

Waste-Everyone's responsibility

Queensland Waste Avoidance and Resource Productivity Strategy (2014–2024)



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EHP. 2014. Waste—Everyone's responsibility: Queensland Waste Avoidance and Resource Productivity Strategy (2014–2024). Brisbane: Department of Environment and Heritage Protection, Queensland Government.









Printed on 100% recycled paper.

December 2014

#30681

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Introduction

The Queensland Waste Avoidance and Resource Productivity Strategy (2014–2024) outlines the many opportunities and challenges ahead for Queensland as we work to improve our collective waste avoidance and recovery performance.

Queensland industry took the lead on developing the draft strategy and has fostered a strong focus on shared responsibility for improving waste and resource recovery performance.

This strategy provides a high-level direction for waste management and resource recovery in Queensland over the next 10 years—broadly focusing on waste from all sectors, including household, agricultural, mining, commercial and industrial waste, and solid and liquid hazardous (or regulated) waste. This 10-year strategy complements and supports *The Queensland Plan*.

The vision for this strategy is for Queensland to become a national leader in avoiding unnecessary consumption and waste generation—adopting innovative resource recovery approaches, and managing all products and materials as valuable and finite resources.

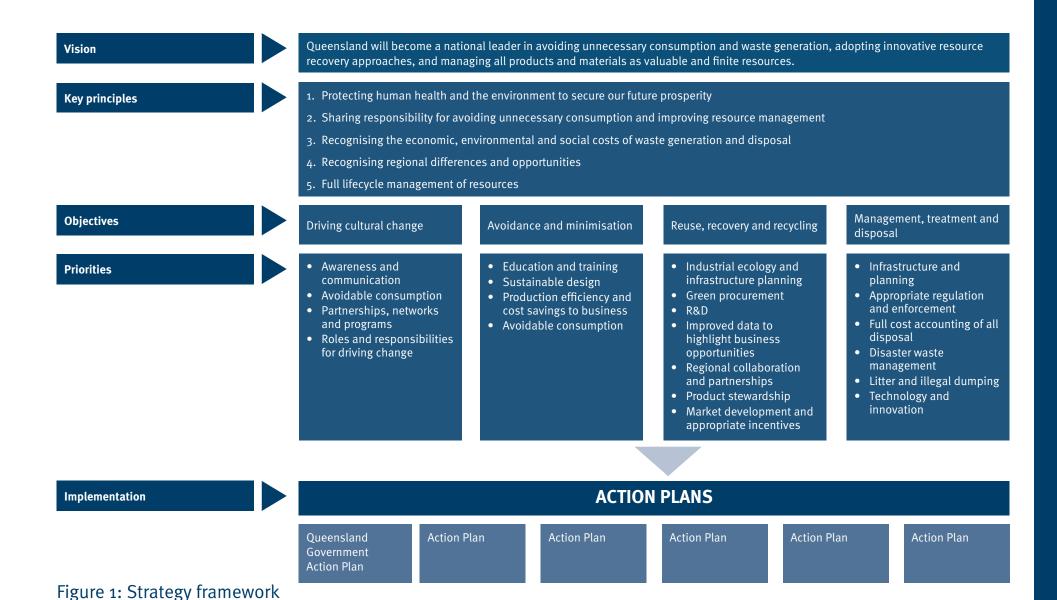
To achieve this vision the strategy sets a framework (Figure 1) of guiding principles and objectives, and priority areas which underpin the development of action plans. The strategy is also informed by the waste and resource management hierarchy (Figure 4), which sets out an order of preference for options for managing waste—from avoiding, to reusing, recovering, treating and disposing of waste. Taken together, the principles and hierarchy help shape the objectives and priorities, and in turn inform the development of action plans for implementing the strategy.

The strategy sets targets for improving resource recovery and recycling rates and reducing landfill disposal over the next 10 years. These targets take account of the different circumstances and opportunities in metropolitan, regional and remote parts of Queensland.

The strategy also identifies the highest priority wastes for action—wastes that are of national concern or that are of particular concern to Queensland.

The strategy will be implemented through a series of action plans that are intended to be developed at a government or sectoral level and will complement the objectives and priorities of the strategy. Specific or sectoral targets within the plans will help contribute towards achieving the strategy's targets. Action plans under the strategy will address improved management of any relevant priority wastes, as well as key waste generated or handled by the sector that have potential for improvement.

Implementation of the strategy will be reported on every three years, as required under the *Waste Reduction and Recycling Act 2011*. The Queensland Government Action Plan will also be reviewed every three years, in line with the strategy review, to ensure Queensland is achieving the vision and objectives of the strategy.



Why do we need a waste strategy?

Changing patterns of consumption, economic changes, and projected population growth over the next decade mean that across Queensland, business industry and regional areas are facing many challenges. We need to re-think our approach to managing waste and resource recovery.

On current trends in population growth, waste generation and disposal from everyday business and domestic activities is expected to increase to more than 11 million tonnes by 2026. In addition, wastes from heavy industrial activities can also be expected to grow over the next decade as population and our demand for resources increases, and as industries expand to meet this growing demand.

Queensland has a population of 4.7 million—3 million live in the south-east corner which covers only 1.3% of the state

Queensland's large size, combined with a significant proportion of the population being located in decentralised coastal communities or vast areas of low-population regional areas inland, presents logistical challenges for managing waste. Small to medium sized businesses often lack the resources and expertise in the waste industry to find the most beneficial waste solutions, and economies of scale and distance create significant challenges to improving practices. A Chamber of Commerce and Industry Queensland survey in 2010 highlighted how difficult it can be for businesses to determine the volume, nature and cost of the waste they create. The resource recovery industry is expanding and material recovery is increasing each year; however investment in the industry remains a challenge due to the difficulty in locating and gaining approval for infrastructure, and the acceptance of recycled materials in the market place.

This strategy provides a roadmap on how Queensland can best deal with waste. The Queensland Government is implementing the strategy to position Queensland as a leader in sustainable waste management and resource recovery, and to realise the vision of *The Queensland Plan* by protecting the environment while encouraging greater opportunities for the economy.

In 2012-13 Queensland sent more than half of the waste produced from everyday business and household activities to landfill

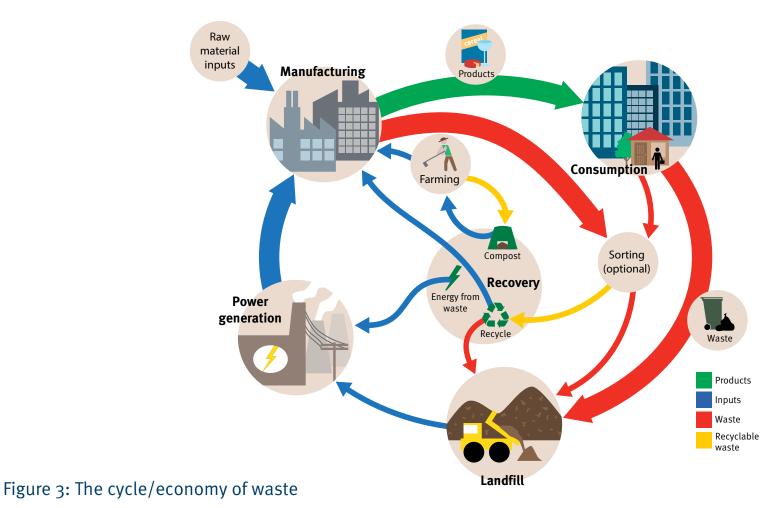
In 2012-13 Oueensland produced almost 8.5 million tonnes of general waste from everyday household, business and construction activities. 45% of general **55%** of **general waste** was sent to landfill waste was recovered, from the following streams: 14.9 million tonnes of hazardous 61% construction wastes—not all of which can be recycled— 33% household was generated by heavy industrial activity including: 42% business Ash from power generation Asbestos Food processing waste Industrial process waste

Figure 2: Management of waste in Queensland 2012-13

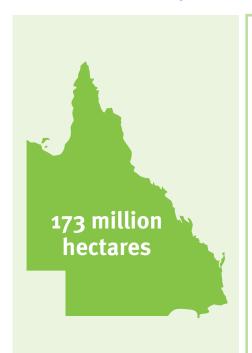
such as galvanizing liquid

The true cost of waste generation and disposal includes a variety of environmental and economic costs to business and the community. Queensland has historically followed a linear pattern of waste management—manufacturing of raw materials into products, followed by consumption and disposal. This is now shifting to look at wastes as resources, cycling through the economy in different forms to extract their full potential. Landfills will remain a necessary part of waste management practices; however, the way that resources are managed will shift so that the resource value of wastes is more readily recognised and realised.

The total impact of waste is complex and is closely connected to the consumption of other resources, such as water and energy that goes into the goods we use. This means that there are multiple benefits and efficiencies from 'closing the loop' and better valuing the resource potential and embodied energy in waste items. Closing the loop recognises everything as a resource and this waste strategy recognises the importance of keeping waste in the economy for as long as possible (Figure 3).



Queensland snapshot



Strengths/achievements:







1 million tonnes

of organic waste

was recycled

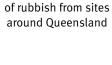
Regional councils collaborate to achieve regional waste targets



962,000 tonnes of fly ash recovered



2801 reports from the public of litter and illegal dumping



91,743 volunteers

removed 3130 tonnes



84% households have access to kerbside recycling



Over **6,000**Queenslanders
employed in the
waste sector



784,000 tonnes of construction and demolition waste recovered



450 megawatts of installed energy-from-waste capacity

Opportunities/challenges:



499 million plastic bags used per year



8.5 million tonnes of waste came from household and businesses



14,500 tonnes of litter and illegally dumped waste cost councils \$11 million



14.9 million tonnes of waste generated from heavy industry



\$678 worth of food per household per year is disposed of



86% of surveyed small and medium sized businesses in 2010 regarded waste to be their most inflexible cost

Setting the direction

We all produce waste, and we all make decisions about how waste is managed. This strategy shows how Queensland can improve its waste and resource management performance though targeted and collaborative action delivered through partnerships and shared responsibility.

This strategy is a call to action for the government, community and the waste industry and will be an effective tool to implement change. The 10-year strategy covers waste from all sectors—household, agricultural and industrial, solid and liquid, and hazardous or regulated waste.

Queensland industry took the lead in developing the new strategy and has fostered a strong focus on shared responsibility for improving waste and resource recovery performance. A steering committee set up to produce the draft strategy consisted of representatives from the waste and resource recovery industry, agriculture, resources, construction and tourism sectors, local and state governments, academia and environmental bodies.

The strategy vision is underpinned by a set of principles which guide the approach to goal-setting and decision-making. Four objectives have been set to implement the strategy's vision and principles, underpinned by priority areas for action (refer to page 7).

The waste and resource management hierarchy (Figure 4) sets the order of preference for managing waste in order to inform decision-makers. The hierarchy shapes the vision, principles, objectives and priorities in the strategy, and provides a basis for development of action plans.

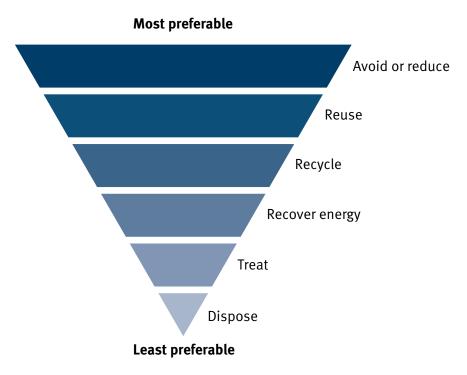


Figure 4: The waste and resource management hierarchy

Principles

Principle 1:

Protecting human health and the environment to secure our future prosperity

Good management of resources is a benefit to our society, economy and environment.

Principle 2:

Sharing responsibility for avoiding unnecessary consumption and improving resource management

Shared responsibility and commitment from those involved in selling, buying, using and disposing of products and material streams. This principle requires all parties to account for the environmental costs and impacts associated with goods and materials throughout their lifecycles. This principle aligns with Queensland's Waste Reduction and Recycling Act 2011 which states those who generate waste should retain responsibility for its management.

Principle 3:

Recognising the economic, environmental and social costs of waste generation and disposal

The true cost of waste must take into account the negative economic, environmental and social costs to government, business and the community. Costs include the impact of waste on the environment and human health, declining landfill space close to major population centres, the rising costs of virgin materials and the loss of valuable resources, increasing transport costs, and the large number of landfills that will require remediation at great cost to the community and governments.

Principle 4:

Recognising regional differences and opportunities

Queensland's geographic, demographic, socioeconomic, and environmental and health differences all require consideration. This principle recognises that a 'one size fits all' approach is impractical, given the divergence of circumstances around the state, and that local solutions are best fit.

Strategic regional collaboration can effectively maximise the benefits from shared services, infrastructure and expertise to deliver viable, accessible and sustainable local resource recovery solutions. This principle also recognises that local solutions create local jobs and minimise the impact of transport of waste and resources.

Principle 5:

Full lifecycle management of resources

We reach our goal when we draw the most sustainable benefit from the wastes that are generated and keep the material circulating in the economy for as long as possible. This principle aims to preserve the on-going value of material streams by ensuring the waste by-products from one process are channelled into another.

Objectives

1. Driving cultural change

All stakeholders recognise their role in meeting the vision of the waste strategy, and are informed and empowered to participate in achieving its goals and objectives

2. Avoidance and minimisation

Queensland will realise all opportunities (environmental, economic and social) from maximising sustainable consumption and production

3. Reuse, recovery and recycling

Queensland will optimise economic benefits from reuse, recovery and recycling

4. Management, treatment and disposal

Queensland will reduce the impact of waste on human health and the environment through improved waste practices

Aligning with *The Queensland Plan*

More than 80,000 Queenslanders contributed their ideas to *The Queensland Plan*, which has established a shared, long-term vision for Queensland over the next 30 years. The waste strategy has been developed to align with and contribute to the goals and objectives set in *The Queensland Plan* (Figure 5).

The Queensland Plan		Queensland Waste Avoidance and Resource Productivity Strategy 2014-2024
Economy "We are the number 1 performing economy in Australia"		Principle 1: Protecting human health and the environment to secure our future prosperity Principle 3: Recognising the economic, environmental and social costs of waste generation Principle 5: Full lifecycle management of resources Objective 2: Avoidance and minimisation Objective 3: Reuse, recovery and recycling
Environment "Our natural resources are managed effectively"		Principle 1: Protecting human health and the environment to secure our future prosperity Principle 3: Recognising the economic, environmental and social costs of waste generation Principle 5: Full lifecycle management of resources Objective 2: Avoidance and minimisation Objective 4: Management, treatment and disposal
Regions "Our regions are strong and prosperous"		
Infrastructure "Our infrastructure fits our changing population and demographics"		Principle 5: Full lifecycle management of resources Objective 4: Full lifecycle management of resources Reuse, recovery and recycling Management, treatment and disposal
Education "Education is valued as a lifelong experience"		Principle 2: Sharing responsibility for avoiding unnecessary consumption and improving resource management Objective 1: Driving cultural change
Governance "We have localised and more flexible decision making"		Principle 4: Recognising regional differences and opportunities Principle 5: Full lifecycle management of resources
Health and Wellbeing "We are connected to our communities"		Principle 1: Protecting human health and the environment to secure our future prosperity Principle 2: Sharing responsibility for avoiding unnecessary consumption and improving resource management Principle 3: Recognising the economic, environmental and social costs of waste generation Objective 1: Driving cultural change
People "Impacts of population growth are managed" Community "In Queensland nobody gets left behind"		Principle 1: Protecting human health and the environment to secure our future prosperity Principle 2: Sharing responsibility for avoiding unnecessary consumption and improving resource management Principle 3: Recognising the economic, environmental and social costs of waste generation Objective 1: Driving cultural change

Figure 5: How the waste strategy aligns with *The Queensland Plan*

Targets

The Queensland Government understands that each part of the state has different needs and constraints, and access to different waste management technologies and services.

The strategy targets (Table 1) address the need identified in *The Queensland Plan* to reduce the impact of waste on the environment. At the same time, the targets take into account the different circumstances and opportunities in metropolitan and non-metropolitan parts of the state.

The south-east corner of the state is home to 70% of Queenslanders

1. Metropolitan

Covers local government areas within South East Queensland.

2. Regional centres

Darling Downs-Maranoa, Wide Bay, Fitzroy, Mackay, Townsville and Cairns regions.

These are regions with significant urban centres with populations over 30,000.

3. Remote areas

Areas with small populations without large urban centres.

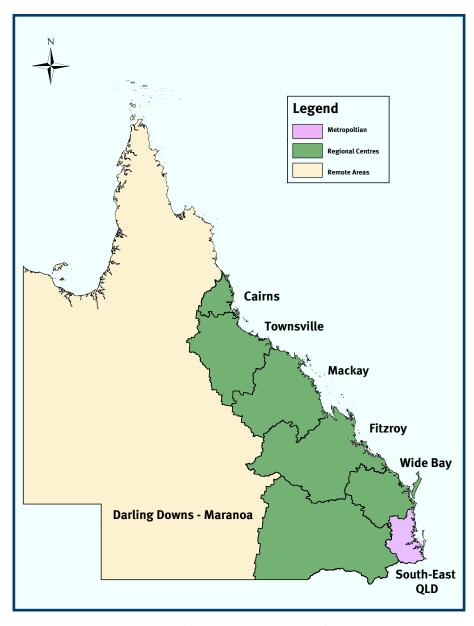


Figure 6: Differentiated target areas for domestic waste

Table 1: Strategy targets

Waste stream	Measure	2012-13 recovery baseline	2024 target
All general waste	Reduction in per capita generation	1.9 tonnes general waste per person per year	Reduce (by 5%) to 1.8 tonnes per person per year
Municipal solid waste (domestic)	Improved recycling rate	33% state37% metropolitan30% regional centre	 50% state 55% metropolitan 45% regional centre Improve practices as much as practicable for remote areas
Commercial and industrial waste	Improved recycling rate	42% state	55% state
Construction and demolition waste	Improved recycling rate	61% state	80% state
Landfill diversion target	Reduction in the amount of waste going to landfill	4,675,000 tonnes to landfill	Reduce by 15% over life of strategy
Problem or priority wastes	Improved management of each waste	Individual baselines to be developed	Individual measures to be developed



Improved recycling rates through recovery and reuse of waste materials

Waste generation

The strategy sets a target for all Queenslanders to reduce the overall generation of waste. It is an ambitious target to reduce the amount of waste generated per capita by 5% across 10 years.

One of the strategy's objectives is to avoid and minimise waste and there are recognised measures that can reduce waste generation, such as cutting excess packaging, reducing food waste and organic waste, and increasing production efficiencies in manufacturing or construction.

Municipal solid (household) waste

The disposal and recovery of municipal solid waste can be tracked by area allowing for differentiated targets to be set across geographical zones, reflecting the differences in waste management across the state. Differentiated targets allow areas of the state to manage their wastes according to the available infrastructure, location and costs to undertake waste treatment and management.

The strategy proposes a 55% recycling rate in metropolitan areas, 45% recycling rate in regional areas, and a 50% recycling rate across Queensland. Remote areas are to improve their recycling rates as much as practicable, taking into account distance to waste management and treatment facilities. Within these targets there will also be a variation of what can realistically be achieved, depending on factors such as population and distance from transport corridors.

Commercial waste

Statewide targets apply to the general commercial and industrial, and construction and demolition waste streams. No regional targets are set for these wastes at this stage.

The Queensland Government proposes to look into available infrastructure, technology and recovery activities across the state to assist with the achievement of the commercial waste targets.

A future area of work under the strategy will be to gather baseline data and set statewide or regional targets for priority materials within these waste streams. In some cases, targets under national recovery schemes will already apply—for example, for used consumer packaging or for e-waste disposal.

The strategy proposes to increase the recycling rate of commercial and industrial waste to 55% across the state. Construction and demolition waste is proposed to increase to 80% across the state.

Landfill diversion

The landfill diversion target aims to reduce the amount of waste being disposed of into landfill by 15% over the next 10 years, promoting the reuse and recovery of wastes rather than directly disposing. The landfill diversion target will be reviewed every three years, to determine if a target of 5% every three years is being met.

Problem or priority wastes

Baselines and targets may be developed for individual priority wastes within the heavy industrial or the general waste stream. It is problematic to apply one target to the heavy industrial waste stream, which is made up of widely disparate types of hazardous waste,

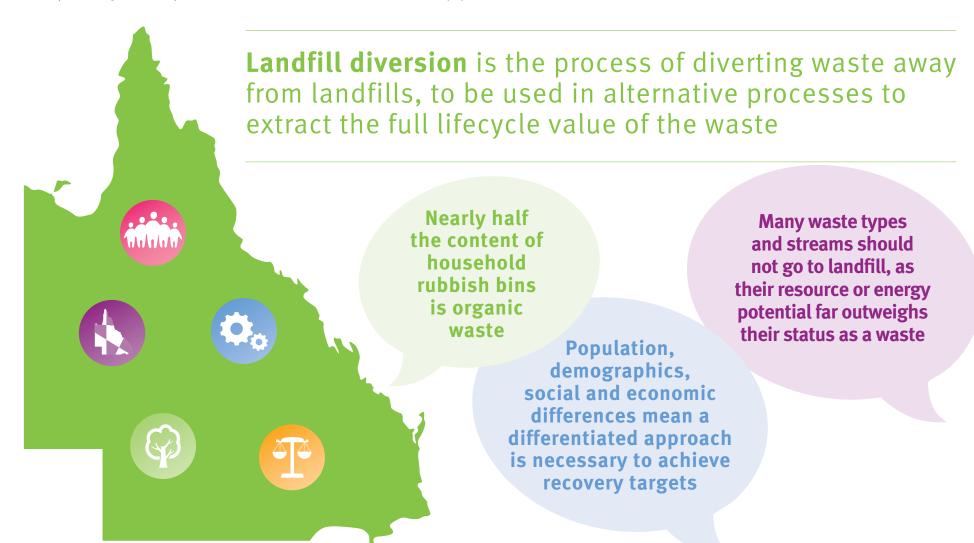
not all of which can be recycled. National targets already apply to wastes such as scrap tyres, televisions and computers. These items are considered to have a greater resource value for their component parts and schemes are in place to redirect these wastes out of landfill.

The regulated waste framework is currently under review, with changes proposed to streamline the ways regulated waste is managed in Queensland, to provide more certainty about what wastes are regulated. Changes to the framework will enable businesses and industry to better manage their regulated wastes, and provide additional information for baseline data to set targets and to better manage and where possible, reuse hazardous wastes to avoid disposal.



Opportunities

Queensland's size and decentralised population means that the cost of managing and recovering waste in South East Queensland is very different from Far North Queensland. By closing the loop and using resources more efficiently, we can reduce our environmental footprint and benefit from job creation and increased economic activity in the resource recovery industry, boosting productivity and fostering new and diversified industries across Queensland. A collaborative effort is required to achieve our targets—to identify the highest priority areas and wastes, implementing clever and profitable waste avoidance, minimisation and recovery systems.





Organic waste

- Creating awareness amongst communities and businesses to inform better purchasing decisions and alternatives to disposal of organic waste.
- Recovering materials to feed into compost or alternative waste technologies to recover materials and energy from waste.



Partnerships

- Identifying inefficiencies and opportunities, and building collaborative partnerships between industries or government, could deliver substantial savings to Queensland businesses.
- By treating waste as a valuable resource, materials and resources will continue to circulate within the economy, generating jobs and further profit.
- Increase efficiencies through government/industry and industry/industry partnerships designed to cut waste (e.g. ecoBiz).



Regulatory initiatives

- Streamlining regulation to provide industry with certainty, stimulating research, innovation and investment in Queensland.
- Removing barriers to the development of new technologies, particularly for alternative waste technologies, and providing policy direction will encourage investment, market certainty and development.



Regional development

- Improving regional access to waste technologies through appropriate planning and industry placement.
- Encouraging local reuse and markets for re-usable products to increase waste opportunities in regional areas.
- Creating certainty for industry development through infrastructure mapping and use of regulatory tools and reforms.



New technologies

- Developing an alternative waste technologies policy—facilitating the increased development of energy-from-waste reflects the changing landscape of waste treatment and technology in Queensland.
- Providing additional research and development activities to grow productivity, reduce waste and add value to the four pillar sectors through Queensland's Science and Innovation Action Plan framework.

National action on waste management

With the increasing number of new products on the market and the increased volume of products being disposed of, there is a growing interest in the end-of-life product management. In 2011, the Australian Government introduced *the Product Stewardship Act 2011* in order to provide a framework to allow the product stewards to take responsibility for the appropriate management of the products they place on the market.

The momentum behind national initiatives will see major progress in key areas within the time horizon of the Queensland Government's waste strategy. This allows Queensland to concentrate on initiatives that extend and complement the national work, and focus on local priorities through adoption of a range of tools that are available to us.

It is likely the next 10 years could see an array of national product stewardship schemes covering a broader range of electrical and electronic waste beyond the current television and computer scheme, and consumables (such as used paint and handheld batteries). This will be in addition to the existing national schemes for used oil, tyres, televisions and computers, packaging and other waste.

Queensland's priority wastes

Under Queensland's *Waste Reduction and Recycling Act 2011*, priority wastes are those with high disposal impacts (such as toxicity or greenhouse gas emissions), social impacts (such as community concern or amenity), or whose recovery would present resource savings or business opportunities. The Act enables the Queensland Government to work with industry and the community in identifying priority wastes in the state, and determine—through a process of consultation—the most appropriate management options for each priority.

Potential solutions could include a state-based product stewardship scheme or landfill ban, to improve the management of particular priority wastes. However, under Queensland law, such schemes can only be considered where justified as the best option through a rigorous process of analysis and public consultation, and in the absence of national action.

Other measures that may be a best fit for a problem waste include education and awareness-raising, partnerships to deliver research or market development programs, or redefining a particular waste as a resource for a beneficial reuse.

A number of waste streams have been identified as priorities for Queensland (Table 2).

Table 2: Queensland's priority wastes

Priority waste stream	Priority material
Plastic waste	Agricultural plastics Packaging waste Plastic bottles, bags and other consumer plastics
Organic waste	Households: • green waste • food waste Commercial premises: • hospitality • food processing
High volume wastes with an existing resource value	Concrete Treated timber Plasterboard
Regional impact waste	Mining and industry development Mattresses Orphan agricultural and veterinary chemicals
Complementary national product stewardship measures	Fluorescent lights Used tyres Used oil

Action plans developed under the strategy will need to address methods for improving the management of Queensland's priority wastes, over the 10-year life of the strategy.

How will we get there?

Action plans

The high-level direction and outcomes set in the strategy will be realised through the development of action plans—detailing how the objectives, priorities and the overall vision will be achieved.

Each action plan will adopt the strategy headline target applicable to the sector, and will be supported by customised actions. The action plans will be tailored to meet the specific needs of the sector or waste stream and may include detail around key wastes for that sector—including:

- targets and measures for items such as office paper within commercial or business waste, trickle tape within agricultural waste, or organics within municipal or commercial waste
- regional targets, such as concrete within the construction and demolition waste stream, for materials that are managed locally
- business and industry targets, such as upstream resource productivity measures to cut the generation of waste.

Action plans will adopt specific sector, region and business targets—as well as develop KPIs to measure progress

Roles and responsibilities

Action plans can be developed by government, industry sectors, or peak bodies to give effect to the strategy.

The Queensland Government Action Plan will be released in 2015. This plan will detail the state government's short to medium term waste reduction actions and priorities and flag the development of actions for the longer term.

The government will also provide support and facilitation for the development of industry and sector action plans, and both parties will champion the commitment publicly. These action plans will:

- form an agreement between the sector/organisation and the Queensland Government on what will be done to contribute towards achieving the strategy's objectives and targets
- outline the roles and responsibilities of the Queensland Government and the sector/ organisation
- detail how a sector/organisation will measure and publically report against its commitments.

The Queensland Government will encourage the voluntary development of industry action plans. The government will provide guidance materials and assistance towards action plan development, and promote and facilitate cross collaboration between mutually beneficial industries.

Under the *Waste Reduction and Recycling Act 2011* the Queensland Government has the ability to identify specific industries or bodies as regulatory planning entities, requiring them to develop and implement waste management plans. A key performance measure for the government will be to review the effectiveness of the voluntary action plans over the first 12 months, and to consider if more targeted measures, including regulation, will be required to deliver on this strategy.

How will progress be measured?

Success of this strategy will be measured in a number of different ways—including reviews, reporting and evaluations measures.

Targets and measures

The strategy sets out the high level targets, whether statewide or regional, to address environmental improvements or economic development opportunities.

Action plans developed under the strategy will contain measures and targets for specific sectors/organisations and types of waste—outlining the actions to be taken and how they contribute towards achieving the strategy's targets.

Overall state targets will determine how effective the strategy has been in improving recycling rates and waste management in Queensland.

Evaluation of action plan development and implementation

Within a year of this strategy's release, the Queensland Government will assess how many industries and sectors have developed action plans, to review the effectiveness of the voluntary approach to implementation.

It is envisaged that individual plans will set priorities and targets for relevant waste streams and materials. An assessment of these targets and how well they are being achieved will assist the Queensland Government to determine if the objectives and targets of this strategy are being met.

Statutory review

Chapter 2 of the *Waste Reduction and Recycling Act 2011* requires the strategy to be regularly reviewed through public consultation. The first review occurs within two years of strategy commencement, and subsequently at three-year intervals, or earlier where the Minister considers the strategy is under-performing.

The review includes monitoring what has been achieved in relation to the strategy's objectives and targets. This review will be used to gauge the performance of the strategy and to highlight areas of success or where amendment is necessary in order to meet the objectives.

Reporting data

To successfully plan and manage waste reduction in Queensland, good data is required—to shape the best waste strategy and policies and to provide certainty to investors.

Accurate data provides a strong foundation for business and policy decisions about waste management. Improved data would also help local governments and the waste industry to identify material flows and commercial opportunities to treat and recover waste. In terms of the strategy, data is crucial for identifying realistic targets, and the starting point against which improvements are benchmarked.

The regular reviews of the strategy will show how well the state is achieving the targets set in the strategy.

Under the *Waste Reduction and Recycling Act 2011* the Queensland Government is also required to publish annual figures on the amounts of waste being disposed and recovered in Queensland. The report also includes information about key aspects of waste management, such as the status of local and state government strategic waste planning, and amounts of litter and illegal dumping, which is managed under the Litter and Illegal Dumping Action Plan.

Mandatory waste and resource recovery reporting was introduced in 2011. Building on this, the new Queensland Waste Data System broadens the capture of information and improves reporting on waste disposal and recovery trends. The data system also:

- supports and strengthens online engagement with regional clients
- expands online collection to include a greater variety of stakeholders
- provides the baselines from which to build capability and performance standards.

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