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Draft review report

Waste Management and Resource Recovery Strategy

March 2023



Queensland
Government

Prepared by: Office of Circular Economy, Department of Environment and Science

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Introduction

The Queensland Government released the current Waste Management and Resource Recovery Strategy (the Strategy) in July 2019. The Strategy presents a plan for a better way of managing waste in Queensland, by harnessing the potential value of resources that have traditionally been discarded.

Under the *Waste Reduction and Recycling Act 2011* regular review of the Strategy must be undertaken to ensure that it continues to achieve its goals and targets. Over the first four years of its life, substantial progress has been made under the Strategy, with the Queensland Government initiating and supporting actions that reduced annual headline waste by 1.6 million tonnes (a 15 percent reduction between 2018 and 2022).

Recent events, such as the global pandemic and ongoing trend towards more frequent extreme weather driven by climate change, highlight the ongoing relevance and value of achieving the Strategy's three strategic priorities:

- reducing the impact of waste on the environment and communities
- transitioning to a circular economy for waste and
- building economic opportunities.

The COVID-19 pandemic has impacted national and global supply chains and demonstrated the vulnerabilities of the traditional linear economic model of “take, make, use, dispose”. The production and transportation of goods around the world has been impacted by travel restrictions, business closures, lockdowns, and labour shortages, while intense pressure has been placed on Australian importers and exporters¹. At the beginning of the pandemic, many Australian industries felt the impact of these supply delays on business, and the subsequent increase in the cost of some goods and services, such as personal protective equipment, cleaning products and freight services².

Climate change is predicted to continue exacerbating the frequency and severity of extreme weather events that amplify pressures on infrastructure and the environment³. Observations suggest that Queensland has experienced a rise in severe weather events since 2010, including eight severe tropical cyclones, an increase in intense rainfall and flood events, and a devastating bushfire season in 2019-20⁴. Extreme weather events can result in increased waste from damaged property and landscapes and destroy waste management infrastructure. However, effective waste management will support Queensland's commitment to reduce net greenhouse gas emissions to zero by 2050.⁵

Collaborating with local governments, businesses, industry and the community to develop a circular economy (Figure 1) will lead to investment and the creation of local jobs. Increasing Queensland's economic resilience through the growth of a repair, re-use and re-manufacturing industry offers opportunities to increase supply chain resilience (materials and stock availability) and competitiveness, as well as ensuring less reliance on raw materials. This was demonstrated during the COVID-19 pandemic with success in the adaptation and refurbishment of medical equipment, such as ventilators⁶.

Improvements to design and manufacturing practices ensures that products and materials can be repurposed has the potential to add value to those items. Product stewardship schemes can drive better design and cleaner manufacturing practices that produce materials and components that are easier to track, re-use, recover and recycle⁷. These schemes acknowledge that those involved in the importation, design, manufacture and selling of products have a responsibility to reduce impacts to human health and the environment that may be caused by the transport, use or disposal of their products.

State and local government initiatives present opportunities to continue to support the development of a circular economy. Notably, the Brisbane 2032 Olympic and Paralympic Games presents a transformational opportunity to implement the principles of a circular economy. In the [Preliminary economic, social and environmental analysis](#), the Queensland Government proposes to repurpose and upgrade existing infrastructure where possible and focus on reducing, reusing and recycling through a combination of behaviour change programs, waste management incentives and purchasing decisions.

In addition to assessing progress under the Strategy, this review seeks to better understand whether there are further opportunities for supporting the implementation of the Strategy and realising the benefits of a circular economy.

² Reserve Bank of Australia, 2021, Box B: Supply Chains During the COVID-19 Pandemic. May. Accessed January 2022. <https://www.rba.gov.au/publications/smp/2021/may/box-b-supply-chains-during-the-covid-19-pandemic.html>.

³ Department of Environment and Heritage Protection, 2017, Queensland Climate Adaptation Strategy 2017 - 2030, Pathways to a climate resilient Queensland. Retrieved December 12, 2021, from https://www.qld.gov.au/_data/assets/pdf_file/0017/67301/qld-climate-adaptation-strategy.pdf

⁴ Department of Environment and Heritage Protection, 2017, Queensland Climate Adaptation Strategy 2017 - 2030, Pathways to a climate resilient Queensland. Retrieved December 12, 2021, from https://www.qld.gov.au/_data/assets/pdf_file/0017/67301/qld-climate-adaptation-strategy.pdf

⁵ Department of Environment and Heritage Protection, 2017, Queensland Climate Transition Strategy: Pathways to a clean growth economy. Retrieved 2021, from https://www.qld.gov.au/_data/assets/pdf_file/0026/67283/qld-climate-transition-strategy.pdf

⁶ The Ellen MacArthur Foundation, 2021, The Covid-19 recovery requires a resilient circular economy. Retrieved January 7, 2022, from Ellen MacArthur Foundation: <https://ellenmacarthurfoundation.org/articles/the-covid-19-recovery-requires-a-resilient-circular-economy>

⁷ What is Product Stewardship? (2020). Product Stewardship Centre of Excellence. Retrieved January 12, 2022, from <https://stewardshipexcellence.com.au/product-stewardship/>

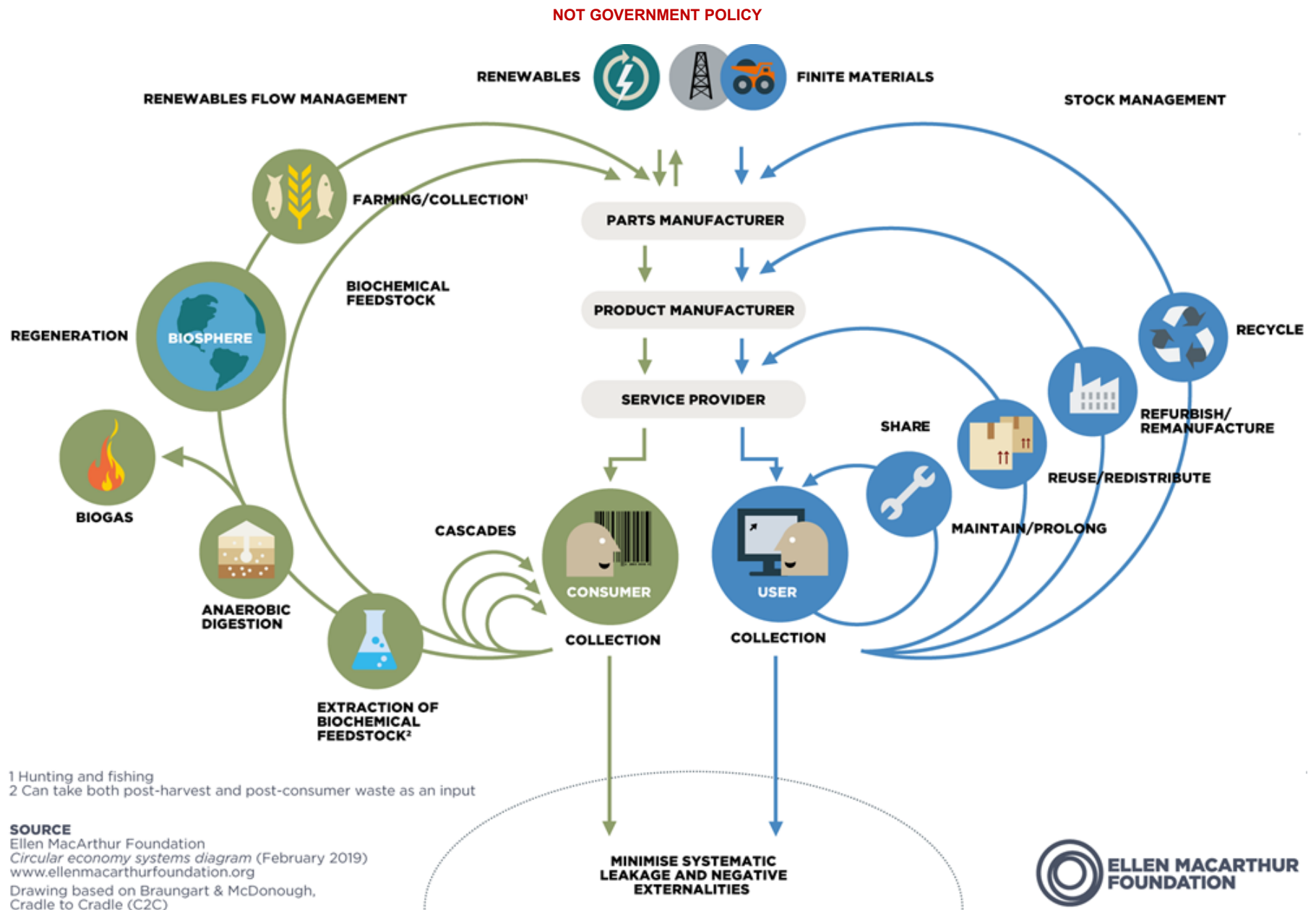


Figure 1: A circular economy for waste

About this report

Regular reviews of the Strategy are required under Chapter 2 of the *Waste Reduction and Recycling Act 2011* (the WRR Act). The legislation also requires that the review must have regard to the goals and targets listed in the Strategy and that a draft review report be published.

This Draft Review Report presents the initial desktop findings for the statutory review of the Strategy. The review covers implementation over the three-year period from 2019 to 2022 and seeks to:

- examine progress towards achieving the Strategy's targets and any resultant outcomes
- assess the ongoing relevance of the Strategy
- identify issues affecting implementation of the Strategy and potential solutions; and
- identify opportunities to improve the Strategy and its implementation.

Consultation

The Department of Environment and Science (DES) welcomes feedback on this draft report and the Strategy, including successful initiatives and outcomes and areas that could be improved.

The feedback received will inform a final review report. The final review report will contain a summary of stakeholder feedback, an outline of review findings and any recommendations arising from the process. These recommendations may include maintaining the Strategy in its current form, amending the Strategy or replacing the Strategy.

Feedback will be accepted until 5:00 pm AEST on Friday 5 May 2023. Submissions should be made via email to circulareconomy@des.qld.gov.au.

Background

Released on 1 July 2019, the Strategy was developed by DES in partnership with industry, local government, and the community, and presented a fundamental shift in the way waste is managed in Queensland.

In the financial year prior to introduction of the Strategy, 2017-18, the quantity of resources recovered or recycled in Queensland was 4.9 million tonnes, or around 45 percent of waste generated. This was below the national average of 63 percent resource recovery across all Australian jurisdictions, and well below those states with the highest recycling rates. The Strategy presents a plan with targets to improve Queensland’s performance and provide benefits in the form of economic growth and reduced impact on the environment.

The vision for Queensland is a zero-waste society, where waste is avoided, reused and recycled to the greatest possible extent. For this to occur waste must be valued as a resource to create new products, technologies, industries, and jobs, whilst disposal to landfill must be seen as the last resort.

The Strategy drives this vision through three strategic priorities and long-term waste reduction, recycling and diversion targets that extend to 2050. To deliver on the strategic priorities, the Strategy identifies key areas for actions by the Queensland Government, local governments, waste sector and community.

The Strategy is supported by [Queensland’s waste levy](#) (the levy) which also commenced on 1 July 2019. The levy aims to reduce the amount of waste going to landfill, encourage waste avoidance, and provide a source of funding to enable better resource recovery practices. The levy also helps to facilitate industry investment in infrastructure to recover resources diverted from landfill.



Figure 2: Overview of the Waste Management and Resource Recovery Strategy

Progress towards quantitative targets

Milestone targets

The Strategy sets an ambitious target for 2050 that is designed to drive growth in the recycling and resource recovery sector and reduce Queensland’s waste footprint. To facilitate progress, milestone targets (Table 1) have been set for headline waste streams in 2025, 2030, and 2040. The Strategy targets align with those set by the Australian Government in the [National Waste Policy Action Plan](#).

Headline waste streams:

- **Municipal solid waste (MSW)**, which includes domestic waste and other wastes arising from council activities such as the collection of waste from roads, parks and public places, beaches, waterways, street sweeping, and the collection of litter and illegally dumped waste.
- **Commercial and industrial (C&I) waste**, which includes scrap metal, paper and packaging materials, sawmill residues and green waste.
- **Construction and demolition (C&D) waste**, which includes concrete, scrap metal, asphalt, and masonry.

Table 1: Waste Strategy targets

Description of target	Waste stream	2017-18 Baseline	2025	2030	2040	2050
Reduce household waste generation (% of 2017-18 baseline)	MSW	0.54 tonnes per capita	10%	15%	20%	25%
Landfill diversion rate (amount diverted as percentage of total waste generated)	MSW	32.4%	55%	70%	90%	95%
	C&I	47.3%	65%	80%	90%	95%
	C&D	50.9%	75%	85%	85%	85%
	Overall	45.4%	65%	80%	85%	90%
Recycling rate (amount recycled as percentage of total waste generated)	MSW	31.1%	50%	60%	65%	70%
	C&I	46.5%	55%	60%	65%	>65%
	C&D	50.9%	75%	80%	>80%	>80%
	Overall	44.9%	60%	65%	70%	75%

Data analysis considerations and trends

This statutory review is being undertaken prior to the earliest (2025) milestone targets set under the Strategy. Due to the short time since the Strategy was introduced and the long-term implementation timeframes for waste-reduction programs, the available data does not support a conclusive analysis of progress towards the Strategy's objectives and targets.

Progress towards the targets was assessed using data submitted by waste industry entities annually through the Queensland Waste Data System (QWDS) according to obligations in Chapter 7 of the WWR Act. The data used in this report is from the 2018-19, 2019-20, 2020-21 and 2021-22 financial years. For information on data sources and considerations see [Appendix 1](#).

The metrics used to determine progress towards targets are based on the percentage of materials diverted and recycled via waste management facilities such as landfills, transfer stations and resource recovery facilities. When materials are diverted via avoidance, re-use or recycling initiatives upstream of these facilities they fall outside of the reporting framework in the WRR Act. This means that data is unlikely to capture successful outcomes linked to some of the strategic priorities. As more materials are diverted away from these facilities, the data may actually show an inverse result.

Natural disaster events have influenced the movement of waste in Queensland significantly since the introduction of the Strategy. Major flooding events in Queensland and New South Wales in 2022 generated over 274 000 tonnes of waste. This included the transfer of 170,000 tonnes of flood disaster waste lawfully received from New South Wales, which increased the amount of interstate waste received to 460,000 tonnes in 2021-22 – a 33 percent increase from previous year. Without natural disaster waste included the total interstate waste delivered would have fallen to 290,000 tonnes, or a reduction of 16 percent from the previous year total of 345,000 tonnes.

Bushfire events in 2019-20 also had a widespread impact on infrastructure and the environment. In many local-government areas in South East Queensland large amounts of waste were generated by burnt debris, asbestos-containing materials and burnt plastic tanks, and access to waste facilities was cut off. The Queensland Government supported recovery through measures described in the [2019 Queensland Bushfires State Recovery Plan 2019-2022](#). This included assisting local governments and operators with effective and rapid resolution of

waste management issues and the declaration of levy exemptions for waste in the disaster declared areas.

As in other jurisdictions, changes in waste generation patterns for both MSW and C&I waste streams were also observed during the COVID-19 pandemic. In 2019-20 Queensland’s population grew by 1.7 percent but COVID-19 related restrictions led to a 5.2 percent contraction in economic activity, which may have resulted in lower consumption and associated waste in domestic, commercial and industrial contexts. Australian Bureau of Statistics has published information on household spending using bank transactions data. It shows a steep drop in household spending when the COVID-19 pandemic commenced, but a rapid increase in spending from late 2020 to late 2022, which aligns with the key findings for MSW presented below.

In Queensland, changes to the type and quantity of waste generated during this time may have been impacted by societal changes, such as:

- increased time at home
- a shift to many people working from home
- increased online orders delivered to homes
- increased takeaway food consumption at home
- an increase in the use of medical and personal protective equipment
- disruptions and impacts to certain businesses and industries, including the waste recovery sector
- the impact on supply chains that resulted in temporary shortages of certain goods and services.

The latest trend in the C&I waste stream data is complex to assess. C&I waste includes industrial waste, waste from offices and commercial activities, but also domestic waste collected from multi-unit dwellings by a commercial waste contractor. Changes in consumption and waste generation patterns may affect C&I waste. However, there can be complex interactions within this waste stream, for example where people are transitioning from working at home to working in offices, but in some cases both home and office waste may be reported within the C&I waste stream.

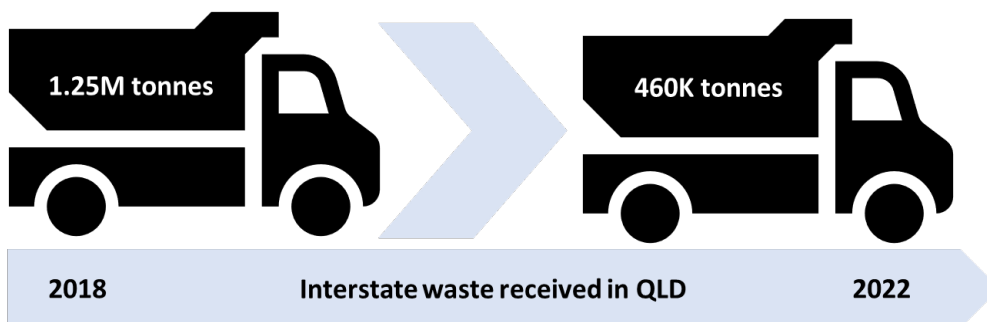
The introduction of the waste levy in 2019 is likely to have positively influenced C&I and C&D waste trends by providing a price signal for waste going to landfill and the transport of interstate waste into Queensland. The strong performance of the C&D waste stream may also be reflective of the relative ease of recycling these waste materials and the well-understood markets for these recycled materials. A similar impact on MSW stream has not been observed, in significant part because annual payments are made to councils offsetting the impact of the levy on households.

Key findings

Based on the most recent data, Queensland is on track to reach 2 out of 9 of the targets set by the Strategy by the first milestone period (2025). The 2021-22 represents a step back after a number of years of positive trend towards the 2025 targets, noting that the impact of substantial recent policy changes and additional investment in circular economy actions are still to be reflected in the recycling and waste data.

Waste generation

Whilst there is no target in the Strategy for total headline waste generated, a key element of the Strategy’s vision is to avoid the generation of waste through strategic programs and actions. Between 2018 and 2022 there was a reduction of approximately 1.6 million tonnes per annum (15 percent) in the total headline waste reported through the QWDS annual survey. This included a 728,000 tonne (62 percent) reduction in waste reported as being received from interstate sources, with volumes falling from 1.25 million tonnes in 2018 to 460,000 in 2022.

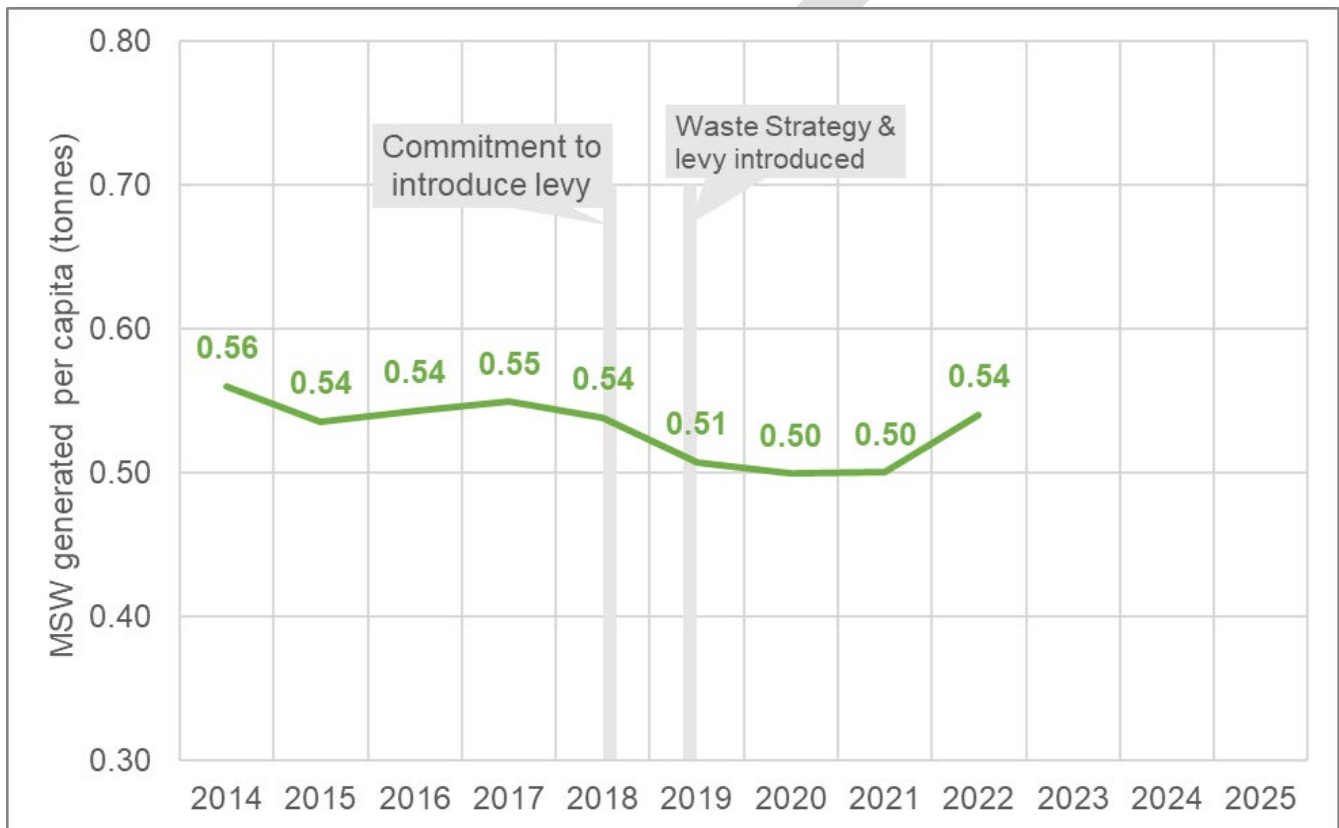


Household waste

The waste avoidance target seeks to reduce the amount of MSW that each person in Queensland generates. Waste reported as MSW is a combination of domestic waste and other wastes arising from council activities such as the management of parks and gardens and the collection of litter and illegally dumped waste.

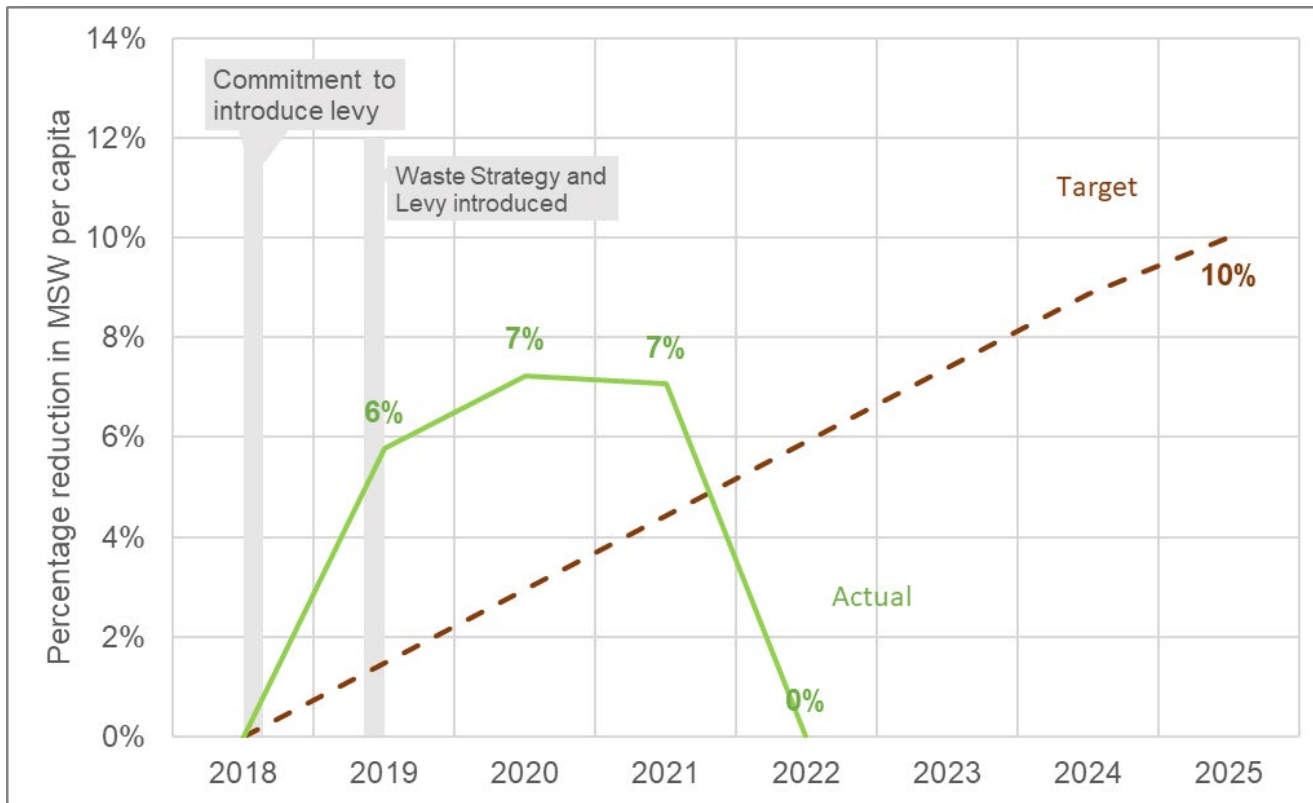
On introduction of the waste levy in 2019, the Queensland Government committed to ensuring that there would be no direct impact on households. To achieve this, local governments have been provided with annual payments to offset waste levy fees incurred by the disposal of household and other municipal solid wastes. This means that MSW is the only headline waste stream to which the waste levy does not apply. Preliminary analysis indicates that the lack of progress on household waste reduction for the MSW stream is correlated with the lack of a financial disincentive to disposal.

A survey of the community also showed that while Queenslanders care about improving waste management, there are still barriers to improved purchasing decisions, reuse, repair and recycling behaviours in the community. Some of the key impediments identified were lack of problem awareness, lack of knowledge of waste reduction options including reuse, sustainable purchasing and recycling pathways, access to facilities and services, and distrust towards recycling outcomes.



Graph 1. MSW generated annually per capita

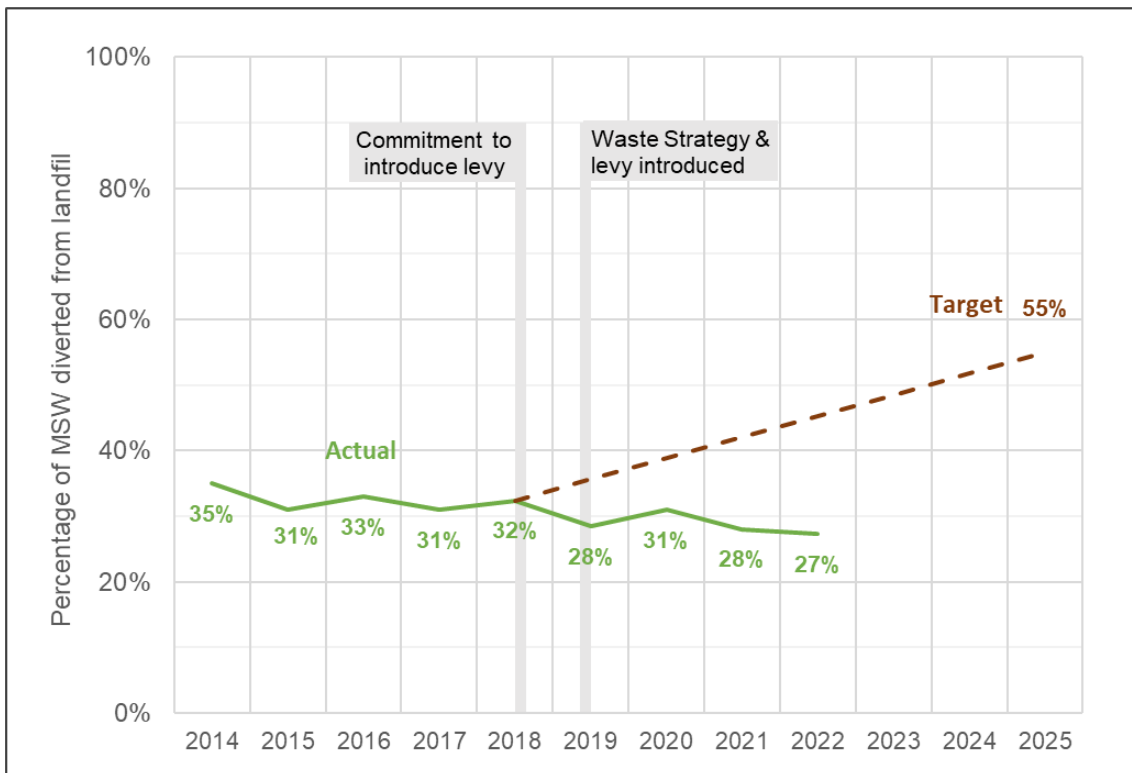
MSW generated per capita is not a defined metric, however this graph provides contextual information to inform the performance against the strategy targets. Since the introduction of the Strategy (and announcement of the Levy) waste produced per capita has fallen, however in 2022 MSW per capita had returned to the 2018 baseline level (an average increase of 30 kilograms/person/annum since the Strategy was introduced in 2019).



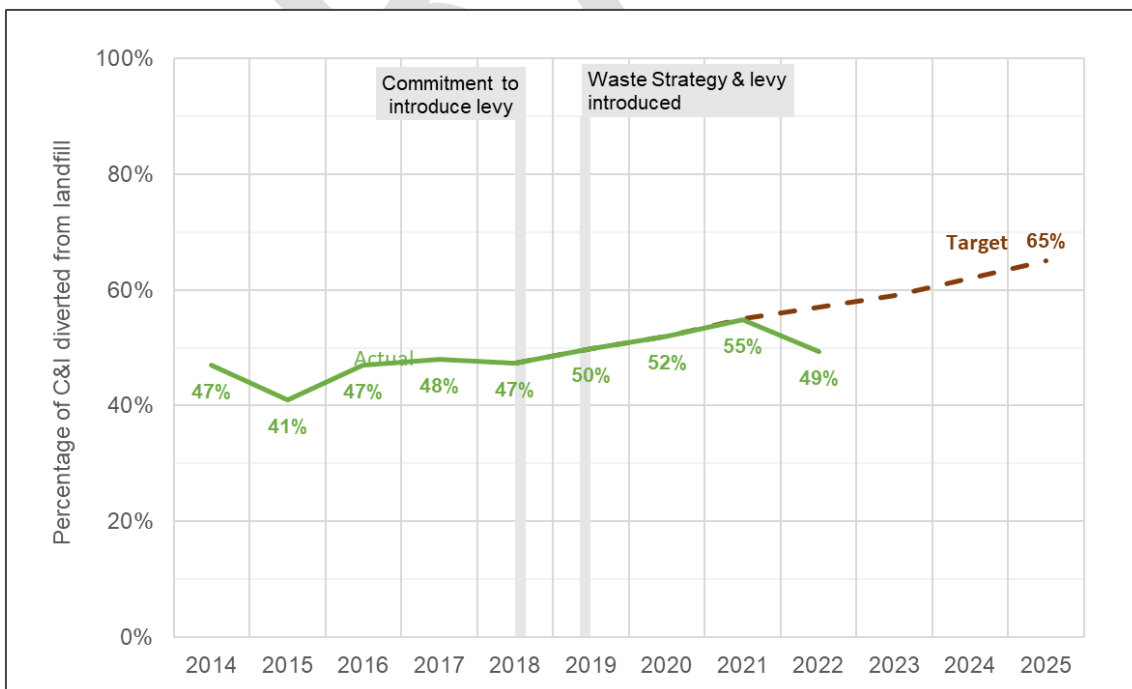
Graph 2. Reduction in MSW generated per capita since 2018: In 2022, MSW produced per capita was the same as in the 2018 baseline. During the four years since the strategy was introduced MSW initially reduced by 7 percent (approximately 40kg of waste/person/annum). In 2021-22 MSW per capita showed an increase back towards the baseline and is not currently tracking towards the first milestone target of a 10 percent reduction by 2025. The drivers for the change in waste generation are not definitively known, however potential influences such as increased production of waste resulting from natural disasters, changes to consumption patterns and impacts on supply chains during the global pandemic may all have played a role in the year-to-year change in waste production. The **Data analysis considerations and trends** section above provides a summary of potential influences on this metric.

Waste diversion from landfill

The landfill diversion targets seek to increase the amount of waste materials diverted away from landfill and towards higher order uses, including energy recovery. This target is measured as a percentage of waste generated, so the overall target of 90 percent for 2050 reflects only 10 percent of all waste materials going to landfill. These targets include wastes (such as asbestos) for which landfill is unavoidable.

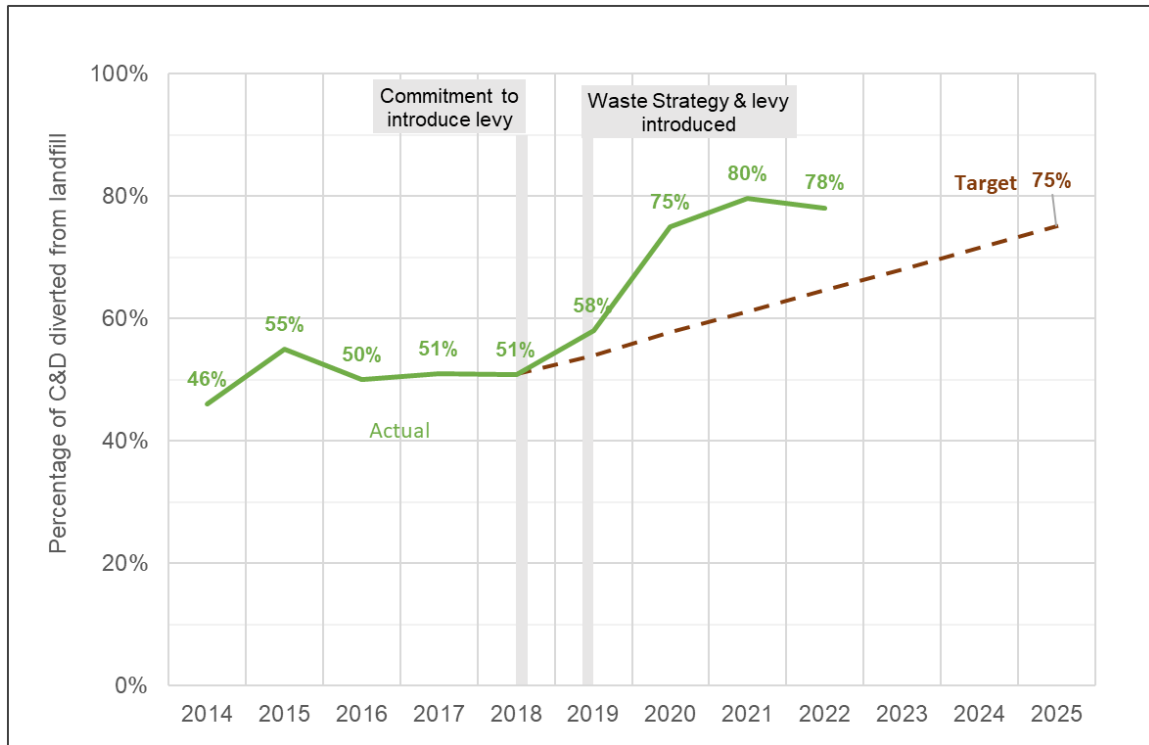


Graph 3. MSW diversion from landfill: 27 percent of MSW was diverted in 2022. If this trend continues, Queensland may not reach the first milestone target of 55 percent by 2025.

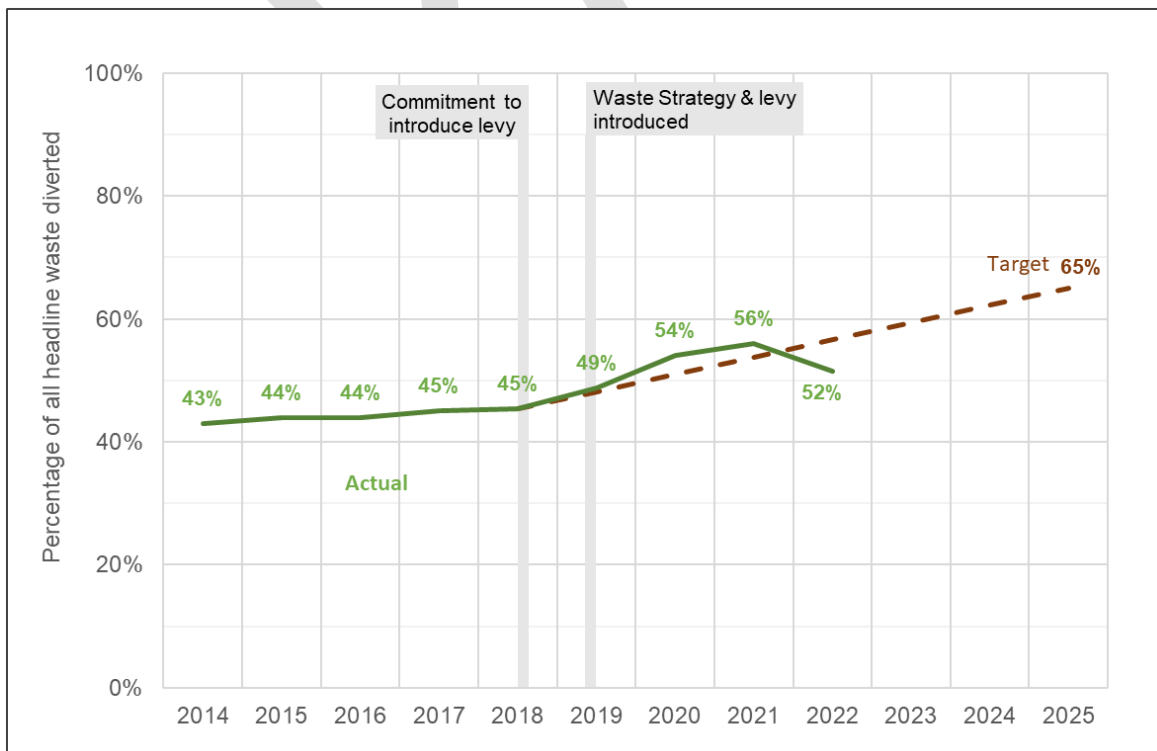


Graph 4. C&I waste diversion from landfill: 49 percent of C&I waste was diverted from landfill in 2022. While the trend in diversion from landfill has been positive since the introduction of the waste levy, the most recent year 2022 showed a reduction in diversion. If this trend continues, Queensland may not reach the 2025 first milestone target. It is not yet clear what has driven this change in diversion, but significant

changes in working patterns as a result of the pandemic may have contributed. This includes changes in consumption and the transition process of returning to work from the office following COVID-19 work arrangements. The **Data analysis considerations and trends** section above provides a summary of potential influences on this metric.



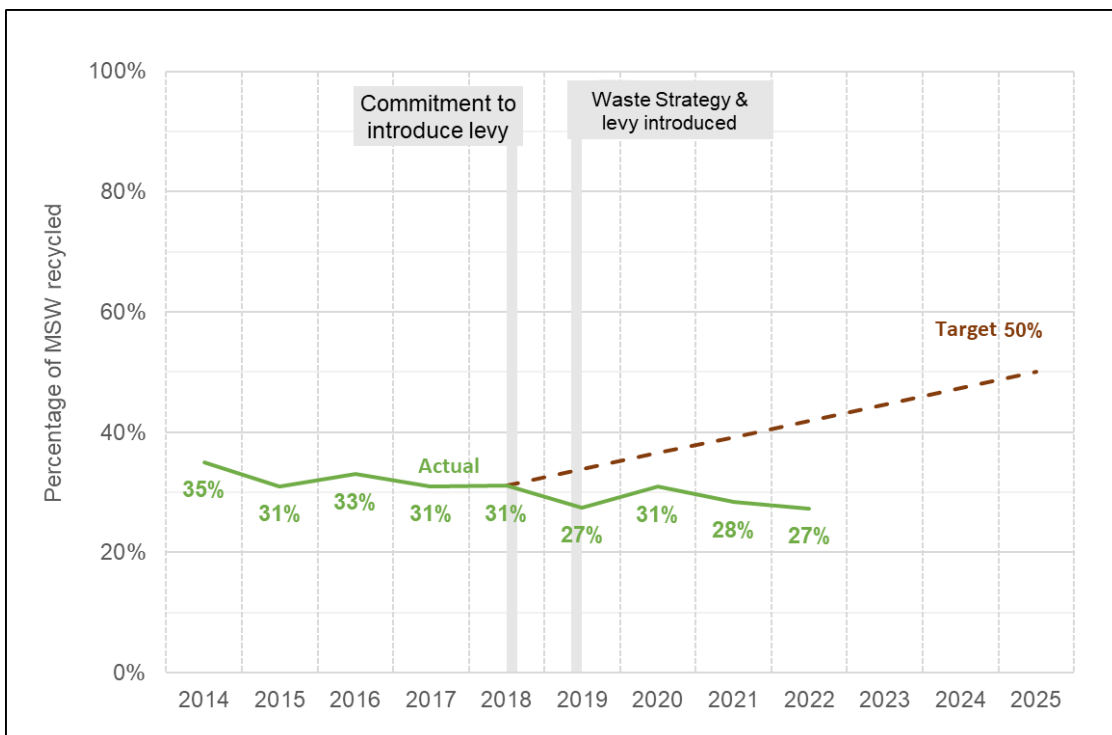
Graph 5. C&D waste diversion from landfill: 78 percent of C&D waste was diverted from landfill in 2022, which indicates that the 2025 first milestone target has been achieved ahead of schedule.



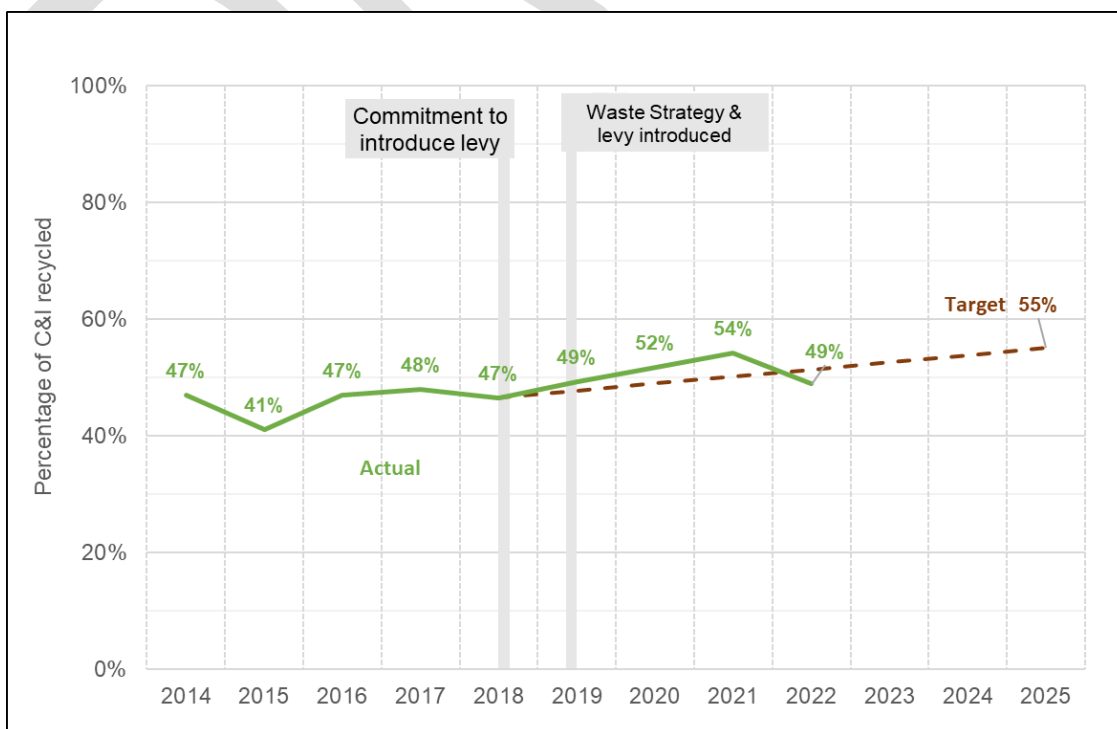
Graph 6. Overall diversion from landfill: 52 percent of all reported headline waste was diverted from landfill in 2022. If this trend continues, Queensland may not reach the 2025 first milestone target of 65 percent. This category includes all headline waste streams; MSW, C&I, and C&D waste.

Recycling

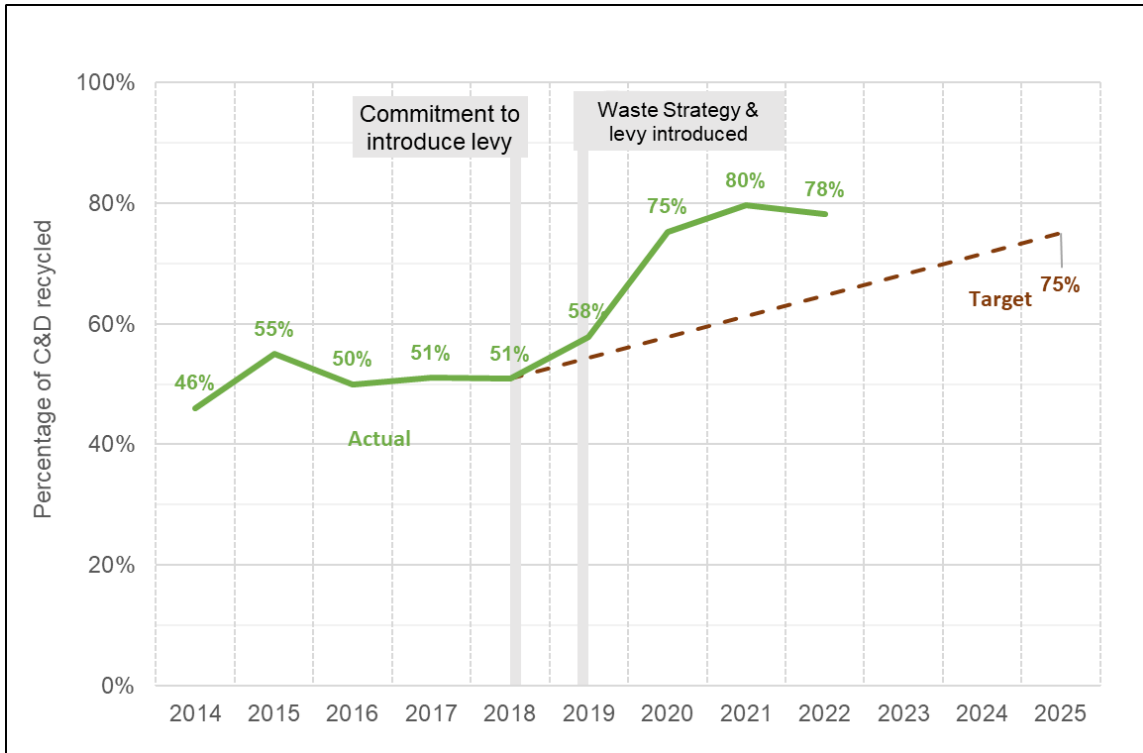
The recycling targets seek to increase the percentage of waste that is reused and recycled through the development of markets and the delivery of infrastructure to meet market demand for recycled materials. The targets represent the percentage recycled from the total waste generated for each stream and exclude material from which energy is recovered.



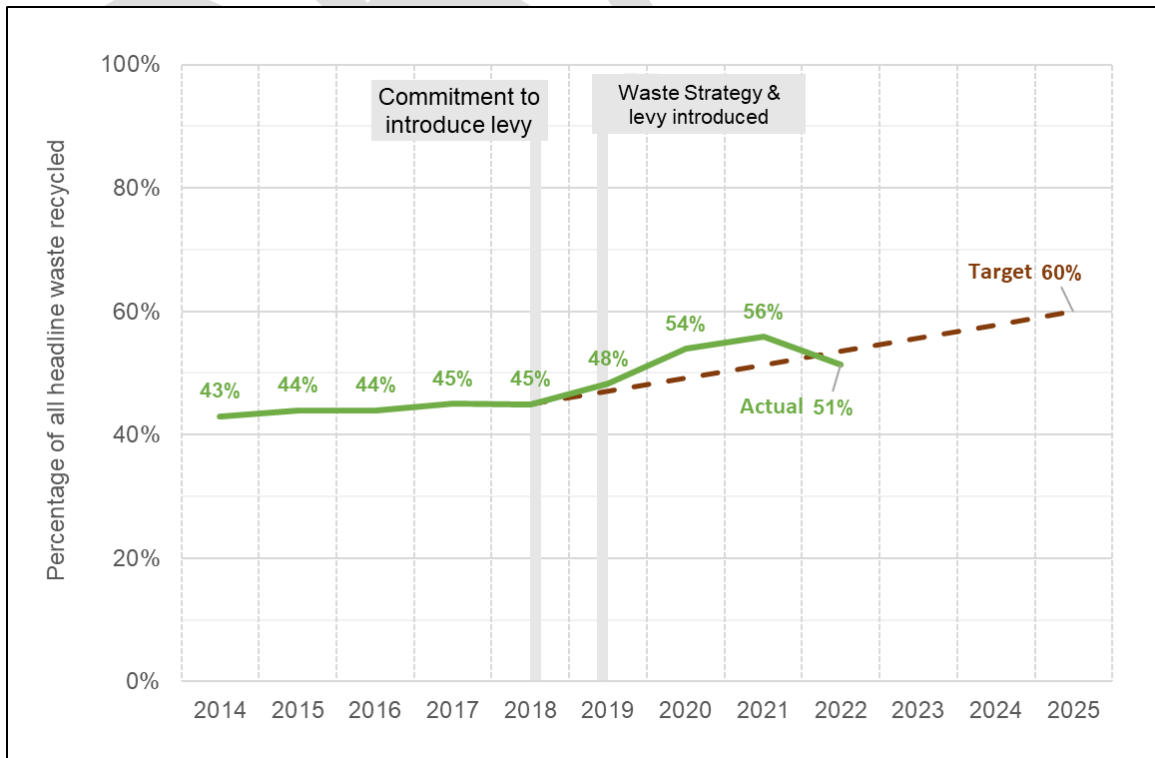
Graph 7. MSW recycling rate: 27 percent of MSW was recycled in 2022, which represents a decrease from the 2018 baseline. Queensland will not reach the first milestone target of 50 percent by 2025 if this trend continues. However, forthcoming roll-out of new services (such as FOGO) and a major behaviour change campaign are anticipated to have reverse the recent trend.



Graph 8. C&I waste recycling: 49 percent of C&I waste was recycled in 2022. It is unclear if Queensland is likely to reach the 2025 first milestone target of 55 percent. While the trend in diversion from landfill has been positive since the introduction of the waste levy, the most recent year 2022 showed a reduction in diversion. It is not clear what has driven this change in diversion, however it may be linked to changes in consumption and the transition process of returning to work from the office following COVID-19 work arrangements. The **Data analysis considerations and trends** section above provides a summary of potential influences on this metric.



Graph 9. C&D waste recycling: 78 percent of C&D waste was recycled in 2022, which indicates that the 2025 first milestone target has been achieved ahead of schedule.



Graph 10. Overall recycling: 51 percent of overall waste was recycled in 2022. It is unclear if Queensland will

reach the 2025 target of 60 percent. This category includes all headline waste streams: MSW, C&I, and C&D waste, and is reflective of the changes in the recycling rates in the MSW and C&I waste streams.

Strategy actions

The Strategy includes actions to be implemented by the community, waste sector, local governments and Queensland government. The actions are to be implemented voluntarily, with support provided by the Queensland Government through regulatory reforms, policy and programs. There are currently no timeframes set for implementing the individual actions listed in the Strategy.

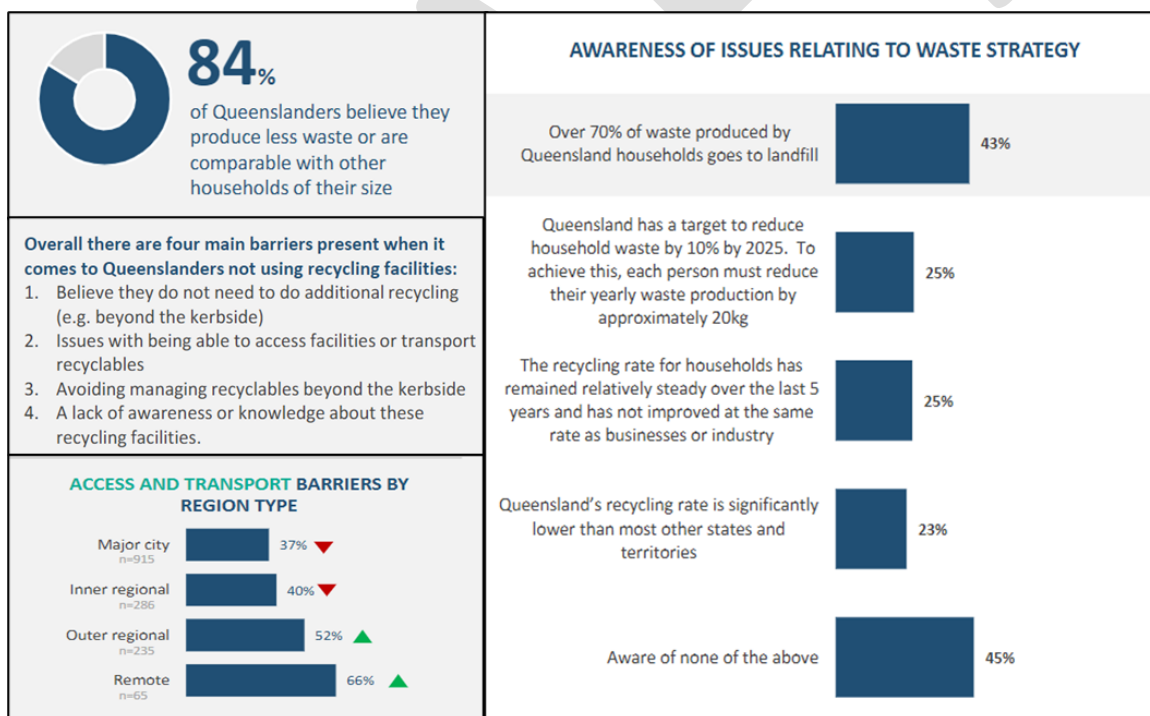
Community

A community summary was developed to support Strategy implementation by providing simple actions to help Queenslanders reduce their own waste, boost recycling and reduce the impact of waste on the environment.

As part of this review, a randomised survey of the Queensland community (1500 people) was undertaken in 2022 with the aim of developing a quantitative understanding of current practices, attitudes, knowledge, and beliefs around the topic of household waste management across Queensland.

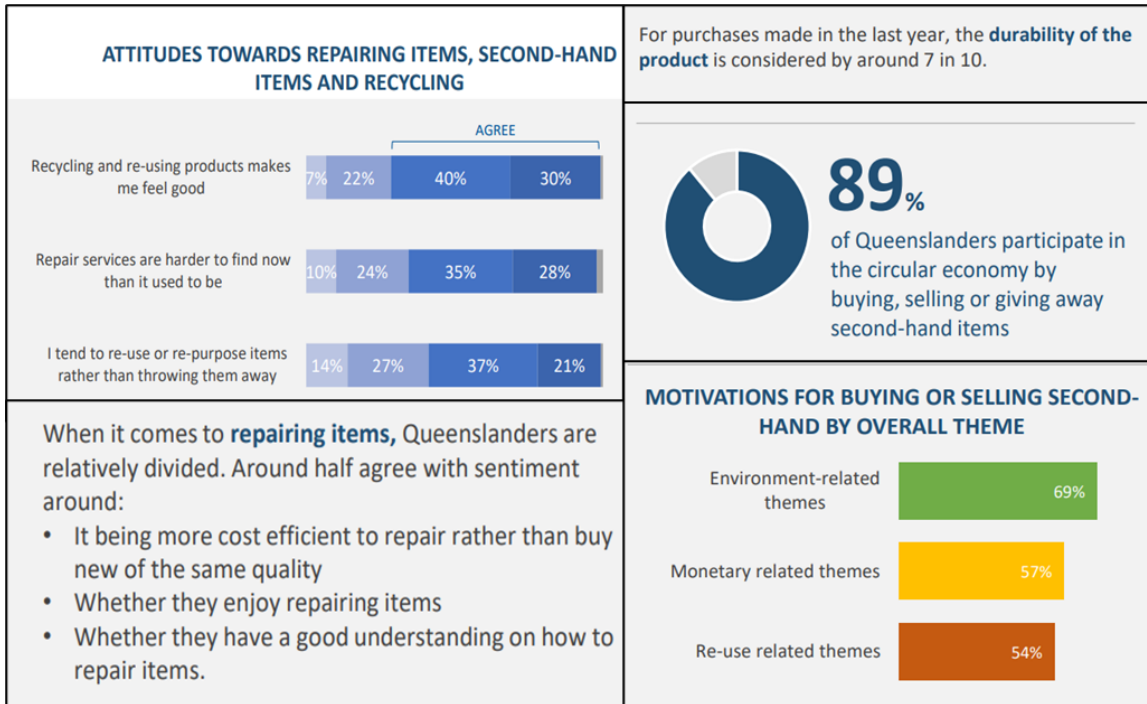
The results of this survey show that Queenslanders care about improving waste management and minimising impacts on the environment. It also shows that there are still barriers to improved purchasing decisions, reuse, repair and recycling behaviours in the community, many of which are exacerbated by often remote locations and lack of facilities in regional areas.

A number of opportunities were identified, including positive attitudes to re-use, repair, product stewardship considerations, and a willingness to change behaviour. Some of the key impediments to emerge were lack of problem awareness, lack of knowledge of waste reduction options including reuse, sustainable purchasing and recycling pathways, access to facilities and services, and distrust towards recycling outcomes.



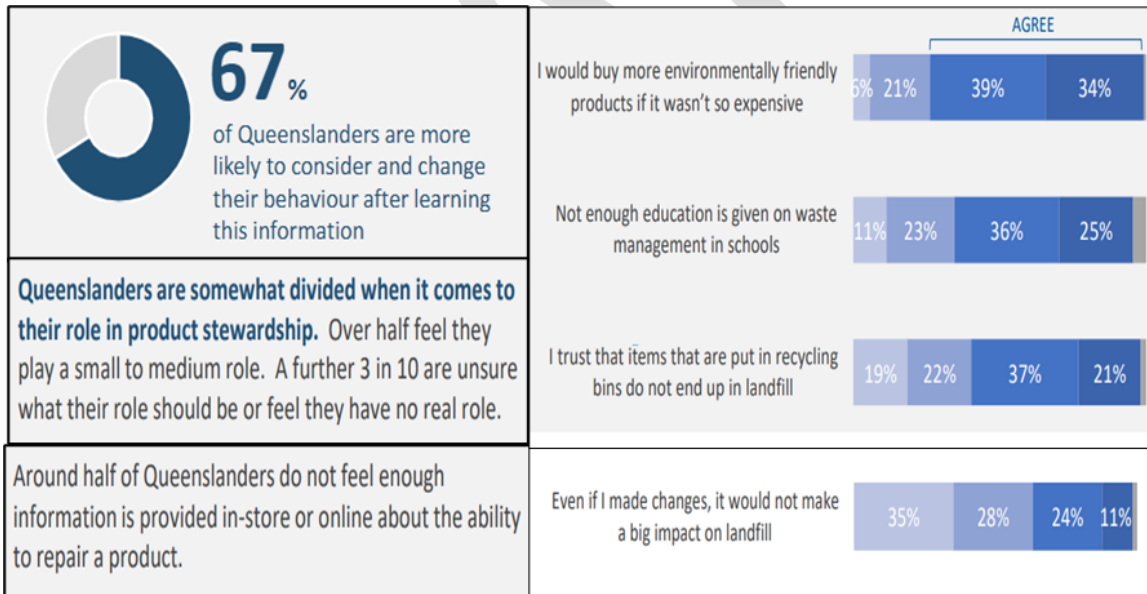
Community awareness and knowledge: waste generation and recycling

Less than a quarter of Queenslanders surveyed were aware that Queensland's recycling rate is significantly lower than most other Australian jurisdictions.



Purchasing, repair and durability

The majority of survey participants reported that they participate to some extent in the second-hand market. However, when it comes to repairing items, Queenslanders are divided. The key barrier being that many believe it is cheaper to replace or that repairing is too expensive.



Opportunities

The results indicate that education and behaviour change initiatives are likely to be effective and well received. The responses indicate that there is a desire for more waste management education in schools, and that consumers would like more information about products to help make better purchasing decisions.

It is also apparent that there is work to be done to build trust with the community around recycling information and services, and to empower the community in regard to the potential positive impacts of their actions.

Queensland Government projects and policy initiatives

In December 2021 the Queensland Government announced an increase in the waste levy and the creation of a \$2.1 billion levy-funded waste package that included a \$1.1 billion Recycling and Jobs Fund, and \$1 billion in annual payments for councils to continue offsetting the cost of the waste levy on households. This is the largest investment in waste management and recycling in Queensland's history.

Investment is targeted at behaviour change initiatives, recycling and remanufacturing facilities, collection infrastructure, organics processing and market development to support job creation in recycling. The rebates to councils provide for a sustainable transition to help households reduce their waste and will decrease in metro areas to 20 percent in 2031.

From 2019 to 2022 the Queensland government continued to work with local governments, First Nations Communities, research and education facilities, and businesses. The programs, policies, plans and regulatory reforms initiated during this time have established a structural framework that will continue to support the achievement of the three strategy priorities over the next five years. Some of the key government-led or government-supported programs include;

- The Queensland Organics Strategy and Action Plan
- Development of Regional Waste Management Plans
- Queensland's Plastic Pollution Reduction Plan implementation
- The Respecting Country – A sustainable waste strategy for First Nation communities
- Queensland Resource Recovery Industries 10-Year Roadmap and Action Plan
- Resource Recovery Industry Development Program
- Keeping Queensland Clean: the Litter and Illegal Dumping Plan
- Energy from Waste Policy and Guideline
- An improved compliance framework, including the Local Government Illegal Dumping Partnership Program.

For a more comprehensive list see [Appendix 2](#).

Waste management in other jurisdictions

National waste management policy

The [National Action Plan](#) provides a framework with targets and actions to support the 2018 National Waste Policy. These targets guide investment and national efforts to reduce waste and its impacts on the environment. The plan was prepared by the Australian Government, state and territory governments and the Australian Local Government Association (ALGA). It complements and supports the implementation of Queensland's Strategy and the achievement of milestone targets.

In March 2020, the Australian, state and territory governments and the ALGA, agreed to apply more stringent regulations to the export of waste overseas. This includes the phased introduction of export bans on mixed waste plastics, glass, whole tyres, single resin/polymer and mixed papers and cardboard. These changes are intended to provide greater security in feedstock sources for recycling and increase domestic responsibility for waste produced within Australia.

This shift towards managing waste and recycling outputs locally reflects a trend in the Asia-Pacific region to limit imports of waste materials according to levels of contamination and plastic types. This trend started with the introduction of China's 'National Sword' policy, which was followed by waste import bans in Malaysia, Thailand, India and Indonesia.

The National Partnership Agreement that the Queensland Government has entered into with the Australian Government will support this transition by investing in local recycling infrastructure and building markets for recycled products.

States and territories

Every state and territory in Australia has a waste management strategy, apart from Tasmania which has released a draft waste action plan. The National Waste Policy, released by the Australian Government in 2018 provides a national framework for waste that was developed in conjunction with the states and territories.

The Queensland Strategy objectives are broadly consistent with other jurisdictions. All aim to reduce waste and increase resource recovery through a combination of qualitative objectives and quantitative targets. Similar to Queensland, the waste strategies of the New South Wales, Victoria, South Australia, Western Australia and Australian Governments all seek to build a circular economy for waste. Queensland also implements many of the

key waste management mechanisms identified in other jurisdictions, such as a waste levy, container refund scheme, product stewardship schemes, organic waste management recovery programs, community education and an ongoing single-use plastics ban.

Data showing progress across Australian jurisdictions is analysed and reported on every two to three years. The most recent release is the National Waste Report 2022 (see table 2).

Over the last 10 years, South Australia has emerged as a leader in resource recovery, with an 80 percent diversion rate in 2020-21.

Queensland ranked 6th for overall diversion from landfill, ahead of Tasmania and the Northern Territory.

Table 2. Resource recovery rates by jurisdiction, 2020-21

	ACT	NSW	NT	QLD	SA	Tas	Vic	WA	Australia
Recovery rate	69%	67%	19%	56%	80%	51%	67%	64%	63%

For a more detailed comparison of waste management in other jurisdictions see [Appendix 3](#).

Summary

The purpose of the Strategy is to improve waste management and resource recovery through collective action. It seeks to provide economic growth through the implementation of a circular economy and reduce impacts to the environment with ambitious targets for waste reduction, diversion and recycling.

Early results from the first two years of Strategy implementation show that continued action is needed in order to reach our goals and targets. Data indicates that Queensland is on track to reach two out of nine of the 2025 milestone targets.

These results have likely been significantly impacted by a series of natural disaster events, such as flooding and bushfires, and the COVID-19 pandemic. However, climate change modelling indicates that the frequency and severity of these events is likely to increase into the foreseeable future. This means that circular economy advancements will need to be resilient and adaptable in the face of large-scale natural disaster impacts.

The Waste Levy has likely been the main driver in increasing overall resource recovery and reducing the transportation of interstate waste to Queensland since the implementation of the Strategy in 2019. Levy funds have also resulted in the creation of a \$2.1 billion waste package that includes a \$1.1 billion Recycling and Jobs fund designated to help build new resource recovery infrastructure, create more jobs in the circular economy, support waste avoidance and behaviour change programs, and offset the cost of the waste levy on household bins.

In the early stages of Strategy implementation, Queensland Government programs and actions have primarily focused on the collection and recycling of goods and materials and reducing disposal of waste. While these initiatives will continue to be important, the next few years of Strategy implementation represent an opportunity to bring our attention to the other half of the circular economy cycle. This will require a focus on avoiding waste generation through better design and production practices, and by maintaining goods in circulation through repair and reuse.

The upwelling of community support for better waste management over the last few years represents an opportunity for widespread behaviour change within Queensland households. This has been especially evident in the increased reporting of littering and illegal dumping, and the success of pilot behaviour-change programs. This momentum will be crucial to the future success of the Strategy.

Consultation on this report is an opportunity to ask for the community's feedback on progress to date and seek input on the best way forward.

Glossary

Commercial and industrial waste (C&I)—produced by business and commerce, and includes waste from schools, restaurants, offices, retail and wholesale businesses, and manufacturing industries.

Construction and demolition waste (C&D)—includes waste generated from building, repairing, altering or demolishing infrastructure for roads, bridges, tunnels, sewerage, water, electricity, telecommunications, airports, docks or rail.

Clean earth- is earth that is not contaminated with waste or other hazardous material. For example, uncontaminated sand, soil, loam, clay, gravel, rock or any other natural substance found in the earth. This category does not include acid sulphide soil unless that soil has been treated and managed as stated in the guideline prescribed by regulation (Section 21 of Environmental Protection Act).

Disposal—the process of getting rid of waste by landfilling or incineration without energy recovery. It is the least acceptable option under the waste management and resource recovery hierarchy.

Diverted waste- also referred to as *resource recovery*, is waste that has been diverted from landfill, including material that has been recycled, reprocessed, or stockpiled for future use. Recovered materials include waste diverted from landfill for energy recovery.

Energy recovery—involves the conversion of waste materials into useable heat, electricity or fuel through processes such as combustion, gasification, pyrolysis and anaerobic digestion.

Headline Waste- (including municipal solid waste, commercial and industrial waste, and construction and demolition waste) form the basis of state and federal waste targets and reporting.

Landfill is a facility where waste is placed into or onto the ground, usually into an engineered and lined cell, where it is then compacted and covered for long-term containment. There are three broad types of landfill classifications:

- Putrescible waste landfills - which accept all solid wastes, including inert wastes, and excluding industrial hazardous wastes. These are the dominant landfill types and are deployed to service most cities and towns.
- Inert waste landfills - which accept all solid wastes, excluding industrial hazardous wastes, MSW, C&I and C&D biodegradable wastes, hazardous household wastes and electronic wastes (e-waste).
- Hazardous waste landfills - which accept hazardous industrial and household wastes.

Litter and illegal dumping—refers to all waste that has been incorrectly disposed of. Litter includes all scattered items of rubbish less than 200 litres (or equivalent volume). Common items of rubbish found in litter include cigarette butts, discarded food wrappers and beverage containers. Illegal dumping involves the unlawful disposal of greater than 200 litres (or equivalent volume) of waste.

Kerbside collection—the collection of household waste left at the kerbside for collection by local government collection services.

Municipal solid waste (MSW)—waste generated by households and waste collected by or for a local government. It includes waste generated from street sweeping, public rubbish bins, maintaining a public place and collection of large items from domestic premises by a kerbside collection service.

Product stewardship scheme is a scheme in which persons who are involved in the life cycle of a product share responsibility for the management and impact of the product throughout its life cycle, including end-of-use management. The scheme seeks to redress the adverse impacts of a product

Resource recovery- the sum of materials sent to recycling and/or energy recovery less any contaminants and residual wastes sent to disposal

Waste- includes anything other than a resource approved under Chapter 8 of the WRR Act that is: left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity; or surplus to the industrial, commercial, domestic or other activity generating the waste.

Waste levy- applies to the disposal of all waste, other than exempt waste, that is delivered to a “levyable waste disposal site”. Some waste types are automatically exempt from the levy under section 26 of the WRR Act and under the Waste Reduction and Recycling Regulation 2011 Other exemptions are available on approval by the department under section 28 of the WRR Act.

Appendix 1. Data information

Development of milestone targets

The Department of Environment and Science (DES) engaged the Queensland Treasury Corporation to advise on the appropriate key performance indicators to be adopted in the Strategy. The recommended targets have been established based on a set of data, assumptions and scenario. The targets are viewed as stretch targets for the State, acknowledging current performance and the Queensland Government's vision to become a national leader in waste reduction and material recovery. The Strategy uses data from 2017-18 as a baseline from which to measure performance.

Household waste target

The household waste target is calculated as the percentage reduction of MSW per capita from the 2018 baseline. The Queensland population data is sourced from the ABS Australian Demographic Statistics report from March 31 within the corresponding financial year.

Recycling target methodology

The recycling targets are calculated by subtracting the amount of waste sent to energy recovery from the total amount of waste diverted from landfill. From 2014 to 2016 the quantity of waste sent for energy recovery annually was less than 1 percent of total waste generated. Inconsistent reporting methodologies during this period means that greater data accuracy is not feasible, therefore energy recovery between 2014 and 2016 has been rounded down to 0 percent for the purposes of this report.

Changes to reporting categories

In November 2018 reforms to the waste-related Environmentally Relevant Activities regulations introduced a new definition of "clean earth", a category exempt from the levy. Clean earth is a refinement of the previous category of "clean earthen material". It is likely that some waste deliveries that would previously have been described as clean earthen material no longer fit the category of clean earth and are now reported and included in general waste calculations. This change may have impacted the amount of waste reported, particularly for the C&D waste stream. As a result of this change the recycling and diversion rates for individual source streams are not directly comparable to the baseline.

Appendix 2. Waste strategy actions

Key Queensland government-led or government-funded initiatives

Table A1. Key government-led or government-funded initiatives and the corresponding actions assigned to the Queensland Government in the Waste Strategy.

Strategic priority	Strategy actions	Key Queensland Government initiatives
Reducing the impact of waste on the environment	Implement the Plastic Pollution Reduction Plan	Single-use Plastics Ban commenced on 1 September 2021
	Continuously improve the effectiveness of waste sector environmental compliance operations	<p>Waste levy compliance targets were implemented and achieved (Annual strategic compliance priorities 2020–2021)</p> <p>Gillies Range Road: Litter and Illegal Dumping Prevention Project</p> <p>Beerburrum Forest area pilot project - Reducing illegal dumping in natural areas</p> <p>Understanding kerbside dumping behaviour Study</p> <p>Love Queensland. Let's Keep it Clean - Campaign</p> <p>Illegal Dumping Hotspots Grant Program</p> <p>Litter and Illegal Dumping Social Research</p> <p>Charitable Recycling Australia Illegal Dumping Partnership Trial</p> <p>Local Government Illegal Dumping Training Package</p> <p>Keeping Queensland Clean: Illegal Dumping Grant Program</p> <p>Local government Illegal Dumping Investigation Training Package</p>
	Audit landfills to test the quality of Queensland landfill infrastructure and identify non-compliance	Top 70% of total waste levy contributors (landfills) were inspected in 2020-2021 by DES for compliance, including volumetric surveys.
	Provide assistance for alternative arrangements where landfill facilities are to be progressively closed	Levy Ready Grant Program for local government
	Develop the Litter and Illegal Dumping: A plan for Queensland	Keeping Queensland Clean: The Litter and Illegal Dumping Plan
	Develop an education strategy to integrate waste and recycling behaviours into the education system	Organic Waste Smart Schools Program
Transitioning to a circular economy for waste	Assess the opportunities of the circular economy model for Queensland.	Queensland's Circular Economy Future Report Communities in Transition pilot program
	Collect and amalgamate data to	

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	understand material flows across the economy and address knowledge gaps	
	Explore options to expand reporting of waste to build baseline datasets and inform decision making	Development of Australian Litter Measure (AusLM) in partnership with states and territories Litter and Illegal Dumping Management Framework Attributes Based Classification Scheme.
	Develop material-specific action plans for problem wastes	The Food Organics, Garden Organics Kerbside Collection Trial
	Deliver community campaigns and education programs that support waste avoidance, re-purposing, reuse and recycling	Community Sustainability Action Grants Organic Waste Smart Schools Grant Program Litter and Illegal Dumping community of Practice Program ecoBiz Queensland Cigarette-butt pilot project Charitable Recycling Australia Illegal Dumping Community Campaign Grant Keeping Queensland Clean: Illegal Dumping Grant Local Government Illegal Dumping Partnerships Program Local government Anti-litter Road Sign Program Palm Island Bin Infrastructure Grant Program Community Sustainability Action Litter and Marine Debris Grants Various Survey and Stakeholder Engagements including: <ul style="list-style-type: none"> • Smokers and Cigarette Butt Litter Survey • Litter and Illegal Dumping Online Reporting System (LIDORS) User Surveys • Whole of Population Survey • Recreational Fishing Waste Survey • Love Food, Hate Waste education program • household food waste webpage
	Explore scope for industry leadership in developing a voluntary specification code for minimum recycled content in packaging and products	
	Develop programs to increase business recycling	Food Rescue Grant Program
	Support and develop extended producer responsibility and product stewardship initiatives	Funding to establish the Circular Economy Lab
	Develop an energy from waste policy	Energy from Waste Policy 2021

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	Work with other governments to develop quality standards for product packaging	The Queensland Government became a signatory and ongoing contributor to the Australian Packaging Covenant
Building economic opportunity	Develop and implement the Advance Queensland Resource Recovery Industries 10 Year Roadmap and Action Plan	Advance Queensland Resource Recovery Industries 10 Year Roadmap and Action Plan
	Continuously improve and reform waste-related legislative frameworks	Regulated Waste Classification reforms (Environmental Protection Regulation 2019) Waste Reduction and Recycling and Other Legislation Amendment Regulation 2022
	Develop proposals for landfill disposal bans	
	Work with the Australian Government to standardise waste policy, legislation, regulation, and messaging	Participant on the national Resource Recovery Reference Group coordinating implementation of the National Waste Policy Action Plan
	Review the land-use planning system to ensure pathways for industry development are supported	
	Promote the development of waste precincts	Guidance for Recycling Enterprise Precincts - Department of State Development, Infrastructure, Local Government and Planning
	Develop a coherent state-wide waste infrastructure planning framework and regional infrastructure plans	Queensland Waste and Resource Recovery Infrastructure Report Respecting Country – A sustainable waste strategy for First Nation communities
	Support the commercialisation of successful recycling and remanufacturing technologies	Resource Recovery Industry Development Program administered by Department of State Development, Infrastructure, Local Government and Planning (DSDILGP) Queensland Recycling Modernisation Fund administered by DSDILGP Queensland Food Waste for Healthy Soils Program
	Create market development plans for key waste types and waste sectors	E-products Draft Action Plan
	Investigate alternative end-uses and markets for recycled materials	
	Consider how procurement can stimulate demand for recycled material manufactured in	

Queensland	
Develop programs to stimulate the growth of markets for recycled materials	Regional Recycling Transport Assistance Package (RRTAP) The Charitable Recyclers Reimbursement Program Regional and Remote Recycling Modernisation Fund (RRMF)
Strengthen collaborative partnerships with key organisations in the sector	Palm Island Metal Clean Up Palm Island Aboriginal Shire Council Litter bin project

Key projects

Strategic priority 1 - reducing the impact of waste on the environment

Plastic Pollution Reduction Plan implementation

Tackling Plastics: Queensland's Plastic Pollution Reduction Plan was released on 7 November 2018. Several key actions from the Plastic Pollution Action Plan have been implemented. These include passing the *Waste Reduction and Recycling (Plastic Items) Amendment Act 2021* which bans the sale or supply of various single-use plastic items from Queensland effective 1 September 2021. This Act banned the sale or supply of the following single-use plastic items in Queensland, from 1 September 2021. Items banned include Straws, cutlery, unenclosed bowls and plates, stirrers, expanded polystyrene takeaway food containers and cups.

The Queensland Government has recently announced a Proposed five-year roadmap for action on single-use plastic items (www.qld.gov.au) following consultation with Queenslanders regarding expanding the ban to other single-use plastic items, such as takeaway coffee cups and lids, drinking cups, magazine wrapping, fruit and vegetable bags and fruit and expanded polystyrene fruit and meat trays.

The Queensland Government has also supported the Boomerang Alliance to expand the Plastic Free Places program in Queensland to assist businesses, suppliers and the packaging industry to eliminate single-use plastics.

Compliance actions

The Strategy committed the Queensland Government to enhance compliance frameworks to provide consistency across the waste management and resource recovery sector and reduce waste crime.

Following the release of the Strategy, a number of improvements in compliance have been implemented and continued focus has been placed on unlicensed waste activities and levy evasion. As described in the Annual Strategic Compliance Priorities Report 2020-2021, the waste sector accounted for the highest number of unlicensed activities detected by DES in Queensland.

The waste compliance program has utilised enhanced intelligence and technology to better identify locations and volumes of waste stockpiles and respond to waste offences that undermined Strategy implementation. In the 2020-2021 the compliance activities implemented by DES included:

- detected and responded to 147 unlicensed waste activities
- 177 enforcement actions undertaken against illegal waste operation
- inspected the top 70percent of waste levy contributors (landfills), including volumetric surveys
- commenced investigation on 90percent of illegal dumping incidents reported to the department within four weeks of receiving the report.

The Local Government Illegal Dumping Partnership Program was developed to increase the state's capacity to respond to illegal dumping offences and protect the health of the environment. Funding and training in illegal dumping compliance skills were provided to 27 local governments partners by the Queensland Government. In 2020-2021 local governments in the program investigated more than 8,000 illegal dumping incidents, issued more than \$1.3 million worth of Penalty Infringement Notices, and removed more than 12 million litres of waste from the environment.

Strategic priority 2 - transitioning to a circular economy for waste Community Sustainability Action Grants and Food Rescue Grant Program

These programs deliver on the action to develop community campaigns and education programs that support

waste avoidance, re-purposing, reuse and recycling.

The Community Sustainability Action Grants have been made available to community groups and individuals for innovative projects. In the most recent round of grants, \$1.1 million in grant funding was approved for 28 projects that seek to reduce the amount of waste going to landfill and/or litter and marine debris in the environment.

The Food Rescue Grant Program has provided \$1.8 million in grant funding to food rescue organisations to divert additional food from landfill and redistribute it to Queenslanders in need. Recipients have included Secondbite, Foodbank, OzHarvest, Integrated Family and Youth Service Administration, the Rock Family and Fareshare.

Circular Economy Lab

In 2019 DES provided seed funding to establish the Circular Economy Lab. Over the last three years the Circular Economy Lab has brought 27 businesses together to develop commercially viable solutions to systemic waste issues, using circular economy principles. The outcomes for the Circular Economy Lab are helping to drive economic opportunity and facilitating our move to a zero waste and zero net emissions.

Strategic priority 3 - building economic opportunity

Queensland Resource Recovery Industries 10-Year Roadmap and Action Plan (the Roadmap)

The Roadmap was introduced in 2019 by the Department of State Development, Infrastructure and Planning. It provides a framework to accelerate the transition to a circular economy and develop the state's resource recovery industries by facilitating investment and market capacity.

Resource Recovery Industry Development Program (RRIDP)

RRIDP funded projects and initiatives that divert waste from landfill, reduce stockpiling and create jobs. Since 2018 the program, which is part of the \$3.34 billion Queensland Jobs Fund, has supported 29 businesses and local government projects that will divert 1.3 million tonnes of waste per annum from landfill, result in \$193.8 million in private sector investment and create more than 360 jobs across Queensland.

Queensland Recycling Modernisation Fund

As part of a commitment to the Queensland Recycling Modernisation Fund, a National Partnership Agreement has been signed between the Australian Government and Queensland Government. In accordance with this agreement, **\$40 million** has been made available to invest into Queensland's recycling industry to effectively manage the impacts of the waste export bans, as well as continue to deliver against Queensland Government waste diversion targets. The fund comprises \$20 million from the Australian Government, and \$20 million in co-funding from the Queensland Government, and is being delivered by the Department of State Development, Infrastructure, Local Government and Planning.

First Nations Programs

The Respecting Country – A sustainable waste strategy for First Nation communities (First Nations Strategy) has been developed collaboratively with Aboriginal and Torres Strait Islander councils and in partnership with the Local Government Association of Queensland. The First nations Strategy identifies sustainable and fit-for-purpose waste management and resource recovery solutions which recognise the important connection that Aboriginal and Torres Strait Islander communities have to Country, land and sea. These solutions aim to create innovative new business opportunities that build local employment.

The Queensland Government has also partnered with the Australian Government to deliver the Regional and Remote Recycling Modernisation Fund (RRRMF).

The RRRMF provides funding to local governments and industry partners for infrastructure and equipment in regional and remote Queensland to improve the viability of sorting, processing, recycling or remanufacturing of waste. Projects delivered under this strategy include the Palm Island Metal Clean up and Palm Island Aboriginal Shire Council Litter bin projects.

Appendix 3. Waste management in Australian jurisdictions

The following waste management strategies were analysed to identify distinguishing or notable features that could help to inform this review:

- [National Waste Policy Action Plan 2019](#)
- [ACT Waste Management Strategy](#)
- [NSW Waste and Sustainable Materials Strategy 2041 Stage 1 plan: 2021 - 2027](#)
- [Draft Waste Action Plan Waste Management Strategy for the Northern Territory 2015-2022](#)
- [Queensland's Waste Management and Resource Recovery Strategy](#)
- [Recycling Victoria: A new economy](#)
- [South Australia's Waste Strategy 2020-2025](#)
- [Tasmania – Draft Waste Action Plan](#)
- [Western Australia Waste Avoidance and Resource Recovery Strategy 2030](#)

Each state and territory has a different strategic focus that reflects the economic, environmental and social context of the jurisdiction, as well as the stage in implementation and infrastructure development that the jurisdiction is in.

South Australia's waste strategy is set for five-year periods, which is short when compared to other jurisdictions. The focus and priorities of the 2020-2025 strategy mostly align with Queensland, although South Australia's strategy contains a greater focus on reducing emissions, food waste, and plastics and packaging. South Australia's strategy also contains comprehensive targets for evaluation, monitoring and reporting processes, including developing a monitoring framework to assess progress towards a circular economy for waste.

Some strategies, such as those for New South Wales and Victoria, include implementation or consultation plans with specified timeframes.

At the time of introduction Queensland required the most frequent review of its waste strategy, which is once every three years, although this is currently being amended to align with the five-year review cycle of most other jurisdictions.

Table A2: Components of waste management and resource recovery in Australian

	C'wealth	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Waste Levy in place		♦	♦		♦	♦		♦	♦
Container deposit scheme		♦	♦	♦	♦	♦	♦	♦	♦
Landfill bans on specific items or materials		♦	♦			♦		♦	♦
Single-use plastics ban (specified goods)		♦	♦	♦	♦	♦	♦	♦	♦
Strategy Review requirements	Not specified	3-5 years	6 years	Not specified	3 years	5 years		5 years	5 years

Quantitative targets

Most quantitative targets between jurisdictions cannot be compared directly due to differences in the way waste is reported and classified, and differences in baseline years and data. Despite this, comparing the types of targets set can be a useful way to assess focus areas, priorities, and trends in waste management, as in Table 4 below.

It should be noted that the below table can only be used as a guide to compare waste strategy content. The different structure of policy frameworks in other jurisdictions means that quantitative targets may be listed in other policy materials. For example, Victoria and South Australia refer to regional targets set by regional waste management plans that are not reflected below.

Table A3. A comparison of the quantitative targets in the waste strategies of Australian jurisdictions

Quantitative targets	ACT	C'wealth	NSW	NT	QLD	SA	TAS (draft)	Vic	WA
Increased diversion from landfill/resource recovery rate	♦	♦	♦		♦	♦	♦	♦	♦
Increased diversion/recovery by sector (waste streams)			♦		♦	♦			♦

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Increased recycling by sector (waste streams)					♦				
Increased energy from waste	♦								
Reduced plastic recycling, use and/or plastic packaging		♦	♦			♦	♦	♦	
Reduced total waste generated per capita		♦	♦			♦	♦	♦	♦
Reduced "household" waste generated per capita					♦				
Litter reduction			♦						
Reduced organic waste to landfill		♦	♦				♦	♦	
Reduced emissions from organic waste	♦		♦						
Increased household access to specific recycling services			♦					♦	
Increased household access to separate food and garden organics collection or composting service						♦		♦	
Increased business access to separate food waste collection services			♦						

Other jurisdictional findings

- New South Wales is the only jurisdiction for which governing law requires an expert reference group to set strategy targets.
- The Northern Territory has no quantitative targets, the goals listed in the strategy are general and with no timeframes specified.
- On average across Australia the recovery rate for each sector was greatest for C&D, followed by C&I and MSW, this aligns with the trends observed in Queensland in 2019-21.
- South Australia and Western Australia had the lowest rate of waste to energy recovery, whilst Victoria had the highest. Energy recovery rates had fallen across all jurisdictions, possible factors listed were; progress in organics processing leading to a reduction in organics sent to landfill, lower rainfall rates reducing waste degradation, the removal of reporting obligations under the National Greenhouse and Energy Reporting system and a switch in landfill operator interest and approach.
- Recycling rate targets for MSW and C&I under Queensland's waste strategy are lower than for other states.
- Some strategies, such as those for New South Wales, South Australia and Victoria, separate metropolitan areas from regional areas when setting targets and goals.