Service standard and associated regulations for the provision of household waste and recycling services

Regulatory Impact Statement

June 2024

vic.gov.au/circular-economy

VICTORIA State Government | Energy, Environment and Climate Action

Photo credit

DEECA

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

DEECA is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal community to progress their aspirations.

ISBN 978-1-76136-500-3 **(online)**

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Accessibility

To receive this document in an alternative format, phone the Customer Service Centre on 136 186, email customer.service@delwp.vic.gov.au, or contact National Relay Service on 133 677. Available at DEECA website (www.deeca.vic.gov.au).

Contents

Index of tables and figures

Tables

Figures

Executive Summary

Context / Background

In its circular economy policy *Recycling Victoria: a new economy* (the CE Policy), the Victorian Government committed to transitioning to a circular economy through a complete overhaul of the state's waste and recycling system. This includes providing a new consistent, transparent, and high-quality household waste and recycling system for Victoria, which will enable more and improved recycling and result in less waste going to landfill.

This system includes providing households with access to four core waste and recycling services:

- general rubbish
- mixed recycling
- glass recycling
- food organics and garden organics (FOGO).

The CE Policy sets a target for all Victorians to have access to the new separated glass service, either by the provision of a kerbside bin or drop-off service, by 2027 and access to a FOGO bin or drop-off service by 2030.

To achieve this, the Victorian Government:

- provided a kerbside reform package of funding and support to councils and Alpine Resorts Victoria (ARV) to roll out this system
- will require councils and ARV to provide the four-stream household waste and recycling services from a prescribed date under section 60 of the *Circular Economy (Waste Reduction and Recycling) Act 2021* (the Circular Economy Act)
- provided for standards to be made for the provision of waste and recycling services (including sub-contracted services) under section 63 of the Circular Economy Act.

Regulations and a service standard made under the Circular Economy Act are now needed to bring the four-stream household waste and recycling system into force. The proposed regulations will specify when councils and ARV are required to provide the new recycling streams to households, while the proposed service standard will set out the quality and performance standards for the services. In doing so, state-wide consistency will be achieved while also providing flexibility in certain circumstances to suit local needs.

Problem statement

The Victorian waste and recycling sector has experienced service disruptions and incidents in recent years, which have undermined community confidence in recycling. Additionally, population growth in Victoria means that the state's waste and recycling industry will need to manage significantly more waste than it does now.

Councils and ARV currently have limited choice of suppliers for collection and disposal of waste and collection and processing of recycling, as a result of a thin market with few operators. Suppliers also provide different services which may or may not suit each council's needs.

The CE Policy outlines the importance of addressing both the increasing amount of waste from Victorian households as well as the need to improve the value captured from recycled materials. This means the way Victorians recycle needs to change.

Putting all recycling into a single 'commingled' (mixed recycling) bin reduces the quality of these materials and demand for them, particularly due to the inclusion of glass. The production of poor-quality materials has led to unsustainable business models with low resilience to challenges in end markets, such as the inability to export these materials to overseas processors. This led to significant disruptions between 2017 and 2019, such as stockpiling which resulted in factory fires and a major recycling company going out of business, resulting in large volumes of recyclables going to landfill.

In the absence of capacity for organics processing, excess FOGO material would likely go to lower value uses (such as landfill rehabilitation) or, if no other options were available, to landfill. In 2021, landfills in Victoria accounted for 2.7 million tonnes of carbon dioxide equivalent (CO2-e) or 3.4% of Victoria's net

emissions.[1] Limited recycling capacity of food and garden organics reduces opportunities for this material to be transformed into compost. It also increases landfill rates and contributes to higher greenhouse gas emissions from the degradation of food waste in landfill relative to if food waste were composted.

Objectives

The proposed regulations and service standard provide a framework for the four-stream household waste and recycling system which aims to:

- provide a simpler, consistent household waste and recycling service
- reduce emissions
- capture greater value of recyclables and result in less extraction of virgin materials
- reduce the volume of household recyclables and organic material being sent to landfill.

About this Regulatory Impact Statement (RIS)

The preparation and making of regulations and service standards are subject to requirements specified in the *Subordinate Legislation Act 1994*, including preparing a RIS.

A RIS presents an analysis based on evidence that enables the government to consider all relevant information before making a policy or regulatory change. This RIS has been prepared in accordance with the *Victorian Guide to Regulation*, which provides a best practice approach to analysing any proposed regulatory intervention.

This RIS outlines the range of regulatory options considered when drafting the proposed regulations and service standard and assesses the impacts of each. An analysis is provided in quantitative terms, where practicable, to ensure the costs of each option are not disproportionate to the benefits. The quantitative analysis and broader context describe why the Victorian Government's proposed regulations and service standard for the four-stream household waste and recycling system are the preferred option.

Options

Different options to achieve the Victorian Government's objectives were considered during the preparation of the proposed regulations and service standard. These options were defined by two key policy settings - commencement date and kerbside service model, compared against the base case.

Commencement date refers to the commencement of the obligation under section 60 of the Circular Economy Act to provide the four services by a date specified in the regulations, as well as the commencement of the service standard.

Kerbside service model refers to how councils and ARV are required to roll out the new glass and FOGO services alongside the general rubbish and mixed recycling services.

The base case describes what Victorian household waste and recycling services would look like in the absence of the proposed regulatory interventions. The base case takes into consideration the stated intention of government to implement and achieve the recycling objectives of the CE Policy and reflects expected progress towards the relevant Circular Economy Act goals for the four-stream system without regulations and standards.

Under the base case, councils have full discretion in how they choose to roll out new services, with no statewide standard lists to guide what can and cannot be accepted in each of the four streams. In the base case, materials permitted in the four streams will remain inconsistent.

In this RIS, two commencement dates and two kerbside service models were analysed:

Commencement date:

- 1 July 2025
- 1 July 2027

[1] (DCCEEW, 2021, *Australia's National Greenhouse Accounts*)

Kerbside service model:

- Compulsory kerbside services – provision of a kerbside FOGO service where a kerbside general rubbish service is provided and a kerbside glass service where a kerbside mixed recycling service is provided, and, where kerbside glass and FOGO is provided, it is on a compulsory basis (no opt-in or opt-out allowed)
- Kerbside services where reasonably practicable – provision of a kerbside glass and a kerbside FOGO service if deemed practicable and where a kerbside FOGO service is deemed practicable, it must be provided on an opt-out basis. Where a kerbside service is not practicable, a drop-off service must be provided.

Each commencement date option was coupled with a kerbside service model option and compared against the base case, producing four options which were analysed in this RIS:

- **Option 1** - 2025 commencement with compulsory kerbside services
- **Option 2** - 2025 commencement with kerbside services where reasonably practicable
- **Option 3** - 2027 commencement with compulsory kerbside services
- **Option 4** - 2027 commencement with kerbside services where reasonably practicable.

Impact analysis

The impact analysis approach for this RIS considers the costs and benefits of the four options against the base case over a 10-year period. It uses a combination of a cost benefit analysis (CBA), which includes costs and benefits that can be quantified, and a multi-criteria analysis (MCA), which considers costs and benefits that cannot be easily quantified. The MCA incorporates the costs and benefits assessed in the CBA. The criteria in the MCA were determined in reference to the objectives of the proposed regulations and service standard.

Summary of the CBA

The CBA demonstrates that all options deliver a net financial benefit over the base case. Compulsory kerbside services (Options 1 and 3) deliver greater benefits than the provision of kerbside services only where reasonably practicable (Options 2 and 4). A 2025 commencement of the service standards (Options 1 and 2) delivers greater benefits than a 2027 commencement (Options 3 and 4).
The CBA demonstrates that when non-quantifiable factors are not considered, kerbside services deliver greater benefits over alternative services, and the benefits are greater the sooner the services are implemented.

The below table shows the net benefits delivered across the key outputs from the CBA. They represent the variance in values between the base case and the options, and do not measure the total cost associated with these outputs. The amounts represent the cumulative costs and benefits between the base year and 2034.

Table 1: Monetised cost/benefit outputs from the CBA

Scenario	Description	Option 1	Option 2	Option 3	Option 4
Reduced costs to councils (net benefit)	$ change	$26,139,988	$21,263,731	$9,887,200	$7,879,484
Benefit of avoided greenhouse gas emissions	$ change	$93,368,515	$73,464,931	$48,044,163	$33,306,873
Increased value of recycled materials	$ change	$105,224,381	$92,056,740	$36,185,119	$25,976,164
Total Benefits	**$ change**	**$211,274,237**	**$183,369,757**	**$95,706,394**	**$66,596,478**
Lost Government revenue (waste levy)	$ change	-$121,908,072	-$89,886,098	-$70,410,637	-$44,452,669

Direct cost to Government	$ change	-$5,650,300	-$5,650,300	-$5,650,300	-$5,650,300
Reduction lost profit for MRFs (gate fees)	$ change	-$3,009,874	-$2,781,037	-$944,805	-$767,630
Lost profit for landfill operators (gate fees)	$ change	-$9,103,706	-$6,998,215	-$4,792,828	-$3,137,290
Total Costs	**$ change**	**-$139,671,953**	**-$105,315,649**	**-$81,798,570**	**-$54,007,889**
Net Benefit	**$ change**	**$85,060,931**	**$81,469,752**	**$12,317,911**	**$13,154,632**
Net Benefit (excl. lost waste levy)	**$ change**	**$206,969,003**	**$171,355,849**	**$82,728,549**	**$57,607,301**

The CBA also produced a range of other physical measures which are outlined in the table below.

Table 2: Physical quantity outputs from the CBA

Scenario	Description	Option 1	Option 2	Option 3	Option 4
Greenhouse gas emissions avoided (tonnes)	Tonnes CO^2-e	-846,946	-670,845	-427,669	-299,343
Tonnes of organics diverted from general rubbish	Tonnes	985,827	730,024	566,540	358,512
Tonnes of glass diverted from mixed recycling	Tonnes	324,760	279,447	122,647	86,008
Approximate reduced tonnes of contaminated recycling	Tonnes	-61,464	-52,888	-23,212	-16,278

Summary of the MCA

The criteria in the MCA and their respective weightings are:

Benefits

- **Cost savings to councils, 10%:** includes saved Materials Recovery Facilities' (MRF) gate fees due to the removal of glass from the mixed recycling stream and saved landfill gate fees from diverting FOGO from landfill.
- **Increased value of recyclables and organics (industry), 10%:** captures the increase in commodity values for recycled materials and FOGO.
- **Improved investment and economic efficiencies, 10%:** includes more investment certainty increasing market participation and economies of scale. It also captures increased public participation in waste separation and increased public trust in the recycling process leading to higher volumes of quality materials being recovered.
- **Reduced harm on the environment resulting in healthier communities, 10%:** includes reducing both the volume of waste going to landfill and the extraction of virgin materials.
- **Reduction in greenhouse gas emissions, 10%:** captures the quantifiable reduction in greenhouse gas emissions that results from more FOGO being diverted from landfills.

Costs

- **Burden to councils, 30%:** captures additional burden to councils not covered in the CBA, including the additional costs of an expedited rollout, the burden on council budgets of a large one-off cost, and opportunity costs from delaying other priorities.
- **Costs to industry (lost gate fee profits for MRFs and landfills), 10%:** captures lost gate fee profit for MRFs due to the removal of glass from the mixed recycling stream and lost gate fee profit for landfills due to a reduction in organics materials sent to landfill.
- **Costs to state government, 10%:** comprises costs associated with the activities of the regulator, Recycling Victoria, in carrying out its functions.

Each option has been scored against each of the criteria on a scale of -10 to +10, where -10 is significantly worse than the base case, and +10 is significantly better than the base case. The base case for each criterion is scored at 0. This means that any option that has an overall positive score is better than the base case and any option with an overall negative score is worse than the base case.

Some scores in the MCA are directly based on the CBA. Some scores are partially based on the CBA and partially based on impacts not modelled in the CBA (e.g. the risks associated with an expedited rollout in 2025). Some scores are based only on impacts not modelled in the CBA. Scores have been determined based on the subject matter expertise of the Department of Energy, Environment and Climate Action (DEECA) and reflects DEECA's understanding of market operations.

Estimating benefits

Cost savings to councils scoring reflects the findings in the CBA that councils can benefit from a separated glass stream in terms of reduced fees for mixed recycling taken to MRFs and greater compaction rates in collection vehicles. A separate FOGO stream will also reduce council expenses for landfill because it is more cost effective to process FOGO compared to disposal via landfill.

Increased value of recyclables and organics scoring reflects modelling in the CBA that a 2025 rollout (Options 1 and 2) will realise the increase in commodity values sooner than a 2027 rollout (Options 3 and 4) and will see the values increase more due to financial compounding over a longer time period.

Improved investment and economic efficiencies scoring reflects that compulsory kerbside services (Options 1 and 3) are likely to result in more materials being recovered due to the convenience for households, and these materials will be of a higher quality and value, which has these flow on benefits to the market. Option 3 and 4 scored higher than the 2025 options because having more time to properly prepare for and execute the rollout will result in a more successful rollout and avoid the risks that come with an expedited implementation in 2025.

Reduced harm on the environment resulting in healthier communities scoring reflects the environmental benefits associated with an earlier rollout of the four streams (Options 1 and 2) are greater than a later roll out (Options 3 and 4) due to the maximum amount of FOGO being diverted from landfill and more materials being recycled (resulting in a lower reliance on virgin materials).

Reduction in greenhouse gas emissions scoring reflects CBA modelling of emission savings which are primarily achieved by diverting organic waste from landfill through new kerbside FOGO services.

Table 3: Summary of MCA results for benefits

BENEFITS	Relative Weight	Option 1	Option 2	Option 3	Option 4
Cost savings to councils	10%	1.00	1.25	0.25	0.75
Increased value of recyclables and organics (industry)	10%	6.25	5.75	3.50	2.50
Improved investment and economic efficiencies	10%	4.50	4.50	9.00	9.00
Reduced harm on the environment resulting in healthier communities	10%	6.25	6.00	5.00	4.75
Reduction in greenhouse gas emissions	10%	6.00	4.75	4.50	3.25

	Weighted Total Benefits	**2.40**	**2.23**	**2.23**	**2.03**

Analysis of costs

Burden to councils scoring reflects that some councils are not expected to successfully implement the four streams by 2025 (Options 1 and 2) because they will not have time to successfully mobilise the required budget, resources and infrastructure. It may also mean an unplanned burden is placed on council budgets which may result in the diversion of budget assigned to other council projects to meet the new timeline, resulting in the ceasing of or delays to the delivery of these other projects. Differences in scoring between kerbside models (Option 1 versus Option 2, Option 3 versus Option 4) reflect the assumption that less bin infrastructure will be necessary under the more discretionary service models (Options 2 and 4).

Costs to industry (lost gate fee profit for MRFs and landfills) scoring reflects how the earlier introduction of the separated glass streams under a 2025 commencement (Options 1 and 2) is expected to result in a greater loss of this profit compared to a 2027 commencement (Options 3 and 4). Similarly, a 2025 commencement (Options 1 and 2) would result in more FOGO diverted from landfill compared to a 2027 commencement (Options 3 and 4).

Costs to state government comprises the staffing costs to Recycling Victoria to administer the standards and undertake compliance and enforcement. Recycling Victoria's allocation of staff is expected to remain the same across all four options and therefore scores equally across all four options.

Table 4: Summary of MCA results for costs

COSTS	Relative Weight	Option 1	Option 2	Option 3	Option 4
Burden to councils	30%	-1.75	-1.25	-1.00	-0.25
Costs to industry (lost gate fees for MRFs and landfills)	10%	-1.00	-0.75	-0.50	-0.25
Costs to state government	10%	-0.50	-0.50	-0.50	-0.50
	Weighted Total Costs	**-0.68**	**-0.50**	**-0.40**	**-0.15**

While consideration of the economic factors in the CBA alone showed that a compulsory kerbside service, commencing in 2025 (Option 1) achieved the greatest benefits, it does not take into account the other important factors that can't be easily quantified. The MCA considered these other factors (e.g. the risks associated with an expedited rollout in 2025).

The results of the MCA show that a *kerbside services where reasonably practicable* service model commencing in 2027 is the **preferred option (Option 4).** The total scores for each option are summarised in the table below.

Table 5: Total weighted scores for each option

	Option 1 2025 (Compulsory kerbside)	Option 2 2025 (Kerbside where reasonably practicable)	Option 3 2027 (Compulsory kerbside)	Option 4 2027 (Kerbside where reasonably practicable)
Weighted MCA score	**1.73**	**1.73**	**1.83**	**1.88**

Preferred option

The RIS analysis shows that Option 4 – 2027 commencement with kerbside services where reasonably practicable is the preferred option. It best balances the need for greater standardisation while recognising the need for some flexibility for local arrangements and without overly burdening councils and ARV with an expedited rollout and the risk of sub-optimal implementation and the lost benefits this would entail.

Under this option, the proposed regulations require councils and ARV to provide each of the four-streams by 1 July 2027. This largely reflects the current council and ARV implementation of the FOGO stream, which is more progressed than was originally anticipated in the CE Policy. There is no change to the delivery date for glass services from the CE Policy.

The proposed service standard will require councils and ARV to provide each of the four streams as kerbside collection services unless this is not reasonably practicable. Where a kerbside service is not practicable, a drop-off service must be provided. Additionally, where a kerbside FOGO service is provided, it must be provided on an opt-out basis, which means that households can opt-out of a kerbside FOGO service if they have alternative arrangements in place. The proposed service standard also includes access requirements for drop-off services and standard lists of accepted and not accepted items for each service.

While a 2027 date is the preferred option for the commencement of the legal obligation to provide the services and to comply with the service standard, the results of the CBA and MCA show that there are significant benefits for rolling these services out even earlier (e.g. 2025) if this would not impair the quality of the rollout or incur significant additional costs. Therefore, councils who can do so are encouraged to transition to the new services sooner than legally required. The Victorian Government will provide support and guidance to those councils that wish to do so.

Small business and competition impacts

The proposed regulations and service standard are not expected to impact small businesses that sit outside of the waste, recycling and resource recovery sector, although some small businesses such as retirement villages, nursing homes or temporary boarding houses who are considered “households” for the purposes of the service standard and receive waste and recycling services from a council or ARV may be impacted by needing to implement processes or infrastructure to sort their waste into the four streams. These impacts are expected to be minor.

Within the waste, recycling and resource recovery sector, small businesses may include waste collectors, waste transporters, transfer stations, skip companies and small regional processors. There may be some resultant secondary impacts on industry, such as costs associated with sorting equipment upgrades or needing to adjust practices to cater for items on the standard contents lists for material streams. While there may be impacts, the reforms also provide opportunities for businesses to benefit from the circular economy outcomes delivered in particular the increased quality, volume and value of recyclable materials. The proposed regulations and service standard are not expected to pose significant restrictions to competition. Any potential impacts on businesses that may be an indirect result of the regulations and service standard are likely to be able to be addressed by businesses ahead of the requirements under the regulations and service standard commencing in 2027.

Implementation and evaluation

Implementation Plan

Recycling Victoria will undertake communication activities to assist councils and ARV (and the broader waste and recycling sector and other stakeholders) in understanding and complying with the proposed regulations and service standard.

Sustainability Victoria is responsible for statewide education campaigns and providing materials for councils and ARV to use for communications.

Recycling Victoria will monitor compliance with the obligations in the regulations and service standard once they have commenced. This will be undertaken in accordance with the Recycling Victoria Regulatory Strategy, including supporting councils and ARV to understand and comply with new requirements before and when they come into effect.

Evaluation strategy

Evaluation of the proposed regulatory framework will take multiple forms – ongoing monitoring and assessment, formal review of the Circular Economy Act, regulations and service standard, and evaluation of the other supporting initiatives.

Under the Subordinate Legislation Act, all regulations sunset ten years after their commencement. Regulations can be remade with or without amendments, so that there is no gap in regulation. Evaluation of

the proposed regulations will occur before they sunset in 2034, unless a review of a service standard identifies matters that warrant earlier amendment of the regulations. This may initiate a review of the regulations earlier.

Section 64 of the Circular Economy Act requires that the Minister must review a service standard at intervals of no longer than three years. The Minister can also review a service standard at any time on the request of the Head, Recycling Victoria, if the Minister is satisfied that it is in the public interest to do so.

Consultation

Extensive stakeholder consultation was undertaken to inform the drafting of the proposed regulations, service standard and RIS.

In late 2022, the former Department of Environment, Land, Water and Planning (DELWP) conducted preliminary consultation via Engage Victoria and held targeted workshops with councils and alpine resort representatives on draft policy options for the service standard. Prior to this, DELWP also conducted public consultation on draft standard lists (late 2021 – early 2022), a key component of the service standard.

The proposed instruments and this RIS have been informed by feedback received from councils, ARV, industry, and the community during this preliminary public consultation period.

Targeted stakeholder consultation has also informed the proposed instruments and this RIS. DEECA now welcomes further feedback on the proposed regulations, service standard and RIS via the current stage of formal public consultation.

Feedback on RIS, proposed regulations and service standard

This RIS and the proposed regulations and service standard will be released for an 8-week period to provide councils, ARV, industry and the Victorian community the opportunity to provide feedback. Public consultation will close at 11:59 pm, Wednesday 14 August 2024.

The RIS and proposed regulations and service standard are available on Engage Victoria, the Victorian Government's online consultation platform, at Setting the standard for better recycling at home | Engage Victoria. Those who wish to provide feedback can do so by completing the online survey on Engage Victoria.

All comments and submissions will be treated as public documents unless the comment or submission clearly indicates that the comment or submission is confidential.

DEECA will consider all submissions received during the period of public review and will prepare a formal Response to Public Comment report summarising the submissions received during the consultation. The Response to Public Comment will be made available on Engage Victoria.

Your feedback will inform the final regulations and service standard to help Victoria set the standard for better recycling at home.

Glossary

Alpine Resorts Victoria (ARV) – a body corporate taken to be the committee of management for all six alpine resorts at Falls Creek, Mount Baw Baw, Mount Buller, Mount Hotham, Mount Stirling and Lake Mountain.

Circular economy – a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution. It is based on three principles, driven by design: eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature.[2] In a circular economy, products are kept in use for as long as possible, through repairing, recycling and redesign – so they can be used again and again. At the end of a product's life, the materials used to make it are kept in the economy and reused wherever possible.[3]

Circular Economy Act – *Circular Economy (Waste Reduction and Recycling) Act 2021.*

Compost products – products made from food and garden organics that have broken down over time in a home compost or composting facility. Compost products are used to fertilise and improve soil and include compost, soil conditioners, and mulches.

Contamination of recycling – happens when items are sorted into the wrong recycling bin (for example, if glass from drinking glasses or window panes were put in the glass recycling bin. These items should be put in the general rubbish bin). Contamination can also happen when items are put in recycling bins with non-recyclable material (such as a cardboard pizza box covered in cheese).

Contamination rate – the percentage of wrong or non-recyclable material put in recycling bins.

Diversion rate – a measure of how much waste is recycled instead of being sent to landfill.

FOGO service – a service used to collect food organics and garden organics (FOGO), such as food scraps, branches, and lawn clippings, for compost products. It may also be described as the food and garden, food and garden organics, or organics bin. From the date in the proposed service standard, all bin lids, labelling and signage provided for kerbside and drop-off FOGO services must be lime green.

Four-stream household waste and recycling system (four-stream system) – a waste and recycling system used at home to separate household waste items into four streams: general rubbish, mixed recycling, glass recycling and FOGO. Some people will have a household bin for some waste and recycling streams, and others will have access to a drop-off service. The four-stream system may also be described as municipal waste and recycling services.

Gate fee – the charge that needs to be paid to operators of waste, recycling and resource recovery processing facilities (such as material recovery facilities, landfills, etc) when a material is taken to them for processing or disposal. Fees can apply for any type of material and can be charged per load, per tonne or per item.

General rubbish service – a service used to collect some household waste items that cannot be recycled. It may also be described as the residual waste, garbage, or household rubbish bin. General rubbish materials are taken to a landfill. From the date in the proposed service standard, all bin lids, labelling and signage provided for kerbside and drop-off general rubbish services must be red.

Glass recycling service – a service used to collect glass bottles and jars for recycling. It may also be described as the glass recycling or glass recyclables bin. From the date in the proposed service standard, all bin lids, labelling and signage provided for kerbside and drop-off glass recycling services must be purple.

Head, Recycling Victoria – a statutory position established under the Circular Economy Act that provides leadership, stewardship and oversight of waste, recycling or resource recovery services and supports the development of a circular economy. The Head is the regulator for the service standard.

Households – includes single-dwelling developments, and residences in multi-unit developments, temporary boarding houses, public housing and retirement villages/aged care facilities.

[2] (Ellen MacArthur Foundation, n.d.)

[3] (Masterson V and Shine I, 2022)

Landfill – a site for the disposal of general rubbish.

Materials Recovery Facility (MRF) – a facility which receives and sorts recyclable materials.

Minister – the Minister for Environment.

Mixed recycling service – a service used to collect paper and cardboard, metal tins and cans, and plastic containers for recycling. It may also be described as the recycling or commingled recycling bin. From the dates in the proposed service standard, bin lids, labelling and signage provided for kerbside and drop-off mixed recycling services must be yellow.

Multi-unit development – a building or development, with more than one unit/dwelling on a lot, e.g. typically apartment buildings.

Municipal waste and recycling services – waste and recycling services provided by or on behalf of a council or ARV. These waste and recycling services may also be described as the four-stream household waste and recycling system (four-stream system).

Recovery rate – the waste that is recycled/recovered for processing or reuse in relation to the total amount of waste produced.

Recyclables – materials or items that can be recycled.

Recycling – the sorting and processing of materials to make them into new items.

Recycling Victoria – a business unit within DEECA that supports the Head, Recycling Victoria.

Resource recovery centres (including transfer stations) – facilities that perform a service to local communities by providing a designated location to aggregate, sort and consolidate waste and recyclable materials, and where viable, divert these materials away from landfill, through either recycling or resource recovery.

Service standard – a standard which must provide for the quality and performance standards for the delivery of a waste, recycling or resource recovery service prepared by the Head, Recycling Victoria and approved by the Minister under the Circular Economy Act. A service standard is a legislative instrument.

Standard lists – lists of items that can and cannot be placed in each of the household waste and recycling streams.

Transfer stations – see definition of resource recovery centres.

1. Background

1.1 Overview of the Victorian Waste, Recycling and Resource Recovery Sector

1.1.1 Snapshot of Victoria's municipal waste and recycling sector

In Australia, waste streams are broadly categorised according to their point of origin or the activities that resulted in their generation. This includes municipal solid waste (MSW) (solid waste generated by households), commercial and industrial waste (C&I), and construction and demolition (C&D) waste[4]. For the purposes of this Regulatory Impact Statement (RIS), C&I and C&D waste are out of scope.

In Victoria, the 79 councils and ARV (a statutory authority that provides strategic leadership across Victoria's six alpine resorts) are responsible for providing or procuring municipal waste and recycling services for their residents.[5] The waste services offered across councils and ARV are not uniform, though all offer the collection and disposal of general household waste to landfill. ARV and councils' waste management service offerings can include the following:

- residential and commercial kerbside collections which may include general rubbish, recyclables, and organic matter, including food and/or garden waste
- litter maintenance, including street sweeping and public place litter collections
- hard waste collections.

1.1.2 Household waste and recycling services

Some councils collect, transport and sort MSW themselves. Others engage private companies to collect, manage, transport, sort and/or process MSW. General rubbish collections are taken to landfill, and recycling collections are delivered to an appropriate facility for sorting and/or processing. Some larger companies that operate collection services and sorting/processing facilities hold a significant proportion of the contracts with councils and are responsible for servicing many households across the state.

Household waste and recycling services rely heavily on residents (community members) correctly sorting their waste and recycling materials. Incorrect sorting can lead to contamination which reduces the value of, and opportunity to recover, recyclable materials.

The flowcharts in Figure 1 below illustrates how each of the three recycling streams (mixed recycling, glass recycling, and FOGO) are collected, sorted and processed.[6]

Figure 1: Flowcharts showing how each of the three recycling streams (mixed recycling, glass recycling and FOGO) are collected, sorted and processed

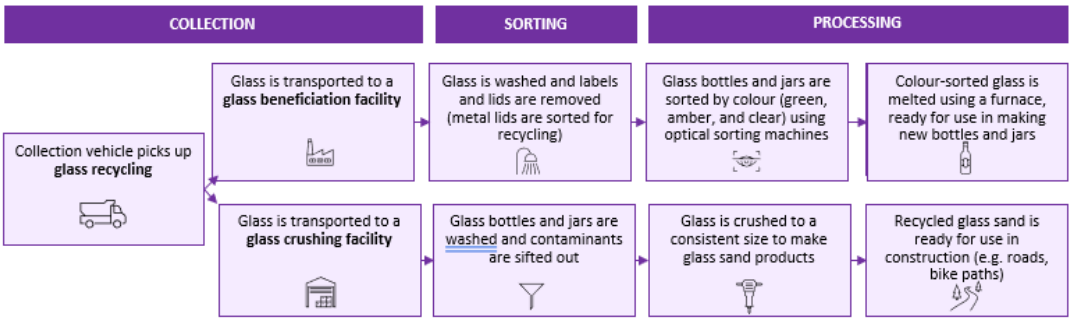
Mixed recycling stream

[4] Other waste categories include liquid waste and biosolids.

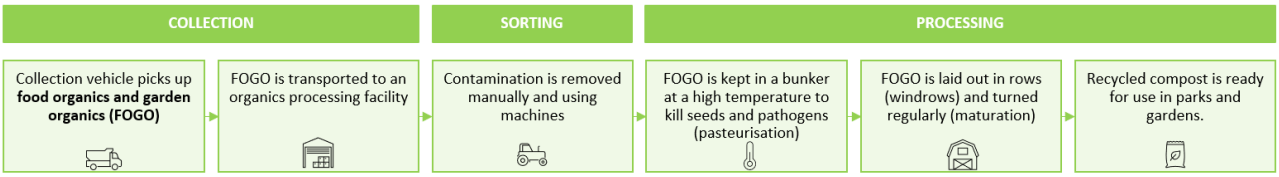
[5] (VAGO, 2021, *Councils' Waste Management Services*)

[6] These figures are for illustrative purposes and are not exhaustive (e.g. there are other methods that may be used in the collection, sorting and processing that are not depicted, such as in-vessel composting of FOGO).

Glass recycling stream



FOGO stream



In addition to the above services, councils and ARV may operate landfills, resource recovery centres and/or transfer stations and various other facilities.[7] These waste infrastructure facilities are critical to the efficient movement and aggregation of waste and allow some waste streams to be sorted for recycling.

Municipal waste and recycling services provided by councils and ARV can also differ across Victoria depending on the location and specific characteristics of the area. For example, in some regional and rural areas, councils may not provide a kerbside collection service, owing to the geographically dispersed nature of the population and the practicability and cost implications of providing kerbside services in these contexts. In these cases, residents make use of drop-off services, such as resource recovery centres or transfer stations.

Where councils do offer kerbside services, the nature of these can differ in terms of the chosen service model (whether offered on a compulsory, opt-in or opt-out basis), bin lid colours, and items accepted in different service streams. Other more minor variations between councils also exist in relation to more operational matters such as bin sizes and collection frequencies for different streams.

Contractual arrangements and waste charges

Contractual agreements between councils and ARV and private companies vary in terms of value and length, with options for extension. Councils and ARV also often enter separate contracts for the collection of different waste and recycling streams, with Materials Recovery Facility (MRF) operators and other processors to receive and sort recyclable materials, and with landfill operators to accept residual waste.

In most cases, councils and ARV negotiate individual contracts with private companies and the details of these contracts are commercial-in-confidence. Councils and ARV have the option of collaborating with other councils and some councils have entered strategic procurement arrangements. Contracts for services are generally set for a period of time (for example 5-10 years) with opportunities to extend by a further period of time.

Councils charge ratepayers for the provision of municipal waste and recycling services and these costs can form part of a council's general rates. Alternatively, the section 221(1) of the *Local Government Act 1989* permits councils to impose an annual service charge for waste, recycling or resource recovery services that is separate to general rates. When councils choose to apply this separate waste charge, the cost of waste and recycling services must be deducted from the general council rates. The waste charge is exempt from the rates cap and many Victorian councils have chosen to implement a separate waste charge.

[7] (VAGO, 2021, *Council Waste Management Services*, p. 2)

There is wide variance in the cost of delivering waste services across councils, which leads to differences in waste service charges. Additionally, because the *Local Government Act 1989* does not specify in detail the waste, recycling or resource recovery services that councils may cover through the waste charge, there can be variances in the amount charged through waste charges across councils.

Provision of services by a caretaker

In some residential settings, councils and ARV are not responsible for the provision of waste and recycling services. For example, residents of some multi-unit developments (MUDs) have their waste and recycling services procured and managed by a caretaker, for example a facility manager, property manager, owners corporation or owners corporation manager (building manager). In these instances, councils and ARV are not a party to the contract with a collection/processing company and as a result, hold little information about the waste and recycling services offered in these MUDs.

Residents of MUDs, where there is a caretaker that enters into direct contracts with private waste and recycling collectors (that councils and ARV are not party to), may be exempt from the waste charge.[8]

Household waste and recycling services provided by a caretaker that is not councils or ARV are outside the scope of the proposed regulations and service standard and not considered further in this RIS.

1.2 Victoria's Circular Economy Policy

The CE Policy was released in February 2020 and set out the systemic change needed to divert waste from landfill and boost recycling and reuse of finite resources to move Victoria towards a circular economy. The CE policy included four targets to:

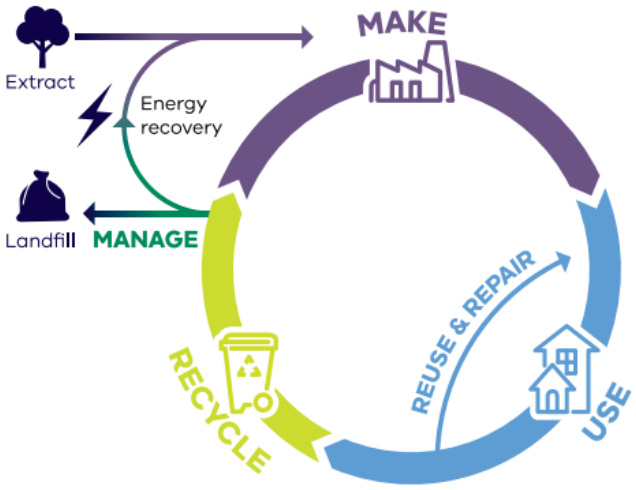
- divert 80% of waste from landfill by 2030, with an interim target of 72% by 2025
- cut total waste generation by 15% per capita by 2030
- halve the volume of organic material going to landfill between 2020 and 2030, with an interim target of 20% reduction by 2025
- ensure every Victorian household has access to food and garden organic waste recycling services or local composting by 2030.

To achieve this, the policy introduced the standardisation of household waste and recycling services provided by councils and ARV through four streams:

- general rubbish
- mixed recycling
- glass recycling
- FOGO.

The CE Policy noted the intention to provide households with access to a separate glass bin or service by 2027 and access to a FOGO bin or service by 2030.

[8] Where this occurs, they must procure their own bespoke waste and recycling services which are usually of far greater costs than council services.



The CE Policy commits the Victorian Government to work closely with councils to find options that meet local needs while implementing a consistent state-wide waste and recycling system and associated education program.

As part of the CE Policy, the Victorian Government committed $380 million to build end markets, build the infrastructure required to process the increase in quality material flowing through the system and attract new investment in advanced technologies required to achieve the CE outcomes.

The Victorian Government is also investing in the state's organics processing capacity, including investing over $14 million in joint funding with the Australian Government to increase and improve composting in Victoria through the Food Waste for Healthy Soils Fund. In the absence of capacity for organics processing, excess FOGO material would likely go to lower value uses (such as landfill rehabilitation) or, if no other options were available, to landfill.

As part of the CE Policy investment of $380 million, the Victorian Government made available $129 million to support councils and ARV to reform household recycling. This includes support through programs such as the Kerbside Reform Support Fund and Transfer Station Upgrade Fund, which provide support for new kerbside bins and regional drop-off points, respectively.

Sustainability Victoria (SV) is delivering the Circular Economy Household Education and Behaviour Change Program to help educate Victorians to better manage and reduce their household recycling and waste. This program provides financial support to all Victorian councils and ARV to support the delivery of local campaigns. Councils and ARV are provided campaign materials available from SV's asset library to ensure consistent statewide and local delivery.

The Victorian Government is also investing over $100 million in recycling infrastructure, including in regional Victoria. This includes investing $34.5 million over three years to establish regional small materials recovery facilities and optimise Victoria's resource recovery and transfer station network.

1.2.1 Value of recyclables

The value of household recyclables varies based on factors including international commodity prices and how 'clean' the stream is (i.e. homogenous, separated from other materials, and uncontaminated).

Contamination is the presence of material that cannot be recycled via that stream (such as food organics in the mixed recycling stream). Contamination reduces the value of recyclable materials because it creates additional costs and limits the applications for which materials can be used. The stream may need to be sorted further to remove unwanted materials, or if they are too difficult to remove, the processor may need to dispose of the contaminated material to landfill.

Recycling facilities make money from accepting recyclables from councils and other organisations (via set fees imposed on tonnages or loads), and profits that come from selling sorted/processed material on to reprocessors or end markets, with different organisations relying on these different income streams to varying degrees.

Figure 2 below provides an overview of the tonnages and value of recyclables collected from households from July 2022 to March 2023, with prices representing average recycled material commodity prices in

Australian dollars for April 2023.[9] [10] Figure 2 illustrates that of the approximate 439,000 tonnes of household recycling materials collected between July 2022 and March 2023, approximately 338,000 tonnes or 77% was sent to downstream processing and approximately 101,000 tonnes or 23% was sent to landfill. Downstream processing includes export of 115,000 tonnes.[11]

Over the last couple of years (2021 and 2022[12]), the impact of increased freight costs has been exacerbated by increases in export licence fees for reprocessed scrap plastics.[13] For materials with a significant export exposure, increases in export container costs had a big impact on the profit margins for exporters of sorted packaging materials. Other challenges include simply obtaining timely access to containers and shipping space.

According to Recycling Victoria analysis, local end-markets for high quality processed recycled plastics (polyethylene terephthalate (rPET), recycled high-density polyethylene (rHDPE) and recycled polypropylene (rPP)) appear strong. However, a gap exists between when this new capacity will be available to process MRF sorted plastic packaging, and the Australian Government's export ban on unprocessed plastics, which came into force in July 2022.[14]Advanced recycling infrastructure is currently being established in Victoria[15] and will enable plastics that are currently considered low value (including mixed and soft plastics) to be recycled from the mixed recycling stream, where they can be sorted and processed. Advanced recycling converts low-value plastics that might otherwise go to landfill back into oil, which can be used as fuel or to make new, food contact grade recycled plastics.[16]

Further separation of waste streams through sorting and processing results in higher quality material streams that are suitable for higher value uses. For example, unsorted mixed plastics have limited applications (e.g. they can be used to make benches and bollards, which are not in high demand) and are typically landfilled.[17] Plastics that are separated by polymer type, however, are suitable for a broad range of packaging uses and can be sold to export markets or to domestic reprocessors.[18]

[9] The prices are based on feedback from industry, ABS export data and international recycled material price websites.

[10] (Recycling Victoria, 2023, *Market Insights Report Summary*)

[11] As above.

[12] (Recycling Victoria, 2023, *Market summary - July 2021 to August 2022*)

[13] (Recycling Victoria, 2023, *Market Insights Report Summary*)

[14] As above.

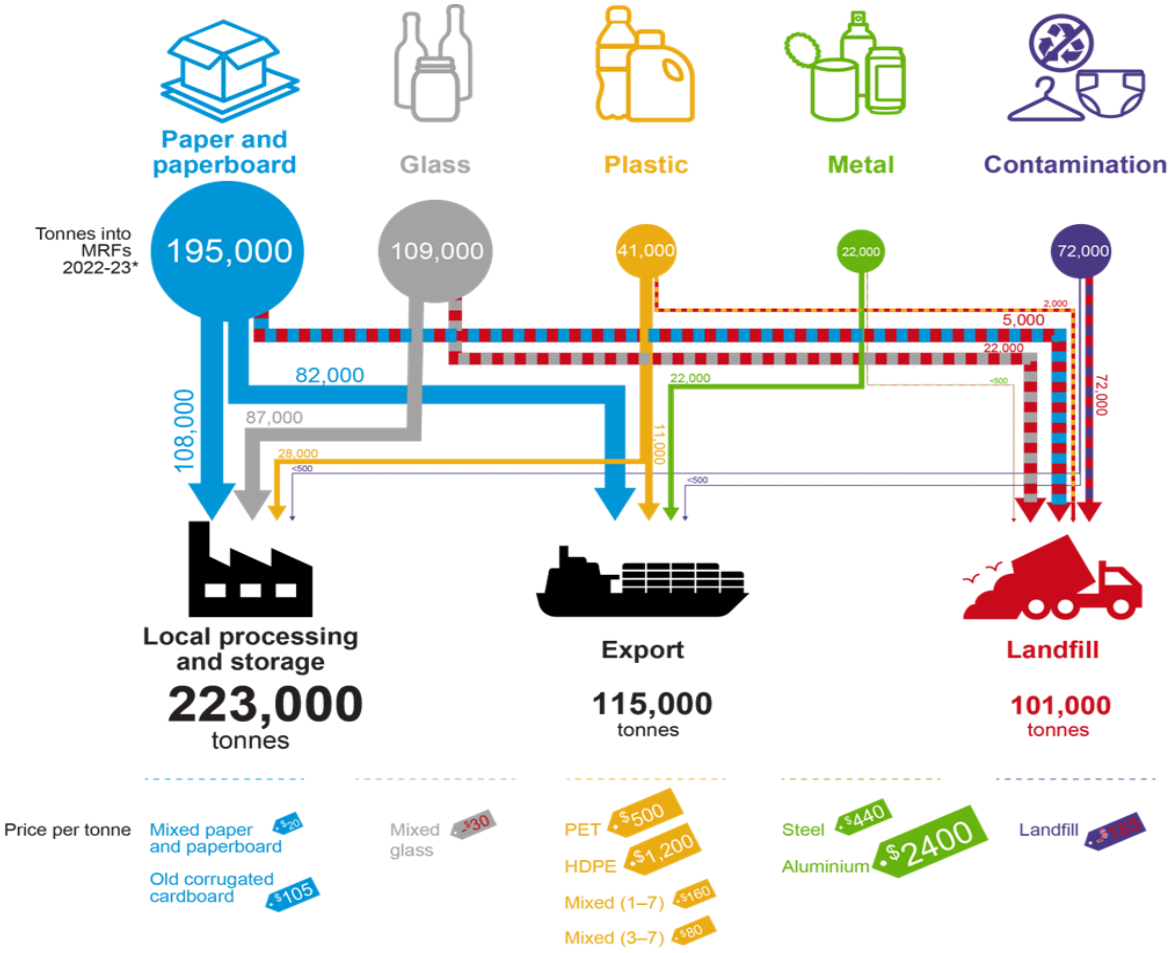
[15] (Korycki, 2023)

[16] (King, Hutchinson, & Boxall, 2021)

[17] (Infrastructure Victoria, 2020)

[18] (King, Hutchinson, & Boxall, 2021, p. 15)

Figure 2: Overview of the tonnages and value of recyclables collected from households from July 2022 to March 2023



The contamination stream in this figure represents items/waste that cannot be recycled or reprocessed and goes to landfill. These are items that should be placed in the household rubbish bin, but on occasion (for various reasons) it ends up in the other streams.

This figure represents point in time values for materials out of a fully co-mingled recycling stream, which includes for example, prices that hold a negative value due to contamination (e.g. caused by glass).

1.3 Legislative context

Under Part 5, Division 1 of the Circular Economy Act, councils and ARV are subject to mandatory service provision requirements and must deliver the four municipal waste and recycling services (for general rubbish, mixed recycling, glass recycling and FOGO) on and from dates to be prescribed in regulations (section 60 of the Circular Economy Act). The Circular Economy Act defines these municipal services[19] as those provided by or on behalf of a council or ARV. Therefore, under the Act, services provided by or arranged by other entities (e.g. an owners corporation or owners corporation manager) are not regarded as municipal services.

Under Part 5, Division 3 of the Circular Economy Act, the Head, Recycling Victoria may prepare a service standard and must submit it for the Minister's approval.

Service providers must comply with any applicable service standards that are in place (once they commence and take legal effect) and incorporate them by reference in relevant agreements. Under the Circular Economy Act, it is an offence to refuse or fail to comply with a service standard, without reasonable excuse (section 69), or to fail to incorporate a service standard in an agreement, without a reasonable excuse (section 71).

[19] *Circular Economy (Waste Reduction and Recycling) Act* 2021, section 3 (definitions of 'municipal food organics and garden organics service', 'municipal recycling service', and 'municipal residual waste service').

The proposed regulations and service standard under the Circular Economy Act (which are the subject of this RIS) are intended to provide the regulatory framework necessary to facilitate a consistent and timely transition to the new household waste and recycling system by councils and ARV across Victoria. The regulations and service standard are being developed in parallel due to key linkages between the instruments:

- the regulations will prescribe (set) when the mandatory requirement on councils and ARV to provide municipal residual waste and recycling services (for general rubbish, mixed recycling, glass recycling, and FOGO streams) under section 60 of the Circular Economy Act will commence, and
- the service standard will complement the regulations by specifying the manner in which councils and ARV will be expected to provide their municipal waste and recycling services (i.e. detail around acceptable service arrangements).

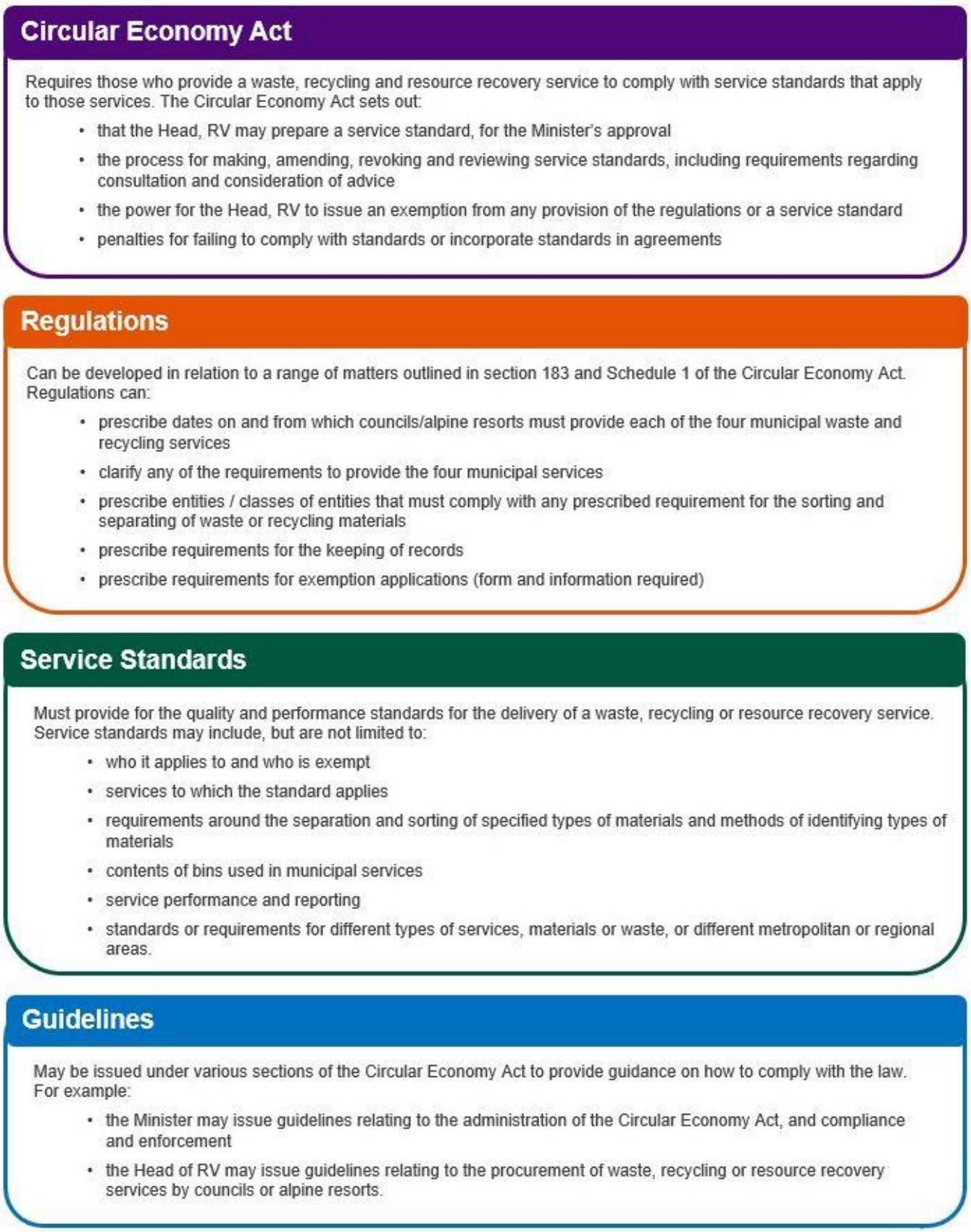
The proposed regulations will also outline compliance and enforcement matters, including the appointment and function of auditors, which are intended to apply broadly across the Act and to any regulations and service standards. The proposed regulations also set out infringement offences and infringement penalties for certain offences contained in the Circular Economy Act and the Circular Economy (Waste Reduction and Recycling) (Risk, Consequence and Contingency Plans and Other Matters) Regulations 2023. The Circular Economy (Waste Reduction and Recycling) (Risk, Consequence and Contingency Plans and Other Matters) Regulations 2023 focus predominantly on risk, consequence and contingency planning requirements under the Circular Economy Act and also include provisions relating to general exemption application requirements, which will apply broadly and in the context of any regulations and service standards made under the Act.

Matters that are in and out of scope of the service standard and regulations are summarised in Table 6.

Figure 3 below outlines the application of the Circular Economy Act, regulations, service standards, and guidelines.[20]

[20] (DELWP, 2020)

Figure 3: The application of the Circular Economy Act, regulations, service standards, and guidelines



1.3.1 Container Deposit Scheme

A container deposit scheme (CDS) is a scheme that provides a small refund for the return of specific containers to collection points. An estimated 3.31 billion beverage containers are consumed in Victoria every year, increasing by 1% annually.[21]

To reduce the littering of these containers, increase resource recovery rates and produce high-quality recycled material for manufacturing, Victoria commenced a CDS in November 2023.[22] Under this CDS, a 10-cent refund is available for each eligible drink can, carton and bottle returned to a specified refund collection point (e.g. a reverse vending machine).[23]

Implementing both a separate household collection of glass and a CDS will deliver combined benefits. A CDS will help to reduce litter, recover more beverage containers for recycling and produce a stream of clean and high-quality material that can be reused or remanufactured into new products. Given most eligible containers are consumed when away from home, a CDS helps Victorians to recycle when they are not at home.

A RIS for Victoria's CDS was completed in May 2022 and can be found on the Better Regulation Victoria website at https://www.vic.gov.au/regulatory-impact-statements-2022.

1.3.2 State government agencies

Waste and recycling service provision is also influenced and regulated by state government, through a range of organisations:

- The Department of Energy, Environment and Climate Action (DEECA) supports the development of policy, laws and regulations and provides governance oversight and coordination of policy implementation.
- Recycling Victoria, a dedicated business unit within DEECA established on 1 July 2022, supports the Head, Recycling Victoria in discharging their statutory powers and functions under sections 16 and 17 of the Circular Economy Act. The Head, Recycling Victoria supports Victoria's transition to a circular economy through providing leadership, stewardship and oversight of the waste, recycling, and resource recovery sector, and regulating the sector to improve its reliability and transparency.
- Sustainability Victoria accelerates Victoria's transition to a circular, climate resilient clean economy through investment and innovation, education and behaviour change expertise and programs, and driving community action.
- The Environment Protection Authority Victoria (EPA) is the state's environmental regulator aimed at preventing and reducing the harmful effects of pollution and waste on Victorians and their environment. The EPA enforces the General Environmental Duty and specific waste duties under the *Environment Protection Act 2017* and is responsible for administering environmental permissions for waste and resource facilities and transporters.

1.3.3 National reform

The Australian Government, through the Department of Climate Change, Energy, the Environment and Water (DCCEEW), is responsible for preparing national waste policy and action plans and reports. The Australian Government regulates the export of waste glass, plastic, tyres, and paper. Through the *Recycling and Waste Reduction Act 2020,* the Australian Government has put in place legislation to regulate the export of unprocessed waste overseas. The national regulation of waste exports for waste glass, plastic and tyres has commenced, with mixed and unsorted paper and cardboard coming into effect on 1 July 2024. By limiting exports of these materials to those that are properly processed, Australia is taking responsibility for its waste.[24]

Figure 4 below outlines the roles of government, businesses, the community and the waste and recycling industry in developing a circular economy.[25]

[21] (DELWP, 2022, *Regulatory impact statement – Container deposit scheme*)

[22] As above.

[23] As above.

[24] (Department of Agriculture, Water and the Environment, 2021)

[25] (DELWP, 2020)

Figure 4: The roles of government, businesses, the community and the waste and recycling industry in developing a circular economy

1.4 About this Regulatory Impact Statement

The preparation and making of regulations and legislative instruments are subject to requirements specified in the *Subordinate Legislation Act 1994*, which include the preparation of a Regulatory Impact Statement (RIS).

A RIS presents analysis based on evidence that enables the government to consider all relevant information before making a policy or regulatory change. This RIS has been prepared in accordance with the *Victorian Guide to Regulation*, which provides a best practice approach to analysing any proposed regulatory intervention.

This RIS outlines the range of regulatory options considered and assesses the impacts of each. Analysis is provided in quantitative terms where practicable, to ensure the costs of each option are not disproportionate to the benefits. The quantitative analysis and broader context are used to describe why the Victorian Government's proposed regulations and proposed service standard are the preferred option.

The RIS supports effective consultation by enabling stakeholders to comment on the detailed analysis, evidence and judgements being considered by the Victorian Government. There has been consultation with key industry, community and council and Alpine Resorts Victoria stakeholders to inform the development of the proposed regulations, service standard and RIS. A detailed description of the stakeholder consultation process is provided in Chapter 7.

This RIS and the proposed regulations and service standard will be released for an 8-week period to provide councils, ARV, industry and the Victorian community the opportunity to provide feedback. Public consultation will close at 11:59 pm, Wednesday 14 August 2024.

The RIS and proposed regulations and service standard are available on Engage Victoria, the Victorian Government's online consultation platform, at Setting the standard for better recycling at home | Engage Victoria. All comments and submissions will be treated as public documents unless the comment or submission clearly indicates that the comment or submission is confidential.

Those who wish to provide feedback can do so by completing the online survey on Engage Victoria.

DEECA will consider all submissions received during the period of public review and will prepare a formal Response to Public Comment summarising the submissions received during the consultation. The Response to Public Comment document will be made available on Engage Victoria.

2. Problem analysis

2.1 Reform Context

The development of the CE Policy has been informed by a range of factors including a number of reviews into waste management in Victoria. These have examined issues facing the Victorian waste and recycling sector and provided recommendations.

The Victorian Auditor-General's Office (VAGO) 2019 report to Parliament, *Recovering and Reprocessing Resources from Waste,* examined a range of issues facing the Victorian waste and recycling sector and made six recommendations for the former Department of Environment, Land, Water and Planning (DELWP), including the development of a state-wide waste and recycling policy.[26] Infrastructure Victoria's 2020 *Advice on recycling and resource recovery infrastructure* focused on six priority materials including plastics, paper and cardboard, glass, organics, tyres and e-waste and made thirteen recommendations, including for the development of recycling capacity and capability.[27]

In response to the direction set by the CE Policy and the legislative requirement for councils and ARV to provide four core municipal waste and recycling services (which is to formally commence via dates prescribed in the proposed regulations), councils and ARV are in the process of gradually transitioning their service offerings, ahead of this requirement becoming mandatory via subordinate legislation. As of January 2024, of the 79 councils in Victoria, 53 have introduced FOGO services, and 31 offer a separate glass service (with 16 councils offering a kerbside glass service and 15 councils offering a drop-off service for separated glass).

2.2 Current challenges

The Victorian waste and recycling sector has experienced service disruptions and incidents in recent years, which has undermined community confidence in recycling. Some of these challenges are addressed below.

2.2.1 Population Growth

Population growth will, over time, see increasing amounts of MSW generated and place greater demands on municipal waste and recycling services. In September 2022, the population of Victoria was 6.656 million,[28] and is projected to reach about 10 million by 2046.[29] Waste generation projections estimate that by 2046, over 20 million tonnes of materials will enter Victoria's waste and recycling system annually, meaning that the state's waste and recycling industry will need to manage more than 40% more waste material than it does now.[30]

2.2.2 Market structure

Most councils and ARV contract private operators to conduct their waste management services.[31] However, councils and ARV currently have limited choice when it comes to suppliers of collection and disposal of general rubbish, and collection and processing of recycling and FOGO, as a result of a thin market with few operators, some of which are large and vertically integrated (i.e. the same company may be involved in multiple stages of the supply chain, such as collecting, sorting, processing, and/or manufacturing). Five suppliers currently make up around 57% of the state's general rubbish and mixed recycling market.[32] Suppliers also currently provide different services which may or may not suit each council's needs, limiting the options of suppliers that councils can choose to engage. Through engagement with councils, the Department has heard that in this context, it is difficult for councils to create any more competitive tension

[26] (VAGO, 2019)

[27] (Infrastructure Victoria, 2020)

[28] (Department of Transport and Planning, 2022)

[29] (DELWP, 2019)

[30] (SV, 2018)

[31] (VAGO, 2021, *Do local councils' waste management services provide value for money?,* p. 6)

[32] As above.

and realise further savings.[33] The proposed regulations and service standard are not expected to exacerbate the state's current thin market situation and may instead help alleviate it. The service standard requires councils and ARV to accept certain items in each waste stream and the service standard must be incorporated into any agreements or contracts in place with suppliers of services. The current absence of standardised lists of accepted waste materials for each of the four streams has created an environment in which:

- There is inconsistent facility equipment across waste and recycling sites. The available facility equipment often dictates the services that can be procured by councils and ARV.
- There is a lack of investment certainty. The range of facility equipment and services that could be invested in does not send clear signals to investors, which can limit new entrances to the market and keep the market thin.
- It is difficult to achieve economies of scale as different facility equipment means different materials can be accepted for processing.
- The differences in facility equipment and accepted materials means that recycling facilities output commodity streams of differing composition and contamination. These output variances mean volumes of consistent commodities are reduced, which can result in lower commodity prices.

2.2.3 Barriers to increasing recycling

Incorrect sorting and contamination of waste streams

Victorians overwhelmingly support recycling. In response to surveys conducted by Sustainability Victoria in 2020 and 2021, eight in ten Victorians agreed that recycling is important to protect the environment, that it is the responsibility of all Victorians to put the right items in their recycling service, and that people need to think carefully about what can and can't be recycled.[34] 92% of people polled by Infrastructure Victoria said that they are willing to change the way they sort their household waste materials.[35]

Market disruptions (for example, the REDCycle insolvency, further outlined below), have affected community confidence in the recycling system. While most Victorians perceived that recycling eventually gets recycled into new products (six in ten believe this to be likely), three in ten think it is likely that recycling ends up in landfill.[36] This aligns with polling conducted by Infrastructure Victoria, with approximately 25% of people polled holding the belief that the contents of their recycling bins ends up in landfill.[37] Community members who believe that recycling collections go to landfill may not be motivated to recycle correctly.

However, many Victorians are confused about how to recycle correctly, with 42% of people agreeing or strongly agreeing with the statement 'It's really hard to know what you are supposed to put in the recycling bin and what you shouldn't'.[38] This confusion often leads to unintentional incorrect sorting of recycling.

Lack of confidence in the circular economy may change public willingness to engage with the system and impact adoption of positive recycling and resource recovery behaviours.

In 2019-20, councils collected 2.37 million tonnes of waste from Victorian households. Of this, only 45%[39] was recovered for recycling.[40] This recovery rate is significantly lower than Victoria's overall recovery rate (69 %).[41] The extensive range of materials present in household waste makes it challenging to separate into individual material streams and means that it often has high levels of contamination due to incorrect sorting.

[33] As above, p. 3.

[34] (Spicer, 2021, p. 3)

[35] (Infrastructure Victoria, 2020, p. 4)

[36] (Spicer, 2021, p. 49)

[37] (Infrastructure Victoria, 2020, p. 4)

[38] (Spicer, 2021, p. 42)

[39] All waste percentages listed are by weight.

[40] (SV, 2021, p. 16)

[41] As above, p. 9.

Many waste materials generated by households are recyclable. According to SV analysis, in 2016-17, Victorians sent approximately 33% of the waste they generated at home to landfill.[42] Approximately 65% of this landfilled material could be viably recovered and reprocessed.[43]

Incorrect recycling behaviours impact on the ability of recycling streams to be recovered. When incorrect items are placed in a recycling stream intentionally, unintentionally, or because the required recycling streams are not available, the recycling is contaminated and sent to landfill, losing its value. If a recycling stream is heavily contaminated (e.g. if the paper/cardboard stream cannot be separated from other material like food waste and small pieces of glass), it may not be feasible to process it. High levels of contamination can lead to an entire load of recycling being sent to landfill.

Low quality recycled material is not valuable and has limited markets. The cost to collect, sort and process this material, or to send it to landfill, is passed on to households by councils in the form of higher waste charges.

Limited source separation of household recycling

Victorian councils and ARV currently offer two, three, or four waste and recycling services. Where two services are provided, these are mixed recycling and general rubbish; where three or four are offered, the additional service(s) may be FOGO, garden organics only, or glass recycling. As noted in Chapter 1, some councils and ARV have commenced rolling out glass recycling and/or FOGO services in line with the CE policy and the obligation (not yet in force) set out in the Circular Economy Act.

While the mixed recycling stream is an efficient system for the collection of some recyclables, such as metals, other material types can be contaminated due to the commingling of different materials. Glass bottles and jars frequently break during the collection process. When collected with other materials, small pieces of broken glass (glass fines) contaminate otherwise recyclable paper/cardboard and plastics and it is very difficult to then separate glass from these other materials. Collecting glass along with other mixed recyclables reduces the value of both the glass and mixed recyclables, making it more difficult for these materials to be reprocessed into new products.

Food scraps and items that aren't recyclable can also contaminate household recycling and lead to lower quality material. The contamination rate in Victorian household mixed recycling bins in 2019-20 was 13%.[44]

If food organics are not collected through a combined FOGO stream, these materials are usually placed in the general rubbish stream and sent to landfill. While garden organics are accepted at most council transfer stations and resource recovery centres, residents may not take the additional step to transport them due to the time and effort involved. Food organics are not typically collected at transfer stations/resource recovery centres.

Limited recycling of food and garden organics reduces opportunities for this material to be transformed into compost, increases landfill rates, and contributes to higher greenhouse gas emissions from the degradation of food waste in landfill relative to if food waste were composted.

Inconsistencies between household waste and recycling services provision across the state

At present, Victorian household's access to waste and recycling services depends on the local government area they reside in. As a result, there is great inconsistency across the state in the waste and recycling services offered to households.

Inconsistencies between items accepted in recycling services between councils undermines trust in the recycling system and undermines resident's motivation to correctly sort recyclables from landfill.

Council-provided services differ in terms of overall service arrangements (kerbside versus drop-off services), kerbside service models (whether kerbside services are offered on a compulsory, opt-in, or opt-out basis), colours used to denote each stream, and materials accepted in each stream. The materials accepted in each stream in a local government area are determined by contracts between councils and the recycling facility that receives, sorts and/or processes the material and are limited by the services offered by the companies that tender for those services. Some materials are accepted in some local government areas and not in others. For the mixed recycling stream, this includes (but is not limited to) beverage cartons, aerosol cans, pizza boxes, and various types of rigid plastics. For the FOGO stream, this includes cooked bones, shellfish

[42] (VAGO, 2019)

[43] As above.

[44] (SV, 2021)

shells, compostable plastic items, and paper/cardboard items. There are also significant variations in how materials are described in councils' lists of accepted and not accepted materials, and the level of specificity given. For example, beverage cartons might be described as 'Tetra Paks', only certain types of beverage cartons might be accepted (e.g. milk cartons), or they may not be mentioned at all.

Where a type of material is only accepted and sorted in some local government areas and not others, this decreases investment incentives in infrastructure and technology for processing that material. If a material is collected only in low quantities and its supply is uncertain, industry is unlikely to take the economic risk of investing in processing it (e.g. beverage cartons, soft plastics).

Additionally, the bin lid colours vary across council. As a quick visual indicator of which bin contains what waste stream, variances in bin lid colours across councils can cause confusion as people move across local government boundaries. The confusion can erode public trust in the waste system and lead to materials being incorrectly sorted for disposal or recycling.

These inconsistencies mean that state-wide communications are limited to general statements about correct recycling behaviour, reducing the potential impact of these communications.

Local recycling infrastructure and markets

Local recycling infrastructure and markets have been affected by a range of recent market disruptions.

China National Sword policy and closure of SKM

In 2016-17 nearly all of Victoria's plastic exports and 75% of paper and cardboard was exported to China.[45] However, the 2018 introduction of China's National Sword Policy which introduced more stringent restrictions on the importation of recyclable waste, effectively removed this market for Australia and disrupted international commodity flows for recyclable waste streams, including plastics and paper and cardboard.

Victoria's recycling system was particularly exposed to these changes, because approximately 46% of all recycled paper and 65% of all recycled plastics were previously exported overseas.[46]

As Australian Materials Recovery Facility (MRF) operators tried to locate new markets for recyclable materials, much of this material was sent to landfill to avoid unsafe stockpiling, which undermined public trust in the recycling sector.

Changes in global recycling and resource recovery markets, alongside ongoing financial and compliance issues, led to the closure of SKM Services Pty Ltd, a local recycling service provider to a large portion of Victoria's councils, in July 2019. Consequently, 34 Victorian councils were left without a household recycling service. While some councils secured alternative recycling providers, many had no choice but to temporarily send recyclable material to landfill.[47]

The Victorian Government worked in partnership with councils and the recycling industry to minimise this recycling service disruption to Victorian households. A $6.6 million relief package to alleviate financial pressure on councils also helped to reduce impacts on households and councils.

While council recycling services have since resumed, Victoria's recycling infrastructure requires further development and maturation, and new markets for some materials remain in the establishment phase.

Most material previously exported for processing now needs to be processed locally, in line with recent Australian Government legislation regulating the export of unprocessed waste overseas. Some of this material is processed domestically (to meet export regulation requirements) and then exported, while some is both processed and recycled domestically.

REDcycle soft plastics insolvency (2022)

REDcycle provided soft plastic recycling services to major Victorian supermarkets across the state. In late 2022, the company suspended its services. EPA commenced investigations after becoming aware of approximately 3,000 tonnes of soft plastics stockpiled in warehouses across Melbourne, including plastics that had come from outside of Victoria.

[45] (Infrastructure Victoria, 2019, p. 11)

[46] (DELWP, 2020)

[47] (Victorian Parliamentary Budget Office, 2019)

With conditional interim authorisation from the Australian Competition and Consumer Commission (ACCC), the major supermarkets (Woolworths, Coles and Aldi) formed a Soft Plastics Taskforce in late 2022 to seek to develop and implement a short-term solution for the storage, transportation, processing, recycling and/or management of soft plastics.

Variable commodity prices and demand for recyclables

Recyclable materials are commodities with fluctuating price points. The commodity price is influenced by a range of factors, including demand for the commodity and cost to recover the materials. Recyclers and processors will closely monitor commodity prices for recyclable materials and adapt their business operations around the pricing. High demand for recyclable materials and a high commodity price provides a direct financial incentive for recyclers and processors to try to collect and sell for recycling as much of that material as they can. Conversely, low demand and low commodity prices can influence recyclers and processors to stop collecting those recyclable materials, stockpiling the materials they have collected until the price increases, and potentially sending the materials to landfill if the material cannot be stockpiled or if stockpiles become unsafe or unviable. Additionally, when demand and commodity prices are lower, this can make it difficult for recyclers and processors to cover the costs associated with labour, transport, energy, and other overheads required to collect and process some materials, making their recovery less financially viable.

2.3 Harms caused by limited recovery of recyclables

2.3.1 Environmental harms

Greenhouse gas emissions and other negative externalities (associated with landfills and transportation)

When food waste decays in a landfill instead of being composted, it releases landfill gas, which predominantly consists of methane and carbon dioxide. In 2021, landfills in Victoria accounted for 2.7 million tonnes of carbon dioxide equivalent (CO2-e) or 3.4% of Victoria's net emissions.[48]

Landfills pose other environmental risks. They produce leachate, a liquid that forms when waste like food organics decomposes, which (if not properly contained and removed) can enter groundwater and cause harmful contamination. Landfilling food organics also impacts on amenity, as this material can attract vermin. Landfill operators are required to actively manage these issues to ensure environmental harms are avoided wherever possible but such impacts on amenity are not able to be eliminated completely.[49] Where food organics are composted or used to make biogas, they do not contribute to these issues. Recycling reduces reliance on new landfills; each tonne of paper recycled saves three cubic metres of landfill space.[50] This is important in the context of Victoria's landfill capacity is becoming more constrained, particularly in metropolitan Melbourne, as a result of population growth and other pressures.

There is limited space for landfills in Victoria and the continued generation of landfill waste will mean that more landfill space needs to be created. Creating new landfill space can lead to the destruction of the natural environment and result in habitat loss, impacting Victoria's native flora and fauna. Landfills also present amenity impacts from vehicle movements, noise, dust and odour.

When glass is collected with other recyclables, this reduces the degree to which collected materials can be compressed inside the collection vehicle (known as the 'compaction rate'). This means that glass-inclusive mixed recycling fills the vehicle more rapidly than glass-exclusive mixed recycling, necessitating more collection trips. This carries higher costs and higher greenhouse gas emissions. Increased collection costs can be significant, as collection accounts for close to eighty percent of the cost of councils' waste and recycling services.[51] Transportation from a recycling facility to landfill where the recycling is contaminated and therefore not fit for further processing will also increase greenhouse gas emissions. Separate glass recycling can typically be collected less frequently than other materials.

Reliance on non-recycled materials (depletion of finite resources and greenhouse gas emissions associated with their use)

Where recyclables from households are contaminated/insufficiently separated, their uses are limited. For example, recycled organics products like FOGO-derived compost are unsuitable for use in agriculture if

[48] (DCCEEW, 2021)

[49] (EPA Victoria, 2020)

[50] (DELWP, 2020, p. 25)

[51] (VAGO, 2021, *Do local councils' waste management services provide value for money?)*

contaminated with materials like plastics and glass. Contaminated mixed plastics, meanwhile, cannot meet the standards required to produce food-contact plastics suitable for food and drink packaging.[52] More waste material from households could be used for these applications if the material were less contaminated, further separated, and collected in higher tonnages.

The lack of availability of recycled materials that meet industry requirements means that manufacturers continue to primarily use raw or virgin materials. Virgin materials require the extraction of finite resources and contribute to greenhouse gas emissions. Recycling glass, plastics, paper/cardboard, steel, and aluminium reduces energy consumption by minimising the energy-intensive steps required in the extraction, processing, and transportation of raw materials. Producing recycled aluminium and steel requires approximately 95 and 60% less energy than new aluminium and steel, respectively,[53] while greenhouse gas emissions are reduced by one tonne for every six tonnes of recycled glass used in place of new glass.[54] Recycling paper and cardboard halves the environmental impact of non-recycled paper production.[55]

If all packaging that was landfilled in Australia in 2020–21 had instead been recycled, this would have reduced greenhouse gas emissions by approximately 2.2 million tonnes—equivalent to removing 740,000 cars from the road for a year.[56]

While packaging made from recycled material is typically more expensive to produce than packaging made with new material, many brand owners are motivated to incorporate recycled content into their products in response to customer expectations about responsible packaging.[57] If brand owners are unable to source appropriate recycled materials locally, they will continue to use virgin materials or import recycled content from overseas, involving transport costs and higher greenhouse gas emissions.

2.3.2 Economic harms

Lost value of recycling

A 2019 report estimated that with greater separation, sorting and processing of household recycling, $328 million in value could be extracted from materials collected in household recycling Australia-wide each year. These materials could be used productively by the manufacturing, construction, and agricultural sectors.[58]

Improving recycling behaviours and increasing source separation, as outlined above, are key to capitalising on the value of household recycling. When mixed recycling is collected, it must be sorted into material types before it can be further processed into new recycled material. There are significant costs involved in these processes. When recycling has a high percentage of contamination, its costs can be the same or even higher than the costs to dispose of general rubbish. Contaminated recyclables that are ultimately un-recoverable incur both sorting costs and landfill disposal costs. This means that the cost of contaminated recyclables can be almost double that of clean recycling streams, while also providing little to no economic value.

2.4 Case for government intervention

The key driver in transitioning Victoria's waste and recycling industry is in creating a strong domestic circular economy. As part of this, the Victorian government's CE Policy is supporting the development of a stronger local processing and manufacturing industry to reuse and recycle more and reduce emissions and landfill.

The transition from an export-reliant recycling industry to domestic processing is a challenge that requires Government intervention, in the form of legislation and regulation. This will allow for stronger oversight of the recycling system, setting rules and standards, and will incentivise industry investment in priority infrastructure to support increased recycling, as well as change how Victorians recycle so that materials collected from households are high quality and can be used again to make new products.[59] Without mandating

[52] Australian Standard for plastics materials for food contact use, AS 2070—1999.

[53] (National Institutes of Health, n.d.)

[54] (European Container Glass Federation, 2016)

[55] (ACT Government, 2018)

[56] (DCCEEW, n.d.)

[57] (Australian Packaging Covenant Organisation Ltd. (APCO), 2000)

[58] (Reardon, Jeyaretnam, & Heath, 2019)

[59] (DELWP, 2020)

standardisation through regulations and service standards, the benefits of higher quality material streams are unlikely to be fully realised.

At present, service provision differs from council to council, including in relation to the services provided, bin lid colours used to identify those services, and the items accepted in each stream. This gives rise to confusion among householders about how to recycle correctly. Standardising services through mandatory requirements will reduce this confusion and go some way to address inconsistency in service provision to households across the state.

In addition, a standardised waste and recycling system that is easy to communicate and understand is required to increase recovery and reduce contamination, and to build a valuable domestic market for recovered materials. Improving separation and sorting of recycling at the household level will support the value and stability of recycling markets.

Prior to the Circular Economy Act, there was no legislation in Victoria that considered the waste and recycling sector as a whole in the context of circular economy objectives, setting obligations and enabling the setting of standards for the sector. Service standards and regulations made under the Circular Economy Act will set rules for councils and ARV relating to the provision of the four-stream waste and recycling system.

Separating waste materials into categories at the source (e.g. into household waste and recycling streams) is required to increase the quality of recycled products and divert recyclable material from landfill. For example, glass collected separately is better quality, enabling it to be transformed multiple times into new bottles and jars.

Giving Victorian households access to a FOGO stream would significantly reduce greenhouse gas emissions associated with disposing of organic waste in landfill and enable this material to be returned to productive use, primarily by being turned into compost to improve and fertilise soil. Food organics can also be used to produce biogas, an energy source.

These regulatory interventions will aid in improving incentives across the waste and recycling supply chain to reduce landfill and recover more materials that can be reused.

3. Options

3.1 Objectives for action

The proposed regulations and service standard aim to provide a simpler, consistent household waste and recycling service which:

- reduces emissions
- captures greater value of recyclables and result in less extraction of virgin materials
- reduces the volume of household recyclables and organic material being sent to landfill.

The service standard is intended to provide for state-wide consistency while allowing for some flexibility in how services are delivered in certain circumstances, to suit local needs.

3.2 Regulatory scope

3.2.1 Scope of the proposed regulations

The regulations are proposed to cover:

- commencement of the obligation on councils and ARV to provide services for the four streams under section 60 of the Circular Economy Act (i.e. the date on and from which councils and ARV must provide the four services)
- provisions to give effect to compliance and enforcement powers, particularly the appointment of auditors and their functions in addition to infringement offences and penalties.

3.2.2 Scope of the service standard

The service standard will cover:

- who the standard applies to;
- which services it applies to;
- acceptable service arrangements (including how to determine kerbside versus drop-off service provision, and various requirements for kerbside and drop-off services, such as outlining access requirements for drop-off services, standard lists of accepted and not accepted items for each service (standard lists), and standard colours for bin lids, labelling and signage for each service); and
- the date the service standard will commence.

3.2.3 Who the service standard will apply to

The service standard is proposed to apply to councils and ARV and their contractors where they provide a municipal waste and recycling service to households.

For the purposes of this service standard, the term ‘household’ includes single-dwelling developments, multi-unit developments, temporary boarding houses, public housing and retirement villages/nursing homes.

The service standard will not apply to other household waste and recycling service providers (i.e. owners corporations or owners corporation managers) where councils and ARV are not party to the service contract.

3.2.4 What elements of service provision the service standard will cover

Table 6 below outlines the elements that are in and out of scope of the service standard and regulations.

Table 6: Elements in and out of scope of the service standard and regulations

Element	In scope	Out of scope
Who it will apply to	Councils and ARV and their contractors	Other parties responsible for procuring household waste and recycling service providers for residents (i.e. owners corporations or owners corporation managers).[60]
What services are required	Household waste and recycling services	• Residential dwellings (including multi-unit developments, temporary boarding houses, public housing, retirement villages and aged care facilities) serviced by private waste and recycling collection arrangements as contracted by the owners corporation or facility owners or operators; • hard waste collections; • public place bins that are not part of a household drop-off service, such as council-serviced bins in parks and reserves; and • non-residential properties serviced by councils and ARV, as these will be considered in the context of future reforms to require businesses to sort their waste. [61]
Proposed inclusions/exclusions in the service standard	The date when the standard will commence Acceptable service arrangements: – kerbside versus drop-off service provision – various requirements for kerbside and drop-off services, such as outlining what is reasonable access to drop-off services – standard lists of accepted and not accepted items for each stream (standard lists) – standard colours for bin lids, labelling and drop-off signage.	Some infrastructure considerations: • bin sizes/configurations; • bin body colours; • frequency of collection; and • the naming of streams. Specific service performance and reporting requirements.

[60] These other private service providers may be addressed through subsequent service standards to ensure that, in time, all households will have access to consistent services. In the interim, such service providers are encouraged to enter an arrangement that reflects the household service standard that will apply to councils and ARV.

[61] The proposed scope of the household service standard is not intended to prevent or preclude councils and ARV from operating consistently with the standard in servicing non-residential properties (e.g. small businesses) if it is appropriate to do so. However, the household service standard will not mandate this.

3.3 Options design

This chapter details different options for achieving the objectives outlined in the previous chapter through the service standards and supporting regulations. A non-regulatory approach is unlikely to sufficiently address the problems with the quantity and quality of household recycling outlined in Chapter 2.

The proposed regulations and service standard outlined in this RIS and the options analysed were developed and informed with the aid of the following processes:

- consultation through development of the Circular Economy Act
- analysing the design and performance of other systems for glass and FOGO
- public consultation on the draft standard lists of accepted and not accepted items in each stream (Nov 2021 – Jan 2022), and
- preliminary public consultation on proposed policy settings to underpin the regulations and service standard in relation to municipal waste and recycling services, including targeted workshops with council and alpine resort representatives (September – October 2022).

In general, consultation has confirmed the approach to options design. Industry stakeholders recognised the benefit of the standardisation to bin contents and the need to improve the quality and quantity of recycled material. Councils sought greater flexibility regarding service delivery. Further analysis of the consultation can be found in a consultation summary published on the Engage Victoria website.

3.4 Options not further analysed

Some options were considered in the early policy development phase and not progressed. These include giving councils and ARV the discretion to provide separate food organics (FO) and garden organics (GO) services (rather than a combined FOGO service) and variations to the standard lists.

A range of other options were considered by DEECA and Recycling Victoria during the development of the regulations and service standard. Some of these were identified as not being feasible regulatory options, and as a result have been discounted and are not assessed in this RIS. These include the option of alternative commencement dates for the obligation to provide the services and the service standard (2027/2030 and a staged approach) and alternative arrangements for separate glass and FOGO collection.

3.4.1 Separate services for food organics and garden organics

The vast majority of councils that already provide FOGO services do so via combined collection of food organics (FO) and garden organics (GO). The Department considered whether it would be beneficial to give councils and ARV discretion within the service standard to provide the FOGO service either via combined collection or via a service that collects FO separately from GO. It was determined that allowing for this variation with full discretion would undermine the consistency objective of the service standard. However, it is acknowledged that a FOGO service that collects FO separately from GO may be appropriate for some councils where it is not financially or logistically achievable to provide combined collection (e.g. in some rural or regional areas).

Therefore, the proposed service standard stipulates that the FOGO service is to be provided with combined collection of FO and GO unless this is not reasonably practicable. If a council or ARV provides the FOGO service as a service that collects FO separately from GO, the council or ARV must take all reasonable steps to ensure that collection includes the items in the standard contents list for FOGO; publish the assessment that finds it is not reasonably practicable to provide combined collection, for the community to access; and review this assessment at least once every 3 years.

3.4.2 Variations to standard lists

Council/ARV discretion to accept/not accept some materials

The Department considered an alternate approach to the standard lists that would allow some specific materials, specifically soft plastics in the mixed recycling stream and compostable plastic caddy liners in the FOGO stream, to be accepted or not accepted based on individual contracts with processors.

Soft plastics

The Department considered whether soft plastics should be accepted in the mixed recycling stream by all councils and ARV, or not accepted by any councils or ARV. The Department has determined that, in order to support advanced recycling investment, where processors engaged by councils and ARV can sort soft plastics and an off-take agreement is in place, soft plastics can be included in the mixed recycling stream.

The intent of this approach is to support CE policy objectives to incentivise the growth of private investment in recycling by indicating to advanced recycling providers that the capacity will exist to collect materials at scale. Once the ability to sort and process soft plastics has expanded sufficiently and the majority of councils and ARV have access to these advanced recycling providers, the approach to acceptance or otherwise of soft plastics in the mixed recycling stream may be updated (potentially via a future amendment to the service standard).

While initially this approach partially undermines the consistency objective of the service standard, government expects that in the future once soft plastics recycling capacity is fully established in the state, soft plastics is likely to become an accepted item in the mixed recycling stream for all councils (i.e. achieving the consistency objective in the long term).

Compostable plastic caddy liners

In the Discussion Paper [62] (released September 2022), it was proposed that compostable plastic caddy liners be accepted in the FOGO stream where they met certain requirements (certified to AS 4736,[63] green in colour, with no handles). This proposal aimed to enable households to use compostable plastic caddy liners while standardising the type of liners accepted, supporting suitable caddy liners to be more easily identified by households and the recycled organics industry. This proposal was in recognition of the close resemblance between certified compostable plastic caddy liners and contaminants like uncertified/conventional plastic bags (particularly when FOGO materials are mixed together at organics processing facilities) and aimed to make certified compostable plastic caddy liners more readily distinguishable from uncertified/conventional plastic bags.

During consultation, the recycled organics industry raised concerns about the use of compostable plastic caddy liners, including that:

- caddy liners frequently contain contaminants such as plastic
- use of caddy liners makes it difficult for processors to detect and remove contaminants from the FOGO stream (as they are contained/hidden in the caddy liner)
- it is not feasible for organics processors to manually open and inspect the contents of all caddy liners due to the extensive time and labour that would be required, and so they are removed by some processors and disposed of to landfill
- knots tied in caddy liners take significantly longer to biodegrade in compost than the caddy liners themselves, appearing as visible contamination
- recycled organics processors need to ensure low contamination rates in the FOGO stream to meet end market requirements for compost products.

To support the achievement of CE objectives, it is now proposed that compostable plastic caddy liners are not accepted in the FOGO stream. It is acknowledged that some households prefer to dispose of FOGO in compostable plastic caddy liners to avoid odour and other amenity issues that come with disposing food organics material directly into the FOGO bin and that these households may be reluctant to sort these materials appropriately. However, there are alternative options for wrapping food waste material and lining caddies, including paper caddy liners, newspaper sheets and paper towels, that are available to households.

Unlike soft plastics, which are ubiquitous, difficult to substitute and require a recycling solution, compostable plastic caddy liners simply provide a means to transport recyclable material (food waste) and can be replaced by suitable alternatives.

[62] (DELWP, 2022, *Discussion Paper: The standard of service for the delivery of waste and recycling services to households by councils and alpine resort*)

[63] Australian Standard for Biodegradable Plastic-Biodegradable Plastics Suitable for Composting and other Microbial Treatment, AS 4736—2006.

3.4.3 Commencement of 2027 for separate glass recycling and commencement of 2030 for FOGO

The CE Policy, published in 2020, proposed that councils and ARV be required to comply with the obligation to provide the four streams under the Circular Economy Act and the service standard by providing separate glass and mixed recycling by 2027 (e.g. 1 July 2027) and FOGO and general rubbish by 2030 (e.g. 1 July 2030).

At the time of developing the CE Policy, several considerations informed the timeframes for completing the household waste and recycling system reform, notably:

- existing council contract arrangements for household waste and recycling services, and
- existing market conditions, particularly for FOGO.

At the time, it was anticipated that the existing contractual arrangements for councils may hamper the transition to new services and that contractual penalties would be applied should councils seek to introduce services before the end of their existing contractual arrangements. Based on the information available in 2019, the latest date of existing contracts expiring was 2027, at which point all 79 councils would have procured new services to facilitate the introduction of separate glass recycling services. However, councils that now offer a separate glass kerbside collection service have achieved this without councils experiencing contract penalties associated with changing existing contracts.

Despite significant effort and funding committed over the previous decade to build best practice processing capacity and strong, viable end markets for recycled organic products, a lack of capacity to receive and process FOGO in the market remained. In consideration of this market constraint, the CE Policy proposed a final transition date of 2030 for FOGO services to allow for more time for investment in end market development and infrastructure to redress the market supply and demand dynamic. FOGO capacity has increased ahead of this timeframe.

More recent government and private investment has now resulted in significant advances in the industry with respect to capacity and capability to receive and process recyclables and organic material, including the development of glass beneficiation facilities, organics processing facilities, advanced recycling technologies and an increase in market demand for recyclable materials. For example, Visy has expanded its Victorian-based beneficiation facility in Laverton by an additional 100,000 tonnes per year.

These developments mean there is no longer sufficient justification to delay the implementation of the four-stream reform to a 2030 completion date and there is in fact opportunity to realise CE objectives, including the benefits to the environment and the economy, ahead of schedule. Therefore, this RIS does not assess the option to commence the new services in line with the CE Policy dates.

Instead, the base case, discussed below, reflects the fact that councils are effectively working towards the original policy dates and as a result, significant progression towards service implementation as required by the Circular Economy Act has occurred.

3.4.4 Staged commencement approach

During preliminary consultation in September 2022, the Department tested an option of commencing the service standard according to a ‘staged’ approach.

Under a ‘staged’ approach, councils and ARV would be required to comply with the service standard from the date upon which they begin providing a new service or services. This would mean that there would not be a set, common commencement date for the service standard, but instead each council would have the flexibility to roll out the services (and in effect ‘switch on’ the requirement to comply with the service standard) when they are ready, up until a fixed end date. This was considered as it would provide each council and ARV with flexibility to transition to the new service on their own schedule and would mean that councils and alpine resorts who are already providing the services would have to comply with the service standard sooner.

While staged commencement would allow education on, or enforcement of, the service standard to begin earlier where services were in place, it would also involve extensive operational, compliance and enforcement challenges for Recycling Victoria, as each council and ARV would be subject to regulation from different dates. It would also present challenges in delivering consistent, statewide education of households, in that communications relating to the new four-stream system and what items are accepted in each stream

would not be able to be disseminated statewide until after the fixed end date. As a result, a staged commencement approach has been discounted as a feasible option and is not assessed as an option in this RIS.

3.4.5 Regulation of bin size and collection frequency

It has been decided that the service standard and regulations will not prescribe requirements that councils and ARV need to meet with respect to bin size and frequency of collection.

This is because councils and ARV require the discretion to adjust the service to meet community needs. This decision has been made in response to feedback received from councils and ARV during preliminary consultation on the policy settings for the regulations and service standard.

This will also not impact the standardisation outcomes that this regulatory approach is seeking to achieve, because the standardisation outcomes are achieved via other features of this regulatory reform, such as consistent bin lid colours and standard lists of accepted materials for each stream, and not by bin size and how often they are collected.

3.4.6 Alternative arrangements for separate glass and FOGO collection

This RIS does not assess an option allowing councils or ARV to *not* provide a separate glass recycling service to households. Section 60 of the Circular Economy Act mandates that councils and ARV must provide separate glass services to households in the municipal district or alpine resort that they service. As discussed in Chapter 1, the CDS complements the new four-stream household waste and recycling system. Implementing both a separate household glass recycling service in conjunction with the continued operation of the CDS will deliver combined benefits of both schemes. Neither scheme in isolation can deliver the full benefits of both.

Similarly, the Department has not assessed an opt-out option for household glass recycling services as part of this RIS because there are no equivalent systems/means to recycle glass within a household. The proposed service standard will however, allow for households to opt-out of the FOGO service, because there are already existing ways that households can manage FOGO waste (e.g. using home composting or via a community composting facility).

The Department has also not assessed options for full council discretion for service provision of either of the new FOGO or glass services as part of this RIS. This is because providing councils and ARV with complete discretion as to how they implement the four service streams (in terms of kerbside versus drop off arrangements, and kerbside service models) would not meet the overarching policy objectives of implementing standardised, consistent services across the state, achieving greater circularity of materials, ensuring easy and convenient household participation, and reducing the volume of material being sent to landfill. Full council discretion is also very similar to the base case, whereby councils are planning the introduction of new FOGO and glass services to residents in line with the CE policy dates and determining whether services are delivered via kerbside collection or drop-off facilities, and in the case of kerbside collection what kerbside service model (compulsory/opt-in/opt-out) is appropriate.

3.5 Other matters that were considered

The proposed regulations prescribe two matters for which no other options were considered. These are regulations relating to infringement penalties and auditors.

3.5.1 Infringement offences and penalties

Infringement notices offer an alternative method for dealing with minor offences, giving the person to whom an infringement notice is issued the option of paying a fixed penalty, rather than proceeding to a court hearing. This system uses incentives such as convenience of payment, lower fine levels than in open court, the avoidance of a conviction being recorded and saving of legal and other costs to resolve matters in an efficient and timely manner. The infringements system provides net benefits to all concerned – the offender, the prosecutor, the courts and the justice system generally.

The regulations prescribe infringement offences and penalties relating to compliance with the Circular Economy Act and its subordinate legislation. The infringement offences and penalties that have been set in these regulations ensure there are appropriate yet proportionate penalties in place to enforce compliance by individuals and businesses who have obligations under the Act.

The infringement penalty amounts have been set in accordance with the *Attorney General's Guidelines to the Infringements Act 2006*, in consultation with the Fines and Enforcement Services area of the Department of Justice and Community Safety. The setting of the infringement penalty amounts took into consideration for each offence under the Circular Economy Act and subordinate regulations, the appropriateness of an infringement as an enforcement tool, the gravity of the offence (i.e. is it sufficiently low in severity to be infringeable), whether the offence is sufficiently clear and easy to establish and whether the consequences for the offence are appropriate if enforced by infringement. An assessment was also carried out to ensure the proposed infringement penalties were within the maximum amounts permitted in the guidelines, were proportionate to the offending behaviour and maximum penalty in the Circular Economy Act and regulations, were consistent with comparable offences in other legislation and were unlikely to have an undesirable financial impact on the fine recipient.

The costs and benefits of the proposed infringement framework have not been modelled in detail in this RIS. It is acknowledged that having infringements may result in some impact on the behaviour of regulated parties (i.e. encouraging compliance which may increase costs) however on balance with the other regulatory levers (e.g. maximum penalties in the Act) and non-regulatory levers (e.g. education campaigns and support provided by the regulator), the additional impact of penalties and infringements prescribed in the regulations is likely to be minor. It is important to note that the infringement offences and penalties proposed in the regulations are related to minor administrative offences in the Circular Economy Act and not offences that are considered to be more serious in nature, such as non-compliance with the service standard.

A total of 16 infringement offences and associated penalties are proposed to be prescribed in the regulations, 14 in relation to offences in the Act and two in relation to regulations made under the Act. Proposed infringement penalties range from 1 to 12 penalty units (or $197.59 to $2371.08) in the case of a natural person and 5 to 60 penalty units (or $987.95 to $11,855.40) in the case of a body corporate.

The offences in the Circular Economy Act for which infringement penalties are proposed relate to a range of matters, such as failure to notify the Head, Recycling Victoria that a person is unable to comply with an exemption condition, failure to comply with a notice (e.g. information gathering notice, and particular aspects of improvement and prohibition notices), and refusal or failure to comply with a direction of an authorised officer. There are also two infringement penalties proposed for offences in the Circular Economy (Waste Reduction and Recycling) (Risk, Consequence and Contingency Plans and Other Matters) Regulations 2023 (RCC Regulations) relating to failure to notify the Head, Recycling Victoria regarding responsible entity status. A summary of the infringement penalties is provided in Appendix 1 (Table 27).

3.5.2 Appointment of auditors

Division 15 (sections 172 and 173) of Part 7 of the Circular Economy Act sets out the powers under which the Head, Recycling Victoria may appoint auditors and the functions of an auditor. Regulations can prescribe any additional persons or class of persons that may be appointed as an auditor, the functions they are able to perform under the appointment and any additional conditions or limitations that relate to that appointment. Regulations may also prescribe the circumstances in which the Head, Recycling Victoria may vary, suspend or revoke an appointment.

Under section 172, an employee of DEECA or a prescribed person or class of person may be appointed as an auditor. This appointment must be for a period not exceeding three years, subject to conditions or limitations specified in the appointment. Regulation 9 of the proposed regulations prescribes the functions of an auditor, which include auditing compliance with the Circular Economy Act and regulations and service standards made under the Act.

Regulation 8 of the proposed regulations prescribe persons who have relevant professional qualifications and appropriate expertise in one or more of the following fields as a class of person who may be appointed as an auditor under section 172 of the Circular Economy Act:

- auditing
- probity
- circular economy
- recycling
- waste management
- environment protection
- accounting
- risk management

- fraud investigation
- data security,
- cyber security, and
- information security.

For the purposes of section 173 of the Circular Economy Act, the proposed regulations also prescribe functions of an auditor, including to conduct audits to determine compliance and investigate complaints of non-compliance with the Circular Economy Act and regulations, service standards and agreements made under the Act, conduct site visits, prepare and provide reports on the finding of audits and maintain accurate and up-to-date records of audits.

The proposed regulations also prescribe a number of circumstances in which the Head, Recycling Victoria may vary, suspend or revoke an appointment. Examples of the circumstances include if it is no longer required for the purpose for which they were appointed, the auditor has contravened the Circular Economy Act, regulations or the conditions of their appointment, is not adequately performing their functions or has failed to meet performance standards specified in the appointment, there is a need to update the condition or limitation in the appointment (e.g. the scope of duties has changed), or any other matter that arises that the Head, Recycling Victoria considers to be relevant to the auditors suitability for appointment. They also set out how the Head, Recycling Victoria must provide written notice to auditors in these circumstances and provide an opportunity for the auditor to make a submission in relation to the proposed suspension or revocation of the appointment.

No other regulatory options were considered for the appointment of auditors, given the regulations prescribe matters that are set out and constrained by the auditor provisions in the Circular Economy Act. The auditor regulations are also enabling, in that without them, classes of persons listed above would not be able to be appointed as auditors under the Circular Economy Act and benefit financially from this business opportunity (when the appointed auditor is not an employee of DEECA). The costs and benefits of the auditor provisions in the proposed regulations have not been assessed as part of this RIS for these reasons.

3.6 Options examined

This RIS examines different options for the regulations and service standard against a base case. Details regarding the options that are being assessed are provided below. Chapter 4 outlines the analysis approach undertaken to assess the best option.

3.6.1 Base case

The ‘base case’ describes what Victorian household waste and recycling services would look like in the absence of the regulatory interventions described in this RIS. While the base case reflects regulatory arrangements for waste services in the absence of regulations to provide a commencement date for services under section 60 or requirements for service standards under section 62, the base case takes into consideration the stated intention of government to implement and achieve the recycling objectives of the CE Policy.

Under the CE Policy it is intended that all households serviced by councils and ARV will have access to a separated glass service by 2027 and a FOGO service by 2030. These dates were chosen at the time to give time for the industry to grow following export restrictions and a lack of domestic markets for some recovered materials.

Under the Kerbside Reform Support Fund, the Victorian government is providing funding to support councils to begin providing the new services and councils have provided DEECA with transition plans which demonstrate how they intend to do this. These transition plans have been used to inform the base case. In this way the base case reflects that there will be some progress towards the relevant Circular Economy Act goals for the four-stream household waste and recycling system throughout the state without further regulatory intervention.

As outlined in Chapter 2, some councils are already providing FOGO and separate glass services to their residents in accordance with their transition plans and as a result of the investment through the Kerbside Reform Support Program outlined in section 2.4. Other councils plan to roll out these new services in line with the dates published in the CE Policy.

Under the ‘base case’, councils have full discretion in how they choose to roll out new services. This includes full discretion as to whether services are provided via kerbside collections or drop-off services, and full

discretion as to how kerbside services are provided (the kerbside service model) – for example, on an opt-in or opt-out or compulsory basis. Some councils may choose to rely predominantly on drop-off services and/or choose to delay rolling out the new services till late 2027 and 2030.

As outlined in Chapter 2.4, full discretion without regulations or a clear standard of service provision makes it challenging to achieve the CE Policy target of halving the volume of organic material sent to landfill. Household recycling services typically take time to become optimised, with participation rates increasing as households adjust to their new services.

Finally, the base case does not have standardised lists of materials that guide what can and cannot be accepted in each of the four streams. In the absence of state-wide standard lists, materials permitted in the four streams will remain inconsistent and contamination rates are not likely to improve across the state under the base case. This also limits the scope and impact of state-wide behaviour change and communication campaigns.

3.6.2 Service standard commencement timing

This RIS models commencement date options for all streams from 1 July 2025 and all streams from 1 July 2027.

2025 – Simultaneous fixed date commencement of the legislative obligation and service standard on 1 July 2025 for the four waste streams

This option models the commencement of the four waste and recycling streams from 1 July 2025 for all councils and ARV. Under this option, all services must comply with the service standard including the provision of a separate glass and FOGO service as outlined above by 1 July 2025. This option would bring forward the obligation to provide glass services by two years, and FOGO by five years.

2027 – Simultaneous fixed date commencement of the legislative obligation and service standard on 1 July 2027 for the four waste streams

This option models the commencement of the four waste and recycling streams from 1 July 2027 for all councils and ARV. Under this option, all services must comply with the service standard including the provision of a separate glass and FOGO service as outlined above by 1 July 2027. This option would bring forward the obligation to provide FOGO services by three years.

3.6.3 Kerbside service model

This RIS also considers two service models for the provision of kerbside services.

Compulsory kerbside services – Provision of a kerbside FOGO service where a kerbside general rubbish service is provided and a kerbside glass service where a kerbside mixed recycling service is provided, and, where kerbside FOGO and glass is provided, it is on a compulsory basis (no opt-in or opt-out allowed)

Under this option, separate FOGO and glass services must be provided via a kerbside collection service where there are kerbside services for general rubbish and mixed recycling respectively. This option is modelled to measure the costs and benefits of council provision of kerbside FOGO and glass to all households who have general rubbish and mixed recycling kerbside services. This is currently approximately 96% of Victorian households. Due to the high proportion of households receiving a kerbside service in this scenario, this option assumes a low level of drop-off facilities (as these are only necessary where kerbside services are not offered).

This option provides low council and ARV discretion in terms of determining kerbside versus drop-off service arrangements, and low household discretion given there is no ability for households to opt-out of a FOGO kerbside service where one is provided by a council/ARV.

Kerbside services where reasonably practicable – Provision of a kerbside FOGO and kerbside glass service if deemed practicable and where a kerbside FOGO service is deemed practicable, it must be provided on an opt-out basis. Where a kerbside service is not practicable, a drop-off service must be provided.

Under this option, councils must seek to prioritise kerbside services but will have the discretion to determine whether it is reasonably practicable to provide kerbside FOGO and glass services, considering factors stipulated in the service standard. These factors pertain to:

- whether a household has appropriate onsite space for bin infrastructure,
- whether a collection vehicle can access the kerbside of the household, or
- whether the area council or ARV has responsibility for has a geographically dispersed population.

Any one of these factors can influence a decision on the practicability of kerbside service provision. Councils would have more discretion as to whether they provide a kerbside service or a drop-off service. Where a council determines a kerbside service is not practicable (for example, owing to inappropriate onsite storage space for bin infrastructure), access to a drop-off service must be provided. Under this modelled option, councils could provide drop-off facilities to service those households that have limited onsite storage space or other constraints around infrastructure and access (e.g. some multi-unit dwellings or other dwellings in high-density areas) and remote areas where kerbside services are not feasible.

Under the proposed service standard, where a council or ARV assesses that it is not reasonably practicable to provide a service as a kerbside collection service, it is proposed that the council or ARV will need to publish the assessment for the community to access. It is further proposed that council and ARV must review assessments where a drop-off service has been provided to households at a minimum frequency of at least once every 3 years.

If councils provide a kerbside FOGO service, it must be delivered on an opt-out basis. That is, if a council determines that provision of a kerbside FOGO service is practicable, households are provided with a kerbside FOGO service unless they notify their council that they do not require the service. To manage opt-out arrangements, councils and ARV must take all reasonable steps to ensure that FOGO waste listed on the standard contents list for the FOGO service does not enter the general rubbish service.

As with compulsory kerbside services above, if councils provide a kerbside glass service, it must be delivered on a compulsory basis. This is the case to reflect that there is no alternative viable means for households to manage glass onsite as is the case with FOGO (given glass will no longer be an accepted item in the mixed recycling stream).

This option assumes a level of drop-off service provision higher than what would be the case with the compulsory kerbside services option. This is to reflect that under this option, it is likely that fewer households will have access to a kerbside FOGO service, and those that do have access to a kerbside service may elect to opt out of that kerbside service but may also still require access to drop-off services to properly manage some food organics material that cannot be managed on-site.

This option provides greater council and ARV discretion in terms of determining kerbside versus drop-off service arrangements. It provides greater household discretion given households may choose to opt-out of a kerbside FOGO service.

3.6.4 Options assessed

Each commencement date option was coupled with a kerbside service model option and compared against the base case, producing four options which were analysed in this RIS:

- **Option 1** - 2025 commencement with compulsory kerbside services
- **Option 2** - 2025 commencement with kerbside services where reasonably practicable
- **Option 3** - 2027 commencement with compulsory kerbside services
- **Option 4** - 2027 commencement with kerbside services where reasonably practicable.

All options are compared against the base case with the following common factors also measured against the base case:

- standard lists (of accepted and not accepted items) for each stream
- mandatory separation of general rubbish, mixed recycling, glass recycling and FOGO (as per section 60 Circular Economy Act requirement) in relation to municipal waste and recycling services provided by councils and ARV
- standard colours for bin lids and drop-off labelling and signage
- compliance and enforcement.

In relation to existing services, all options also assume that, if a service is provided as a kerbside collection service on the day immediately prior to the service standard commencing, the service must continue to be provided as a kerbside collection service.

4. Impact analysis

4.1 Approach to impact analysis

The RIS process requires an analysis of the costs and benefits of the options under consideration.

The Victorian Guide to Regulation suggests a range of analytical approaches to support option analysis. Some of these options include a CBA, where most benefits are known and can be readily quantified or estimated, or an MCA, for when it is not possible to quantitatively estimate the effects of many or most of the impacts of an option.

For this RIS, a combination of a CBA and an MCA is used. The CBA considers many of the readily quantifiable costs and benefits and the MCA considers the other criteria which cannot be easily quantified and incorporates the criteria that was assessed using the CBA.

4.2 CBA modelling approach

The CBA measures the readily quantifiable costs associated with the options outlined in Chapter 3. The modelling does not assess the total costs associated with each service, rather it measures the variance in costs between the options and base case.

A base case was established in the CBA which reflects the service intentions of all of Victoria's 79 councils. This includes their current services offered, the years they have indicated they would introduce new services and the proportion of the community who would receive kerbside or alternative services such as drop off. A variety of data sources was used to gather this information such as the Victorian Local Government Annual Survey and reporting through the Kerbside Reform Support Fund. The best available information was used for each council.

This information was modelled to map key measurables over a 10-year period to align with the lifespan of the proposed regulations. The key measurables included:

- tonnage of materials collected
- collection and processing costs
- drop-off point implementation and operating costs
- diversion of organic waste from landfill and glass from mixed recycling
- reduced greenhouse gas emissions
- changes in the commodity value of materials.

For Options 1 and 3, the model assumed that all households with a kerbside general rubbish service would receive a FOGO service and all households with a kerbside mixed recycling service would receive a glass kerbside service. Any services which were planned to be introduced in later years under the base case were brought forward to 2025 or 2027, depending on the option. The model uses financial years ending in the stated year, i.e. '2025' means 1 July 2024 to 30 June 2025.

For Options 2 and 4, a minimum level of kerbside services was applied to each council. This varied between different council types, i.e. metropolitan (70% of households), interface[64] (75% for FOGO and 80% for glass), regional cities (50% for FOGO and 60% for glass) and large and small shires (40% for both streams). These ratios are highly approximate and general estimates based on a higher prevalence of privately serviced MUDs in densely populated metropolitan areas and households in dispersed rural areas. Councils that indicated a lower proportion of kerbside services to alternative services were increased to minimum levels for each council type. For example, if a metropolitan council was introducing a drop-off only glass service under the base case, under Options 2 and 4 it is assumed at least 70% of households would receive a kerbside service instead. If a council proposed to provide a higher level of kerbside services under the base case, then this remained unchanged. If a council provided a mixed recycling or garbage kerbside service to a lower proportion of their community than the assumptions state, then these proportions were used in options 2 and

[64] An interface council are those councils which are situated in the outer suburbs and form a ring around metropolitan Melbourne.

4. For example, if a densely populated metropolitan council provides a kerbside service to only 50% of households, then this value was used – not 70%.

Households with a kerbside service or alternative service were the key quantities that drove the various modelled outputs. The impacts of the options relative to the base case are driven primarily by the volume and timing of kerbside service provision to households. Both costs and benefits in initial years are driven primarily by bringing forward services planned for a later date to an earlier date. In the later years of the model (i.e. after 2030), when councils had already planned to have finalised the rollout of kerbside services, the differences between the options and the base case are driven by instances where the service standard requires a higher level of kerbside provision that council's announced plans.

Options were modelled against the base case, with costs and benefits identified across the following outputs:

- costs and savings for councils
- lost profit from reduced gate fees at landfills and MRFs
- lost waste levy for the Victorian Government
- increase in the commodity value of materials
- value of reduced greenhouse gas emissions.

A range of assumptions were used to inform the model across a variety of sources. Where available, publications and key datasets were used to inform these assumptions. Where these were not available, such as when regarding commercially sensitive contracts, assumptions were made based on consultations between DEECA and the industry and local government sectors. A full list of assumptions used is explained in Appendix 2.

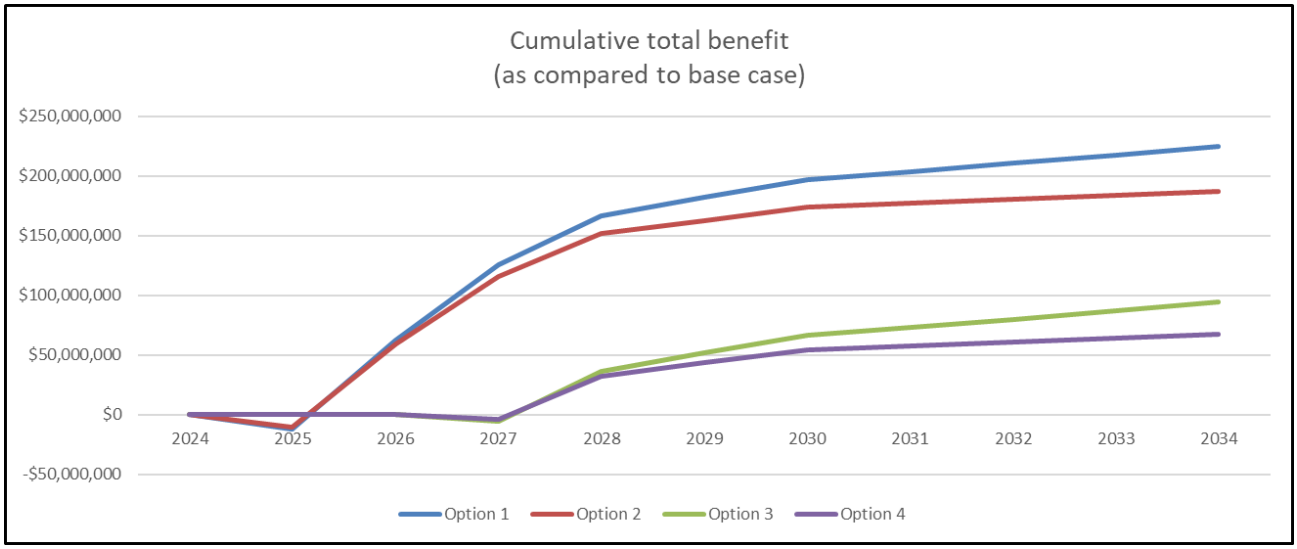
4.3. Summary of CBA outputs

4.3.1 Overall economic benefits

Under the CBA, all options deliver a financial benefit over the base case across all measures. Options 1 and 3 (compulsory kerbside services) deliver greater economic benefits than Options 2 and 4 (kerbside only when reasonably practicable), and Options 1 and 2 (2025 commencement) deliver greater benefits than Options 3 and 4 (2027 commencement). When quantified costs and benefits are considered in isolation, the CBA demonstrates that kerbside services deliver greater economic benefits over alternative services because they result in higher recovery rates, and the benefits are greater the sooner that services are implemented, as these benefits are brought earlier in time.

Figure 5 below shows the cumulative total benefits across all options. A slight negative variance from the base case is visible in 2025 (for Options 1 and 2) and 2027 (for Options 3 and 4). This is due to the additional costs of implementing new services (particularly purchasing bins) which are not introduced until later under the base case. These new services however quickly deliver strong overall benefits over time, which far surpass these initial costs.

Figure 5: Cumulative total benefit (as compared to base case)



The table below shows the three key outputs from the CBA. *Reduced costs to councils* is the primary indicator of immediate community financial impact, *benefits of avoided greenhouse gas emissions* is the primary monetised measurement for environmental benefits and *increased value of recycled materials* is the key measure for the growth of a circular economy. These are all also reflected in the above chart.

Table 7: Key monetised outputs from the CBA

Scenario	Description	Option 1	Option 2	Option 3	Option 4
Reduced costs to councils (net benefit)	$ change	$26,139,988	$21,263,731	$9,887,200	$7,879,484
Benefit of avoided greenhouse gas emissions	$ change	$93,368,515	$73,464,931	$48,044,163	$33,306,873
Increased value of recycled materials	$ change	$105,224,381	$92,056,740	$36,185,119	$25,976,164

The below table shows the benefits delivered across the key outputs from the CBA. They represent the variance in values between the base case and the options, and do not measure the total costs or benefits associated with the services. That is, if a particular household receives the same service in the same year in both the base case and an option, the costs and benefits of that service provision are not included in the outputs of the model. The amounts represent the cumulative costs and benefits between the base year and 2034 discounted to 2023 dollars using a 4 per cent social discount rate. The table below summarises the monetised outputs of the CBA.

Table 8: Monetised cost/benefit outputs from the CBA

Scenario	Description	Option 1	Option 2	Option 3	Option 4
Reduced costs to councils (net benefit)	$ change	$26,139,988	$21,263,731	$9,887,200	$7,879,484
Benefit of avoided greenhouse gas emissions	$ change	$93,368,515	$73,464,931	$48,044,163	$33,306,873
Increased value of recycled materials	$ change	$105,224,381	$92,056,740	$36,185,119	$25,976,164
Total Benefits	**$ change**	**$211,274,237**	**$183,369,757**	**$95,706,394**	**$66,596,478**

Lost Government revenue (waste levy)	$ change	-$121,908,072	-$89,886,098	-$70,410,637	-$44,452,669
Direct cost to Government	$ change	-$5,650,300	-$5,650,300	-$5,650,300	-$5,650,300
Reduction lost profit for MRFs (gate fees)	$ change	-$3,009,874	-$2,781,037	-$944,805	-$767,630
Lost profit for landfill operators (gate fees)	$ change	-$9,103,706	-$6,998,215	-$4,792,828	-$3,137,290
Total Costs	**$ change**	**-$139,671,953**	**-$105,315,649**	**-$81,798,570**	**-$54,007,889**
Net Benefit	**$ change**	**$85,060,931**	**$81,469,752**	**$12,317,911**	**$13,154,632**
Net Benefit (excl. lost waste levy)	**$ change**	**$206,969,003**	**$171,355,849**	**$82,728,549**	**$57,607,301**

The CBA also produced a range of physical measures which are outlined in the table below.

Table 9: Physical quantity outputs from the CBA

Scenario	Description	Option 1	Option 2	Option 3	Option 4
Greenhouse gas emissions avoided (tonnes)	Tonnes CO^2-e	-846,946	-670,845	-427,669	-299,343
Tonnes of organics diverted from general rubbish	Tonnes	985,827	730,024	566,540	358,512
Tonnes of glass diverted from mixed recycling	Tonnes	324,760	279,447	122,647	86,008
Approximate reduced tonnes of contaminated recycling	Tonnes	-61,464	-52,888	-23,212	-16,278

4.3.2 Costs and benefits to councils

Measuring the variance in costs and benefits to councils in the CBA showed an overall net benefit across all options. The introduction of glass and FOGO services increases collection costs for councils, but this is offset and exceeded by reductions in landfill disposal and recycling processing costs. Overall, the CBA showed a reduction in council operational collection and disposal costs.

While there are reductions in operational costs, there are upfront one-off capital costs associated with new bins for the new services. This cost is often less for FOGO services as councils may have existing green-lidded bins in use for garden organics which can be converted to the new service. The CBA showed options increased costs to councils initially due to one-off costs, however the benefits of reduced operational costs in each subsequent year gradually recovered these costs and then delivered a net benefit from the fourth year of operation onwards. Options commencing in 2025 (Options 1 and 2) showed a greater negative variance from the base case in the initial years. This is due to the larger number of bins being procured in 2025 compared to the base case. However these services were able to deliver the reduced operational costs sooner, which increased the total benefit. Conversely the options introduced in 2027 (Options 3 and 4) showed smaller initial costs due to councils having already procured bins in 2025 and 2026 under the base

case, yet these options produced a more marginal net benefit over the base case. The figure below shows these trends.

Figure 6: Cumulative total costs/savings to councils (as compared to base case)

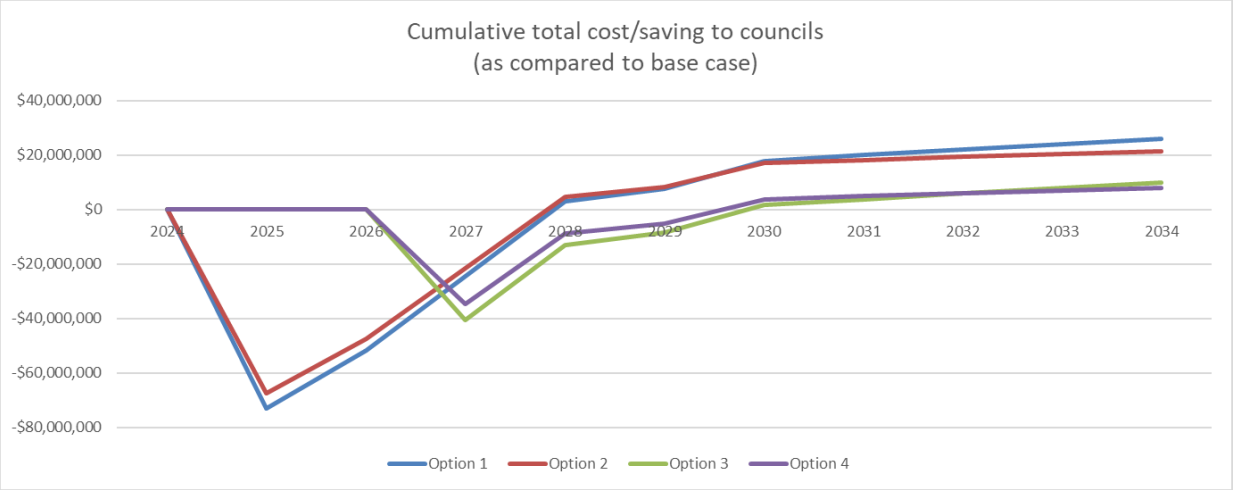


Table 10 below shows a summary of the costs and benefits experienced by councils. They represent the variance in values between the base case and the options, and do not measure the total cost associated with these services. The amounts represent the total discounted costs and benefits between the base year and 2034.

Table 10: Summary of the costs and benefits experienced by councils for each option from the CBA

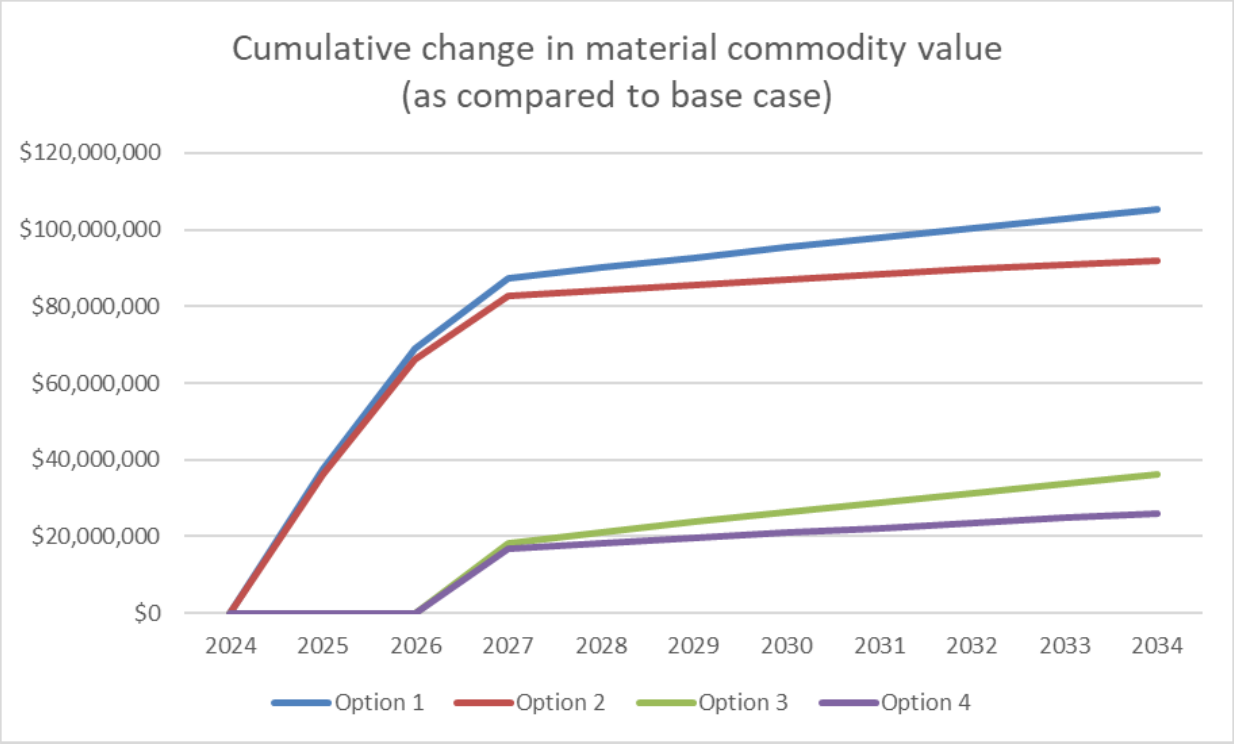
Measures	Description	Option 1	Option 2	Option 3	Option 4
Increase in collection costs	$ change	$102,463,311	$83,801,988	$46,783,259	$31,940,230
Procurement and implementation costs	$ change	$39,604,068	$30,273,607	$23,855,830	$15,154,319
Total costs	$ change	**$142,067,379**	**$114,075,595**	**$70,639,089**	**$47,094,549**
Reduction in landfill and mixed recycling processing costs	$ change	$168,207,367	$135,339,326	$80,526,288	$54,974,033
Total benefits	$ change	**$168,207,367**	**$135,339,326**	**$80,526,288**	**$54,974,033**
Overall net benefit	$ change	**$26,139,988**	**$21,263,731**	**$9,887,200**	**$7,879,484**

4.3.3 Increased value of recyclables and organics

Industry is able to benefit from significant improvements in commodity values for recyclable materials. This also provides opportunities for businesses who may experience lost gate-fee profits to offset costs. However, the model also captures the value to the economy of improved quality of recyclables, not just those benefits to the waste, recycling and resource recovery sector.

In the CBA the changes in material commodity values are modelled. This primarily measured the change in value of recycled materials after glass was separated from mixed recyclables, but also includes a smaller benefit from the value of organics. The largest driver of benefits are the increased value of cardboard and paper in mixed recycling bins with the reduction in contamination with glass shards. The modelling showed a significant increase across all options, however the different years modelled (i.e. 2025 and 2027) was a far greater variable than the type of kerbside service modelled, because a 2025 rollout will affect a larger volume (total tonnes) of glass and recyclables. The total tonnes of recyclables are lower for Options 3 and 4 as most councils plan to have completed their rollout of glass services by 2027. The table below shows this variance.

Figure 7: Cumulative change in material commodity value



The CBA primarily modelled the change in commodity prices with recycled materials, however the value of organic materials was also incorporated to a lesser extent. An assumption was made that each tonne of FOGO diverted created an organic product valued at $10. This is a conservative estimate accounting for the challenges and complexities of the industry and the various practices which take place. Compost products range from approximately $25-$85 per tonne.

While the CBA modelled a static commodity price, it is expected that the value of organic products such as compost will increase over time. This is largely because the standard lists will improve recycling behaviours and reduce contamination. This has not been modelled in the CBA but has been incorporated into the MCA.

CBA values – Variance in material flows

Table 11 below shows the key measures of tonnes of glass diverted from mixed recycling.

Table 11: Tonnes of glass diverted from mixed recycling for each option

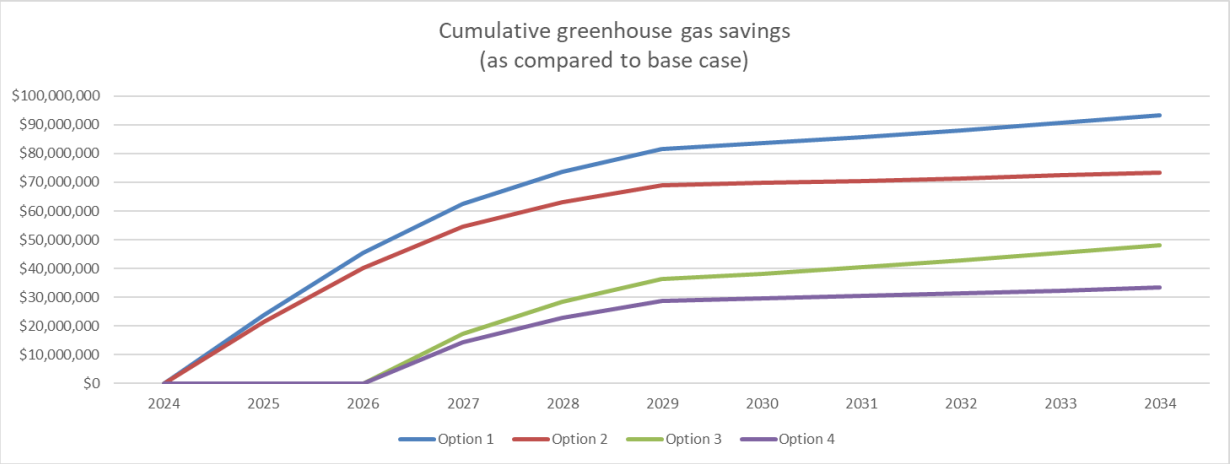
Benefit	Option 1	Option 2	Option 3	Option 4
Glass diverted from mixed recycling (tonnes)	324,760	279,447	122,647	86,008

4.3.4 Reduction in greenhouse gas emissions

Greenhouse gas emissions were reduced across all options compared to the base case. These emission savings are achieved by diverting organic waste from landfill through new kerbside FOGO services. Organic waste, and in particular food waste, creates significant greenhouse gas emissions as it breaks down in landfill. These emissions are mostly avoided if the organic waste is diverted to other processes such as composting. The CBA also accounted for the future presence of waste to energy (WtE) in Victoria. It considered that a proportion of waste collected in residual waste bins will be diverted from landfill to WtE facilities when they are operational. As a result, changes in emissions related to WtE were included in the modelling. For more information about the assumptions used in the greenhouse gas modelling, please see Appendix 2.

The value of the avoided greenhouse gas emissions produced significant financial benefits across all options. The below chart demonstrates the cumulative value of these avoided emissions. Calculations considered factors such as the composition of organic waste to landfill, rate of landfill gas capture and estimates on volumes of waste that would otherwise have gone to waste to energy for processing. The value of avoided emissions was estimated based on the Intergovernmental Panel on Climate Change's (IPCC's) Sixth Assessment Report (2022) that is consistent with the Paris Agreement, decided by the international community in 2015, to "hold the increase in global average temperature to well below 2°C and to pursue efforts to limit the temperature increase to 1.5°C". The series is also consistent with the estimated costs of meeting Victoria's climate goals, as modelled by DEECA for analysis to support Victoria's 2035 emissions reduction target.

Figure 8: Cumulative greenhouse gas savings (as compared to base case)



CBA values – Variance in material flows

Table 12 below shows the key measures of tonnes of FOGO diverted from landfill as well as quantity of greenhouse gas emissions avoided in tonnes of carbon-dioxide equivalent (tCO_2-e).

Table 12: Cumulative tonnes of organics diverted from landfill and greenhouse gas emissions avoided for each option

Benefit	Description	Option 1	Option 2	Option 3	Option 4
Organics diverted from landfill	Tonnes	985,827	730,024	566,540	358,512
Greenhouse gas emissions avoided	$ value	$93,368,515	$73,464,931	$48,044,163	$33,306,873
	tCO_2-e	846,946	670,845	427,669	299,343

4.3.5. Costs to government

Costs to government have been considered in the context of the costs associated with activities that the regulator, Recycling Victoria, will carry out in the course of its functions. This includes providing support and guidance to councils in how to comply with the regulations and service standard and monitoring compliance.

It is acknowledged that other government costs are being incurred to support the rollout of the reform in general, however these relate to other support mechanisms that are being offered (e.g. the administration of grant programs discussed further in chapter 6) and do not depend directly on the making of regulations and the service standard. For this reason, they were not taken into account for this assessment. Government will also incur losses of waste levy revenue, however this has intentionally not been taken into account when deciding on a preferred option, as it is accepted as a necessary component of government's stated policy objective for the reform of reducing waste going to landfill.

The costs to Recycling Victoria are estimated in the CBA based on the expected staff costs over a 10 year period. They were considered for all four options based on existing resourcing allocations in reference to the base case.

The base case considers that in the absence of the regulations and service standard requiring councils and ARV to provide the four-stream services from a prescribed date, there are no costs to Recycling Victoria relating to supporting councils to comply. In the base case, there would not be any monitoring, compliance or administrative costs to Recycling Victoria.

Across the four options, the nature of Recycling Victoria's activities will differ but Recycling Victoria's available resourcing is expected to remain the same. Therefore this cost, which equates to $5.65 million over 10 years, was the same across all four options. Under Option 1 and Option 2 (2025 commencement), Recycling Victoria will have a shorter period of time to undertake support to comply activities such as developing and communicating regulatory guidance and working with councils to support their understanding of their new obligations. Under Option 3 and Option 4, Recycling Victoria will have more time to provide support to councils to understand and comply with the new obligations.

4.4 MCA modelling approach

The CBA can only assess readily quantifiable impacts. Therefore an MCA has been used in this impact assessment as the tool to complete the overall assessment of all of the impacts (costs and benefits) for this regulatory reform.

An MCA involves:

- specifying assessment criteria;
- assigning a 'weighting' to each criterion;
- assigning scores for each option in relation to each criterion;
- multiplying the scores and the weights to arrive at weighted scores for each criterion; and
- calculating a weighted score for each option by summing the weighted scores for each option.

MCA allows a decision to be made based on the weighted scores. The option assigned the highest weighted score is the 'preferred option'.

Although a degree of subjectivity is inherent in the MCA approach, when applied appropriately and using expert knowledge, an MCA can provide a structured, systematic and transparent framework for comparing options with a mix of quantified and un-quantified costs and/or benefits. By clearly identifying the basis on which options have been compared, it allows stakeholders and decision makers to see (and comment on) which factors were taken into account, the weight given to different aspects of a decision, and the reason for the decision.

Each option for this MCA is scored using a scale from -10 to +10 relative to the base case. A score of zero represents no change in impacts against a criterion for that option compared to the base case. A score of +10 represents a significant benefit relative to the base case and a -10 score, a significant cost relative to the reference case. Scores around -5 or +5 represented moderate costs or benefits respectively.

The relative weights of the criteria are set to reflect the relative importance of each criterion. The combinations of weights and scores provide a weighted score.

The raw scores have been assigned in increments of +/-0.25, which means that impacts are rounded to the to the nearest 0.25. In cases where the impacts differ by a relatively small amount, they may be assigned the same score in the MCA.

The MCA is used to capture other relevant considerations that are not directly captured in the CBA. For example, it is expected that not all councils will be able to comply with a 2025 rollout. This would reduce the expected benefits for Options 1 and 2 that were calculated in the CBA (e.g. it would reduce the volumes of waste recovered and compromise the quality of recovered materials which will impact on the value of recycled materials). To account for this, the MCA adjusted the scores of the relevant criterion drawn from the CBA.

The weighted scores, once adjusted, were then summed for each option, and provided a basis for ranking options and choosing a preferred option.

4.4.1 Weighting

The criteria assessed in the MCA have been divided into either cost or benefit criteria.

Benefits criteria account for benefits to councils, industry and households/the broader community, as well as to the environment.

Cost criteria include costs to councils, industry and the state government. It is acknowledged households will also bear some costs, such as costs associated with the sorting of waste into each stream and taking waste to a drop-off service, and impacts associated with having more bins on their property (e.g. reduction in space). However, due to the difficulty of accurately quantifying aggregate costs borne by households, these costs are not captured or assessed as part of the analysis. Moreover, costs on a per-household basis are considered to be minor. The criteria assessed in the MCA are explained in Table 13 below.

Table 13: MCA Criteria

Criteria	Description of criteria
Benefits	
Cost savings to councils	This criterion captures the cost savings calculated through the CBA to councils in reduced MRF gate fees due to the removal of glass from the mixed recycling stream, and through reduced landfill gate fees due to diverting FOGO from landfill, as well as other operational efficiencies that can be gained.
Increased value of recyclables and FOGO-derived products	This criterion captures the quantifiable benefits that are calculated in the CBA and incurred by industry through the increase in commodity values for recycled materials and FOGO.
Improved investment and economic efficiencies	This criterion reflects that increased investment certainty will improve investment in the industry, economies of scale, and the ability to standardise equipment across the state, which is not captured in the CBA. This leads to long run benefits such as increased commodity value, decreased costs and increased recovery rates. It also captures increased public participation in waste separation, and trust in the system, leading to higher volumes of quality materials being recovered.
Reduced harm on the environment resulting in healthier communities	This criterion captures environmental benefits through outcomes such as avoided habitat destruction and improved amenity. It also acknowledges the benefits that the recovery of more recycled materials results in less extraction and use of raw materials. These benefits were not captured in the CBA.
Reduced greenhouse gas emissions	This criterion captures quantifiable reductions in greenhouse gas emissions that results from more FOGO being diverted from landfills, captured in the CBA.
Costs	
Burden to councils	This criterion captures additional burden to councils not covered in the CBA. This includes additional costs of an expedited rollout, and the burden on council budgets for a large one-off cost (e.g. disruption to budget for other council projects that may be delayed as a result).
Costs to industry (lost gate fees for MRFs and landfills)	This criterion captures lost gate fee profit for MRFs that is calculated in the CBA due to removal of glass from the mixed recycling stream, and lost gate fee profit for landfills due to a reduction in organics material sent to landfill.
Costs to state government	This criterion captures costs associated with the regulator, Recycling Victoria, carrying out its function, which are captured in the CBA. This includes costs associated with providing support to councils to comply with the regulations and service standards, and costs associated with monitoring, compliance and assessing exemption applications.

The benefits and costs criteria have each been weighted according to their level of importance compared to the overarching objectives of the regulations and service standards. The weights for each benefit and cost criteria assessed in the MCA and the rationale for the chosen weighting is explained the table below.

Table 14: Criteria weightings and rationale

Criteria	Weighting	Rationale
Benefits – total weighting 50%		
Cost savings to councils	10%	The benefit criteria are weighted equally to reflect their equal relative importance in achieving the aims of the four-stream system. Each benefit criterion was therefore assigned a weighting of 10%.
Increased value of recyclables and FOGO-derived products for industry	10%	
Improved investment and economic efficiencies for industry and the community	10%	
Reduced harm on the environment resulting in healthier communities	10%	
Reduced greenhouse gas emissions	10%	
Costs – total weighting 50%		
Burden to councils	30%	Burden to councils is the most important criterion given that councils are implementing the reform, and its success may be jeopardised if councils cannot implement it fully. It was therefore assigned a weighting of 30%.
Costs to industry (lost gate fees for MRFs and landfills)	10%	Industry bears costs due to lost gate fees for MRFs and landfills, but as a whole is not as affected compared to councils. This criterion was therefore assigned a weighting of 10%.
Costs to state government	10%	Costs to state government are low compared to costs incurred by councils and similar to costs to industry. This criterion was therefore assigned a weighting of 10%.

4.5 Estimating benefits

4.5.1 Cost savings to councils

Separate glass recycling in councils

Councils can benefit from the introduction of a separate glass service in many ways. While some councils may see an increase in bin procurement and collection costs due to the new glass collection service, there are a number of savings in processing which offset these costs and deliver much greater net benefits through overall reductions in operational costs. For this reason, the MCA does not reflect these collection costs as a cost criterion, as they have been accounted for when calculating the net benefit.

Councils pay for each tonne of mixed recycling which is taken to a MRF. Glass represents approximately 27% of the weight of this mixed recycling, so removing the glass can reduce these costs by this amount. Councils can also benefit from more favourable rates with recyclers which take into account the improvement in material quality following the removal of glass.

Other benefits can also be achieved, for example, removing glass from the mixed recycling stream allows for greater compaction rates in collection vehicles. This means that vehicles can fit more into their loads which in some instances can greatly improve efficiencies. Due to the complexity and highly variable nature of this benefit, compaction was not modelled in the CBA, however the assumptions highlighted the potential benefit as an approximate $0.05 saving per household collection. Also, while glass services introduce additional

collection costs, these are less than the costs of mixed recycling services because glass bins are not presented as frequently – and often there are half the number of glass bins presented on bin night compared to mixed recycling. This also improves the efficiency of the glass service and reduces this additional collection cost.

As a result of these costs and efficiencies, the analysis shows that councils can be overall financially better off following the reform.

Case study

Below are some details from one metropolitan council which demonstrate the overall financial benefit following implementation of the kerbside reforms with a 3.5% overall reduction in operational costs.

Table 15: Results from council case study summarising changes to operational costs

Outcome	Pre introduction of separated glass recycling	Post introduction of separated glass recycling	Increase/decrease ($)
Collection costs	$2,450,000	$3,200,000	$750,000
Processing costs	$1,750,000	$853,000	-$897,000
Savings		3.5%	$147,000

Benefits for FOGO in councils

Disposal of waste in landfill is more expensive than processing FOGO. For example, in the CBA it is assumed that disposal of waste in landfill costs between $284 and $309 per tonne, whereas FOGO processing costs between $80 and $100 per tonne. Organics represent a large portion of the waste which is sent to landfill - in the CBA this is assumed to be 50% - hence, diverting this represents significant cost savings. A Victorian council that recently introduced a new FOGO service reported a 41% reduction in landfill volume shortly after implementation[65].

Councils may also face less logistical barriers to implementing the FOGO service. Many councils already provide green waste services which may be able to be converted to FOGO services without the need for new collection costs or the procurement of new bins.

Cost saving opportunities and low barriers to implementing new services may be why FOGO recycling is already well progressed in Victoria, with 53 of the 79 councils offering a FOGO service in January 2024.

MCA analysis

As explained in the CBA above, options commencing in 2025 (Options 1 and 2) showed a greater net benefit in cost savings, with Option 1 returning a cost saving of $26.1 million, and Option 2 of $21.3 million. This is because these options see a reduction in operational costs sooner.

The options commencing in 2027 (Options 3 and 4) showed a net benefit over the base case, but of lesser value than Options 1 and 2 (Option 3 of $9.9 million and Option 4 of $7.9 million).

In the MCA, the CBA figures for the 2025 options were adjusted to take into account the fact that some of councils may experience challenges and potential delays in meeting the 2025 commencement date, and this will reduce the cost savings to councils. The compulsory kerbside figures (Options 1 and 3) were also adjusted to reflect the higher marginal cost and difficulty of providing a kerbside service when this is not reasonably practicable.

Taking this into consideration, the MCA is scored:

- Option 1 - score of 1.00,
- Option 2 - score of 1.25,
- Option 3 – score of 0.25,
- Option 4 – score of 0.75.

[65] (Yarra Ranges Council, 2023)

Table 16: Scores for cost savings to councils for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Cost savings to councils	1.00	1.25	0.25	0.75

4.5.2. Increased value of recyclables and organics

As discussed in section 4.3.3 above, the CBA analysis found that commodity prices for mixed recyclables (when glass is separated out) and organics materials significantly increased with the introduction of the four-stream services across all four options but was greater for the 2025 options (Option 1 and 2) when compared with the 2027 options (Options 3 and 4). This is because expediting the introduction of the glass and FOGO services will see better quality recyclables and FOGO recovered compared to the base case in 2025 and 2026, resulting in a greater total benefit.

The CBA figures for the 2025 options were adjusted down, as above, to account for the risk that an expedited rollout under Options 1 and 2 may not be achieved on time, and that it may not be communicated as effectively, leading to poorer recycling behaviours in some instances, resulting in reduced value of recyclables.

The options with compulsory kerbside services scored higher than options where kerbside services are provided where reasonably practicable, as it is assumed that more materials will be recycled/diverted from landfill when households have the convenience of bins at their property.

Based on the CBA findings, the MCA scored Option 1 at 6.25 and Option 2 at 5.75. Options 3 and 4 received a lower but still positive score of 3.50 and 2.50 respectively.

Table 17: Scores for increased value of recyclables and organics (Industry) for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Increased value of recyclables and organics	6.25	5.75	3.50	2.50

4.5.3 Improved investment and economic efficiencies

Standardisation of services and better recycling rates leads to greater volumes and higher quality streams of recyclable and organic material. This in turn leads to higher commodity values and opportunities for economies of scale and long-term business planning. These processes improve the viability of the waste and recycling market and encourage more businesses to enter the market. Improving market participation has positive economic implications, encouraging investment in the sector and increasing employment opportunities. This is a significant benefit to businesses in the industry.

This criterion also considers that increased consistency and certainty of kerbside services supports increased public trust and therefore participation in waste separation - that is households will put more time and effort into sorting materials into the correct stream if they trust that these streams will be recycled. This leads to higher volumes of better-quality materials being recovered, which in turn leads to higher commodity values and supports an improved market. This can lead to a virtuous cycle of waste stream separation improving behaviours, increasing commodity values and reducing waste service costs.

For councils that are already providing the four streams to households (captured in the base case), the introduction of standard lists and consistent rules and supporting behaviour change campaign across the state will further improve participation rates, resulting in better quality recycled materials recovered. Since the CBA assumes the same quality of streams regardless of the introduction of standard lists, this effect is not captured in the CBA.

The CBA assumes that the waste volumes and associated costs and benefits are homogenous for each council type (e.g. metro, large, shire, etc). Therefore, the CBA does not account for the quality of the rollout out, i.e. whether it is delivered on time and with sufficient time for planning, contracting and communication with households to occur.

If logistical and administrative challenges impact councils and ARV from successfully implementing new services as required by the instruments by the set commencement date, the overall long-term benefits of the reform could be reduced and compromised. Industry may not receive the same benefits of increased commodity prices and market stability and the public could lose trust in the new system, resulting in poorer recycling outcomes.

The 2027 options (Options 3 and 4) both scored 9.00, while the 2025 options scored lower (both scored 4.50). This is because the 2027 timeframe provides councils with more time to prepare for and execute the rollout successfully, which may result in fewer implementation risks (outlined above). An expedited 2025 rollout may have increased risks, such as logistical and administrative challenges for councils (e.g. hastily renegotiating contracts), which could in turn jeopardise the overall benefits of the reform. Due to this, the benefits for 2025 under this criterion were scored as half of a 2027 rollout, which would reduce these key implementation risks by giving councils more time to transition.

Table 18: Scores for improved investment and economic efficiencies for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Improved investment and economic efficiencies	4.50	4.50	9.00	9.00

4.5.4 Reduced harm on the environment resulting in healthier communities

In the context of a 2025 commencement date, Option 1 received a moderately higher score (6.25) than Option 2 (6.00) relating to benefits for the environment. This is because the provision of FOGO bins to households would be compulsory, meaning that the maximum amount of FOGO would be collected and processed, resulting in the highest amount of diversion from landfill. This would therefore lead to fewer landfills being required, and less environmental harm (e.g. habitat destruction) and disamenity. The same logic applies for glass, in respect to more glass being recycled and other recyclables being put to higher-value use, and therefore less reliance on raw virgin materials. Bringing the commencement date earlier for both streams when compared to the base case (2027 for glass and 2030 for FOGO) also results in more avoided emissions and use of virgin materials. When scoring this criterion, the risks to implementation of a 2025 commencement date were taken into account.

This criterion scored a moderate score for the 2027 options due to benefits to the environment relating to avoided emissions and reduction in extraction of virgin materials, however it was slightly lower than the 2025 commencement option as these benefits will be realised two years later (Option 3 scored 5.00, while Option 4 scored 4.75).

Table 19: Scores for reduced harm on the environment resulting in healthier communities for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Reduced harm on the environment resulting in healthier communities	6.25	6.00	5.00	4.75

4.5.5 Reduction in greenhouse gas emissions

The CBA found that Options 1 and 2 result in greater savings in terms of greenhouse gas emissions, as commencing in 2025 will see more FOGO diverted from landfill and therefore a greater reduction in emissions over the 10 year period. The CBA calculated benefits in reductions in emissions expressed in monetary terms. It determined a benefit of $93.4 million for Option 1 which is higher than the value of

emissions reductions for Option 2 of $73.5 million, because a compulsory kerbside service is likely to have a higher diversion rate than a scenario where some households don't have a FOGO bin and instead have to take their FOGO waste material to a drop-off facility.

These figures were adjusted down in the MCA assessment to account for the challenges some councils may have in meeting this deadline or achieving the separation and volumes that they would achieve with a 2027 rollout.

Options 3 and 4 result in savings of emissions but of a lower amount due to having two years less of savings. Option 3 results in a benefit of $48 million, which Option 4 of $33.3 million.

In consideration of these CBA findings, the MCA scored Option 1 6.00 and Option 2 4.75 respectively, reflecting the greater greenhouse gas emissions avoided of an earlier rollout. The 2027 options nevertheless still scored positively, with Option 3 achieving a score of 4.50 and Option 4 scoring 3.25.

Table 20: Scores for reduction in greenhouse gas emissions for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Reduction in greenhouse gas emissions for each option	6.00	4.75	4.50	3.25

4.6 Estimating costs

4.6.1 Burden to councils

This criterion is where the highest negative impacts were assessed for councils and ARV, relating to the risk of imposing additional burdens on councils beyond those quantified in the CBA, for example difficulty in planning and resourcing the rollout and higher costs due to the need to procure bins and services more rapidly. This criterion also captures the additional difficulty of delivering compulsory kerbside (Options 1 and 3), where the costs of providing kerbside service to households where it is not reasonably practicable to do so is substantially higher than for other households. This criterion is separate to the improved investment and economic efficiencies criterion discussed in 4.5.3, where similar issues may reduce the efficacy of the reforms.

It is assessed that some councils may struggle to successfully implement the four streams by the set date in 2025. This could be due to challenges such as arranging the required resources and infrastructure to meet the earlier commencement dates. Implementing an earlier commencement date may cause disruption for council budget priorities, potentially resulting in the diversion of budget assigned to other council projects to meet the new timeline, resulting in ceasing or delaying delivery of other projects. These impacts are likely to vary significantly across councils and are difficult to quantify with accuracy. As such, these non-quantifiable impacts are captured through the MCA. The two 2025 options (Options 1 and 2) were assessed as having negative scores of –1.75 and –1.25.

The two 2027 commencement dates options (Options 3 and 4) scored higher for this criterion than they did for a 2025 commencement date (-1.00 and -0.25 respectively), as the rollout of the two new streams by 2027 carries less risk to councils and ARV than a 2025 rollout, in relation to being prepared and able to successfully comply with the requirements of the regulations and service standard. A 2027 commencement will allow councils and ARV more time to address any logistical or administrative complexities such as the renegotiation of contracts with service providers or being able to supply the required new infrastructure (e.g. bins) in time, and will enable budget to be assigned for the task, rather than needing to cease or delay other council projects to fund the implementation of new services.

Options where councils and ARV could determine if kerbside services are reasonably practicable (Options 2 and 4) scored higher than the options with compulsory kerbside service (Options 1 and 3) for this criterion. This is because there is additional burden to councils of delivering kerbside services to households where it is not reasonably practicable to do so that are not quantified in the CBA.

Table 21: Scores for burden to councils for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Burden to councils	-1.75	-1.25	-1.00	-0.25

4.6.2 Costs to industry (lost gate fee profit for MRFs and landfills)

Some existing MRFs that charge councils on a per tonnage basis may experience reduced tonnages and therefore reduced revenue associated with the glass stream bypassing the facility. Landfills will likely experience reduced tonnages and therefore reduced revenue from gate fees associated with the diversion of waste from landfill. This criterion considers the lost profit of MRFs and landfills, as the gate fee reflects the cost to the economy to handle, process, and/or dispose of waste. Only the profit associated with gate fees corresponds to lost economic value from reduced volumes subject to gate fees.

These costs to industry correspond with an equal benefit to councils who are paying the reduced gate fees (i.e. they are a transfer). However, the recycling industry financially benefits from the improvement in the commodity values of recyclables as well as reduced equipment maintenance costs, which is discussed in the benefits section above (4.5.2). Lost gate fee profits are also low when compared to the increase in commodity values. There are complex interests among landfill operators. Some landfill operators may not view reduced tonnages coming through their gates negatively because they have a greater interest in extending the life of the landfill. This could be due to reasons such as being a council operated landfill, where they are not seeking to profit – rather to reduce their councils ongoing waste disposal costs. Opening a new landfill would be costly, complicated and administratively burdensome and potentially face community opposition, so extending the life of the landfill would be seen as important.

Lost gate fee profits for MRFs and landfills was determined in the CBA to be higher for the 2025 options compared with the 2027 options, by nature of the change occurring earlier. Option 1 was calculated as incurring lost fees in the order of $12.1 million, compared with Option 2 losses of $9.8 million. These figures were adjusted down in the MCA to account for the councils that may experience challenges including a potential delay in meeting the 2025 commencement date, and this will influence the amount of lost profit incurred by MRFs and landfills.

The 2027 options resulted in less losses due to the change occurring two years later than 2025, with Option 3 incurring lost gate fees of $5.7 million compared to Option 4 which equated to losses of $3.9 million.

Taking the CBA findings and the adjustment factors applied to the 2025 scores into account, the MCA scored Option 1 -1.00 and Option 2 -0.70. Option 3 scored -0.55, while Option 4 scored -0.25.

Options 1 and 3 with compulsory kerbside services lead to greater diversion of materials than the discretionary kerbside options (Options 2 and 4), which results in greater lost gate fee profits. This is reflected in differences between the MCA scoring for these options.

Table 22: Scores for costs to industry (lost gate fee profit for MRFs and landfills) for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Costs to industry (lost gate fee profit for MRFs and landfills)	-1.00	-0.75	-0.50	-0.25

4.6.3 Costs to state government

As discussed above in the CBA section, costs to government have been considered in the context of the costs associated with Recycling Victoria's activities relating to providing support and guidance to councils in how to comply with the regulations and service standard, and monitoring compliance.

Recycling Victoria's allocation of staff is expected to remain the same across all four options. This cost which equates to $5.6 million in total of the 10 years therefore scores equally across all four options (-0.50).

Table 23: Scores for costs to state government (direct costs) for each option

MCA Criteria	Option 1	Option 2	Option 3	Option 4
Costs to state government (direct costs)	-0.50	-0.50	-0.50	-0.50

4.7 Summary of MCA

While the analysis of economic measures in the CBA shows Option 1 (compulsory kerbside services in 2025) achieves the greatest benefits, this does not take into account the other important factors that are not readily quantified which the MCA considers (e.g. the potential issues associated with an expedited roll-out in 2025).

The CBA includes only readily quantifiable impacts, and does not account for additional or non-quantifiable burden on councils, improved investment and economic efficiencies from increased public participation in waste stream separation, and reduced harm on the environment and amenity (other than greenhouse gas emissions).

The results of the MCA show that Option 4 - kerbside services where reasonably practicable service model commencing in 2027 is the preferred option. The additional burden on councils, as well as the risk that an expedited rollout compromises the efficacy of the reform, are the main drivers of the difference between the MCA and CBA results.

A breakdown of the weighted scores for each criteria for each of the options is shown in Table 24 below, with a summary of the total scores for each option summarised in

Table 25 below.

Table 24: Weighted scores for benefits and costs criteria for each option

	Relative Weight	Option 1	Option 2	Option 3	Option 4
Benefits					
Cost savings to councils	10%	1.00	1.25	0.25	0.75
Increased value of recyclables and organics	10%	6.25	5.75	3.50	2.50
Improved investment and economic efficiencies	10%	4.50	4.50	9.00	9.00
Reduced harm on the environment resulting in healthier communities	10%	6.25	6.00	5.00	4.75
Reduction in greenhouse gas emissions	10%	6.00	4.75	4.50	3.25
Total weighted benefit score		**2.40**	**2.23**	**2.23**	**2.03**
Costs					
Burden to councils	30%	-1.75	-1.25	-1.00	-0.25
Cost to industry (lost gate fees for MRFs and landfills)	10%	-1.00	-0.75	-0.50	-0.25

Cost to state government (direct costs)	10%	-0.50	-0.50	-0.50	-0.50
Total weighted cost score		**-0.68**	**-0.50**	**-0.40**	**-0.15**

Table 25: Total weighted scores for each option

	Option 1	Option 2	Option 3	Option 4
Total weighted MCA score	**1.73**	**1.73**	**1.83**	**1.88**

5. Preferred option

The MCA results support Option 4 as the preferred option out of those that were assessed, which includes:

- **Kerbside services where reasonably practicable** – Provision of a kerbside FOGO and glass service if deemed practicable (otherwise access to a drop-off service must be provided), and where a kerbside FOGO service is deemed practicable it must be provided on an opt-out basis
- **Commencement in 2027** – Simultaneous fixed date commencement for both the legislative obligation in the regulations and service standard on 1 July 2027 for the four waste streams.

This option balances the need for greater standardisation without overly burdening councils and ARV and risking potential implementation issues which would reduce benefits over time.

The preferred option enables councils and ARV to have some discretion so the service arrangements can be tailored to suit the needs of the local community they service. The discretion extends to being able to determine when provision of a kerbside service is practicable and also the requirement that a kerbside FOGO service is provided on an opt-out basis, rather than a compulsory basis, to allow households who can manage FOGO materials at home to opt to do so. This is enabled without jeopardising the core objective of standardising the service.

A commencement date in 2027 is preferred because it reflects that councils and ARV are largely ready for the rollout of the glass and FOGO streams earlier than anticipated when the CE Policy was released, along with the expected processing capacity in the sector for the streams, and does not carry with it the potential implementation challenges which come with the earlier 2025 commencement date. It will provide clarity for regulated parties about what obligations apply and when, with sufficient notice to plan and execute the reforms (e.g. negotiate changes to contracts and secure required budget) before the regulations and service standards commence. It also enables the market more time to adjust to align with the standardised list of accepted materials and plan for how they can best benefit from improved material quality. There is no change to the delivery date for glass services.

It will enable the commencement of statewide education campaigns to be rolled out across Victoria to educate the community on what is accepted in each stream, with sufficient time to ensure this is done properly and Victorians are best prepared to do their part in sorting recyclables in the home. This will assist in reducing contamination rates, which will lead to higher recovery rates of reusable materials and reduced waste going to landfill. Through these measures, commencement in 2027 will enable Victoria to transition faster to a circular economy to achieve policy targets than what was originally planned.

It is acknowledged that there is reluctance in some councils to commence separated glass services in the absence of certainty about the service standard.

A 2027 commencement date will also result in a reduction in time for councils and ARV to meet procurement and budget timelines when compared with the original CE Policy dates of 2030 for FOGO however the experience of councils that have already implemented the FOGO stream has proven that these aspects are not insurmountable.

While a 2027 date is the preferred option for the commencement of the legal obligation to provide the services and to comply with the service standard, the results of the CBA clearly showed that there are significant benefits for the earlier implementation of these services (e.g. 2025) if this would not impair the quality of the rollout or incur significant additional costs. Therefore councils who are able to do so will continue to be encouraged to transition to the new services sooner than legally required.

5.1 Small business impacts

This RIS considers the effects of the proposed regulations and service standard on small businesses and on business competition overall. Competition can be hindered when businesses are limited or prevented from competing within markets due to the regulatory impacts. Small businesses can be disproportionately affected by regulations due to relatively limited resourcing to interpret and comply with new regulatory requirements in comparison to larger businesses.

The proposed regulations and service standard are not expected to impact small businesses that sit outside of the waste, recycling and resource recovery sector, although some small businesses such as retirement villages, nursing homes or temporary boarding houses who are considered “households” for the purpose of

the service standard and receive waste and recycling services from a council or ARV may have impacts in that they may now need to implement processes or infrastructure to sort their waste into the four streams. However these impacts are likely to be very minor.

Within the waste, recycling and resource recovery sector, small businesses may include waste collectors, waste transporters, transfer stations, skip companies and small processors. As outlined further in the following section, there may be some resultant secondary impacts on industry, such as costs associated with sorting equipment upgrades or needing to adjust their practices to cater for items on the standard contents lists for the streams. While there may be impacts, the reforms also provide opportunities for businesses to benefit from the circular economy outcomes delivered, in particular the increased quality, volume and value of recyclable materials.

Small businesses will gain the benefit of operating in an environment where the standards of municipal services are known and transparent (a more level playing field) and be better able to compete with larger businesses who are more established in the sector. Some larger businesses may still have a competitive advantage compared to smaller businesses in spite of the regulations and service standard, by virtue of their size and economies of scale, but these types of competitive advantages exist under the base case and are not expected to be exacerbated as a result of the regulations and service standard. It is also illegal for businesses with substantial market power to do anything that has the purpose, effect or likely effect of substantially lessening competition.[66]

Further it is anticipated that by government providing sufficient lead time to businesses, from the making of the regulations to when the requirements under the regulations and service standard commence in 2027, all businesses, including small businesses, will have sufficient opportunities to plan for and seek advice from government to address any impacts they may anticipate.

5.2 Competition impacts

Competition can be hindered when businesses are limited or prevented from competing within markets due to the regulatory impacts of Government's regulatory interventions. Regulations in Victoria are required to include an assessment of the impacts on competition under the Competition Principles Agreement. Under the agreement, any new primary or subordinate legislation should not restrict competition except where:

- restriction of competition is required to meet the objectives of the legislation; and
- the benefits of the restriction outweigh the costs.

Restrictions on competition occur when there will be likely changes to the way a market functions due to the implementation of the proposed primary or subordinate legislation. Specifically, restrictions can occur where:

- the number or range of suppliers is limited
- the ability of suppliers to compete is limited
- the incentive for suppliers to compete vigorously is reduced.

The answers to the following questions in Table 26 below indicate in the affirmative or negative whether the proposed regulations are considered to restrict competition.

The Competition Agreement states that if there is a restriction on competition it is necessary to explain the objective that is achieved through restricting competition and to assess other reasonable methods of achieving the objectives without restricting competition. As described in Table 26 below, the proposed regulations and service standard are not expected to pose significant restrictions to competition. As previously mentioned, any potential impacts on businesses that may be an indirect result of the regulations and/or service standard are likely to be able to be addressed by businesses ahead of the requirements under the regulations and service standard commencing in 2027. Insofar as there are minor impacts on competition, these impacts are necessary to achieve the Government's objectives and the benefits of these impacts outweigh the costs.

[66] (Australian Competition & Consumer Commission, n.d.)

Table 26: Competition analysis

Competition test	Answer	Explanation
Is the proposed measure likely to limit the number of producers or suppliers to: • only one producer? • only one buyer? • less than four producers?	No	At present, councils and ARV have limited choice of suppliers of collection and disposal of waste and recycling. The regulations and service standard will provide certainty to councils, alpine resorts and the waste and recycling sector on the standard of service that is required. This certainty will support industry to know what facility equipment their operations will require and what services to offer to council and ARV. The certainty can also support economies of scale, as well as create more consistent and higher value commodity outputs. The regulations and service standards will create new investment conditions which will boost investment certainty both for new market entrants, and for existing market participants expanding existing operations. The standards are not expected to have a negative impact on market competition.
Would the proposed measure discourage entry into the industry by new firms/individuals or encourage existing providers to exit the market?	No	It is unlikely that the regulations and service standard will significantly disadvantage existing service providers or encourage them to exit the market. Notwithstanding this, some existing companies that charge councils and ARV on a per tonnage basis may need to adjust their business model to account for potentially reduced tonnages and revenue associated with the glass stream bypassing the MRF. Some MRFs have also invested in sorting technology which assumes glass will be present, which may not be well suited to the reformed glass-out system (however these MRFs would have been expecting glass to be separated from the mixed recycling stream in 2027 anyway, so there is no change from the base case). The removal of glass from mixed recycling stream may, however, provide opportunities for MRFs to financially benefit from the resultant improvement in the quality and commodity values of other recyclables and reduced equipment maintenance costs. Manufacturers of certified compostable plastic caddy liners may be impacted if the majority of their business relates to manufacturing of this item that is now proposed to no longer be accepted in the FOGO stream. The number of Victorian businesses that exclusively manufacture these items is not known but is expected to be low. In these cases where manufacturers exclusively produce these caddy liners, pivoting manufacturing to other items could involve costs, however these businesses could also continue to export these certified compostable caddy liner items to other jurisdictions should they remain accepted in FOGO streams elsewhere. The lead time between the regulations being made and commencement of the requirements to no longer accept this item in the FOGO stream will also enable these businesses to plan for any necessary changes to their business model.
Would the proposed measure impose higher costs on a particular class of business or type	Potentially as a	The proposed measure will not directly impose costs on a particular class of business or type of service.

of service? (e.g. small business)	secondary impact	Some nursing homes, retirement villages and temporary boarding houses serviced by councils may not currently be sorting their waste into the four streams and may need to change their business practices and in some cases infrastructure in order to do so. This may incur a cost but it is not expected to be significant. A number of indirect/secondary potential costs may arise, for example: • Some MRFs may incur costs associated with a need to upgrade sorting technology in order to handle materials included in the standard lists. • Higher costs may be incurred by recipients of waste and recycling services if suppliers of collection and sorting services increase their prices to cover their potential increased costs associated with upgrading sorting technology. Conversely, there may be cost savings for some MRF businesses in reduced maintenance to plant and equipment that, under the base case, is often damaged by broken glass in the mixed recycling stream. This may offset potential sorting technology upgrade costs to some extent.
Would the proposed measure affect the ability of businesses to innovate, adopt new technology or respond to the changing demands of consumers?	Minimal	While industry will adapt their service offering to councils and ARV based on the standard contents lists for the four streams, the preferred option does not preclude industry from innovating how they go about this, e.g. through adopting new technology (for example, the approach in the service standard relating to soft plastics supports innovation). The Circular Economy Act requires that a service standard is reviewed at least every three years, and this regular review timeframe will ensure that the service standard remains up-to-date and reflects the latest technology and meets current consumer demands and expectations (for example in relation to what materials can and can't be recycled). Efficiency is a key area of competition between recyclers, whereby the operators with the lowest gate fees are more attractive to councils. The standard lists may lead to changes in this area, whereby a MRF which previously didn't accept a particular item will now be obliged to accept it, reducing their efficiency. While the standard lists may change the competitive environment between operators in the short term, the Department considers that the impacts on competition will be minimal and over the long term the certainty of the lists will help market stability and investment confidence. Furthermore, this minimal reduction in competition is necessary to implement the intent of the Circular Economy Act and achieve the objectives of the Regulations and Standards.

6. Implementation and evaluation strategy

This chapter outlines the actions that the Victorian Government will undertake to:

- implement the proposed regulations, service standard and supporting initiatives,
- assess the efficiency and effectiveness of the proposed regulations and service standard, and
- assess compliance with the proposed regulations and service standard.

6.1 Implementation Plan

The regulations are proposed to come into operation on 1 December 2024 and prescribe 1 July 2027 as the date on which the service standard is proposed to commence. There is a large program of work for Recycling Victoria to deliver to support councils and ARV to meet the obligations in the instruments. The regulations and service standards are part of Government's kerbside reforms and this implementation plan includes those supporting initiatives.

Recycling Victoria will work closely with councils and ARV to ensure that they understand the new obligations being introduced and how to comply. Recycling Victoria is developing an implementation plan which will be publicly available.

Since the release of the CE Policy in 2020, and in the absence of the regulations and service standard, the transition to the new household recycling system has been occurring in a staged approach, with councils introducing services in line with the needs of their local communities. There are councils that have completed the introduction of the four-stream system, while others are partially transitioned with various combinations of streams and others are yet to begin the introduction of streams.

Councils and ARV have an important role leading the delivery of the reforms to customise the service for their communities while meeting the regulatory requirements of the reform. The Victorian Government is supporting councils through the transition by providing funding support for service planning, new and upgraded infrastructure, and state-wide education and behaviour change programs that will help households understand their new recycling system.

The funding for these supporting initiatives has come from the Victorian Government's Sustainability Fund, which is a hypothecated fund established and administered under the *Environment Protection Act 2017* and is allocated for strategic initiatives that foster environmentally sustainable uses of resources and best practices in waste management and community action or innovation to reduce impacts from climate change.

A detailed breakdown of the components that will make up the implementation plan are outlined Table 27 below.

Table 27: Key implementation outputs, responsibility and timing for the regulations, service standards and supporting initiatives

Implementation task	Outputs	Responsibility & timing
1. Proposed regulations and service standard are made	• Public consultation on proposed regulations and service standard • Making of the Circular Economy (Waste Reduction and Recycling) (Mandatory Service Provision and Other Matters) Regulations 2024 • Making of the Household Waste and Recycling Service Standard 2024	DEECA: 2024
2. Support councils and ARV in preparing to comply and support the community for transition	**Support for councils and ARV** • Guidance material for councils and ARV to support them in understanding their obligations and	Recycling Victoria: 2024 – 2027

	how to comply with the regulations and service standard • Recycling Victoria's regulatory approach for this service standard (document) • Ongoing regional forums for councils and ARV • Webinars and information sessions for councils and ARV on the obligations • Site visits **Support for the community** • Statewide campaigning to support successful local transition • Circular Economy Household Education Fund for councils and ARV • Library of materials, resources and training to support council delivery	Sustainability Victoria: 2024 – 2025
3. Compliance Monitoring	• Support for councils in undertaking the first year of annual reporting • Ongoing regional forums for councils and ARV	Recycling Victoria: 1 July 2027 onwards
4. Support to ensure infrastructure is available to enable delivery of four streams (enabling function)	• Infrastructure project funding: ▪ the Kerbside Reform Support Fund ▪ the Transfer Station Upgrade Fund ▪ Circular Economy Councils Fund ▪ the Regional Recycling Fund • the Circular Economy Infrastructure Fund, the Circular Economy – Recycling Modernisation Fund and the Investment Facilitation Service	DEECA and Sustainability Victoria 2020 – 2024
5. Infringements and auditor provisions	• Internal policies, procedures and training for Recycling Victoria's use of legislative requirements regarding issuing of infringements or official warnings • A framework for the appointment and management of external auditors	Recycling Victoria: 2024 onwards

Task 1: Regulatory Instruments are made

Public consultation will occur on the proposed regulations, service standards and RIS via Engage Victoria between June - August 2024. Following public consultation, all feedback received will be considered by DEECA and amendments made to the proposed regulations and service standard if required.

The regulations will be settled with the Office of the Chief Parliamentary Counsel and submitted to the Governor in Council, on the recommendation of the Minister for Environment, to be made. It is intended the regulations will come into effect on 1 December 2024, and for the regulations to prescribe 1 July 2027 as the day on which the requirements relating to the section 60 obligation in the Circular Economy Act for mandatory service provision by councils will commence. The service standard will be finalised by the Head, Recycling Victoria and submitted to the Minister for Environment for approval together with the regulations. It

is intended the service standard will commence on 1 July 2027, to align with the date on which the requirements under section 60 of the Act need to be met.

Communication about the final regulations and service standards will occur when they are made, via various methods including correspondence to councils and ARV and other stakeholders in the sector, an article in the Recycling Victoria newsletter and social media. A Response to Public Comment report, summarising the key matters raised in the public consultation and any changes that were made to the final instruments, will be sent to everyone who provided a submission during the public consultation and published on the Engage Victoria website.

In addition, in accordance with requirements of the *Subordinate Legislation Act 1994*, a notice of the making of the regulations and service standard will be published in the Victorian Government Gazette and on the Victorian Public Notices website (www.publicnotices.vic.gov.au). The regulations will also be available to download from the Victorian Legislation website (www.legislation.vic.gov.au) and the service standard will be published on the Recycling Victoria website.

Task 2: Support councils and ARV in preparing to comply and support the community for transition

Support for councils and ARV

Recycling Victoria will produce an implementation plan to outline the key activities to support councils and ARV to understand their new obligations in the lead up to the service standard commencement date, and the first year of the service standard's commencement. The implementation plan will be publicly available.

Recycling Victoria's regulatory approach enables the use of a range of tools and methods to encourage and require compliance. In line with Recycling Victoria's overall regulatory approach, a key focus will be providing councils and ARV with practical and constructive support and advice to encourage compliance. This includes supporting councils and ARV to improve their understanding of the law, as well as how to address areas or risks of non-compliance. This approach will be supported by regular engagement.

The implementation plan will include:

- development of Recycling Victoria's regulatory approach for this service standard so that councils and ARV understand how compliance and non-compliance will be approached and any priorities for Recycling Victoria regarding compliance
- development and publishing of guidance to support councils and ARV to understand how to comply with their obligations
- development of an annual reporting process for councils and ARV to demonstrate compliance once the service standard commences, and associated guidance for councils and ARV
- webinars, regional forums and information sessions to provide councils and ARV information and provide the opportunity to provide feedback.

Support to community

Clear and effective communication to Victorian communities is required to ensure the successful implementation of the four-stream waste and recycling system.

Sustainability Victoria, in conjunction with councils and ARV, is delivering a household education and behaviour change program to help educate Victorians to better manage and reduce their household recycling and waste. This involves state-wide communications using a range of methods including advertising, public relations, community engagement, events and behavioural interventions. In addition, SV is providing campaign materials and guidance to support councils in the delivery of local campaigns.

To support the delivery of local campaigns, the *Circular Economy Household Education Fund*[67] has been established to provide financial support of $6.03 million to all Victorian councils and ARV to educate their local communities on how to use the new services correctly to achieve a low level of contamination. A key objective of this fund is to promote the recycling system to build community trust and pave the way for successful implementation of the new services when they are introduced.

Applicants to access the education fund must use the standardised campaign materials – developed by Sustainability Victoria – which help educate Victorians to better manage and reduce their household recycling and waste.

[67] (SV, 2024)

Task 3: Compliance monitoring

As a new regulator, Recycling Victoria is committed to working constructively with councils and ARV to ensure that they understand their obligations, and this will continue once the obligation and standard commences. Recycling Victoria's approach to compliance and any priorities in relation to that will be outlined in the Regulatory Approach relating to this service standard, which will be published and communicated.

Recycling Victoria will monitor and assess compliance with the obligations and service standard, drawing upon information, intelligence, and data from the community, local government, and industry. Recycling Victoria will take a risk-based approach to prioritising and addressing potential non-compliances.

Recycling Victoria intends to implement an annual performance reporting approach to support monitoring of compliance. Engagement activities will be delivered (webinars, information sessions) to support councils and ARV to understand what they need to complete in their reporting.

Task 4: Support to ensure the necessary infrastructure is available

A range of grant opportunities have been provided by the Victorian Government and the Australian Government to councils and the waste and recycling sector in order to support the implementation of the four-stream waste and recycling system and ensure the necessary infrastructure is available to improve processing capacity in Victoria.

These include:

- The *Kerbside Reform Support Fund* is administered by DEECA and allocates funding to councils and ARV to help offset the costs of introducing their intended service models for the four waste streams in accordance with their transition plans. Allocations of funds under this are determined based on the service offering outlined in transition plans.
- The *Transfer Station Upgrade Fund* is available for rural and regional councils in Victoria and provides funding specifically for upgrading transfer stations and establishing drop-off collection points to enable the collection of separated glass and FOGO. Under this Victorian Government fund administered by DEECA, $20 million in funding was made available to eligible councils to increase community access to drop-off points, particularly for those households without a kerbside service for glass and organics.
- The *Circular Economy Councils Fund*[68] is administered by Sustainability Victoria and is a 4-year program which supports councils and ARV to reduce waste to landfill and transition towards a circular economy. It offers grants of up to $500,000 for on local and regional circular economy projects which decrease the volume of waste to landfill, increase the volume of material reused, repaired, repurposed or recycled, and increase circular economy activity which also stimulates local employment and economic growth.
- The *Regional Recycling Fund*[69] is a Victorian Government funding initiative administered by DEECA that will invest $34.9 million over three years in recycling infrastructure and jobs in regional Victoria. Round 1 of the Regional Recycling Fund provided grants of up to $500,000 per regionally significant resource recovery facility, to help upgrade infrastructure for recyclable materials including cardboard, plastic, paper, glass and mixed recyclables. Round 2 of the Regional Recycling Fund aims to reduce the costs associated with transporting recyclable materials in regional Victoria. It will invest up to $25 million in small regional material recovery (sorting) facilities. These facilities:
    - generate direct and indirect local economic benefits
    - create opportunities for the retention and reuse of materials locally
    - reduce transport costs, by creating local sources of material for reuse
    - increase transport efficiencies through consolidation of volumes and higher compaction rates.
- The *Circular Economy Infrastructure Fund (CEIF)* and the *Circular Economy - Recycling Modernisation Fund (CE-RMF)*[70] provide funding for the waste and recycling sector to improve recycling infrastructure, which will in turn build the capacity, capability and resilience of Victoria's resource recovery sector, prepare businesses for the implementation of the national export ban on waste materials which was agreed to at the Council of Australian Governments in 2020, increase the

[68] (SV, 2023, *Circular Economy Councils Fund*)

[69] (DELWP, 2023)

[70] (SV, 2023, *Materials recycling infrastructure funding: Guidelines*)

quality of materials for remanufacture and create jobs in the circular economy. It is administered by Sustainability Victoria.

- Under the CE-RMF, the Victorian Government has released a funding stream of $13.3 million to address paper, cardboard, plastics, glass, tyres, textiles and organics recycling.
- Under the CEIF, the Australian Government has entered into a National Partnership Agreement (NPA) with States and Territories that commits up to $190 million over four years for recycling infrastructure projects across Australia. In Victoria, $37.9 million is available through this fund to industry and local governments to build capacity for high value recycled commodities and associated demand.

Task 5: Infringements and auditors

Auditors may be used by Recycling Victoria to investigate any potential non-compliance of its regulated entities with their obligations. This may include, but is not limited to, non-compliances relating to the service standard, and the proposed regulations. Audits may be conducted by Recycling Victoria staff or Recycling Victoria may engage external auditors, in line with the provisions in the proposed regulations.

The approach to the engagement of auditors will differ across Recycling Victoria's regulatory functions. For example, for the Container Deposit Scheme, the intent is for Recycling Victoria and the Scheme Coordinator to jointly appoint a Scheme Auditor. The auditor will conduct audits of the Network Operators, Scheme Coordinator, subcontractors, waste supply chain, and collection point operators on an as needs basis to investigate non-compliances and to ensure scheme integrity. Recycling Victoria may also engage external auditors, in line with the proposed regulations, to audit probity, data security, financial management and other matters under the scheme agreements.

For other regulatory functions, Recycling Victoria may use audits when required as part of a risk-based response to potential non-compliances. Audits may also be used as part of strategic compliance programs aimed at identifying, preventing or responding to non-compliance.

Recycling Victoria will establish internal policies, procedures and systems to enable Authorised Officers (or other persons authorised by the Head, Recycling Victoria to issue infringements and official warnings.

6.2 Evaluation strategy

The evaluation strategy is designed to assess the effectiveness of the reform following its implementation and operation for a period of time. The Victorian Guide to Regulation notes that the evaluation strategy should include detail of what will be evaluated, how and when it will be done and by whom.

6.2.1 What will be evaluated

The implementation of the new reforms through the proposed regulations and service standard will be evaluated through assessment of whether the objectives of the legislative instruments have been met and whether any changes to the instruments may be required in future.

The evaluation will consider the following:

- implementation of, and compliance with, the requirements under the regulations and service standard
- effectiveness of the regulations and service standard in:
    - diverting waste from landfill
    - enabling improvements in the value of recyclables and greater capture of this in the sector
    - reducing confusion for households sorting their waste and reduction in contamination of waste and recycling streams
- the actual impact of the regulations and service standard against the expected impact captured in this RIS in terms of costs and benefits incurred by regulated parties and the regulator
- lessons learnt, including any unintended consequences, and options to improve the regulations and service standard.

The other supporting initiatives outlined in the Implementation Chapter will also be subject to evaluation.

6.2.2 How and when will evaluation occur

Evaluation of this proposed regulatory framework will take multiple forms – ongoing monitoring and assessment, formal review of the Circular Economy Act, regulations and service standard, and evaluation of the other supporting initiatives.

The review of the regulations, Circular Economy Act, service standard and other initiatives will draw on a range of data sources, including data reported by councils and ARV and the waste, recycling and resource recovery sector, data from other portfolio partners such as the EPA and federal government waste and recycling information, and other data sources such as Australian Bureau of Statistics data, all of which are collated through the Recycling Victoria DataHub.

Part 3 of the Circular Economy Act establishes data collection and reporting requirements that prescribed reporting entities in the waste, recycling and resource recovery sector must meet. At present, these provisions require regulations to be prepared in order to come into effect. Work to prepare regulations for mandatory data collection and reporting is expected to commence in the coming year.

These data regulations will help achieve a key commitment in the CE Policy to expand and improve Victoria's waste data systems, and will ensure that high quality, reliable data is accessible about Victoria's circular economy and waste, recycling and resource recovery sector. It will enable Recycling Victoria to have appropriate oversight and regulation of the sector, help government and businesses to better manage waste and make better investment decisions, and enable government to track Victoria's progress towards a circular economy.

Review of the regulations and Circular Economy Act

Under the Subordinate Legislation Act, all regulations sunset ten years after their commencement. Regulations can be remade with or without amendments so there is no gap in regulation. Evaluation of the proposed regulations will occur before they sunset in 2034, unless a review of a service standard identifies matters that warrant amendment in the regulations which will initiate a review of the regulations earlier.

The evaluation will assess whether the objectives of the regulations have been met, implementation of, and compliance with, the regulations, lessons learnt and whether any changes to the regulations may be required in future.

Section 182 of the Circular Economy Act provides for a review to be conducted of the first five years of operation of the Act. This includes providing the Minister with a written report, which is required to be tabled in Parliament. The first review is planned to be completed by 2027. The review of the operation of the Circular Economy Act may include a recommendation to amend the regulations and/or the service standard.

Review of the service standard

Section 64 of the Circular Economy Act requires that the Minister must review a service standard at intervals of no longer than three years. The Minister can also review a service standard at any time on the request of the Head, Recycling Victoria, if the Minister is satisfied that it is in the public interest to do so.

For the purposes of the review, the Head, Recycling Victoria must provide advice to the Minister relating to the operation and performance of the service standard during the preceding three years, and any amendments required to improve its operation. The Head, Recycling Victoria may also provide advice to the Minister relating to compliance with the service standard during the preceding three years, and any amendments required to improve compliance with it.

Three-year review cycles will allow time for the sector to continue developing maturity with regards to provision of municipal waste and recycling services and capacity and infrastructure to collect and process materials, and for Recycling Victoria to evolve in its regulatory approach over time.

The first planned review of the household service standard will be within three years from the date it is made. It is recognised that with the intention to make the service standard in 2024, a review will be required before the requirement to comply with the service standard commences in 2027. DEECA considers that this is appropriate as it provides a means to ensure that the service standard will not have any adverse effects and allows for any advances in the sector between the making of the service standard and when it commences to be considered and incorporated into the standard, before it takes effect (for example, advances in soft plastic recycling). Given the service standard will not have yet been operational, the scope of this review will be narrow, to ensuring the requirements set out in the standard are still fit for purpose.

The review of the service standard may also identify matters that precipitate amendment of the regulations.

Evaluation of other supporting initiatives

The funding support provided to councils and ARV for the implementation of this reform is provided through the Sustainability Fund, which requires projects to be evaluated in accordance with the Sustainability Fund Evaluation Framework to demonstrate outcomes and achievement of the Sustainability Fund legislative objectives. The purpose of monitoring and evaluating the Sustainability Fund is to:

- provide transparency and accountability for Sustainability Fund monies
- show achievement against the Fund's legislated objectives
- support decision-making
- support learning from the delivery of funded projects and programs (i.e. lessons learned).

Each funded project requires annual reporting against its targets in its funding agreement, and project leaders must prepare Evaluation Reports at the completion of each project.

6.2.3 Who will lead the evaluation

Recycling Victoria is responsible for ongoing monitoring and assessment of the implementation and compliance with the regulations and service standard.

Reviews of the Circular Economy Act, the regulations and the service standard will be undertaken by DEECA. Evaluation of DEECA Sustainability Fund projects will be carried out by DEECA as the department responsible for the delivery of the projects and acquittal of funding requirements.

7. Consultation

DEECA is bound to meet the consultation requirements set out in the *Subordinate Legislation Act 1994* Guidelines and those set out in the Circular Economy Act in relation to the preparation and making of service standards.

In late 2022, the former DELWP conducted preliminary consultation via Engage Victoria and held targeted workshops with local government and alpine resort representatives on draft policy options for the service standard. Prior to this, DELWP also conducted public consultation on draft standard lists (late 2021 – early 2022), a key component of the service standard.

The proposed instruments and this RIS have been informed by feedback received from council representatives, alpine resort representatives, industry, and the community during this preliminary public consultation period. Further detail on the preliminary public consultation undertaken is provided below.

Targeted stakeholder consultation has also informed the proposed instruments and this RIS. DEECA now welcomes further feedback on the proposed regulations, service standard and RIS via the current stage of formal public consultation.

7.1 Preliminary public consultation

7.1.1 Proposed draft standard lists

From 22 November 2021 to 12 January 2022, the former DELWP sought community, local government and industry input on proposed drafts lists for each of the three recycling streams (glass recycling, mixed recycling, and FOGO).

This period of consultation included open online consultation for the public and industry via Engage Victoria and targeted workshops with industry. More than 900 individuals and 95 representatives from industry and local government provided valuable feedback via responses to online surveys on Engage Victoria and written submissions. 30 industry representatives and 52 local government representatives participated in engagement sessions focused on the mixed recycling stream.

The consultation reinforced that Victorians are keen recyclers and want to improve and increase recycling at home. There was a broad support for government reform to standardise how waste and recycling is sorted at home. Households also emphasised that clear labelling on recyclable packaging and clear communication around what can and can't be recycled helps them to recycle correctly, and were enthusiastic to see greater controls on types of packaging used and more innovation in plastic recycling.

Key opportunities were identified by industry and local government representatives who engaged in this consultation process:

- the importance of developing end market uses for recycled materials
- the need for infrastructure development to support and optimise recycling processes, particularly in regional areas
- controls on types of packaging used and the importance of product design to minimise waste and enable reuse and recycling.

7.1.2 Proposed policy settings for the service standard

From 29 September to 26 October 2022, the former DELWP sought feedback on a discussion paper on proposed policy settings for the first service standard to be met by councils and ARV in delivering the new four-stream household waste and recycling system. A Service Standard Framework was also released to support consultation.

This preliminary consultation period included open online consultation for councils and ARV, industry, and the community via Engage Victoria and targeted workshops for councils and ARV.

DEECA received survey responses and written submissions from:

- 55 council and alpine resort representatives
- 7 peak bodies

- 11 industry organisations
- 192 community members.

Four targeted workshops were also held in October 2022. A total of 89 representatives from 56 councils and two alpine resorts participated in these sessions.

The feedback received from this consultation was used in the finalisation of policy positions outlined in this regulatory impact assessment. A summary of the feedback received during this consultation period is available at https://engage.vic.gov.au/setting-the-standard-for-better-recycling-at-home.

7.2 Targeted stakeholder consultation

It is a statutory requirement under sections 6 and 12C of the *Subordinate Legislation Act 1994*, that where required by the Subordinate Legislation Act Guidelines, consultation occur with any sector of the public on which a significant economic or social burden may be imposed by the proposed regulations or legislative instrument (in this case, the service standard) and with other portfolio Ministers (i.e. their departments) which may be affected by the proposed regulations and service standard.

To meet this requirement, targeted consultation was held during September 2023 to January 2024 on the proposed regulations and service standard with the waste and recycling industry through direct engagements and existing regular forums, including the kerbside reform council engagement sessions, the Local Government Chief Executive Officer Forums (which includes representatives from all councils and ARV) and the Resource Recovery, Recycling and Waste Industry Group (RRRWIG) (which includes industry representatives and peak bodies).

Portfolio partners, such as the Environment Protection Authority (EPA) and Sustainability Victoria (SV), and other government agencies, such as the Office of the Chief Parliamentary Counsel, Better Regulation Victoria, Department of Justice and Community Safety, Department of Treasury and Finance and Local Government Victoria, were also consulted during this period.

Together, these engagements were vital to:

- gather information on current approaches to municipal waste and recycling service provision within the sector and test policy options to inform the drafting of the proposed regulations, service standard and RIS
- gain an understanding of the key barriers and opportunities anticipated by councils, ARV and industry, and potential solutions that minimise regulatory burden
- ensure councils, ARV and industry are aware of any policy or reform that may impact their operations
- enable continued engagement with peak body organisations and key stakeholders, ensuring opportunities to advise on project progress
- provide a feedback loop to key stakeholders.

7.3 Public comment

The proposed regulations, service standard and this RIS will be released via Engage Victoria for an 8-week public comment period to provide the waste and recycling sector, councils, ARV and other interested stakeholders and members of the public with the opportunity to consider and provide feedback on the proposed instruments and RIS. Feedback can be provided by completing the online survey at https://engage.vic.gov.au/setting-the-standard-for-better-recycling-at-home.

DEECA will consider all feedback received during the period of public review. DEECA will prepare a formal Response to Public Comment summarising the submissions received during the consultation, and make this available on the Engage Victoria website.

Appendix

Appendix 1: Infringement offences and penalties.

Table 28: Proposed infringement offences and penalties

Proposed infringement offence	Proposed infringement penalty (natural person)	Amount ($)[71]	Proposed infringement penalty (body corporate)	Amount ($)
Section 29 of the Act – failure to comply with any condition of an exemption	5 penalty units	987.95	N/A	N/A
Section 55(1) of the Act – disclosure of any confidential or commercially-sensitive information not in accordance with Part 3 of the Act	6 penalty units	1185.54	N/A	N/A
Section 73(2) of the Act – refusal to comply with a notice requiring information	5 penalty units	987.95	25 penalty units	4939.75
Section 74G(1) of the Act – failure of a responsible entity to submit a statement of assurance to the Head, Recycling Victoria on or before 30 September each year	2 penalty units	395.18	10 penalty units	1975.90
Section 117(2) of the Act – refusal or failure to comply with an information gathering notice	12 penalty units	2371.08	24 penalty units	4742.16
Section 126(1) of the Act – failure to comply with an improvement notice	6 penalty units	1185.54	30 penalty units	5927.70
Section 128(1) of the Act – failure to comply with a prohibition notice	6 penalty units	1185.54	30 penalty units	5927.70
Section 152(3) of the Act – refusal or failure to comply with request to state their name and address; or stating a false name or address; or stating an address which is not full and correct	2 penalty units	395.18	N/A	N/A
Section 153(2) of the Act – refusal or failure to comply with a direction given by an authorised officer	6 penalty units	1185.54	30 penalty units	5927.70

[71] As per the Department of Treasury and Finance's annual indexation of fees and penalties, from 1 July 2024 to 30 June 2025, the value of the penalty unit is $197.59.

Section 155 of the Act – hinder, delay or obstruct an authorised officer; conceal from the authorised officer the location or existence of any person or thing; use abusive, threatening or insulting language to the authorised officer or a person assisting the officer	6 penalty units	1185.54	30 penalty units	5927.70
Section 160(2) of the Act – failure to allow the person assisting the authorised officer access to the place or premises	6 penalty units	1185.54	N/A	N/A
Section 162(2) of the Act – refusal or failure to comply with a request made by an authorised officer who has entered a place or premises to produce a document, or part of a document located at the place or premises in the person's possession or control	6 penalty units	1185.54	60 penalty units	11855.40
Section 163(3) of the Act – refusal or failure to comply with a request made by an authorised officer to give any information or answer any question	6 penalty units	1185.54	60 penalty units	11855.40
Section 170(3) of the Act – failure of the owner of a thing to comply with terms and conditions imposed by the Head, Recycling Victoria on the return of that thing	3 penalty units	592.77	15 penalty units	2963.85
Regulation 8(1) of the RCC Regulations – failure to notify the Head, Recycling Victoria when an entity becomes a responsible entity	6 penalty units	1185.54	30 penalty units	5927.70
Regulation 9(1) of the RCC Regulations – failure to notify the Head, Recycling Victoria when an entity ceases to be a responsible entity within 60 days after ceasing to be a responsible entity	1 penalty unit	197.59	5 penalty units	987.95

Appendix 2: CBA Inputs and Assumptions

This appendix provides further information about the CBA modelling. The following tables outline inputs and assumptions.

Overarching assumptions

Main Category		
Discount rate (real)	4% value	**Source**[72]**:** Victorian Government
Household forecasts	Victoria in Future data used to forecast household numbers for individual councils. A constant growth rate interpolation was used to calculate interim years.	**Source:** Department of Transport and Planning, 2023

Waste Volume Projections		
Source: Recycling Victoria, Victorian Local Government Annual Survey, available at: https://www.vic.gov.au/victorian-local-government-waste-data-dashboard		
Kerbside Waste Generated in 2021-22		
Household rubbish	1,207,856	tonnes
Organics	646,422	
Mixed recycling	563,343	
Glass	10,918	
Household generation rates		
Household rubbish	0.434	tonnes / household
Organics	0.35	
Mixed recycling	0.17181	
New FOGO generation rate reduction	75%	The rate at which FOGO is generated in the future, accounting for existing garden organic services (i.e. a 25% reduction in FOGO volumes relative to the tonnes per household)
CDS reduction of mixed recycling	17%	The reduction in weight in mixed recycling waste generation due to materials being diverted through CDS Vic. This is applied to the mixed recycling tonnes per household value above.

[72] See Reference list below for list of sources.

Processing/disposal costs

Assumptions are an approximation which factors the considerable statewide variance in rates. Charges are commercial in confidence, which limits available data sources to inform assumptions. It is also assumed that any waste to energy costs to councils will be equal to landfilling costs.

Source: DEECA consultations with industry and the local government sector

Landfill costs		
Metropolitan and interface gate fee, waste levy, transport and handling costs	$284.27	per tonne
Regional and shires gate fee, waste levy, transport and handling costs	$309.02	
Mixed recycling and glass gate fees		
Mixed recycling and glass: metro, interface and regional city		
Glass included	$170.00	per tonne
Glass excluded	$125.00	
Separate glass	$0.00	
Mixed recycling and glass: large and small shire		
Glass included and excluded	$200.00	per tonne
Separate glass	$25.00	
FOGO gate fees		
Metropolitan and interface gate fee	$80.00	per tonne
Regional and shires gate fee	$100.00	

Commodity prices per tonne			
Separated glass	$70.00		**Source:** DELWP, 2023, *Regulatory impact statement – container deposit scheme*
Mixed recycling (including glass)	$18.47	Commodity prices are based on the composition of a mixed recycling bin (as outlined below). The value of paper/cardboard was assumed to increase from $20 per tonne to $105 per tonne when glass was removed. The value of metals and plastics was assumed to not to change following the separation of glass. This is a conservative assumption as plastics are also likely to increase in value with the separation of glass. The value of glass collected in mixed recycling was assumed to have a negative value of -$30 per tonne and separated glass was assumed to have a value of $70.00 per tonne as noted above. Contamination was assumed to be 14% for mixed recycling and 7% for glass-out recycling.	**Source:** DEECA calculation based on consultation with industry and the following sources: Recycling Victoria, 2023, *Market Insight Report Summary* Recycling Victoria, 2023, *Recovered plastic packaging: Market insights report – July 2023* • Recycling Victoria, 2023, *Recovered metal packaging: Market insights report – July 2023* • Blue Environment, 2022
Mixed recycling (excluding glass)	$122.99		
Organic product value p/t FOGO	$10.00	Assumption that $10 worth of organic products is created for each tonne of FOGO processed. This is a conservative estimate accounting for the challenges and complexities of the industry and the various practices which take place. Compost products can range from approximately $25-$85 per tonne.	**Source:** DEECA calculations based on consultation with industry.

Bin composition

RESIDUAL BIN

Organics	50%
Food organics	35%
Garden organics	7%
Wood/timber (organics)	1%
Other organics	7%
Paper and cardboard	10%
Glass	3%
Metal	3%
Plastics	15%
Other	19%

Source: DEECA analysis based on Sustainability Victoria, 2018

COMMINGLED BIN

	Unseparated	Separated
Paper and cardboard	48%	76%
Glass	27%	0%
Plastics (1-7)	8%	13%
Metal	3%	5%
Contamination	14%	7%

Source: DEECA analysis based on Blue Environment, 2022

Collection costs

Source: DEECA consultation with industry and the local government sector

Note: Lift rates are the cost of collecting an individual bin. These are charged by collection contractors to councils and cover the cost of the collection service. Assumption is an approximation which factors the considerable statewide variance in rates and service providers, including some councils providing their own collection services. Charges are commercial in confidence, which limits available data sources to inform assumptions. It is assumed that the cost per bin lift incorporates all collection costs, including transport to processing facilities.

Metropolitan and interface bin lift costs per collection		
Glass only	$0.90	
Mixed recycling (high compaction)	$1.00	
Mixed recycling (low compaction)	$1.05	
Organics	$1.05	
Regional centre bin lift costs per collection		
Glass only	$0.95	
Mixed recycling (high compaction)	$1.05	
Mixed recycling (low compaction)	$1.10	
Organics	$1.10	
Large shire bin lift costs per collection		
Glass only	$1.40	Higher costs for large shire lift rates accounts for the additional distances and transport costs between households and processors and factor the limited available service providers and low population density.
Mixed recycling (high compaction)	$1.40	
Mixed recycling (low compaction)	$1.45	
Organics	$1.45	
Small shire bin lift costs per collection		
Glass only	$1.45	Higher costs for small shire lift rates accounts for the additional distances and transport costs between households and processors and factor the limited available service providers and low population density.
Mixed recycling (high compaction)	$1.45	
Mixed recycling (low compaction)	$1.50	
Organics	$1.50	

Glass and FOGO service implementation costs

Source: DEECA consultation with industry and the local government sector.

Note: Metropolitan and interface councils are expected to run one drop off point per 750 households that use alternative services, Regional city councils are assumed to run one drop off point per 850 households that use alternative services, and large and small shires are assumed to run one drop-off point per 1,000 households that use alternative services. Costs for FOGO and glass drop-off points are calculated separately.

Annual cost of operating drop-off points (glass) per serviced household		
Metropolitan and interface	$5.85	Assumption accounts for costs such as contract management, collection, cleaning and maintenance. Assumption is an approximation which factors the considerable statewide variance in services.
Regional city	$5.16	
Large and small shire	$4.39	
Annual cost of operating alternative services (FOGO) per serviced household		
Metropolitan and interface	$4.88	Assumption accounts for costs such as contract management, collection, cleaning and maintenance. This assumption also incorporates council home composting program accounting for 20% of households with an alternative service. Assumption is an approximation which factors the considerable statewide variance in services.
Regional city	$4.33	
Large and small shire	$3.71	
Cost of implementing drop-off points (glass) per serviced household		
Metropolitan and interface	$5.67	Assumption accounts for purchase of bins, signage, lighting and project management for establishment, this is an approximation which factors the considerable statewide variance in services.
Regional city	$5.00	
Large and small shire	$4.25	
Cost of implementing alternative services (FOGO) per serviced household		
Metropolitan and interface	$4.65	Assumption accounts for purchase of bins, signage, lighting and project management for establishment, this is an approximation which factors the considerable statewide variance in services. This assumption also incorporates costs related to supporting households who home compost accounting for 20% of households with an alternative service.
Regional city	$4.12	
Large and small shire	$3.52	
New bin costs per serviced household		
Metropolitan and interface	$29.50	Costs include procuring and delivering new bins, education, administrative costs.
Regional cities	$31.50	Assumption that costs to councils are reduced following Government assistance through the Kerbside Reform Support Fund and Circular Economy Household Education Fund.
Large and small shires	$34.50	

Collection variables		
PRESENTATION RATES		
Note: Presentation rates are the percentage of bins in use that are presented on the street for collection.		
Rubbish	85%	**Source:** DEECA consultation with industry and the local government sector.
Mixed recycling	85%	
Organics	70%	
Glass	40%	
DIVERSION RATES		
Organics		
Note: Assumption on the proportion of household organic waste which is diverted from a household garbage service following the introduction of a FOGO service.		
Kerbside FOGO	75%	**Source:** DEECA consultation with industry and the local government sector.
Drop-off, alternative and home composting FOGO	15%	Assumption that drop-off diversion rates will become less efficient in dispersed rural areas due to the distances required to transport it and the prevalence of home composting. Assumption that home composting achieves higher diversion rates in more regional areas, because the practice is more accessible and embedded. **Source:** DEECA consultation with industry and the local government sector.
Glass		
% of household glass		
Kerbside glass	97%	Assumption based on DEECA consultations.
Drop-off glass	37%	Assumption based on analysis of survey results from councils who have implemented extensive drop-off services.

Minimum kerbside services for options

This is the assumptions for the proportion of households in a council that will have a kerbside service under the options.

Options 1 and 3

All households with an existing kerbside service receive a kerbside FOGO service and glass service.

Options 2 and 4 (FOGO)

Metropolitan	70%	Minimum proportion of households receiving a kerbside service. If a council has greater ratios in base case than these are used. Ratios account for different housing types such as privately serviced MUDs and dispersed rural properties. These are highly approximate and account for varied statewide circumstances. These assumptions do not provide an accurate indication of minimum compliance with potential future service standards. If a council proposed to provide a higher level of kerbside services under the base case, then this remained unchanged. If a council provided a mixed recycling or garbage kerbside service to a lower proportion of their community than the assumptions state, then these proportions were used in options 2 and 4. For example, if a densely populated metropolitan council provides a kerbside service to only 50% of households, then this value was used – not 70%
Interface	75%	
Regional city	60%	
Large shire	40%	
Small shire	40%	

Options 2 and 4 (Glass)

Metropolitan	70%	Minimum proportion of households receiving a kerbside service. Ratios account for different housing types such as privately serviced MUDs and dispersed rural properties. These are highly approximate and account for varied statewide circumstances. These assumptions do not provide an accurate indication of minimum compliance with potential future service standards.
Interface	80%	
Regional city	70%	
Large shire	40%	
Small shire	40%	

Greenhouse gas calculations

Note: Greenhouse gas calculations, for the most part, use the same assumptions as the *Regulatory Impact Statement for Victoria's waste to energy cap and cap licensing (2023)*. However, due to uncertainty on the commissioning of WtE facilities suitable for processing residual municipal solid waste (MSW) within the early modelling period, changes including a 2-year delay have been built into the modelling for this RIS and the model accounted for the processing of residual MSW via WtE in the late 2020s and 2030s. By the end of the modelling period it was assumed that approximately 650kt of residual MSW would be processed through WtE. Specific assumptions relating to this have not been presented in this table due to commercial-in-confidence considerations.

	Value in 2024/2034	**Description**	**Source**
Diverted FOGO composition	84% food 14% garden organics 2% wood and timber	Assumption that diverted FOGO is comprised of 84% food, 14% garden organics and 2% wood and timber. This reflects the high proportion of food in new FOGO services due to the prevalence of existing garden organic services.	DEECA calculation based on Sustainability Victoria, 2018
FOGO in general rubbish to landfill	1.02/1.04	This emissions factor describes the avoided GHG emissions from diverting one tonne of FOGO in landfill.	DEECA analysis based on a range of resources including prior analysis in the Waste to Energy Regulatory Impact Statement. **Source:** DEECA, 2023, *Waste to Energy: Regulatory Impact Statement for Victoria's waste to energy cap and cap licensing* (version 2). The values presented here include scope 1 and 2 emissions as well as avoided emissions, and different waste streams are grouped by impact and presented in terms of a composite factor that represents a broad stream for simplicity.
FOGO recovery emissions factor	-0.02/-0.2	This emissions factor describes the GHG emissions associated with recovering one tonne of FOGO. The value is close to zero as there are almost no emissions associated with organics recovery. This is a conservative estimate, as the model does not estimate the GHG benefits associated with the avoided need for other fertilisers and similar organics products. This model assumes that 40% of recovered FOGO is processed in an open windrow facility, 40% of recovered FOGO is processed in an in-vessel facility, and 20% of recovered FOGO is processed in an anerobic digestion facility. These are intended as a rough indication of the long-term variance in FOGO recovery processing methods. This assumption is not intended to be an accurate depiction of the actual proportions of these processing methods. This assumption does not change over the course of the model. The composition assumption makes a small difference to the GHG results, as all organics processing techniques have near-zero associated emissions.	
FOGO in general rubbish to WtE	-0.71/-0.61	This emissions factor describes the GHG emissions associated with removing one tonne of recovered FOGO from red-lidded residual waste bins which are destined for WtE. These additional emissions represent the foregone benefit of offsetting fossil fuels in the grid with organics processed in a WtE facility. Changes in this value over time are primarily driven by the declining marginal emissions intensity of Victoria's electricity grid.	
Non-FOGO waste in general rubbish to WtE	-0.20/-0.42	This emissions factor describes the GHG emissions associated with one tonne of non-FOGO general rubbish that replaces FOGO in WtE facilities. In the modelling period, this is comprised of approximately 41% plastic, 30% paper and cardboard, 14% other organics, 11% textiles, and 4% wood and timber, which is the proportion of these	

		materials in general rubbish, excluding food and garden organics. As plastic is a fossil fuel product, the processing of plastic through WtE contributes additional GHGs. Changes in this value over time are primarily driven by the declining marginal emissions intensity of Victoria's electricity grid.	
Non-FOGO waste in general rubbish to landfill	0.48/0.48	This emissions factor describes the avoided GHG emissions from diverting one tonne of non-FOGO general rubbish in landfill to use in WtE facilities to replace organics diverted toward recovery. The composition of materials is as noted above.	
Landfill gas capture rate	45%	Effectiveness of landfill gas capture infrastructure. It is assumed that all captured gas is combusted for energy, offsetting some of the emissions of landfill.	**Source**: Carbon Credits (Carbon Farming Initiative—Alternative Waste Treatment) Methodology Determination 2015, s 22

Emissions valuation

The analysis in this RIS uses a trajectory of 'carbon values' (Table 29) based on scenarios in the Intergovernmental Panel on Climate Change's Sixth Assessment Report (2023; 2022) which is consistent with the Paris Agreement, decided by the international community in 2015, to "hold the increase in global average temperature to well below 2°C and to pursue efforts to limit the temperature increase to 1.5°C". The series is also consistent with the estimated costs of meeting Victoria's climate goals, as modelled by DEECA for analysis supporting Victoria's 2035 emissions reduction target.

Victoria is delivering its share of global action to achieve the Paris Agreement goal through the *Climate Change Act 2017*. This includes establishing a process to develop emission reduction policies (sector pledges) and committed greenhouse gas emissions reduction targets of:

- 28–33% below 2005 levels by 2025,
- 45–50% below 2005 levels by 2030,
- 75–80% below 2005 levels by 2035, and
- net zero emissions by 2045.

This will contribute to Victoria's transition to net zero emissions and the global achievement of the Paris Agreement goal.

This IPCC trajectory assumes global action is taken to keep global temperature rise to well below 2°C and is maintained out to 2100. It is derived from the median of costs of abatement that has been assessed by the IPCC as necessary to provide a 50% chance of returning global temperature increases to 1.5 degrees Celsius by 2100, after 'overshooting' (IPCC, 2022, pp. 360, Scenario C2 Figure 3.32). This means it is a 'targets-based' or 'targets-consistent' valuation, not a 'social cost of carbon'.

As the IPCC's Sixth Assessment report did not include abatement cost estimates for 2020, estimates from the closest scenario in the IPCC's Fifth Assessment report were used instead (430-480 ppm scenario, (IPCC, 2014, pp. 450, Figure 6.21) The 25th percentile and 75th percentile estimates are also derived from the IPCC's reports.

The carbon values were converted into Australian dollars for the relevant year using an annual average of daily exchange rates and then escalated to current values using the historical consumer price index (CPI) series, both sourced from the Reserve Bank of Australia.

A straight line was used to connect each data point and calculate a value for each financial year.

Table 29: Benefits of avoiding GHG emissions

FY2023 AUD/tCO_2-e per year	Lower sensitivity (25th percentile)	Central values	Upper sensitivity (75th percentile)
2024	$73	$106	$155
2025	$77	$112	$168
2026	$80	$118	$181
2027	$84	$124	$195
2028	$88	$130	$208
2029	$92	$135	$221
2030	$95	$141	$235
2031	$106	$154	$253
2032	$116	$167	$272

2033	$127	$180	$290
2034	$137	$192	$309

Sensitivity analysis

A sensitivity analysis was conducted on the following key inputs to assess how changes in assumptions impacted the modelling outputs:

- Mixed recycling, glass and FOGO processing costs
- Collection costs
- Procurement and implementation costs (new bins and drop off points)

These inputs were selected as impacts on councils is the most complex aspect of the modelling, given councils experience both costs and benefits. Other outputs, such as the change in material commodity prices, deliver a simple large benefit, and testing variances in assumptions would only vary the extent of this large benefit.

Sensitivity testing of these input costs involved increasing them by 10% and 20%. Options continued to deliver an overall net benefit to councils – albeit a reduced benefit. The only exception is under a 20% processing cost increase scenario, where Option 3 indicated a slight and highly marginal overall net cost.

Procurement and implementation costs were the least sensitive in the analysis. This is likely due to the long-term costs and benefits associated with collection and processing being more significant than the initial costs of new services.

The preferred option, Option 4 demonstrated a net benefit to councils under every tested scenario.

All options continued to deliver the same significant greenhouse gas and commodity price/circular economy benefits as cost inputs increased.

The table below shows the results from the sensitivity analysis. It shows the net costs/benefits with unchanged assumptions in the first row, then shows the net costs/benefits as costs increase.

Table 30: Sensitivity analysis results – net benefit to councils

Scenario	Description	Option 1	Option 2	Option 3	Option 4
Net benefits to councils **No change to assumptions**	**$ change**	**$26,139,988**	**$21,263,731**	**$9,887,200**	**$7,879,484**
Collection cost increase - 10%	$ change	$15,607,110	$12,724,448	$5,042,515	$4,596,586
Collection cost increase - 20%	$ change	$5,074,232	$4,185,165	$197,831	$1,313,687
Processing cost increase - 10%	$ change	$18,317,782	$16,025,065	$4,807,358	$4,825,627
Processing cost increase - 20%	$ change	$10,495,575	$10,786,400	-$272,483	$1,771,770
Procurement and implementation cost increase - 10%	$ change	$22,466,128	$18,395,454	$7,667,975	$6,452,928
Procurement and implementation cost increase - 20%	$ change	$18,792,268	$15,527,178	$5,448,751	$5,026,371

A sensitivity analysis was also conducted by modelling the 'carbon values' which indicate the potential benefits of avoiding greenhouse gas emissions. These are discussed above. In this sensitivity analysis the lower, upper and central sensitivity values were tested. The below table shows the results of this analysis.

Table 31: Sensitivity analysis - Benefits of avoiding GHG emissions

Scenario	Option 1	Option 2	Option 3	Option 4
Lower sensitivity (25th percentile)	$63.7 million	$50.1 million	$32.8 million	$22.7 million
Central values	$93.3 million	$73.5 million	$48 million	$33.3 million
Upper sensitivity (75th percentile)	$145.7 million	$114.1 million	$77 million	$53.2 million

References

ACT Government (2018) *Paper and cardboard*, ACT Government, retrieved from https://www.cityservices.act.gov.au/__data/assets/pdf_file/0008/1368620/NOWaste-Paper-Factsheet_Update-March-2022_ACCESS.pdf

ACCC (Australian Competition & Consumer Commission) (n.d.) *Misuse of market power*, ACCC website, retrieved from https://www.accc.gov.au/business/competition-and-exemptions/misuse-of-market-power

Australian Packaging Covenant Organisation Ltd (APCO) (2000) *Recycled Content Guide*, APCO, retrieved from https://documents.packagingcovenant.org.au/public-documents/Recycled%20Content%20Guide

Blue Environment (2022) *National Waste Report 2022*, report to DCCEEW, Blue Environment, retrieved from https://www.dcceew.gov.au/sites/default/files/documents/national-waste-report-2022.pdf

Department of Agriculture, Water and the Environment (DAWE) (2021) *National Plastics Plan 2021,* DAWE, Commonwealth Government, retrieved from https://www.dcceew.gov.au/sites/default/files/documents/national-plastics-plan-2021.pdf

DCCEEW (Department of Climate Change, Energy, the Environment and Water) (2021) *Australia's National Greenhouse Accounts* [data set], DCCEEW, retrieved from https://greenhouseaccounts.climatechange.gov.au/

DCCEEW (Department of Climate Change, Energy, the Environment and Water) (n.d) *A circular economy for packaging in Australia*, DCCEEW website, retrieved from https://www.dcceew.gov.au/environment/protection/waste/packaging

DEECA (Department of Energy, Environment and Climate Action) (2023) *Waste to Energy: Regulatory Impact Statement for Victoria's waste to energy cap and cap licensing* (version 2) DEECA, Victorian Government, retrieved from https://engage.vic.gov.au/wastetoenergy

DELWP (Department of Environment, Land, Water and Planning) (2019) *Victoria in Future 2019: Population Projections 2016 to 2056*, DELWP, Victorian Government, retrieved from https://www.parliament.vic.gov.au/48eb42/contentassets/1e833e26d6a4491f9b7488a2ef553b28/vpa-further-info-victoria_in_future_2019.pdf

DELWP (Department of Environment, Land, Water and Planning) (2020) *Recycling Victoria: A new economy*, DELWP, Victorian Government, retrieved from https://www.vic.gov.au/victorias-plan-circular-economy

DELWP (Department of Environment, Land, Water and Planning) (2022) *Discussion Paper: The standard of service for the delivery of waste and recycling services to households by councils and alpine resorts,* DELWP, Victorian Government, retrieved from https://engage.vic.gov.au/setting-the-standard-for-better-recycling-at-home

DELWP (Department of Environment, Land, Water and Planning) (2022) *Regulatory impact statement - Container deposit scheme*, DELWP, Victorian Government, retrieved from https://engage.vic.gov.au/container-deposit-scheme

DELWP (Department of Environment, Land, Water and Planning) (2023) *Regional Recycling Fund,* Victorian Government, retrieved from https://www.vic.gov.au/regional-recycling-fund

Department of Transport and Planning (DTP) (2022) *Population Dashboard* [data set], DTP, Victorian Government retrieved from https://public.tableau.com/app/profile/planning.victoria/viz/PopulationDashboard_16680490256660/PopulationDashboard

Department of Transport and Planning (DTP) (2023) *Victoria in Future: The official Victorian state government projection of population and households* [data set], DTP, Victorian Government, retrieved from https://www.planning.vic.gov.au/guides-and-resources/data-and-insights/victoria-in-future

Ellen MacArthur Foundation (n.d.) *What is a circular Economy?*, Ellen MacArthur Foundation website, retrieved from https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview

EPA Victoria (Environment Protection Authority Victoria) (2020) *Landfills and the environment,* EPA Victoria website, retrieved from https://www.epa.vic.gov.au/for-community/environmental-information/household-waste/landfills/landfills-and-environment

European Container Glass Federation (2016) *Recyling: Why glass always has a happen CO_2 ending*, European Container Glass Federation, retrieved from https://feve.org/wp-content/uploads/2016/04/FEVE-brochure-Recycling-Why-glass-always-has-a-happy-CO2-ending-.pdf

Infrastructure Victoria (2019) *Recycling and resource recovery infrastructure,* Infrastructure Victoria, Victorian Government, retrieved from https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/10/Infrastructure-Victoria-Recycling-and-resource-recovery-infrastructure-Evidence-base-report-October-2019-FINAL-REPORT.pdf

Infrastructure Victoria (2020) *Advice on recycling and resource recovery infrastructure in Victoria*, Infrastructure Victoria, Victorian Government, retrieved from https://www.infrastructurevictoria.com.au/project/advice-on-waste-infrastructure-in-victoria/

IPCC (Intergovernmental Panel on Climate Change) (2014) *Climate Change 2014, Mitigation of Climate Change*: *Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Edenhofer O, Pichs-Madruga R, Sokona Y, Farahani E, Kadner S, Seyboth K, Adler A, Baum I, Brunner S, Eickemeier P, Kriemann B, Savolainen J, Schlömer S, von Stechow C, Zwickel T and Minx JC (eds) Cambridge University Press, retrieved from https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_full.pdf

IPCC (Intergovernmental Panel on Climate Change) (2022) *Climate Change 2022, Mitigation of Climate Change: Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change,* Shukla PR, Skea J, Slade R, Al Khourdajie A, van Diemen R, McCollum D, Pathak M, Some S, Vyas P, Fradera R, Belkacemi M, Hasija A, Lisboa G, Luz S, Malley J (eds) Cambridge University Press, retrieved from https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf

IPCC (Intergovernmental Panel on Climate Change) (2023) *Climate Change 2023: Synthesis Report* (Core Writing Team, Lee H, Romero J (eds) IPCC, Geneva, Switzerland retrieved from https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

King S, Hutchinson S and Boxall N (2021) *Advanced recycling technologies to address Australia's plastic waste,* CSIRO, Australian Government, retrieved from https://research.csiro.au/ending-plastic-waste/advanced-recycling/

Korycki L (15 May 2023) 'Licella advanced recycling facility takes on plastic waste', *Waste Management Review*, retrieved from https://wastemanagementreview.com.au/licella-advanced-recycling-facility-takes-on-plastic-waste/

Masterson V and Shine I (14 June 2022) 'What is the circular economy, and why does it matter that it is shrinking', World Economic Forum, retrieved from https://www.weforum.org/agenda/2022/06/what-is-the-circular-economy/

National Institutes of Health (n.d.) How does recycling benefit the environment?, National Institutes of Health website, retrieved from https://nems.nih.gov/environmental-programs/pages/benefits-of-recycling.aspx#:~:text=It%20takes%2095%25%20less%20energy,recycled%20glass%2040%25%20production%20energy

Reardon S, Jeyaretnam T and Heath E (2019) *Finding treasure in our trash: The $325 million wasted opportunity sitting on our kerbs*, Ernst & Young, Australia, retrieved from https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/topics/climate-change/finding-treasure-in-our-trash-report.pdf

Recycling Victoria (n.d.) *Victorian local government waste data dashboard* [data set], Recycling Victoria, retrieved from https://www.vic.gov.au/victorian-local-government-waste-data-dashboard

Recycling Victoria (2023) *Market Insight Report Summary*, Recycling Victoria, Victorian Government, retrieved from https://www.vic.gov.au/market-summary

Recycling Victoria (2023) *Market summary - July 2021 to August 2022*, Recycling Victoria, Victorian Government, retrieved from https://www.vic.gov.au/market-summary-july-2021-august-2022

Recycling Victoria (2023) *Recovered metal packaging: Market insights report – July 2023,* Recycling Victoria, Australian Government, retrieved from https://www.vic.gov.au/kerbside-metal-packaging

Recycling Victoria (2023) *Recovered plastic packaging: Market insights report – July 2023,* Recycling Victoria, Australian Government, retrieved from https://www.vic.gov.au/kerbside-plastic-packaging

Recycling Victoria (2023) *Recovered glass packaging: Market insights report – July 2023,* Recycling Victoria, Australian Government, retrieved from https://www.vic.gov.au/kerbside-glass-packaging

Spicer D (2021) *Know Your Recycling,* report to Sustainability Victoria, Kantar Public, retrieved from https://assets.sustainability.vic.gov.au/susvic/Report-Recycling-knowledge-attitudes-and-behaviours-of-Victorians-2021.pdf

SV (Sustainability Victoria) (2018) *Statewide Waste and Resource Recovery Infrastructure Plan,* SV, Victorian Government. retrieved from https://assets.sustainability.vic.gov.au/asset-download/Plan-Statewide-Waste-and-Resource-Recovery-Infrastructure-Plan-Victoria-2018.pdf

SV (Sustainability Victoria) (2021) *Waste and recycling in Victoria: Local government waste services report,* SV, Victorian Government, retrieved from https://assets.sustainability.vic.gov.au/susvic/Report-Waste-Local-Government-Waste-Services-Report-2019-20.pdf

SV (Sustainability Victoria) (2023) *Circular Economy Councils Fund*, SV website, retrieved from https://www.sustainability.vic.gov.au/grants-funding-and-investment/grants-and-funding/circular-economy-councils-fund

SV (Sustainability Victoria) (2023) *Materials recycling infrastructure funding: Guidelines*, SV website, retrieved from https://www.sustainability.vic.gov.au/grants-funding-and-investment/grants-and-funding/materials-recycling-infrastructure-funding-guidelines

SV (Sustainability Victoria) (2024) *Circular Economy Household Education Fund – Round 3*, SV website, retrieved from https://www.sustainability.vic.gov.au/grants-funding-and-investment/grants-and-funding/circular-economy-household-education-fund-round-3

VAGO (Victorian Auditor-General's Office) (2019) *Recovering and Reprocessing Resources from Waste*, VAGO, Victorian Government, retrieved from https://www.audit.vic.gov.au/sites/default/files/2019-06/060619-Waste-Resources.pdf?

VAGO (Victorian Auditor-General's Office) (2021) *Council Waste Management Services*, VAGO, Victorian Government, retrieved from https://www.audit.vic.gov.au/sites/default/files/2022-11/20211202_Council-Waste-Management-Services.pdf?

VAGO (Victorian Auditor-General's Office) (2021) *Do local councils' waste management services provide value for money?* VAGO, Victorian Government, retrieved from https://www.audit.vic.gov.au/report/council-waste-management-services

Victorian Parliamentary Budget Office (2019) *Advice – Councils recycling costs,* Victorian Parliamentary Budget Office, Victorian Government, retrieved from https://pbo.vic.gov.au/response/527

Yarra Ranges Council (13 November 2023) *Keeping food scraps out of landfill,* Yarra Ranges Council website, retrieved from https://www.yarraranges.vic.gov.au/Council/Latest-news/Keeping-food-scraps-out-of-landfill#:~:text=In%20the%20first%20month%2C%20the,the%20community%20for%20their%20efforts