring and enforcement against mandatory requirements.

Box 9: Design elements under consideration for restriction or to be disincentivised

These include:

- Use of mixed or multiple polymers.
- Inclusion of colours in plastic packaging.
- Suitability of PVC/PDVC, EPS/PS, PETG, non-polyolefin bioplastics (PLA, PHA), PA, nylon, EVOH, AlOx, SiOX, rigid steel, and oxo-degradable polymers in packaging.
- Overwraps, empty space (excess headspace, double walls, and false bottoms).
- Additives that prevent or impede recycling.
- Additives that reduce the value of recyclate.
- Chemicals of concern regulated through other frameworks to protect human health and the environment.
- Use of carbon black.
- Use of silicone, metal parts, wadding, padding, ties, cables, metals, thermosets, pump systems, swing tops with ceramic, and sealing foils not able to be completely removed in container closures.
- Use of labels and sleeves where they impede recycling.
- Use of inks that are toxic, bleed, or are metallic or mineral based.
- Use of adhesives that are not water soluble or cannot be easily removed in the recycling process.
- Packaging that cannot be easily emptied by the consumer where the remaining product impedes recycling.

Potential obligations to improve design, together with other government actions such as problematic and single-use phase-outs, will help reduce waste. Governments will continue to work together to ensure alignment between the proposed reforms and other actions, as outlined in Box 10.

Box 10: Addressing problematic plastic packaging

The government is also working to reduce waste and prevent litter and pollution by supporting state and territory governments to phase out problematic and unnecessary single-use plastic products, including some packaging items.

The government has heard from stakeholders that new packaging regulations must provide industry with the certainty they need to further invest and transition to safe and circular packaging design. Reform presents an opportunity to set clear and nationally consistent design requirements for industry.

The government will continue to work with state and territory governments towards circularity and to harmonise policies to reduce confusion and burden on industry. Depending on the circumstances, this could mean governments considering one or more policies which:

- require design changes to packaging
- incentivise innovation to remove problematic materials
- encourage a shift to reuse and refill systems
- or in some cases where there are safer and more sustainable replacements, ban highly problematic materials.

5.9.1 Independent expert recommendation to the department on packaging design

In 2024, the department established the National Packaging Design Standard Working Group (the Working Group) to provide technical advice on packaging design requirements to inform the reform of packaging regulations. The Working Group is comprised of experts in packaging design, manufacturing, recycling, and reprocessing. The department has requested the Working Group develop evidence-based, feasible, future-proofed, and effective guidance for the design of packaging in Australia, in line with circular economy principles.

Informed by international examples, the Working Group has developed a draft grading framework that proposes to grade packaging based on its recyclability, that considers:

- how readily it can be collected, sorted, and recycled in Australia
- that it does not unduly impact the quality, quantity or value of recycled materials or cause recycling stream contamination
- whether there is an established end market for the recycled materials.

This process is also considering how packaging that is necessary but is currently unable to be accepted through kerbside recycling streams at scale would be treated in reformed regulations. This could include liable parties producing non-kerbside recyclable packaging to provide evidence that they are members of an effective alternative collections scheme and are achieving equivalent outcomes to any new mandatory obligations.

The recyclability grading is proposed to support an eco-modulation approach to packaging see section 5.5.1.2 above for more information on eco-modulation). The Working Group has focused on recyclability as a first step. This work will then provide a foundation for future work on additional design criteria towards the ultimate goal of circularity, including emissions, water, and electricity impacts.

It is important to note that the grading framework, when finalised, will be a recommendation from an independent advisory group and not government policy. Details of the final design obligations are subject to change.

5.9.2 Addressing chemicals of concern in packaging

The primary purpose of packaging-specific interventions on chemicals of concern is to improve safe circularity of packaging and support sustainable packaging design. It can also help reduce human health and environmental risks. Improving safe circularity can be achieved by designing out the use of unnecessary, intentionally added chemicals of concern that impede circularity, and undermine material recovery and value. Interventions to improve circularity may also serve to reduce risks to human health and the environment from exposure to chemicals of concern.

Best practice packaging design for circularity would mean only using chemical additives that provide a clear and necessary benefit or function. Chemicals added to packaging may be considered for elimination, phase-down or minimisation commensurate with their impact on material circularity. For example, chemicals with a high potential to contaminate recovered material streams, such that they are unsuitable for use, may be a candidate for elimination. Chemicals with only a marginal impact on packaging recovery may be suitable for minimisation. Interventions targeting chemicals

performing a necessary function in packaging should consider the availability and impacts of their alternatives to avoid unintended consequences such as lost packaging functionality or future impacts to recycling systems.

Appendix C proposes chemicals for which the use in packaging should be eliminated, phased-down or minimised. Box 11 above provides a brief overview of PFAS in packaging as one of the chemicals of concern that could be restricted in packaging.

Australia has a regulatory framework to protect human health and the environment from the risks of chemical use. Any new requirements for chemicals in packaging would not duplicate existing regulatory requirements.

Box 11: PFAS in packaging

Australia's environment ministers have identified the removal of per- and polyfluoroalkyl substances (PFAS) in packaging as an urgent priority for all jurisdictions to be dealt with through packaging regulatory reform (DCCEEW 2024b).

PFAS are a group of over 4,700 chemicals. Some PFAS are very effective at resisting heat, stains, grease and water, making them useful chemicals for a range of applications, including certain packaging materials. Unfortunately, their properties also make them problematic in the environment. All PFAS persist in the environment for long periods and accumulate over time. Some PFAS can build up in the bodies of animals and people, can be toxic and travel long distances.

There is global action to eliminate three groups of the highest concern PFAS – PFOS, PFOA and PFHxS. Standards have been established under the Industrial Chemicals Environmental Management Standard (IChEMS, DCCEEW 2024d) for PFOS, PFOA and PFHxS. These groups of chemicals will be banned or severely restricted from 1 July 2025.

There is general concern about other PFAS because of their persistence and sometimes unknown long-term effects. Where the release of these chemicals into the environment cannot be controlled, such as in products for consumers, they should no longer be used. Under the National PFAS Position Statement (2019), Australian governments have agreed that:

- use of long-chain PFAS should be eliminated, and
- transitioning away from the use of chemicals that cause irreversible or long-term contamination of Australia's environment.

PFAS additives in packaging contaminate material recovery streams. A 2021 study found PFAS in fibre packaging in Australia, with the highest levels in bagasse food takeaway containers. In 2022, APCO launched an industry-led action plan to phase-out PFAS in fibre-based food contact packaging by the end of 2023.

Due to its extreme stability and background levels of PFAS in material, PFAS will be present in recycled packaging long after it has been phased-out of use. Stopping new sources of PFAS will reduce levels in recycled packaging over time.

Compostable packaging is not widely accepted in kerbside organics collection. The removal of PFAS and other chemical additives of concern used in packaging may create opportunities for compostable packaging to play a role in aiding food recovery through kerbside organics collections while avoiding impacts to compost quality.

5.9.3 Implementation under the reform options

Table 13 summarises how each of the reform options would implement packaging design for recyclability obligations.

Table 13: Implementation of design for recyclability obligations by packaging reform option

Option	Description
Option 1 – Strengthening the administration of the co-regulatory arrangement	No mandatory requirements for design for recyclability under the NEPM. Covenant Signatories already commit to optimise the design and recovery of their packaging including reducing chemicals of concern and report annually. From 2027, APCO eco-modulated fees would create economic incentives to improve recyclable packaging design. Additional industry guidance could be used to encourage best practice design.
Option 2 – National mandatory requirements for packaging circularity	Nationally consistent mandatory requirements to require packaging to be designed to be recycled at scale through Commonwealth legislated: • Limited bans on problematic packaging materials, additives or chemicals that are known to impede recyclability • Progressive bans of packaging which does not meet a minimum percentage recyclability threshold.
Option 3 – an EPR Scheme for packaging	First ban on a limited set of problematic packaging as per Option 2 AND Link EPR fees to recyclability grading of packaging placed on market (e.g. the more problematic to recycle, the higher the fee). Provides an opportunity to disincentivise other problematic packaging and chemicals of concern using fees. Reduces risk of banning packaging based on their recyclability by weight, which could lead to regrettable substitution.

5.9.3.1 Problematic packaging format and additives bans

Under Option 2 and 3, the government would ban packaging materials or additives known to impede packaging recyclability. Materials that could be subject to an initial ban are:

- carbon black, which impedes the sorting of packaging at material recovery facilities (MRFs)
- oxo-degradables, which accelerate fragmentation of plastics and result in microplastics that pollute our land and waterways
- a limited set of chemicals (e.g. PFAS) that have significant impacts on recyclability.

Further bans or phase-outs could be prioritised and scaled over time, initially eliminating materials and additives without necessary applications that are known to have significant impacts on the recyclability of packaging.

5.9.3.2 Progressive bans to mandate minimum recyclability performance

In addition to specific material bans, Option 2 would introduce progressive bans of packaging with low recyclability. This would require packaging to meet a minimum recyclability standard such as minimum recyclability performance grades (for example percentage of recyclability by weight). Bans

would increase over time to continuously improve recycling rates while allowing industries time to develop the requisite manufacturing infrastructure and overcome design challenges. To implement the scale of change required to support a circular economy, bans would need to ultimately apply to unrecyclable and a large portion of difficult to recycle packaging types. An example of how this may work is provided in Table 14.

Table 14: Example of minimum recyclability performance grading for packaging

Grade	A	B	C	D
Packaging recyclability (% of total weight)	<90%	<80%	<70%	<60%

In this example, the government could ban packaging graded D so that only packaging with a minimum of 60% recyclability by weight could be placed on market. Over time, C-graded packaging could be banned, with the result that all material placed on market would have high recyclability.

Option 2 is expected to help eliminate problematic and unnecessary packaging by moving packaging into more recyclable formats, improving the value of recovered materials.

5.9.3.3 Eco-modulated fees informed by a recyclability grading framework

Instead of progressive bans, Option 3 would use eco-modulation of fees to incentivise circular design choices and disincentivise the use of non-recyclable materials and chemicals of concern. Box 12 provides an example of how this could work. This would support innovation to improve design and recycling technologies. It would also reduce the risk of regrettable substitutions with worse environmental and recycling outcomes that could result from bans.

Box 12: Example of eco-modulation informed by a recyclability grading framework

A recyclability grading framework could provide the foundation of eco-modulated fees to incentivise circular packaging design.

Packaging assessment

Packaging could be assessed against the grading framework to determine the recyclability of a packaging in Australia. For example, higher grades of packaging could exhibit the following characteristics:

- ✓ The packaging is accepted in kerbside recycling bins for at least 80% of Australian households or is accepted in CDS or other approved product stewardship scheme
- ✓ The packaging does not disrupt operations in MRFs or recycling processors
- ✓ The packaging has sustainable end-markets.

Based on the assessment, the packaging would receive a grade that would have an associated fee (see Box 6 for possible approaches to EPR eco-modulation). Under basic and advanced eco-modulation approaches, packaging with high recyclability would pay a lower eco-modulated fee than packaging that is difficult to recycle on non-recyclable.

An online recyclability evaluation tool could be implemented based on the grading framework to assist regulated entities with the grading of their packaging and could support mandatory recyclability labelling.

5.10 Improved recyclability labelling

As part of industry's responsibility for the packaging it places on the market, businesses must be accountable for how they represent a product or packaging was made, how it should be disposed of, and the outcome of its waste.

The reform options will seek to ensure clear and consistent recyclability labelling is used so packaging is recycled, valuable recycling streams aren't contaminated, and consumers aren't confused when disposing of packaging. Improving the design of packaging and increasing the number of products carrying clear disposal instructions will support increased recycling rates and the use of recycled materials in packaging.

5.10.1 Implementation under the reform options

Table 15 summarises how each of the options would implement recyclability labelling obligations.

Table 15: Implementation of recyclability labelling obligations by packaging reform option

Option	Description
Option 1 – Strengthening the administration of the co-regulatory arrangement	Continue current arrangements: The government supports the use of the ARL as a world-leading education tool designed to help households recycle correctly and assist brand owners to design packaging that can be recycled. Strengthened arrangements under Option 1 would improve the uptake and effectiveness of the ARL. Enhanced education efforts could also encourage better purchasing decisions (such as avoidance of unnecessary or problematic packaging) and disposal decisions. For example, increased awareness and use of the ARL would increase participation in recycling systems to increase recovery and reduce contamination. The efforts would complement existing initiatives such as harmonisation of kerbside recycling systems.
Option 2 – National mandatory requirements for packaging circularity	Clear and consistent recyclability labelling would be mandatory for regulated entities to include on-pack for consumer packaging. This will indicate to consumers how the packaging should be disposed of. It would be expected to improve packaging recovery rates and reduce contamination in recovery streams.
Option 3 – an EPR Scheme for packaging	As for Option 2. Labelling information may also be required to reflect a recyclability grade (see Box 12 for an example of recyclability grading). This would allow consumers to make more informed decisions by communicating the whole-of-life impact of packaging. This additional information would further increase transparency around material use and recyclability and apply pressure to producers to improve design choices.

5.11 Recycled content thresholds

Australia's transition towards a circular economy requires more materials to be recovered and used at their highest value for longer. Increasing material circularity relies on strong and reliable markets for recovered materials to provide investment certainty across the supply chain.

APCO is charged with delivering the National Packaging Targets (NPTs) and will continue to lead work on recycled content targets while reform progresses. APCO has produced three reports, informed by engagement with industry, to support discussion on this topic.

- Recycled content options paper for packaging (APCO 2024c)
- Traceability data requirements (APCO 2024d)
- Traceability technical solutions (APCO 2024e)

Instruments such as legislated targets and financial instruments are being used elsewhere to increase the use of recycled content in packaging. Examples include the European Union's 30% recycled content mandate for plastic beverage bottles by 2030 (EU 2019) and the United Kingdom's tax on plastic packaging with less than 30% recycled content (UK Government 2021). Similar initiatives have

been implemented in parts of the United States, including California's 50% recycled content target for plastic beverage containers by 2030 (CA Government 2020) and Maine's 25% mandate for plastic beverage containers by 2026 (Maine Government 2022).

By adopting similar standards to major international markets, Australia can facilitate smoother trade and material and product flows and reduce administrative burdens for industry while ensuring Australian products can compete effectively in these jurisdictions.

5.11.1 Implementation under the reform options

Table 16 summarises how each of the options would implement recycled content obligations.

Table 16: Implementation of recycled content obligations by packaging reform option

Option	Description
Option 1 – Strengthening the administration of the co-regulatory arrangement	No mandatory requirement for recycled content under the legislation that gives effect to the NEPM. No change to existing arrangements however additional industry guidance could be used to encourage the use of recycled content. Covenant signatories must already report annually on the use of recycled materials as one of seven criteria of the Packaging Sustainability Framework (APCO 2020b). From 2027, APCO eco-modulated fees creates economic incentives to use more recycled materials in packaging.
Option 2 – National mandatory requirements for packaging circularity	Commonwealth legislated minimum recycled content requirements as a single set of obligations for packaging placed on the Australian market. Would be expected to help increase demand for and develop end markets for recycled content. Each regulated entity would be responsible for meeting minimum recycled content thresholds.
Option 3 – an EPR Scheme for packaging	As for Option 2. In addition, bonuses applied to EPR fees (as outlined in section 5.5) could further incentivise regulated entities to use recycled content in packaging at rates which exceed minimum thresholds. This could support the creation of end markets enabled through mandatory recycled content regulation if fees could be used could further support investment across the supply chain, including in research and infrastructure that increases recycled content in products and the development of end markets.

5.11.1.1 Proposed recycled content thresholds under Options 2 and 3

Table 17 outlines proposed minimum recycled content thresholds for various packaging materials and polymers by year and by application (food grade and non-food grade applications), subject to consultation.

The thresholds in years 1 and 3 following implementation are based on the existing NPTs (see Table 18). The thresholds then aim to drive performance beyond the 2025 recycled content targets and towards better practice over the longer term. The thresholds increase in future years to align with proposed requirements in the European Union's Packaging and Packaging Waste Regulation (PPWR) provided at Table 19 (European Parliament 2024).

A phased approach to implementing minimum recycled content thresholds would allow the market to adjust, enabling regulated entities to test and modify packaging design and supplier contracts and invest in new manufacturing equipment where needed. Additionally, recyclers and material reprocessors could prepare to meet increased demand for recycled materials.

The thresholds for 2035 and 2040 are indicative only, informed by APCO's report (2024c) which suggests what may be achievable. These will be refined through consultation processes and would require periodic review and potential adjustments.

Table 17: Proposed minimum post-consumer recycled content thresholds

Material	Category and application	Year 1 (%)	Year 3 (%)	2035* (%)	2040)* (%)
Plastic	PET: non-food grade	30	35	45	65
	PET: food grade	-	30	40	50
	HDPE: non-food grade	20	35	45	65
	HDPE: food grade	-	10	15	25
	LDPE: non-food grade	10	35	45	65
	LDPE: food grade	-	10	15	25
	PP: non-food grade	20	35	45	65
	PP: food grade	-	10	15	25
	Other: non-food grade	10	35	45	65
	Other: food grade	-	10	15	25
Paper/paperboard	All: combined	60	65	70	75
Glass	All: combined	50	55	60	70
Metal	Aluminium: non-food grade	35	45	55	80
	Aluminium: food grade	-	35	55	80
	Steel: non-food grade	20	35	-	40
	Steel: food grade	-	35	-	40

* Indicative only

Table 18: Australia's current recycled content targets and rates by material

Material	Category and application	2025 NPTs (%)	Post consumer recycled content 2021-22 (%)
Plastic	All	20	6
	PET	30	19
	HDPE	20	6
	LDPE	-	2
	PP	20	6
	Other	-	0
Paper/paperboard	All	60	54
Glass	All	50	41
Metal	All	35	13
	Aluminium: non-food grade	-	6
	Aluminium: food grade	-	24
	Steel: non-food grade	-	12
	Steel: food grade	-	7

Table 19: EU proposed minimum post-consumer recycled content thresholds for plastic packaging

Category and application	2030 (%)	2040 (%)
PET: non-food grade	35	65
PET: food grade	30	50
HDPE: non-food grade	35	65
HDPE: food grade	10	25
LDPE: non-food grade	35	65
LDPE: food grade	10	25
PP: non-food grade	35	65
PP: food grade	10	25
Other: non-food grade	35	65
Other: food grade	10	25

Specific recycled content thresholds for soft plastics may also be considered, supporting actions on soft plastic, including as part of the *Soft plastics pathway* currently in development by the Australian, state and territory governments through the Kerbside Harmonisation Roadmap (DCCEEW 2024b).

Both pre-consumer and post-consumer recycled content support material circularity. The proposed thresholds above would apply to post-consumer recycled content only to help drive system

investment in transforming consumer waste into high value materials. This would also align with leading approaches such as the European PPWR (European Parliament 2024).

The department may also consider scenarios which may warrant exemptions to the recycled content requirements, for example specific packaging types or functions which may be less suited to recycled content.

5.11.1.2 Recycled content sources

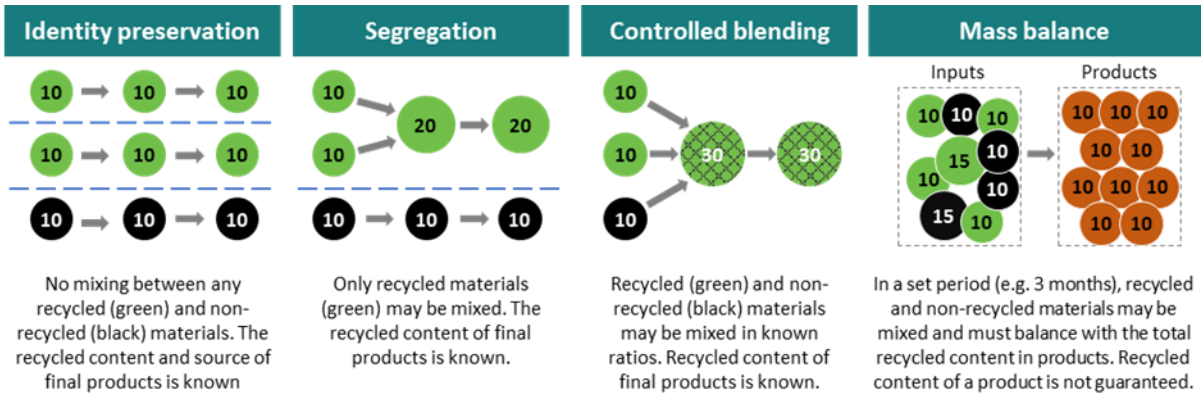
Both domestic and imported recyclate could be used to meet minimum recycled content requirements. The department could explore options for supporting the use of domestic recycled content to drive local circularity, while ensuring alignment with international obligations.

5.11.1.3 Recycled content chain of custody

Under Options 2 and 3, there would be a requirement for the calculation, traceability and reporting of recycled content to be consistent with the National Framework for Recycled Content Traceability (NFRCT) (DCCEEW 2023a). The NFRCT encourages the collection and sharing of information on recycled materials to boost confidence in and demand for those materials. The NFRCT lays a foundation of principles and guidelines to help industry implement traceability consistently and enables Australian governments to set harmonised and consistent traceability expectations for recycled content.

Reporting of recycled content would also need to be consistent with the chain of custody approaches in the NFRCT, which are detailed in Figure 3 and Appendix D. These chain of custody approaches are identity preservation, segregation, controlled blending and mass balance. For mass balance approaches, the department is considering the potential implications of allowing the allocation methods listed in Appendix D and multi-site mass balance approach.

Figure 3: Chain of custody approaches



5.11.1.4 Traceability

To support regulated recycled content thresholds, full supply chain traceability would be required. However, a phased approach to implementation could be considered such that initially organisations have at least 'one-step forward and one-step back' data sharing (also known as one-up-one-down traceability), with a requirement to transition to full supply chain traceability with visibility of all upstream and downstream supply chain partners by a certain date.

5.11.1.5 Reporting

To support regulated recycled content thresholds, each organisation would also need to be able to trace the recycled content used in its packaging product and to demonstrate the process for tracing their recycled content as outlined in the NFRCT, including by:

- establishing, documenting and maintaining systems and policies that align with the NFRCT; and
- maintaining traceability records for recycled content used as set out in Appendix D.

This data should also be collected and shared in alignment with the ACCC's draft guidance on sustainability collaboration (ACCC 2024).

The department could also consider establishing specific data requirements for each material category to verify recycled content claims. These data requirements would be developed in close collaboration with industry stakeholders to ensure practicality, effectiveness, and alignment with existing industry practices.

5.11.1.6 Verification

Any verification for regulated recycled content thresholds would need to align with the NFRCT, in that recycled content claims must be verified by an independent third-party or certified through a certification scheme. To support businesses, the department would consider developing an approved third-party certification list or establishing a centralised verification body, such as a government body or industry peak body.

5.11.1.7 Logo and claims

Logos and claims would need to be consistent with the Making environmental claims: A guide for business issued by the ACCC (2023b) and the definitions in ISO 14021:2016 which outlines that environmental claims must be accurate and not misleading**.**

Claims relating to recycled content depend on the chain of custody model used. If mass balance is used throughout any stage of the supply chain, language that conveys any specific quantities of recycled material within packaging products cannot be used (e.g., "made with" or "composed of").

Any claims would need to distinguish between pre-consumer and post-consumer recycled content. AS/ISO 14021 provides definitions that can support truthful and accurate marketing claims.

The department may consider developing a recycled content labelling scheme to regulate claims about recycled content in packaging and to provide a standardised format for packaging to present its recycled content claims to consumers. This would differ to the on-pack recyclability logo and would instead refer to the recycled content claims made by packaging producers.

5.11.2 Other obligations

For Options 2 and 3 other obligations may be necessary. Some examples have been included below. We are seeking feedback on these and on other potential obligations that may help achieve the reform outcomes.

Any additional obligations should consider existing work of Australian governments and industry that supports and complements reforms to packaging regulation. This work is outlined in Appendix B.

5.11.2.1 Collection and recycling

We are seeking feedback on whether specific obligations for collection and recycling are needed under Option 2 and 3 to support the collection and recycling of packaging in Australia. These could include mandatory data provision and performance standards or targets. This could provide certainty that recyclable materials are being recycled in practice and providing higher quality recycled content suitable for packaging applications. Any performance standards or targets would be considered alongside obligations for packaging design and the uptake of recycled content.

Collection and recycling outcomes could be delivered through mandatory obligations on regulated entities under Option 2, or through setting industry-level outcomes for the scheme administrator under Option 3. Under Option 3, funding from EPR fees could be able to be used to help achieve these outcomes.

5.11.2.2 Packaging reuse and refill systems

The department is considering appropriate applications for reusable packaging in Australia. Reuse is when a unit of packaging is designed and intended to achieve multiple uses for the same purpose for which it was originally used. In practice, reuse is often implemented as a refill system, where the user owns the packaging, or as a return system, where the user rents the packaging from a business and returns it after use. Reuse can be applied in business and consumer applications.

There are significant differences between business-to-business (B2B) and business-to-consumer (B2C) reuse packaging applications. B2B reuse often relates to the transport of goods and is influenced by supply chain logistics. There are many opportunities for reuse in B2B and many businesses are already adopting reuse in the B2B space. Reuse systems for consumer packaging is currently less common in Australia than B2B systems. Reuse systems have the potential to reduce the impacts of consumer packaging, although implementation can be challenging. Consumer reuse systems require significant behavioural shifts and upfront investment by businesses to commence the shift to a circular economy (ANZPAC 2024).

There are mechanisms that could be implemented to incentivise the uptake of reusable packaging. The European Union has set ambitious targets for reusable packaging under the PPWR, including a requirement for businesses to provide the option of refill or reuse for takeaway food and beverage products. In addition to targets, financial incentives could be implemented, such as through eco--modulated fees.

It is important that reusable packaging meets minimum standards to ensure that the packaging can cycle through a reuse system for an appropriate period of time. Global standards are being developed for B2C reuse systems and will include considerations such as design, washing, labelling, return and collection, and logistics. When complete, the new standards should be considered in the development of reuse systems in Australia.

6. What is the net benefit of each option?

6.1 Assessment of options

This section provides a preliminary assessment of the department's proposed reform options against:

- the principles for reform set out in Chapter 4
- a qualitative analysis of potential costs and benefits by stakeholder groups.

Further assessment, including quantifying costs and benefits of the reform will be conducted as part of the future impact analysis process. The objective of this consultation paper is to build on previous stakeholder engagement, to gather additional evidence and data on the extent of the problem and to seek views on the potential benefits and costs of the proposed policy options.

6.1.1 Any viable option must compare well against the principles established.

As established in Chapter 4, the department has developed a series of principles to inform policy design. The principles identified will underpin a strong and effective circular economy for packaging that is accepted and trusted both domestically and internationally. Figure 4 and Table 20 show our assessment of the base case and each option against the principles (section 4.1 refers) using the following ratings:

- Good (Green) – has potential to fully deliver on principle
- Partial (Amber) – expected to partially deliver on principle, the approach may have some limitation or weaknesses
- Poor (Red) – not expected to deliver on principle, or approach has significant limitation or weaknesses.

In summary the options are described as:

- Base case: The current situation including the proposed APCO 2030 strategy
- Option 1: Strengthening administration of the co-regulatory arrangement
- Option 2: National mandatory requirements for packaging
- Option 3: An extended producer responsibility scheme for packaging.

Figure 4: Assessment of base case and options against the principles - at a glance

Principle	Base case	Option 1	Option 2	Option 3
Nationally consistent obligations and requirements to ensure a level playing field and increase certainty for businesses producing packaging and placing it on the market				
Clear obligations for industry to support effective action…				
…and investment across the packaging life cycle				
A system where industry takes responsibility for the packaging it places on market				
Flexibility to accommodate innovation in packaging design and recycling technologies				
Measurable, enforceable and enforced obligations to sustain industry and community confidence				
A system that contributes to Australia meeting its international obligations				
A system that is based on global best practice, while accounting for Australia's geographic and market context				
A system aligned with global standards to maintain and increase industry access to global markets and alignment with global supply chains.				

Table 20: Assessment of base case and options against the principles

Principle	Base case	Option 1	Option 2	Option 3
Nationally consistent obligations and requirements to ensure a level playing field and increase certainty for businesses producing packaging and placing it on the market	Poor Inconsistent obligations between Covenant and state and territory legislation that supports the NEPM	Poor Inconsistent obligations between Covenant and state and territory legislation that supports the NEPM not addressed in this option	Partial Yes, through Commonwealth legislated requirements but limited in scope compared to existing Covenant obligations	Good Commonwealth legislated requirements and eco-modulated fees for design for recyclability
Clear obligations for industry to support effective action…	Poor Inconsistent obligations between Covenant and state and territory legislation that supports the NEPM	Poor Inconsistent obligations between Covenant and state and territory legislation that supports the NEPM	Partial Clear obligations for individual	Good Clear obligations for individual and industry

Principle	Base case	Option 1	Option 2	Option 3
…and investment across the packaging life cycle	Poor Strategic plan supports, but risks exacerbating free rider issue given voluntary membership of Covenant	Partial Strategic plan supports, strengthened compliance and enforcement aim to improve scheme participation and investment in whole of supply chain actions	Poor No financial mechanism to fund or invest in whole of supply chain actions	Good Legislated EPR requires participation
A system where industry takes responsibility for the packaging it places on market	Partial Limited in scope to Covenant Signatories and liable parties that report under the NEPM while free rider issue remains	Partial Limited in scope to Covenant Signatories and liable parties that report under the NEPM while free rider issue is addressed through more compliance and enforcement by states and territories	Partial Individual businesses are responsible for the packaging they POM	Good EPR administrator accountable for meeting industry-wide scheme outcomes
Flexibility to accommodate innovation in packaging design and recycling technologies	Partial Flexible implementation for APCO members	Partial Flexible implementation for APCO members	Partial Requires industry to improve packaging POM to meet restrictions and bans. However, bans can reduce flexibility to innovate and can have unintended consequences	Good Eco-modulated fees for design for recyclability support flexible implementation
Measurable, enforceable and enforced obligations to sustain industry and community confidence	Poor Known free rider issue and ineffective compliance and enforcement of the NEPM by state and territories	Poor While this option seeks to increase compliance and enforcement to address free riders, it does not address inconsistent implementation of and the NEPM or clarify obligations of liable parties under the NEPM	Good Single Commonwealth regulator	Good Single Commonwealth regulator. EPR fees support effective and efficient compliance and enforcement

Principle	Base case	Option 1	Option 2	Option 3
A system that contributes to Australia meeting its international obligations	Poor No way to impose mandatory requirements on all regulated entities, but industry-led action can support outcomes	Poor No way to impose mandatory requirements on all regulated entities, but industry-led action can support outcomes	Partial Can impose mandatory requirements, no regulated industry coordinating mechanism or funding to support system improvement	Good Can impose mandatory requirements, and scheme administrator can support early industry-led action
A system that is based on global best practice, while accounting for Australia's geographic and market context	Poor APCO eco-modulated fees will support industry to take more responsibility to increase recycling to support delivery of the NPTs and goals of the Covenant, but limited to Covenant Signatories only	Poor APCO eco-modulated fees will support industry to take more responsibility to increase recycling to support delivery of the NPTs and goals of the Covenant, but limited to Covenant Signatories only	Poor Potentially limited in its scope due to restrictive requirements when EPR approach is best practice. There are no industry wide targets and regulation targeting only the most significant issues (e.g. chemicals). There is no funding mechanism.	Good EPR and flexible implementation can support industry's ability to lead on innovation and best practice
A system aligned with global standards to maintain and increase industry access to global markets and alignment with global supply chains	Poor Strategic plan supports, but limited to Covenant Signatories	Poor Strategic plan supports, but limited to Covenant Signatories	Partial Commonwealth legislation can only limit extent to which standards can be applied using restrictions or bans, noting eco-modulation would not be available to achieve outcomes	Good Commonwealth legislation can set national requirements as needed. EPR supports greater alignment with global standards in a way that also supports flexibility and innovation.

6.1.2 Costs and benefits by stakeholder group– preliminary assessment

A cost-benefit analysis (CBA) is undertaken to estimate how each option performs when we set out all of the costs and benefits. The analysis in Table 21, Table 22 and Table 23 below outlines some potential qualitative benefits and costs that will impact stakeholder groups. A more detailed cost benefit analysis could be conducted ahead of an impact analysis to support future government consideration. Stakeholders providing accurate and time relevant data as part of this consultation will help strengthen and better inform any CBA process.

Many of the potential benefits and costs under Option 1 are critically reliant on achieving strong participation by brand owners as APCO members.

Table 21: Option 1 benefits and costs summary by stakeholder group

Affected stakeholder	Potential benefits	Potential costs
Recycling and resource recovery sector	Access to increased revenue through APCO service contracts* Reduced contamination costs from packaging being designed to be more recyclable* Market development for recycled materials from APCO industry support*	Packaging handling and processing and other business infrastructure improvements/ adaptation costs Increased storage or disposal costs if demand for recycled materials remains underdeveloped
Environment	Reduction in litter and landfill impacts due to more reuse or collection systems and improvements to consumer awareness* Reduced reliance on virgin material to make packaging	Packaging continues to cause environmental harm when collection systems and demand for recycled materials is unable to manage large volumes of packaging placed on the market
Consumers (e.g. businesses, households and community)	Better access to reuse, collection and recovery systems for packaging*	A lack of a mandated recyclability label means consumers are less informed on how to dispose of their packaging.
Governments	Local governments kerbside collection costs may be reduced due to improvements in resource recovery Improved local and civic amenities due to reduction in litter. Reduced litter collection costs	Additional costs related to strengthened monitoring, compliance and enforcement activities and education campaigns
Packaging suppliers and brand owners (APCO members)	More protection from free riders as the co-regulatory arrangement is enforced Certainty for suppliers and brand owners who will continue to receive support from APCO to meet existing obligations Certainty from existing reporting and administrative remaining similar Increased understanding about obligations	Higher packaging supply costs from: • designing recyclable packaging • recycled materials in packaging • additional member fees to support greater movement towards the National Packaging Targets

*Impacts generated from APCO members

Table 22: Option 2 benefits and costs summary by stakeholder group

Affected stakeholder	Potential benefits	Potential costs
Recycling and resource recovery sector	Reduced costs from the removal of packaging contaminated with extremely problematic materials and additives (e.g. carbon black and oxo-degradables) Cleaner recycled materials have a higher monetary value and can compete with virgin materials Cleaner material resource stream to support recycled content markets Stable end markets for recycled content Greater certainty for private investment in recycling capacity	Ceasing of the co-regulatory arrangement may reduce industry support leading to higher processing, handling and other business infrastructure improvements/adaptation costs Higher storage or disposal costs if there is no increase in demand for recycled materials
Environment	Impacts from extremely problematic materials and additives are minimised (e.g. PFAS)	Delayed reduction in litter and landfill impacts from phased in ban on packaging that does not meet recyclability thresholds by weight No financial mechanisms available to reduce packaging volumes, chemicals of concern or effect packaging design choices
Consumers (e.g. businesses, households and community)	Increased confidence in recycled content claims Consistent on-pack recyclability labelling	May impact packaging appearance and experience
Governments	Single regulator improves administrative efficiency, consistent data management and enforcement of mandatory obligations	Increased government, compliance and verification costs. Government administration and regulation of the packaging reforms may increase without the co-regulatory arrangement
Packaging suppliers and brand owners	Additional certainty for material selection, production and operation choices Liable brand owners have greater certainty of their obligations	Ceasing of co-regulatory arrangement may impact business administration costs for annual mandatory reporting obligations Higher costs to meet mandatory obligations (e.g. recycled content, recyclability and design criteria) including re-tooling and manufacturing process changes Higher packaging supply costs from: • designing recyclable packaging • clear recyclability labelling • recycled materials in packaging

Table 23: Option 3 benefits and costs summary by stakeholder group

Affected stakeholder	Potential benefits	Potential costs
Recycling and resource recovery sector	Reduced contamination costs from packaging being designed to be more recyclable and removal of problematic materials and additives Cleaner material resource stream to support recycled content markets. Cleaner materials have higher value EPR funding could support sector costs associated with packaging such as gaps in capability, innovation, and infrastructure Greater certainty for investment in recycling capacity due to stable end markets for recycled content	Participation and compliance costs arising from whole of supply chain approach such as data reporting
Environment	Reduction in litter and landfill impacts due to increased recovery from: • more packaging being designed to be recyclable • funding to support increased capability of reuse, collection and recycling systems and improvements to consumer awareness Less problematic packaging placed on the market causing environmental harm	Environmental harms from remaining packaging that is not recovered (e.g. packaging materials exempt from recyclability criteria)
Consumers (e.g. businesses, households and community)	Increased confidence in recycled content claims Less of a need to weigh up environmental and economic drivers as most packaging paced on the market is recyclable Consistent on-pack recyclability labelling	May impact packaging appearance and experience
Governments	Efficiency gains from more centralised administration	Increased government, compliance and verification costs Government and administration costs associated with EPR fees
Packaging suppliers and brand owners (APCO members)	No competition disadvantages due to free riders Additional certainty on that packaging choices that do not consider recovery and end-of-life impacts will have greater financial impacts in the future.	Higher packaging supply costs from: • designing recyclable packaging • clear recyclability labelling • recycled materials in packaging legislated EPR fees

7. Consultation questions

The department welcomes your feedback on the options and packaging obligations outlined in this paper. We are seeking your feedback through the survey available on the department's Have Your Say website.

The questions asked through the survey are outlined below to help you prepare responses. Where possible, please include any evidence or data you would like to be considered to support your responses, particularly with respect to anticipated costs, risks and benefits.

7.1 Questions on the reform options

- What reform option do you prefer?
- How effective do you think the reform options would be in achieving the reform outcomes?
- What are the most important packaging reform principles to achieve the outcomes?
- What support and/or systems would businesses need to meet the reform options and packaging obligations?
- Under Option 1, what, if any, education for businesses and consumers would improve packaging reform outcomes?
- Under Option 2:
    - Would an industry organisation be needed to support businesses and, if so, what would its role be?
    - Do you support the proposed progressive bans based on packaging recyclability measured by total weight? If not, what alternative do you suggest?
- Under Option 3:
    - What functions could potentially be performed by an EPR scheme administrator?
    - Which EPR fee modulation approach (as outlined in Box 6) do you prefer?
    - What other actions to improve packaging should be incentivised using eco-modulated fees?
    - What activities could EPR scheme revenue be used for to support material circularity, noting that there may be limitations on what activities can be funded due to legislative or other constraints?
- Under Options 2 and 3:
    - If some regulations could be introduced early to provide industry certainty, would you support a two-stage approach to regulation? What early requirements would you support?

7.2 Questions on the packaging obligations

- How supportive are you of the proposed packaging obligations on design, labelling and recycled content as outlined in sections 5.9 to 5.11?
- How effective do you think each of the packaging obligations would be in delivering the objectives of the reform?

- What percentage of the packaging you placed on the market would need to change to meet the proposed obligations?
- What activities would you need to undertake to prepare for the proposed packaging obligations? Do you anticipate these activities will be the same or different across the packaging obligations? Why?
- How soon do you think your business would be able to meet the proposed packaging obligations?
- What would your major anticipated costs and risks associated with the proposed packaging obligations be?
- What would be the major anticipated benefits associated with the proposed packaging obligations and who will receive them?
- Are there any other anticipated risks, costs and benefits to you under the different options not covered by the questions above?
- What other obligations should be considered to support a circular economy for packaging?
- Should mandatory obligations be placed on collectors, recyclers and reprocessors? If so, what should they be, and do you have supporting evidence?
- Should obligations be imposed to incentivise the uptake of packaging reuse systems?
    - Which industries or packaging formats should be prioritised?
    - Should uptake be mandated or incentivised through eco-modulation?
    - Should reuse standards be introduced for suitable reuse packaging formats?

For the questions on packaging obligations, we are asking for your views on the different ways the packaging obligations can be achieved under the three options:

- Design for recyclability
    - Option 1: No additional obligations
    - Options 2 and 3: National ban on limited set of problematic packaging inputs (e.g. carbon black, oxo-degradables, PFAS)
    - Option 2: Progressive national bans on packaging below minimum recyclability by weight threshold
    - Option 3: National EPR fees linked to design recyclability grades
- Recyclability labelling
    - Option 1: No additional obligations
    - Options 2 and 3: Mandatory on-pack recyclability labelling
- Recycled content
    - Option 1: No additional obligations
    - Options 2 and 3: National mandatory minimum recycled content thresholds
    - Option 3: National EPR fees incentivise more recycled content use above minimum thresholds

7.3 Questions on scope and liability for reforms

- Should packaging regulations be applied uniformly to both business-to-consumer (B2C) and business-to-business (B2B) packaging?

- Do you have packaging that could not comply with the proposed obligations on design, labelling and recycled content as outlined in sections 5.9 to 5.11? Why is this? For example, are there conflicting obligations?
- What point in the supply chain is the most effective point to apply the proposed packaging obligations on design, labelling and recycled content as outlined in sections 5.9 to 5.11?
- How should liability thresholds be set to ensure packaging reforms achieve their intended outcomes while minimising impacts on businesses?

7.4 Questions on recyclable packaging design

- What packaging materials or chemical additives impede recyclability or are not recyclable but are necessary for functionality?
    - Why are they necessary?
    - Are there alternatives?
    - What are the barriers to adopting the alternatives?
- Is the recovery, reprocessing or reuse of material disrupted by certain packaging materials or chemical additives? What are these materials or chemical additives and what are the impacts?
- Is your packaging required to comply with other mandatory requirements that restrict its design? If so, please list these (e.g. tamper-proof packaging for therapeutic goods).
- Do you support a mandatory label on packaging which clearly indicates what can and can't be recycled?
- Have you undertaken share life cycle analysis or related data or modelling demonstrating the environmental impacts of packaging materials?

7.5 Questions on recycled content thresholds

- With reference to Table 17: Proposed minimum post-consumer recycled content thresholds , what do you think about:
    - The designated material categories used?
    - Differentiating between non-food and food grade packaging?
    - The proposed thresholds for year 1 and year 3?
- What requirements, further to those outlined in the National Framework for Recycled Content Traceability, would need to be specified to support traceability and verification for mandatory recycled content thresholds in packaging?
- Which approach to mass balance claims (free allocation, fuel exempt, polymer only, or proportional allocation) outlined in Section 5.11 do you support? Why?
- Do you support a mandatory recycled content label for packaging? If so, what level of detail should be included?

7.6 Questions on why packaging reform is needed, its objectives and outcomes

- Do you have any additional information or data on the problems outlined in Chapter 3?

- How important is it to you that packaging is designed to be recycled or reused and then recycled or reused in practice?
- Do you support the proposed packaging reform objective outlined in Section 4.1?
- Do you support the proposed packaging reform outcomes outlined in Section 4.1?

8. Next steps

We are now seeking your feedback through the department's Have Your Say website.

To support government decision making on a preferred regulatory option, the department will evaluate feedback and the data received through this consultation, supported by further modelling where necessary to identify the costs of each option on business, governments and the community.

Subject to the government's consideration and decision on a preferred regulatory option in 2025, there will be sufficient lead time for business to prepare before they are enforced.

The department will continue to work closely with stakeholders and provide updates as the reform progresses.

Glossary

Term	Definition
Advanced recycling	Changing the chemical structure of a material or substance, with processes such as cracking and gasification, to produce monomers or new raw materials.
APCO	Australian Packaging Covenant Organisation
ARL	Australasian Recycling Label
B2B	Business-to-business packaging. Packaging where the end customer, prior to the packaging reaching end of life, is a business or institution. Includes the secondary or tertiary packaging that is used in the transport of goods between businesses.
B2C	Business-to-consumer packaging. Packaging where the end customer, prior to the packaging reaching end of life, is a consumer (i.e. a person).
Brand owner	This term is defined in section 3 of the National Environment Protection (Used Packaging Materials) Measure 2011.
Carbon black	A common colouring agent used to create dark colours in packaging. Carbon black absorbs UV light rather than reflecting it making it difficult for near-infrared scanners used in MRFs and processing facilities to identify and segregate waste streams.
CDS	Container Deposit Scheme
Chain of custody	Consistent with ISO 22095:2020, chain of custody describes the rules for managing recycled materials, to ensure their characteristics remain transparent through the supply chain and can be accounted for in the final recycled content goods.
Chemicals of concern	Concern is a measure of the potential consequences of a chemical substance being used in Australia. Concern includes consideration of the risk to the environment, the inherent hazard characteristics of a chemical substance, and relevant social and economic impacts for a chemical's use.
Circular economy	An economic model that promotes sustainable and efficient use of resources. It shifts away from the linear 'take, make, waste' consumption model to an approach where the value of resources is maintained in the economy for as long as possible (DCCEEW 2024a).
Circularity	A system or process where products and the materials they contain are valued, used efficiently, recovered, and waste is avoided or reduced to a minimum (EPRS 2016).
The Covenant	Australian Packaging Covenant
DCCEEW/The department	Department of Climate Change, Energy, the Environment, and Water
Eco-modulation	The concept of penalising the use of materials that are less environmentally friendly, and rewarding the use of those which are better.
EMM	Environment Ministers' Meeting
EPR	Extended Producer Responsibility

Term	Definition
Food grade packaging	The Food Standards Code details specific requirements for surfaces in contact with foods, including containers and packaging in which food is processed or stored. They must be: • adequate for the production of safe and suitable food • fit for their intended use. For a food contact surface to be considered food grade it must be able to be effectively cleaned and must be made from a material that will not migrate into, contaminate or taint the food. The requirements for a plastic to be considered food grade are listed in the Australian Standard for Plastics materials for food contact use AS 2070-1999 (NSW 2020).
Free riders/free riding	A business (or act of) that gains advantage by not participating in voluntary or regulatory programs which are funded by their competitors that deliver industry and public benefit.
GOG	Government Officials Group
The government	The Australian Government
Government Response	Australian Government response to the independent review of the co-regulatory arrangement under the National Environment Protection (Used Packaging Materials) Measure 2011 (Australian Government 2022)
IChEMS	Industrial Chemicals Environment Management Standard. This is a national approach to manage chemical use, storage, handling and disposal (DCCEEW 2024d).
Independent Review	Review of the co-regulatory arrangement under the National Environment Protection (Used Packaging Materials) Measure 2011 (mpconsulting 2021)
Kerbside collection	Materials collected by local councils from residential properties, including residual waste, commingled recyclables and garden organics, food organics and garden organics (APCO 2023a).
Kerbside recyclable	Packaging that can be recycled through household kerbside collection systems. Includes, but is not limited to, packaging that has a 'recyclable' ARL.
Life cycle analysis (LCA)	The act of measuring the environmental impact of a product or service throughout its life cycle, from the resources used to create the product or service, across its use by the user, to its final end of life destination. An LCA measures the environmental impacts of each distinct part involved in creating and using products and services, such as energy used in production, fuel used in transport, and end-of-life ecological costs (BPF 2024).
Mass balance	Consistent with ISO 22095:2020, mass balance is a chain of custody approach in which recycled materials and non-recycled materials are combined at any point in the supply chain over a defined period. The total amount of recycled materials incorporated into outputs must not exceed the total input amount after accounting for system losses. The percentage of recycled content in individual products or outputs is not known, but the average content for all the products or outputs produced during the defined period can be calculated.
Materials recovery facility (MRF)	A centre for the sortation, aggregation and baling of mixed recovered materials for further sorting or processing (Pickin et al. 2022).
NEPM	National Environment Protection (Used Packaging Materials) Measure 2011
NFRCT	National Framework for Recycled Content Traceability (DCCEEW 2023)
Non-kerbside recyclable	Packaging that cannot be recycled through household kerbside recycling collection systems, but may be recycled through alternative pathways, such as 'return to store'.

Term	Definition
NPTs	National Packaging Targets (APCO 2024f)
Oxo-degradable	Additives used in plastic packaging to make it break down faster into tiny particles or microplastics. These particles do not completely decompose and contaminate the environment and can end up in the food chain.
Packaging	Material used for the containment or protection of a product. Includes primary, secondary, tertiary, and quaternary packaging in both consumer and business applications (APCO 2023a).
PFAS	Per- and polyfluoroalkyl substances
POM	Placed on market
Post-consumer recycled material	Consistent with AS 14021 or ISO 14021:2016, post-consumer recycled material is recycled from the waste generated by households or other end users when a product has reached end-of-use.
PPWR	European *Packaging and Packaging Waste Regulation* (European Parliament 2024)
Pre-consumer recycled material	Consistent with AS 14021:2018 or ISO 14021:2016, pre-consumer recycled material is recycled from the waste discarded from manufacturing processes, excluding offcuts which are used again in the same manufacturing processes that created them (such as rework, regrind and scrap).
PRO	Producer Responsibility Organisation
Recovered material	Consistent with AS 14021:2018 or ISO 14021:2016, recovered material is end of use material collected and recovered as a material input for further recycling or processing.
Recovery rate	The weight of materials allocated to the fate of reuse, recycling or energy recovery divided by the weight of waste generated.
Recyclability	The ability for packaging materials to be collected, sorted, processed, and turned into new products through recycling. Here it is further defined as being accepted through kerbside or commercial collection or Container Deposit Schemes in more than 80% of Local Government Areas and where there are sustainable end-markets for the material.
Recyclate	See recycled material.
Recycled at scale	'At scale' implies that there are significant and relevant geographical areas, as measured by population size, where the packaging is actually recycled in practice.
Recycled content	Consistent with AS 14021:2018 or ISO 14021:2016, recycled content is the proportion by weight of recycled materials in goods.
Recycled material	Recovered materials processed to the point of being suitable for manufacturing into a final product or product component, or for direct use in applications like construction.

Term	Definition
Recycling	Activities through which wastes are collected, sorted, reprocessed (including through composting), and/or converted into raw materials for use by end-markets in a production system, excluding for energy. For data reporting purposes, the mass of material allocated to the fate 'recycling' (Pickin et al. 2022): • includes all materials received by a reprocessing facility that are processed to the point of being suitable for remanufacturing or return to productive use, whether immediately used or stored for later sale or use • includes weight losses to the atmosphere during the processing of wastes (for example, moisture, carbon dioxide from organics degradation) • excludes residuals that are sent to landfill or otherwise disposed of • excludes materials received at a recycling facility but not yet processed • is reported as wet weight.
Regulated entity	A legal entity that is regulated under a legislative framework that relates to packaging.
Reprocessor	Facility that uses an industrial process to change the physical structure and properties of a waste material so it can be used again. This can include facilities that dismantle products, such as tyres, e-waste and mattresses, and energy from waste facilities that use materials to generate energy (APCO 2023a).
Reuse system	Established arrangements (organisational, technical or financial) which ensure the possibility of reuse, in closed-loop, open-loop or in a hybrid system (ISO 18603:2013).
Scheme administrator	The administrator of an extended producer responsibility scheme.
Signatory	A Signatory to the Australian Packaging Covenant.
Single-use packaging	A packaging system or packaging component which has been principally designed to accomplish a single trip, even if some form of reuse or repurposing is possible. Single-use packaging does not meet the definitional requirements of ISO 2013 (Packaging and the environment – Reuse) as reusable packaging.
Soft plastics	Soft (flexible) plastics are generally defined as plastics that can be scrunched into a ball, unlike 'rigid' plastics such as bottles and tubs, which are moulded and hold their shape (APCO 2023a).
SPGs	Sustainable Packaging Guidelines (APCO 2020b)
Supply chain	Packaging supply chain. People and businesses involved in the movement of packaging materials along the supply chain from raw material production to sale of packaging to the final end-user.
The Working Group	The National Design Standard Working Group
Traceability	Consistent with ISO 22095:2020, traceability is the ability to trace the history, application, location or source of a material or product (backward or forward) throughout its supply chain.
Verification	Consistent with ISO 22095:2020, verification is the process of confirming the truthfulness of claims.

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Appendix A – Current regulation of packaging in Australia

The Covenant

The Covenant (APCO 2024g) is an agreement between APCO, representing industry participants in the packaging supply chain, and the Australian, state and territory governments to reduce the environmental impacts of packaging. It is the industry-led component of the co-regulatory arrangement. The Covenant's goals are to optimise resource recovery of packaging and prevent the impacts of litter. Through the Covenant, APCO is also responsible for delivering the National Packaging Targets (NPTs) by 2025 (APCO 2024f). These four voluntary, industry-led targets to be achieved by 31 December 2025 are:

- 100% of packaging being reusable, recyclable, or compostable.
- 70% of plastic packaging being recycled or composted.
- 50% average recycled content included in packaging.
- The phase-out of problematic and unnecessary single-use plastic packaging.

APCO has recently released their Strategic Plan to 2030 (2024b). This outlines how APCO will deliver the goals and objectives of the Covenant and the NPTs. The Strategic Plan includes new actions which respond to environment ministers' calls for greater action to deliver the NPTs.

The NEPM

One of the purposes of the *National Environmental Protection (Used Packaging Materials) Measure 2011* (NEPM) is encouraging jurisdictions to establish a statutory basis to ensure that businesses that do not sign up to the Covenant cannot gain a commercial advantage over those that do (free riding). It outlines obligations that participating state and territories should impose on brand owners through their laws and other arrangements, including:

- undertaking or assuring the systematic recovery, reuse, recycling or energy recovery of consumer packaging in which the brand owner's products are sold
- demonstrating that reasonable steps have been taken to ensure that consumers are adequately advised as to how the packaging is to be recovered, and
- keeping records of their packaging material used during a financial year by packaging type, including total weight used, recovered, reused, recycled and landfilled.

2021 Review of the national co-regulatory arrangement for packaging

Clause 22 of the NEPM states that it will be subject to a review every five years as part of any comprehensive evaluation of the Covenant. In 2021, the department commissioned an independent

review of the NEPM and the Covenant to evaluate and report on whether they achieved their environmental protection goals (the Independent Review).

The Independent Review (mpconsulting 2021) was the first comprehensive statutory review undertaken of Australia's co-regulatory arrangement for packaging since it was established in 1999. It commenced in December 2020 and a final written report with recommendations was provided to the government on 6 September 2021. The review was informed by a detailed analysis of the federal, state and territory legislation and policies that underpin and provide for enforcement of the NEPM and Covenant, as well as data on packaging consumption and recovery rates in Australia.

The reviewer undertook comprehensive briefings and one-on-one interviews with key industry and government stakeholders, including APCO and all state and territory governments through the Government Officials Group (GOG), chaired by the Australian Government. The review also included a targeted, five-week consultation period that invited submissions from businesses, all governments, industry peak bodies, associations, non-government organisations, and members of the public.

The Independent Review found that while the Covenant operates effectively as a voluntary stewardship initiative, there have been significant failures in the implementation and enforcement of the NEPM. These limitations have created a lack of clarity for brand owners regarding their liability and obligations, enabled free riders, reduced industry confidence and participation and resulted in limited or no data collection to measure and report on performance. It made nine recommendations to address these limitations and assist governments and industry to develop a reformed packaging scheme:

- Establish a clear goal and associated key performance indicators
- Establish a national agreement that forms the basis of a reformed used packaging scheme
- Clarify the liable parties
- Establish a nationally consistent set of obligations for liable parties based on those described in the Covenant, that enables flexibility as to how outcomes can be demonstrated
- Centralise administration
- Coordinate and strengthen monitoring and enforcement
- Governments [should] fund the implementation with ongoing costs funded by industry
- Governments [should] agree a preferred implementation approach
- While changes are being made to legislation to make the used packaging scheme sustainable into the future, governments take interim actions to reinforce the ongoing expectation that parties who can influence the design, procurement and use of more sustainable packaging will re-design packaging to improve sustainability, optimise recovery and reuse, collaborate across the packaging chain and be accountable for the achievement of outcomes.

Government's response to the Independent Review

The government responded to the Independent Review in December 2022 (the Government Response). The government endorsed the need for reform of Australia's packaging regulation, reaffirming its commitment to working with state and territory governments to establish an effective national framework that enables Australia's transition to a circular economy for packaging. The Government Response addresses the Independent Review's recommendations, outlines the steps

and consultation needed to identify and implement a reform model. All jurisdictions have considered the Independent Review report and endorsed the need for reform.

In October 2022, Australia's environment ministers agreed to reform the regulation of packaging by 2025, to ensure that all packaging available in Australia is designed to be recovered, reused, recycled and reprocessed safely in line with circular economy principles. In June 2023, ministers also agreed to mandate obligations for packaging design based on international best practice and make industry responsible for the packaging they place on the market.

Table A.1: Timeline of key events for packaging reform

Date	Key Events/ Milestones
1999	Establishment of the NEPM and Australian Packaging Covenant
2018	National Packaging Targets established
Dec 2020	Independent Review of the NEPM and Australian Packaging Covenant commenced
Sep 2021	NEPM Independent Review provided to governments
Oct 2022	All environment ministers agreed to reform regulation by 2025 (DCCEEW 2022)
Dec 2022	Australian Government response to the NEPM Review (Australian Government 2022)
Feb 2023	APCO National Packaging Targets Review (2023b) report provided to all Environment Ministers; published in April 2023
Jun 2023	All environment ministers agreed to mandate obligations for packaging design based on international best practice (DCCEEW 2023b)
Oct 2023	DCCEEW conducts targeted consultation and modelling on potential reform obligations
Nov 2023	All environment ministers supported packaging regulations being implemented under Commonwealth legislation (DCCEEW 2023c)
Sep 2024	Public consultation on reform options

Appendix B – Circular economy initiatives

The Australian and state and territory governments are working together to address threats to the environment from waste and pollution and to transition Australia to a circular economy. As part of the reform of packaging regulation, the department is working closely with relevant governments on related policies and programs, to avoid duplication and stakeholder confusion, and realise opportunities to collaborate and boost outcomes by integrating systems and processes.

These related circular economy initiatives include:

Initiative	Detail
Transitioning towards a circular economy	In October 2022, all of Australia's environment ministers agreed to work with the private sector to design out waste and pollution, keep materials in use and foster markets to achieve a circular economy by 2030 (DCCEEW 2022). The Australian Government is developing a National Circular Economy Framework to set the policy, pace and direction for Australia's transition to a more circular economy.
National Waste Policy Action Plan (Australian Government 2019)	The National Waste Policy Action Plan guides Australia's investment and national efforts to deliver against seven ambitious targets to better manage Australia's waste and resource recovery in support of a circular economy to 2030. The Australian Government is leading work with the states and territories and industry to strengthen the Action Plan, which is to be considered by environment ministers at the end of 2024.
Boosting recycling infrastructure	The Australian Government's $250 million Recycling Modernisation Fund leverages $1 billion in investment across governments and industry for new or upgraded recycling facilities. This will ensure the nation has greater capacity and capability to sort and recycle used packaging.
International legally binding instrument on plastic pollution, including in the marine environment	Australia is playing an ambitious leadership role in negotiations for a new international legally binding instrument on plastic pollution, including in the marine environment (the instrument). The government seeks an instrument that covers the full lifecycle of plastics, promotes a safe circular economy, accelerates international efforts to remove harmful chemicals from plastics, and includes globally binding obligations to complement national-level actions.
Restricting harmful chemicals	The Industrial Chemicals Environmental Management Standard (IChEMS) (DCCEEW 2024d) helps industry and governments manage the environmental risks of chemicals. It will deliver more consistent regulation, make it easier for industry to choose less harmful chemicals, and help reduce emissions of harmful chemicals into wastewater and the environment. Restricting chemicals at the start of the supply chain ensures they do not enter the environment or recycling streams, which prevents the contamination of recycled content.
Promoting the use of recycled content	In addition to improving our recovery and recycling of valuable materials, using recycled content in products is an essential capability needed for Australia to achieve a circular economy. The government has committed $8 million to develop a brand and labelling scheme for Australian made recycled content products. ReMade in Australia, which will help Australians shop sustainably with confidence and ease. Packaging is not in scope at this time, due in part to the packaging reforms underway. Consultation feedback on ReMade in Australia also raised that including packaging in the scheme may confuse consumers on whether the brand refers to the packaging or the product.

Supporting industry systems for recycled content traceability	Uncertainty in the origin, composition and quality of recycled content can prevent producers from using this content, which is a barrier to Australia's transition to a circular economy. To help overcome this, the National Framework for Recycled Content Traceability (DCCEEW 2023a) provides guidance to industry to collect and exchange verifiable data about recycled content across all recycled content supply chains in Australia.
Restarting flexible plastic collection and recycling	In June 2024, all environment ministers agreed to develop a pathway for flexible plastics collection by the end of the year (DCCEEW 2024b). This will consider different collection approaches across metropolitan, regional and remote locations, and available processing capacity in Australia. The reform provides an opportunity to tackle the soft plastics challenge including by ensuring industry complies with standards for sustainable packaging design and by creating demand for recycled content through minimum mandated thresholds.
Phasing out single-use plastics	All Australian governments are working together to harmonise the phase-out of single-use plastic items that are the most common offenders for litter in our natural environment. New packaging regulation could contribute to protecting the environment from litter and reducing the consumption of unnecessary packaging by improving the way packaging is designed, used, collected, and reprocessed.
Harmonising kerbside collections	All Australian governments are developing a national roadmap for the harmonisation of kerbside bin collections. Greater consistency and better practice kerbside recycling collections provide certainty to the public on how to recycle correctly and boost recycling rates and quality, assisting our transition to a more circular economy.
Taking responsibility for our waste exports	The Australian Government's waste export regulations for glass, plastic, tyres and paper are an important mechanism for Australia to take responsibility for its waste. By ensuring only properly processed waste is exported, Australia is preventing these materials from being dumped overseas, reducing harm to the environment and human health while building our capacity to turn these waste materials into high-value, recycled commodities in Australia.
Container Deposit Schemes (CDS)	Container deposit schemes provide a financial incentive to consumers to return containers. This keeps litter out of the natural environment, reduces the cost of kerbside collection and sorting, and provides an ongoing source of higher-value materials for reprocessing into new products. The Australian Government is committed to working towards the harmonisation of Container Deposit Schemes. The department will work closely with state and territory governments and industry to ensure any new packaging regulations work consistently with and build upon the success of CDS.
Sustainable procurement for government	The Environmentally Sustainable Procurement (ESP) Policy (DCCEEW 2024e) guides decisions and allows the Australian Government to measure the environmental outcomes from its procurements. It establishes a reporting framework which will create a baseline of environmentally sustainable procurement.
National Food Waste Strategy: Halving Australia's food waste by 2030 (DEE 2017)	The National Food Waste Strategy outlines Australia's target to halve food waste by 2030. It provides a framework to support the collective action of governments, industry, business, academia and not-for-profit organisations.

Appendix C – Additional information on chemicals of concern

Addressing chemicals of concern in packaging

Chemicals of concern are found in a wide range of sectors and product supply chains. Concern is a measure of the potential consequences of a chemical substance being used in Australia. Concern includes consideration of the risk to the environment, the inherent hazard characteristics of a chemical substance, and relevant social and economic impacts for a chemical's use.

A variety of chemicals may be added to packaging materials to help the packaging achieve specific properties and functions. Chemicals are chosen based on the specific requirements of the packaging material, including durability, flexibility, appearance, and protective properties. Some of these functions and properties add economic benefit or are cosmetic, while others may be performance requirements outlined by public and worker health and safety legislation. Types of chemicals include stabilisers to prevent degradation of packaging, colourants and dyes, adhesives and sealants, and anti-microbial and barrier agents.

The types of chemicals used in packaging include:

- **Plasticisers:** added to plastics to make them more flexible and workable. They improve pliability and durability of materials.
- **Stabilisers and antioxidants:** used to prevent degradation of plastics and other materials due to heat, light, or oxygen exposure. They maintain integrity and extend shelf life of materials.
- **Colourants and dyes:** used to add colour to packaging materials, which can enhance visual appeal and aid in branding. Some dyes are used in inks for printing labels and designs.
- **Flame retardants:** added to materials to reduce their flammability and prevent or slow the spread of fire, enhancing safety.
- **Coatings:** provide barrier properties to protect contents from moisture, oxygen, light, and contaminants, and improve properties such as oil and water resistance.
- **Adhesives and sealants:** used to bond different components of packaging together, ensuring that it remains intact and functional. They maintain the integrity of packaging materials.
- **Preservatives and Anti-Microbial Agents:** incorporated into packaging to prevent microbial growth and extend the shelf life of the contents, particularly in food packaging.
- **Barrier Agents:** used to create layers that prevent the permeation of gases, moisture, and light, which helps protect sensitive products like food and pharmaceuticals from spoilage.

Some chemicals of concern in packaging may interrupt material circularity due to:

- their human health risks
- their environmental risks
- compatibility with sorting, processing or recycling technologies
- reduced material value
- end market requirements for recovered materials.

Chemicals that negatively impact recyclability can reduce the efficiency of recycling processes and increase costs, slowing down progress to circularity or reduce the value of recyclate. Contaminants such as adhesives and flame retardants can lower the quality of recycled materials and complicate recycling operations.

Chemicals of concern from consumer goods and materials prevent recycling where the alternate disposal pathway is landfill. As packaging materials degrade over time, chemicals can leach into the surrounding environment. Substances like PFAS are likely to be present in packaging materials long after their intentional addition to products ceases, making them difficult to remove in the recycling process and reducing the value of the recyclate.

Preventing or reducing the intentional use of chemicals of concern in packaging supports material recovery and circularity. Cleaner packaging supports the recovery of more, better quality and higher value packaging materials. Higher value recycled materials will improve recovery and recycling rates, resulting in less material diverted to landfill, and be more competitive in the market with virgin materials.

Which chemicals used in packaging should be targeted?

Tables C.1, C.2 and C.3 below outline the proposed chemicals where the use in packaging should be eliminated, phased-down or minimised to improve safe circularity of packaging. This approach is broadly consistent with approaches overseas, including the amended EU Packaging and Packaging Waste Regulations, and acknowledges the global nature of the trade of packaging.

Table C.1: Chemicals targeted for elimination from packaging

Chemical	Description
Substances listed under international agreements for elimination	*Impact: likely to cause serious or irreversible harm to the environment and/or human health* The Stockholm Convention on Persistent Organic Pollutants and Minamata Convention on Mercury are global treaties to protect human health and the environment. Australia is a Party to both treaties and has obligations to eliminate and reduce release of these substances into the environment.
Chemicals that are prohibited or restricted through Australian regulatory frameworks	*Reason: likely to cause serious or irreversible harm to the environment and/or human health* There are existing Australian regulatory frameworks for worker and public health and safety and environment protection. Packaging must comply with these frameworks.
Heavy Metals	*Reason: likely to cause harm to the environment and/or human health* Lead, cadmium, arsenic and hexavalent chromium can be toxic, complicate recycling processes, and impact the value and usability of recyclate in other products.
PFAS	*Reason: may cause harm to the environment, or have unknown, intergenerational environmental impacts* PFAS are difficult to remove in the recycling process and reduce the value of recyclate. The long-term impacts of many PFAS are unknown so they should not be used in products where disposal and release to the environment cannot be controlled. As they persist for long periods of time, PFAS are likely to be present in packaging materials long after their intentional addition to products ceases. Preventing intentional addition to packaging will reduce levels in packaging over time.
PBT chemicals	*Reason: likely to cause serious or irreversible harm to the environment* Persistent, bioaccumulative and toxic (PBT) chemicals are the highest concern chemicals to the environment and will be prohibited or severely restricted under the Industrial Chemicals Environmental Management Standard (IChEMS) (DCCEEW 2024d).
Chemicals that prevent recycling	*Reason: landfilling the only disposal pathway* Chemicals that prevent recycling should be eliminated from materials where the disposal pathway is landfilling.

Table C.2: Chemicals targeted for phase-down and transition to alternatives

Chemical	Description
Phthalates	*Reason: interfere with recycling process, reduce quality and safety of recyclate* Phthalates can disrupt the normal functioning of hormones in animals and people. They can affect the quality and safety of recyclate. Safer alternatives should be considered.
Flame retardants (not otherwise targeted for elimination)	*Reason: reduce quality and safety of recyclate, persist in the environment* Some flame retardants can be harmful to the environment and persist for long period of time. Some brominated flame retardants are PBT or listed on the Stockholm Convention so should be eliminated. Flame retardants affect the quality and safety of recyclate so safer alternatives should be considered.
Azo dyes	*Reason: reduce quality and safety of recyclate* Some azo dyes can degrade into aromatic amines during the recycling process and affect the safety and quality of recyclate.
Bisphenols	*Reason: reduce quality and usability of recyclate* There are concerns around the use of Bisphenol A (BPA) as it has been shown to leach into food and beverages. Food Standards Australia and New Zealand (FSANZ) found that in Australia, the risk to human health from BPA leaching into food and drink is low. However, BPA as a free additive can affect the quality and reusability of recyclate so alternatives should be considered.
Chemicals that impede recycling	*Reason: reduced material value or landfilling a likely disposal pathway* Chemicals that impede recycling should be phased-down to increase the likelihood of efficient recycling and decrease packaging being diverted to landfill.

Table C.3: Chemical use that should be minimised or avoided

Chemical	Description
Colourants	*Reason: reduced material value*
Solvents	*Reason: residues can interfere with recycling, reduced material value*
Adhesives	*Reason: residues can interfere with recycling, reduced material value*

Appendix D – Additional recycled content information

Chain of custody approaches

The chain of custody approaches outlined in the NFRCT (DCCEEW 2023) are:

- Identity preservation: Recycled materials from different sources (for example, different businesses) are kept separate and never mixed with non-recycled materials as they move through the supply chain. Each final packaging product will contain 100% recycled content from a known source. This approach provides the highest degree of physical traceability.
- Segregation: recycled materials from different sources, but with identical characteristics, are combined but are never mixed with non-recycled materials as they move through the supply chain. Each final packaging product will contain 100% recycled content from two or more known sources.
- Controlled blending: recycled materials and non-recycled materials are combined in specific ratios, resulting in a known percentage of recycled content in each output or packaging product.
- Mass balance: A method of tracking the use of recycled materials within a production process over a specific period. Instead of physically separating recycled and non-recycled materials, the total amount of recycled material input is calculated and attributed to the total output. The recycled content is calculated as an average across the entire production batch or period.

Mass balance parameters

- Claims made using a mass balance approach must ensure that each mass balance is material specific and use consistent units of measurement. Mass balance claims should be kept site specific where possible.
- The mass balance period shall not exceed 12 months.
- Packaging made under a mass balance method may calculate their recycled content claim using credit accounting.

Credit accounting

- Credit accounting is incorporated into the mass balance approach and involves converting each unit of recycled inputs into bookkeeping credits over a mass balance period and making deductions to cover the claims made on recycled content packaging dispatched over the same period.

Example: Credit Accounting

A company receives a total of 100 kg of recycled materials over their chosen mass balance period of 3 months. Assuming a 90% conversion factor, this equates to 90 credits in bookkeeping. The company can deduct 90 credits to sell 90kg of recycled content products at 100% recycled content, or 180kg of products carrying a claim of 50% recycled content.

- At the end of each mass balance period, the credits balance must be zero and cannot be negative. This means recycled content claimed on packaging dispatched must not exceed the actual recycled inputs received. The total recycled content inputs must be determined using the following equation:

$$\text{Balance at end of period} = \{(A + B) \times CF + D\} - \{E \times RC\}$$

  - A = Quantity of recycled materials received over the mass balance period
  - B = Quantity of recycled materials in stock at the start of the mass balance period
  - CF = Conversion factor – this is the yield in percent of a production process. It is calculated based on actual production data as the output production quantity divided by the input production quantity.
  - D = Quantity of recycled content packaging in stock at the start of mass balance period
  - E = Mass of recycled content packaging physically dispatched over the mass balance period
  - RC = Recycled content percentage claimed on the packaging physically dispatched over the mass balance period

Allocation

Mass balance allocation determines how the recycled content percentage of input materials are assigned to specific outputs. This is most relevant to processes (most often polymer production) that produce multiple product or output streams. The NFRCT allows for the following mass balance allocation methods:

- **Proportional allocation:** Input credits can be split based on yield or distribution. For example, if 10% of the total inputs are recycled materials, each output stream is considered to have 10% recycled.
- **Free (fuel exempt) allocation:** In processes that produce fuel outputs, credits apportioned to fuel outputs are excluded and the remaining credits can be freely assigned to the other outputs to carry recycled content claims.
- **Free (polymers only) allocation:** Credits can be freely allocated only to outputs directly linked to polymer production.
- **Free allocation:** All input credits can be freely allocated to the outputs.

Identity preservation, segregation and controlled blending

- Claims made using the identity preservation, segregation or controlled blending methods must be able to demonstrate that systems or processes are in place to ensure the physical separation of recycled and virgin materials (inputs).
- Packaging made under identity preservation or segregation methods would involve full physical separation of recycled and virgin materials to allow up to a 100% recycled content claim.
- Packaging made with controlled blending would have a calculated recycled content percentage. This method ensures consistent amounts of recycled materials are included in all, using the following equation.

$$\boldsymbol{RC}\% = \frac{\boldsymbol{total\ mass\ of\ recycled\ input\ \times\ CF}}{\boldsymbol{total\ mass\ of\ recycled\ content\ packaging}} \times \mathbf{100}$$

[The Conversion Factor (CF) is the yield in percent of a production process. It is calculated based on actual production data as the output production quantity divided by the input production quantity.]

Table D.1: Traceability data to collect and share. Further information is available in the NFRCT.

Basic traceability	**Provenance**	**Composition**	**Quality**
Item identifier	Country of origin	Recycled content claim	Processing method
Item description	Jurisdiction of origin	Chain of custody approach	Chemical content declaration
Quantity	Remoteness of source	Mass balance period	Recycled content risk assessment
Unit of measure	Feedstock source stream	Mass balance allocation method	Results of analysis
Receipt date	Feedstock type	-	-
Ship date	Feedstock source type	-	-
Sender identifier	-	-	-
Shipment identifier	-	-	-
Receiver identifier	-	-	-
Ship from location	-	-	-
Ship to location	-	-	-