

**NSW Waste Avoidance and
Resource Recovery Strategy
2014–21**



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Published by:

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ISBN 978 1 74359 598 5

EPA 2014/0876

December 2014

Foreword

NSW has a proud history of recycling; indeed, recycling rates in NSW have never been higher. We are, however, generating more waste than ever before. This places increased pressure on our environment to not only absorb disposed waste, but also to provide more natural resources for new materials. Government, businesses, households and communities will need to continue to work together to identify opportunities for waste reduction and resource recovery in all areas of our lives.

The NSW Waste Avoidance and Resource Recovery Strategy 2014–21 provides a clear framework for waste management over the next seven years and aligns with the NSW Government's waste reforms in [NSW 2021: A plan to make NSW number one](#). The key result areas identified in the WARR Strategy will support investment in much-needed infrastructure, encourage innovation and improve recycling behaviour. They will also promote the development of new markets for recycled materials and reduce litter and illegal dumping. Support from the Government for the waste management industry and councils will in turn create more jobs and build better communities.

I would like to thank those in our community who provided submissions to the WARR Strategy and participated in workshops around the state. I am also indebted to the members of the Expert Reference Group who oversaw the development of the strategy. The community support for our ambitious targets, which remained unchanged throughout the strategy's development, reflects the broad and ongoing commitment that will be required to achieve them.

Businesses and community groups are encouraged to continue to draw upon the NSW Government's \$465.7 million [Waste Less, Recycle More](#) initiative, which has already supported significant new recycling and waste infrastructure, litter programs and illegal dumping strategies across the state.

I look forward to continuing work with all sectors of the community to reduce the environmental impact of waste and promote the efficient use of our resources into the future.

Rob Stokes MP
Minister for the Environment

Contents

Foreword	i
WARR Strategy 2014–21 objectives and targets	iii
1. Introduction	1
2. Understanding the impacts of waste	3
3. The waste hierarchy	6
4. Framework for achieving WARR Strategy 2014–21 objectives	8
5. Waste and resource recovery to date	11
6. WARR Strategy 2014–21 targets to 2021–22	13
Key Result Area 1: Avoid and reduce waste generation	13
Key Result Area 2: Increase recycling	15
Key Result Area 3: Divert more waste from landfill.....	17
Key Result Area 4: Manage problem wastes better.....	18
Key Result Area 5: Reduce litter	20
Key Result Area 6: Reduce illegal dumping.....	21
7. Measuring progress	24
8. Responsibilities for delivering WARR Strategy 2014–21	27
9. Expert reference group	30
Glossary	31

WARR Strategy 2014–21 objectives and targets

Avoid and reduce waste generation

By 2021–22, reduce the rate of waste generation per capita

Increase recycling

By 2021–22, increase recycling rates for:

- municipal solid waste from 52% (in 2010–11) to 70%
- commercial and industrial waste from 57% (in 2010–11) to 70%
- construction and demolition waste from 75% (in 2010–11) to 80%

Divert more waste from landfill

By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%

Manage problem wastes better

By 2021–22, establish or upgrade 86 drop-off facilities or services for managing household problem wastes statewide

Reduce litter

By 2016–17, reduce the number of litter items by 40% compared with 2011–12 levels and then continue to reduce litter items to 2021–22

Reduce illegal dumping

From 2013–14, implement the *NSW Illegal Dumping Strategy 2014–16* to reduce the incidence of illegal dumping statewide

As part of this strategy, by 2016–17:

- reduce the incidence of illegal dumping in Sydney and the Illawarra, Hunter and Central Coast regions by 30% compared with 2010–11
- establish baseline data to allow target-setting in other parts of the state

1. Introduction

Effective waste management is a fundamental responsibility for the NSW community as well as the global community. Without it, we risk compromising our environment, our health and our economy.

The NSW Government has set priorities for waste reform in [NSW 2021: A plan to make NSW number one](#) and commits to developing long-term strategies that encourage resource recovery and prevent unnecessary waste.

Vision

The primary goal of this strategy is to enable all of the NSW community to improve environment and community well-being by reducing the environmental impact of waste and using resources more efficiently.

Using resources efficiently and keeping materials circulating in the productive economy can also help to create jobs and grow the NSW economy.

The NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014–21 is a key component of the Government’s vision for the environmental, social and economic future of the state that will be supported financially by the [Waste Less, Recycle More](#) initiative.

This document outlines in Section 2 the impact of waste on our environment, industries and economy as well as the health and well-being of our community. The driving factors behind the development of the WARR Strategy 2014–21 are discussed in Section 3 in the context of the waste hierarchy, which outlines the preferred approaches for efficient resource use, and the framework for achieving waste management goals is covered in Section 4.

An important part of developing new long-term goals has been to assess the current state of waste management in NSW and the progress made against existing targets as detailed in Section 5. The WARR Strategy 2014–21 is based on these findings and provides long-term targets across the six key result areas covered in Section 6:

- Key Result Area 1: Avoid and reduce waste generation
- Key Result Area 2: Increase recycling
- Key Result Area 3: Divert more waste from landfill
- Key Result Area 4: Manage problem wastes better
- Key Result Area 5: Reduce litter
- Key Result Area 6: Reduce illegal dumping.

Section 6 also provides specific strategies that will pave the way towards the targets in each key result area and Section 7 outlines how we will monitor and measure progress. Everyone’s responsibilities for reducing the impacts of waste are provided in Section 8.

The WARR Strategy 2014–21 seeks to drive opportunity and outcomes by providing policy certainty and a long-term focus. The strategy does not work in isolation and other key elements that set the framework include:

- implementation plans to focus action over shorter time periods – the *NSW Illegal Dumping Strategy 2014–16* is the first of these and others will follow to detail the delivery of the priorities set out in this strategy

- evaluation of progress towards the goals using a variety of methods and reported every two years in WARR Progress Reports
- recognition that everyone in the community has a role to play in avoiding waste and increasing resource recovery to improve environmental and community well-being.

Why review the WARR Strategy?

The NSW [Waste Avoidance and Resource Recovery Act 2001](#) reflects the importance the community places on minimising waste and maximising resource recovery by requiring the WARR Strategy to be reviewed and replaced every five years.

Section 12 of the Act specifies that the strategy must:

- include targets that address waste reduction, resource recovery and diversion of waste from landfill
- be benchmarked against international best practice
- undergo a public consultation process.

Section 12 also requires that targets for waste reduction, resource recovery and diversion of waste from landfill disposal are developed by an expert reference group (see Section 9).

The WARR Strategy has become part of the NSW landscape over time. Industry, local councils and community groups now use the strategy to set their waste agenda and focus effort.

The review and community consultation on a new strategy in 2013–14 provided an opportunity to reset the targets that were first established in 2003 and reaffirmed in 2007. These initial targets have either already expired or are due to expire in 2014.

2. Understanding the impacts of waste

The impact and importance of waste can be measured across the economy, our environment and society.

Waste and the economy

Waste management is a significant part of the economy. The Australian Bureau of Statistics estimated that the supply of waste management services nationwide in 2009–10 was worth over \$9.5 billion, including income from recycling waste products valued at \$4.5 billion.¹ As NSW generates 31% of Australia's gross domestic product, the value of waste management services to the NSW economy can be estimated at \$2.9 billion – \$1.3 billion of this coming from resource recovery.

Just over 17 million tonnes of material entered the NSW waste management system in 2010–11, up from 16.3 million tonnes two years earlier. While a large percentage of this material was ultimately recycled, this still represents a significant amount of material moving through the economy as well as physically through our neighbourhoods by road and rail. Waste collection, transport, processing and recovery/disposal have a major impact on existing infrastructure and increase demand for new infrastructure.

The economy depends on the environment to provide raw materials and absorb the waste and emissions we produce. Reusing, recovering and recycling these valuable materials keep them in the productive economy for longer. This has the dual benefits of lowering demand for new resources and reducing the need to absorb waste. Waste going to landfill is not only a loss of valuable resources, it reduces landfill space.

Recycling generates jobs

In 2009, Access Economics² estimated that more than 22,000 full-time equivalent staff were engaged directly in recycling in Australia. Nearly 7000 staff were involved in landfill operations with over 24,000 indirect jobs flowing from this. This means there are 9.2 full-time equivalent employees directly involved in recycling for every 10,000 tonnes of material processed, compared with only 2.8 jobs for an equivalent amount of waste sent to landfill.

Recycling saves money

In 2012, the cost to Australian businesses (excluding mining and agriculture) of managing the waste they generated was an estimated \$2.2 billion.³ In addition, businesses spent an estimated \$24.3 billion on materials that were discarded as part of the creation of a product. For NSW businesses, this equates to about \$825 million for disposal and recycling services and \$7.8 billion in wasted materials every year.

¹ Australian Bureau of Statistics 2013, *Waste Account, Australia, Experimental Estimates*, Canberra, www.abs.gov.au/ausstats%5Cabs@.nsf/mediareleasesbyCatalogue/58479FBF0D1B7171CA257B16000E1913?Opendocument

² Access Economics Pty Ltd 2009, *Employment in Waste Management and Recycling*, report for Department of Environment, Water, Heritage and the Arts, Canberra

³ Encycle Consulting, SRU 2013, *A Study into Commercial and Industrial (C&I) Waste and Recycling in Australia by Industry Division*, report for Department of Sustainability, Environment, Water, Population and Communities, www.environment.gov.au/resource/study-commercial-industrial-ci-waste-and-recycling-australia-industry-division

This inefficient use of resources highlights waste that could be avoided and money saved.

Waste and the environment

Managing and disposing of waste presents risks to the environment. Impacts include odour, noise, dust, litter, dumping, greenhouse gas emissions, potential contamination of land and groundwater, and harm to flora and fauna. The risks to the environment rise as more waste is generated and are reduced by increasing recycling.

The NSW EPA's [Recyclator](#) can be used to calculate the resource benefits of recycling different materials, based on a detailed Australian life cycle analysis. For example, a business recycling 1000 tonnes of office paper can save:



670 tonnes of carbon dioxide –
equal to permanently removing 161 cars from NSW roads



2630 gigajoules of energy –
equal to the average annual energy used by 122 households



370 megalitres of water –
equal to a million four-minute showers



4400 cubic metres of landfill space –
equal to about 18,333 full wheelie bins.

Waste and society

The community feels the impact of improperly managed waste in many different ways. It can be detrimental to public health through odour, noise, dust, vermin and toxic substances, while wastes of particular concern, like asbestos, can cause significant health problems. The same issues can impact the amenity of local communities to the detriment of public well-being. Waste can also pollute our environment and leach toxins or nutrients into groundwater and land.

Litter and illegal dumping can reduce the amenity of public spaces and are anti-social behaviours. Landfills remove space from the community and may compromise the use of land into the future.

People in NSW have high expectations about waste and recycling

Waste-related issues have consistently been identified by the NSW community as environmental issues of concern in the [Who Cares About the Environment?](#) survey. The survey – which has been running since 1994 and is the only one of its kind in Australia – tracks the attitudes, knowledge and behaviour of people in relation to the environment.

In 2012, the NSW community again identified waste among the leading issues they expect the Government to address. Litter was identified as a specific issue.

WARR Strategy 2014–21, supported with [Waste Less, Recycle More](#) funding, is meeting community expectations that recycling, recovery and reuse will increase and thus reduce the impacts of inputs into the system and the negative consequences of outputs from a less efficient waste management system.

3. The waste hierarchy

The WARR Strategy 2014-21 is driven by our desire to improve the way we live and make sure that future generations enjoy the same or an improved quality of life. This stretches across all aspects of life and covers environmental, social and economic areas. The Strategy adopts the principles of ecologically sustainable development as defined in Section 6 of the Protection of the Environment Administration Act 1991. The WARR Strategy 2014–21 is also informed and driven by the waste hierarchy which underpins the objectives of the [Waste Avoidance and Resource Recovery Act 2001](#).

There are costs associated with managing waste and the waste hierarchy helps to focus attention and efforts where the greatest efficiencies in cost, time and resources can be achieved.

The waste hierarchy (shown in Figure 1) provides guidance on the order of preference of approaches to achieve efficient resource use.

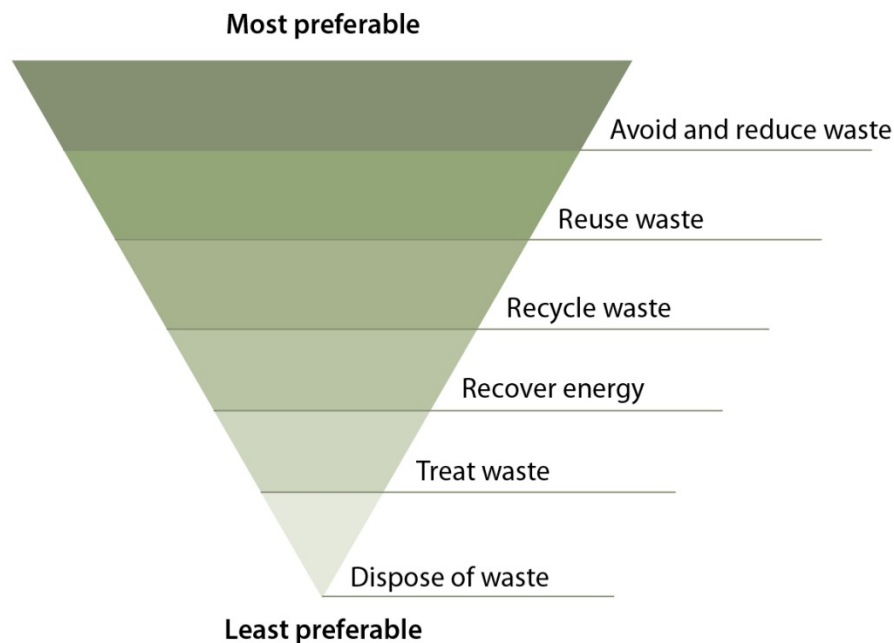


Figure 1: The waste hierarchy

At the top of the hierarchy, **avoiding and reducing the generation of waste** is the most preferred approach. This is because it preserves resources, avoids the use of additional resources to manage waste that would have been generated, and aims to eliminate disposal costs. The goal is to maximise efficiency and avoid unnecessary consumption through such positive behaviours as:

- selecting items with the least packaging or that require the least resources to produce
- avoiding disposable goods or single-use materials
- buying products that are recycled, recyclable, repairable, refillable, reusable or biodegradable
- using leftover food rather than throwing it away.

Where avoiding and reducing waste is not possible, the next most preferred option is to **reuse the materials** without further processing, avoiding the costs of energy and other resources required for recycling. For example, many household and industrial items can be repaired, reused, sold or donated to charities.

The next step in the hierarchy is **recycling**, which involves processing waste materials to make the same or different products. This includes composting, which recycles nutrients back into the soil. Recycling keeps materials in the productive economy and benefits the environment by decreasing the need for new materials and waste absorption. Recycling a product generally requires fewer resources than drawing virgin materials from the environment to create a new one.

Where further recycling is not feasible, it may be possible to **recover the energy** from the material and feed that back into the economy where this is acceptable to the community.

Some materials may be inappropriate to reuse, recycle or recover for energy and instead require **treatment** to stabilise them and minimise their environmental or health impacts.

Finally, the waste hierarchy recognises that some types of waste, such as hazardous chemicals or asbestos, cannot be safely recycled and direct treatment or **disposal** is the most appropriate management option.

4. Framework for achieving WARR Strategy 2014–21 objectives

A range of approaches and solutions are needed to achieve WARR Strategy 2014–21 objectives with businesses, industry, state government agencies, local government and the broader community working together to meet the targets and goals.

Strategy and targets

The targets in WARR Strategy 2014–21 clarify the state's long-term goals and priorities. These targets are recognised across the community as important drivers for change and innovation and were broadly supported by industry, state and local governments and the community during the strategy's consultation phase.

Implementation plans

Implementation plans will support WARR Strategy 2014–21 by providing shorter term priorities, actions and milestones within each of the key result areas. These plans are designed to provide a clear path toward the strategy targets and will be reviewed and updated regularly as new opportunities arise.

Investment and incentives

Continued investment in innovation and change is needed to improve our waste and environmental outcomes. The WARR Strategy 2014–21 sets clear priorities and provides long-term policy stability and direction as the foundation for significant private and public investment.

Funding to achieve the strategy's targets is being delivered through [Waste Less, Recycle More](#) which came as a direct result of the [independent review](#) in 2012 of the Waste and Environment Levy ('Waste Levy'). The initiative provides \$465.7 million from Waste Levy revenue over five years for grants and programs that align with the key result areas in WARR Strategy 2014–21. The funding will support investment in recycling infrastructure, encourage innovation, improve recycling behaviour and develop new markets for recycled materials, as well as tackle littering and illegal dumping.

Regulations and policies

WARR Strategy 2014–21 is supported by regulations and policies. The [Protection of the Environment Operations Act 1997](#) (POEO Act) and associated regulations work to minimise the impact of waste on human health and the environment. The POEO Act established the Waste Levy, as well as licensing requirements for waste facilities and activities, offences for illegal dumping and littering, and a pathway for recovered resources to be used on land and for fuel.

The POEO (Waste) Regulation 2014 came into effect on 1 November 2014 and modernises waste regulation in the context of WARR Strategy 2014–21 and the *Waste Less, Recycle More* initiative. It includes the introduction of the proximity principle which addresses the environmental and human health impacts in NSW associated with the unnecessary transportation of waste over long distances and ensure local communities play an active role in waste management by taking greater responsibility for the waste they generate.

Waste policies provide clarity and direction on particular waste issues. These can be guidance or technical notes (such as landfill and composting guidelines), environmental standards (such as for the reuse of processed waste) and protocols.

An important policy step to maximise resource efficiency is the [NSW Energy from Waste Policy Statement](#) which was released in 2014 after extensive consultation. This provides regulatory clarity to industry and the community on the criteria that apply to NSW facilities proposing to thermally treat waste for energy recovery. Inclusion of resource recovery criteria in the policy ensures that the availability of energy recovery in NSW will not undermine current or future material resource recovery.

Supporting national initiatives

The NSW Government also supports initiatives under the [National Waste Policy](#). Most notably this has included establishment of an Australian framework for product stewardship, which has been a long-standing focus in NSW. The Commonwealth [Product Stewardship Act 2011](#), which provided the first national approach to voluntary and regulated product stewardship schemes, involves industry taking greater responsibility for the environmental impacts of their products, particularly where they become waste.

NSW continues to support the development of national rather than state-based solutions in the product stewardship area because many products are sold in national markets and are problematic in all jurisdictions. Management at a national level can provide consistent action to achieve these goals effectively.

Compliance and enforcement

Compliance will only be achieved by setting clear rules and fair licensing standards, supported by diligent and consistent enforcement. The NSW Government has strengthened the enforcement powers of the Environment Protection Authority in the development of the revised POEO (Waste) Regulation 2014. Effective compliance is crucial to reduce the risk of environmental impacts from waste and ensure a ‘level playing field’ so that responsible businesses can thrive. Illegal activity can compromise recycling outcomes, lead to clean-up costs for communities and have an adverse impact on human health and the environment.

Polluter pays principle identified as part of ecologically sustainable development in the Protection of the Environment Administration Act 1991 is key to the NSW Government’s approach to enforcement and compliance, that is, those who generate pollution and waste should bear the costs for avoiding, reducing and managing waste.

Education and behaviour change

Significant improvements in resource consumption and waste management will only occur if we continue to change the way we think and act. Education to encourage behaviour change will be fundamental to achieving WARR Strategy 2014–21 goals. All implementation plans designed to deliver the strategy’s targets will include an education and behaviour change element.

Economic instruments

The Waste Levy provides a strong economic signal by reflecting some of the external environmental costs of waste disposal and making waste avoidance, reduction and recycling more financially attractive than disposal to landfill. It is a key policy tool for

driving waste diversion from landfill in NSW and achieving the targets in WARR Strategy 2014–21.

Waste Levy revenue re-invested through *Waste Less, Recycle More* will increase the effectiveness of resource recovery and reduce litter and illegal dumping.

Monitoring and evaluation

The [Waste Avoidance and Resource Recovery Act 2001](#) requires progress against the targets in WARR Strategy 2014–21 to be reported every two years. This report collects data across all three waste sectors and provides information on the strategy's effectiveness, as well as making it accountable to the NSW community. This reporting sits alongside a number of other ongoing data collection and evaluation projects.

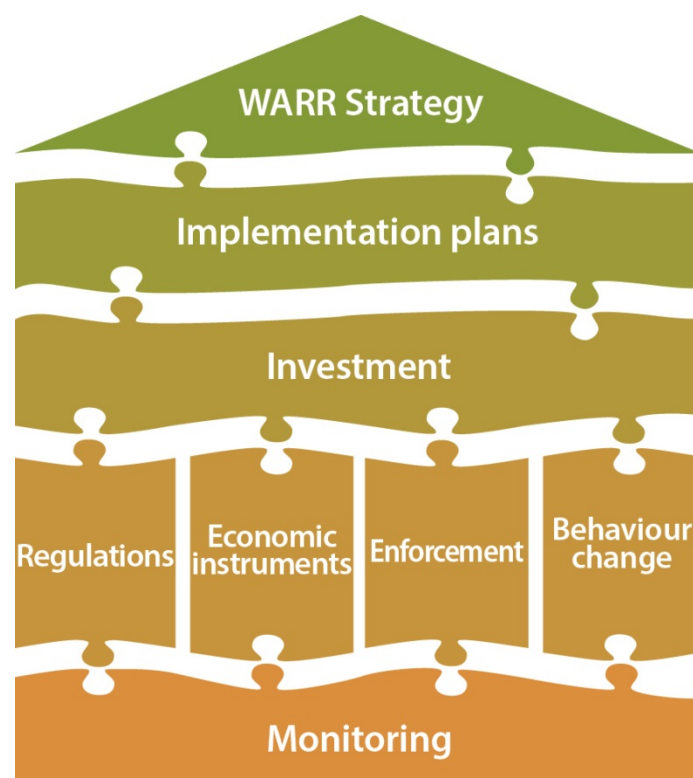


Figure 2: Elements that together will achieve WARR Strategy 2014–21 objectives

5. Waste and resource recovery to date

Progress in recycling and diversion across all waste sectors is reported every two years in the WARR Strategy Progress Report. The most recent data from 2010–11 shows NSW continues to make good progress in improving recycling and diversion from landfill disposal (Table 1).

Table 1: Progress in recycling and diversion from landfill in NSW

Recycling by waste stream	2002–03	2004–05	2006–07	2008–09	2010–11	Previous 2014 recycling targets*
Municipal Solid Waste (MSW)	30%	33%	38%	44%	52%	66%
Commercial and industrial (C&I)	34%	38%	44%	52%	57%	63%
Construction and demolition (C&D)	64%	62%	67%	73%	75%	76%
Overall % of waste diverted from landfill**	45%	46%	52%	59%	63%	n/a

*Set in NSW WARR Strategy 2003

** Diversion through recycling alone

Other key findings

Total waste generated (waste recycled + waste disposed to landfill) continued to increase

The total amount of waste generated in NSW increased from 16.3 million tonnes in 2008–09 to 17.1 million tonnes in 2010–11, an increase of 5.2%. Waste generation rates continued to outstrip the population growth of 3.4% during this period.

Successful diversion of waste from landfill

Despite continued increases in the waste generated, the amount sent to landfill fell in absolute terms from 6.7 million tonnes in 2008–09 to 6.4 million tonnes in 2010–11. The amount of waste sent to landfill in 2010–11 was lower than the waste landfilled in 2002–03, when the first targets were set.

Figure 4 shows the amount of waste diverted (recycled) compared with that disposed of for each waste sector in 2010–11. The tonnes of waste shown are provided as rounded figures.

Waste recycled in 2010–11 was more than double the amount recycled in 2002–03

Recycling absorbed the additional waste generated and reduced the amount of waste sent to landfill. In 2010–11, NSW recycled 10.8 million tonnes compared with 5.3 million tonnes in 2002–03.

Recycling increased across all regions in NSW

Recycling rates in the Hunter, Central Coast and Illawarra regions increased from 59% in 2008–09 to 68% in 2010–11. Estimated recycling rates in regional and rural areas increased from 42% to 50% over the same period.



Figure 4: Amount and type of waste recycled or disposed of in NSW during 2010–11

Littering decreased

Despite significant annual fluctuations, litter in NSW decreased by 28% between 2005–06 and 2011–12, while the volume of littered items decreased by 40% (see [National Litter Index](#)). The litter count in NSW is about average in comparison to other states and territories, but well below the best performing state. See the [NSW Litter Report](#) series for more information.

6. WARR Strategy 2014–21 targets to 2021–22

NSW WARR Strategy 2014–21 has six key result areas that continue the intent of the 2003 and 2007 strategies, but have been broadened to enable more targeted action:

- Key Result Area 1: Avoid and reduce waste generation
- Key Result Area 2: Increase recycling
- Key Result Area 3: Divert more waste from landfill
- Key Result Area 4: Manage problem wastes better
- Key Result Area 5: Reduce litter
- Key Result Area 6: Reduce illegal dumping

WARR Strategy 2014–21 is a high-level framework for setting priorities and long-term directions. This is reflected by the statewide goals and targets.

Regional, rural and metropolitan councils or industries may have differing priorities within their particular areas. These will be addressed through implementation plans, along with issues of distance and economies of scale.

Key Result Area 1: Avoid and reduce waste generation

Target for reducing waste generation

By 2021–22, reduce the rate of waste generation per capita

Introduction

The target in this key result area aims to improve the efficient use of materials across the community and avoid generating unnecessary waste.

In NSW, ‘waste generation’ refers to the total amount of material that enters the solid waste management system. This includes all materials disposed of to landfill as well as those that are recovered from the waste stream for recycling or energy recovery.

Many of our activities – living in a built environment, consuming food, buying clothes, and communicating and storing information – involve products and materials that eventually enter the waste stream and count towards waste generation, even if they are recycled and put back into the productive economy. With this in mind, a certain level of waste generation is an unavoidable outcome of human activity.

Many of these activities could be undertaken using fewer materials, which would lead to less waste. Resource efficiency is important from an avoidance perspective. Inefficient resource use increases demands for the environment to provide additional raw materials that require further resources (such as energy, water and other materials) to process. It also places more pressure on the environment to absorb these materials and emissions when they go to waste.

Waste avoidance and reduction is difficult to measure because it essentially aims to monitor material that is no longer entering the waste management system. Waste generation is also driven by a number of factors, including economic activity, population growth, climatic conditions and consumer behaviour.

In 2010–11, a total of 17.1 million tonnes of waste and recycled materials was generated in NSW, an increase of 5.2% from 2008–09. Over the same period, the population grew by 3.4% and the NSW economy by 4.6%, as measured by Gross State Product (GSP). Recent analysis suggests that waste generation rates may

have become more closely related to economic activity than population growth: that is, waste generation is outstripping population growth.

Given this relative divergence from population growth, NSW WARR Strategy 2014–21 retains an ambitious target to reduce the rate of waste generated in NSW per capita. However because a number of factors can influence waste generation, ongoing trends will be measured against a number of parameters to better understand the best way to monitor progress in this area and influence change.

For example, the rate of change in waste generation per capita will be compared with the rate of change in NSW GSP, which is a measure of economic activity across all waste sectors. Comparing these on a per capita basis will allow population growth to be taken into account. Trends will be monitored using 2012–13 as a starting date while measurement of this target is explored.

Reporting periods for achievement against all targets in the strategy will remain unchanged at every two years as reported in the WARR Strategy Progress Reports to date.

The new target for reducing waste generation by 2021–22 is an aspirational goal, given the current growth in waste, but one that should remain an important focus.

Approaches to reducing waste generation

NSW WARR Strategy 2014–21 recognises that many positive examples of waste avoidance already occur in NSW with significant amounts of material circulating in the economy without entering the waste management system. Activities such as home composting and reusing building demolition materials on-site (for fill or road-making for instance) will continue to be encouraged as positive waste avoidance activities. Product life is extended in these cases, with material kept in the productive economy and out of the waste management system.

Economic incentives

We will increase pressure on generators to focus on waste avoidance. The Waste Levy will continue to provide an economic incentive for waste generators to reduce their waste management costs. This will be a particular incentive for the commercial and industrial sector and construction and demolition sector, where generators are more directly exposed to these costs.

Behaviour change

Education and behaviour change are key elements of an effective avoidance program. The goal is to encourage and facilitate behavioural changes that ensure fewer resources are wasted. The focus is on more efficient use of materials, rather than simply expecting people to consume less.

The successful [Love Food Hate Waste](#) program is a good example of this approach that can be extended into other areas as opportunities arise. The program focuses on giving people the skills to make better purchasing decisions, improving food storage techniques, using leftovers so that food is eaten rather than thrown away, and saving money. The [Waste Less, Recycle More](#) initiative increases funding to *Love Food Hate Waste*.

Product stewardship

Most of a product's environmental impact is set at its design stage. Downstream waste generation can be reduced if products are designed with waste avoidance in mind, such as through light-weighting products and minimising packaging. Product stewardship is a key approach for improving product and packaging design. NSW will continue to work with the Australian Government to introduce product stewardship

initiatives at the national level under the Commonwealth [Product Stewardship Act 2011](#).

Industrial ecology

Industrial ecology involves using the by-products of production in one process or company as a resource in another. Linking companies directly will keep these materials out of the waste stream as they can use each other's by-products. *Waste Less, Recycle More* is funding an expansion of industrial ecology networks in NSW.

See Section 7 for details on performance measurement in this key result area.

Key Result Area 2: Increase recycling

Target for increasing recycling

By 2021–22, increase recycling rates for:

- municipal solid waste from 52% (in 2010–11) to 70%
- commercial and industrial waste from 57% (in 2010–11) to 70%
- construction and demolition waste from 75% (in 2010–11) to 80%.

Introduction

The target in this key result area aims to increase the amount of material that is recycled and put back into the productive economy. Using recycled materials helps to reduce the waste going to landfill and can potentially save energy, water and other resources that would have otherwise been used to produce new materials. The production of competitively priced recycled materials can also help economic growth through the development of the recycling industry and the industries that use the recycled materials.

Energy recovery is not included as part of this recycling target but as part of the diversion target in KRA3.

The targets address all three waste streams and are based on an independent [modelling study](#) conducted on behalf of the EPA. This study assumed continued population growth, scheduled increases in the Waste Levy to 2016 and funding from the [Waste Less, Recycle More initiative](#). It also took into account various waste actions, including reducing waste generation, improved kerbside recycling, better source-separation of commercial and industrial waste, recovery of food and garden waste, development of additional alternative waste treatment (AWT) facilities and diversion of recycling residuals to energy from waste.

The new targets are based on the modelled cumulative recycling rates that could be achieved from combining the various waste actions. They have been rounded to account for variability in current waste data and forward projections as well as likely improvements in systems and technologies over time. The new targets represent a significant increase in the total tonnage that will be recycled by 2021–22, even though they may appear to be only an incremental increase on the 2014 targets.

Increasing the current recycling rate of municipal waste from 52% to 70% by 2021–22 will require an additional 1.2 million tonnes of materials to be recycled when continued waste generation and population growth rates are taken into account. On top of the 2.5 million tonnes already being recycled, this represents an increase of 33% in total tonnage recycled. Across all three waste streams, the modelling indicates an additional 3.3 million tonnes will need to be recycled to achieve the 2021–22 targets – 31% more than current levels.

Approaches to increase recycling

The targets will drive action and long-term investment in recycling and be supported by significant funding from the NSW Government's *Waste Less, Recycle More* initiative.

A significant part of the initiative will address infrastructure to improve recycling and resource recovery. The EPA will establish an interagency group to identify and facilitate opportunities for the development of waste infrastructure.

An analysis of the municipal, commercial and industrial, and construction and demolition waste data for 2010–11 indicates that there is significant potential to increase recycling.

In the municipal solid waste (MSW) stream, the major untapped waste sources are food and garden organics, which account for almost half of the average household waste. Significant quantities of paper/cardboard, glass, plastics and metals in household waste bins also go to landfill. Based on this, tackling household food and garden waste and increasing the effectiveness of kerbside recycling systems are clear priorities.

Areas for priority recycling action in the commercial and industrial (C&I) sector also include addressing food waste, along with paper/cardboard, plastics and timber wastes.

An analysis of the construction and demolition (C&D) waste stream indicates that recycling of C&D materials is already quite high: NSW has almost reached its 2014 target. Opportunities to improve recycling in the C&D sector are limited by the presence of contaminated soils, which are difficult to recycle and make up a significant part of the C&D waste stream. Relatively small gains can be made with concrete/brick, sand/soil/rubble and timber wastes.

The *Waste Less, Recycle More* initiative provides incentives to key stakeholder groups, such as local government and the waste industry, to deal with these issues through education and behaviour change, system improvement and new recycling infrastructure across all three waste streams.

Increase the effectiveness of kerbside recycling

Ninety-six per cent of NSW households have access to kerbside recycling. This system has been very effective with increased household recycling rates, but there is still room for significant improvement. For example, 23% of the materials in the average 'red lid' household garbage bin could be recycled through the 'yellow lid' kerbside recycling bin. More of these materials could be recovered through community education and behaviour change.

The location of the collection service influences the types of materials that can be recovered through the kerbside system. Kerbside recycling rates could be further improved by standardising kerbside services across NSW and increasing the range of materials accepted for recycling.

Target food and garden organic waste in the C&I and MSW sectors

Significant quantities of garden waste continue to be discarded to landfill each year, despite well-established collection and composting in many areas. Audits show about 40% of waste in household red lid bins sent to landfill is food and garden waste that could be composted. Investment in new infrastructure will see significant amounts of this material collected and processed into valuable compost.

Invest in infrastructure for C&I recycling

The commercial and industrial waste stream presents a number of significant challenges. Different organisations produce very different wastes and the large numbers of small- to medium-sized enterprises in NSW also pose significant logistical challenges.

The *Waste Less, Recycle More* initiative provides funding for business waste audits, incentives to improve source-separation and funding to invest in new equipment and/or infrastructure to improve their recycling rate. Funds are also available to larger organisations develop industrial ecology networks.

Remove problem wastes

The *Waste Less, Recycle More* initiative is funding a statewide network of permanent drop-off points and collection events for common household wastes, like paint, oils, batteries, gas bottles, fluorescent lights and smoke detectors. These materials can contaminate recycling streams and removing them will create opportunities to improve the recycling of other materials.

Develop markets and encourage innovation

The *Waste Less, Recycle More* initiative is also providing funding to help establish new markets for recycled materials and encourage innovation in recycling technology.

Build capacity for developing regional recycling plans

The *Waste Less, Recycle More* initiative supports local councils to develop regional strategies that identify and address recycling needs in their communities, with funding available to put the plans into action. The funding for local communities recognises the vital role of local government in delivering on the recycling targets and the potential to improve recycling performance through regional collaboration and long-term strategic planning.

See Section 7 for details on performance measurement in this key result area.

Key Result Area 3: Divert more waste from landfill

Target for diverting more waste from landfill

By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%

Introduction

Diverting waste from landfill decreases the impact of landfills on the environment and reduces the need to construct new sites. ‘Waste diversion’ refers to the alternative pathways for materials entering the system that avoid disposal to landfill, such as recycling and energy recovery.

Even though the 2003 and 2007 WARR Strategies had no specific key result area or target associated with landfill diversion, significant improvements still occurred in NSW. The total waste diversion rate increased from 45% in 2002–03 to 63% in 2010–11. Despite a 45% increase in the amount of waste generated over this period, the material sent to landfill declined from 6.5 to 6.4 million tonnes. The additional waste generated from 2003 to 2011 was either reused or recycled, as there were no significant waste-to-energy facilities as a pathway for diverting waste.

Reuse and recycling will remain the main avenues for diverting waste from landfill with energy recovery providing a new means of future diversion from landfill for

residual waste remaining from recycling operations. While the aim is to reduce waste going to landfill, we will still need to have appropriate, approved landfills to service our needs.

The EPA's [NSW Energy from Waste Policy Statement](#) sets a framework for the operation of purpose-built facilities to recover energy from residual wastes that are unable to be recycled and would otherwise be disposed of to landfill. The policy statement aims to increase investment in energy from waste infrastructure and provide regulatory certainty to industry and confidence to the wider community.

Approaches to divert more waste from landfill

Initially, more waste will be diverted from landfill by increasing recycling through the actions detailed under KRA2. In future, the recovery of energy from waste may also make a contribution to diversion. The [Waste Less, Recycle More](#) initiative provides \$60 million over five years to co-fund large-scale infrastructure and bring forward viable resource recovery projects, including funding for potential energy-from-waste projects.

Generally, there is low community acceptance of new and expanded landfill to the extent that in some parts of NSW there is diminishing supply of approved landfill capacity. While increased recycling and diversion of waste from landfill will continue to offset our need for greater landfill capacity, the EPA with the Department of Planning and Infrastructure will investigate Greater Metropolitan Sydney's landfill needs to ensure there is appropriate approved landfill capacity.

See Section 7 for details on performance measurement in this key result area.

Key Result Area 4: Manage problem wastes better

Target for managing problem wastes better

By 2021–22, establish or upgrade 86 drop-off facilities or services for managing household problem wastes statewide

Introduction

Some household products and materials cause problems in the waste and recycling streams because of their potential to harm human health and the environment. They can also make the recovery and recycling of other materials more difficult or uneconomic. The target of this key result area aims to reduce the impact of these household materials by separating them from household waste and recycling streams and treating them appropriately. Problem wastes can include paint, batteries, smoke detectors, fluorescent lamps, gas bottles, motor oils and fluids, and other toxic and hazardous household products.

Since 2003, the NSW Government has been tackling problem wastes in two ways by:

- working with other jurisdictions and industry to establish product stewardship schemes
- organising and funding household chemical collection events.

Product stewardship occurs when producers take responsibility for the products they make throughout their life cycles, including at end-of-life. NSW has been a leader in the product stewardship debate in Australia and has strongly supported national rather than state-based solutions for product groups identified for stewardship action which occur in national markets and are problematic in all jurisdictions. State-based

action could lead to inconsistencies and inefficiencies and potentially contravene the *Mutual Recognition Act 1992*.

The Television and Computer Recycling Scheme is the first product stewardship scheme to roll out under the Commonwealth [Product Stewardship Act 2011](#). NSW is working with the Commonwealth and other state and territory governments to ensure the scheme operates effectively at a local level and develop further national schemes for problem wastes.

NSW has also supported a number of other industries that have introduced voluntary national product stewardship schemes. These include agricultural and veterinary chemicals ([ChemClear](#)) and their packaging ([drumMuster](#)), fluorescent lamps from commercial and public lighting ([FluoroCycle](#)), mobile phones and batteries ([Mobile Muster](#)) and PVC ([Vinyl Council Product Stewardship Program](#)). NSW continues to work with these industries to improve the effectiveness of these schemes.

NSW has been actively involved in household problem waste collection across the state through periodic collection events. In the greater Sydney area (Sydney, the Hunter and Illawarra), the EPA in partnership with local councils, organises collection events under the [Household Chemical CleanOut](#) program. In regional areas, the EPA supports collection events organised by regional councils. Problem waste collection is available to households once or twice a year on average. The products and materials collected range from high-volume materials, such as paints and batteries, to low-volume, but highly toxic chemicals like DDT and mercury.

The NSW Government has also commenced a trial of the Householders' Asbestos Disposal Scheme across 23 councils to assess different approaches to encourage the proper handling and disposal of the asbestos waste produced by home renovators. The trial will run until August 2015 and the results will inform the NSW Government on the best approach to reduce the dumping of asbestos waste.

The independent [Review of Waste Strategy and Policy in NSW](#) in 2010 recommended increasing service by establishing permanent drop-off sites for high-volume, low-toxicity materials that make up the bulk of the problem wastes delivered. Permanent drop-off facilities that are open on a regular basis would significantly improve service and increase the community's ability to separate problem wastes from the existing waste and recycling streams.

The Government has accepted this recommendation and incorporated a commitment in [NSW 2021: A plan to make NSW number one](#) to 'support community drop-off centres to make it easier for people to recycle and remove problem waste from bins'.

The [Waste Less, Recycle More](#) initiative is providing \$70 million over five years for dealing with problem wastes.

Approaches to improve the management of problem wastes

Enhanced community services for the collection and safe disposal of problem wastes will be delivered by:

- funding the roll-out and servicing of permanent drop-off facilities and upgrade of existing facilities throughout NSW so a consistent 'core' list of high-volume, low-toxicity materials can be more easily collected, including paints, oils, batteries, gas bottles, smoke detectors and fluorescent lamps. Further funding will allow local communities to expand the facilities to collect other local priority materials, such as mattresses, expanded polystyrene and e-waste
- continuing event-based collections for the low-volume, high-toxicity materials, allowing occupational health and safety risks to be tightly controlled

- trialling alternative collection methods, such as mobile collection facilities, in high density or remote areas where permanent collection sites may not be available
- continuing to work closely with the Commonwealth, other state and territory governments, and key stakeholders to help implement additional product stewardship initiatives at the national level.

See Section 7 for details on performance measurement in this key result area.

Key Result Area 5: Reduce litter

Target for reducing litter

By 2016–17, reduce the number of litter items by 40% compared with 2011–12 levels and then continue to reduce litter items to 2021–22

Introduction

Litter continues to be a prime focus and concern of the community. Litter damages pride in the local environment, is linked to other anti-social behaviours, and affects land, fresh water and marine environments.

'Litter' refers to material that ranges in size from very small to very large items, a characterisation which allows a broad application of littering offences to be applied if required. Common types of litter include cigarette butts, small pieces of paper, chip and confectionery wrappers, fast-food packaging, bottle caps, plastic straws, broken glass, drink containers and plastic bags.

'Illegal dumping' generally covers larger, more bulky items and is covered in KRA6.

Littering and illegal dumping of waste are treated as separate issues in the WARR Strategy 2014–21 as the attitudes and behaviours behind these issues, along with the location and material types, differ.

The NSW Government recognises that litter levels are still too high and has committed to further reducing the problem. The litter reduction target in [NSW 2021: A plan to make NSW number one](#) has set a goal for NSW to be the best performing state in Australia by 2016.

According to the 2011–12 National Litter Index, Victoria had the lowest litter count in Australia, with an average of 36 items per 1000 square metres compared with 58 items in NSW. These results reflect the investment Victoria has made in litter reduction in recent years. To better Victoria's performance, the NSW litter count of 2011–12 would need to fall by 38%. While the National Litter Index results are not directly comparable between different jurisdictions, they do indicate the performance level that is possible and the improvements NSW can and should make. The strategy target of 40% litter reduction was developed on this basis.

The new litter target reflects the aspiration and time frame for improvement by 2016 outlined in *NSW 2021* and seeks to continue to improve litter performance to 2021.

Approaches to reduce litter

Effective litter prevention and reduction will require coordinated action by all stakeholders with an interest in, and responsibilities for, litter. The [Waste Less, Recycle More](#) initiative is providing \$20 million over five years to reinvigorate action on litter, backed up by a targeted Litter Prevention Strategy that will act as an implementation plan. Elements of this coordinated approach are outlined below.

Education

Changing social norms around litter behaviour through education and anti-litter campaigns is a key objective. A new statewide litter campaign will be rolled out across NSW by state and local governments to raise awareness about the environmental and social impacts of litter.

Regulation and enforcement

Increasing the number of state and local government officers with powers to enforce litter regulations will boost enforcement activity against litterers. The community will be encouraged to participate in reporting litterers while opportunities to improve enforcement efforts with new technologies, such as smart phone applications, will be explored.

Infrastructure and clean-up of litter hot spots

The very presence of litter provides an incentive for people to litter more. Identifying and cleaning up litter hot spots and providing litter bins and appropriate signage can reduce littering.

The NSW Government will provide significant grant funding to councils and local communities to tackle local litter hot spots, including the state's most highly littered areas and materials.

The Government will continue to work on litter issues with other parties at the national level, including the packaging industry through the Australian Packaging Covenant and collaboratively with other jurisdictions. National options to increase the recovery of packaging waste and reduce packaging-related litter will be further investigated. A new method for measuring litter that will allow for more accurate comparisons of litter performance between jurisdictions will also be developed as part of this work.

Measuring and evaluation

Measuring our litter and understanding our behaviour are foundation steps to building targeted, effective action. Evaluating programs helps design even more effective approaches. This increased knowledge and information will be shared across all stakeholders to coordinate statewide action.

The key approaches outlined here will be further detailed in a Litter Prevention Strategy to be released in 2014.

See Section 7 for details on performance measurement in this key result area.

Key Result Area 6: Reduce illegal dumping

Target for reducing illegal dumping

From 2013–14, implement the *NSW Illegal Dumping Strategy 2014–16* to reduce the incidence of illegal dumping statewide

As part of this strategy, by 2016–17:

- reduce the incidence of illegal dumping in Sydney and the Illawarra, Hunter and Central Coast regions by 30% compared with 2010–11
- establish baseline data to allow target-setting in other parts of the state

Introduction

'Illegal dumping' is the disposal of waste materials on private or public land where no planning approval or environment protection licence has been granted for the activity.

Illegal dumping can range from the disposal of small bags of rubbish or household waste in an urban environment to larger scale dumping of materials, such as construction and demolition waste, in more isolated areas. This waste may also include dangerous materials like asbestos.

The attitudes and behaviours that drive illegal dumping, the type of materials involved and where it occurs differ from littering. For this reason, NSW WARR Strategy 2014–21 treats litter and illegal dumping as separate issues.

Illegal dumping can seriously pollute the environment, potentially endanger human health, harm wildlife, affect local amenity and reduce a community's pride of place. It can be expensive for local councils, landowners, land managers and the community to clean up dumped material. Illegal dumping also distorts the market by undercutting legitimate waste operators and creating an uneven playing field for business.

The EPA and local councils both have key regulatory responsibilities in relation to illegal dumping under the [Protection of the Environment Operations Act 1997](#). The EPA also provides financial and operational support to Regional Illegal Dumping (RID) Squads. These squads bring together groups of local councils, who pool their enforcement capacity and operate across council boundaries to investigate and enforce breaches of NSW regulations on illegal dumping and landfilling. NSW currently has four active RID Squads.

Gathering accurate information on the nature and extent of illegal dumping is challenging, because dumping often occurs out of sight, undetected and anonymously. As a result, information on illegal dumping in many parts of NSW is limited, which makes setting statewide targets difficult. Generating good baseline data on illegal dumping is a key priority, so that illegal dumping programs can be tailored to meet local needs and progress against the targets measured.

The target for dumping in the Sydney, Illawarra, Hunter and Central Coast areas reflects the availability of relatively robust baseline data for these areas.

While the target in the initial period to 2016–17 focuses on data collection and illegal dumping incidents in the greater Sydney region, efforts to reduce the problem in other regions and deal with smaller scale incidents will continue during this period.

The NSW Government has identified illegal dumping as a key priority in [NSW 2021: A plan to make NSW number one](#) and is providing \$58 million over five years in the [Waste Less, Recycle More](#) initiative to combat illegal dumping across the state.

Approaches to reduce illegal dumping

The *NSW Illegal Dumping Strategy 2014–16* has been released following an extensive public consultation period and will function as an important implementation plan under NSW WARR Strategy 2014–21.

Dealing with illegal dumping will require a multi-pronged response, involving those with regulatory powers (state and local government) working together with landowners and managers, industry and local communities.

Key action areas include:

- establishing strong and collaborative partnerships between the State Government, local councils, Aboriginal communities, RID Squads, industry and the community to increase opportunities for people to look after their own environments

- building capacity at the local level so that councils, landowners, land managers and the community have the knowledge and expertise to implement practical regional solutions
- ramping up compliance and enforcement activities to detect, investigate and prosecute illegal dumping
- conducting education campaigns to inform the community about the impacts of illegal dumping and correct disposal options
- recognising and promoting cooperative efforts and regional successes so that other communities can learn from these activities and illegal dumpers will understand that illegal dumping is being targeted
- building a robust evidence base through data collection and analysing illegal dumping incidents, attitudes and behaviour to help regulatory authorities, land managers and communities identify, prioritise and target local needs as well as monitor and evaluate the effectiveness of their actions
- trial a program to make it easier for home renovators to dispose of small amounts of asbestos waste.

See Section 7 for details on performance measurement in this key result area.

7. Measuring progress

Progress against WARR Strategy 2014–21 will be reported every two years as required under the [Waste Avoidance and Resource Recovery Act 2001](#). Each progress report will provide an assessment of performance against the targets in each key result area. The parameters for measuring progress against each of the key result areas are provided and discussed below.

Key Result Area 1: Avoid and reduce waste generation

Target

By 2021–22, reduce the rate of waste generation per capita

In NSW, ‘waste generation’ refers to the total amount of material that enters the solid waste management system. This includes all materials disposed of to landfill, as well as those that are recovered from the waste stream for recycling or energy recovery.

This target will be compared to Gross State Product (GSP) and population growth to better understand the best way monitor progress in this area.

Measurement

- Waste generation is measured in tonnes.
- Waste generation is the sum of the tonnage of all materials sent to landfill plus the tonnage of all materials diverted from landfill through a resource recovery processor.
- Materials that do not go to landfill or through a resource recovery processor are considered to be avoided because they have not entered the waste management system. Thus when materials are reused without being processed (such as at a second-hand clothing store), they are not counted in the waste generation measurement.
- Growth in waste generation is the difference between the total tonnes of waste generated in the current period minus total tonnage of waste generated in the last period divided by the total tonnage of waste generated in the last period. Since progress towards WARR Strategy 2014–21 targets is measured every two years, growth in waste generation is measured in two-year increments.
- NSW population growth is determined by the Australian Bureau of Statistics (ABS).
- Gross State Product (GSP) is reported annually by the ABS.

Key Result Area 2: Increase recycling

Target

By 2021–22, increase recycling rates for:

- municipal solid waste from 52% (in 2010–11) to 70%
- commercial and industrial waste from 57% (in 2010–11) to 70%
- construction and demolition waste from 75% (in 2010–11) to 80%.

In NSW, ‘recycling’ refers to the waste stream which is reprocessed to make the same or different products and put back into the economy. It does not include energy recovered from waste.

Measurement

- The recycling rate for a particular waste stream (MSW, C&I, C&D) is the proportion of all materials recycled from that waste stream in a given year (measured in tonnes) compared with the sum of all waste generated from that waste stream in the same year. Recycling excludes recovery of energy from waste processes.
- Measurement of waste generation is described under KRA1.

More detail on the collection of data and calculation of recycling rates can be found in the [Quality Declaration: Waste Avoidance and Resource Recovery Strategy - Recycling Rates](#)

Further information on what is captured under each of the three waste streams is available on the EPA [waste glossary](#) webpage.

Key Result Area 3: Divert more waste from landfill

Target

By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%

‘Waste diversion’ refers to the alternative pathways for materials entering the waste system that avoid disposal to landfill, such as recycling and energy recovery.

Measurement

- The diversion rate is the proportion of all materials (measured in tonnes) that are either recycled or otherwise recovered (such as through an energy-from-waste facility) compared with total waste generation in a given year.
- Measurement of waste generation is described under KRA1.

Key Result Area 4: Manage problem wastes better

Target

By 2021–22, establish or upgrade 86 drop-off facilities or services for managing household problem wastes statewide

‘Problem wastes’ refers to some household products and materials in the waste and recycling streams that pose potential harm to the environment and human health and/or make the recovery and recycling of other materials more difficult or uneconomic.

Measurement

The establishment or upgrade of 86 drop-off facilities or services will aim to provide a reasonable level of geographic coverage across the state to address problem wastes by 2021–22. The location of facilities or services for the NSW community will use the following criteria as a starting point and be refined where necessary:

- one facility per 50,000 households in metropolitan populated clusters
- one facility per 20,000 households in regional population centres
- generally less than 100 kilometres between facilities in remote locations.

The drop-off facilities established or upgraded will be required to collect a consistent ‘core’ list of materials: paint, oil, batteries, gas bottles, smoke detectors and fluorescent lamps.

The event-based collections of more hazardous materials through Household Chemical CleanOut events will continue.

Key Result Area 5: Reduce litter

Target

By 2016–17, reduce the number of litter items by 40% compared with 2011–12 levels and then continue to reduce litter items to 2021–22

'Litter' is a broad term for material inappropriately disposed of in public places (including land, freshwater and marine environments) and ranges in size from very small to very large items. Common types of litter include cigarette butts, small pieces of paper, chip and confectionery wrappers, fast-food packaging, bottle caps, plastic straws, broken glass, drink containers and plastic bags.

Measurement

Currently, the average number of littered items in NSW is measured using the Keep Australia Beautiful National Litter Index methodology, which is based on two visual surveys per year at 151 sites in NSW, normalised against a 1000-square-metre area.

A new national litter methodology is being developed to replace the National Litter Index and this may establish a different means of measuring litter levels in NSW. Once the new methodology is applied, a revised baseline will be established and further reductions then compared against the new baseline.

Key Result Area 6: Reduce illegal dumping

Target

From 2013–14, implement the *NSW Illegal Dumping Strategy 2014–16* to reduce the incidence of illegal dumping statewide

As part of this strategy, by 2016–17:

- reduce the incidence of illegal dumping in Sydney and the Illawarra, Hunter and Central Coast regions by 30% compared with 2010–11
- establish baseline data to allow target-setting in other parts of the state

'Illegal dumping' refers to the disposal of waste materials on private or public land where no planning approval or environment protection licence has been granted for the activity. Illegal dumping can range from the disposal of small bags of rubbish in an urban environment to larger scale dumping of materials, such as construction and demolition waste, in more isolated areas.

Measurement

- The number of illegal dumping incidents will be based on the number of such incidents greater than 200 cubic metres detected by the EPA. This includes incidents that are detected as a result of the EPA's own searches or those reported to the EPA by local government, other agencies, RID Squads and community members.
- Databases for smaller scale illegal dumping incidents and incidents outside the Sydney, Illawarra, Hunter and Central Coast regions will be developed as part of the Illegal Dumping Strategy. Once completed, they will allow a baseline to be established against which further reductions in illegal dumping can be measured.

8. Responsibilities for delivering WARR Strategy 2014–21

Everyone can help to reduce the impacts of waste and move towards a more sustainable future. We are all critical to delivering a new vision for NSW where our valuable resources are kept moving through the economy and not sent to landfill.

Every sector of the community has a role to play in effective waste management and these responsibilities are outlined below. If we meet our responsibilities and change our waste management behaviours quickly, then we will reach our goals at a faster rate.

Commonwealth Government

Partner with all jurisdictions to deliver the agreed objectives under the [National Waste Policy](#)

NSW Government agencies

Responsibilities generally applicable to all agencies:

- support the WARR Strategy 2014–21 through complementary policies and programs, including sustainable procurement
- incorporate resource recovery and waste reduction objectives in their own operations
- comply with regulations.

Environment Protection Authority

- Provide clear and consistent regulations for waste disposal, recovery and recycling
- Collaborate and build partnerships with key stakeholders in government, industry and the community to reduce waste, increase recycling and tackle litter and illegal dumping
- Provide information and support to help build capacity, knowledge and skills in the community to tackle waste, littering and illegal dumping
- Provide support to local communities to tackle problem wastes
- Undertake research, data collection and analysis to ensure a robust evidence base is available for decision-making
- Report back to the community on waste and resource recovery issues and performance
- Enforce environmental regulation

Environmental Trust

- Deliver [Waste Less, Recycle More](#) grants to local government, industry, research institutes, community groups and other stakeholders to help reduce the impact of waste and achieve the targets in NSW WARR Strategy 2014–21
- Provide grants to industry as an incentive for investment in waste, recycling and recovery infrastructure as well as improved collection systems

NSW Department of Planning and Infrastructure

- Plan for waste and resource recovery as essential services in our communities
- Establish a coordinated planning assessment process for major resource recovery infrastructure projects
- Identify areas where resource recovery facilities could be situated to maximise value from available land and infrastructure

NSW Trade and Investment

Assist the resource recovery industry to identify suitable locations and develop new resource recovery infrastructure and jobs in NSW

WorkCover NSW

Assist the waste industry, local government and the community in the safe management of problem wastes in the workplace

Local government

- Work collaboratively with neighbouring local government areas to develop and implement regional waste and resource recovery strategic plans that provide a clear pathway for delivering the outcomes in NSW WARR Strategy 2014–21
- Provide their communities with best practice waste and resource recovery services, including (where appropriate) kerbside collection systems, public place litter infrastructure, drop-off facilities for problem wastes, resource recovery infrastructure and well-managed landfill
- Provide information and work with their communities to improve waste and resource recovery outcomes
- Ensure compliance and enforcement of waste, litter and illegal dumping regulations
- Provide timely assessment of local planning and development applications for resource recovery operations and infrastructure
- Tackle litter and illegal dumping
- Specify and purchase recycled materials, such as compost for use on parks and playing fields
- Comply with regulations

Environment and community groups and non-government organisations

Provide information and work with the State Government, local government, industry and the community to change attitudes and behaviour towards waste, resource recovery, litter and illegal dumping

Industry and businesses

- Reduce and avoid waste generation through improved resource efficiency measures and industrial ecology partnerships

- Separate recycling streams at source to enable collection separate from residual waste
- Work with suppliers to reduce packaging and waste in supply chains
- Implement and maintain best practice resource recovery systems
- Actively seek other businesses that may use your waste as an input material in their business
- Ensure that waste and recycling streams are collected by legitimate operators and taken to appropriate facilities
- Specify and purchase recycled materials
- Work with other producers to take responsibility for the end-of-life management of problem wastes
- Comply with regulations

Waste and resource recovery industry (such as collectors, waste managers, recyclers)

- Provide best practice resource recovery and waste services
- Work with businesses and industry to improve resource recovery outcomes
- Invest in new and upgrade existing resource recovery infrastructure to recover additional types of material and increase the amount of material put back into the productive economy
- Comply with regulations

Individuals

- Avoid and reduce waste generation by making smart purchasing decisions, such as purchasing products with less packaging, rejecting plastic bags, only purchasing food that is needed and storing and using perishable goods appropriately and within use-by dates
- Ensure that waste and recycling materials are deposited in the correct bins at home or in public places to avoid contamination and maximise recovery
- Avoid littering
- Support local businesses that recycle material and create local jobs
- Use drop-off locations for problematic wastes, such as e-waste and televisions
- Provide authorities with the details and accounts of illegal dumping or other fraudulent waste activities
- Comply with regulations

9. Expert reference group

An independent expert reference group oversaw the development of NSW WARR Strategy 2014–21 in accordance with section 12 of the [Waste Avoidance and Resource Recovery Act 2001](#).

The Expert Reference Group comprised:

- Ms Julie Savet Ward (Chair) – EPA Board member
- Ms Christine Covington – EPA Board member
- Mr Tony Wright – Wright Corporate Strategy
- Mr Vaughan Levitzke – Chief Executive, Zero Waste SA
- Mr Robert Verhey – Local Government NSW.

Glossary

Alternative waste treatment (AWT)	Generally refers to a facility that applies a combination of mechanical, biological and (sometimes) thermal processes to separate organic materials from a mixed residual waste stream (usually household waste)
Commercial and industrial waste (C&I waste)	Solid waste generated by businesses, industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices), but not C&D waste or MSW – more details on what is counted as C&I waste: www.epa.nsw.gov.au/wr/glossary.htm
Construction and demolition waste (C&D waste)	Solid waste sourced from construction and demolition works, including building and demolition waste, asphalt waste and excavated natural material – more details on what is counted as C&D waste: www.epa.nsw.gov.au/wr/glossary.htm
Diversion rate	The proportion of all recycled materials or those otherwise recovered (through an energy-from-waste facility) compared to the total amount of waste generated
Energy from waste	The process of recovering energy from waste materials: the energy is used to produce useable heat, steam, electricity or a combination of the above
E-waste	End-of-life electronic equipment, such as televisions, computers, mobile phones, stereos and small electrical appliances (but not whitegoods)
GSP (Gross State Product)	A measure of economic activity: an estimate of the total value of all goods and services produced within the state within a specific time frame
Industrial ecology	Refers to using the by-products from the production process in one company as a resource in another
KRA (key result area)	Refers to the key outcomes the strategy seeks to achieve
Materials recovery facility (MRF)	An MRF handles a range of recyclables which typically have already been separated from other waste streams (such as by householders or businesses at the collection stage). At the MRF, the materials are sorted into individual material streams before being sent for recycling. Components of the incoming material which are not suitable for recycling will be separated as 'contaminants' at the MRF.
Municipal solid waste (MSW)	Solid waste from households and local government operations, including waste placed at the kerbside for local council collection and waste collected by councils from municipal parks and gardens, street sweepings and public council bins – more details on what is counted as MSW: www.epa.nsw.gov.au/wr/glossary.htm
Problem wastes	Some household products and materials in the waste and recycling stream that pose potential harm to the environment and human health and/or make the recovery and recycling of other materials more difficult or uneconomic

Recycling	Set of processes (including biological) for converting materials, that would otherwise be disposed of as wastes, into useful materials or products
Recycling rate	Proportion of all recycled materials compared to the total amount of waste generated – does not include energy from waste
Red lid bin	Refers to the Australian Standard (AS 4123.7-2006 Mobile Waste Containers – Part 7: Colours, markings and designation requirements) bin-lid colours for household kerbside waste and recycling bins. The red lid bin is for residual waste.
Reducing waste	Refers to reducing waste generation by avoiding or preventing the creation of waste where possible along the various parts of the supply chain. The aim is to use less material to achieve the same or equivalent outcome.
Resource recovery	In NSW this currently refers to the recycling of waste material. Recovery may also include extracting embodied energy from waste through thermal processes.
Solid waste	Refers to unwanted solid materials and does not include liquid waste
Waste avoidance	Waste that does not enter the waste management system
Waste management system	Waste materials from MSW, C&I and C&D sectors that are collected at the kerbside, recovered from the waste stream for recycling or energy recovery or disposed to landfill
Yellow lid bin	Refers to the Australian Standard (AS 4123.7-2006 Mobile Waste Containers – Part 7: Colours, markings and designation requirements) bin-lid colours for household kerbside waste and recycling bins. The yellow lid bin is for ‘dry’ recyclable materials. Generally, dry recyclables include paper, cardboard, glass, some hard plastics and ferrous and non-ferrous metals. The type of recyclable materials collected in the yellow lid bin can vary depending on the facility where the materials are taken for further separation and the availability of further downstream markets for the materials.