



Australian Government

Department of the Environment, Water, Heritage and the Arts

Draft National Waste Policy Framework

Less waste more resources

Discussion paper

Waste Policy Taskforce
Department of the Environment, Water, Heritage and the Arts

This document is produced for consultation purposes and does not represent a statement of policy by the Australian Government or state and territory governments.

© Commonwealth of Australia 2009

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the Commonwealth, available from the Department of the Environment, Water, Heritage and the Arts. Requests and inquiries concerning reproduction and rights should be addressed to:

Assistant Secretary
Waste Policy Branch
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
Canberra ACT 2601

Contents

1.	Overview	1
2.	Opportunity to comment	4
3.	Context	4
4.	Key points of clarification and update since the Consultation Paper	5
5.	Key messages raised during the consultation process	8
6.	Draft National Waste Policy Framework	12
6.1	Introduction	12
6.2	Aims	12
6.3	The vision by 2020	12
6.4	Key principles	13
6.5	Themes and directions	13
6.5.1	Taking responsibility	14
6.5.2	Improving the market	15
6.5.3	Pursuing sustainability	16
6.5.4	Facilitating investment	18
6.5.5	Reducing hazards	19
6.5.6	Reporting on performance	20
6.5.7	Tailoring solutions	20

Figures and tables

Figure 1.	Key milestones in developing the National Waste Policy	3
Table 1.	Key messages raised during the consultation process	8
Figure 2.	Elements of the Draft National Waste Policy Framework and its relationship to the National Waste Policy	11

1. Overview

In November 2008 the Minister for the Environment, Heritage and the Arts, the Hon Peter Garrett MP, announced that the Australian Government, with the support of the Environment Protection and Heritage Council (EPHC), an intergovernmental committee of environment ministers, would lead the development of a new National Waste Policy for Australia.

The purpose of the National Waste Policy is to build on the 1992 National Strategy for Ecologically Sustainable Development¹ to set objectives and priorities for at least the next 10 years by clearly articulating the respective roles of governments. The National Waste Policy will deliver leadership and a national approach where it is needed by providing the basis for collaboration between the jurisdictions, effective and efficient approaches to domestic waste issues and ensuring that waste management remains aligned with Australia's international obligations. The policy seeks to complement action to deliver emission reductions, reduce energy and water use, support jobs and invest in future long term economic growth. The National Waste Policy will be a policy of all Australian governments, endorsed by environment ministers and the Australian Local Government Association.

The National Waste Policy is also being developed with regard to relevant Council of Australian Government agreements such as the December 2008 National Partnership Agreement to Deliver a Seamless National Economy. This partnership agreement is 'intended to deliver more consistent regulation across jurisdictions, and address unnecessary or poorly designed regulation will be taken into account'.

A Waste Policy Taskforce has been formed within the Australian Government Department of the Environment, Water, Heritage and the Arts to consult widely among the community, business and government and to develop a draft National Waste Policy for consideration by Australian governments.

A consultation paper was published on 7 April 2009 and submissions invited on the scope, key elements and priorities for the National Waste Policy by 13 May 2009. A series of meetings have been held including discussions between the taskforce and senior officials from the states and territories and some local governments, public consultations in each capital city and a sample of regional centres (Kalgoorlie, Wagga Wagga and Townsville) and individual stakeholder meetings. A leaders forum hosted by Minister Garrett and attended by representatives from industry, business, all levels of government and the community also took place.

Over 420 people attended the public consultation sessions and the department received 143 written submissions. Copies of the consultation paper and non-confidential submissions are available at www.environment.gov.au/wastepolicy. Key messages arising from these consultations were presented to the Environment Protection and Heritage Council and used to inform development of a Draft National Waste Policy Framework to deliver enduring change to waste management in Australia, reduce the volumes of waste generated and the levels of contamination of waste streams and establish a culture of recovery where 'waste' becomes a resource that adds value to the community and our economy.

In May 2009 the Environment Protection and Heritage Council agreed to release a Draft National Waste Policy Framework (the draft framework) for public comment during June and July.

¹ Ecologically Sustainable Development Steering Committee, *National Strategy for Ecologically Sustainable Development*, Canberra, AGPS, 1992

The purpose of this discussion paper— *Draft National Waste Policy Framework – less waste more resources*—is to present the draft framework, which includes aims, a vision, principles, themes and key directions, to the public for comment. Ideas from individuals, community groups, businesses, industry and governments are also being sought on priority strategies and actions that could effect improvements within each of the key themes identified in the draft framework. These themes and key directions for change and their underlying principles encompass the views put forward by participants during the consultation process.

The draft framework builds on Australia’s waste management and resource recovery achievements and responds to a renewed emphasis by governments to address red tape, climate change and sustainability issues and encourage a seamless national economy. It also reflects the intent of all Australian governments to ensure that Australians:

- reduce the amount of waste for disposal
- manage waste as a resource for better environmental, economic and community outcomes
- apply stewardship approaches to enhance resource recovery
- drive innovation in waste minimisation
- dispose of necessary waste in a safe and environmentally sound manner
- are aware of the environmental consequences of their consumption choices.

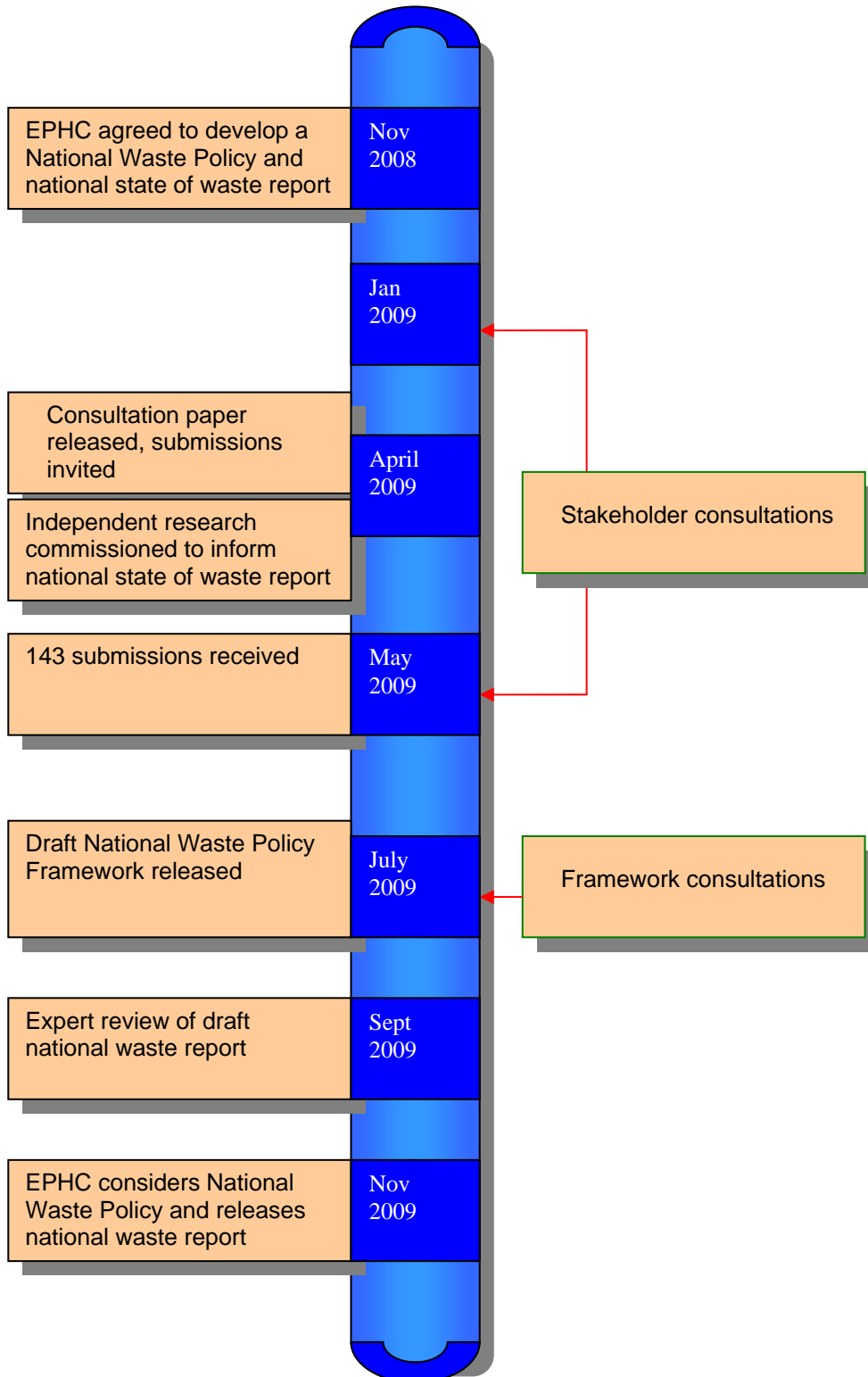
Public comments will be used to inform government’s development of the Draft National Waste Policy Framework and a suite of objectives, strategies and actions for each theme. Expected outcomes, responsibilities and timelines for each strategy and action will also be established. Once governments have considered public comments, they will develop a draft National Waste Policy that will be considered by the Environment Protection and Heritage Council in November 2009.

This paper sets out:

- a timeline for development of the National Waste Policy
- an invitation for stakeholders to comment on the draft framework and contribute ideas on possible strategies and actions
- the context which has informed the draft framework including a summary of key issues raised during the consultation process that stakeholders may wish to consider in preparing their comments on the draft framework
- a Draft National Waste Policy Framework which proposes aims, a vision, principles, themes and key directions.

An illustration of the key milestones in developing a National Waste Policy is set out in Figure 1 below.

Figure 1. Key milestones in developing the National Waste Policy



2. Opportunity to comment

The Waste Policy Taskforce invites comments on the Draft National Waste Policy Framework from individuals, businesses, and industry including ideas on strategies and actions that could effect improvements within each of the key themes identified in the draft framework by **31 July 2009**.

Comments should include the reasons for your views and be no more than four pages. Information and views provided in your submission on the consultation paper should not be included.

Comments can be submitted to wastepolicy@environment.gov.au

or

Waste Policy Taskforce
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
CANBERRA ACT 2601

Comments on the draft framework will be made available to the public on the National Waste Policy website (www.environment.gov.au/wastepolicy) and be used to inform development of the draft National Waste Policy. The draft National Waste Policy will be considered by the Environment Protection and Heritage Council in November 2009.

3. Context

Waste management is primarily the responsibility of state and territory governments ('the states') and local governments which develop and implement policies, programs and legislation to achieve waste or resource recovery objectives. The Australian Government has responsibilities in relation to international agreements, legislation and its participation in national activities through the Environment Protection and Heritage Council.

The first comprehensive approach to waste was set out in the National Strategy on Ecologically Sustainable Development adopted by the Council of Australian Governments in 1992. This aimed to 'improve the efficiency with which resources are used and reduce the impact on the environment of waste disposal, and to improve the management of hazardous wastes, avoid their generation and address clean-up issues'. A national target of 50 per cent reduction by the year 2000 in waste going to landfill (as well as a number of material-specific recycling targets) was also adopted as part of the 1992 National Waste Minimisation and Recycling Strategy.

The National Strategy on Ecologically Sustainable Development provided an impetus for all levels of government to introduce a mix of waste minimisation and management policies, programs and legislation including visions, strategies, targets and priorities. This considerable investment has made a significant difference to waste management in Australia and resulted in:

- increased infrastructure for waste collection, processing and handling systems including advanced treatment facilities in some locations
- increased access to kerbside recycling to around 90 per cent of households
- increased solid waste recycling
- improved management of landfills
- new domestic and international markets for materials and products recovered from waste

- regional waste management plans in some jurisdictions
- improved risk management for hazardous materials
- extended community-based litter initiatives
- a range of voluntary and co-regulatory product stewardship schemes
- standards and programs that have delivered broader environmental benefits such as greenhouse gas reduction and improved water and energy efficiency
- increased community awareness of waste management and resource recovery options and benefits
- improved waste management data in some jurisdictions.

Notwithstanding these considerable efforts by governments and actions by industry and the community, available data trends suggest that waste generation in Australia increased by 28 per cent over the period 2002-03 to 2006-07 and that per capita waste quantities are also increasing². The diverse and fragmented approach to waste management that has evolved across Australia, the lack of clear pricing signals along the supply chain of goods and services and the absence of fundamental data and analytical tools on many aspects of waste management that enable governments and business to track progress and inform policy have contributed to this trend. This information made it clear that a National Waste Policy was needed to drive reforms in resource recovery and waste management.

4. Key points of clarification and update since the Consultation Paper

A number of issues have emerged during the consultations which stakeholders may wish to consider in preparing their comments on the draft framework.

National policy—The Environment Protection and Heritage Council asked the Australian Government, in consultation with state and territory governments and the Local Government Association of Australia, to develop a National Waste Policy. A national policy is agreed by all levels of government and the aims, vision, principles, key direction and priorities established through this process will be shared. Indeed all levels of government (as well as industry and the community) will have a role to play in delivering against the strategies and actions under the National Waste Policy. A National Waste Policy can add value in a range of circumstances including for issues that affect national markets, where coordinated action on a matter is more effective and where a single approach is more efficient than separate arrangements undertaken individually by states and territories. A national approach to resource recovery and waste management does not mean adopting uniform arrangements that cannot be tailored to meet local circumstances. To be efficient and effective, responses to waste policy issues also need to be managed and implemented at the appropriate level, whether nationally or by individual levels of government or by business and the community. Delivering a range of benefits through reform to waste management and resource recovery arrangements will, however, require modification to business as usual frameworks and practices to achieve agreed outcomes in some circumstances.

² Hyder Consulting, *Waste and Recycling in Australia*, Department of the Environment, Water, Heritage and the Arts, 2008

Vision and scope—An integrated National Waste Policy can more effectively drive change where it sets out a clear vision and has sufficient authority to enable states, territories and local governments and industry to act. Key areas of focus include development of fit-for-purpose technology, standardised approaches and national definitions for waste classifications, facilities and business models that enable business development and growth, facilitation of a functioning market, business certainty for investment, the safe handling and disposal of waste materials and hazardous waste, and the capacity to manage risks to the environment and health.

Targets—At a strategic level, stakeholders through the consultation process have consistently sought an integrated National Waste Policy that provides a clear vision and contains objectives and targets to enable jurisdictions and industry to drive change and to provide a basis for measuring performance. The draft framework proposes targets as part of the vision. A national target would provide impetus for coordinated action while allowing individual jurisdictions to continue to implement waste policies that reflect the particular desires of their own communities. Some states and territories already have waste related targets. These range from a broad goal of zero waste to specific targets to reduce waste to landfill, increase the recovery and use of materials from particular waste streams, reduce litter and phase out priority hazardous substances. Given that the National Waste Policy will set priorities for the next decade, a key question is how such targets should be derived. Should targets be of a similar nature to those used in the states or an alternative formulation such as tonnes of waste per capita compared to a baseline year? Should targets be equivalent to existing state and territory targets or more ambitious stretch targets? Would it be helpful to have both broad targets (e.g. reduction in total waste to landfill) and specific targets (e.g. municipal solid waste, commercial and industrial and construction and demolition sectors)?

Market arrangements—Current market arrangements are focused on ‘end-of-pipe’ signals for waste disposal, typically a mix of waste levies applied by a state or territory, a landfill gate fee applied by the operator for commercial waste (weight or volume based) and rates paid by the community to the local council for disposal and recycling of domestic waste. In some areas landfill bans apply for specific products. End-of-pipe solutions can be an effective driver for resource recovery and contribute to waste minimisation. However, there are currently no clear market signals to influence creation or management of waste with respect to product design, the hazardous content of materials and components, efficacy of manufacturing processes, packaging, transport or end-of-life disposal. An effective National Waste Policy will need to encourage market signals along the supply chain and requires the creation and disposal of waste to be encompassed both in business decisions and in the purchasing decisions of consumers. Access to appropriate technologies, infrastructure and business services for all sectors for the handling, re-processing, re-use of waste and disposal of residual elements to landfill is also critical.

Maximising benefit—Delivering a cohesive, efficient and effective National Waste Policy can help fulfill other goals. Reducing overall waste production and managing waste as a resource provides an opportunity to innovate and develop new processes, technologies, industries and markets, bringing associated growth in employment and the economy. The National Waste Policy can also contribute to greenhouse gas reductions, water security and quality and the productivity of our horticultural crops and agricultural land. Understanding in which circumstances these broader benefits can be achieved through actions to reduce waste or improve resource recovery is increasing.

Product stewardship—Introducing national stewardship arrangements for priority products, particularly for electronic waste such as computers and televisions as well as for end-of-life tyres, batteries, mercury containing lamps and whitegoods has been strongly supported through the public consultation process. In considering the development of a national product stewardship/extended producer responsibility framework, not every material and product available in the marketplace will be covered. The proposed framework would be sufficiently flexible to encompass a range of product stewardship approaches (voluntary, co-regulatory and regulatory) and cover an initial set of nominated sectors, materials or products with capacity to extend over time if agreed criteria are met. It would provide an accreditation mechanism to allow existing schemes to opt in. Existing work by the Environment Protection and Heritage Council on the design elements of a national product stewardship approach for computers, televisions and end-of-life tyres will continue. The national product stewardship/extended producer responsibility framework will provide the underpinning competitive neutrality safety net and minimum performance governance arrangements for these schemes.

Legacy emissions—Since the release of the consultation paper, the Australian Government has determined that liability for landfill emissions under the proposed Carbon Pollution Reduction Scheme will now only apply to greenhouse gas emissions that come from waste that is deposited after commencement of the scheme on 1 July 2010. Emissions from legacy waste will, however, continue to count towards a landfill's threshold in order to ensure broad coverage of new waste emissions. In light of this announcement, the need to develop complementary measures for legacy waste emissions will be considered as part of the National Waste Policy. Are such measures necessary and if so, what form should they take?

5. Key messages raised during the consultation process

A number of consistent themes arose during the consultations which have been used to inform the Draft National Waste Policy Framework. A summary of these issues, and how they are reflected in the draft framework, is set out in Table 1 below. It is intended that strategies and actions will be developed together with expected outcomes, responsibilities and timeframes and that these components will constitute the core elements of the National Waste Policy (see Figure 2).

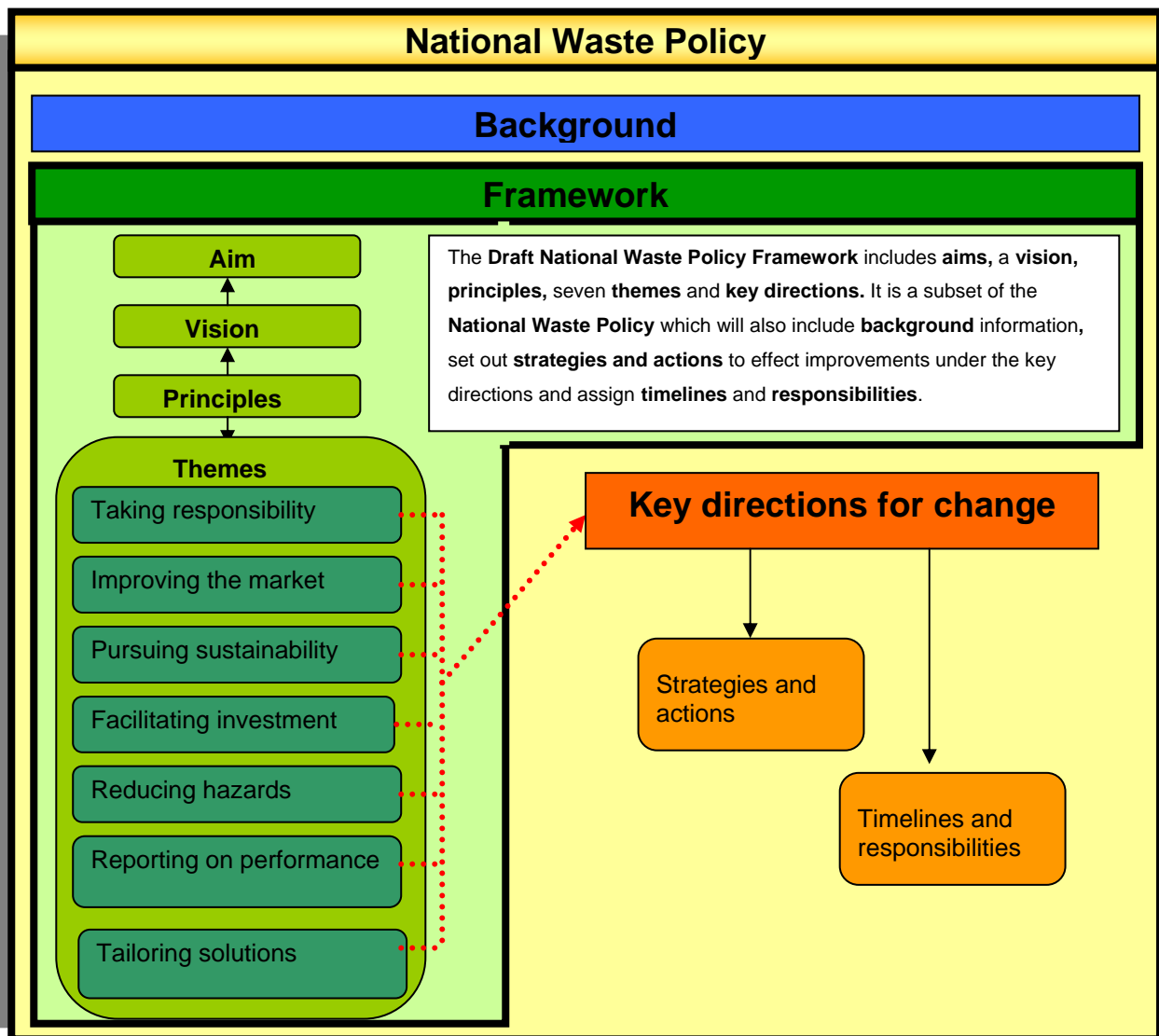
Table 1: Key messages raised during the consultation process

Key messages	Element in Draft National Waste Policy Framework
Clear aims, objectives, directions and targets, bold vision <ul style="list-style-type: none"> – allocate responsibilities – waste minimisation and management objectives of the 1992 National Strategy on Ecologically Sustainable Development still relevant and important foundation to build on 	Aims, the vision, principles
Endorse the waste hierarchy	
Recognise intergenerational legacy issues – particularly for hazardous waste	
Continue to work with the community to address waste issues, including awareness raising	
Frame the policy in terms of waste avoidance and resource recovery and connect to state, territory and international regulation	
Implement a national approach to product stewardship/extended producer responsibility under Commonwealth regulation <ul style="list-style-type: none"> – cost of managing problem materials is increasing and community no longer thinks it acceptable that they bear the cost – need a mechanism to deal with free riders and deliver industry certainty – enables investment and employment and economies of scale for innovation – develop principles for priority materials – fast track electronic waste and support schemes for end-of-life tyres, batteries, mercury containing lamps and whitegoods 	Taking responsibility Product stewardship/extended producer responsibility, lifecycle and supply chain management and initiatives to drive environmental and economic benefits

Key messages	Element in Draft National Waste Policy Framework
<p>Address regulatory inconsistencies and market impediments within and across jurisdictions to enable re-use and recycling of waste materials</p> <ul style="list-style-type: none"> - better coordinated policy objectives, existing waste regulation and other legislation can reduce business costs and risks - national product and practice standards would assist in providing markets for waste products 	<p>Improving the market</p> <p>Addressing market and institutional impediments and inconsistencies in regulation and classification of waste, co-products and by-products to enable innovation, technology, infrastructure investment and business models for managing waste as a resource</p>
<p>Develop national definitions and classification of waste (including hazardous, prescribed and controlled waste)</p> <ul style="list-style-type: none"> - remove impediments to waste becoming a co-product/ by-product/fuel as an input to another process/purpose 	
<p>Develop a clearing house/brokerage to build capacity and exchange information</p> <p>provide local government with access to technical and market expertise to help meet community expectations for cost-effective waste services</p>	
<p>Bring forward national specifications, guidelines, standards and best practice to facilitate infrastructure development, reduce contamination, provide materials for re-use of certain quality and ensuring landfills are established and managed to best practice</p>	
<p>Avoid and minimise waste, including through innovation and green design</p>	
<p>Tackle the organics waste stream</p> <ul style="list-style-type: none"> - significant volume and capacity to generate methane a concern 	<p>Pursuing sustainability</p> <p>Avoiding waste and using waste generated as a resource to achieve better environmental, social and economic outcomes</p>
<p>Landfill is an effective and appropriate part of Australia's future waste management</p>	
<p>The carbon pollution reduction scheme</p> <ul style="list-style-type: none"> - imposes an unfair burden on communities by including landfill legacy emissions - does not necessarily support recycling and re-use 	
<p>Litter a concern for the community</p> <ul style="list-style-type: none"> - incidence can increase with changes to waste management services and costs - costs borne by local government - can learn from successful programs 	

Key messages	Element in Draft National Waste Policy Framework
Provide investment and re-use incentives <ul style="list-style-type: none"> – intervene at the right point in the supply chain – undifferentiated levies and poor price signals an issue 	Facilitating investment Facilitating investment in jobs, innovation and infrastructure
Increase re-use of commercial and industrial and commercial and demolition waste streams <ul style="list-style-type: none"> – recognise increased employment opportunities compared to landfill 	
Adjust government operation services and procurement requirements to encourage local markets for recovered resources such as tyres, glass and concrete	
The availability of and access to hazardous and clinical waste facilities and technologies on a national basis	Reducing hazards Improved standards, identification, collection, treatment and disposal of problematic and hazardous materials
Reduce the hazardous materials in manufactured goods and waste streams	
National data and reporting system <ul style="list-style-type: none"> – implement better data collection and sharing arrangements to inform policy, business decision making and benchmark performance – ensure cost impost on industry and business minimised 	Reporting performance Developing capacity to effectively collect, report and compare consistent national waste and resource recovery data to inform policy and assess performance
Regional and remote areas including Indigenous communities require tailored solutions guided by local circumstances <ul style="list-style-type: none"> – ratepayers expect similar levels of service to metro areas but costs are higher (small volume/high transport costs) and borne by local government without commensurate contribution from industry and producers – capacity to develop viable alternatives to landfill more limited and localised dumping a problem as levies increase – dedicated support needed for strategic assets and infrastructure – better access to state of the art information and technology 	Tailoring solutions Building capacity for regional, remote and Indigenous communities

Figure 2. Elements of the Draft National Waste Policy Framework and its relationship to the National Waste Policy



6. Draft National Waste Policy Framework

6.1 Introduction

It is intended that the National Waste Policy encompass wastes in the municipal, commercial, industrial, construction and demolition waste streams and cover liquid, gaseous and solid wastes. Radioactive waste will be excluded. Strategies and actions will be developed to effect improvements within each of the key themes. Expected outcomes, responsibilities and timeframes for each action will also be established.

6.2 Aims

The aims of the National Waste Policy will be to avoid the generation of waste, to reduce the amount of waste (including hazardous waste) for disposal, to manage waste as a resource and to ensure that waste disposal is done in a safe, scientific and environmentally sound manner.

6.3 The vision by 2020

1. Australia will reduce the amount of waste (type and appropriateness of target to be determined—see page 6 of discussion paper).
2. Australia will reduce the amount of potentially hazardous waste produced (type and appropriateness of target to be determined—see page 6 of discussion paper).
3. Australians manage potential waste streams as a resource to achieve better environmental outcomes and overall community benefit including increased agricultural productivity, reducing greenhouse gases, water and energy efficiency and energy production.
4. Access to products, services and capabilities for waste avoidance, resource recovery and waste management is available to all Australians.
5. Local stockpiling of hazardous waste is significantly reduced, particularly for rural and remote areas.
6. There will be efficient and effective Australian markets for waste and recovered resources.
7. There will be a level playing field for Australian manufacturers, importers and consumers in terms of standards, hazardous content and labelling requirements of manufactured goods.
8. Businesses in the manufacturing and supply chain embrace design and engineering approaches that support re-use and disassembly and minimise the environmental footprint of their product.
9. Product stewardship/extended producer responsibility is adopted for business operations and embraced by the community and drives improvements in product design, longevity, efficiency of re-use and consumption choices.
10. The activities of government—including environmental regulation, planning and development and licensing and specification requirements—facilitate waste avoidance and resource recovery.

6.4 Key principles

Key principles that underpin the development and implementation of the policy are:

1. All wastes, including hazardous wastes, are managed consistent with Australia's international obligations.
2. Environmentally responsible management of waste reduces greenhouse gas emissions and contributes to broader sustainability outcomes.
3. Market, regulatory and governance failures, duplications and inconsistencies are addressed and issues dealt with holistically.
4. The costs of resource recovery and waste management are borne by the participants in the product supply and consumption chain and not by the community generally.
5. Decisions are informed by the waste management hierarchy of actions, the precautionary approach and principles of ecologically sustainable development and intergenerational equity.
6. The environmentally sound management of materials, products and services are advanced by embracing whole of lifecycle strategies.
7. The generation of hazardous and other wastes is avoided or minimized, taking into account social, technological and economic aspects.
8. The risks associated with waste are understood and managed in the future to minimise intergenerational legacy issues.
9. Nationally consistent, comprehensive data on waste and re-use of materials is regularly available to assess performance and inform policy.
10. Any measures, whether voluntary or regulatory, consider overall community benefit by taking account of social, environmental, and economic outcomes, and are implemented by the appropriate level of government, industry or the community.

6.5 Themes and directions

Seven high level themes have been identified, together with a number of key directions for change. It is intended that the directions will be used to guide development of specific strategies and actions.

The seven key themes are:

1. taking responsibility
2. improving the market
3. pursuing sustainability
4. facilitating investment
5. reducing hazards
6. reporting on performance
7. tailoring solutions.

6.5.1 Taking responsibility

Product stewardship/extended producer responsibility and lifecycle and supply chain management and initiatives to drive environmental and economic benefits

Today's municipal and commercial waste streams include increasing volumes of complex high value manufactured products, materials and packaging. These wastes can contain high value materials or other resources that can be re-used, and heavy metals and other hazardous material. They can also be made of substances that do not readily decompose or degrade into inert compounds.

The trend, both internationally and in Australia, is for these goods and materials to be subject to recycling and re-use schemes organised on a voluntary, co-regulatory or mandatory basis. Such schemes may either be based on a product stewardship approach with all parties participating, or on the concept of extended producer responsibility where the producer/supplier takes responsibility for the product at end-of-life. Manufacturers and suppliers are increasingly initiating product stewardship style schemes, and community expectation that recovery arrangements are in place and consumers willingness to pay are also increasing.

The approach to date within Australia has been to take a tailored approach to considering individual products, materials, or type of packaging. Often a variety of schemes have been adopted by different states and territories and at the local government level. The absence of a comprehensive, national approach has created market difficulties and does not address concerns that those players who do not participate in the scheme will enjoy lower operating costs and receive a competitive advantage (free riders). It has also led to policies which are unresponsive to business and community needs and placed additional regulatory and operational burdens on business. In addition jurisdictional schemes have emerged which do not necessarily align with the principles of the *Mutual Recognition Act (Commonwealth) 1992*.

Taking responsibility—directions for change

Facilitate business and the community to take responsibility for end-of-life management of materials, products and packaging through a national product stewardship/extended producer responsibility framework.

This framework would:

- cover an initial set of nominated sectors, materials or products with capacity to extend when agreed criteria are met
- provide underpinning national legislation that will address the free rider issue
- enable the application of an advance charge to cover recycling and disposal
- allow businesses/sectors to implement recovery schemes best suited to their needs
- allow businesses to manage compliance
- allow business and governments to identify products or sectors to be nominated or request opt-in for existing schemes.
- include public reporting and an independent review
- provide transitional measures for industry, business and the community, if necessary.

The application of an advanced charge would provide a supply chain signal that would encourage product re-engineering to avoid waste, waste reduction, the use of less hazardous substances and design for re-use.

6.5.2 Improving the market

Addressing market and institutional impediments and inconsistencies in regulation and classification of waste, co-products and by-products to enable innovation, technology, infrastructure investment and business models for managing waste as a resource

What constitutes a waste, hazardous waste, scheduled waste and prescribed waste varies across jurisdictions and is usually enshrined in legislation (primary Act or Regulation). The nature of the classification invokes a range of requirements for handling, transporting and disposing of waste. At a national level this increases complexity and cost and can have unintended consequences such as movement of materials to areas with lower requirements.

Management of waste as a resource that can be used for other purposes requires a different and uniform classification system. If a waste is subsequently used for another purpose then it requires a classification that reflects its role as a co-product or by-product to which typical manufacturing standards apply. Similarly, facilities that re-use waste for energy (e.g. tyres, wood, and paper) as an input to production of other goods and services should be required to comply with typical emission and environmental benchmarks rather than being classified as waste incinerators.

Facilitating re-processing or re-use of waste materials requires that other existing impediments arising from their consideration as waste be addressed. This includes the need for consistent guidelines or standards for safe and acceptable storage/stockpiling of these resources prior to use.

In the commercial and industrial and construction and demolition sectors (which produce more than 2.5 times more waste than the municipal sector), there is considerable scope for increased use of many of these waste materials providing assurances relating to quality and quantity of supply and quality of the end product can be met. The existing impediments arise from the lack of consolidation of these waste streams close to re-processing and re-use facilities where type and quality can be controlled. A mix of market and regulatory signals in these sectors could encourage commercially useful quantities of material for secondary markets.

Waste streams that provide opportunities for improved collection and re-use are organic waste (in particular food waste), tyres and packaging (glass, paper, wood and cardboard), concrete and wood. For example, materials such as glass, concrete and tyres can be effectively re-used in roads, with the potential to use the majority of this material locally. However, such use is precluded in the majority of jurisdictions due to the absence of engineering specifications for this use, government contract specifications preventing consideration of recycled materials and the lack of knowledge in the industry to take advantage of such opportunities. A set of national technical specifications, allowing for recycled material in contract provisions, and product testing information would facilitate this particular market.

More generally there is a need for agreed specifications, best practice, guidelines, standards or regulation to reduce contamination of recovered resources and to provide assurance that end products are of a consistent, recognised standard to facilitate market certainty and development. A critical number of core, appropriately located, infrastructure also needs to be available to handle commercial waste and provide the capability for re-direction to other productive uses. The development of core infrastructure and technology is being facilitated in some jurisdictions through incentives such as grants provided from waste levies.

Improving the market—directions for change

The management of waste as a resource that can be used for other purposes requires a national classification system. Where a waste is subsequently used for another purpose then it requires a classification that reflects its role as a co-product or by-product to which typical manufacturing standards apply. Similarly facilities that re-use waste for energy as an input to other goods and services should be required to comply with typical standards for emission to the atmosphere rather than being classified as waste incinerators.

Facilitating re-processing or re-use of waste materials will also require that other existing impediments arising from their consideration as waste be addressed. This includes the need for consistent guidelines or standards for safe and acceptable storage/stockpiling of these resources prior to use.

For major urban centres and larger regional areas, development of integrated waste management, processing and resource re-use complexes (including landfill) could be facilitated by developing national performance guidelines. These complexes would need to have best practice requirements for infrastructure and technology, specifications, and guidelines and standards applying to construction, location, waste stream separation, processing, materials input and output, monitoring, methane capture and energy generation. Application of industrial waste management approaches, such as supply chain mapping that help match waste generators with facilities that could reprocess or re-use that waste, could also add value to the local economy in some areas.

Development of agreed guidelines, standards and specifications (such as best practice for infrastructure components, quality/contamination of waste stream inputs and quality of end products) can also facilitate better use of components of the waste stream (including co-products and by-products), and assist in enhancing markets for processed products.

Understanding and making decisions on investment and accessing or creating business opportunities could be facilitated by the establishment of a clearing house capability. A clearing house or brokerage capability could provide, among other things, access to: baseline assessments on technologies (domestic and international); expert advice on fit-for-purpose technologies; contacts with successful operations; possible sources or uses for materials; best practice guidance; and specifications. This could greatly assist local governments, councils, re-processing and recycling businesses and down stream markets.

6.5.3 Pursuing sustainability

Avoiding waste and using waste generated as a resource to achieve better environmental, social and economic outcomes

A new direction for managing Australia's waste needs to be considered in the context of strategic government policies on sustainability, innovation and climate change. Avoiding the generation of waste and enhancing the recovery and recycling of Australia's waste streams can improve the efficient use of materials, save energy and water and make an important contribution to reduce greenhouse gas emissions.

Better management and re-use of the organics in Australia's waste streams would offer significant opportunity to deliver sustainability and innovation benefits. Greenhouse emissions from the waste sector are dominated by methane emissions from landfill. Methane is produced from the large volumes of organic waste (including cardboard, paper, wood, green waste, sewerage sludge, as well as food waste and other putrescible waste and bio-solids).

In 2006-07, approximately 21 million tonnes of organic waste per annum (or 51 per cent of total waste disposed) was landfilled. Based on available data, over 64 per cent of municipal waste, 78 per cent of commercial and industrial waste, and 11 per cent of construction and demolition waste to landfill is organic waste. In 2006 methane emissions from solid waste disposal in landfill were 13.2 million tonnes of carbon dioxide equivalent. Net emissions from landfill in 2007 are estimated to have increased by 0.2 Mt (2.0 per cent) compared with 2006.

There are a wide variety of approaches in place across jurisdictions to manage organic material. They range from bans on certain organics to landfill, to gate fees being applied on either a weight or volume basis at landfills in close proximity to each other, to licence requirements on operators to flare methane. The application of the Carbon Pollution Reduction Scheme to landfill is expected to drive further change in the management of organics.

Improved management of organic waste can better capture both its embodied energy and nutrient values to provide broader benefits. The production of fertilizers, mulch, soil conditioners and biochar can significantly increase the water carrying capacity of the soil, add nutrients and improve horticultural and agricultural productivity. The displacement of chemical fertilisers by recycled organics can reduce nutrient runoff to receiving waters—a key contributor to algal blooms. Industrial biotechnology applications can reduce nitrogen build up and enhance water security, save energy and defer the need for infrastructure investment.

Other waste, in particular plastics, tyres and organics, can be used to produce energy as part of manufacturing processes and reduce greenhouse emissions.

Pursuing sustainability—directions for change

Better design of products, processes and services to avoid and minimise waste including the use of hazardous substances, consider whole of life impacts to promote energy, water and material efficiency and facilitate disassembly and recycling have the potential to deliver environmental, social and economic gains for Australia. The community and business need to have a better understanding of the links between waste and other environmental issues and the data and tools to facilitate action.

An agreed effective national approach to organics to harness opportunities for business. This could include a transition to alternative uses for each major type of organic waste, in particular for non putrescibles. This approach could set out the conditions under which the different types are allowed to landfill; the need for facilities to handle the different types of organics for a range of re-use purposes; the provision of agreed best practice, guidelines and standards for both organic waste input (separation and contaminant levels including hazardous materials) and organic end products such as soil conditioners and compost; and for waste to energy plants and methane to energy. Such an approach would allow fit-for-purpose arrangements that can be tailored to the circumstances and the location. Supplementary approaches are needed to encourage recovery and re-use of organics within wastewater.

6.5.4 Facilitating investment

Facilitating investment in jobs, innovation and infrastructure

Government, through its own operations and delivery of services, can be a driver in creating markets for recovered resources and supporting product stewardship approaches that enable more effective establishment of collection, distribution and reprocessing infrastructure. Governments can influence markets through their procurement and contracting policies and licensing practices where they relate to use of waste materials, products and services. Governments are also major purchasers and users of goods and materials and should take a leadership role. Such leadership could have wide coverage. For example, this could range from the conditions applying to the purchase, use and disposal of computers used by government on the one hand, to providing for a small proportion (possibly around four per cent) of recycled materials (tyres, concrete or glass) to be used in road base through the development of technical specifications, education of decision makers and tender requirements.

Waste avoidance, efficient use of materials and addressing intractable waste problems can also be achieved by improving awareness, understanding and access to innovative technologies and approaches. Demonstration projects for a range of different technologies and processes exist in a number of sectors across the country and have reported quantifiable water, energy, greenhouse and waste benefits. Business, industry and governments have yet to realise the full economic potential better waste management approaches can offer to support their business drivers. Improved education of decision makers, ready access to enabling technologies and processes, ensuring that market signals reflect the true costs and creating a climate for private sector investment in infrastructure can drive change.

Facilitating investment—directions for change

Government procurement and licensing policies and practices can ensure tender specifications explicitly invite proposals that include use of recovered and recycled products and services where these meet desired performance characteristics, and meet ‘value for money’ criteria. This approach combined with product stewardship approaches can assist in deepening the market for recovered materials and goods. By improving consumer confidence and establishing best practice in this regard, other industries can replicate these arrangements, potentially enabling local solutions for recovered materials that can be costly to transport to alternative markets. Ensuring that standards for relevant materials and goods are based on performance and do not rule out use of recovered materials can also assist in providing market incentives.

Facilitating investment in jobs, innovation and infrastructure will also occur as a result of undertaking other actions such as those designed to improve the market and pursue sustainability. For example, making better use of Australia’s organic waste stream to harness improved agricultural productivity will require better understanding of priority materials flow modelling, investment in improved collection and sorting systems, processing and distribution infrastructure, technology and processes and the people to operate them. Emerging markets may also need support including awareness raising of the costs and benefits of using organic waste in agriculture and facilitation of partnerships to create economies of scale and fit-for-purpose outcomes.

6.5.5 Reducing hazards

Improved standards, identification, collection, treatment and disposal of problematic and hazardous materials

The presence of hazardous substances in waste and recycling streams has the potential to cause long term environmental and health impacts and prevent re-use. There are approximately three million tonnes per annum of hazardous waste produced in Australia (as defined by the Basel Convention) that is eight per cent of the national total. Hazardous wastes can be in the form of by-products or residues from agricultural, manufacturing or industrial processes and can also result from the substances embedded in products. As mentioned previously, Australia does not have a national approach to classifying waste, hazardous waste, scheduled waste and prescribed wastes, impacting on the cost and complexity of handling, treatment and disposal arrangements. The current approach to dealing with products that contain hazardous materials has been on a product-by-product basis at end-of-life.

In Australia there are also no national standards and requirements for labelling for content and for risks in manufactured goods and consumables in regard to hazardous materials including heavy metals and chemicals. Hence toxic substances can be embodied in products without the purchaser being aware and waste managers and re-processors have no means of assessing appropriate disposal. Such standards exist in a number of other OECD countries and Australia could adopt appropriate international standards rather than developing its own under the auspices of the nascent national standard setting body for the environmental management of chemicals. A number of Australian businesses already produce to meet these overseas requirements.

It is not sensible or practicable for each jurisdiction to have a full suite of facilities for handling all types of hazardous and controlled wastes as such waste facilities are highly specialised. However, without suitable access to such facilities or technologies (and combined with the cost of transport and destruction), hazardous wastes are currently stockpiled in situ, presenting an environmental risk. Consideration could be given to establishing a national hazardous waste infrastructure capability where access to and use of such facilities and technologies is open to other jurisdictions at an appropriate charge or where the development and funding could be shared by more than one jurisdiction or between jurisdictions and business.

Reducing hazard—directions for change

Adoption of national standards and requirements for labelling of manufactured goods and consumables in regard to hazardous materials, including heavy metals and chemicals. Such standards exist in a number of countries, and Australia should adopt the appropriate international requirement rather than developing its own.

A co-operative approach to investments in the operation of, and access to a full suite of facilities and technologies for handling hazardous and controlled wastes in Australia to provide a national capability for hazardous waste. Provision of shared investment models for jurisdictions and business to cover the circumstances where the cost of a specialised facility or technology is too great for one party or where mobile facilities are considered the most efficient approach to service delivery.

Develop an approach for managing hazardous substances that links substances to agreed standards or guidelines for appropriate recovery, reprocessing and safe disposal. This would facilitate businesses and the community taking responsibility for reducing and managing hazardous substances.

6.5.6 Reporting on performance

Developing capacity to effectively collect, report and compare consistent national waste and resource recovery data to inform policy and assess performance

A national waste data system that informs policy performance and future directions at the jurisdictional and national level is required as an authoritative source of information across a range of aspects including avoidance, minimisation, generation, recovery, re-use, recycling and disposal, regulation and levies, infrastructure and profile of business engagement. The data should be nationally consistent and provide for streamlined collection to reduce industry and business costs and compliance risks.

Developing effective policy responses, understanding the level of interstate waste movements, tracking and benchmarking performance and assessing the impost on business of different approaches and undertaking compliance actions, have been constrained by the differences between jurisdictions in how and what data are collected and reported. As well as gaps in statistical information there are also limits to scientific knowledge about the environmental and health impacts and future risks of some of the materials disposed to landfill. This has also had an impact on the ability of business to make decisions.

Reporting on performance—directions for change

Develop and publish an annual summary and periodic (three or five yearly) current and future trends report on waste across all its attributes. The summary would provide data and information against a small subset of agreed key performance indicators. The current and future trends report would document performance against the strategies and agreed actions under the National Waste Policy and the extent to which Australia is meeting its responsibilities under the Basel Convention. The report would provide information on progress and trends, inform policy development, facilitate comparison of performance, provide transparency to the public and be underpinned by a national waste data system.

The national waste data system should identify a core data set that is necessary and sufficient for jurisdictions to meet their respective policy and program objectives, deliver greater consistency in reporting, minimise and streamline the administrative burden on business and government and have utility for business, government, investors and the community. The system should be flexible to track trends and enable adjustments to accommodate future policy settings, allow Australia to meet its international reporting obligations and align and integrate with existing reporting obligations and tools (e.g. National Greenhouse and Energy Reporting System and the National Pollutant Inventory).

6.5.7 Tailoring solutions

Building capacity in regional, remote and Indigenous communities

There are many regional, remote and Indigenous communities which face particular challenges in waste management and improved use of resources. The remoteness of these communities and their small size relative to the majority of urban centres are challenging considerations when looking at the approaches that would facilitate reduction in waste and improved waste management and recovery of resources. Specific geographic issues also come into play. For example the high water table in parts of the Northern Territory makes landfill problematic, but in other areas dry conditions can make composting difficult and compromise methane production. These communities also face challenges in accessing skills and resources to make informed decisions about appropriate waste management strategies.

Specific tailored initiatives could provide health, environmental or other economic benefits to the community and could include scalable waste to energy plants, mobile facilities to collect and recycle particular wastes or arrangements that build on existing initiatives such as drumMUSTER.

In terms of national best practice, guidelines and standards applying to waste management operations, a tiered approach could be adopted to cater for these smaller communities. Infrastructure for resource recovery, design for waste avoidance, recycling, alternative waste technologies and landfill establishment, operation and post closure maintenance are all major capital investments.

Tailoring solutions—directions for change

For regional, remote and Indigenous communities, explore the potential for small scale energy generation facilities and re-use and recycling facilities, including funding models that would be flexible and provide local employment. For example, with the provision of crushing equipment, glass could be recycled in road base rather than being transported long distances to recycling plants.

Tailored, fit-for-purpose guidelines for the development and operation of waste management in these areas and communities would also facilitate appropriate solutions and investment.