Final Review report

Waste Management and Resource Recovery Strategy

July 2024

Queensland Government

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About this report

Regular reviews of the Waste Management and Resource Recovery Strategy (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.

A Draft Review Report was released for consultation in March 2023, which contained the initial desktop findings and reporting on progress towards quantitative targets.

This final Strategy Review covers implementation over a four-year period from 2019 to 2023 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 and recommend opportunities to improve the Strategy and its implementation.

Consultation

Sixteen written submissions were received on the draft waste strategy review, and information sessions were held with Local Government Association of Queensland, Waste Recycling Industry Association (Qld) and Waste Management and Resource Recovery Association of Australia members. This feedback has been considered in preparation of this final report.

Waste Management and
Resource Recovery Strategy
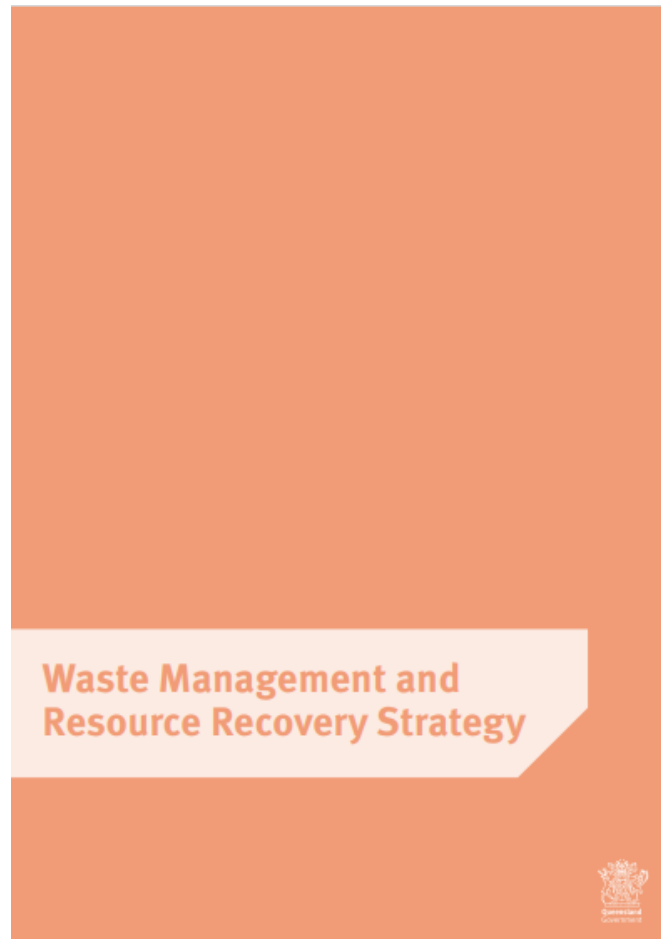
Key Findings

The review finds that the core elements of the Strategy continue to be relevant to the vision of Queensland becoming a zero-waste society by 2050. The vision, actions and targets have guided a range of Queensland Government supported initiatives that have set up the foundations for positively shifting the ways we consume, use and discard of products and materials.

The Waste Management and Resource Recovery Strategy is in the initial stages of implementation, which presents challenges when assessing the impacts of long-term infrastructure investments or behaviour change initiatives for which tangible outcomes are only just beginning to be realised. A number of key Queensland Government initiatives are likely to begin having positive impacts towards the targets over the next five years, including a $100 million Resource Recovery Industry Development Program, $40 million dollar investment in recycling infrastructure through the Queensland Recycling Modernisation Fund, and the creation of the $1.1 billion Recycling and Jobs Fund commencing inJuly2022.

This review presents an opportunity to "course correct" any elements of the Strategy framework that are out of step with a best-practice approach in Queensland. Stakeholder feedback supports the findings that elements of the focus and implementation should be updated to ensure continued relevance to the Queensland Government's objective of transitioning to a circular economy. There are also actions in the Strategy that are nearing completion or have established implementation mechanisms, such as the delivery of action plans for the identified problem waste products. These sections no longer communicate the Queensland Government's direction going forward and should be expanded to ensure continued strategic relevance.

While data to 2021-2022 was used for the Strategy review, analysis of a fourth year of data to 2022-2023 now indicates that five of the nine 2025 milestone targets are likely to be achieved, with unclear trends for a further two of the categories due to anomalous data variations in 2022. This was driven in part by large quantities of disaster waste that was disposed to landfill. The COVID-19 pandemic likely had a negative impact on progress during the first three years of the Strategy, but this is complex to assess and quantify without previous years of Strategy implementation for comparison. The impacts of the Queensland Government offsetting levy costs on household waste can be clearly seen in the declining percentage of municipal solid waste (MSW) that is diverted from landfill. Waste avoidance, recycling and diversion for MSW has been identified in this review as a priority for additional support, particularly as the economic disincentive provided by Queensland's waste levy (the waste levy) will continue to be offset for households. The implementation of Regional Waste Management Plans, the Queensland Organics Strategy 2022-2032 (Organics Strategy) and a major behaviour change initiative have already begun in response to these issues.

The quantitative targets in the Strategy are primarily focused on recycling outcomes which, while important indicators of waste reduction, are lower order activities in the circular economy hierarchy (see figure 1). A recycled product is often of lesser value, both economically and in terms of material loss, than the original product or material. The current waste-focus makes it challenging to objectively assess and report on the outcomes of the many initiatives that look beyond waste to embed circular concepts across the economy by reducing the need for consumption and circulating materials at their highest value for as long as possible. Successful interventions earlier on in a products life may even lead to inverse data outcomes as materials that were previously recycled are instead re-used or re-purposed before they are classified as waste, and so not reported and counted towards waste diversion targets. Additional metrics to assess successful circular economy implementation will be required to measure progress as strategy implementation matures.
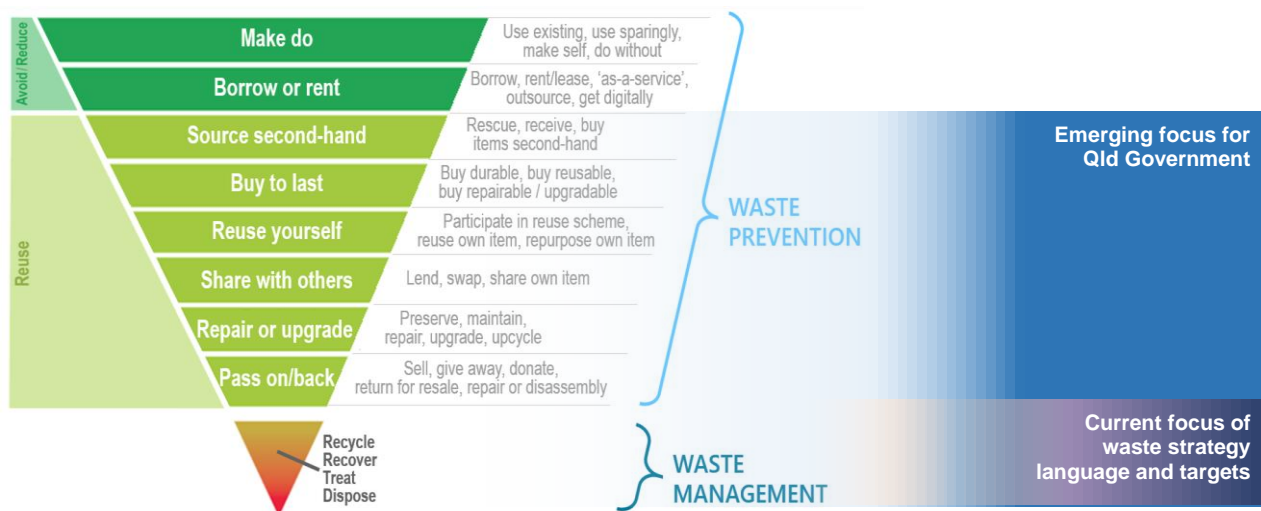
Figure 1. Circular Economy Hierarchy and Strategy gap analysis.

Issues and Recommendations

The below recommendations were informed by stakeholder feedback and desktop research gathered in 2022-23. The Queensland Government has already begun to implement the recommendations and address the issues identified through a range of programs and funding initiatives.

Recommendation	Scope	Issues addressed by recommendation	2024	2025	2026
1. **Update the Strategy focus and language to align content and structure with the circular economy model.**	Update of name, terminology and strategic priority structure to align with the core principles of a circular economy. Does not include changes to actions or quantitative targets	Strategy focus and structure • Strategy structure does not facilitate clear prioritisation and alignment with circular economy principles. • Higher order circular economy initiatives, such as waste avoidance, will require greater focus going forward in the next stage of strategy implementation			
2. **Develop a circular priority products and materials list to replace current "problem wastes" listed in the Strategy.**	A published list with clear inclusion criteria based on the objective of maximising positive economic, social and environmental impacts through products and material selection.	Strategic Direction • The current "problem wastes" listed are being addressed through the development of action plans and key initiatives, meaning that this section no longer communicates future priorities. • The term "problem wastes" no longer aligns with the holistic approach required for interventions at different stages of a material's lifecycle.			
3. **Communicate short to medium term investment priorities, key focus areas and sequencing of actions.**	Publish information on the delivery timeframes and focus for Strategy implementation, and projected waste levy fund investment.	Communication and collaboration • Industry, government and community stakeholders require information on timeframes and investments in order to act with greater financial certainty.			
4. **Transition the current format Strategy into an interactive website that forms the homepage for Queensland Government-led Circular Economy initiatives.**	The key priorities and actions in the Strategy should provide the structure and linkages to communicate initiatives, programs, grants, funding, regulatory frameworks, data and priority products.	Communication and collaboration • Currently poor Strategy awareness amongst the community. • The link between the overarching strategic direction and key government initiatives is not clearly communicated. • The relevance of the Strategy to the Queensland Government's programs and interventions requires better communication.			

Recommendation	Scope	Issues addressed by recommendation	2024	2025	2026
5. Develop additional metrics and targets for circular economy outcomes throughout the value chain.	Targets should be: • Based on sustainable and reliable data sets • Scalable to small-scale interventions. • Reflect industry and business readiness and capacity.	Monitoring and Reporting framework • Quantitative targets in the Strategy are waste-focused and do not measure outcomes for all strategic priorities and actions.			
6. Monitor implementation of the recently published regional waste management plans and incorporate findings into next Strategy review.	Progress towards implementation of the plans should be recorded and made available on a central and accessible website.	Statewide relevance • The Strategy does not provide enough differentiated actions or targets for rural and regional contexts and infrastructure needs.			

7. Continue to review and reform the policy and legislative framework and identify where provisions can be modernised to better support circular economy objectives of the Strategy.	The policy and legislative reform program should continue to seek a balance between mitigating the environmental and social risks of waste generation and inappropriate management and providing a supporting environment for delivery of circular processes in a comparable way to new products and materials.	Barriers to implementation
		• The regulatory framework for waste inhibits achievement of the Strategy objectives.
		  o Regulatory burden is not fairly distributed along the value chain. Contaminants are heavily regulated in recovered resources but often not regulated in new or imported products.
		  o Regulatory framework needs updating to capture new diversion initiatives and technologies.			

8. Deliver behaviour change and awareness for circular economy concepts targeted at households.	Program should be targeted to specific audiences within the general populace and supportive of local government implementation.	Barriers to implementation • Lack of community awareness and education posing barrier to achieving reduction. • Messaging to-date has focused on recycling and waste but does not focus on responsibility for avoidance and consumption behaviours. • There is a lack of confidence in kerbside recycling systems.			

Progress Report

Waste Generation

Since the introduction of the Strategy, headline waste generation in Queensland has fallen from 10.9 million tonnes to 9.3 million tonnes. This represents a 15% reduction in waste despite a population increase of 8.5% in the same period. This included a 975,000 tonne (78%) reduction in waste reported received from interstate sources, with volumes falling from 1.25 million tonnes in 2018 to 272,647 tonnes in 2023.

The Strategy's vision to become a zero-waste society has been supported by the waste levy which also commenced on 1 July 2019. The waste levy aims to reduce the amount of waste going to landfill, reduce interstate waste, encourage waste avoidance, and provide a source of funding to enable waste strategy actions. The waste levy also helps to facilitate industry investment in infrastructure to recover resources diverted from landfill. The positive impacts of the waste levy can be seen in the decrease in waste generation, interstate waste and overall percentage landfilled, and the funding of programs to deliver on strategy priorities.
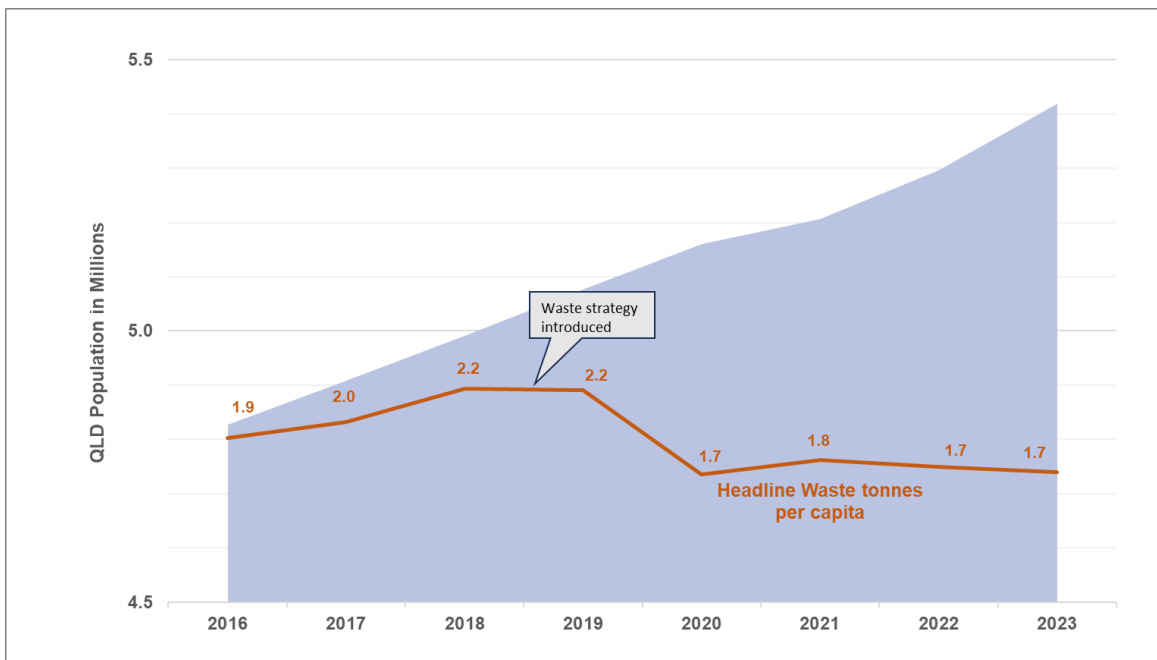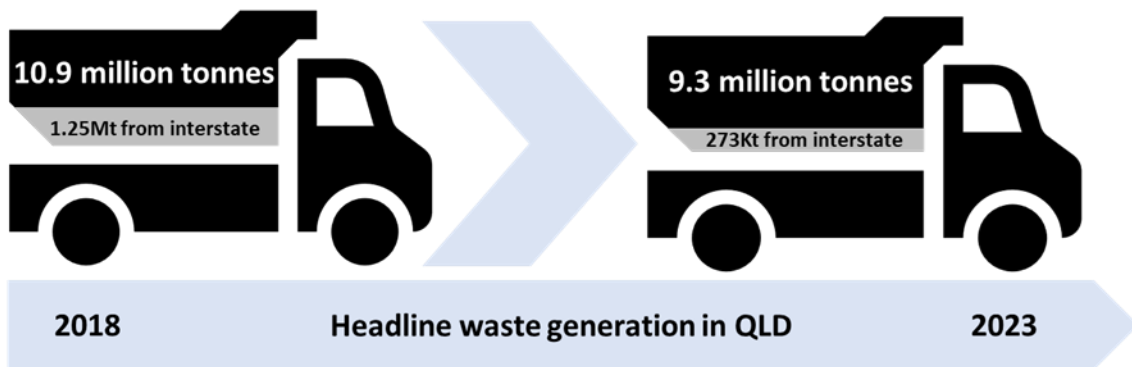
Graph 1. Total headline waste generated per capita compared to population growth since 2016. The continuing decrease in waste generation is likely to be driven by successful diversion initiatives within the Construction and Demolition sectors.

Waste Strategy Actions

Many of the actions for the Queensland Government have already been initiated through collaboration with local governments, First Nations Communities, the waste and recycling industry, research and education facilities, and businesses. These initiatives have focused on establishing a structural framework and baseline for the transition to a circular economy. A detailed summary of the actions delivered to date under the Strategy can be found in Appendix A.

The actions in the strategy are voluntary and there are currently no timeframes indicated for completion. The need for the Queensland Government to better communicate implementation timeframes and sequencing has been identified by key stakeholders (See recommendation 3).

The Strategy also identifies problem wastes to be addressed through increased policy focus and action plans. This list will require regular updating as items are addressed and new materials and products are identified both within Queensland and Nationally (See recommendations 2 & 3).

Table 1. Status of problem waste list

Problem waste listed in Strategy	Action Status
Food and Agricultural Wastes	Queensland Organics Strategy and action plan - *Implementation stage*
Plastics	Plastic pollution Reduction Plan– *Implementation stage*
Waste electrical equipment and batteries	Draft E-Products Action Plan- *released for consultation March 2023*
Glass	Expansion of Container Refund Scheme to include wine and spirits bottles - *commenced*
Textiles	Textiles Action Plan - *Under Development*
Built environment waste, including construction and demolition waste	*Under development*
Paper and cardboard	*Pending*
Tyres	*Pending*

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. However, community surveys in 2022 have indicated that problem awareness and knowledge continue to be an issue, and improved information campaigns and better access to recycling facilities is required (See recommendation 8).

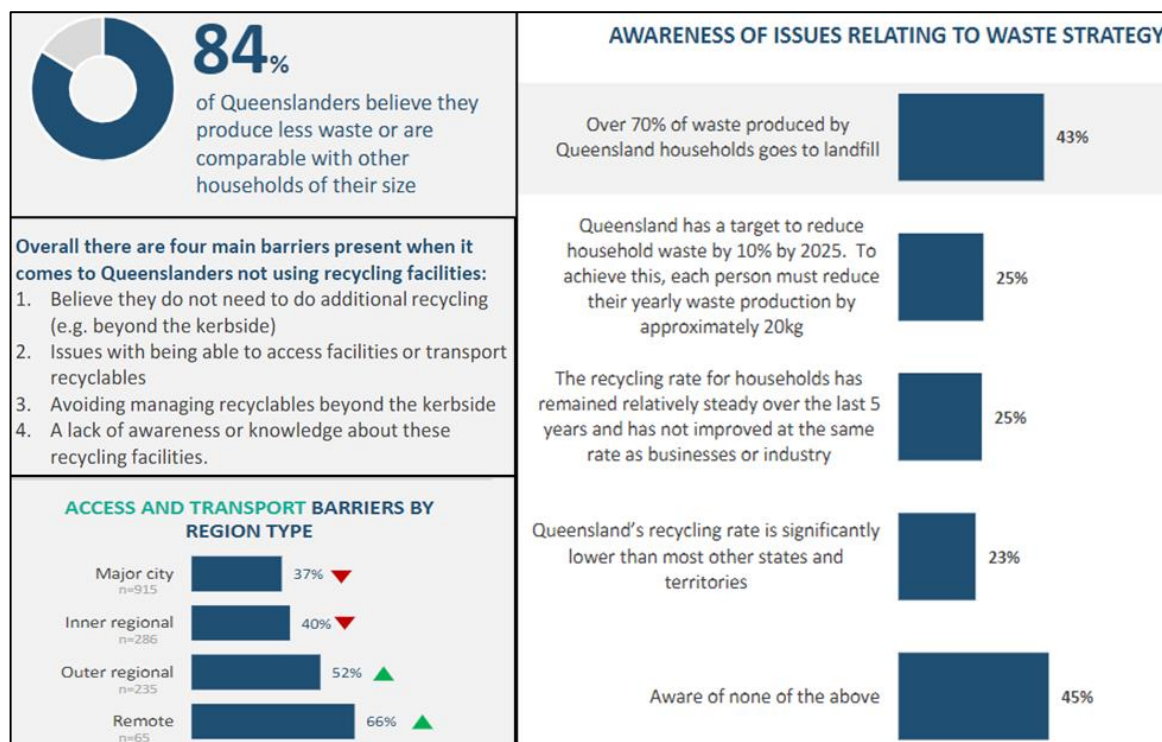**Table 2. Community Survey Results** (1500 people) showing poor problem awareness of waste issues.
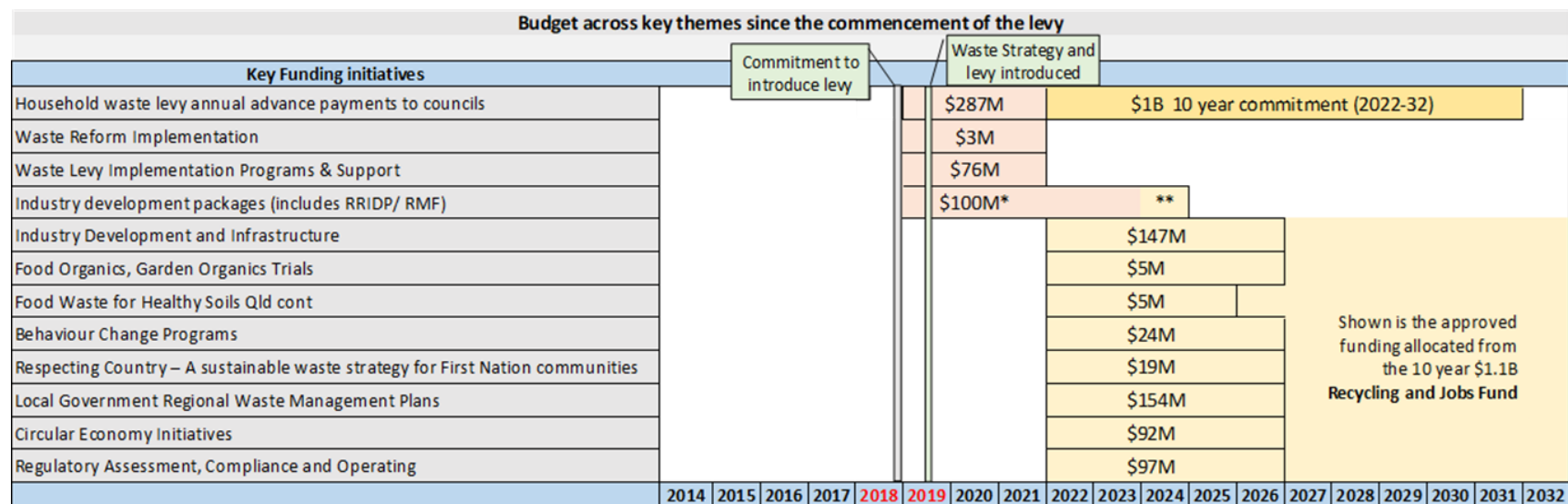
Progress towards quantitative targets

Data Considerations

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 current 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 show an inverse result, indicating that a broader range of metrics are required to form a clear picture of Queensland's progress towards circularity (see recommendation 5).

This statutory review is being undertaken ahead of the earliest (2025) milestone target dates 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 of the Strategy's objectives and targets. The expected lag in achieving outcomes following the establishment of key recycling infrastructure and circular economy programs is not well reflected in the linear trend set by the first milestone targets and progress.

Table 3. Key funding initiatives in the implementation of the Strategy. The grants and programs currently funded by the waste levy will establish the infrastructure and frameworks required to deliver on Strategy objectives. These programs are still in the implementation phase with positive outcomes likely to come to fruition between 2025-2030.

Budget across key themes since the commencement of the levy		
Key Funding initiatives		
Household waste levy annual advance payments to councils	$287M	$1B 10 year commitment (2022-32)
Waste Reform Implementation	$3M	
Waste Levy Implementation Programs & Support	$76M	
Industry development packages (includes RRIDP/ RMF)	$100M*	**
Industry Development and Infrastructure	$147M	
Food Organics, Garden Organics Trials	$5M	
Food Waste for Healthy Soils Qld cont	$5M	
Behaviour Change Programs	$24M	
Respecting Country – A sustainable waste strategy for First Nation communities	$19M	
Local Government Regional Waste Management Plans	$154M	Shown is the approved funding allocated from the 10 year $1.1B **Recycling and Jobs Fund**
Circular Economy Initiatives	$92M	
Regulatory Assessment, Compliance and Operating	$97M	

Labels: Commitment to introduce levy · Waste Strategy and levy introduced

Years: 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032

Notes:

* Includes $20M for RMF; matched with Australia Government $20M; total project budget $40M

** $28M of the $100M is funded from the R&J Fund

RRIDP = Resource recovery industry development Program

RMF = Recycling Modernisation Fund

KEY

Funding from the Recycling and Jobs Fund

Funding prior to the Recycling & Jobs Fund

Announced funding

Natural Disasters
Natural disaster events have significantly influenced the movement of waste in Queensland since the introduction of the Strategy, notably spiking in 2022 and driving diversion and recycling rates down for that year across all waste streams. Large quantities of damaged goods and materials were also likely to have been disposed of by individuals and entities without being formally recorded as disaster waste, and this may have continued into the 2022-23 financial year.

Bushfire events in 2019-20 also had a widespread impact on infrastructure and the environment. In many local-government areas in Southeast Queensland large amounts of waste were generated. The Queensland Government supported recovery, including assisting local governments and operators with effective and rapid resolution of waste management issues and the declaration of waste levy exemptions for disaster waste.
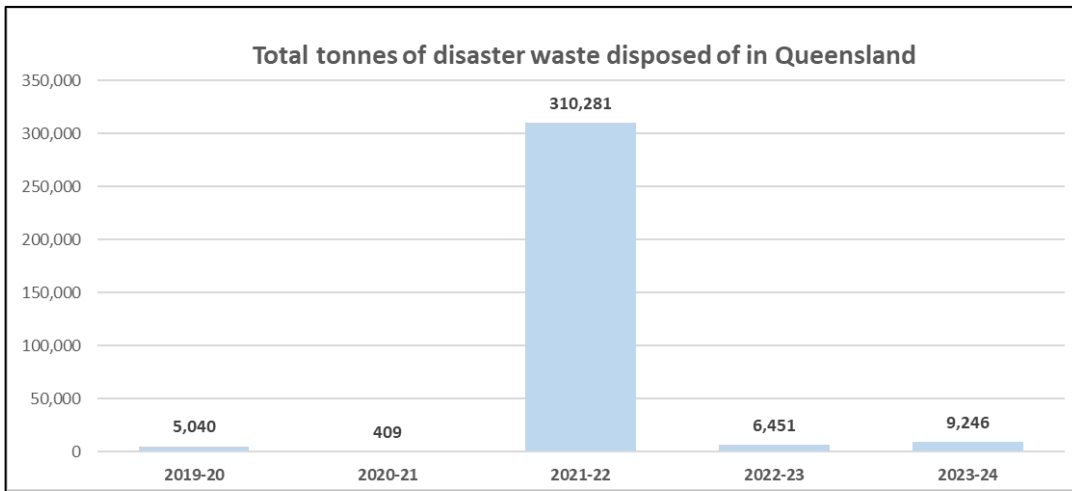
Graph 2. Disaster Waste disposal- Major flooding events in early 2022 generated over 274,000 tonnes of waste, which included the transfer of 190,550 tonnes of flood disaster waste lawfully received from New South Wales.

COVID-19 pandemic
As in other jurisdictions, changes in waste generation patterns for both MSW and Commercial and Industrial (C&I) waste streams were observed during the COVID-19 pandemic. In 2019-20 Queensland's population grew by 1.7% but COVID-19 related restrictions led to a 5.2% contraction in economic activity, which may have resulted in lower consumption and associated waste in domestic, commercial and industrial contexts. Queensland saw a faster than expected recovery in domestic activity, however some industries had significant ongoing impacts due to the reduced international travel and workforce. These impacts particularly affected the tourism, education and agricultural sectors.

The COVID-19 pandemic also had a severe but short-lived impact on household spending in Queensland, with the 2022-23 overall growth in household spending 28% higher than pre COVID-19. There have also been large-scale societal changes to the way we live that are likely to have had profound impacts on waste generation. These changes include;
  •   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.

Export Bans
In March 2020, the Council of Australian Governments, agreed to apply more stringent regulations to the export of untreated and unprocessed 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.

It is possible, that because of these bans, there may be a lag-on-effect for diversion of these wastes from landfill with the emerging capability and capacity for industry to recover and recycle these wastes.

Table 2. Timetable for implementation of Australian waste export bans

Waste type		• Unprocessed Glass • Mixed plastics • Whole tyres	• Single resin polymer plastics		• Mixed and unsorted paper and cardboard
	2020	**2021**	**2022**	**2023**	**2024**

Energy From Waste
The Strategy contains implicit expectations for energy from waste (EfW) recovery in Queensland. The recycling targets have been calculated as the diversion rate excluding the percentage of waste materials from which energy is expected to be recovered in accordance with the Queensland Energy from Waste Policy. The percentage of waste materials expected to be used for EfW in 2025 is 5% of MSW, 15% of C&I, and 10% overall. In 2023 only 1% of C&I was recorded as being used for EfW so the recycling rates were, for all practical purposes, equal to diversion rates.

Target Progress: data trends and analysis

Milestone targets
The Strategy sets ambitious targets for 2050 that are designed to drive growth in the recycling and resource recovery sector and reduce Queensland's waste footprint. To facilitate progress, milestones 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.

Based on the most recent data, Queensland appears to be on track to reach 5 out of 9 of the 2025 milestone targets. Two of the diversion targets will possibly be reached after course correcting following a sudden change in trend in 2022 driven largely by disaster waste. Progress is assessed using data submitted by waste industry entities annually through the Queensland Waste Data System (QWDS) according to obligations in Chapter 7 of the WRR Act.

Table 13: Summary of Strategy targets and progress

Key	Municipal solid waste (MSW) 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.
Ontrack/surpassed milestone targets	
Possibly reach milestone targets	Commercial and industrial (C&I) waste includes scrap metal, paper and packaging materials, sawmill residues and green waste.
Unlikely to reach milestone targets	Construction and demolition (C&D) waste includes concrete, scrap metal, asphalt, and masonry

| Category	Waste stream	2017-18 Baseline	2022-23 data	2025 milestone
Reduction in household waste generation (% reduction from 2017-18 baseline)	MSW	0.54 tonnes/ capita	**6%**	10%
Landfill diversion rate (amount diverted as percentage of total waste generated)	MSW	32.4%	**27%**	55%
	C&I	47.3%	**53%**	65%
	C&D	50.9%	**81%**	75%
	Overall	**45.4%**	**54%**	**65%**
Recycling rate (amount recycled as percentage of total waste generated)	MSW	31.1%	**27%**	50%
	C&I	46.5%	**52%**	55%
	C&D	50.9%	**81%**	75%
	Overall	**44.9%**	**54%**	**60%**

Overall Diversion and Recycling

This category includes all headline waste streams: MSW, C&I, and C&D waste. The relative diversion success across different streams aligns with trends seen in other jurisdictions, with C&D having the greatest average recovery rate, followed by C&I and MSW. For further analysis of how Queensland compares to other jurisdictions, see Appendix **B**.

In the initial years of the Strategy, the waste levy has likely been the main driver in increasing overall resource recovery in the C&I and C&D waste streams and reducing the transportation of interstate waste in to Queensland. As of June 2022, waste levy revenue was $1.3 billion, which supports the implementation of the strategic priorities and actions.

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, a summary of actions delivered under the Strategy can be found in Appendix A.

As key infrastructure becomes operational and resource recovery matures, the focus of transitioning to a circular economy will shift to avoiding waste generation through better design and production practices, and by maintaining goods in circulation through repair and reuse. The metrics and data used to assess success will need to be updated to reflect this development (See Recommendations 1 & 5).
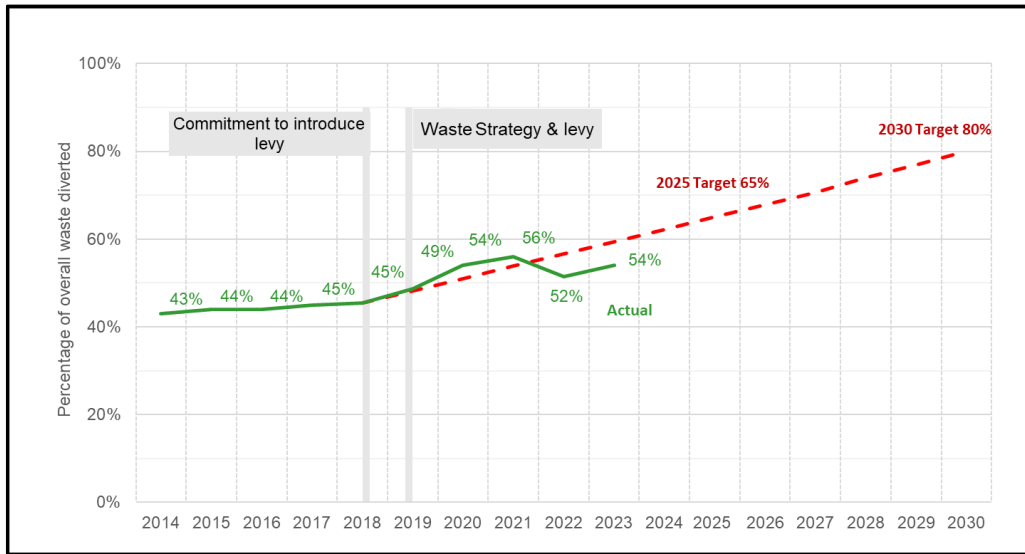
Graph 3. Overall diversion from landfill: 54% of all reported headline waste was diverted from landfill in 2023. While the trend in diversion from landfill has been positive since the introduction of the waste levy, there was a decrease in 2022. It is unclear if Queensland will reach the 2025 first milestone targets.
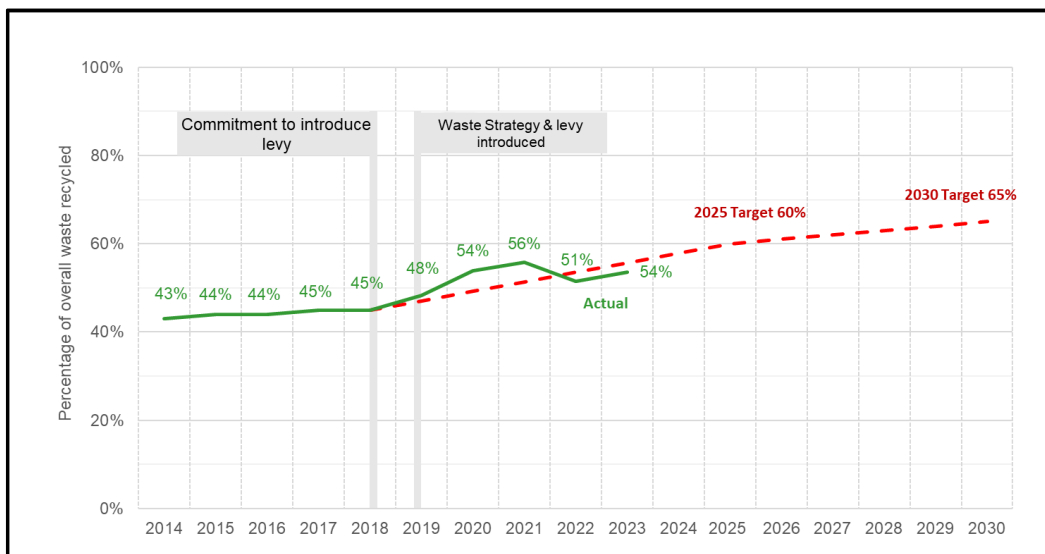
Graph 4. Overall recycling: 54% of overall waste was recycled in 2023. If this trend continues Queensland is likely to reach the 2025 target of 60%.

Household waste generation

Household waste generation per capita is on track to reach the 2025 target of a 10% reduction. Whilst these results are positive, the trend in household waste generation has not changed significantly over the past 5 years, signalling that waste avoidance and reduction behaviours in the community require further support. There is likely to be a lag in seeing the impacts of altered economic activity and lifestyle changes during COVID-19, so increased post-pandemic spending may be observed in increased household waste generation in the coming years.
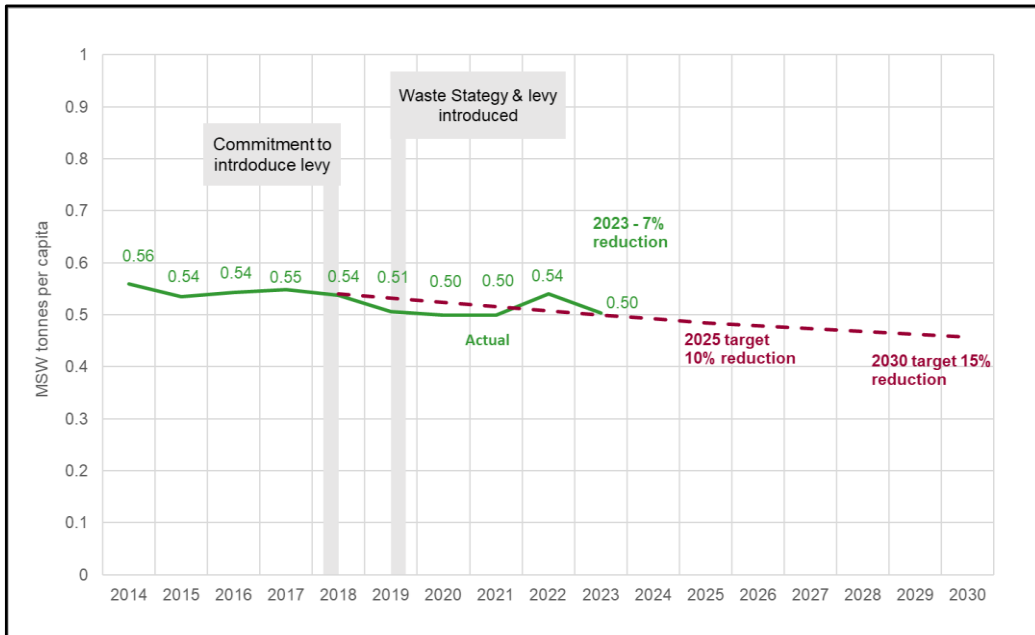
Graph 5. MSW Generated annually per capita. Since the introduction of the Strategy MSW produced per capita has steadily fallen and is likely to reach the 10%

MSW Recycling and Diversion

Recycling and diversion rates for MSW have continued to decline in Queensland since the implementation of the Strategy. The impact of offsetting waste levy costs on household waste can be clearly observed, with previous surveys indicating a lack of problem awareness, recycling facility accessibility and knowledge within the community (see recommendation 4 & 8).

In response to these findings, the Queensland Government has focused resources and funding on initiatives designed to divert household waste from landfill, including the implementation of the Organics Strategy and Action Plan (including organics kerbside collection services), the development of regional waste management plans, and a statewide behaviour change program. The infrastructure and programs to support these initiatives are currently being established and results are expected to drive significant improvements in MSW performance by 2030 (see recommendation 8).
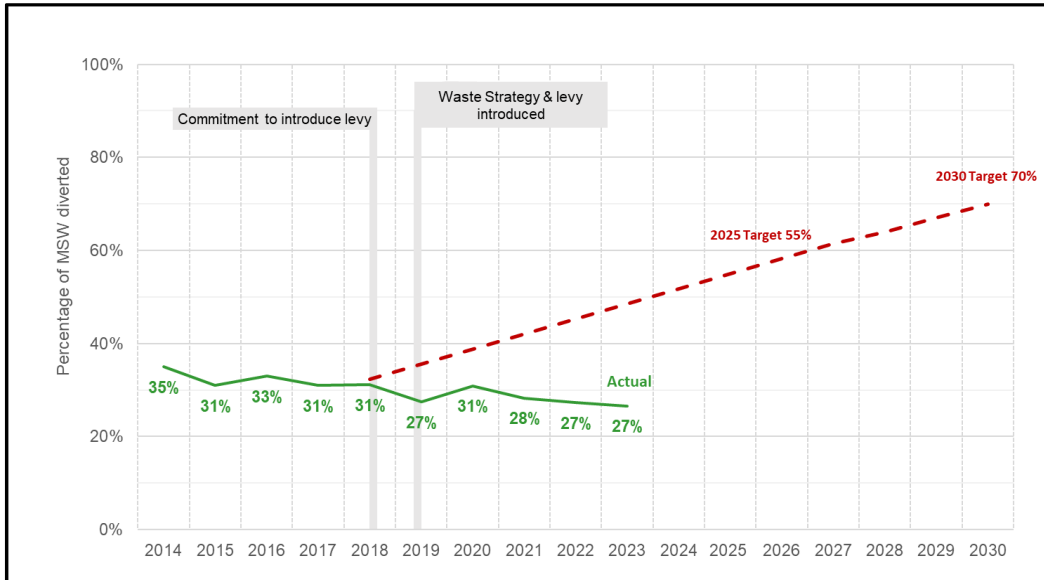
Graph 6. MSW diversion from landfill: 27% of MSW was diverted in 2023. If this trend continues, Queensland will not reach the first milestone target of 55% by 2025.
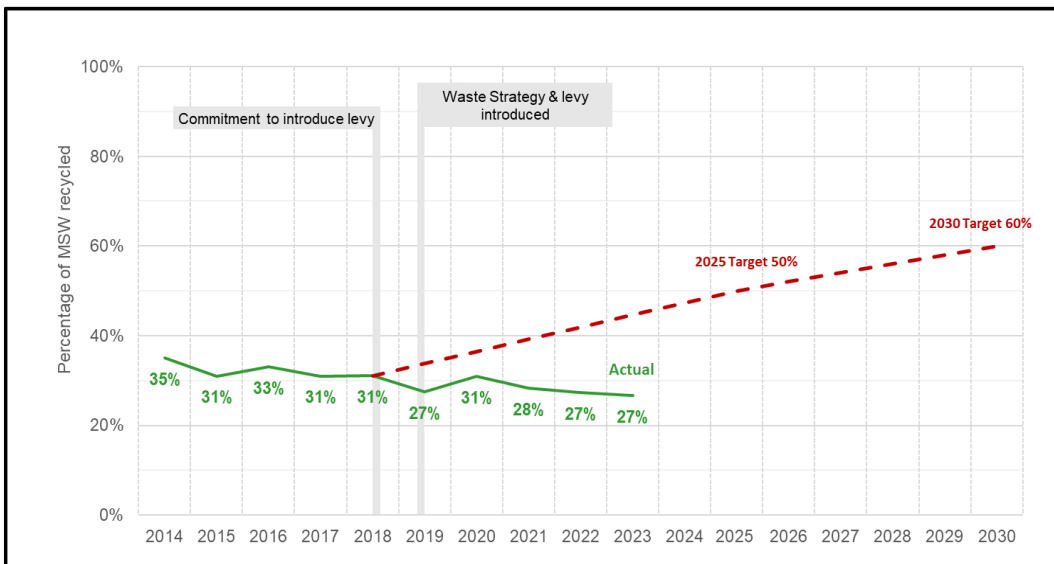
Graph 7. MSW recycling rate: 27% of MSW was recycled in 2023, which represents a decrease from the 2018 baseline. Queensland will not reach the first milestone target of 50% by 2025 if this trend continues.

C&I Recycling and Diversion

This waste stream includes industrial waste, waste from offices and commercial activities, but also domestic waste collected from multi-unit dwellings by a commercial waste contractor. There are complex interactions between different waste streams and key events that impact C&I outcomes. For example, there have been changes in household consumption and waste generation patterns from people moving from office-based locations to hybrid work approaches, but in some cases both home and office waste may be reported within the C&I waste stream depending on the location of the waste generated.

Following initial improvements after the introduction of the waste levy, C&I recycling and diversion rates dropped away from the target trendline in 2022 and 2023. Whilst a spike in disaster waste in 2022 is likely to have had a significant impact on this outcome, it is not yet clear what else may be driving this change.
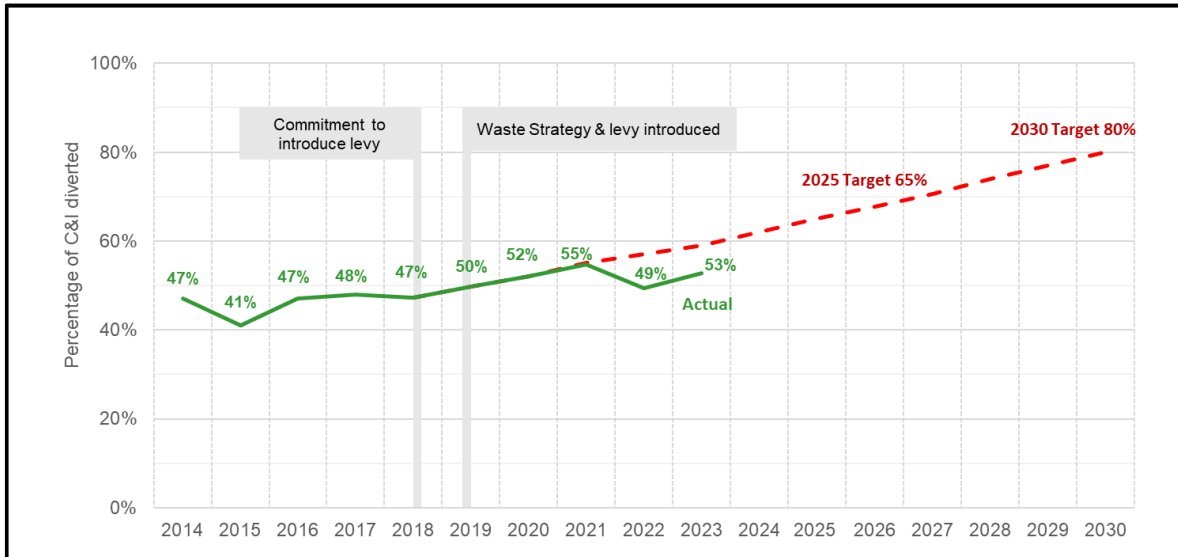
Graph 8. C&I waste diversion from landfill: 53% of C&I waste was diverted from landfill in 2023. While the trend in diversion from landfill has been positive since the introduction of the waste levy, 2022 and 2023 showed a slowing down in diversion rates. Based on this data, it is unclear if Queensland will reach the 2025 first milestone target
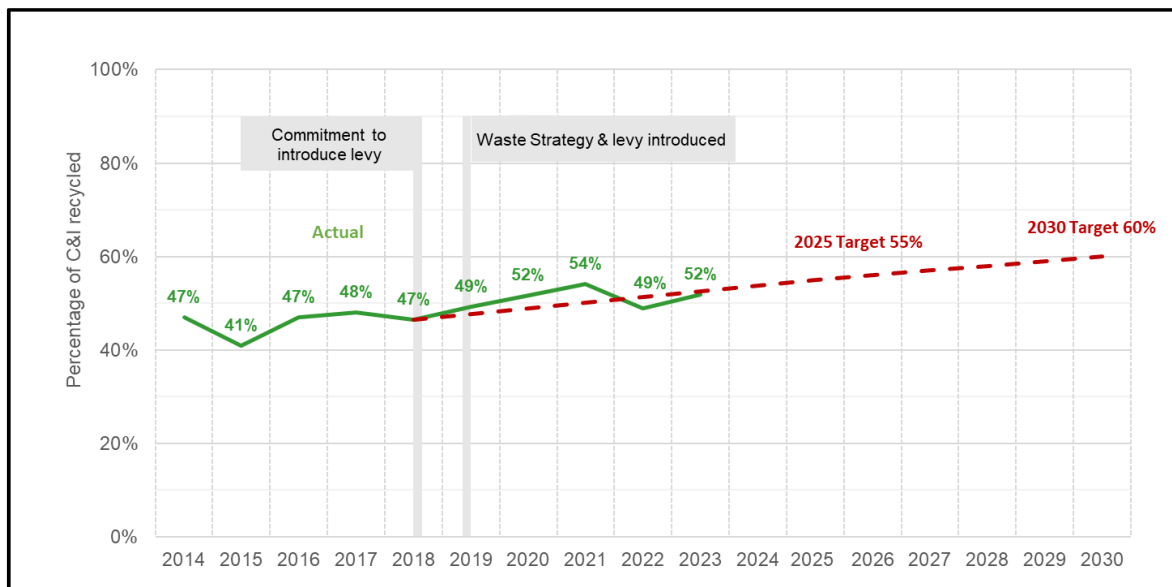
Graph 9. C&I waste recycling: 52% of C&I waste was recycled in 2023. Queensland is likely to reach the 2025 first milestone target of 55% if this trend continues.

C&D Diversion and Recycling

The introduction of the waste levy and the Strategy had a marked positive impact on this waste stream. The strong performance of the C&D stream reflects the relative ease of recycling these waste materials and the well-understood market for these recycled products.
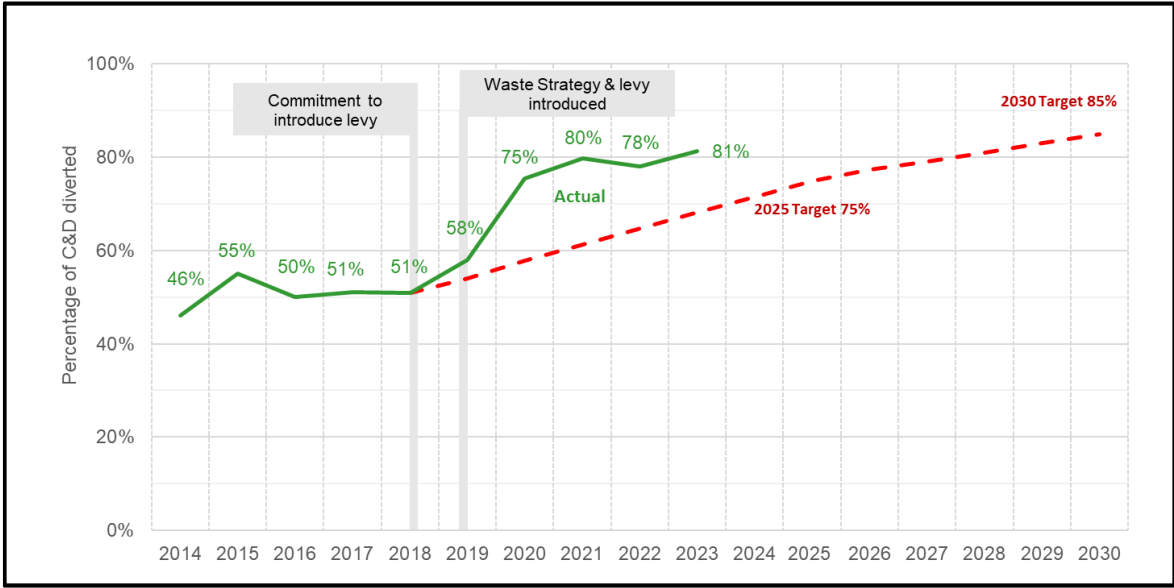
Graph 10. C&D waste diversion: 81% of C&D waste was recycled in 2023, which indicates that the 2025 first milestone target has been achieved ahead of schedule.
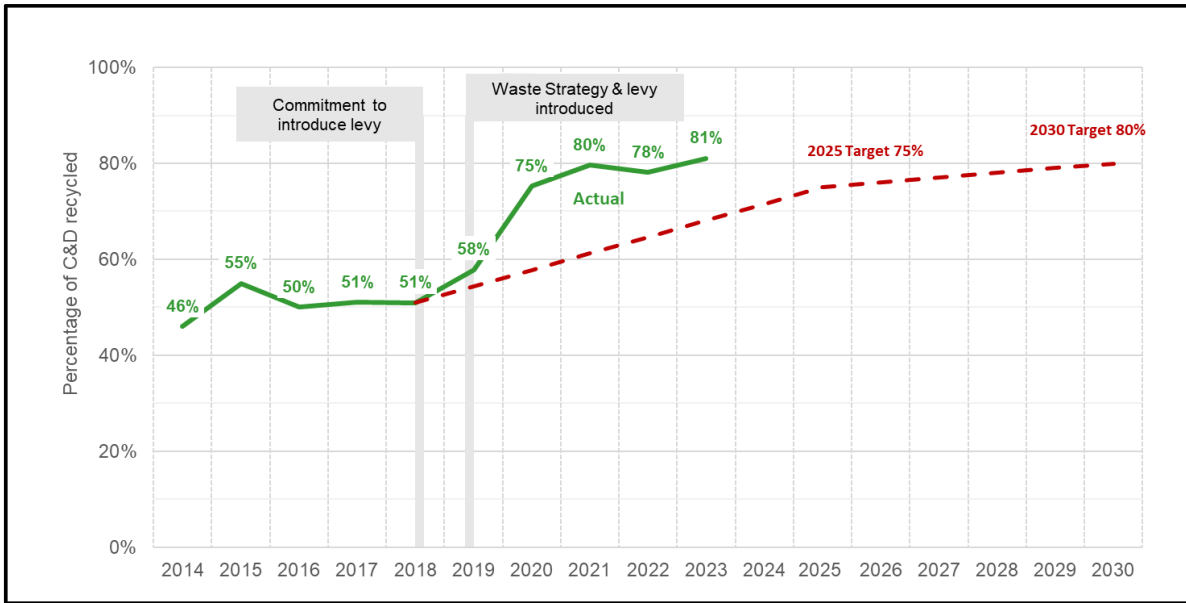
Graph 11. C&D waste recycling: 81% of C&D waste was recycled in 2023, which indicates that the 2030 milestone target has been achieved seven years ahead of schedule.

Appendix A. Delivery of Strategy Actions

Key Queensland government-led or government-funded initiatives

Table A1. Key Queensland government-led or government-funded initiatives that delivered on Strategy actions.

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 Bans commenced on 1 September 2021. Single use plastics five-year roadmap 2022-2026 in implementation.
	Continuously improve the effectiveness of waste sector environmental compliance operations	Waste levy compliance targets were implemented and achieved (Annual strategic compliance priorities 2020–2021) Gillies Range Road: Litter and Illegal Dumping Prevention Project Beerburrum Forest area pilot project - Reducing illegal dumping in natural areas Understanding Kerbside Dumping Behaviour Study Love Queensland. Let's Keep it Clean - Campaign Illegal Dumping Hotspots Grant Program Litter and Illegal Dumping Social Research Charitable Recycling Australia Illegal Dumping Partnership Trial Local Government Illegal Dumping Training Package Keeping Queensland Clean: Illegal Dumping Grant Program Local government Illegal Dumping Investigation Training Package
	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 undergoing implementation
	Develop an education strategy to integrate waste and recycling behaviours into the education system	Organic Waste Smart Schools Program Expansion of the Ecomarines Schools Program across Queensland

Transitioning to a circular economy for waste	Assess the opportunities of the circular economy model for Queensland.	Circular Economy Program Study Queensland's Circular Economy Future Report Communities in Transition Pilot Program
	Collect and amalgamate data to understand material flows across the economy and address knowledge gaps	Annual Waste Survey - Queensland Waste Data System
	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	Queensland Organics Strategy and Action Plan Plastic Pollution Reduction Plan Draft E-Products Action Plan Container Refund Scheme Textiles Action Plan (Under Development) Built environment waste, including construction and demolition waste　　　(Under development)
	Deliver community campaigns and education programs that support waste avoidance, re-purposing, reuse and recycling	Let's Get It Sorted- pilot advertising campaign 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: - 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	National agreement reached with Australia's

	leadership in developing a voluntary specification code for minimum recycled content in packaging and products	Environment Ministers to introduce mandatory packaging design obligations based on international best practice.
	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
	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	Sunset review and remake of Waste Reduction and Recycling Regulation 2023. Introduction of circular economy principles to the objective of the WRR Act Amendment to introduce ability to declare materials or products not a waste (WRROLA 2023). Review of End of Waste framework 2023. Removal of clean earth waste levy exemption on 1 July 2023. Regulated Waste Classification reforms (Environmental Protection Regulation 2019)
	Introduction of disposal bans	Early stakeholder engagement commenced in 2023 to explore the viability of disposal bans on key priority waste products including solar panels, batteries, mattresses, large household appliances, tyres and commercial food organics
	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 Ongoing work occurring through Environment Ministers Meetings.
	Review the land-use planning system to ensure pathways for industry development are supported	Proposed precinct areas included in regional planning documents.

	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
		Regional Waste Management Plans developed across Queensland
	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	
	Investigate alternative end-uses and markets for recycled materials	Solar photovoltaic recycling pilot program
		Research for using recycled materials in Queensland Roads (Department of Transport and Main Roads)
		Implementation of QLD Organics Strategy- including contribution to national Food Waste for Healthy Soils Program.
	Consider how procurement can stimulate demand for recycled material manufactured in Queensland	Circular Economy objectives included in Queensland Procurement Strategy 2023
		Brisbane 2032 Procurement strategy
	Develop programs to stimulate the growth of markets for recycled materials	Regional Recycling Transport Assistance Package
		The Charitable Recyclers Reimbursement Program
		Regional and Remote Recycling Modernisation Fund
	Strengthen collaborative partnerships with key organisations in the sector	Partnerships with First Nations communities to implement *Respecting Country – A sustainable waste strategy for First Nation communities (*First Nations Strategy)
		Local Government Infrastructure services Partnership Program

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 the Department of Environment, Science and Innovation (department) 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 2020-21 the compliance activities implemented by the department included:

- detected and responded to 147 unlicensed waste activities
- 177 enforcement actions undertaken against illegal waste operation
- inspected the top 70% of waste levy contributors (landfills), including volumetric surveys
- commenced investigation on 90% 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 government partners by the Queensland Government. In 2020-21 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.

First Nations Programs
The First Nations Respecting Country 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.

Appendix B Waste management in other jurisdictions

National waste management policy

The National Waste 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

Table A2. 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%

Every state and territory in Australia has a waste management strategy. 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, Tasmania 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% diversion rate in 2020-21.

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

Table A3: Components of waste management and resource recovery in Australian

	Clth	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Waste Levy in place		♦	♦		♦	♦		♦	♦
Container deposit scheme		♦	♦	♦	♦	♦	♦	♦	♦
Landfill bans on specific items or		♦	♦			♦		♦	♦

	ACT	C'th	NSW	NT	QLD	SA	TAS	Vic	WA
materials									
Single-use plastics ban (specified goods)		♦	♦	♦	♦	♦	♦	♦	♦
Strategy Review requirements	Not specified	3-5 years	6 years	Not specified	5 years	5 years	4 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 A4. Quantitative targets in other Australian jurisdiction Waste Strategies

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

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 landfll for energy recovery.

Energy recovery—involves the conversion of waste materials into useable heat, electricity or fuel through processes such as combustion, gasification, pyrolisation 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 biodegradables 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