

Efficiency, productivity and resilience: Further integrating recycling into the broader manufacturing supply chains

Higher productivity, cost of living relief, lower costs, rising recycling rates, more made in Australia, enhanced sovereign capabilities, supply chain resilience.

The cost of inaction is not zero.

Contents

1. Executive summary	4
2. Recommendations to boost productivity and lower inflationary pressures	6
3. Community interest in recycling and impact on productivity	10
4. What’s driving productivity losses and adding avoidable costs in the supply chain	13
5. Proposed productivity solutions and benefits	18
6. Summary - The cost of doing nothing is not zero	21
7. Attachments	22

Soft Plastics Stewardship Australia acknowledges the Traditional Custodians of Country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present.



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Analysis by Stephen Koukoulas.

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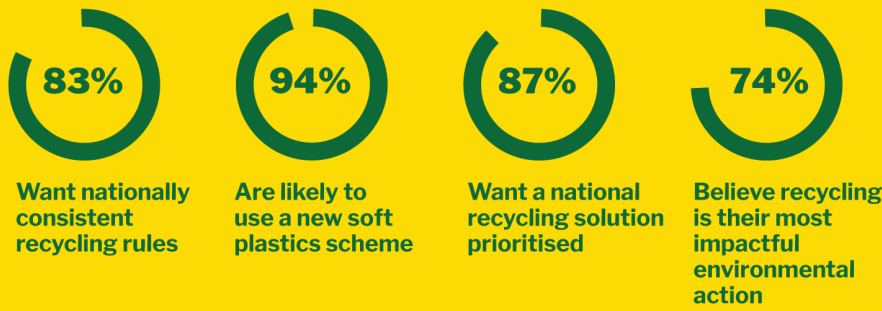
Reforms boost supply chain resilience and productivity



Productivity gains reduce cost of living pressures and product stewardship initiatives provide additional community services



Australians want action



But aren’t confident



1. Executive summary

Packaging affects all sectors selling goods in the economy. The current fragmented and unaligned packaging regulatory system is reducing Australia’s productivity and needlessly increasing inflationary cost pressures. Regulatory reform can deliver \$115 to \$277 million in net productivity reforms and \$1.6 to \$2.6 billion in capital investment.

Packaging enables trade. It protects products as they transit across national, state and local government borders and while they are in use by the community or business.

Yet despite its widespread use, recycling and remanufacturing of waste packaging is regulated in a fragmented way by Commonwealth, state and local governments. This has created additional complexity and red tape which is currently reducing Australia’s productivity and unnecessarily adding avoidable inflationary pressures. These unproductive costs can be removed with simple and low cost policy reform.

Australian society relies on supply chains not visible to the general public for essential items like food and grocery products, clothing, bedding and medicines. Due to global population growth and emerging resource shortages, recycled materials are increasingly replacing virgin inputs in manufacturing. As a result, the recycling sector has emerged in the last 40 years as a small but dynamic potential growth engine for the Australian economy, strengthening our sovereign capability and the resilience of our domestic supply chains.

Reform also provides further opportunities for Australian domestic manufacturing by creating greater economies of scale, and provides an essential contribution to achieving the Australian government’s ambitious climate change and emissions targets.

Today, local recyclers supply materials as inputs to a very well-established manufacturing sector with embedded global and national standards, from a fragmented and inconsistent policy environment.

This report urges government to streamline the integration of the recycling sector into the broader manufacturing supply chain by:

- **Introducing aligned national packaging design and labelling, and kerbside collection and recycling minimum standards to deliver productivity gains and enhance supply chain resilience in the manufacturing and retail sectors; and**
- **Progressively phasing in producer funded product stewardship on priority problematic materials to address market failures by delivering solutions at scale.**

The benefits of these reforms include:

	Enhanced productivity, a boost to manufacturing and sovereign capability
	Reduced state and local government duplication and cost
	National consistency and clarity for community and industry
	Increased R&D, innovation and investment confidence
	Increased economies of scale to reduce inflationary pressures
	Reduced community confusion and recycling contamination enabling increased productivity that lowers inflationary pressures
	Reduced need for ad hoc government grant programs
	Estimated net productivity gains of \$115 million to \$277 million per annum
	Stimulating capital investment of \$1.6 billion to \$2.6 billion per annum

2. Recommendations to boost productivity and lower inflationary pressures

- **Introducing aligned national packaging design and labelling, and kerbside collection and recycling minimum standards to deliver productivity gains and enhance supply chain resilience in the manufacturing and retail sectors; and**
- **Progressively phasing in producer funded product stewardship on priority problematic materials to address market failures by delivering solutions at scale.**

Government has parallel models in place for recycling household materials: kerbside collection is used for easy to recycle materials, while the Minister’s Product Stewardship Priority List addresses more challenging materials. Both require small reforms to reap large economic, environmental and community benefits.

Table 1A: Government models for recycling household materials

	Easy to recycle materials	Hard to recycle materials
Government model	Kerbside collection	Minister’s Product Stewardship Priority List
What is it?	Collection of recyclable materials from households via kerbside collection bin	Minister nominates products requiring industry product stewardship; may regulate should industry programs fail
Funding	Community / households, via rates	Industry, via levies
What’s broken?	Lack of aligned national supply chain standards is eroding productivity and increasing inflationary pressures	No priority items have been regulated, preventing voluntary schemes from achieving critical economies of scale
Recommended Solution	Introducing aligned national standards or guidelines for packaging design and labelling, kerbside collection and recycling to deliver productivity gains and enhance supply chain resilience in the manufacturing and retail sectors	Progressively phasing in mandatory producer funded product stewardship on problematic materials to address market failures by delivering solutions at scale
Estimated Net Benefit	\$115 million to \$277 million productivity gain	
Estimated CAPEX	\$1.6 billion to \$2.6 billion stimulated per annum	

These recommended reforms are good news – good for the economy, good for the environment and good for boosting what is already one of the most popular issues in community – recycling.

The benefits for government, industry and community are compelling:

- Kerbside recycling services provided to community are highly valued and considered essential for modern day living.
- Recycled materials are increasingly becoming inputs for the manufacturing sector and reduce reliance upon virgin materials, including crude oil.

Aligning the packaging design and labelling standards used by the \$622 billion packaging, food and grocery and retail sectors with the \$22 billion council kerbside and recycling sectors’ guidelines reduces confusion and cost for community and provides investment certainty, yields, scale and productivity gains for industry, ultimately lowering inflationary pressures for Australians (See Diagram 1).

Table 1B: Benefits of recommended policy reforms

Current	Proposed	
State & Local Government Model	a. Nationally Aligned Model	b. Targeted Product Stewardship
Model • National waste strategy • State legislation, regulation & enforcement • Local implementation Impact • High duplication of activity • Lack of consistency between jurisdictions • Stretched resources limit capability • Lack of ability to scale • Lack of standards and direction for industry • Lack of R&D, innovation and investment confidence • Community confusion reducing trust and increasing contamination that reduces recycling yield and increases costs Assessment • Inefficient • Adds cost pressures	Model • Nationally aligned value chain standards Impact • Reduced duplication • National consistency • Centralised resourcing increasing capability • Economies of scale • Clarity of direction for industry • Increased R&D, innovation & investment confidence • Community confidence increasing trust and reducing contamination that increases recycling yields and reduces costs Assessment • Productivity gains • Lowers cost-of-living pressures	Model • Introduce mandatory product stewardship in areas of market failure only. E.g. batteries, soft plastics, mattresses, textiles and tyres. Impact • Reduces ad hoc approaches by state and local government and underfunded voluntary schemes • Reduces need for ad hoc grant programs • Provides funding certainty for schemes • Provides certainty for industry • Reduces duplication • Enables economies of scale • Very low cost impacts Assessment • Productivity gains • Low cost, high community value

The productivity savings from introducing nationally aligned recycling system standards can more than offset the phased introduction of targeted priority low-cost interventions in areas of proven market failure such as soft plastic, batteries, textiles or mattress recycling that require scale to address, providing Australians with greater services while reducing cost-of-living pressures.

Table 2: Estimated potential economic benefits of packaging reform

	Reference	Low Side	High Side
Capital Investment			
Estimated - Plastic focus (excl chemical recycling)	Table 4g	\$135,520,000	\$251,680,000
Estimated - Plastic focus (chemical recycling)	Section 4	\$387,000,000	\$517,000,000
Estimated - Food & Beverage Manufacturing	Table 5a	\$1,094,500,000	\$1,844,500,000
Total estimated capital investment		\$1,617,020,000	\$2,613,180,000
Retained Resource Value			
Improved participation and reduced contamination	Table 4e	\$68,992,000	\$128,128,000
Total estimated retained resource value		\$68,992,000	\$128,128,000
Administrative Productivity Gains			
National education campaign	Table 4d	\$25,450,560	\$47,168,689
Reduced duplicated state-based consultation costs	Table 4c	\$912,000	\$1,008,000
Harmonised CDS reporting	Table 4a	\$9,240,000	\$10,737,391
Recycling Productivity Gains			
Landfill cost avoidance	Table 4f	\$78,848,000	\$146,432,000
Industry Efficiency Gains			
Increased utilisation of plastic recycling infrastructure	Table 4h	\$30,532,376	\$89,485,896
Pack change and labelling cost avoidance	Table 5b	\$25,500,000	\$38,250,000
Total estimated productivity gains		\$170,482,936	\$333,081,977
Minister's Product Stewardship Priority List			
Batteries	Estimate supplied by relevant organisation	\$23,800,000	\$23,800,000
Soft plastic		\$21,000,000	\$21,000,000
Mattresses		\$5,000,000	\$5,000,000
Clothing and textiles		\$5,600,000	\$5,600,000
Total estimated product stewardship costs		\$55,400,000	\$55,400,000
Net productivity gain per annum		\$115,082,936	\$277,681,977

“The cost of doing nothing is not zero. Australia’s fragmented recycling and packaging rules are acting as a drag on productivity and adding avoidable inflationary pressures. This “fragmentation tax” delivers no benefit to households, councils or industry.”

– Stephen Koukoulas

3. Community interest in recycling and impact on productivity

Australians value recycling. A recent survey by Cleanaway highlighted that 91% of Australians feel recycling is important. For many, recycling is the tangible face of environmental responsibility, with three-quarters of Australians (74 per cent) believing that a trip to the recycling bin is the most impactful initiative they can do for the environment, according to a report from the Australian Packaging Covenant Organisation (APCO)⁽¹⁾.

However, Australians also report they are confused by what is recyclable, and trust in recycling is an issue negatively impacting the sector. Even confident recyclers make inadvertent mistakes, with a Nestlé study showing 88% putting common household items in the wrong bin⁽²⁾.

Both trust and confusion have real economic consequences. The Cleanaway report highlights that 32% of Australians don't trust recycling, 25% believe recycling is confusing and 32% rank the Federal government as most responsible for implementing recycling solutions in Australia⁽³⁾.

Community confusion and trust in recycling have real economic consequences.



Community Confusion

Australians have indicated they are confused about what is recyclable. This is understandable when the number and colour of bins varies between councils, what bins accept is inconsistent, houses and apartments in the same street can have different bins, and the bins that a person sees at home, at work, and on-the-go can be different. In addition, the plethora of recycling symbols on packaging add to this confusion. The average Australian may face several differing and even conflicting recycling messages in a day as they move across a city.

With the right information, education and uniform packaging, householders have shown they are enthusiastic to contribute to recycling programs, and in effect to 'donate' their time to recycle fully and correctly.

Economic consequences

- The greater the confusion, the harder it becomes for Australians to sort their recyclable packaging correctly, reducing the quality and quantity of feedstock available to recyclers, reducing productivity and increasing costs.
- Confusion leads to errors that see recyclable material going to landfill, contributing to unnecessarily high landfill costs and pressure on landfill availability, adding to the level of council rates and household cost of living pressures.



Trust in Recycling

Trust in recycling drives participation and communities' care factor. The more they trust, the more they recycle. The more they care, the more willing they are to invest in sorting their packaging into what is and isn't recyclable.

While trust has been eroded by failures in recycling systems and a lack of verification confirming that the materials they sort are recycled, confusion about recycling also erodes trust⁽⁴⁾. Nevertheless recycling remains a values-driven commitment reflecting how Australians see themselves and their responsibility to the environments they live in⁽⁵⁾.

Economic consequences

- Increased collection volumes drive economies of scale. Currently 35.5% of recyclable packaging is not being recovered, highlighting current lost economies of scale and avoidable cost embedded in the current system⁽⁶⁾.
- Greater care in separating recyclable waste improves the feedstock quality for recyclers, increasing productivity and lowering costs.



The good news is these embedded cost impacts can be reduced. This report details the economic costs currently embedded in the fragmented regulatory landscape and provides simple recommended policy interventions to reduce the cost-of-living impacts for Australians. Importantly, this will increase Australians' trust and participation in recycling, helping Australians feel good that their actions are having a real impact.

4. What’s driving productivity losses and adding avoidable costs in the supply chain

Packaging affects all sectors selling goods in the economy. The current fragmented and unaligned packaging regulatory system is reducing Australia’s productivity and needlessly increasing inflationary cost pressures. Regulatory reform can deliver \$170 to \$330 million in productivity reforms and \$1.6 to \$2.6 billion in capital investment per annum.

Packaging plays a vital role in manufacturing. It allows raw materials to move through supply chains and finished goods to reach consumers. As the global population grows and the movement of goods increases, pressure on resources is rising. Sustainable, effective packaging is now essential to cut waste and prevent product loss, reducing avoidable inflationary cost pressures.

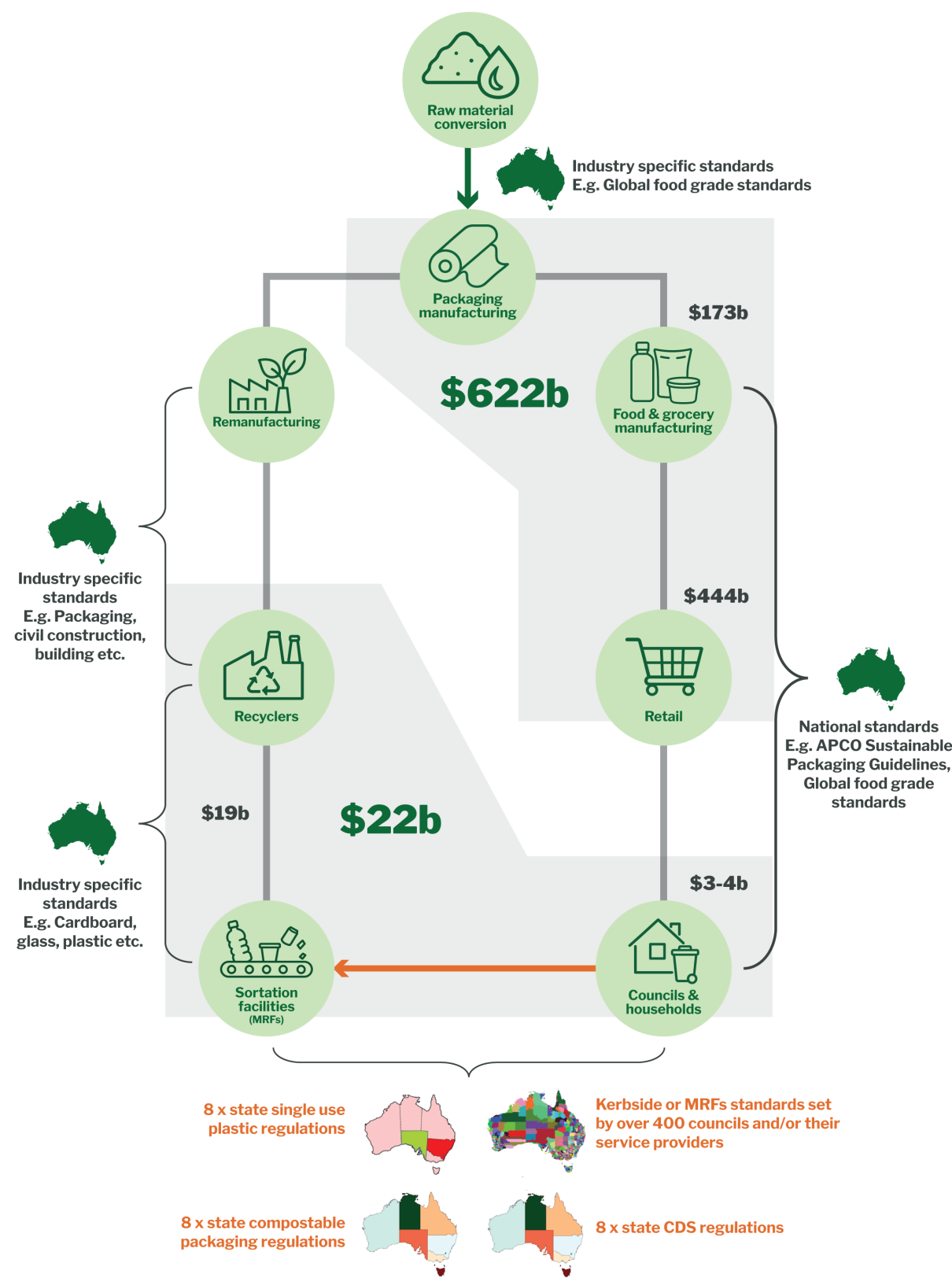
The packaging manufacturing, food and grocery manufacturing and retail sectors combined, valued at \$622 billion, trade on established and embedded global standards to drive efficiencies from raw material conversion through to retail.

However, this consistency is not in place for recycling collection and processing. As this sector has emerged in the last 40 years, creating a \$22 billion sector, regulation and standards have not aligned, and the sector’s growth is constrained by misaligned government regulations, standards and guidelines dependent upon state jurisdictions, packaging formats and the services available to local councils (See Diagram 1). This patchwork quilt policy environment has added complexity and cost for governments, community and industry.

This report urges government to address this systemic fragmented policy mire, which currently negatively impacts productivity and investment across the broader supply chain, with a consistent national policy framework that connects packaging to recycling to drive efficiency, productivity and reduce inflationary pressures.

Without policy intervention, the smaller, emerging recycling sector within the supply chain is constrained, adding avoidable costs and productivity barriers to the larger upstream manufacturing and retail sectors that Australians depend upon for both discretionary and non-discretionary purchases.

Diagram 1: Packaging value chain – Misaligned standards and regulations



1. Packaging Manufacturing \$4-5B: IBIS World
2. Food and Grocery Manufacturing \$173B: AFGC
3. Retail \$444B: ARC
4. Councils \$3.5B: ALGA
5. Recycling \$1B: ACOR

Barriers to productivity and the reforms to overcome them

Barrier # 1 Lack of aligned national standards in the packaging value chain

Regulations designed to reduce the impact of packaging waste currently vary by packaging format by state or local government jurisdiction. As manufacturers and retailers supply products into national and global supply chains, the misalignment between jurisdictions creates confusion, eroding research and development, innovation and investment confidence, ultimately adding avoidable inflationary pressures while eroding Australian productivity.

Examples



Beverage containers: There are 8 different container deposit schemes (CDS) operating across the country. The schemes, which are operated separately, all require separate registrations, reporting and audits. All have different price impacts, ranging from 11 cents to 20 cents in Tasmania due to diseconomies of scale. The scope of beverage containers covered by the schemes also varies. While the schemes are an effective tool to reduce litter, the complexity caused by duplication across 8 states adds avoidable inflationary impacts estimated between \$31 million and \$46 million per annum. (See Attachment 4.1a – Summary of state CDS variations).



Single use plastics: Separate single use plastics regulations operate in states and territories across the country. Each has some level of uniqueness, complicating product design and adding avoidable cost and compliance for manufacturing and retail sectors. (See Attachment 4.1b – Table 4f).



Compostable packaging: While the National Packaging Targets established in 2018 call for packaging to be 100% recyclable or compostable, only 1 jurisdiction allows compostable packaging to be collected in the kerbside compost bin. This adds complexity, cost and confusion for community and industry. (See Attachment 4.1b – Table 4f).



Kerbside collections: National packaging design and labelling guidelines have been established by the Australian Packaging Covenant Organisation (APCO) to improve pack recyclability and community understanding. While some states are harmonising collections, local governments typically determine what can be included in kerbside recycling based on recycler services, community expectations, and state government requirements. Even when brands and councils aim to educate the public, inconsistent messages can confuse residents, weaken trust, discourage industry investment, reduce productivity, and add unnecessary cost-of-living pressures. (See attachment 4.1c – Table 4f).

Economic impacts

Reduced productivity increasing cost of living pressures

- Developing different sets of regulations across 8 states/territories needlessly adds to government and industry costs, estimated between \$0.9 million and \$1.0 million annually. (See Attachment 4.1b, Table 4c).
- Developing and implementing individual community recycling education programs across 537 council adds unnecessary cost, estimated between \$25 million and \$47 million annually. (See Attachment 4.1c – Examples of council kerbside collection variations).
- Community confusion caused by inconsistencies in recyclability messaging between local councils and on product labels erodes community trust, reducing community participation and care for recycling. This in turn means more recyclable material is mistakenly landfilled, while recyclers receive less material, with more contamination, making it more expensive to recycle, adding pressure to councils finances, and potentially adding to community cost of living pressures, estimated between \$79 million and \$146 million annually. (See Attachment 4.1c – Examples of council kerbside collection variations).
- Negotiating waste contracts at a council level unfairly disadvantages councils with smaller populations, as their lack of collection volume reduces economies of scale. This reduces their negotiating power with national service providers. Additionally, geographic location adds significant cost burden for rural and remote councils compared to metropolitan areas. Combined, this creates higher cost of living pressures in rural and remote areas which national product stewardship would address.
- Lower recycling collection volumes increase the current under-utilisation rate of recycling infrastructure, reducing economies of scale, and adding to cost of living pressures estimated between \$30 million and \$89 million annually. (Attachment 4.1c, Table 4h).
- Lower recycling rates increase Australia’s reliance on imported packaging, noting that Australia uses 1.3 million tonnes of plastic packaging annually, yet only produces 80k tonnes locally each year. This makes Australia vulnerable to global resin shortages, particularly in the area of food security.

Reduced sovereign capability and supply chain resilience

- The introduction of the Australasian Recycling Label (ARL) and PREP design tool by APCO provided industry with certainty to invest in more sustainable packaging design, by providing a clear tool against which industry could assess their packaging and understand its recyclability. However, the 2024 release of DCCEEW’s draft packaging design standards has eroded industry’s confidence to invest, effectively stagnating many years of research and development, innovation and investment in plant and equipment. The Australian Food and Grocery Council has indicated a desired productive capital investment of \$7.5 billion per annum over the next decade is required to secure a robust and competitive on shore food and grocery sector. (Attachment 5c: Benefits for the manufacturing and retail sectors).
- Confidential information from manufacturers shows that significant capital investments have been undermined by subsequent changes to packaging design standards, reducing confidence for brands to invest further capital until regulatory certainty is provided.

Solutions: Introducing aligned national packaging design and labelling, kerbside collection and recycling standards

Barrier # 2 Problematic materials are not being recycled and require scaled solutions where market failures exist

The current state or council fragmented approach to recycling is a barrier preventing the commercialisation of recycling infrastructure where market failures exist and economies of scale and/or subsidies are required. Globally, advanced nations have addressed this by introducing mandatory product stewardship for priority problematic materials, where producers pool funding to correct areas of market failure and divert materials from landfill.

Examples

In Australia, several key problematic products have been identified in the Minister’s Product Stewardship Priority List. The List indicates where industry is expected to take product stewardship action; should action not be taken, the Minister may consider regulating the products requiring all relevant producers to contribute to managing waste associated with the product, creating scale that may not be able to be achieved with voluntary participation alone.

However, while the 2020 Recycling and Waste Recovery Act and Product Stewardship Investment Fund was created to provide a pathway for voluntary industry schemes of priority products to be developed and regulated, no action to regulate any product has been taken by the Federal Government.

Soft plastic packaging

Currently, it is estimated that 94% or \$900 million of soft plastic is lost to the economy and landfilled at a cost of \$154 million annually, increasing Australia’s reliance on imports. Despite the public collapse of REDcycle in 2022 and government committing to reform packaging regulations on several occasions, there has been no action to date, placing the voluntary Soft Plastic Stewardship Australia scheme at risk. This is despite the government committing \$60 million in grants and private capital investment, which has produced an excess of recycling capacity, now under-utilised.

Textiles

Unwearable clothing materials are not recycled at scale as collection, sorting and processing costs more than landfill. Demand and price signals for recycled textile content, e.g. government procurement policy, remain weak. Highly variable fibre composition can limit efficient recovery, as does geographically fragmented infrastructure. Australia sent approximately 220,000 tonnes of clothing to landfill in 2024. An estimated 10,000 tonnes were recovered, despite an estimated 86,000 tonnes of available processing capacity. Seamless research, including industry pilots, demonstrate that capability exists, but stronger end markets, reliable material supply and policy certainty are necessary to attract investment to achieve scale. Voluntary stewardship cannot overcome these barriers across a market of more than 14,000 potentially liable businesses.

Rigid plastic packaging

Despite the introduction of container deposit schemes the plastic recycling rate for rigid plastic remains at 28%, with many facilities now underutilised, reducing Australia’s productivity and increasing reliance on imports ⁽⁹⁾.

Bedding

Around 1.85 million mattresses reach end of life in Australia each year, yet responsibility for managing their environmental and financial impacts is not shared consistently across the market. Voluntary participation allows free riding: collection, transport and disposal costs are shifted onto councils, consumers and the businesses that do participate. The stewardship scheme cannot sustainably raise the voluntary stewardship contribution to fund system-wide solutions, because higher fees would fall only on participating businesses, widen the price advantage enjoyed by non-participants, and still leave a substantial share of products outside the funding base.

At the same time, the growing use of imported products, memory foam, composite materials and pocket springs is increasing end-of-life costs while reducing recoverability. Fragmented data and weak markets for recovered foam and textiles further tilt the economics toward low-cost shredding and disposal rather than durability, reuse or higher-value recovery. As a result, producers receive little commercial signal to design for longer product life or improved end-of-life performance.

Batteries

Battery recycling has been highlighted as a priority by all state governments due to fires in trucks and recycling facilities triggered by batteries. As a result of inaction by the Commonwealth, NSW has drafted state-based legislation. While this is a proactive step to address a market failure, it risks adding further state-based fragmentation and cost for industry.

(See Attachment 4.2a – Summary of Minister’s Priority List Product Stewardship schemes).

Economic impacts

Reduced productivity increasing cost of living pressures

- Regulated product stewardship schemes share the end-of-life costs equitably across all organisations that place these materials or products on the Australian market, therefore lowering the cost impact per unit. Additionally, regulated schemes can attain greater economies of scale, lowering cost impacts. Conversely, voluntary schemes do not benefit from a regulated of level playing field, therefore reducing economies of scale and material efficiencies and increasing costs. Additionally, as voluntary schemes are only funded by a fraction of industry participants, these responsible organisations have an exponential cost disadvantage versus free riders who avoid taking responsibility. This erodes long-term support from producers and ultimately the effectiveness and viability of voluntary schemes.
- The introduction of regulated container deposit schemes highlighted that greater scale enables provision of equitable services and costs in metropolitan, regional and remote areas. By contrast, voluntary schemes struggle to deliver services in remote and regional areas when scheme revenue is constrained by high free rider levels. As a result, these communities can be under-serviced as available funding is invested in metropolitan areas where product volumes and processing infrastructure is concentrated.
- The recent Cleanaway recycling behaviour survey reported that half (49%) of Australians have put soft plastic in their kerbside recycling bin hoping that it would be recycled. This creates contamination for recyclers, lowers productivity and increases costs to community. Without federal regulatory support for a scaled soft plastic scheme, community will not have access to viable and convenient soft plastic collection and recycling. The report also highlights that if a new soft plastic recycling scheme launched tomorrow, over nine in ten (94%) Australians say they would be likely to use it, with over five in six (87%) Australians saying Australia should prioritise a national soft plastic solution⁽³⁾.

Reduced sovereign capability and supply chain resilience

- Mandatory container deposit schemes have helped increase investment confidence in domestic rigid plastic recycling infrastructure. Cleanaway, Pact Group, Asahi Beverages, and Coca-Cola Europacific Partners, have invested more than \$100 million in two major PET recycling plants in Australia. However, for soft plastic, a lack of regulatory certainty means that confidence in infrastructure investment is now at risk. Although the Federal and state governments made \$60 million in Recycling Modernisation Fund grants available for hard-to-recycle plastics, \$11 million in awarded funding reportedly did not proceed to construction because of uncertainty about regulated soft plastic stewardship. Other projects have also reportedly been delayed until policy settings are clearer.
- Viva Energy and Cleanaway’s Cycleback Plastics project to construct a 50,000 tonne chemical recycling facility that would help to produce food grade resin from hard-to-recycle soft plastic, requires the federal government regulating product stewardship and recycled content targets on soft plastic packaging to establish sustainable end markets and enable further investment. Without the regulation, the capital investment remains at risk. Based on the 2026 Economic Viability of Chemical Recycling Report by the European Commission, similar plants in Europe generated capital investments of \$387-517 million ⁽¹⁰⁾.
- Private investment in soft plastic recycling infrastructure by iQRenew, which processed the majority of the REDcycle stockpile, now sits idle much of the time due to a lack of feedstock caused by Soft Plastic Stewardship Australia’s (SPSA) collection capacity being stifled by 85% of industry participants not contributing to the scheme.
- Without the intervention of industry-led schemes, Australia creates avoidable landfill of valuable materials and increases iits reliance on imported virgin and recycled materials. For example, Australia imports an estimated \$957 million of soft plastic per annum, and landfills 94% of that material, valued at \$900 million, at an estimated cost for landfill alone of \$154 million. The total lost value exceeds the value of the imported material by \$97 million per annum. This level of waste is simply uneconomic. In contrast, onshore recycling reduces Australia’s reliance on imports, reduces emissions and creates local employment and taxation revenue for government. (See Attachment 4.2b – Summary of soft plastic market failure).

Solutions: Progressively phase in producer funded product stewardship on problematic materials where market failures exist and scaled solutions are required.

5. Proposed productivity solutions and benefits

Policy reform can realise economic benefits for community, councils, recyclers, government and the environment. This will give industry the confidence needed to trigger capital investment in the manufacturing and recycling sectors, strengthening Australia’s sovereignty.

The proposed policy reforms would introduce:

- 1. Nationally aligned standards, and
- 2. Clear timelines for regulated stewardship for products on the Minister’s Priority List.

Supported by a national education program to reduce confusion and increase trust, these reforms will generate productivity gains in the total value chain, removing embedded inflationary costs while increasing material recovery and quality.



5. Proposed productivity solutions and benefits

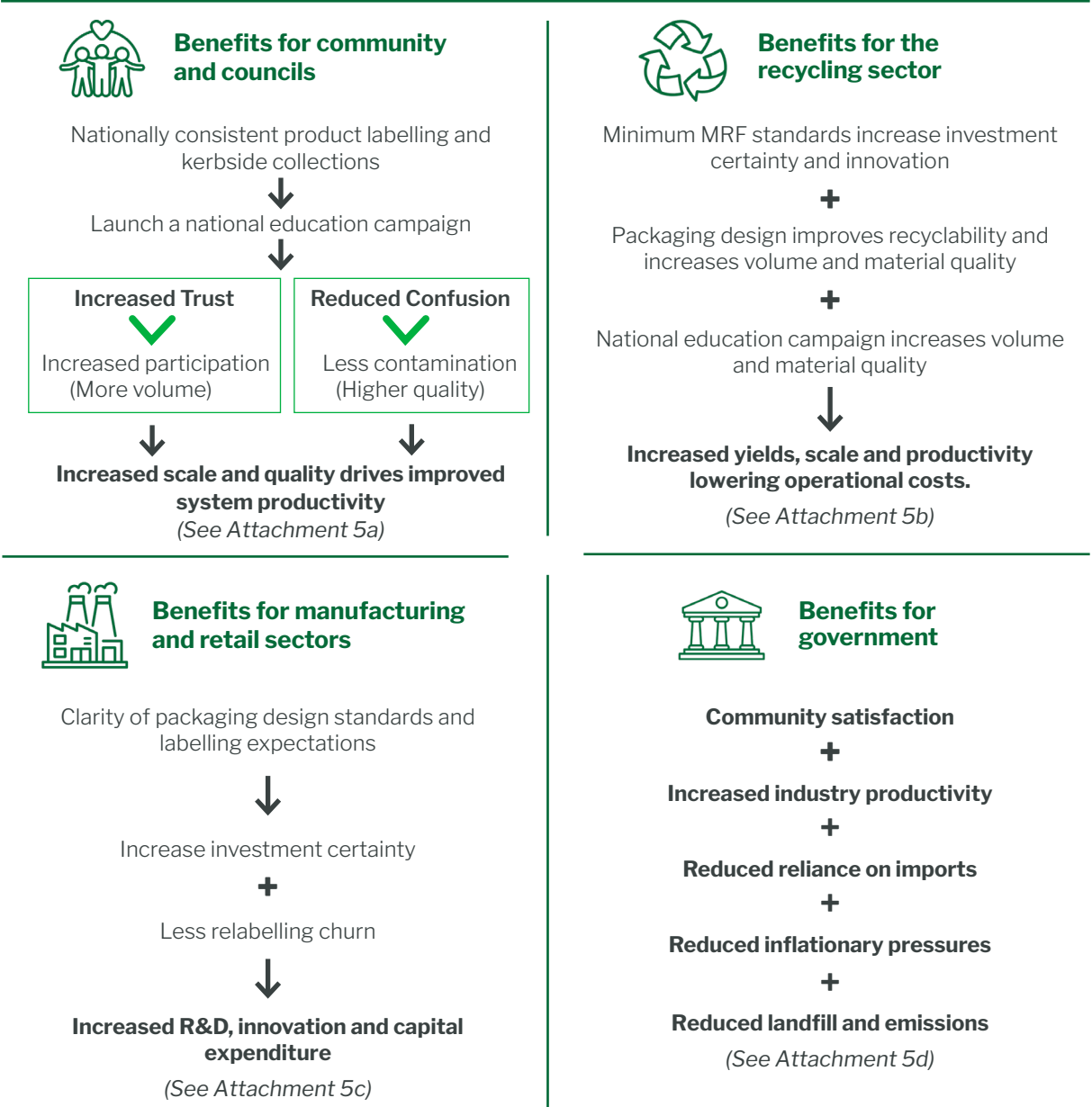
Proposed solution #1

Introducing aligned national packaging design and labelling, kerbside collection and recycling standards.

These standards and guidelines already exist, and 83% of Australians want nationally consistent recycling standards. They simply need regulating to embed the productivity gains⁽³⁾.

APCO has long-term packaging design and labelling guidelines. DCCEEW has drafted packaging and kerbside standards. The Australian Council or Recyclers (ACOR) has drafted recycling minimum standards for Material Recovery Facilities (MRF).

Once aligned, these minimum standards can immediately reduce confusion, drive productivity and reduce costs. Over time, the standards can be increased to drive greater economic and environmental outcomes for Australia.

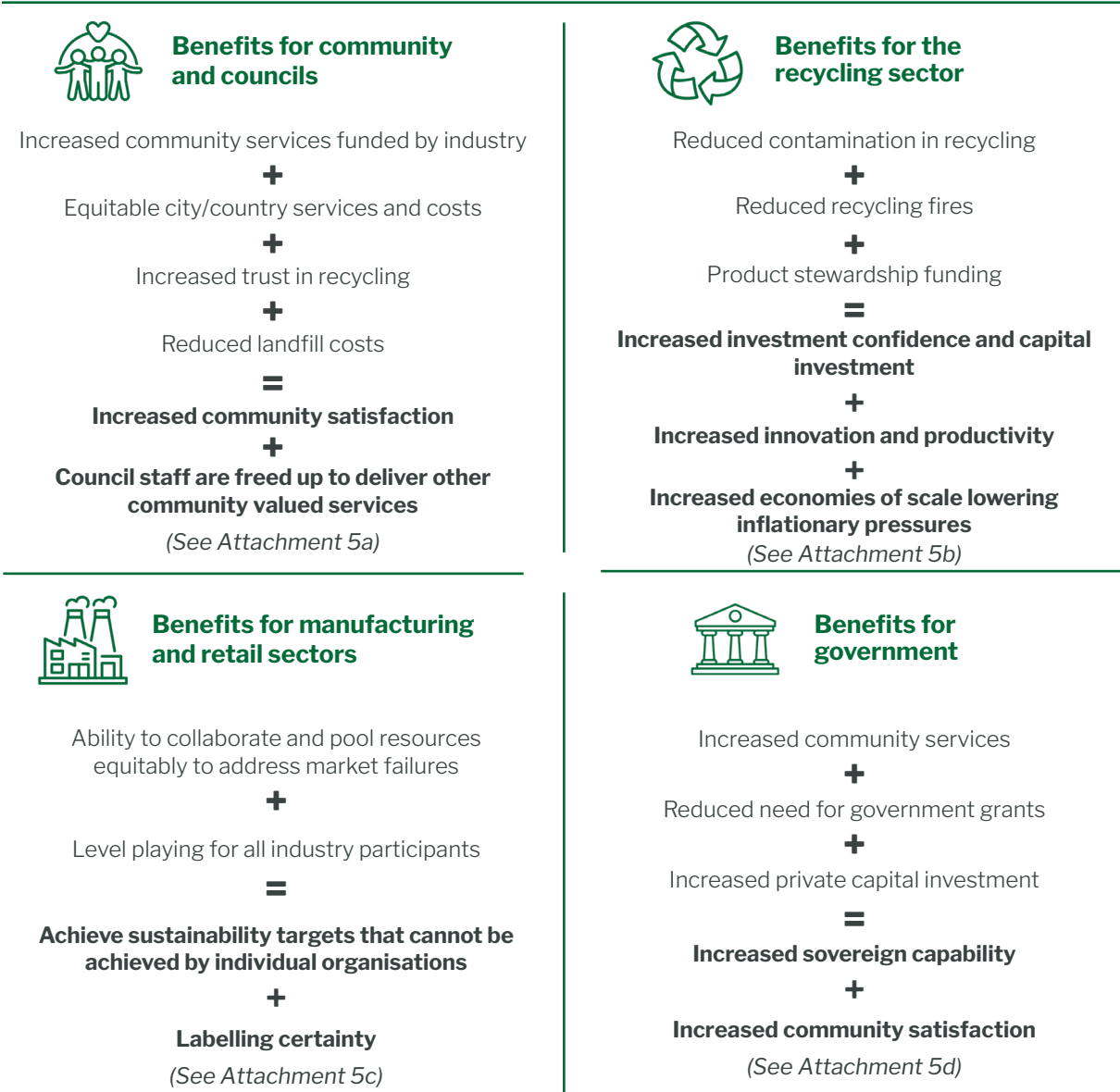


5. Proposed productivity solutions and benefits

Proposed solution #2

Progressively phase in producer funded product stewardship on problematic materials where market failures exist and require scaled solutions.

Since recycling emerged over the last 40 years, items that are economically viable are collected and recycled at council level. However, not all products are economically viable to collect at small scale and require scaled interventions by national product stewardship organisations funded by the producers placing the material on the market. Commonly called Extended Producer Responsibility (EPR) or product stewardship, this is now common practice in most developed economies and is expanding in developing countries.



- **\$115 million to \$277 million net productivity benefit.**
- **\$1.6 billion to \$2.6 billion stimulated capital investments in manufacturing and recycling.**
- **492,000 to 915,000 tonnes landfill diversion. 0.0125% total retail sales impact of regulating voluntary schemes.**

6. Summary – The cost of doing nothing is not zero

Extensive productivity gains will be driven by a unified, synchronised approach to waste collection across local government areas, designed to deliver higher volumes of recyclable materials. Together, these changes strengthen economies of scale, improve utilisation of existing recycling infrastructure, boost capital expenditure and reduce managerial and compliance costs for councils.

Economies of scale and business investment sit at the heart of the proposed reforms. Australia’s manufacturing sector is often constrained by a relatively small and dispersed population, making it difficult for businesses to profitably expand operations. Importing goods is often cheaper and easier than producing them locally, a problem compounded when domestic policies restrict expansion. With the greater scale of recycling and remanufacturing activity that result from the reforms, additional capital investment, job creation and higher profitability can be realised across the sector.

As recycling rates rise, the Future Made in Australia and ReMade in Australia initiatives will be strengthened, with domestically manufactured recycled materials replacing considerable volumes of imported products cumulatively worth hundreds of millions of dollars in today’s terms. For example, under an interim target of recycling 20 per cent of soft plastic by 2030, the value of soft plastic imports is expected to fall by around \$118 million per annum (at current prices), as remanufactured materials feed into local supply chains. Without reform, this benefit will not be realised.

Initial savings of \$78 million per annum from reduced landfill costs for all packaging will grow rapidly, reaching \$146 million by 2035. Beyond the financial benefits, lower landfill volumes will ease pressure on governments to identify new landfill sites, a decision that is generally highly contentious within affected communities.

If the reforms are not undertaken, planned capital investment in manufacturing and recycling centres is likely to be delayed or

abandoned, and some existing facilities may close. This foregone capital investment would erode productivity, reduce employment, and the viability of some existing recycling programs. For soft plastic alone, between \$387 and \$517 million in currently planned private sector investment is at risk, which will have a negative impact on the economy if it is not undertaken.

We recommend the Federal Government streamline and consolidate local government spending by funding a one-off \$25 million community education campaign to support the new recycling system. This is comparable to the \$24 million spent on the Future Made in Australia advertising campaign.

Over the medium term, the reforms are expected to increase company tax receipts from waste management firms, recyclers and remanufacturers, as higher volumes of better-quality recycled materials lift profitability. While the size of this increase is uncertain, we can make a case where this will in time be tens of millions of dollar per annum, but we encourage Finance or Treasury to test these projections using their detailed modelling. All calculations are estimates based on public and industry sources. It is recommended government undertakes a Policy Impact Assessment in line with best practice policy reform.

Local governments also incur substantial administrative costs overseeing recycling programs, which currently operate under a patchwork of regulations and compliance requirements. The proposed reforms are expected to reduce these costs across all household recycling streams.

These savings cannot be achieved if reform does not occur. Without the reforms, additional cost of living pressures will emerge with council running costs increasing more rapidly, import dependence embedded into the packing sector and lower recyclable volumes due to no progress on reduced contamination of other materials.

7. Attachments

- Attachment 4.1 – Barrier #1: Lack of aligned national standards or guidelines
 - Attachment 4.1a – Summary of state CDS variations
 - Attachment 4.1b – Summary of state single use plastic and compostable packaging regulation variations
 - Attachment 4.1c – Examples of council kerbside collection variations – Impacts and opportunities
 - Attachment 4.2a – Summary of Minister’s Priority List and regulated product stewardship schemes
 - Attachment 4.2b – Summary of soft plastic market failure
 - Attachment 5a – Benefits for community and councils
 - Attachment 5b – Benefits for the recycling sector
 - Attachment 5c – Benefits for the manufacturing and retail sector
 - Attachment 5d – Benefits for government and the environment

Attachment 4.1 – Barrier #1: Lack of aligned national standards or guidelines

The existing regulatory inconsistencies generate duplicated costs and effort for industry and government alike. Including state-specific packaging design rules and single use plastic bans, jurisdiction-by-jurisdiction CDS reporting and overheads, and differing collection and recycling systems across 537 local councils, each with varying community education programs.

This complexity confuses the community, raises contamination rates, and ultimately increases costs borne by community.

To improve productivity in the recycling, manufacturing and retail sectors, a mandatory national packaging framework for packaging in Australia should include nationally aligned regulations across the country, with consistent standards applying throughout the entire supply chain from design through to recycling. These elements together would replace the current fragmented voluntary arrangements and the patchwork of differing state laws that currently undermine investment confidence, create inertia across the supply chain, and erode supply chain resilience.

Economic Perspective

Complexity is the enemy of improved productivity. Leaving the current 537 different sets of rules on oversight of recycling unchecked is a textbook case of extreme complexity when the end point should be to maximise the volumes of clean and sorted materials for recycling.

Creating education programs at individual council level increases costs for councils, many for just 50,000 to 60,000 households in their specific local government area.

This is in stark contrast to the proposed alignment of the system in this report, which would benefit hugely from having the same recycling rules for all 11.5 million Australian households.

As packaging design changes and the recycling industry expands, the overarching standards can be updated periodically to ‘keep up’ with industry best practice.

Attachment 4.1a – Summary of state Container Deposit Scheme variations

The table below summarises the operational and economic impacts of fragmentation and misalignment between jurisdictions.

Packaging format - Beverage containers								
Current regulation There are 8 different container deposit schemes legislated across the country. This includes SA CDS, NT CDS, Return and Earn in NSW, ACT CDS, Containers for Change in QLD, Containers for Change in WA, CDS VIC and Recycle Rewards in Tasmania.								
	NSW	Qld	Vic	SA	WA	Act	NT	Tas
Legislation	Y	Y	Y	Y	Y	Y	Y	Y
Refund per container	10c	10c	10c	10c	10c	10c	10c	10c*
Wine	N	Y	N	N	N	N	N	N
Milk	N	N	N	N	N	N	Y	N
<100ml e.g. Yakult	N	N	N	Y	N	N	N	N
Administration								
• Product registration	Y	Y	Y	Y	Y	Y	Y	Y
• Reporting	Y	Y	Y	Y	Y	Y	Y	Y
• Audit	Y	Y	Y	Y	Y	Y	Y	Y
• Marketing	Y	Y	Y	Y	Y	Y	Y	Y
*Proposed to move to 20 cents per container								
Impact on industry Mandatory container deposit schemes have been proven to reduce litter, increase the quality of collected material and increase the recycling sector’s investment confidence. However, the multiplicity of requirements and levies to be managed across each state has increased the financial cost inputs for manufacturers, suppliers and retailers.								
Economic impact Scale and capital expenditure are key drivers of productivity. Further, the centralising of reporting and audit functions for beverage manufacturers could conservatively generate productivity gains for the manufacturing sector of \$9.2 to \$10.7 million annually (See Table 4a below).								
While not a recommendation of this report, a single national scheme would: - Decrease the administrative costs to operate the scheme significantly, indicatively producing productivity gains of \$29.4 to 44.3 million per annum, and reducing inflationary pressures (See Table 4b). - Give smaller jurisdictions the benefit of the scale of larger jurisdictions, thus lowering the inflationary impacts on states and territories with lower populations.								

Harmonised reporting and audits – Estimated productivity gains for the manufacturing sector

The following table conservatively estimates potential productivity and efficiency gains if the reporting and audit functions of state schemes were centralised nationally.

Table 4a - Total estimated productivity gains range from \$9.2 to \$10.7 million per annum.

	Current	Potential - Centralised Reporting	
	State Duplication	Low side	High side
Cost per staff member	\$120,000	\$120,000	\$120,000
Number of member organisations	700	700	700
Number of schemes	8	1	1
Reporting frequency per annum	4	4	4
Days per report	1	2	1
	\$11,686,957	\$2,921,739	\$1,460,870
Audits per annum	1	1	1
Days per audit	2	3	2
% organisations audited	10%	10%	10%
	\$584,348	\$109,565	\$73,043
Cost per annum	\$12,271,304	\$3,031,304	\$1,533,913
Saving		\$9,240,000	\$10,737,391

Table 4b - Harmonised administration productivity savings for scheme administration

	Current	Potential - Centralised Administration	
	State Duplication	Low side	High side
Cost per staff member	\$120,000	\$120,000	\$120,000
Staff efficiencies		-30%	-50%
Number of staff	70	392	280
Number of schemes	8	1	1
Total Staff	560	392	280
Cost per annum	\$67,200,000	\$47,040,000	\$33,600,000
Total Administration Savings		\$20,160,000	\$33,600,000

Attachment 4.1b – Summary of state single use plastic and compostable packaging regulation variations

The table below summarises the operational and economic impacts of fragmentation and misalignment between jurisdictions.

Packaging format								
Single use plastics and compostable packaging								
Current regulation								
Many states have legislated bans on specific single use plastic items and as a result, industry adopted compostable packaging in many instances. However, each jurisdiction has different single use plastic and compostable packaging regulations, with bans at council level in some instances. In addition, most jurisdictions have now banned compostable packaging from compost bins and/or compost facilities, resulting in compostable packaging being landfilled.								
The table below outlines the regulations based on product categories in each State and Territory.								
Red: Banned Amber (R): Restricted use Yellow (L): Limited to a specification Purple (P): Ban Postponed Green: Accepted in compost bin								
	NSW	QLD	VIC	SA	WA	ACT	NT	TAS
Single use plastic ban examples								
PP or PET rectangular lidded food containers				2029	2024			
Polymer Coated Paper Plates								
Plastic Containers without Lids	2027							R
Plastic Cups for Cold Drinks	2027							R
Non-compostable produce labels	2030			P				R
Alternate compostable packaging examples								
Oxo-degradable plastics		R	N				R	L
Meat/Dairy/Seafood Barrier Bags				R	R	L	L	L
Straws								
Cutlery			L				L	
Plates	N	N	L		L	N	L	
Compostable Plastic Cups	R		R	R	R	R	L	L
Kitchen Caddy Liners	R				L	L	L	
Compostable packaging accepted in kerbside compost/organics bins								
Certified compostable packaging accepted in compost bins		R		R		R	No Bins	L

Attachment 4.1b – Summary of state single use plastic and compostable packaging regulation variations

Impact on community, industry and government

Household organic waste collection commenced in South Australia in the early 1990s, stimulating investment in organic recycling facilities and council roll outs of organics collections services. This is now being implemented in most jurisdictions nationwide.

The inclusion of a target that 100% of packaging would be recyclable or compostable in the National Packaging Targets in 2018 stimulated investment in compostable packaging formats. However, in the intervening years most state jurisdictions have banned compostable packaging in compost/organics bins.

This has resulted in:

- Councils needing to re-educate community
- Wasted packaging investments by brands and retailers
- Undermining of infrastructure capital investments
- Increased greenhouse gas emissions from compostable packaging in landfill.

State-by-state inconsistencies on single use plastic bans and compostable packaging increase confusion, cost and complexity for community, council and businesses with national reach. As retailers and brands operate within national and often global supply chains, alignment across all jurisdictions is critical to providing the scale needed to both manage costs and waste.

Economic Impact

Implementing single use plastic bans on a state-by-state bases has resulted in considerable confusion and wasted investment by government and industry alike.

This is another illustration of extreme inefficiency from complexity and a lack of consistency in regulation. The productivity losses from undermined industry investments and education by councils is impossible to quantify, but highlights the risk of further productivity losses when national regulation is delegated to state and council jurisdictions.

The cost of duplicating government consultations, developing regulations and legislation in each state has been conservatively estimated in Table 4c below to range between \$0.9 to \$1.0 million dollars per annum.

Table 4c– Productivity savings from national versus state based government consultations

	Current		Proposed - Low side		Proposed - High side	
	Government	Industry	Government	Industry	Government	Industry
Estimated no. of policy & legislative staff	4	1	5	1	4	1
Estimated time allocated to consultation	30%	15%	40%	15%	30%	15%
States or industry sectors	8	7	1	7	1	7
Estimated wage cost per staff member per annum	\$180,000	\$180,000	\$180,000	\$180,000	\$180,000	\$180,000
Months per consultation	8	8	8	8	8	8
Total	\$1,152,000	\$126,000	\$240,000	\$126,000	\$144,000	\$126,000
Total Government & Industry	\$1,278,000		\$366,000		\$270,000	
Potential savings			\$912,000		\$1,008,000	

Attachment 4.1c – Examples of council kerbside collection variations – Impacts and opportunities

The table below summarises the operational and economic impacts of fragmentation and misalignment between industry sectors.

Packaging format All household packaging, paper and cardboard products (e.g.: Magazines, etc)		
Current regulation As there are no national kerbside standards, variations exist between the 537 councils nationwide.		
Examples of divergent councils with differing bin systems:		
Northern Beaches Council (NSW) - 4 bin system		
Red Lid Bin	Garbage	Weekly Collection
Blue Lid Bin	Paper, Cardboard	Fortnightly Collection
Yellow Lid Bin	Containers	Fortnightly Collection
Green Lid Bin	Vegetation	Fortnightly Collection
Narromine Shire Council (NSW) - 1 red bin system in Tomingley (town) and 3 bin system in other suburbs in the LGA.		
Red Lid Bin	Garbage	Weekly
Green Lid Bin	Organic Waste	Weekly
Yellow Lid Bin	Recycling	Fortnightly
Mitchell Shire Council (VIC) - 4 bin system		
Red Lid Bin	Garbage	Fortnightly Collection
Purple Lid Bin	Glass	Monthly Collection
Yellow Lid Bin	Mixed Recycling	Fortnightly Collection
Green Lid Bin	Organic Waste	Weekly Collection
Katherine Town Council (NT) - 1 bin system		
Red Lid Bin	All Waste	Weekly Collection

Impact on manufacturing and retail sectors

Aligned minimum standards in packaging, manufacturing, retail and recycling are essential to an effective, resilient supply chain that supports both our ability to source safe and trusted products, and Australian sovereign capability. While standards exist across much of the supply chain, the absence of aligned standards from packaging design through recycling undermines investment confidence and system resilience. Mandating packaging recyclability with equivalent standards for councils, MRFs and recyclers increases confidence in recycling and recycling labels.

At present, councils and MRFs determine material eligibility for recycling, creating inconsistency across 537 local government areas. Applying aligned system standards to councils, MRFs and recyclers would support credible, consistent recycling information and a nationally consistent community education program.

National packaging design standards increase manufacturers’ investment confidence, driving research and development, innovation, and capital investment in packaging plant and equipment where costs range from \$100,000 to over \$1,000,000 for major packaging equipment changes.

Minimum standards also protect legitimate MRF operators from low-cost, low-recovery and low-quality operators. The SKM case illustrates the risk: select high-value commodities were sorted while other recyclable materials were illegally stored or landfilled, making fair competition difficult for responsible operators.

Attachment 4.1c – Examples of council kerbside collection variations – Impacts and opportunities

Economic impact

Introducing aligned national standards enables a national education campaign that will deliver significant economic benefits. As detailed in Section 2 - Community interest in recycling and impact on productivity, increasing community trust and clarity drives community participation and material quality, with potential productivity gains of \$25 to \$47 million per annum from implementing a national community education campaign, and \$68.9 to \$128.1 million in productivity gains for recyclers from increased quality and quality of feedstock. (See Table 4d and Table 4e).

Increased recycling also reduces the cost of material to landfill by an estimated \$78 to 146 million per annum (See Table 4f below) and increases the need for additional recycling capacity and related capital investment estimated at \$135 to \$252 million (See Table 4g below). The additional recycling capacity strengthens Australia’s national sovereignty by reducing our reliance on imported virgin material.

Increased recycling also produced productivity gains from increased utilisation of recycling infrastructure estimated between \$30 and \$89 million per annum. (See Table 4h below).

As complexity is the enemy of productivity, simplifying the recycling system by aligning standards throughout the value chain will produce productivity gains and remove some of the embedded inflationary factors.

Table 4d – Estimated productivity savings from implementing a national community education campaign

The following table estimates the cost savings of transitioning from council specific education programs to implementing a national community behaviour change program to reduce confusion, increase participation and material quality. The council costs have been provided by several councils in confidence and are conservative when benchmarked to council funding programs, such as the Growing the Recovery of Organic Waste via Food Organic and Garden Organics (GROW FOGO) Fund, allocating up to \$10 per household for education and awareness programs.

Developing a national behaviour change campaign to be implemented locally will reduce the pressure on councils while obtaining greater cost effectiveness and community reach from a national campaign.

	Current			Proposed - Low side			Proposed - High side		
	\$/HH	Total Households (000)	Cost (\$000)	% Savings	Cost (\$000)	Savings (\$000)	% Savings	Cost (\$000)	Savings (\$000)
Wages	\$3.17	11,500	\$36,504	25%	\$27,378	\$9,126	50%	\$18,252	\$18,252
Program development	\$1.83	11,500	\$21,010	25%	\$15,757	\$5,252	50%	\$10,505	\$10,505
Program implementation	\$1.82	11,500	\$20,969	25%	\$15,727	\$5,242	60%	\$8,387	\$12,581
Other	\$0.51	11,500	\$5,829	25%	\$4,372	\$1,457	60%	\$2,331	\$3,497
Total	\$7.33		\$84,314		\$58,863	\$25,450		\$37,145	\$47,168

Table 4e – Estimated retained material value from implementing national standards supported by a national community education campaign

The following table estimates the incremental retained commodity values from implementing a national community behaviour campaign where participation increases the recovery of recyclable materials and reduces the level of contamination.

	Current	Potential	
		Low side	High side
Total packaging PoM T	7,040,000	7,040,000	7,040,000
Recovery rate	69%	74%	78%
Contamination	12%	10%	8%
Net Recycling rate	57%	64%	70%
Total packaging recycled T	4,012,800	4,505,600	4,928,000
Incremental tonnes		492,800	915,200
Commodity value / tonne		\$140	\$140
Incremental retained resource value		\$68,992,000	\$128,128,000

Table 4f– Estimated landfill cost savings from implementing national standards supported by a national community education campaign

	Current	Potential	
		Low side	High side
Incremental tonnage recycled		492,800	915,200
Total estimated landfill & transport	\$300	\$147,840,000	\$274,560,000
Less estimated MRF gate fee	-\$140	-\$68,992,000	-\$128,128,000
Net landfill cost avoided		\$78,848,000	\$146,432,000

Table 4g – Estimated capital expenditure from implementing national standards supported by a national community education campaign

	Potential	
	Low side	High side
Incremental tonnage recycled	492,800	915,200
% Plastics	15.0%	15.0%
% Other processing expansion	10.0%	10.0%
Incremental plastic and other materials (Tonnes)	123,200	228,800
Estimated capital investment per recycled tonne of packaging	\$1,100	\$1,100
Incremental capital invested	\$135,520,000	\$251,680,000

Table 4h – Estimated productivity gains from increased utilisation of recycling infrastructure

Current	Soft plastic		Rigid plastic	Total plastic
	B2C	B2B	All	
Total tonnes placed on Market	300,000	246,622	718,144	1,264,766
Recycling rate	-	15.5%	28.0%	18.9%
Tonnes recycled	-	38,264	201,080	239,344
Low Side	Soft plastic		Rigid plastic	Total plastic
	B2C	B2B	All	
Estimated recycling rate	5%	20%	35%	25.0%
Estimated tonnes recycled	15,000	49,324	251,350	315,675
Estimated tonnes of crude oil saved*				599,782
Estimated barrels of crude oil saved*				4,396,403
Estimated kW of electricity saved*				947,024,400
High Side	Soft plastic		Rigid plastic	Total plastic
	B2C	B2B	All	
Estimated recycling rate	10%	30%	50%	36.6%
Tonnes recycled	30,000	73,987	359,072	463,059
Estimated tonnes of crude oil saved*				879,811
Estimated barrels of crude oil saved*				6,449,017
Estimated kW of electricity saved*				1,389,175,800
	Current	Low Side	High Side	
Estimated average processing costs / tonne	\$800	\$703	\$607	
Fixed %	50%	43%	34%	
Variable %	50%	57%	66%	
Fixed \$ / tonne	\$400	\$303	\$207	
Variable \$ / tonne	\$400	\$400	\$400	
Tonnes recycled	239,344	315,675	463,059	
Fixed \$	\$95,737,544	\$95,737,544	\$95,737,544	
Variable \$ / tonne	\$95,737,544	\$126,269,920	\$185,223,440	
Total \$	\$191,475,088	\$222,007,464	\$280,960,984	
Productivity savings \$ / tonne		\$97	\$193	
Productivity gain		\$30,532,376	\$89,485,896	

Source: * <https://share.google/9XKwbeM6f7rT4Lisl>

Attachment 4.2a – Summary of Minister’s Priority List and regulated product stewardship schemes

Products on the Minister’s Priority List are contributing negatively to the environment and require economies of scale and industry funding to address. The following table highlights that **voluntary schemes are significantly lower cost than the regulated container deposit schemes**, however they are at risk due to a lack of regulatory, funding and investment confidence by all industry participants. Regulated schemes are thriving due to funding and investment certainty.

Material	Batteries	Soft plastic	Mattresses	Clothing & textile	Container deposit schemes
Frequency of use by community	Daily	Daily	Daily	Daily	Daily
Consumption per annum	3,810 tonnes 530 million units	538,000 tonnes		390,700 tonnes	
Acceptance in kerbside recycling	No	No	No	No	Yes
Domestic recycling rate	18.5%	6% - B2C <1%, B2B 15.5%		<4%	60-70%
Recycling infrastructure status	Limited/developing	Existing plants now underutilised due to funding constraints	Limited/developing	Limited/developing	Very developed
End market demand status	Limited/developing	Limited/developing	Limited/developing	Limited/developing	Very developed
Minister’s priority list	No - Previously listed	Plastic packaging was removed in 2024 as government announced plans to regulate	Yes	Yes	No
Regulatory status	Voluntary NSW introducing regulation	Voluntary	Voluntary	Voluntary	Regulated
Scheme name	B-Cycle: Battery Stewardship Council	Soft Plastic Stewardship Australia	Australian Bedding Stewardship Council	Seamless	Return and Earn, Containers for Change, Recycle Rewards, Return-i.
Year established	2019	2024		2023	1977-2025
Initial support from the national product stewardship investment fund	Yes	Yes	Yes	Yes	N/a
Free riders %		>85%		>95%	n/a
Scheme status	At risk in the lead up to regulation due to constraints	Unable to scale or at risk due to funding constraints from lack of members and regulation providing level playing field			Thriving due to funding and regulatory certainty
Annual cost per household	\$2.07	\$1.83	\$0.43	\$0.49	\$137
% of retail sales	0.005%	0.005%	0.001%	0.001%	0.356%

Product stewardship estimated cost per household per week



*Source: Annual Container Deposit Scheme Reports, excluding South Australia, Northern Territory and Tasmania.

Attachment 4.2b – Summary of soft plastic market failure and opportunity

The following table highlights the poor recycling rate of soft plastic packaging in Australia. If regulations are not introduced the value of resin imported and landfilled each year will climb to \$1.013 billion with \$173.5 billion in landfill costs.

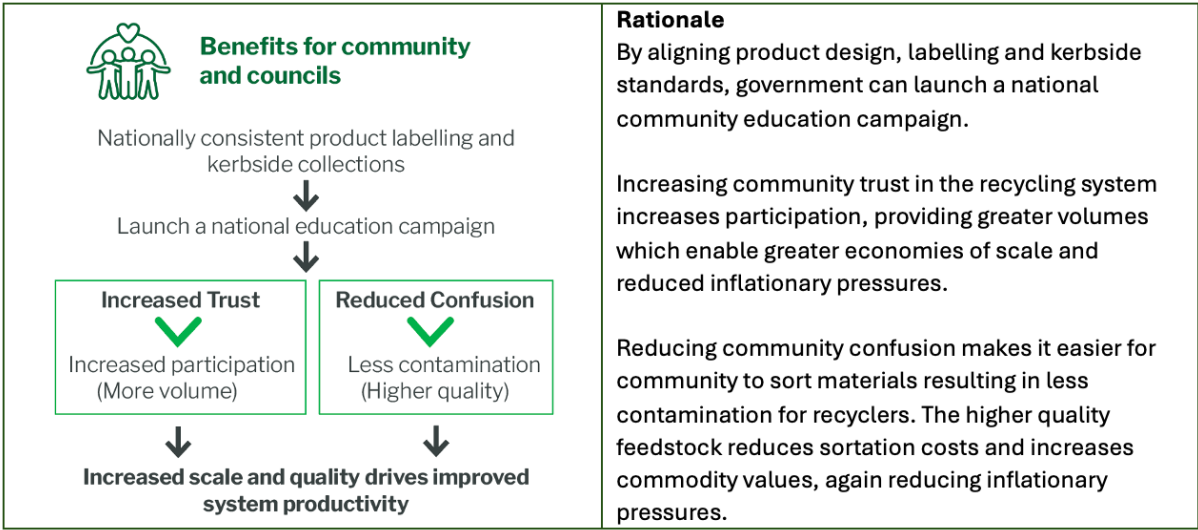
Detriments include:

- Increased reliance on import and recycled sovereign capability
- Inability for industry to achieve the National Packaging Targets 70% plastic recycling target
- Increasing avoidable cost of living pressures from landfill costs

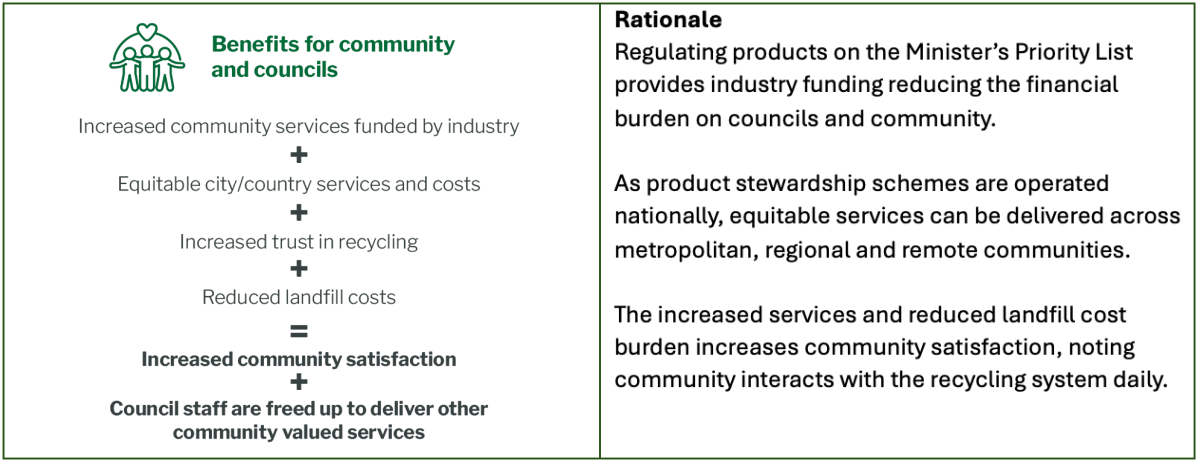
Years	Total soft plastic				Consumer Soft plastic			
	Tonnes	Value (PE)	Value landfilled	Landfill \$	Tonnes	Value (PE)	Value landfilled	Landfill \$
2026	546,622	\$957,506,825	\$900,056,415	\$154,147,404	300,000	\$525,504,000	\$522,876,480	\$89,550,000
2027	563,021	\$986,232,030	\$927,058,108	\$158,771,826	309,000	\$541,269,120	\$538,562,774	\$92,236,500
2028	579,911	\$1,015,818,991	\$954,869,851	\$163,534,981	318,270	\$557,507,194	\$554,719,658	\$95,003,595
2029	597,309	\$1,046,293,560	\$983,515,947	\$168,441,030	327,818	\$574,232,409	\$571,361,247	\$97,853,703
2030	615,228	\$1,077,682,367	\$1,013,021,425	\$173,494,261	337,653	\$591,459,382	\$588,502,085	\$100,789,314
Assumptions	Growth	PE / Tonne	Recycling rate	Gate fee & transport	Growth	PE / Tonne	Recycling rate	Gate fee & transport
	3.0%	\$1,752	6%	\$300	3.0%	\$1,752	0.5%	\$300
Source	APCO Consumption and Recovery Factsheet 2022/23	Australia polyethylene import basket 2020-2024	APCO Consumption and Recovery Factsheet 2022/23	Industry est	APCO Consumption and Recovery Factsheet 2022/23	Australia polyethylene import basket 2020-2024	SPSA	Industry est

Attachment 5a – Benefits for community and councils

The following table summarises the benefits of aligned national standards.



The following table summarises the benefits of regulating products on the Minister’s Priority List.



Economic value

Council management costs of overseeing recycling are reduced by:

1. Reducing landfill costs by an estimated \$78 to 146 million per annum (See Table 4f), and
2. Introducing a national community education campaign (implemented locally) to reduce workload pressures on council staff and budgets and increase education reach and consistency. This is estimated to provide productivity savings between \$25 and 47 million per annum (See Table 4d).

With an education campaign, there will be higher volumes of materials recycled and less contamination increasing the scale, yield and productivity of recyclers, ultimately lowering the cost to councils and community.

Lower landfill volumes extends landfill life, delaying the need and cost to develop new sites for future landfill.

Attachment 5b – Benefits for the recycling sector

The following table summarises the benefits of aligned national standards.

Benefits for the recycling sector Minimum MRF standards increase investment certainty and innovation + Packaging design improves recyclability and increases volume and material quality + National education campaign increases volume and material quality ↓ Increased yields, scale and productivity lowering operational costs.	Rationale Introducing minimum MRF standards will provide recyclers with greater investment confidence by creating a level playing field and ensuring competitors tender against equivalent standards. Aligned packaging design standards, supported by a national education campaign, will increase material volumes and improve material quality, resulting in stronger economies of scale, higher yields and improved commodity values. Ultimately, these measures will lower operational costs and improve the productivity of recycling facilities.
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The following table summarises the benefits of regulating products on the Minister’s Priority List.

Benefits for the recycling sector Reduced contamination in recycling + Reduced recycling fires + Product stewardship funding = Increased investment confidence and capital investment + Increased innovation and productivity + Increased economies of scale lowering inflationary pressures	Rationale Introducing mandatory product stewardship for priority products, supported by a national community education campaign, will reduce contamination in kerbside collections. Critically, removing batteries from kerbside collections will reduce the incidence of MRF fires. Industry funding from product stewardship schemes will be invested in collection systems, recyclers and remanufacturers, improving investment confidence, feedstock availability and market demand for recycled materials. Ultimately, the national scale provided by these schemes will generate economies of scale and productivity benefits that stimulate capital investment.
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Economic value

Higher material volumes will increase scale for recyclers and manufacturers, supporting infrastructure utilisation, investment confidence and capital expenditure, while retaining additional resources within the economy. The estimated benefits are:

- Increased utilisation of plastic recycling infrastructure ranges between \$30 and \$89 million per annum (See Table 4h).
- Capital investment is estimated between \$135 and \$251 million, excluding the proposed Viva Energy and Cleanaway chemical recycling investment estimated between \$387-517 million (See Tables 4g and Section 4).
- Resource retention estimated between \$68 and 128 million per annum (See Table 4e).

Attachment 5c – Benefits for the manufacturing and retail sectors

The following table summarises the benefits of aligned national standards.

Benefits for manufacturing and retail sectors Clarity of packaging design standards and labelling expectations ↓ Increase investment certainty + Less relabelling churn ↓ Increased R&D, innovation and capital expenditure	Rationale Aligning packaging design, kerbside and recycling standards increases manufacturers confidence to invest in packaging knowing that kerbside collections align with packaging labelling and being confidence that recycling facilities can recycle the packaging as labelled. Aligning the standards also prevents avoidable label churn that results from ad hoc changes from recycling ability and or recycling capability changes.
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The following table summarises the benefits of regulating products on the Minister’s Priority List.

Benefits for manufacturing and retail sectors Ability to collaborate and pool resources equitably to address market failures + Level playing for all industry participants = Achieve sustainability targets that cannot be achieved by individual organisations + Labelling certainty	Rationale By joining product stewardship schemes, manufacturers can legally collaborate and fund at scale recycling solutions to achieve national or organisational targets, that they are otherwise unable to deliver due to financial and competition law constraints. If schemes are regulated, manufacturers have a level playing field, meaning leading organisations are not financially disadvantaged versus other organisations that elect to not support voluntary schemes. The scaled solutions fund broad based collections securing labelling and preventing label churn.
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Economic value

By regulating schemes, free riders are minimised generating greater funding, collection volumes and economies of scale, which stimulates greater investment confidence, and capital expenditure.

Additionally, **regulating schemes eliminates free riders and reduces scheme levies exponentially.**

For example, if a scheme with 75% free riders is regulated eliminating all free riders, there is a fourfold productivity gain, reducing the scheme levy fourfold. **This reduces the overall scheme cost per product for participating organisations thereby reducing inflationary pressures.**

Example:

	Voluntary scheme	Regulated scheme
Total tonnes in market	400,000	400,000
Total members tonnes	100,000	400,000
Free rider %	75%	0%
Scheme cost	\$1,000,000	\$1,000,000
Levy/tonne	\$10.00	\$2.50

Attachment 5c – Benefits for the manufacturing and retail sectors

Packaging policy certainty has been missing in recent years, contributing to manufacturers deferring capital investment plans. As policy certainty is delivered, many firms are poised to lift capacity and Capex. The Australian Food and Grocery Council (AFGC) [Sustaining Australia Report](#) highlights that capital expenditure has plateaued for the past ten years, noting that some capital investments, *such as sustainable packaging, often have low or no return on investment. If businesses cannot make the case for investments to happen in Australia, then companies will lose their competitive edge and manufacturing will move to markets where the business case for investment is enhanced through government support. The report estimates total capital expenditure requirements need to lift by a further 50 per cent (compared to the central case) to \$75 billion over the decade ahead. This is almost double the value of capital expenditure of the past ten years.*

While packaging policy certainty is not the only consideration for capital investment decisions, it can be a deal breaker as organisations cannot invest in a packaging plant investment if the packaging format is not conformed. **Put simply, how can a manufacturing organisation confidently invest to upgrade a packaging plant if the packaging format is not certain? Hence, a lack of packaging policy certainty can stagnate capital investments in the manufacturing sector.** Conversely, packaging policy certainty can enhance sovereign capability and supply chain resilience for both manufacturers and retailers, protecting Australis food security in the event in a global supply chain shock.

Based on the AFGC’s estimated capital investment requirement, if half of these are contingent on packaging certainty the lost capital investment is estimated between \$1.1 to \$1.8 billion per annum, for the food and grocery sector only.

Table 5a – Food and Grocery sector capital investment at risk (\$ million)

	22/23	23/24	Estimate	
			Low Side	High Side
Capital Investment (Gross Fixed Capital Formation) \$ million	\$4,283.0	\$3,811.0	\$6,000.0	\$7,500.0
Estimated percentage of CAPEX projects stalled by lack of packaging certainty			50%	50%
Capital investment at risk \$ million		-\$472.0	\$1,094.5	\$1,844.5

Source: AFGC State of the Industry

Additionally, the lack of aligned supply chain standards results in avoidable label changes as collection coverage and recycling capacity and capability change over time. For example, the Australasian Recycling Label (ARL) is based on recyclability design criteria and has a community access threshold of 80% to deem an item recyclable. Therefore, should councils and/or MRF’s vary their acceptance of certain packaging materials impacting the community access threshold above or below the 80% threshold, this can trigger labelling changes for the nation. The cost impacts are conservatively estimated between \$25 and \$38 million per year.

Table 5b – Potential avoided pack labelling cost per annum

	Current	Estimate	
		Low Side	High Side
Estimated number of items with ARL	255,000	255,000	255,000
Estimated cost per packaging change	\$5,000	\$5,000	\$5,000
Estimated % items changing per annum	6.0%	4.0%	3.0%
Potential cost per annum	\$76,500,000	\$51,000,000	\$38,250,000
Potential avoided pack labelling cost per annum		\$25,500,000	\$38,250,000

Source: ARL Toolkit

Attachment 5d – Benefits for government and the environment

The following table summarises the benefits of aligned national standards.

Benefits for government Community satisfaction + Increased industry productivity + Reduced reliance on imports + Reduced inflationary pressures + Reduced landfill and emissions	Rationale Introducing national standards aligns with the government’s productivity and supply chain resilience priorities. By implementing standards, recyclers and upstream manufacturing sectors will have greater investment confidence to invest in research & development, innovation and capital infrastructure. The improved onshore scale and capability drive productivity gains, reducing inflationary pressures and Australia’s reliance on imported products. These standards and guidelines already exist and simply need regulating to embed the productivity gains. APCO has long-term packaging design and labelling guidelines. DCCEEW has drafted packaging and kerbside standards. The Australian Council or Recyclers (ACOR) has drafted recycling minimum standards for Material Recovery Facilities (MRF).
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The following table summarises the benefits of regulating products on the Minister’s Priority List.

Benefits for government Increased community services + Reduced need for government grants + Increased private capital investment = Increased sovereign capability + Increased community satisfaction	Rationale Targeted product stewardship injects private industry funding into the economy to solve productivity issues or market failures where scale is required and not achievable by a single organisation or council. Mandatory schemes provide the certainty for industry to invest, reducing reliance on government grants. The improved onshore scale and capability drive productivity gains, reducing inflationary pressures and Australia’s reliance on imported products. The additional services increase community satisfaction.
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Economic and community value

The estimated net economic benefits for government and community are considerable as summarised in Table 2: Estimated potential economic benefits of packaging reform:

- Potential capital investment of \$1.6 to \$2.6 billion dollars per annum (See Table 2),
- Potential resource retention of \$68 to 128 million per annum (See Table 4e),
- Potential productivity gains of \$115 to \$278 million per annum (See Table 2), and

Industry contributing \$55 million per annum in stewardship investments to deliver a potential net productivity gains of \$115 to \$278 million per annum.

Attachment 5d – Benefits for government and the environment

Imports of plastics will fall as existing recycling infrastructure utilisation increases and new facilities are constructed, reducing Australia’s dependence and vulnerability on imported virgin resins hence strengthening Australia’s sovereign capability and supply chain resilience.

The increased scale and productivity efficiencies generated throughout the broader packaging supply chain from pack design to kerbside collection and recycling can lower per unit costings reducing inflationary pressures already embedded in the system.

At an aggregate level, recycling is one of the most popular and frequent government service interactions with community – the political implications of these changes are likely to be positive by providing community with additional beneficial services and reducing inflationary pressures.

Environmental benefits

Estimated incremental landfill diversion of total packaging estimated between 492,800 and 915,200 tonnes per annum (See Table 4f).

Plastic recycling estimated to increase from 239,300 tonnes per annum to between 315,600 and 463,000 tonners per annum (See Table 4h), equating to:

- Estimated tonnes of crude oil saved: 599,782 to 879,811 tonnes per annum
- Estimated barrels of crude oil saved: 4,396,403 to 6,449,017 barrels per annum
- Estimated kW of electricity saved: 947 to 1,389 million kWh per annum

Recommended additional readings

The future of producer responsibility in Australia international solutions that will fix a broken system.
Millicer, H. (2026).

The future of producer responsibility in Australia international solutions that will fix a broken system executive summary.
Millicer, H. (2026).

Australians and recycling: Attitudes, behaviours and outlook.
Cleanaway Waste Management. (2026).

Securing Australia’s plastic packaging recycling future report prepared by Rennie Advisory for Australian Council of Recycling securing Australia’s plastic recycling future.
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Designing effective extended producer responsibility schemes.
Australian Retail Council, & Baringa Partners LLP. (2026).

The fragmentation tax how regulatory inconsistency is costing Australian retailers and households.
Mandala, & Australian Retail Council. (2026).

Australia’s circular economy: unlocking the opportunities, Inquiry report no. 107, Canberra.
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Cleanaway Waste Management. (2026).
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Sensoneo. (2025).
9. **Rigid Plastic Consumption and Recovery: 2022-2023 Fact Sheet.**
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Chemistry World. Mehta, A. (2026).





Efficiency, productivity and resilience:
Further integrating recycling into the broader manufacturing supply chains

Analysis by Stephen Koukoulas.

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