The Allen Consulting Group

# National Waste Policy

## Regulatory Impact Statement

**October 2009**

Report to the Department of the Environment, Water, Heritage and the Arts

The Allen Consulting Group

The Allen Consulting Group Pty Ltd

ACN 007 061 930, ABN 52 007 061 930

Melbourne

Level 9, 60 Collins St

Melbourne VIC 3000

Telephone: (61-3) 8650 6000

Facsimile: (61-3) 9654 6363

Sydney

Level 12, 210 George St

Sydney NSW 2000

Telephone: (61-2) 8272 5100

Facsimile: (61-2) 9247 2455

Canberra

Empire Chambers, Level 2, 1-13 University Ave

Canberra ACT 2600

GPO Box 418, Canberra ACT 2601

Telephone: (61-2) 6204 6500

Facsimile: (61-2) 6230 0149

Online

Email: info@allenconsult.com.au

Website: www.allenconsult.com.au

# Contents

# Executive summary

In November 2008, the Environment Protection and Heritage Council agreed to the development of national waste policy that:

- is consistent with the Australia's international obligations;
- addresses the current ad hoc approach to waste governance and allows the Commonwealth to focus its efforts and deliver on matters where leadership and a national approach are needed, while recognising both the needs of industry and the community and the appropriate role for state and territory governments; and
- provides a coherent, efficient and environmentally responsible waste management policy for Australia that complements the Commonwealth's policies on climate change and sustainability.

## The problem

Differences in jurisdictional approaches to waste management, recycling and disposal have created a complex structure of reporting, regulations, fees and policies that add to administrative costs for government and compliance costs for business. Policy fragmentation across Commonwealth, state and territory jurisdictions also reduces the potential for economies of scale in companies with multi-jurisdictional operations below that which would be available under a truly seamless national economy.

The mix of Commonwealth, state and territory powers established under the Constitution means that national consistency cannot be achieved unilaterally. The challenge for policymakers is therefore, to secure, and if possible extend, the gains from closer alignment and consistency of Commonwealth, state and territory approaches. Current arrangements have seen problems and deficiencies develop in several areas, as discussed below.

### *Classification and reporting requirements*

Jurisdictional inconsistencies are imposing a regulatory burden on industry — creating uncertainty and imposing extra costs. Key areas of concern to industry include definitions and classifications of waste (with ensuing treatment requirements), and data and reporting requirements.

### *Lack of regulatory coordination and consistency*

Industry has identified inconsistencies in policy and regulatory approaches across the States and Territories, suggesting that a lack of coordination and consistency in these approaches is adding unnecessarily to costs.

In the absence of national agreement, State and Local governments are developing their own responses to resource recovery and waste management issues, leading to a degree of fragmentation across state and territory policy settings for waste management and resource recovery.

*Foregone opportunities for market development*

Improvements in use of materials embodied in 'waste' in Australia are areas of potential benefit. While all materials will eventually reach the end of their useful or economic life, there is a cost to society when this occurs prematurely. A net benefit can still be derived by re-directing 'waste' products back into the 'resource' stream. Many industry stakeholders express concern that the current policy and regulatory framework surrounding waste in Australia is hindering the resource recovery and waste management industry from reaching its potential. Industry submissions highlight the potential for ongoing and increased costs from continuing and increasing fragmentation in policies, with particular emphasis on problems of lack of co-ordination on product stewardship.

*International commitments on waste (including hazardous waste) are linked to jurisdictional outcomes*

Australia is party to a number of international treaties governing wastes and hazardous materials and chemicals, as well as synthetic and other greenhouse gases. Policies and outcomes at the jurisdictional level can impact on the ability of Australia to meet these commitments. These include:

- Basel Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their Disposal;
- Stockholm Convention on Persistent Organic Pollutants;
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade;
- Montreal Protocol on Substances that deplete the Ozone Layer (protocol to the Vienna Convention for the Protection of the Ozone Layer); and
- Kyoto Protocol (protocol to the United Nations Framework Convention on Climate Change).

A National Waste Policy is being proposed to address these issues.

## Benefits of a National Waste Policy approach

The proposed National Waste Policy seeks to update and integrate Australia's policy and regulatory framework. It will build on the existing settings by providing a nationally agreed direction so that all jurisdictions can focus their individual and collective efforts on common goals, strategies and actions over the coming decade. The strategies are directed at emerging domestic and international needs and avoiding inefficient measures.

The policy will seek to reduce the hazardous content of products and materials and encourage responsible management during and at end of life, including through a national approach to product stewardship. Improved national data is proposed to inform policy and decisions and meet international reporting requirements. Jurisdictions will, through individual and collective national action, address market impediments, including developing national definitions and classifications of waste, regulatory and procurement barriers and waste management infrastructure. The complexity and regulatory burden should be reduced. Collaborative work will seek to increase capacity in regional and remote and Indigenous communities.

Resource, health and environmental values are linked to waste policy development and regulation setting in the years ahead. The value of the resources and community amenity affected by these decisions can be economically significant.

Evaluating the appropriate over-arching policy approach for addressing these issues is difficult because future costs and benefits will depend on the outcomes achieved. Nevertheless, there is evidence to suggest that a nationally coordinated and consistent approach that operates within a mutually agreed framework is likely to be superior to current approaches as a tool for unlocking future benefits.

While the costs of operating within this framework are unlikely to be materially different from the cost of current arrangements, tangible additional savings are likely to be generated from improved design and coordination of measures developed under the auspices of that framework.

The 'insurance' value of promoting and reinforcing a more cohesive national approach to waste management and resource recovery is also relevant. A national waste policy framework represents a new paradigm for developing and implementing regulation in this area. A key implication is reduced exposure to outcomes associated with a more fragmented policy regime at a jurisdictional level. Averted risks and potential costs are also relevant to consideration of the value and pay-offs from implementing a national waste policy framework. The example of product stewardship provides some indication of the magnitude of these potential benefits. Pay-offs to waste agendas in terms of reduced risk to health and environmental assets may be even more substantial.

There are strong indications that a national framework approach for development and implementation of waste policy represents an investment that is likely to deliver benefits that exceed its costs.

A national approach to resource recovery and waste policy, as embodied in the National Waste Policy, was found to offer net benefits to the community in several dimensions. Benefits included:

### *Reduced costs for government and business through efficiency gains and lower compliance costs*

The Regulation Impact Statement modelled a national framework approach to product stewardship for problematic wastes compared to separate jurisdictional approaches. A national framework approach was found to generate administrative costs to government of $65 million over twenty years at a 7 per cent discount rate but achieve $147 million in savings over the base case. A fragmented jurisdictional approach resulting in up to an additional 5 product stewardship programs was found to generate extra costs of between $0 and $212 million in administration alone, compared to the base case, and a 70 per cent loading on administrative costs compared to a more coordinated approach dealing with the same number of extra products.

### *Better and more efficient data collection*

Nationally consistent data arrangements were considered by stakeholders to reduce compliance costs and provide a more sound basis for decision-making by business and governments. In its 2008 evaluation of waste data arrangements, the Waste Management Association of Australia (WMAA) found that the current fragmented and duplicative arrangements for data collection where estimated to cost its members $9 million per year, while a more co-ordinated approach was estimated to cost $5.7 million per year (a 35 per cent saving).

### *Improved management and tracking of hazardous waste*

Consultation on the National Waste Policy and independent analysis by Hyder Consulting (2009b) found that data and information associated with the hazardous aspects of waste are incomplete and inconsistent. This lack of reliable data creates difficulties in assessing risks associated with hazardous wastes, selecting appropriate management strategies and planning for future infrastructure needs including treatment capacity.

Stakeholders identified significant and avoidable compliance costs associated with inconsistent classifications of hazardous waste, while the community were found to place a high value on the proper treatment and disposal of hazardous waste. The Regulatory Impact Statement on the Victorian Government's proposed Environment Protection (Industrial Waste Resource) Regulation 2009 supports this conclusion.

It is inherently difficult to quantify the risks to human health and the environment of inappropriate management of hazardous waste but there is stakeholder and community support for a national approach to hazardous waste management as a means of reducing these risks.

### *Synergies and alignment with the Carbon Pollution Reduction Scheme*

Future policy setting for the resource recovery and waste management sectors will occur in a carbon-constrained world. While legacy waste emissions from landfills are not covered by the current proposed design of the Carbon Pollution Reduction Scheme, these emissions still contribute to Australia's national emissions profile. A 2009 study by MMA estimated that between 2012 and 2020, 106.3 Mt CO2-e of landfill sector emissions would not be covered by the proposed Carbon Pollution Reduction Scheme. A co-ordinated national approach to prevention strategies and other measures could deliver future benefits.

Overall the cost-benefit analysis of a co-ordinated national approach was found to produce a net community benefit when compared to continuing fragmentation of resource recovery and waste management policies and regulation through individual jurisdictional action.

The cost-benefit analysis was by nature high level given that the National Waste Policy posits an approach to policy making for resource recovery and waste management to 2020. Specific strategies under the National Waste Policy were not assessed in detail because the design of those strategies has yet to occur. Strategies or measures that have a regulatory component will be subject to their own regulation impact statements.

## Proposed implementation

The implementation of the National Waste Policy will be undertaken by all jurisdictions. The majority of strategies will be undertaken through the Environment Protection and Heritage Council (EPHC) but some strategies and actions will involve action by the Australian Government while others will involve individual State government action.

The EPHC will review the National Waste Policy periodically. Reviews by EPHC will be informed by the outcomes of a report on national current and future trends in waste and resource recovery (the State of Waste Report) to be produced every three years from the commencement of the policy.

*Chapter 1*

# Background and context

In November 2008, the Environment Protection and Heritage Council agreed to the development of national waste policy that:

- is consistent with the Australia's international obligations;
- addresses the current ad hoc approach to waste governance and allows the Commonwealth to focus its efforts and deliver on matters where leadership and a national approach are needed, while recognising both the needs of industry and the community and the appropriate role for state and territory governments; and
- provides a coherent, efficient and environmentally responsible waste management policy for Australia that complements the Commonwealth's policies on climate change and sustainability.

Inconsistent approaches to waste management and resource recovery were a significant concern for stakeholders in their submissions to the Productivity Commission Inquiry into Waste Management (Productivity Commission 2006) and the 2008 Senate Inquiry into the management of Australian Waste Streams. There were over 110 mentions of regulatory impediments, 80 mentions of inconsistent and multiple data and reporting requirements and 20 mentions of classification and definitional issues (AECOM 2009). The Productivity Commission concluded that there was 'a good prima facie case for the Australian Government to work with the states and territories to review whether and how environmental regulatory standards could be more nationally consistent to the benefit of the Australian community' (Productivity Commission 2006, p.356).

Since the time of the Productivity Commission submissions:

- two jurisdictions (Northern Territory and Western Australia) have introduced new waste and resource recovery legislation;
- four jurisdictions (New South Wales, Queensland, South Australia and the Northern Territory) have introduced or are in the process of introducing new waste policies; and
- four jurisdictions (New South Wales, the Northern Territory, Tasmania, Western Australia) have new institutional arrangements for waste management.

In addition, there have been numerous changes to subordinate regulation, such as the Victorian Industrial Waste Resource Regulations and South Australian Beverage Container Regulations. Australia has also agreed to participate in international efforts to develop a Legally Binding Instrument on Mercury and is considering ratification of the decision to list nine Persistent Organic Pollutants under the Stockholm Convention taken by the Conference of Parties in May 2009.

In February 2009, the Council of Australian Governments (COAG) concluded the National Partnership Agreement to Deliver a Seamless National Economy which aims to 'deliver more consistent regulation across jurisdictions, and address unnecessary and poorly designed regulation, to reduce excessive compliance costs on business, restrictions on competition and distortions in the allocation of resources in the economy' (COAG 2009). Although not explicitly part of the work program under the agreement, the National Waste Policy was developed to be consistent with the aims and objectives of this National Partnership agreement.

The National Waste Policy also recognises that future directions in the waste management and resource recovery sectors will occur in a carbon constrained world and be subject to the impacts of a carbon price domestically and in international trade transactions. The National Waste Policy therefore addresses the role that the waste and resource recovery sectors can play in contributing to reducing greenhouse gas emissions and energy use.

The aims of the National Waste Policy are to:

- avoid the generation of waste, reduce the amount of waste (including hazardous waste), for disposal, manage waste as a resource and ensure that waste treatment, disposal, recovery and re-use is undertaken in a safe, scientific and environmentally sound manner; and
- contribute to: the reduction in greenhouse gas emissions; energy conservation and production; water efficiency; and the productivity of the land.

The guiding principles and relevant strategies that constitute the National Waste Policy are provided at Appendix A and a more detailed discussion of its objectives in Chapter Three. While the National Waste Policy contains a range of strategies, its primary focus is on promoting co-ordination and harmonisation in resource recovery and waste management approaches to 2020. This Regulation Impact Statement will therefore provide a high level analysis of the net community benefit of a co-ordinated policy approach. Individual strategies will be subject to their own regulatory impact assessment of net community benefit where they involve regulation or changes to regulation.

## 1.1 What is waste?

Defining waste is not simple and there is no single domestic or international definition. This is due to the complex nature of waste, and the fact that the nature of waste is changing rapidly involving more diverse materials and products as well as new processing and management technologies.

The Productivity Commission's 2006 Waste Management report defines waste as:

> ... any product or substance that has no further use or value for the person or organisation that owns it, and which is, or will be, discarded. But what is discarded by one party may have value for another. Thus, a broad approach to defining 'waste' can include products that are recoverable by others. (Productivity Commission, 2006, p. xxvii)

Australia is also a Party to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (see Section 2.4), which offers a similar definition:

> Wastes are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law. (Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Article 2.1, 1989).

Broadly speaking, there are three main waste streams — municipal, commercial and industrial, and construction and demolition.

**Municipal Solid Waste** is generated from domestic (household) premises and from council activities, waste dropped off at recycling centres and transfer stations, and construction waste from owner/occupier renovations. The main materials in municipal solid waste are organic materials, plastics, metals, and chemicals, as well as electronic waste (e-waste) and household goods. Over 90 per cent of households have access to kerbside waste collection and recycling services.

**Commercial and industrial** wastes are generated by manufacturers, small and medium enterprises, retail, property and business services, the hospitality industry, and educational bodies. Waste materials in this stream include paper and cardboard, metals, food waste, plastic, wood, electrical and electronic equipment, materials from office refurbishments and small amounts of other waste such as biosolids.

**Construction and demolition** waste is generated from residential, civil and commercial construction and demolition activities such as fill material (e.g. soil), asphalt, bricks and timber.

There are different definitions for **hazardous waste** but a common feature is that it can pose a threat to either human health or the environment. Hazardous waste requires specific treatment and disposal and generally requires specialist management facilities. Not all hazardous material is clearly identified as such. Many consumer and commercial products contain hazardous substances and can enter the municipal, commercial and industrial and construction and demolition waste streams.

## 1.2 Resource flows and players

Waste generation is influenced by economic activity and population but there is no simple linear correlation.

Waste generation increased by 31 per cent between 2002-03 and 2006-07 (Hyder Consulting 2009a). In 2006-07, Australia generated approximately 43.8 million tonnes of solid waste. Of the waste generated, 48 per cent was sent to landfill and 52 per cent was diverted. In each waste stream there was an increase in waste generated, as well as an increase in the proportion of material recycled:

- *municipal* — approximately 12.7 million tonnes of waste were generated, with 7.6 million tonnes disposed in landfill and 5.1 million tonnes recycled;
- *commercial and industrial* — approximately 14.5 million tonnes of waste were generated, with 6.5 million tonnes disposed in landfill and 8.0 million tonnes recycled; and
- *construction and demolition* — approximately 16.5 million tonnes of waste were generated, with 7.0 million tonnes disposed of to landfill and 9.5 million tonnes recycled (Hyder Consulting 2009a).

### Hazardous Waste

Information on the domestic production of hazardous waste is patchy and does not provide a comprehensive or consistent basis for reporting. Some data on hazardous waste exports, imports and waste generation is available as a result of Australia's reporting under the Basel Convention. In 2007 the amount of hazardous waste reported under the Basel Convention was 1.12 million tonnes, having grown from 642 000 tonnes reported in 2002.

In their management and regulation of waste, all jurisdictions have regard to the waste hierarchy. Under the hierarchy, preference is given to waste avoidance, followed by waste reduction and resource recovery, with waste disposal regarded as a last resort. Resource recovery and waste disposal activities are subject to measurement through economic data and regulatory arrangements, however little data is available on waste avoidance and waste reduction activities.

In the Australian resource recovery and waste management sectors, the three main revenue streams are the collection and transport of waste, the treatment, processing and disposal of waste, and resource recovery and recycling.

In 2006-07, the ABS estimated income from sales and services for the resource recovery and waste sectors at $6.9 billion, and employment at 27,347 Full Time Equivalent (FTE) (ABS 2007).

### The resource recovery and waste sector

The resource recovery and waste sector can be separated into two broader categories: recycling and landfill.

#### *Resource recovery and recycling*

Resource recovery can be defined as the process of extracting materials or energy from a waste stream through re-use (using the product for the same or a different purpose without further production), recycling or recovering energy from waste.

In 2006-07 Australia recycled 22,707,000 tonnes (52 per cent) of the 43,777,000 tonnes of waste generated across the municipal solid waste, commercial and industrial and construction and demolition streams (Hyder 2009a). The municipal solid waste stream (including kerbside collections) made up 22 per cent (5,082,000 tonnes) of total recycling. The commercial and industrial stream was 36 per cent (8,076,000 tonnes) and included materials such as green waste, paper and cardboard, metals and biosolids. The construction and demolition stream recycled large amounts of concrete, brick, steel and other building materials, making up 42 per cent of total recycling (9 549 000 tonnes).

The resource recovery and recycling industry has expanded, with the number of recycling companies increasing from 894 in June 1997 to 1092 in June 2003, that is, an average annual increase of 3.7 per cent (ABS 2004). Resource recovery now includes paper/cardboard, newsprint, timber, plastic, glass, electrical and electronic equipment (computers, TVs, mobile phones) ferrous and non-ferrous metals, fluorescent light bulbs, agricultural and veterinary chemicals, used oil, tyres, whitegoods, concrete, bricks and asphalt.

There is a range of specific recycling schemes including national (such as agricultural and veterinary chemicals, used oil), state-based (South Australia's container deposit legislation, Victoria's Byteback scheme) or industry-based (Mobilemuster, Publishers National Environment Bureau, Cartridges for Planet Ark).

Resource recovery is related to provision of infrastructure, convenience, end markets, and transport cost, as well as perceptions of the usefulness of the material. Demand factors include the:

- level of waste disposal charges (such as landfill levies);
- prices of virgin raw materials and recyclable materials;
- presence and type of recycling programs;
- level of government subsidies paid to recycling contractors;
- infrastructure to collect, transport and recycle materials; and
- existence of re-use programs (IBISWorld 2009).

### *Landfill*

Landfill remains a significant waste destination, with around 48 per cent of all waste by weight being disposed of to landfill (Hyder Consulting 2009a). In general, landfill charges do not include waste externalities, including the full social costs of use, insurance against environmental risks, and remediation of sites. A recent study by BDA of landfill costs found that total costs range between $42 and $102 per tonne of waste in urban areas and between $41 and $101 per tonne in rural areas, depending on the level of management controls and prevailing climate. These costs do not include the externality costs associated with the leaching of hazardous substances in landfills, which are inherently difficult to estimate (BDA 2009).

There were 665 landfills in Australia in 2008 (WMAA 2009). Landfill facilities take putrescible, inert, or hazardous wastes. Organic waste, mainly from the municipal and commercial and industrial waste stream, is sent to putrescibles sites, while non-degradable waste from the commercial and industrial, as well as the construction and demolition, streams are sent to inert sites. Around half of all waste to landfill is sent to putrescibles sites (Hyder Consulting 2009a). Hazardous waste is generally sent to specialist facilities. However, there is an increasing trend for potentially hazardous substances to be embedded in consumer products and materials and these are generally sent to putrescibles landfills by default, increasing the community risk from such substances when treated as part of the more benign waste stream, or requiring most costly waste sorting and/or treatment.

There is a trend towards consolidating landfills and closing smaller sites and towards larger waste management companies they are able to cover the long-term financial commitment. In Australia, the construction of new landfill sites is regulated at the state level. Government approval is required for the design, operation and rehabilitation of landfill sites and landfills are subject to strict environmental standards (Hyder Consulting 2009a).

Future landfill capacity is dependent on the rate of waste generation and the availability and capacity of alternative resource recovery infrastructure. Modelling of the consumption of landfill capacity is hampered by incomplete information. Based on available information, there is sufficient landfill capacity for the medium term in most of the major population centres (Hyder Consulting 2009c). While landfill capacity is not constrained by physical factors, there are other considerations including infrastructure costs, community concern, environmental risk and regulation, geology and suitability for landfill gas capture.

Using the mid point value of cost per tonne for putrescibles waste and $6 per tonne cost for landfilling inert waste, the estimated cost of landfill activities in Australia in 2006-07 is $1.044 billion.

### *Market players*

Information on the resource recovery and waste management sectors is limited and reflects those companies that identify their main activities as resource recovery or waste services. Many companies, however, undertake waste avoidance, re-use and resource recovery as part of their business operations but are not identified as contributing to the resource recovery and waste management sectors as defined by ABS or similar economic classification systems.

In Australia, a report by IBISWorld (2009) found that seven waste services companies which undertake resource recovery and waste management operate on a national basis and that the six largest account for 44 per cent of market share (Figure 1.1).

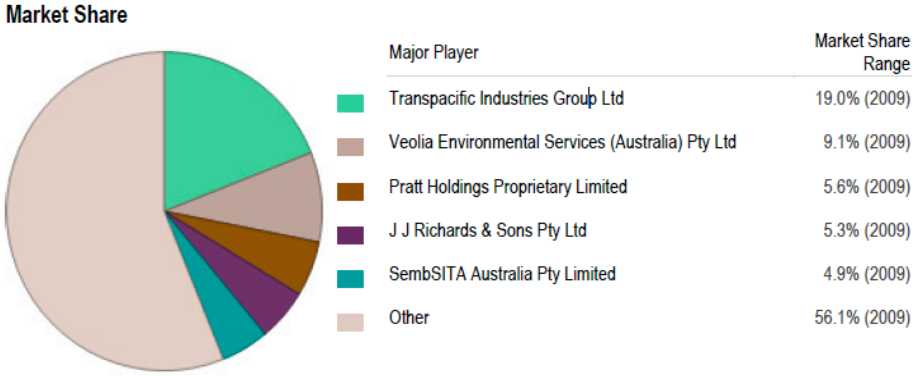
Data from the Australian Bureau of Statistics suggests that in 2002-03 there were approximately 1700 organisations delivering waste management services. Local governments run approximately 600 of these 1700 organisations.

Within the remaining 1092 organisations identified by the ABS in 2002-03, a small number of companies have a dominant share of the market. According to analysis in The Blue Book - Australian Waste Industry 2007-08 industry and market report, in 2002-03:

- 54 per cent of the waste and resource recovery-recycling services market is provided by less than one half of 1 per cent of all companies offering services in the sector;
- less than 5 per cent of service providers have 82 per cent of the market;
- 7 per cent of the market is shared by 81 per cent of the service providers; and
- the trend towards greater concentration of market power in a few large companies is continuing.

Figure 1.1

**MAJOR PLAYERS IN THE AUSTRALIAN WASTE SERVICES INDUSTRY**




Source: IBISWorld 2009, p. 25.

The seven largest national waste services are outlined in Box 1.1. These and other large companies generated $1,840.4 million (68.6 per cent of total industry revenue) (ABS 2004). The remainder is small and medium enterprises.

Box 1.1

**LARGE AUSTRALIAN WASTE SERVICES COMPANIES**

**Transpacific Industries Group Ltd** is a Queensland-based firm, providing waste management services in solid and liquid wastes. The company also provides industrial cleaning services, refines used oil into fuel, and operates a heavy-duty commercial vehicles business. In 2007, the firm acquired Cleanaway, the largest waste management service provider in Australia, handling more than 7 million cubic metres of solid waste and 730 million litres of liquid waste. Through a series of acquisitions, Transpacific maintains contracts in all states and territories (except Tasmania) with over 65,000 commercial and industrial customers, as well as more than 85 municipal customers.

**Veolia Environmental Services (Australia) Pty Ltd** provides waste management services to 3.4 million people and 52,500 commercial and industrial clients. In Australia and New Zealand, the firm has 31 recycling and treatment units (recycling 390,108 tonnes of material, collecting 1.97 million tonnes of waste, and treating 3.21 million tonnes of waste in 2007). The company's facilities include compost production, electronics and liquid waste recycling, construction and demolition waste recycling, material recovery and bioreactor landfill technology.

**Pratt Holdings Proprietary Limited (trading as Visy Industries)** is a private packaging and recycling company which manufactures cardboard boxes, plastic containers and other packaging, in Australia and the United States. Visy Recycling (a subsidiary of Visy Industries) operates in Australia, New Zealand and the United States. Each week, Visy Recycling collects and/or processes recycling from 2.2 million households, as well as from 20,000 businesses in Australia. Visy Recycling is Australia's largest recycling company, processing 1.47 million tonnes of paper and cardboard, 460,000 tonnes of glass, 47,000 tonnes of plastics and 19,000 tonnes of metals. Visy has 30 recycling facilities and 250 regional recycling agents.

**J J Richards & Sons Pty Ltd,** headquartered in Queensland, is one of the largest privately-owned waste management companies in Australia. The firm has a fleet of 800 vehicles and undertakes 1.5 million waste and recycling collections per week, from 50,000 commercial customers. JJ Richards Engineering Pty Ltd, a subsidiary of the firm, designs collection vehicles and systems to maximise resource recovery through compaction reduction, and minimises environmental impacts through use of alternative fuel sources.

**SembSITA Australia Pty Limited** provides waste management services to 43,000 commercial and industrial customers, as well as 800,000 households. Services include

recycling domestic, commercial and industrial collection, waste assessment and resource recovery options, sorting, processing such as composting, autoclaving, product destruction, waste stabilisation, engineered landfill operations and transfer facilities. The firm operates in all major capital cities and regional locations.

**Sims Metal Management** is the world's largest metal and electronics recycler. The firm has over 230 operations globally and earns around 80 per cent of its revenue from operations in the United Kingdom, Europe, North America, New Zealand and Asia. The firm operates two main businesses, Metal Recycling and Sims Recycling Solutions. The Sims Recycling Solutions business involves the 'e-recycling' of information technology equipment and electrical and electronic consumer goods. The Metal Recycling business involves the collection, processing ferrous and non-ferrous metals (primarily in the United States).

**SteriCorp** collects, treats and disposes medical waste. The company is the largest medical waste provider and the only national provider in Australia. The company has 18 per cent of the medical waste collection and disposal market in Australia.

Source: IBISWorld 2009, p. 25, 27, 28, 29, 30, and 34.

## 1.3 Resource recovery and waste sectors in a carbon-constrained world

The waste sector as a whole generated 14.7MT CO2-e, or 2.5 per cent of Australia's greenhouse gas emissions, in 2008. Solid waste in landfill contributed 11 MT CO2-e of this amount (75 per cent) (Department of Climate Change 2009a). Greenhouse gas emissions in landfill are caused by the anaerobic degradation of organic matter such as food, cardboard, paper, wood, green waste and sewage sludge. This degradation produces landfill gas which is approximately 55 per cent methane. Methane has a global warming potential of 21 to 25 times that of carbon dioxide and an atmospheric life of 10 to 20 years. This means that abating one tonne of methane delivers a much earlier and greater benefit.

Waste emissions are predicted to increase slightly to 15 MT CO2-e in 2020 and landfill sector emissions are predicted to be 11 MT CO2-e in that year (Department of Climate Change 2009a). The 2020 projections are based on mitigation measures such as organic waste diversion and landfill gas capture accounting for an 18.7 MT CO2-e reduction in 2020 over BAU (Department of Climate Change 2007). This projection requires new investment in alternative waste treatments and landfill gas generation capacity.

The resource recovery and waste sectors are proposed to be covered by the Carbon Pollution Reduction Scheme (CPRS) as currently proposed, noting that the current Bill before Parliament has not been passed Emissions from waste deposited prior to the commencement of the proposed CPRS, known as legacy emissions, would not be included in liabilities under the Scheme (Department of Climate Change 2009b).

Recent analysis indicates that between the proposed commencement of the CPRS in 2011-12 and 2019-2020, solid waste from landfills is projected to create 106.3 MT CO2-e of which 74.54 MT CO2-e or 70 per cent does not attract liability.

### *Co-benefits*

The recovery of materials can contribute to reducing greenhouse gas emissions and have co-benefits such as reduced water and energy use when considered on a life cycle basis. A net benefits assessment undertaken by the Australian Council of Recyclers estimated that in 2006 recycling in Australia reduced greenhouse emissions (8.8 MT CO2-e), produced energy (202 TJ) and water (134 GL) savings, and conserved resources (eg 4MT of iron ore) (Australian Council of Recyclers 2008).

RMIT (2009) assessed the environmental benefits associated with recycling of common materials in the waste stream for the NSW Department of Environment and Climate Change and an excerpt of the results is provided in Table 1.1.

Table 1.1

**NET BENEFIT OF RECYCLING 1 TONNE OF WASTE MATERIAL (POSITIVE VALUES ARE BENEFITS, NEGATIVE VALUES ARE IMPACTS)**

| | Global Warming tonnes CO2-e | Energy Gigajoules (Low Heating Value) | Water in kilolitres |
|---|---|---|---|
| Aluminium cans | 15.85 | 171.10 | 181.77 |
| Concrete | 0.02 | 0.28 | 1.28 |
| Cardboard/Paper recycling | 0.06 | 9.32 | 25.41 |
| Food and garden organics | 0.25 | 0.18 | 0.44 |
| Glass | 0.56 | 6.07 | 2.30 |
| Mixed Plastics | 1.53 | 58.24 | - 11.37 |

Source: RMIT, Extended Environmental Benefits of Recycling Project, Draft Final Report, 25 May 2009 for NSW DECC, based on Table 4, p14

For resource recovery to be environmentally beneficial on a whole of life cycle basis the impacts associated with material collection and reprocessing need to be offset by the benefits associated with material recovery and avoided landfill capacity.

## 1.4 The role of governments

There is a strong prima facie case for policy maker interest in market performance, environmental outcomes and resource efficiency issues. A suite of problems has been commonly identified that are well recognised areas of market failure. These include environmental externalities, information problems and barriers to competition.

The regulatory framework surrounding the management of waste in Australia is multi-layered. The state and territory Governments have primary constitutional responsibility for regulating waste management in their jurisdictions. The Commonwealth government has responsibility to ensure that Australia meets its commitments under international agreements such as the Basel and Stockholm Conventions and also regulatory responsibilities primarily in relation to the import and export of waste. The Australian Government also has a national co-ordination role through the Environment Protection and Heritage Council and the National Environment Protection Council. Local government has traditionally been responsible for household waste management services (e.g. collection, disposal and resource recovery), as well as 'much of the away-from-home services offered to the general public (such as street bins and litter abatement)' (Productivity Commission 2006).

*Chapter 2*

# The nature and extent of the problem

This Regulation Impact Statement, in considering the proposal for a National Waste Policy, assesses the key problems with current coordination and consistency in resource recovery and waste policies and regulations in Australia.

It considers the extent of:

- inefficiency of regulation of the resource recovery and waste management sectors due to lack of co-ordination and consistency across Australian jurisdictions;
- market impediments to the resource recovery and waste management sectors operating efficiently; and
- problems associated with Australia meeting its international obligations concerning waste (including hazardous waste) and chemicals.

## 2.1 Inefficiency of regulation

Differences in jurisdictional approaches to waste management, recycling and disposal have created a complex structure of regulations, fees and policies. Industry has identified this as a source of uncertainty, and suggested that it leads to increased administrative costs for government and compliance costs for business. Policy fragmentation across Commonwealth, state and territory jurisdictions also reduces the potential for economies of scale in companies with multi-jurisdictional operations below that which would be available under a truly seamless national economy.

The challenge for policymakers is, therefore, to secure, and if possible extend, the gains from closer alignment and consistency of jurisdictional regulation and approaches. Given that this needs to occur within a framework that is essentially cooperative in nature and recognising the Constitutional rights of State, Territory and Commonwealth governments.

Consultations during the development of the national waste policy indicate that the main areas where jurisdictional inconsistencies are seen to impose a regulatory burden on industry — creating uncertainty and imposing additional compliance costs (Australian Information Industry Association 2009; Plastics and Chemicals Industry Association 2009; Transpacific Industries 2009) are:

- definitions and classifications of waste; and
- data and reporting requirements.

### *Definitions and classifications of waste*

To facilitate and guide the effective regulation of waste management in their jurisdictions, each state and territory government provides:

- a definition of what constitutes a 'waste'; and
- a classification framework that differentiates waste based on certain characteristics.

Although most jurisdictions' main definitions of what constitutes a waste are similar, no two jurisdictions employ the same definition. Waste is typically defined as 'a product or substance that has no further use or value for the person or organisation that owns it, and which is, or will be, discarded'. But what is discarded by one party may have value for another. Thus, a broad approach to defining 'waste' can include products that are recoverable by others (Productivity Commission 2006). However, notable exceptions to this general definition include:

- the Queensland definition of waste 'does not include material that is deemed to have a beneficial re-use, such as that intended for recycling' (Productivity Commission 2006); and
- the Western Australian definition is sufficiently broad to include any matter 'whether useful or useless, which is discharged into the environment' (*Waste Avoidance and Resource Recovery Act 2007*).

Greater variation is evident in how state and territory governments classify waste. Some jurisdictions classify waste based on the source of the waste (e.g. municipal, commercial and industrial, and construction and demolition) or on the physical properties of the waste (e.g. inert, solid, and putrescible). All States and Territories have a separate classification for hazardous waste, though the terminology differs across the jurisdictions ('hazardous' in the Australian Capital Territory, New South Wales, and the Northern Territory; 'controlled' in Tasmania and Western Australia; 'regulated' in Queensland; 'listed' in South Australia; and 'prescribed industrial waste' in Victoria).

Inconsistencies also exist in the meaning of classifications across the States and Territories. Such variation can be relatively minor as in the case of municipal solid waste. However, other classifications are seen to have 'widely inconsistent' meanings across jurisdictions. As one stakeholder submission to the national waste policy notes 'what one state defines as a waste type may be completely different in another state or territory. This applies to hazardous, contaminated (regulated), inert, construction & demolition and putrescible waste' (Transpacific Industries 2009).

Industry stakeholders highlight hazardous waste in particular as a classification that is inconsistently defined across the States and Territories. As the Productivity Commission noted in its 2006 report:

> There are ... a number of wastes that are classified as hazardous in some jurisdictions but not in others. For example, fly ash is listed as a hazardous waste in Victoria, Queensland and Western Australia. It is not a hazardous waste in South Australia. In most jurisdictions, whole used tyres are hazardous wastes and cannot be landfilled, but are not hazardous if they are shredded.

Biohazardous waste is also seen as a classification that is inconsistently defined (Waste Management Association of Australia 2009). According to the Biohazard Waste Industry (2009), the primary difference in the various definitions of biohazardous waste 'is in the classification of "blood contamination".

Table 2.1

**COMPARISON OF JURISDICTIONAL DEFINITIONS OF WASTE CLASSIFICATIONS**

| Jurisdiction | Waste Classification | Classes of waste types (not limited to) |
|---|---|---|
| ACT | Inert | Building and demolition wastes, tyres, office wastes |
| | Solid | Municipal waste, biosolids |
| | Industrial | Stabilised asbestos |
| | Hazardous | Assessed as dangerous goods |
| NSW | General solid waste (putrescible) | 8 classes |
| | General solid waste (non-putrescible) | 22 classes |
| | Restricted solid waste | None to date |
| | Special waste | 3 classes: clinical wastes, asbestos and waste tyres |
| | Hazardous | 6 classes |
| NT | Domestic garbage | Waste generated from household sources |
| | Putrescible waste | Organic wastes |
| | Clinical waste | Sharps, laboratory waste |
| | Hazardous waste | Includes medical and radioactive wastes |
| Qld | General waste | Putrescible and inert waste |
| | Regulated waste | Oils, tyres, clinical waste, asbestos, batteries, abattoir effluent and lead |
| SA | Municipal solid waste | Waste from domestic sources |
| | Commercial & industrial (listed & general) | General C&I waste is the solid component of waste from commercial and industrial sources. Listed C&I waste contains some listed wastes. |
| | Construction & demolition (inert & mixed) | Inert C&D waste is the solid inert component from construction and demolition. Mixed C&D waste contains some foreign material such as organics, timber, electrical wiring or plastics |
| Tas | Municipal | Domestic and council waste |
| | Commercial & industrial | Solid waste from commercial and industrial sources |
| | Construction & demolition | Solid waste from construction and demolition activity |
| | Controlled waste | Asbestos, tyres, filter cake, fly ash |
| Vic | Municipal wastes | Waste from domestic sources |
| | Solid industrial wastes | Waste from commercial sources, includes construction and demolition wastes. |
| | Prescribed industrial wastes | Contaminated soils, grease trap waste, asbestos, tyres |
| WA | Municipal | Municipal and public drop off waste |
| | Commercial & industrial | Waste generated from industry sources, including engineering, mining and automotive sector |
| | Construction & demolition | Building and demolition wastes |

Source: based on Hyder Consulting 2009b

### *Impact of inconsistencies in waste definitions and classifications*

Inconsistencies in jurisdictional approaches by themselves are not a problem. They become a problem when they start to impose a regulatory burden on companies that affects their operating practices.

It does appear that, as the Productivity Commission concluded in its 2006 report, inconsistencies in how the States and Territories define and classify waste 'lead[s] to ambiguity and confusion, and raise[s] the compliance costs of firms operating in more than one jurisdiction.' The Cement Industry Federation (2009) supported this view in its submission to the consultation paper of the proposed National Waste Policy:

> In particular, State approaches vary to defining, classifying and regulating wastes. This leads to increased ambiguity and confusion, and forms barriers to progressing innovative initiatives for end use.

The waste management services industry stakeholder Transpacific Industries (2009) lists 'inconsistent waste classification between States' as one of the most 'common barriers to most cost effective and environmentally beneficial waste management practices.' There would appear to be broad agreement that the one area where inconsistencies in definition and classifications impact on resource recovery and the effective operation of waste companies is hazardous waste.

Box 2.1 provides some examples of how inconsistencies in definitions and classifications can adversely impact the operations of companies involved in the collection and disposal of biohazardous waste.

Research by Hyder Consulting (2009b) indicates that in general the inconsistencies do not have a significant impact on companies as these are directly managed by their waste and recycling contractors. Most of the 31 respondents to Hyder's survey, advocated the harmonisation of waste classification and definitions, highlighting the need to address inconsistent classifications and definitions in order to reduce confusion and inefficiency.

Greater consistency could support the development of a comprehensive national picture on resource recovery and waste management which in turn would enable decision-makers to identify synergies, future opportunities and emerging issues.

Box 2.1

**BIOHAZARDOUS WASTE CLASSIFICATIONS IMPACT**

**Example One**

A healthcare provider that operates in two or more jurisdictions has to develop separate waste management strategies, staff training programs and quality assurance programs for facilities in each jurisdiction.

There are approximately 290 private hospitals in Australia. Of these, Ramsay Healthcare operates 63 in 5 States; St John of God operates 14 in 3 States and Healthscope operates 43 in all States and Territories. This data does not include the operation of medical clinics, pathology services and diagnostic services – all of which generate biohazard waste.

These organisations have a variety of strategies for dealing with the different definitions. Recognising that they must be in compliance with regulatory requirements, they either:

- Develop specific waste management strategies for each State/Territory; or
- Develop one strategy that will ensure all requirements are met.

When coupled with training activities, these organisations have indicated that their resources and costs are increased simply due to the inconsistency of definitions.

**Example Two**

A waste management company can treat a specific type of waste with a treatment technology in one jurisdiction, but in another jurisdiction is not allowed to treat the same waste with an identical treatment technology. An example is pharmaceutical wastes.

**Example Three**

Applicants wishing to establish treatment facilities are requested to undertake differing testing regimes (e.g. levels of microbiological inactivation and efficacy), for the same technology for the same waste materials in different jurisdictions.

As an example, an applicant for a treatment technology in NSW is required to conduct efficacy testing for Creutzfeldt Jakob Disease. This is expensive and the need debatable. No other jurisdiction including NSW has requested this of any treatment technology.

Source: (Biohazard Waste Industry 2009)

### *Data and reporting requirements*

Most state and territory governments collect data about waste and its management in their jurisdictions to measure the performance of waste management policies and maintain community health and safety (particularly with regard to hazardous waste).

The 'collection of waste data varies amongst the jurisdictions and is often dependent on which waste type is being measured.' (Hyder Consulting 2009b) There are three key differences in data collection.

- *Type of data collected* — States and Territories collect data about the movement of hazardous waste but only five jurisdictions (New South Wales, Northern Territory, Tasmania, Victoria and Western Australia) collect data about the volume of general waste disposal and recycling.

- *Method of collection* — five jurisdictions (New South Wales, Queensland, South Australia, Tasmania and Victoria) collect data about the movement of hazardous waste through a tracking system (which can be online, paper-based, or both), while the Northern Territory and Western Australia rely on annual surveys. Data about the volume of general waste disposal and recycling, meanwhile, is collected through either mandatory reports (monthly or annual) or surveys (either of waste facilities or local governments).
- *Definitions and coding* — inconsistencies exist in the definition and classifications of waste across the States and Territories (see the above section), which affects how data is reported and interpreted. This includes different 'interpretations of what is "recycled"' (measuring either 'the amount of material in the gate' or 'the amount of recycled product produced'). Likewise, most waste tracking systems use codes to designate the type and origin of waste being transported. With the exception of Western Australia, most jurisdictions have adopted similar waste codes but each jurisdiction has its own set of waste origin codes (Transpacific Industries 2009).

### *Impact of inconsistencies in data and reporting requirements*

Consultations on the National Waste Policy indicated that inconsistencies in data and reporting requirements – primarily regarding the movement of hazardous waste –impose compliance costs on waste management companies that operate across multiple jurisdictions. For instance, Transpacific Industries (2009) note that:

> For nationwide waste operators such as Transpacific, widely different tracking requirements in each State present nearly insurmountable difficulties especially in adaptation of a single IT solution that would service all States generating all required data and fulfilling all diverse State requirements

and

> The differences in consignment authorisation application and tracking requirements impost significant documentation burden on businesses servicing customers who require regular collection and transportation of controlled wastes across jurisdictional borders. In a number of cities and towns situated along state borders the most logical, and often most environmentally responsible, disposal location from controlled wastes generated in large volumes, and requiring regular servicing, can be located in another State or Territory.

Likewise, resource recovery and waste management industry stakeholders surveyed by Hyder Consulting (2009b) were of the view that differing reporting requirements across jurisdictions 'is inefficient and creates duplication.' These respondents also 'reported difficulties associated with inconsistent conversion factors and measurement units which can make waste tracking and national level company data analysis difficult.'

## 2.2 Market impediments

Improved use of resources embodied in 'waste' in Australia is seen as an area of potential.

According to the Australian Council of Recyclers and the Boomerang Alliance (2009), approximately $1.7 billion of waste material is disposed in landfill each year that could have been recycled. While all materials will eventually reach the end of their useful or economic life, it is a cost to society when this occurs prematurely, and a net benefit can still be derived by re-directing 'waste' products back into the 'resource' stream.

In their submissions on the national waste policy stakeholders expressed concern that the inconsistencies and lack of co-ordination in the current policy and regulatory framework is hindering the resource recovery and waste management industry from reaching its full potential.

These two issues will be discussed in turn below.

### *Inconsistencies*

A number of stakeholders contended that inconsistencies between the policy and regulatory approaches of the state and territory governments are hindering the development of markets for waste.

The Cement Industry Federation (2009), for example, noted that the Australian cement manufacturing industry has not been able to match the 'significant achievements in the use of alternative resources' demonstrated by Europe and Japan due in part to:

> outdated and inconsistent waste and recycling legislation within State and Federal jurisdiction which results in regulatory uncertainty or disincentives to drive progress supporting resource recovery. In particular, State approaches vary to defining, classifying and regulating wastes. This leads to increased ambiguity and confusion, and forms barriers to progressing innovative initiatives for end use.

According to Engineers Australia (2009), 'national consistency [in waste policy] would help to grow scale in these markets [for recycling materials], including those intended for export.' The Australian Industry Group (2009), likewise, contends that:

> There are clearly opportunities to better harmonise practice at every level – from policy objectives such as waste targets, through to important technical details such as the conversion factors applied in calculating waste data. An effective national waste policy could potentially unlock important economic and environmental gains for Australia, and contribute to a seamless national economy.

The Australian Industry Group (2009) provided specific information about battery recycling:

> licensing requirements differ between States, with varying thresholds for the absolute or annual mass of batteries that a business can store or receive before a licence is required. Confusing and restrictive, these arrangements deter effective collection and recycling.

### *Lack of coordination*

Many stakeholders suggested that a lack of coordination in waste management policy is hindering the market for waste in Australia. As the Australian Council of Recyclers and the Boomerang Alliance (2009) state:

> To date there has been a fragmented response to waste policy issues by Australian governments, and differing levels of service delivery amongst almost 700 local government authorities, varying targets and regulation amongst states and territories and no current national coordinating strategy... This lack of coordination directly undermines opportunities to maximise resource recovery and improve the resource efficiency of Australian society as a whole. A new approach is needed to consolidate gains made to date and to further accelerate progress in resource recovery and resource efficiency.

Greater coordination – on a national basis – is thus seen as necessary to ensure that the waste management industry can reach its potential. As the Waste Management Association of Australia (2009) notes, 'creating demand and sustaining markets for recycled products and materials can only be done efficiently and consistently at the national level.' Similarly, the Alex Fraser Group (2009) contends that construction and demolition waste 'is a major – yet mostly unnecessary – contributor to landfill activity' due to the absence of national waste segregation standards.

> The lack of regulatory guidance of proper segregation of waste on site at the time of demolition allows developers to demand the wholesale building demolition that reduces or in some ways eliminates the ability to recover successfully easily recoverable waste streams and ensures that the waste materials are consigned to either legal or illegal landfill sites.

## 2.3 Lack of coordinated policy response

In the absence of national agreement, state and local governments are developing their own responses to resource recovery and waste management issues, leading to a degree of fragmentation across state and territory policy settings for waste (see Table 2.3). While national co-ordination is not always necessary, in some cases a national response is more appropriate in meeting community objectives. Industry submissions highlight the potential for ongoing and increased costs from continuing and increasing fragmentation in policies, with particular emphasis on problems of lack of co-ordination on product stewardship.

Table 2.2

**WASTE MANAGEMENT AND RESOURCE RECOVERY MEASURES IN AUSTRALIA**

| | Landfill levy | Banned from landfill | Product stewardship | Waste and recycling targets | Waste management strategy | Residential hazardous waste collection |
|---|---|---|---|---|---|---|
| **ACT** | Yes | Computers | No | Yes | Yes | No |
| **NT** | No | No | Beverage containers planned | Yes | Under development | No |
| **NSW** | Yes | No (some local bans) | Legislation allows for Extended Producer Responsibility | Yes | Yes | Yes |
| **QLD** | No | Limits on the number of new landfills | No | Under consideration | Under development | No |
| **SA** | Yes | Considering a ban on range of materials to landfill (some local bans) | Beverage containers | Yes | Yes | Yes |
| **TAS** | No | Tyres and untreated clinical waste; waste approval required from 30 June 2009 | No | Considering waste reduction goals and targets | Under development | No |
| **VIC** | Yes | Automotive tyres, whole batteries, *inter alia* | Batteries, computers and paint | Yes | Yes | Yes |
| **WA** | Yes | No | Legislation allows for Extended Producer Responsibility | Yes | Yes | Yes |

Source: Adapted from DEWHA, 2009a, p. 14.

### *Product Stewardship / Extended Producer Responsibility*

The past decade has seen growing interest by governments, business and the community in the concepts of product stewardship and Extended Producer Responsibility (EPR). Both of these approaches seek to shift waste management away from a focus on waste disposal to also include waste avoidance and resource recovery.

EPR is most commonly defined as 'an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle' (Organisation for Economic Co-operation and Development 2009). There is no widely accepted definition for product stewardship. According to the Productivity Commission (2006), 'one of the more useful definitions' is provided by the Environment Protection and Heritage Council (2004):

> An approach which recognises shared responsibility for the environmental impacts of a product throughout its full life cycle, including end of life [several egs of 'end-of-life' not used as an adjective were globally replaced with 'end of life'] management, and seeks to reduce adverse impacts and internalise unavoidable costs within the product price, through action at the point(s) in the supply chain where this can be most effectively and efficiently achieved.

### *Current policy arrangements*

A number of state and territory governments have already 'adopted generic policies that could be used to underpin co-regulation or government regulation for specific PS/ EPR schemes' (Productivity Commission 2006). Three jurisdictions (Victoria, Queensland and Tasmania) have outlined a voluntary approach to product stewardship in their respective waste policies. Victoria has legislation to allow for a price-based ban on lightweight plastic bags (i.e. bags cannot be provided free) and the ACT is assessing a similar approach.

The New South Wales government has introduced legislative provisions for extended producer responsibility in Part 4 of the *Waste Avoidance and Resource Recovery Act 2001*. This Act requires the Director-General of the Department of Environment and Climate Change (2007) 'to publish an annual priority statement on EPR schemes that the Director-General proposes to recommend for implementation under the Act.' In the most recent of these, the Department of Environment and Climate Change (2007) retained its focus on 17 'wastes of concern' that were highlighted in previous statements, and has given notice that lightweight plastic bags, tyres, TVs and computers 'could require regulations relating to producer responsibility schemes to be initiated in NSW in the coming 12 months'.

In Western Australia, the *Waste Avoidance and Resource Recovery Act 2007* includes provisions relating to both product stewardship and EPR schemes. Similar to the New South Wales legislation, this Act requires the Department of Environment and Conservation (2009) to release an annual priority statement outlining 'areas where the development of EPR schemes is considered necessary to reduce problem wastes.' No such priority statement has yet been released.

To date, the New South Wales and Western Australian governments have applied their generic product stewardship/EPR policies in a limited manner. These States are awaiting the outcomes of the National Waste Policy before determining whether to institute their own regulatory arrangements.

Australian governments collaborate on waste management policies through the Environment Protection and Heritage Council. A key focus has been product stewardship with TVs and computers identified as a priority in 1998.

### *Industry desire for national consistency*

Industry and local government stakeholders expressed concerns about jurisdictional approaches to product stewardship schemes in their submissions on the national waste policy. In these comments, stakeholders maintained that a national approach to EPR/product stewardship would be 'more effective' than, and thus preferable to, a fragmented, go-it-alone approach driven by the states and territories (Plastics and Chemicals Industry Association 2009). Three primary reasons are offered for the perceived effectiveness of a national approach to EPR/product stewardship.

First, stakeholders believed that inconsistencies between jurisdictional product stewardship/EPR schemes would hinder the development of markets dedicated to recycling/recovering targeted products. As Revive Recycling (2009) states,

> ... national approaches provide the necessary economies of scale, a sharing of cost burdens between different products covered by EPR (and hence a reduction in costs over alternative approaches) and the opportunity to invest in the necessary reprocessing infrastructure and market development (where needed).
>
> In the absence of the necessary economies of scale, 'optimum environmental outcomes' are unlikely to occur (Waste Management Association of Australia 2009).

Second, inconsistencies between different jurisdictional product stewardship/EPR schemes could impose additional administrative and compliance costs on industry. As the Australian Local Government Association (2009) states,

> One of the key outcomes of a [NWP] should be the development of an effective [EPR] and Product Stewardship framework at the national level. This is particularly important in diverse national markets where individual state-based approaches would add costs, restrict competition and contribute to distortions in the allocation of resources in the economy.

Particular elements of multi-jurisdictional product stewardship/EPR schemes that could potentially impose a greater regulatory burden on industry than a national scheme include:

- *reporting requirements* — under multi-jurisdictional schemes, industry would be required to meet the reporting requirements of each participating state and territory, and navigate, in turn, the different definitions and classifications of each jurisdiction; and
- *potential for levy avoidance* — if a levy is involved, producers in jurisdictions without a product stewardship/EPR scheme could avoid payment of levies imposed on producers in jurisdictions with a product stewardship/EPR scheme, leading to a distortion in the market.

Third, multiple product stewardship schemes are likely to confuse consumers and decrease the volume of products that would be captured. As a result, the cost burden of the end-of-life management of these products would continue to be placed on the community at large.

## 2.4 International obligations for waste (including hazardous waste), chemicals and emissions

It is the responsibility of the Commonwealth Government to ensure Australia complies with the obligations inherent in conventions and protocols ratified by Australia. The Commonwealth therefore has responsibilities that intersect with the state and territory management of waste. A degree of co-ordination can be beneficial.

Australia is party to a number of international treaties governing wastes and hazardous materials and chemicals, as well as synthetic and other greenhouse gases. These include:

- Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal;
- Stockholm Convention on Persistent Organic Pollutants;
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade;
- Montreal Protocol on Substances that deplete the Ozone Layer (protocol to the Vienna Convention for the Protection of the Ozone Layer); and
- Kyoto Protocol (protocol to the United Nations Framework Convention on Climate Change).

The **Basel Convention** regulates the movement of hazardous and other wastes across international boundaries, and requires that such wastes are managed and disposed of in an environmentally sound manner. It also places certain obligations on Parties to ensure that hazardous and other wastes are appropriately managed within their own borders.

The **Stockholm Convention** on Persistent Organic Pollutants was implemented to protect human health and the environment from persistent organic pollutants (POPs) that remain intact in the environment for long periods, become widely distributed, accumulate in the food chain, and pose a risk even at low concentrations. The Stockholm Convention requires Parties to eliminate or reduce the release of POPs into the environment, including from stockpiles and wastes (Stockholm Convention 2001).

The **Rotterdam Convention** regulates the import, export and international trade of hazardous chemicals. The objectives of the Rotterdam Convention are to promote cooperative effort in the international trade of certain hazardous chemicals, and facilitate the environmentally sound use of hazardous chemicals through information exchange. The Rotterdam Convention requires that notification to export a listed substance be given by an exporting Party, in addition to obtaining consent from an importing Party.

The **Montreal Protocol** established a mechanism to phase-out global production and consumption of ozone depleting substances (ODS), including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). Australia has met or will exceed all phase-out obligations, and will essentially complete the phase-out of HCFCs four years ahead of schedule, in 2016 (Department of the Environment, Water, Heritage and the Arts 2009a).

The **Kyoto Protocol** manages the global response to climate change and limits total emissions of the six covered gases: carbon dioxide, methane, nitrous oxide; hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. The last three gases are known as synthetic greenhouse gases, and can commonly arise in industrial processes and applications, and the disposal of specialised electrical equipment and refrigeration appliances.

### *Hazardous wastes and chemicals*

Australia meets its obligations under the Basel Convention for the export and import of hazardous materials within the waste stream under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. The Act also addresses some aspects of the management of the domestic production, disposal and management of hazardous and other wastes covered by the Convention, but domestic management issues remain primarily the responsibility of state and territory governments. Consumer products (including certain TVs, computers, mobile phones, batteries, and fluorescent lamps) contain hazardous substances, as defined under the Basel Convention. At present, there is no national definition of hazardous materials (see Section 2.2), nor is there national legislation to govern the management of these types of wastes within Australia.

Obligations under the Stockholm Convention are met by Australia's National Implementation Plan (NIP), which outlines the actions already undertaken to reduce the presence of POPs, future actions to meet obligations and the roles and responsibilities of all Australian governments, the Environment Protection and Heritage Council (EPHC) and other ministerial councils in the management of chemicals in Australia (Department of the Environment Water Heritage and the Arts 2009b).The Stockholm Convention originally included 12 POPs. Australia has banned the production and import of ten of these, with controls on the remaining two (dioxins and furans) predominantly being implemented through state and territory legislation.

In May 2009, international agreement was reached to add nine chemicals to the Convention with the treaty amendment yet to take effect in Australia. Of the nine chemicals, six are already controlled in Australia. Acceptance of the treaty action in Australia would include obligations in relation to the remaining three as well as wastes containing any of the listed chemicals.

The National Strategy for the Management of Scheduled Waste governs the use of eight of the original 12 POPs and four of the nine additional chemicals.

### *Ozone depleting substances and greenhouse gases*

Australia fulfils its obligations under the Montreal Protocol and, for SGG hydrofluorocarbons and perfluorocarbons, under the Kyoto Protocol, through the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*. The Act controls the manufacture, import, export, and end-use. It is mandatory for the refrigeration and air conditioning industry to recover and dispose of ODS and SGG refrigerants. Since 2004 importers of refrigerant and air conditioning equipment must be licensed and manage their product at end of life. This condition has been met by membership of the national product stewardship scheme, Refrigerant Reclaim Australia (RRA) which is the vehicle for recovery and destruction of waste refrigerant. The scheme is funded by a per kilogram levy, imposed by RRA, on all importers of ODS and SGG (Refrigerant Reclaim Australia 2009). Around 31 per cent of ODS and SGG is recovered from refrigeration and air conditioning equipment at end of life (Energy Strategies 2006).

### *Impact of international obligations on the management of hazardous waste, chemicals and other substance*

Australia has a good record of compliance under international conventions on hazardous waste and chemicals. There is now considerable international activity concerning the effective management of hazardous substances, some of which are contained in everyday consumer products. Action to meet forthcoming obligations under the Stockholm Convention and the proposal for a Legally Binding Instrument on Mercury will provide considerable challenges to jurisdictions. The lack of reliable and robust data on the transport, management and disposal of hazardous waste and chemicals, particularly within jurisdictions and the absence of comparable classification systems (see section 2.5) adds to the challenges of instituting new management strategies.

*Chapter 3*

# Objectives of government action, and options to address the problem

Prior to assessing options to address the identified problems, it is important to establish the objective of government action. The objective should be independent of any individual solution, and be sufficiently broad to allow consideration of a range of alternative solutions.

The problems identified in Chapter 2 of this RIS are problems relating to:

- the efficiency of regulation of the resource recovery and waste management sectors;
- market impediments to the sectors operating efficiently; and
- the need for Australia to meet its international obligations concerning waste (including hazardous waste) and chemicals.

Given these problems, the objective of government action is more efficient and effective arrangements for resource recovery and waste management.

Any government action, however, must also be consistent with government policy and regulatory objectives for resource recovery and waste management, including to:

- position these sectors to efficiently and effectively respond to future risks and challenges;
- reduce the amount of waste disposed;
- reduce the amount of hazardous waste; and
- reduce greenhouse gas emissions associated with resource recovery and landfills.

## 3.1 Options for addressing the problem

As part of the RIS process, it is necessary to describe and consider the different options that can be used to achieve the stated objective. OBPR and COAG best practice guidelines require that the options considered represent the spectrum of regulatory approaches — including explicit regulation, co-regulation and non-regulatory approaches. This RIS considers three options for achieving the stated objective. These are:

- business-as-usual jurisdictional policy settings;
- unco-ordinated future resource recovery and waste policy action; and
- the National Waste Policy in place.

### 3.2 The Base Case — business-as-usual jurisdictional policy settings

This case assumes that the current mix of jurisdictional policies and programs for resource recovery and waste management continue as at present settings to 2020. Only actions already commenced or legislated to commence will be considered as part of this case.

Key elements of this scenario are:

- current legislation remains in place along with any changes legislated to commence;
- there is an assumed trajectory of future waste generation (based on past trends and anticipated changes);
- the current mix of jurisdictional waste targets remains unchanged;
- the current investment in waste education, awareness raising and behaviour change initiatives is maintained;
- current institutional roles and responsibilities for resource recovery and waste management remain unchanged;
- Queensland continues its policy of no landfill levy;
- New South Wales and Victoria continue with regionalisation of waste contracting, commissioning Alternative Waste Treatment facilities and increasing methane capture from landfill;
- South Australia continues with its policies of active diversion, landfill bans and expanding the coverage of its Container Deposit Legislation (CDL);
- a CPRS driven carbon price is in place (impacting on relative production costs, input prices of resource recovery and landfill operations and the commercial incentives for methane management in the waste sector — noting the specific timing and coverage of the approach proposed for waste sector (landfill) emissions under the CPRS);
- community participation in recycling and resource recovery remains static; and
- it is assumed that inter-jurisdictional stewardship arrangements will be implemented for five additional products within the 20-year time horizon considered in the cost-benefit analysis.

### 3.3 Policy Option One — Unco-ordinated future waste policy action

This option depicts greater independence and disparity in jurisdictional policy setting (i.e. a fragmented approach).

This counterfactual case assumes that, in the absence of national leadership on the avoidance, minimisation, management, and disposal of waste, as well as resource recovery and recycling, States and Territories adopt a range of approaches to achieve the same or similar objectives.

Specifically, under this option there would be unilateral, State-based approaches to issues such as product stewardship (eg. for computers, televisions and tyres), waste classification, hazardous waste, business regulations and licensing, reporting, practice and product standards, and market development for recovered resources. Different approaches to methane management are also in prospect. The implications for business and administrative costs, and efficiency and inter-jurisdictional environmental outcomes, would be examined.

Under this option, State-based approaches to product stewardship will lead to multiple schemes for the same product class or material and cover more products and materials than a national product stewardship approach because of different criteria. The analysis models the administrative burden of five to ten new schemes (that is, up to an additional five inter-jurisdictional schemes beyond that represented in the base case). These schemes are likely to be based on the four priority wastes identified by NSW (TVs, computers, tyres, lightweight plastic bags), separate schemes for TVs and computers for Western Australia, TVs, computers and tyres for Victoria, and mercury-containing lamps and lead acid batteries in South Australia (to align with the EPA Draft Environment Protection (Waste to Resources) Policy).

State and territories will continue to review and update waste classifications on the basis of the need to integrate with other related state and territory strategic policies. The divergence with classification systems in other jurisdictions continues to increase.

Hazardous wastes are managed by state and territory policies with interstate transport and disposal based on bilateral agreements.

Under this option, States and Territories continue to independently develop their own reporting requirements tailored to their specific jurisdictional issues such as conditions, distances, population and infrastructure. The reliance on voluntary surveys continues with their attendant issues of confidentiality, lack of independent verification and incompleteness (Netbalance 2009). Reporting obligations under the National Greenhouse and Energy Reporting Scheme and the National Pollutant Inventory are an additional impost on business because of the lack of shared data points, and their independence from other reporting requirements.

Market development for resource recovery, particularly to address future carbon liability takes place in an uncoordinated manner with different planning, operational, contractual and risk sharing arrangements.

## 3.4 Policy Option Two — National Waste Policy in place

This option reflects the influence of the National Waste Policy (co-ordinated approach).

### *National Waste Policy*

In November 2008, the Minister for the Environment, Heritage and the Arts, the Hon Peter Garrett MP, announced that the Australian Government, in collaboration with state and territory governments and the Australian Local Government Association (ALGA), would develop a National Waste Policy (Garrett 2008). This policy will seek to:

- facilitate collaboration and harmonisation in waste policy across all Australian jurisdictions;
- ensure that Australia has the right mix of incentives and regulation to provide environmental, social and economic benefits to the Australian community; and
- complement action to deliver emission reductions, reduce energy and water use, support jobs and invest in future long term economic growth (Waste Policy Taskforce 2009).

In April 2009, a consultation paper was released by the Department of the Environment, Water, Heritage and the Arts (DEWHA) and 143 submissions were received. In July 2009, the Environment Protection and Heritage Council endorsed the release by DEWHA of a *Draft National Waste Policy Framework*. The National Waste Policy has been developed, reflecting comments on the draft framework and incorporating the results of state and territory consultations. The scope of Policy Option Two encompasses the suite of aims, principles, priorities and strategies as defined in the National Waste Policy (including the national product stewardship framework). 0 outlines the aims, guiding principles, directions and strategies of the National Waste Policy.

As for Policy Option One, implications for business and administrative costs, and efficiency and inter-jurisdictional environmental outcomes will be examined.

Box 3.4

**DRAFT NATIONAL WASTE POLICY FRAMEWORK**

**Aims**

The aims of the National Waste Policy will be to:

- avoid the generation of waste, reduce the amount of waste (including hazardous waste) for disposal, manage waste as a resource and ensure that waste treatment, disposal, recovery and re-use is undertaken in a safe, scientific and environmentally sound manner, and
- contribute to the reduction in greenhouse gas emissions, energy conservation and production, water efficiency, and the productivity of the land.

**Principles to guide our actions**

The key principles that underpin Less waste, more resources are:

- management of all wastes, including hazardous wastes, in line with Australia's international obligations
- environmentally responsible management of waste to reduce greenhouse gas emissions and contribute to broader sustainability outcomes
- holistic approaches which address market, regulatory and governance failures, duplications and inconsistencies
- participants in the product supply and consumption chain, rather than the general community, bear responsibility for the costs of resource recovery and waste management
- evidence-based decisions informed by the waste management hierarchy of actions and the principles of ecologically sustainable development, including the precautionary approach and the principle of intergenerational equity
- the environmentally sound management of materials, products and services embracing whole-of-life cycle strategies and quality assurance practices
- avoidance or minimisation of hazardous and other waste generation, taking account of social, technological and economic factors
- minimisation of intergenerational legacy issues through understanding and management of the risks
- regular provision of nationally consistent and comprehensive data on waste and re-use of materials to assess performance and inform policy
- consideration of overall community benefits taking account of social, environmental and economic outcomes for any measures, whether voluntary or regulatory
- implementation of policy by the appropriate level of government, industry or the community.

**Outcome: Less waste, more resources by 2020**

Where we want to be in 2020:

1. Australia manages waste, including hazardous waste, in an environmentally safe, scientific and sound manner, and has reduced the amount per capita of waste disposed.
2. Waste streams are routinely managed as a resource to achieve better environmental, social and economic outcomes, including saving water, energy, greenhouse gas emissions and finite resources, and to increase productivity of the land.
3. Australia has increased the amount of products, goods and materials that can be readily and safely used for other purposes at end-of-life.
4. Opportunities to safely manage, reduce and recycle waste are available to all Australians, including approaches that have been tailored to meet the needs of remote and rural communities.
5. The risks associated with waste and hazardous substances are understood and managed to minimise current and intergenerational legacy issues.
    - Australia manages its products, materials and chemicals that contain potentially hazardous substances, in particular those that are persistent, bio-accumulative and toxic, consistent with its international obligations and using best available evidence, techniques and technologies.
    - Local stockpiling of hazardous waste has been significantly reduced, particularly for rural and remote areas.
    - There are consistent and clear requirements for disposal of hazardous material, and for content labelling of manufactured goods, that also provide a level playing field for Australian manufacturers and importers and informs consumers.

6. The interaction of regulatory frameworks and operational processes across government agencies aligns with world's best practice and facilitates waste avoidance, resource recovery and appropriate end-of-life management arrangements within their own operations as well as by business and the community.
7. There are efficient and effective Australian markets for waste and recovered resources, and local technology and innovation are sought after internationally.
   - Businesses, including those in manufacturing and the supply chain, embrace innovations that support the creation of value from potential waste streams and minimise their environmental footprint.
   - As part of a seamless national economy, there is a consistent and coherent regulatory environment that facilitates business activity in resource recovery and waste management.
8. Governments, industry and the community have embraced product stewardship and extended producer responsibility approaches.
   - Product stewardship and extended producer responsibility is adopted in business operations, leading to improvements in the design, longevity and disassembly of products, a reduction in hazardous content, less waste, and more thoughtful consumer choices.

**Directions**

To achieve these outcomes, the policy sets six key directions and identifies 16 priority strategies that would benefit from a national or coordinated approach. These strategies will give focus to the work across individual jurisdictions, build on current directions and complement existing activity. This will also lead to clarity and certainty for business and the community. The strategies will be delivered by action at a national level through collaboration, or be led by one or more jurisdictions. These are described below with further detail in Appendix A.

The six key areas are:

1. Taking responsibility—Shared responsibility for reducing the environmental, health and safety footprint of products and materials across the manufacture-supply-consumption chain and at end of life.
2. Improving the market—Efficient and effective Australian markets operate for waste and recovered resources, with local technology and innovation being sought after internationally.
3. Pursuing sustainability—Less waste and improved use of waste to achieve broader environmental, social and economic benefits.
4. Reducing hazard and risk—Reduction of potentially hazardous content of wastes with consistent, safe and accountable waste recovery, handling and disposal.
5. Tailoring solutions—Increased capacity in regional, remote and Indigenous communities to manage waste and recover and re-use resources.
6. Providing the evidence—Access by decision makers to meaningful, accurate and current national waste and resource recovery data and information, in order to measure progress and educate and inform the behaviour and the choices of the community.

*Chapter 4*

# Impact analysis

*This chapter assesses the costs and benefits of the options set out in Chapter 4, compared with the 'base case' option of no change in the current approach – the continuation of State-based resource recovery and waste management policies and current COAG arrangements for consultation on and co-ordinating resource recovery and waste policy matters among jurisdictions. The focus of these costs and benefits is on the impact of a more structurally coordinated approach on future resource recovery and waste policies and measures to be implemented at a national and jurisdictional level across Australia.*

The focus of this regulation impact assessment is at a high policy level — essentially, the merits of a national approach to development and implementation of resource recovery and waste management policy making in Australia (compared with a unilateral approach by various jurisdictions).

Though resource recovery and waste management are not covered explicitly, paragraph 6 of the National Partnership Agreement to Deliver a Seamless National Economy highlights the desire of all governments to remove unnecessary costs within the economy and promote efficient resource use and decision making:

> The COAG reform agenda is intended to deliver more consistent regulation across jurisdictions and address unnecessary or poorly designed regulation, to reduce excessive compliance costs on business, restrictions on competition and distortions in the allocation of resources in the economy. (COAG 2009)

The National Waste Policy is being developed in the spirit of these aims and principles.

## 4.1 Framework for assessing costs and benefits of options

The key difference between options is national commitment and direction versus unilateral actions by State and Territories.

The implementation of a National Waste Policy will involve a commitment by all governments to further their waste policy objectives, and their development and application of waste regulations, in a nationally coordinated way.

A national approach to resource recovery and waste policy setting and implementation offers benefits in several dimensions, though some are difficult to accurately quantify. A national approach can unlock future benefits — recognising that the design and detail of strategies and actions agreed within that framework will drive future value, cost savings and economy-wide efficiency gains.

Key areas of benefit being targeted (representing potential benefit to Commonwealth and State governments and the private sector) relate to:

- reduced costs for government and business through better coordination and lower compliance costs of regulation;

- better and more efficient data collection;
- improved management and tracking of hazardous waste; and
- synergies and alignment with the CPRS.

## 4.2 Potential cost reductions and other benefits under a national approach

This regulation impact assessment examines the potential benefits from the adoption of a national policy approach to waste. As noted, the net benefit from implementation of a national framework will depend on the detailed actions that are developed within it and, where regulatory, these actions will be subject to their own regulation impact assessment,

In broad terms, it is unlikely that the direct cost of applying Policy Option Two (co-ordinated approach) will be markedly different from the cost associated with the current approach to Commonwealth-state arrangements for resource recovery and waste management, that is, the Business-As-Usual Case. The key factors that differentiate the policy options under examination are their productivity and the degree of cohesion that they are likely to engender as detailed elements of the future waste policy agenda are progressed.

National coordination of waste policy approaches has the potential to deliver a range of benefits to jurisdictions associated with reduced duplication of effort in planning and administration. Benefits in terms of better policy design and outcomes are also feasible through the pooling of ideas and program experience.

While it is possible to anticipate the issues and broad direction of future waste and resource recovery policy development, detail and timing are harder to predict. Nevertheless, recent experience provides some examples of the kinds of costs and benefits that might be linked to future waste policy proposals, and their social and economic significance.

### *Indicative benefits from a national product stewardship framework approach*

Analysis undertaken by PricewaterhouseCoopers (PwC) and Hyder Consulting Decision Regulation Impact Statement (2009) in the context of a proposed product stewardship program for end-of-life televisions and computers, provides some indication of the potential overhead savings associated with national versus jurisdictional approaches. PwC estimate that a national approach to a product stewardship scheme for televisions and computers stands to deliver a net (NPV) saving in government on-costs of around $29.4 million over twenty years at a seven per cent discount rate (key estimates from the PwC and Hyder Consulting analysis are provided in Appendix B). The savings result from reduced duplication of planning, administration and effort at the jurisdictional level.

Extrapolating from the analysis for televisions and computers on the basis of anticipated jurisdictional activity in the area of product stewardship provides an indicative estimate of the potential gains from a national approach.

Under 'base case' conditions, we assume that future waste policy is likely to see five additional products moved forward for product stewardship. Without pre-judging future assessment processes, likely candidates for product stewardship assessment include lead acid batteries, fluorescent lights, televisions and computers, and used tyres.

With this number of product stewardship schemes replicated under Policy Option Two (the coordinated approach) the potential savings are $147 million over twenty years at a seven per cent discount rate. This is based on a PwC estimate of savings in on-costs in the order of **$29.4m** (in PV terms) sourced from a recent Decision RIS for televisions and computers. This is the estimated saving to jurisdictions from coordinating their administrative efforts under a national approach. The estimate is relevant to other stewardship programs to the extent that they involve similar administrative costs.

Under Policy Option One (fragmented approach), up to an additional five products are moved forward for product stewardship obligations, and this occurs as co-regulatory arrangements in States and Territories. This is based on the assumption of separate schemes for computers and televisions in WA, Victoria and NSW (a total of six schemes), separate schemes for tyres in Victoria and NSW, and possible schemes for mercury-containing lamps and lead acid batteries in South Australia or other jurisdictions. The exact number of additional schemes that could potentially be implemented would depend on the outcome of a cost-benefit analysis — with only those schemes likely to deliver a net benefit, at least to their respective jurisdiction.

In the analysis undertaken here, fragmentation is expected to result in up to five extra products for stewardship, than in the base case (or under a coordinated approach). On the basis of the estimates provided, 1 extra product pursued as a result of greater policy fragmentation would cost (in PV terms) an extra $42.4m in on-cost terms plus the cost of the processing activity itself.

For computers and televisions, PwC have estimated processing to have a PV cost of over $780m over 20 years. Program costs would actually depend on the nature of products targeted by future stewardship arrangements. In an ideal world, all costs would be justified by the benefits of a properly designed and implemented scheme, but given practical uncertainties and despite best efforts this will not always be the case.

Nevertheless, accepting that up to an additional five products will move forward under a more fragmented approach, this implies an extra present value (PV) cost of up to $212m associated with this outcome — or relative to administrative costs under a national approach this represents an additional loss in terms of forgone administrative savings of up to **$147m** in PV terms over twenty years using a seven per cent discount rate.

Table 4.1

**PV COSTS FOR DIFFERENT PRODUCT STEWARDSHIP SCENARIOS**

| | Base case | Option 1 (fragmented) | Option 2 (national approach) |
|---|---|---|---|
| Products captured under stewardship regulation applied across jurisdictions | 5 | 5-10 | 5 |
| PV costs of design, implementation and administration per item | $42.4m | $42.4m | $13m |
| Total indicative PV costs | $212m | $212m - $414m | $65m |
| Saving relative to base case | - | 0 to -$212m | + $147m |

Source: PwC Computer RIS estimates (see PwC Table 5.2)

A fragmented approach could come at considerable additional cost to the community. First, implementation of a product stewardship scheme in one jurisdiction may generate benefits to that jurisdiction, but potentially impose higher costs in other jurisdictions. Second, the estimated net benefits expected to flow from a product stewardship approach cannot be determined with complete certainty. The focus of regulatory streamlining and review is to err on the side of less rather than more regulation, and to aim for consistency and simplicity in these requirements. To the extent that fragmentation generates more regulatory activity at a jurisdictional level, it carries an enhanced risk of complexity and spillover costs at a national level.

Further, to the extent that a national waste policy (Option Two) reduces the risk of fragmentation, some share of the averted costs associated with fragmentation (Option One) can also be attributed to the national approach (Option Two). This is the risk premium that would be paid in favour of a national approach (Option Two), because it further reduces the risk of a state of the world typified by fragmentation, and the potential costs involved (see also section 4.3).

### *Indicative benefits from better information and data collection under a national approach*

The current proposal in the National Waste Policy is for all governments to commit to a national framework for data collection on waste management and resource recovery. Under this commitment, government would agree to develop a national waste data system though the framework for this data system is yet to be agreed.

This would address recommendations made by the Productivity Commission in its Waste report (See Box 4.1).

Box 4.1

**PRODUCTIVITY COMMISSION WASTE REPORT: RECOMMENDATION 12.3**

The Australian Government should work with the state and territory Governments to:

- develop and implement a national definition of waste and a national waste classification system;
- review the appropriate balance between prescriptive and risk-based classifications of waste;
- standardise, coordinate and improve the efficiency of current processes for granting exemptions to recoverable resources from irrelevant environmental controls; and
- explore opportunities to achieve further consistency in regulatory standards applying to waste.

Source: Productivity Commission 2006

There is currently no national information system for:

- efficiently determining whether we are meeting our international obligations such as the Basel Convention; or
- assisting policy makers in determine the appropriate policies to meet community objectives for waste management (such as collection, treatment etc).

For this Regulation Impact Statement, the key question is, while there are a number of ways in which data collection could be improved, what is the case (based on potential net benefit) for applying a national approach to this problem?

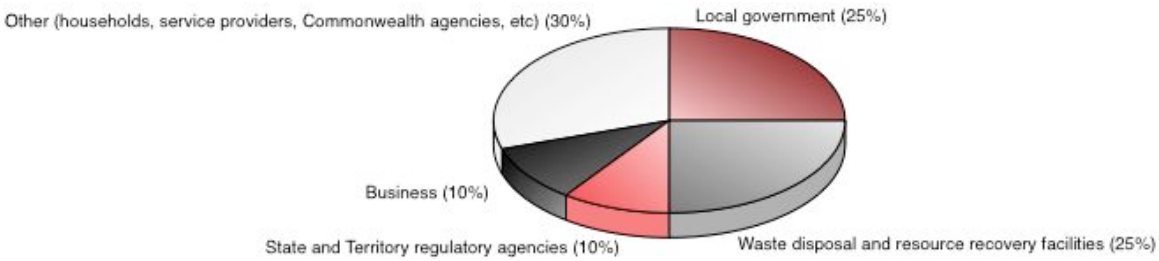
There is sound research, and examples in related areas, which make the case for a national approach in this field. The Waste Management Association of Australia (WMAA), in its 2008 evaluation of waste data arrangements, has estimated that the costs to their member organisations (including some local governments) of participation in the current fragmented and duplicative arrangements are $9 million per year, with a more coordinated approach leading to an estimated 35 per cent saving (at an estimated cost of $5.7 million). As part of this research, 217 separate waste and recycling streams were identified, with 144 of these being recurring streams (i.e. annual reporting versus one-off collections). Of these requests:

- 52 per cent are by voluntary survey;
- 21 per cent are by voluntary audit;
- 21 per cent are by compulsory survey;
- 4 per cent are publicly available requests; and
- 2 per cent are by compulsory audit.

As shown in 0, the cost burden of providing data into the current system falls on a range of parties, including local governments, resource recovery and waste disposal businesses. The potential benefits of a more streamlined approach to data collection would benefit each of these stakeholders, primarily by reducing the ad hoc nature of data collection and providing greater consistency of definitions and categories of data. There is also a quality dimension to this data collection issue. Heavy reliance on voluntary survey information may help reduce cost imposts, but questions remain over the utility and reliability and comprehensiveness of the information collected for policy and decision purposes.

Figure 4.1

**REQUESTS FOR DATA – SOURCE OF DATA**




Source: Waste Management Association of Australian (WMAA)

In related fields, such as energy and greenhouse data reporting, COAG principles of regulatory reform have led to the formation of a national reporting framework (the National Greenhouse and Energy Reporting System). The key areas of benefit from this system, as identified in the Regulation Impact Statement, are: a single, cooperative, streamlined reporting system; removal of current duplicative reporting arrangements; consistent robust and comparable information to inform decision making; and information that is publicly available.

### *Indicative benefits from improved management of tracking of hazardous waste*

Data and information for many areas associated with the hazardous aspects of waste are widely recognised as being poor and needing improvement to allow decision makers to better assess the risks presented by hazardous articles and materials, to select appropriate management initiatives, to plan for future treatment capacity, to ensure that we are protecting human health and the environment, and to ensure Australia is meeting its international obligations. Since 2001 Australia has reported the generation of over 6.4 million tonnes of hazardous waste (as defined under the Basel Convention) and exported about 210,000 tonnes for treatment overseas. However, the figure of 6.4 million is likely to be an underestimate, given the different reporting mechanisms by states and territories.

Data and classification are important precursors to identifying and managing hazards in an appropriate way. Significant and avoidable compliance costs can be associated with the misclassification of waste as 'hazardous'. Conversely, major risks to health and safety can arise from misclassification of waste materials as non-hazardous.

Materials and products containing potentially hazardous substances are found in a range of areas, including:

- commercial and industrial waste — such as that specifically identified as hazardous under Australia's international obligations such as the Basel and Stockholm Conventions;
- municipal solid waste — such as household chemicals and articles containing hazardous chemicals, and bio-waste including medical waste;
- construction and demolition waste — such as treated timber, floorings, plastics, paints, polymers, coatings, solvents and adhesives which contain hazardous materials; and
- biosolids — particularly sewage sludge which may be contaminated by a range of household chemicals and pharmaceuticals.

An audit of waste received at the Global Renewables Eastern Creek Alternative Waste Treatment Facility highlights the risk represented by waste contaminants. It revealed that hazardous materials made up an average of 3.17 per cent of the household rubbish received over five days. Materials included batteries, insecticide containers, motor oil, medicines, syringes, tubing used for dialysis, computer equipment and gas cylinders. However, there is little sound analysis of the high end risks from contamination by hazardous waste. It can also be important that different tracking and treatment regimes should be applied appropriately to different classes of hazardous waste materials.

The Regulatory Impact Statement for the proposed Environment Protection (Industrial Waste Resource) Regulation 2009 by the Victorian Environment Protection Agency sought to ascribe a value to the appropriate handling of industrial wastes. The Statement highlights the lack of good quality analysis of spillovers cost and benefits in this areas, but notes general community acceptance of the fees associated with Category A ($1000 per tonne) and Category B ($500 per tonne) prescribed wastes. In the absence of better information on actual health or environmental risks, this might be used as a rough guide to the minimum benefit per tonne that society derives from proper disposal or re-use of these hazardous materials.

> In the development of this regulatory impact statement EPA has undertaken a significant consultation and stakeholder engagement process which gave the opportunity for industry or the community to raise concerns about the schedules or treatment requirements. The consultation process has indicated that the mandatory treatment of Category A waste is not an issue of concern. This would suggest that society's value of treatment of prescribed industrial waste is greater than the $1000 per tonne cost.
>
> A similar argument could be made for Category B prescribed industrial waste, which is estimated to cost $500 per tonne to treat. The consultation process has indicated that this is not an issue of concern. (EPA 2009 Environment Protection (Industrial Waste Resource) Regulations - Regulatory Impact Statement, p.51)

While this 'proxy' value is not ideal for considering the costs associated with hazardous waste management, the relatively high price per tonne nevertheless gives some indication of the risk that the community sees as inherent in hazardous waste. Putting an exact dollar value on hazardous waste remains problematic.

The scale of the requirement for hazardous waste management in the future is equally difficult to quantify, particularly when considering new international requirements such as the Legally Binding Instrument on Mercury (currently being developed) and the additional nine Persistent Organic Pollutants, some of which are contained in consumer goods. Risks and community costs relating to health and other social factors arise from piecemeal policy making and regulation in this area.

### *Synergy and alignment with the proposed CPRS*

The Australian Government has announced a medium term greenhouse gas emissions target of between 5 and 15 per cent below 2000 levels by 2020, and the possibility of a more stringent target if international negotiations are favourable. A national Carbon Pollution Reduction Scheme (CPRS) has been proposed as a key mechanism for achieving this goal.

Analysis indicates that between the proposed commencement of the CPRS in 2011-12, and 2019-20, landfill emissions equivalent to 106.3 Mt CO2e are expected, 70 per cent of which would not covered by the proposed CPRS. (MMA 2009)

This is clearly an important area for the Commonwealth to consider in developing a least cost approach to reducing greenhouse emissions. For these emissions, a range of approaches might be applied at a jurisdictional level, but there will be obvious advantages in terms of direct costs and economic efficiency if a consistent and best practice approach is applied to emissions activities that will eventually fall under the rubric of a national scheme, even allowing for the fact that legacy emissions will not be covered.

One approach to landfill methane reduction is to divert the 'feedstock', in this case organic waste, to beneficial use including compost, biochar and digestate. Carbon pricing structures around landfill, soil carbon and fertiliser use suggest the need for a coordinated approach to this issue.

A national waste policy framework has the potential achieving beneficial outcomes for government, business and the community.

## 4.3 An insurance pay-off: moving to a less risky paradigm

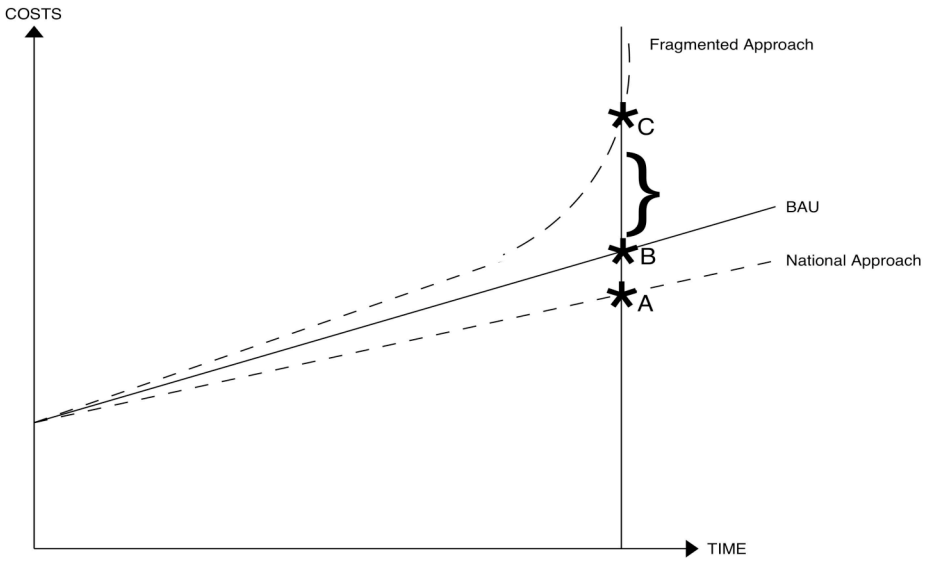
The focus on frameworks and future uncertainty is another consideration in the cost-benefit evaluation: evaluations can also consider risk and the likely pay-off from early and affirmative action to reinforce the cooperative relationships that currently prevail, and on which the base case is founded.

This view of alternative states of the world is at Figure 4.2. It reflects the progression of waste policy discussions and outcomes as projected under the base case, and a treatment of Policy Option One (fragmented) — which represents fragmentation of future policy setting processes relative to business as usual and Policy Option Two (co-ordinated) — which is aimed at generating a more cohesive policy setting framework that cuts the cost of developing current arrangements and reduces the risk of a fragmented outcome that comes at higher costs.

This 'alternative states of the world' analysis is appropriate to thinking about the direct savings that are likely to flow under a national approach, and also benefits that might be associated with averting other feasible (and higher cost) states of the world.

Figure 4.1

**POLICY DIVERGENCE RISKS: OPTIONS 1 AND 2 VERSUS BASE CASE**




Source: ACG analysis

This construct allows for some empirical testing of the costs and benefits of Policy Options One (Fragmented Approach) and Two (National Approach) relative to the base case, although as before, only the estimates around product stewardship provide sufficient clarity for this approach. Notably, it is also relevant to other elements of the proposed package of strategies that underlie the national waste policy 'framework'.

The coverage of future strategies is broad and, at present, the details of actions are uncertain. It is difficult to anticipate the exact nature of future action, although the details of regulatory approaches will be passed through the normal processes of regulatory assessment, albeit with the benefit of comparison with previous arrangements (and potential synergy with other complementary approaches viewed within a more comprehensive framework).

Nevertheless, it is useful to consider the potential implications of the national waste policy in light of the major issues that will be considered within it. These include, but are by no means limited to, the following key impacts:

- *Benefits of a national approach to product stewardship* – an empirical analysis of the 'insurance' value of such an approach is provided in Appendix B, and suggests an additional pay-off to a more coordinated policy paradigm in the order of $88.8 million (in NPV terms) based on administrative savings alone.
- *Improved waste data collection*, offering a compliance cost saving to business alone of around $3.3 million per year, and other potential benefits associated with better performance assessment and planning.
- *Potential improvements to the waste management regime within Australia*, which will need to deal with hazardous materials and associated potential health and environmental risks (and to ensure appropriate classification of these materials). It will also need to deal with existing and emerging international obligations including those on mercury and persistent organic pollutants.
- *Development of efficient and complementary approaches to dealing with greenhouse gases from landfill*, the majority of which will fall outside the CPRS in the decade ahead, and will represent a liability in Australia's greenhouse accounts worth an estimated $1.3 billion in today's terms.
- *Improved planning and coordination at a national level*, providing a more certain and consistent business environment that can promote innovation, infrastructure investment and national markets, consistent with longer term social and environmental needs.

## 4.4 Key findings

Significant resource, health and environmental values are linked to resource recovery and waste policy development and regulation setting in the years ahead. The value of the resources and community amenity affected by these decisions is economically significant, especially regarding the future cost of carbon.

Evaluating the appropriate over-arching policy approach for addressing these issues is difficult because future costs and benefits will depend on what is achieved. Nevertheless, there is evidence to suggest that a nationally coordinated and consistent approach operating within a mutually agreed framework is likely to be superior to current approaches as a tool for unlocking future benefits.

While the costs of operating within this framework are unlikely to be materially different from the cost of current arrangements, tangible additional savings are likely to be generated from improved design and coordination of measures developed under that framework.

Drawing on product stewardship examples alone, administrative savings to Australian governments in the order of $147 million (NPV) may be available. Other areas of waste policy (such as hazardous waste treatment and approaches to methane reduction from landfill) need only derive an efficiency benefit of a few per centage points as a result of the framework approach to exceed this result. For example, the potential national exposure to the uncovered greenhouse gas emissions arising in the waste sector is currently estimated at around $1.3 billion to 2020, based on Treasury carbon price forecasts. Coordinated policy responses are required in this area to ensure effective long term abatement.

The 'insurance' value of promoting and reinforcing a more cohesive national approach to resource recovery and waste management is also relevant. A national waste policy framework represents a new paradigm for developing and implementing regulation in this area. A key implication is reduced exposure to outcomes associated with a more fragmented policy regime at a jurisdictional level. Averted risks and potential costs are also relevant to the value and pay-offs from implementing a national waste policy framework. Again, the example of product stewardship provides some indication of the magnitude of these potential benefits. Pay-offs in terms of reduced risk to health and environmental assets may be even more substantial.

There are strong indications that a national framework approach for development and implementation of waste policy represents an investment that is likely to deliver more benefits than costs.

*Chapter 5*

# Consultation

## 5.1 Introduction

The development of the National Waste Policy has involved the public release of two documents, 'A National Waste Policy: Managing Waste to 2020' and 'Draft National Waste Policy Framework: Less Waste, More Resources'.

Over 420 people participated in public discussions on the need for a national waste policy and 475 people subscribed to the National Waste Policy e-news service. A total of 210 written submissions were received and there has been significant support for the need for the development of a national waste policy and for the aims, visions, principles and key directions outlined in the draft framework.

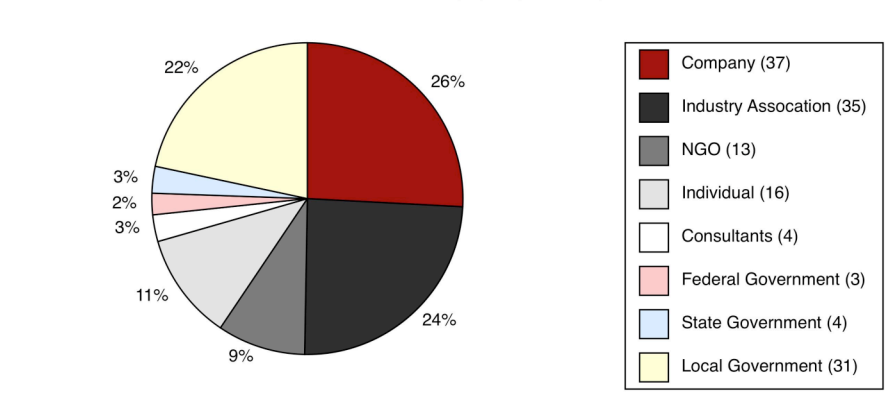
In particular there has been broad support for extended producer responsibility/product stewardship schemes for problematic wastes such as e-waste and hazardous waste. There has been general agreement to improving our management of hazardous waste through national standards and harmonising policies and activities in waste management to reduce cost burdens and maximise opportunities for market development. Strong support for a national approach to data collection and management has also been expressed as a key means of tracking performance against policy aims and objectives

## 5.2 Consultation paper

The Consultation Paper on the National Waste Policy was published on the website and released for public comment on 7 April 2009 with submissions required by 13 May 2009. A total of 143 submissions was received. A breakdown of submitters by broad sectors is illustrated in Figure 5.1 below.

Figure 5.1

**STAKEHOLDER SUBMISSIONS RECEIVED ON CONSULTATION PAPER**

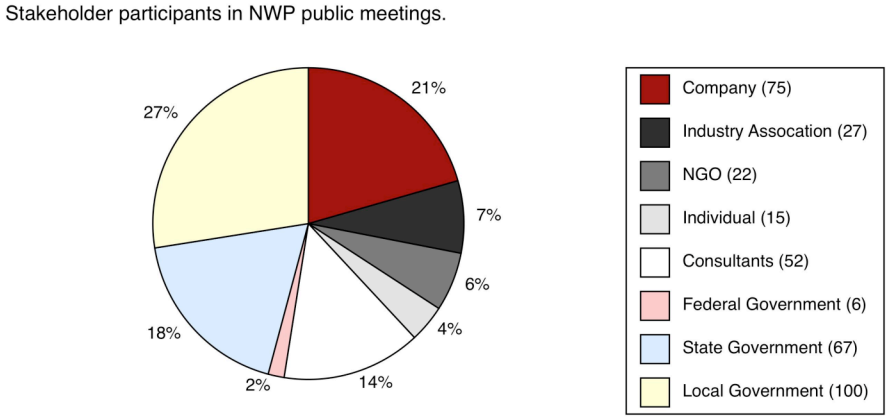


During 21 April and 1 May 2009, public consultation sessions were held in all capital cities and in the regional centres of Kalgoorlie, Townsville and Wagga Wagga. The sessions were jointly hosted by representatives of the Waste Policy Taskforce, relevant state government agencies, and local government.

A total of 364 people attended these sessions and the breakdown by sector is provided below at Figure 5.2.

Figure 5.2

**STAKEHOLDER PARTICIPANTS IN NATIONAL WASTE POLICY MEETINGS**




Separate bilateral discussions were held after each public consultation session with State Government agencies, local government representatives and waste industry and non-government participants. Over fifty people attended these sessions, with the large majority being government representatives.

A broad range of issues was raised in the 143 submissions to the Consultation Paper. There was high level support for:

- the development of the national waste policy which builds on the principles articulated in the National Strategy on Ecologically Sustainable Development;
- harmonising resource recovery and waste management policies, legislation, licensing etc;
- product stewardship as a policy tool to manage waste streams in the future;
- national consistency relating to hazardous/regulated/scheduled materials; and
- better data and information on resource recovery and waste management in order to track performance and trends, allow comparisons and inform decision-making

Many stakeholders expressed concern over:

- end-of-life televisions and computers;
- the capacity for rural and remote communities to access and fund resource recovery and alternative waste management treatment facilities; and

- litter and the need for maintaining a focus on litter reduction.

Opinions were split on:

- the relevance of the waste hierarchy, with opponents recommending the adoption of a life cycle approach; and
- the diversion of organic waste from landfills with some submitters supporting diversion and others supporting landfill gas capture.

Many stakeholders recognised the continued role of landfills in future waste management strategies and concern over liability for waste legacy issues (though these are no longer an issue due to proposed CPRS changes announced on 9 May 2009).

## 5.3 Draft National Waste Policy Framework

On 20 May 2009, EPHC agreed to the public release of a draft national waste policy framework. This outlined the aims, vision, principles, priorities and directions that would guide resource recovery and waste management to 2020. The draft Framework, "Less Waste, More Resources", was released electronically on 8 July 2009, with comments due on 31 July 2009. It was informed by the outcomes of the consultation process.

Most submissions were strongly in favour of the aims, vision, themes and directions provided in the Framework and the coverage these provide for market, social and environmental issues

A common view of the majority of submitters is that the National Waste Policy does not focus enough on education programs and community/stakeholder engagement, which are both vital to build awareness of recycling and consumer choices and to drive the behaviour change necessary to support the directions of the policy. Some submitters called for an increased focus in the National Waste Policy on directions for managing behaviour change and information provision.

Relatively few submissions commented directly on waste targets, and of those that did, opinions were split on the use and nature of targets. It is generally accepted that targets are likely to be necessary to drive decision-making timetables and measure progress/success of policy measures.

The analysis of submissions also showed:

- Majority support for the development of an extended producer responsibility/product stewardship framework, as it is generally accepted that these schemes can manage problematic waste such as e-waste and hazardous waste. Submissions indicated that programs should be monitored and supervised by government, be accompanied by measures to address free-riders, ensure equity between remote and urban areas, and have the flexibility to allow the development of appropriate approaches for different products.

- Broad agreement that markets could be improved through the creation of national standards for specified recycled materials and national performance-based specifications in contracts removing impediments to the use of recycled materials. However, there is some suggestion that the market should be allowed to dictate the right level of uptake of recycled materials. There also appears to be an expectation of government funding for the development of infrastructure and research for processing of recovered materials.
- The focus on organics has too narrowly constrained the policy direction 'Pursuing Sustainability', and reduction strategies for commercial & industrial and construction & demolition waste should be explored in this theme due to the significant proportion of the waste stream they represent and their potential uses.
- There was a clear split in opinion about the appropriateness of organics being disposed of to landfill, with some seeing organics in landfill as a wasted resource and others as a proven, valuable source of energy generation
- Submitters from regional and remote areas were concerned that they would face undue costs because their capacity to fulfil the aims of the National Waste Policy was limited by their lack of affordable waste recovery options. Their concern encompassed hazardous waste management, and it was noted that hazardous materials are likely to be stockpiled, increasing the risk of environmental issues.
- There was significant support for a national standard on hazardous waste that clarifies and enforces effective labelling, handling and disposal procedures, and general consensus that appropriate international examples should provide the basis for this.
- Extended Producer Responsibility/Product stewardship was generally considered as an appropriate means by which hazardous materials could be removed from the waste stream.
- There was significant support for a national database that identifies data requirements and provides for a consistent method of collection across jurisdictions, while avoiding duplication and unnecessary burden.
- Tailored solutions may also be required in urban and outer urban areas and not just regional and remote areas.

## 5.4 Other consultations

Targeted consultations have also been held including:

- a National Waste Policy Leaders forum held on 27 April 2009 at the request of the Chair of the Environment Protection and Heritage Council (EPHC) and attended by 52 invitees representing industry, business, community and all levels of government;
- a roundtable discussion with 36 representatives of the television and computer industries was held on 6 May 2009 to discuss options for the management of end-of-life products. The outcomes of this roundtable informed deliberations at EPHC 18 where Ministers supported the establishment of a national product stewardship scheme for televisions and computers; and

- a workshop with 26 state and territory representatives, local government and industry associations held on 18 August 2009 to discuss options for the development of a national waste data system.

Since the National Waste Policy is the beginning of a new strategic direction for resource recovery and waste management, there will need to be further consultation on the specific details of strategies and actions with affected stakeholders.

*Chapter 6*

# Implementation and review

## 6.1 Implementation

All jurisdictions will undertake the implementation of the National Waste Policy. The Environment Protection and Heritage Council will shoulder most strategies; some strategies and actions will involve action by the Australian Government while others will involve individual State government action. Australian Government action will involve a number of agencies. The lead agency for the regulatory framework for product stewardship will be the Department of the Environment, Water, Heritage and the Arts (DEWHA). Any measures on emissions from landfill will be developed in consultation with the Department of Climate Change while the audit of the waste facilities in Indigenous communities will be undertaken by FaHCSIA.

### *Taking Responsibility*

*Objective: to support business and consumers to appropriately manage end-of-life products, materials and packaging.*

The Australian Government will be responsible for the establishment and administration of the Commonwealth regulatory framework for product stewardship. State and territory jurisdictions will provide the resources for assessments, inspections, and intelligence gathering as part of existing policy, program and regulatory arrangements.

All governments will undertake to promote sustainable procurement principles and practices in their own operations. EPHC will facilitate the sharing of guidance materials between jurisdictions and from relevant bodies such as the Australian Procurement and Construction Council.

All jurisdictions and signatories to the National Packaging Covenant will take action to manage packaging better to improve the use of resources and reduce the environmental impact of packaging design, enhance away-from-home recycling, and reduce litter.

### *Improving the Market*

*Objective: Support waste avoidance, reduction, recovery and re-use by addressing market impediments and removing red tape.*

EPHC will be responsible for developing a national definition and classification system for wastes (including hazardous and clinical wastes) that aligns with definitions in international conventions. Implementation will occur in two stages, with the first stage mapping existing classifications and scoping the development of a nationally consistent classification system that aligns with current and future needs. The second stage will be to agree and implement the preferred approach through EPHC.

EPHC will also develop a suite of agreed national principles, specifications, best practice guidelines and standards, to remove impediments to the development and operation of effective markets for potential wastes. The first priorities will be recycled construction and demolition waste and organic waste products.

EPHC will also provide access to current information and analyses on waste management and reprocessing technologies, regulatory and institutional settings, research, business case information and consumer values.

### *Pursuing Sustainability*

*Objective: To enhance biodegradable (organic) resource recovery and reduce greenhouse gas emissions from landfills.*

State and territory governments will be responsible for maintaining and building on their current commitments to phase down the amount of biodegradable material going to landfill. They will also continue to regulate and license landfills to ensure effective management of health and safety risks arising from landfill gas.

The Australian Government in collaboration with state and territory governments will develop a strategy for complementary measures to address emissions from landfill no longer covered by the proposed Carbon Pollution Reduction Scheme.

*Objective: To avoid waste and increase recovery and re-use of wastes from the commercial and industrial and construction and demolition waste streams.*

All jurisdictions will be responsible for identifying areas that deliver the most significant waste reductions in the commercial and industrial waste stream and to implement appropriate partnership agreements.

All governments as part of their existing procurement, infrastructure and waste management responsibilities will continue to encourage best practice waste management and resource recovery for construction and demolition projects.

### *Reducing Risk and Hazard*

*Objective: A comprehensive nationally integrated system for the identification, classification, collection, treatment, disposal and monitoring of hazardous substances and waste that aligns with international obligations*

The Australian Government will continue to be responsible for ensuring that Australia continues to meet its international obligations with respect to the management of hazardous wastes.

EPHC will progress the consideration of labelling systems for products and articles containing hazardous content to conform with the direction of the Council of Australian Governments in its consideration of the management of chemicals in the environment. It will also consider approaches to improve the collection of chemical wastes.

EPHC will analyse Australia's current and future hazardous waste treatment and disposal capabilities, while jurisdictions will examine possibilities of streamlining transboundary movements and reduce local stockpiling.

*Objective: Develop a national system to reduce potentially hazardous substances available in Australia.*

The Australian Government will lead jurisdictions in considering the best approach for reducing hazardous substances in products and articles sold in Australia.

#### *Tailoring solutions*

*Objective: Support improved waste management and re-use of waste in regional, remote and Indigenous communities*

All jurisdictions will be responsible for action to build capacity and ensure an appropriate suite of services is available to regional and remote communities.

The Australian Government will be responsible for undertaking an audit of existing waste infrastructure and local capability in selected remote Indigenous communities as part of a larger essential services audit under the COAG National Indigenous Housing Partnership

#### *Providing the evidence*

*Objective: Develop capacity to effectively collect consistent, accurate and meaningful national waste and resource recovery data to inform policy and decisions.*

EPHC will assess options for developing and accessing comprehensive, robust, accurate and timely core national waste data and information with a view to streamlining business reporting requirements. Following these deliberations, it will agree the approach to be implemented and the timing and resourcing of the preferred approach.

### 6.2 Review

The EPHC will review the National Waste Policy periodically. Reviews will be informed by the outcomes of a report on national current and future trends in waste and resource recovery (the State of Waste Report) to be produced every three years from the commencement of the policy.

The State of Waste Reports will consider, among other things, progress towards the aims, changes affecting the capability of participants in the resource recovery and waste management sectors, and international trends and developments.

*Chapter 7*

# Conclusion

This Regulation Impact Statement examines the efficiencies of a National Waste Policy compared to a fragmented, uncoordinated jurisdictional approach to policy setting and regulatory arrangements for the resource recovery and waste management sectors.

A national approach to resource recovery and waste policy, as embodied in the National Waste Policy, was found to offer net benefits to the community in several dimensions, although some of these benefits are difficult to quantify. Key benefits are set out below.

### *Reduced costs for government and business through efficiency gains and lower compliance costs*

The RIS modelled a national framework approach to product stewardship for problematic wastes compared with separate jurisdictional approaches. A national framework approach was found to generate administrative costs to government of $65 million over twenty years at a 7 per cent discount rate but achieve $147 million in savings over the base case. A fragmented jurisdictional approach resulting in up to an additional 5 product stewardship programs was found to generate extra costs of between $0 and $212 million in administration alone, compared to the base case, and a 70 per cent loading on administrative costs compared to a more coordinated approach dealing with the same number of extra products. The quantification of these administrative savings was based on costings in the Televisions and Computers Decision Regulatory Impact Statement.

### *Better and more efficient data collection.*

Nationally consistent data arrangements were considered by stakeholders to reduce compliance costs and provide a more sound basis for decision-making by business and governments. In its 2008 evaluation of waste data arrangements, the Waste Management Association of Australia (WMAA) found that the current fragmented and duplicative arrangements for data collection where estimated to cost its members $9 million per year while a more co-ordinated approach was estimated to cost $5.7 million per annum (a 35 per cent saving).

### *Improved management and tracking of hazardous waste*

Consultation on the National Waste Policy and independent analysis by Hyder Consulting (2009b) found that data and information associated with the hazardous aspects of waste are incomplete and inconsistent. This lack of reliable data creates difficulties in assessing risks associated with hazardous wastes, selecting appropriate management strategies and planning for future infrastructure needs (including treatment capacity). Stakeholders identified significant and avoidable compliance costs associated with different classifications of hazardous waste while the community were found to place a high value on the proper treatment and disposal of hazardous waste. Evidence for community value was the Regulatory Impact Statement on the Victorian Government's proposed Environment Protection (Industrial Resources) Regulation 2009 which used proxy values of between $500 and $1000 for prescribed industrial wastes. It is inherently difficult to quantify the risks to human health and the environment of inappropriate management of hazardous waste, but there is stakeholder and community support for a national approach to hazardous waste management as a means of reducing these risks.

### *Synergies and alignment with the Carbon Pollution Reduction Scheme*

The RIS notes that future policy setting for the resource recovery and waste management sectors will occur in a carbon-constrained world. While legacy waste emissions from landfills are excluded from the current proposed design of the Carbon Pollution Reduction Scheme, these emissions still contribute to Australia's national emissions profile. A 2009 study by MMA estimated that between 2012 and 2020, 106.3 Mt CO2-e of landfill sector emissions would not be covered by the proposed Carbon Pollution Reduction Scheme. A co-ordinated national approach to prevention strategies and other measures could deliver future benefits.

Overall the cost-benefit analysis of a co-ordinated national approach was found to produce a net community benefit when compared with continuing fragmentation of resource recovery and waste management policies and regulation through individual jurisdictional action. The cost-benefit analysis was by nature high level given that the National Waste Policy posits an approach to policy making for resource recovery and waste management to 2020. Specific strategies under the National Waste Policy were not assessed in detail because the design of those strategies has yet to occur. Strategies or measures which have a regulatory component will be subject to their own regulatory impact statements.

*Appendix A*

# National Waste Policy Statement

## A.2 Background

This statement is in two parts. Part one provides the context for the development of the National Waste Policy and summarises the roles and responsibilities of governments. It highlights progress in relation to waste management and resource recovery and presents the drivers for change.

Part two presents the National Waste Policy. The policy sets out the purpose, scope, aims, principles, key outcomes, directions, implementation and strategies for action. It has a built-in capacity, through ongoing data gathering and regular reporting to the Environment Protection and Heritage Council (EPHC), an intergovernmental committee of environment ministers, to keep up with domestic and international economic, social and environmental change.

## A.3 PART ONE—CONTEXT

### *Introduction*

Australian governments have a long history of collaboration on waste policy and actions. The first comprehensive domestic approach to waste was agreed under the 1992 National Strategy for Ecologically Sustainable Development (the National Strategy for ESD) by the Council of Australian Governments (COAG), who committed Australia to improving the efficiency with which resources are used; reducing the impact on the environment of waste disposal; and improving the management of hazardous wastes, avoiding their generation and addressing clean-up issues. This commitment still stands. It has underpinned the policies and programs implemented by governments to date and formed the basis for collaboration on national waste issues under the EPHC since its inception in 2002.

In November 2008, the Minister for the Environment, Heritage and the Arts, the Hon Peter Garrett AM MP, announced that the Australian Government, with the support of the EPHC, would lead the development of a new National Waste Policy for Australia.

Australia has obligations under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (the Basel Convention) to take appropriate measures to ensure that the generation of hazardous and other wastes (including household wastes) is reduced to a minimum, taking into account social, technological and economic aspects; that adequate disposal facilities exist for the environmentally sound management of wastes; and that waste managers take steps to prevent pollution due to waste and, if this occurs, minimise the consequences for human health and the environment. Under the Stockholm Convention on Persistent Organic Pollutants (the Stockholm Convention) there is the further requirement to restrict, and ultimately eliminate, the production, use, trade, release and storage of dangerous long lasting chemicals.

Waste generation has increased by 31 per cent to 43.8 million tonnes between 2002 and 2006 and this trend is expected to continue.[1] Hazardous waste generation (as defined under the Basel Convention) has doubled from 0.64 to 1.19 million tonnes per annum between 2002 and 2006 and now appears to have stabilised. Resource recovery from waste has also increased over this period to 22.7 million tonnes, however given the changing nature of the waste stream, the capacity for continued growth in the recovery of materials is constrained under current policy settings.

### *Roles and responsibilities*

The overarching policy and regulatory framework for waste derives from the Constitution, international agreements, Commonwealth legislation, agreements of COAG, decisions of the EPHC and other ministerial councils, and from multiple legislative instruments in each state and territory. Fundamental to these are the requirements to avoid waste, reduce the hazardous nature and content of waste, and reduce the amount for disposal.

Under the Australian Constitution the management of waste is primarily the responsibility of the state and territory governments. The Australian Government is responsible for ensuring that Australia's international obligations are met, whether through measures implemented by the Commonwealth or through measures implemented by the states.

The Australian Government's role and overarching responsibilities flow from the suite of international agreements and applies to hazardous substances, wastes, persistent organic pollutants, ozone depleting substances and synthetic greenhouse gases and climate change. Relevant instruments to which Australia is a party are: the Basel Convention on Transboundary Movement of Hazardous Wastes and Their Disposal; the Stockholm Convention on Persistent Organic Pollutants; the Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade; the Vienna Convention for the Protection of the Ozone Layer; the Montreal Protocol on Substances that Deplete the Ozone Layer; and the Kyoto Protocol to the United Nations Framework Convention on Climate Change. There is also international agreement to commence international negotiations to develop a legally binding instrument on mercury.

The Australian Government has passed legislation to reflect many of these international obligations. The export and import of hazardous waste from and to Australia is subject to the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*; industrial, agricultural and veterinary chemicals are subject to the *Industrial Chemicals (Notification and Assessment) Act 1989* and the *Agricultural and Veterinary Chemicals Act 1994*; dumping and incineration at sea of waste is covered through the *Environment Protection (Sea Dumping) Act 1981*, *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*, and the *Environment Protection and Biodiversity Conservation Act 1999*; and ozone depleting substances through the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*. The Australian Government is also committed to reducing greenhouse emissions and the proposed Carbon Pollution Reduction Scheme (CPRS) will impact on waste management. The *Product Stewardship (Oil) Act 2000* established a product stewardship framework for used oil.

[1] *Waste and recycling in Australia, amended report,* Hyder Consulting, 2009.

All state and territory governments have enacted comprehensive legislative and policy instruments to protect the environment and conserve natural resources. Their waste management and resource recovery legislation is as follows:

- **NSW** — Protection of the Environment Operations Act 1997 (amended in 2008) and Waste Avoidance and Resource Recovery Act 2001
- **Vic** — Environment Protection Act 1970 and Environment Protection (Amendment) Act 2006
- **Qld** — Environmental Protection Act 1994
- **WA** — Environmental Protection Act 1986, Waste Avoidance and Resource Recovery Act 2007, and Waste Avoidance and Resource Recovery Levy Act 2007.
- **SA** — Environment Protection Act 1993, Zero Waste SA Act 2004 and Plastic Shopping Bags (Waste Avoidance) Act 2008
- **Tas** — Environmental Management and Pollution Control Act 1994
- **ACT** — Environment Protection Act 1997 and Waste Minimisation Act 2001
- **NT** — Waste Management and Pollution Control Act 2007

The roles and responsibilities of local government depend on the regulatory framework of a particular state or territory and can vary significantly. Local government plays an important role in providing household waste collection and recycling services, managing and operating landfill sites, delivering education and awareness programs, and providing and maintaining litter infrastructure. They may also form cooperative groups to work together on waste management issues of regional significance and can have compliance and enforcement roles for littering and the illegal disposal of waste.

### *Building on current efforts*

The 1992 National Strategy for ESD provided an impetus for all levels of government to introduce a broad range 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 over 90 per cent of households
- increased solid waste recycling
- improved management of landfill sites
- 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 and ongoing efforts by governments and actions by industry and the community, there is a range of major interrelated drivers for renewing a national approach to progress the commitment given in the 1992 National Strategy for ESD, including:

- the need to ensure that waste management remains aligned with Australia's international obligations which continue to evolve over time
- large scale growth in the generation of waste and the increasingly complex and potentially hazardous nature of the growing waste stream
- a prospective need for additional infrastructure which faces increasing environmental and community constraints and can take time to develop
- significant change in markets for waste and recovered resources and the way services are delivered
- existing regulatory and quasi-regulatory settings, which in combination, act as impediments to achieving current waste and resource recovery policy outcomes and to establishing effective secondary markets for waste
- potential for waste management to reduce greenhouse gas emissions, improve energy and water efficiency, soil health and use of resources
- changing community expectations and aspirations
- the opportunity for managing waste as a resource to improve economic and job outcomes and encourage innovation and the development of technology and infrastructure
- the absence of fundamental data and analytical tools, as identified in 1992, on many aspects of waste management, to enable governments, business and communities to make sound decisions.

Most states and many local governments have recently renewed, or are in the process of renewing, their own waste management and resource recovery policy and regulatory frameworks, and it is timely to do so at a national level to ensure that the waste and resource recovery system remains efficient and effective.

Waste and resource recovery is extensively regulated. This is because of the significant consequence of not managing waste safely or effectively and inherent market failures (particularly information failures, a lack of clear price signals, and the potential for 'free-riding'). Since 1992 a wide variety of waste policies and legal instruments have been adopted at national, state and local levels. Their evolution has resulted in a complex patchwork of approaches that does not clearly articulate the respective roles of governments, objectives, or the basis for collaboration and national leadership on waste.

As markets and regulatory frameworks have evolved, a range of barriers have emerged that industry consider increase costs and complexity, and could be addressed through better coordination. In some cases, these fragmented approaches have led to perverse or unintended consequences, such as the movement of waste to lower level treatment facilities because of reduced costs. It is timely to review these arrangements from a national perspective to determine how to save costs for governments, industry and the community, as well as deliver better environmental outcomes.

There are also a number of areas with regard to the proactive management of hazardous materials and substances before they become wastes which will not be addressed by the market without intervention. Further effort will be required if we are to meet our current international obligations to minimise waste (and in particular, hazardous waste) and to manage the risks associated with a range of hazardous materials to ensure we protect human health and the environment.

There is a need to plan how to meet prospective requirements, such as the need to reduce the presence of an additional nine persistent organic pollutants and mercury, and provide accurate national reporting. At present, to enable us to understand the extent of the risk, monitoring for the presence of persistent organic pollutants in people and in the environment is based on one-off activities, generally at a single location and point in time. This monitoring, although limited, has shown that pollutants like brominated flame retardants (chemicals applied to prevent electronics, clothes and furniture from catching fire) are found at low levels across Australia in people, and the natural environment, from carnivores such as Tasmanian devils, to herbivores like grey kangaroos.

The way waste is managed and the use of waste as a resource can also make a difference to jobs and the economy. A recent survey on the employment impacts of recycling, estimated that full time equivalent (FTE) employment per 10 000 tonnes of waste is 9.2 for recycling and 2.8 for landfill. On a national level, this corresponds to an estimated direct labour force of 22 243 FTEs in recycling activities and 6695 FTEs in landfill operations—that is, 28 930 across Australia. Combined with indirect employment, this amounts to 53 246 jobs.

While recycling rates significantly increased between 2002 and 2006, there is no guarantee that recycling can continue to mitigate the growth in waste generation without updating the policy settings and addressing market barriers.

The nature of our waste is also changing. Higher proportions of goods are being disposed to landfill which contain complex materials that do not readily degrade and increasing quantities of potentially hazardous substances. The management of hazardous wastes will also be influenced by listings of persistent organic pollutants under the Stockholm Convention and the introduction of a binding instrument for managing mercury.

These trends will leave a legacy of waste for future generations and require that Australia has adequate landfill practices and controls to contain hazard, and monitor sites to reduce the future risk to people and the environment. Strengthened planning for future waste management and resource recovery infrastructure will also be needed with these trends.

An analysis of Australian landfills comparing the controls in place against those recommended through state and territory guidelines, found that the presence of controls was broadly compliant for most design, construction and operational criteria. The compliance level for large landfills however, substantially exceeds that of small landfills. Whilst there are clear state and territory guidelines and strong jurisdictional regulation, the reported landfill compliance is not yet fully meeting these requirements for the installation of liner systems, (particularly for large and medium scale landfills, where some 97 per cent of solid waste is disposed), and capture and treatment of landfill gas[2].

The growth in waste is placing demands on management and disposal facilities. While nationally Australia has sufficient landfill sites, some cities and towns are projected to deplete existing capacity within five years and are applying for approval to extend existing facilities. The increasing costs of transporting waste to distant locations and dealing with the associated greenhouse gas emissions, combined with greater environmental conditions and community opposition to new sites, are factors that will continue to make the siting of new landfills problematic and drive recycling and efforts to prolong the life of existing facilities.

Almost two thirds of all waste sent to landfill is organic (food waste, paper, cardboard, biosolids, green waste, textiles and wood), with approximately 37 per cent of landfilled waste regarded as readily degradable (biodegradable). Organic waste in landfill generates the powerful greenhouse gas methane, which is also odorous and highly flammable. Estimates of annual greenhouse gas emissions include a large component of emissions resulting from waste disposal over the preceding 50 years. Today's waste management decisions leave a legacy for future generations.

The waste sector is projected to continue its contribution to greenhouse emissions of around 15 million tonnes of $CO_{2\text{-}e}$ per year[3]. Of this, approximately 11 million tonnes of $CO_{2\text{-}e}$ is derived from landfills. Enhanced recovery of organic material presents considerable potential to positively contribute to climate change and sustainability issues, and contribute to jobs and the economy.

[2] *Landfill performance study,* Wright Corporate Strategy Pty Ltd.

[3] Department of Climate Change, *Tracking to Kyoto and 2020: Australia's Greenhouse Emissions Trends 1990 to 2008-2012 and 2020,* August 2009, p60.

Communities are calling for recycling to be more readily available in work places and public spaces, and for convenient infrastructure to be established to help them deal appropriately with waste arising from their consumption choices. Recent 'choice modelling' which seeks to provide a dollar value for non-market goods and services, and attitudinal surveys, suggest that communities are willing to pay for increased access to resource recovery facilities that deliver significant recycling outcomes.

By deploying existing and innovative technologies for better waste avoidance, reprocessing and recycling across different locations, scales, waste streams and materials, business, industry and consumers can save money, water and energy and avoid greenhouse gas emissions and pollution. Re-use of resources can also conserve virgin and finite resources and generate new opportunities and jobs and more effectively meet the needs and aspirations of Australian communities.

## A.4 PART TWO—THE POLICY

### National Waste Policy: less waste, more resources

#### *Purpose*

The National Waste Policy builds on the 1992 National Strategy for ESD commitments to improve the efficiency with which resources are used, reduce the impact on the environment of waste disposal, and improve the management of hazardous wastes, avoiding their generation and addressing clean-up issues. It also seeks to enhance, build on, or complement, existing policy and actions at all levels of government.

The policy sets a clear direction for Australia over the next 10 years, toward producing less waste for disposal, and managing waste as a resource to deliver economic, environmental and social benefits. It will complement action to deliver greenhouse gas emission reductions, reduce energy and water use, support jobs, and invest in future long term economic growth. It will further more consistent regulation and seek to address market impediments. The policy will provide the basis for collaboration among the jurisdictions to deliver effective and efficient approaches to national waste issues, and ensure that waste management remains aligned with Australia's international obligations.

The practical outcome of implementing the National Waste Policy will be that all wastes, including hazardous wastes, will be managed consistent with Australia's international obligations, and for the protection of human health and the environment. The policy will also seek to ensure that the risks associated with waste are understood and managed in the future to minimise intergenerational legacy issues. There will also be a significant contribution to greenhouse gas reduction, water and energy efficiency and improved resource use. Greenhouse gas emissions from landfill will be addressed under the final design of the CPRS, and the beneficial and/or innovative use of organic material diverted from landfill, will be encouraged to increase the productivity of the land, provide a source of energy, and reduce greenhouse gas emissions.

Improved economic and job opportunities will arise from using waste as a resource. There will be a consistent and coherent regulatory environment that facilitates business activity, sends clear signals on government policy directions, and removes distortions and impediments to the effective operation of relevant markets. The differences between jurisdictions in the way waste is defined, classified and regulated will be addressed, and information failures will be dealt with. Innovation and the development of technology and infrastructure will be encouraged for managing waste as a resource and waste avoidance.

The policy will align the approach by government, business and the community, with global directions to reduce the environmental, health and safety footprint of manufactured goods through design, manufacture, supply chain, consumption, and at end-of-life through a national approach to product stewardship rather than state-by-state regulation (which would distort national markets).

This policy statement articulates the aims, outcome and principles to guide action, sets key directions and priority strategies for national waste management and resource recovery policy to 2020, and provides a mechanism for measuring progress and responding to change.

### *Scope*

This policy encompasses wastes, including hazardous wastes and substances, in the municipal, commercial and industrial, construction and demolition waste streams, and covers gaseous, liquid and solid wastes. Radioactive waste is excluded.

### *Aims*

The aims of the National Waste Policy will be to:

- avoid the generation of waste, reduce the amount of waste (including hazardous waste) for disposal, manage waste as a resource and ensure that waste treatment, disposal, recovery and re-use is undertaken in a safe, scientific and environmentally sound manner, and
- contribute to the reduction in greenhouse gas emissions, energy conservation and production, water efficiency, and the productivity of the land.

### *Principles to guide our actions*

The key principles that underpin *Less waste, more resources* are:

- management of all wastes, including hazardous wastes, in line with Australia's international obligations
- environmentally responsible management of waste to reduce greenhouse gas emissions and contribute to broader sustainability outcomes
- holistic approaches which address market, regulatory and governance failures, duplications and inconsistencies
- participants in the product supply and consumption chain, rather than the general community, bear responsibility for the costs of resource recovery and waste management

- evidence-based decisions informed by the waste management hierarchy of actions and the principles of ecologically sustainable development, including the precautionary approach and the principle of intergenerational equity
- the environmentally sound management of materials, products and services embracing whole-of-life cycle strategies and quality assurance practices
- avoidance or minimisation of hazardous and other waste generation, taking account of social, technological and economic factors
- minimisation of intergenerational legacy issues through understanding and management of the risks
- regular provision of nationally consistent and comprehensive data on waste and re-use of materials to assess performance and inform policy
- consideration of overall community benefits taking account of social, environmental and economic outcomes for any measures, whether voluntary or regulatory
- implementation of policy by the appropriate level of government, industry or the community.

***Outcome: Less waste, more resources by 2020***

Where we want to be in 2020:

1. Australia manages waste, including hazardous waste, in an environmentally safe, scientific and sound manner, and has reduced the amount per capita of waste disposed.
2. Waste streams are routinely managed as a resource to achieve better environmental, social and economic outcomes, including saving water, energy, greenhouse gas emissions and finite resources, and to increase productivity of the land.
3. Australia has increased the amount of products, goods and materials that can be readily and safely used for other purposes at end-of-life.
4. Opportunities to safely manage, reduce and recycle waste are available to all Australians, including approaches that have been tailored to meet the needs of remote and rural communities.
5. The risks associated with waste and hazardous substances are understood and managed to minimise current and intergenerational legacy issues.
   - Australia manages its products, materials and chemicals that contain potentially hazardous substances, in particular those that are persistent, bio-accumulative and toxic, consistent with its international obligations and using best available evidence, techniques and technologies.
   - Local stockpiling of hazardous waste has been significantly reduced, particularly for rural and remote areas.
   - There are consistent and clear requirements for disposal of hazardous material, and for content labelling of manufactured goods, that also provide

a level playing field for Australian manufacturers and importers and informs consumers.

6. The interaction of regulatory frameworks and operational processes across government agencies aligns with world's best practice and facilitates waste avoidance, resource recovery and appropriate end-of-life management arrangements within their own operations as well as by business and the community.

7. There are efficient and effective Australian markets for waste and recovered resources, and local technology and innovation are sought after internationally.
   - Businesses, including those in manufacturing and the supply chain, embrace innovations that support the creation of value from potential waste streams and minimise their environmental footprint.
   - As part of a seamless national economy, there is a consistent and coherent regulatory environment that facilitates business activity in resource recovery and waste management.

8. Governments, industry and the community have embraced product stewardship and extended producer responsibility approaches.
   - Product stewardship and extended producer responsibility is adopted in business operations, leading to improvements in the design, longevity and disassembly of products, a reduction in hazardous content, less waste, and more thoughtful consumer choices.

### *Directions*

To achieve these outcomes, the policy sets six key directions and identifies 16 priority strategies that would benefit from a national or coordinated approach. These strategies will give focus to the work across individual jurisdictions, build on current directions and complement existing activity. This will also lead to clarity and certainty for business and the community. The strategies will be delivered by action at a national level through collaboration, or be led by one or more jurisdictions. These are described below with further detail in Table 1.

The six key areas are:

1. **Taking responsibility—**Shared responsibility for reducing the environmental, health and safety footprint of products and materials across the manufacture-supply-consumption chain and at end of life.
2. **Improving the market—**Efficient and effective Australian markets operate for waste and recovered resources, with local technology and innovation being sought after internationally.
3. **Pursuing sustainability—**Less waste and improved use of waste to achieve broader environmental, social and economic benefits.
4. **Reducing hazard and risk—**Reduction of potentially hazardous content of wastes with consistent, safe and accountable waste recovery, handling and disposal.

5. **Tailoring solutions—**Increased capacity in regional, remote and Indigenous communities to manage waste and recover and re-use resources.
6. **Providing the evidence—**Access by decision makers to meaningful, accurate and current national waste and resource recovery data and information, in order to measure progress and educate and inform the behaviour and the choices of the community.

### *Implementation*

The National Waste Policy will be implemented by individual and collective action by the Commonwealth and state, territory and local governments, and forms the long term agenda for EPHC for resource recovery and waste issues.

The roles and responsibilities for each level of government have been articulated and are set out in Table 1.

Progressive action on collaborative strategies will be undertaken as part of the EPHC work program. An implementation plan will be released by EPHC following its first meeting in 2010.

## National Waste Policy Strategies

| Taking responsibility | Shared responsibility for reducing the environmental, health and safety footprint of manufactured goods and materials across the manufacture-supply-consumption chain and at end-of-life. | |
|---|---|---|
| Objective: Support business and consumers to appropriately manage end-of-life products, materials and packaging. | | |
| Strategy | Results | Responsibility |
| The Australian Government, with the support of state and territory governments, will establish a national framework underpinned by legislation to support voluntary, co-regulatory and regulatory product stewardship and extended producer responsibility schemes to provide for the impacts of a product being responsibly managed during and at end-of-life.<br><br>Key outcomes: 1,3,4,7,8 | The first product stewardship scheme(s) are in place under the national framework within three years, and Commonwealth legislation for the national product stewardship framework is enacted.<br><br>A number of voluntary product stewardship schemes are accredited and reporting under the national product stewardship framework within four years.<br><br>Business is increasingly aware of, and implementing, waste avoidance opportunities. | Australian Government to resource and be responsible for the establishment and administration of the Commonwealth legislative framework.<br><br>Australian Government will consult state and territory governments through EPHC, on the design of the National Product Stewardship Framework.<br><br>Consultation on additional products that might be regulated in future will be through EPHC.<br><br>Operation of the co-regulatory and any regulatory schemes to be funded by the sector subject to regulation and the approach agreed as part of the development of the scheme by the sector.<br><br>Accreditation of voluntary schemes to occur on cost recovered basis through a fee for service.<br><br>State and territory governments to provide for assessments, inspections, intelligence gathering as part of existing policy, program and regulatory operations.<br><br>State and territory governments can continue to support local product stewardship action. |

| Taking responsibility | Shared responsibility for reducing the environmental, health and safety footprint of manufactured goods and materials across the manufacture-supply-consumption chain and at end-of-life. | |
|---|---|---|
| Objective: Support business and consumers to appropriately manage end-of-life products, materials and packaging. | | |
| Strategy | Results | Responsibility |
| All governments as significant procurers of goods, services and infrastructure, will embody and promote sustainable procurement principles and practices within their own operations and delivery of programs and services to facilitate certainty in the market.<br><br>Key outcomes: 1,2,3,4,5,6,7,8 | Sustainable procurement principles are taken into account as part of value for money in procurement decisions.<br><br>Waste management, use of reprocessed materials, resource recovery and responsibility for goods and materials at end of life, are taken into account as far as practicable in decision making.<br><br>Guidance on sustainable procurement such as standard specifications and model contract clauses are available to procurement officials within four years.<br><br>Governments will report periodically on the uptake of sustainable procurement. | All governments to undertake as part of existing arrangements.<br><br>EPHC, through the secretariat, facilitates sharing of guidance materials between jurisdictions and in consultation with relevant bodies such as the Australian Procurement and Construction Council. |
| The Australian Government, in collaboration with state and territory governments, industry and the community better manage packaging to improve the use of resources, reduce the environmental impact of packaging design, enhance away from home recycling and reduce litter.<br><br>Key outcomes:<br>1,2, 4,7 | Approaches to improving the use of resources, reducing the environmental impact of packaging design, enhancing away from home recycling and reducing litter will be agreed.<br><br>Improved away from home recycling.<br><br>Packaging design will increasingly provide for easy re-processing and will be labelled accordingly. | All governments will progress through EPHC activities, including the National Packaging Covenant.<br><br>This strategy will also be progressed through existing and prospective government initiatives and programs. |

| Improving the market | Efficient and effective Australian markets for waste and recovered resources, and local technology and innovation are sought after internationally. | |
|---|---|---|
| Objective: Support waste avoidance, reduction, recovery and re-use by addressing market impediments and removing red tape. | | |
| Strategy | Results | Responsibility |
| The Australian Government, in collaboration with state and territory governments, will introduce a national definition and classification system for wastes (including hazardous and clinical wastes) that aligns with definitions in international conventions, provides for when a product or material ceases to become a waste, and reflects these classifications in relevant policies and instruments.<br><br>Key outcomes: 2,5,6 | Existing arrangements are mapped in a simple national classification data base for wastes which shows equivalent classes and to the extent possible, how these relate to international approaches.<br><br>Principles are agreed that can be applied to classes or types of waste that enable definitions to be applied as to when a material ceases to be a waste.<br><br>Existing classification arrangements are assessed and options developed for a national system, together with their costs and benefits, with a decision on an approach within four years.<br><br>National classifications and definitions of when a material ceases to be a waste are referenced as key instruments are progressively reviewed or new instruments established.<br><br>Key government policies and legislation use consistent classifications and are supported by nationally consistent data collection and tracking systems. | This strategy will be progressed in two phases.<br><br>The first phase will address impediments to defining when a product or material ceases to become a waste, map existing classifications of waste, and scope development of a nationally consistent classification system that aligns with current and future needs. Existing arrangements such as the Controlled Waste NEPM and NPI will be considered. This phase will be progressed through EPHC.<br><br>For the national classification system, the first phase will build on EPHC work to scope requirements, and assess the benefits of change, implementation options and costs.<br><br>For the second phase of the national classification system, EPHC will agree an approach. This will be completed within four years. |

| Improving the market | Efficient and effective Australian markets for waste and recovered resources, and local technology and innovation are sought after internationally. | |
|---|---|---|
| Objective: Support waste avoidance, reduction, recovery and re-use by addressing market impediments and removing red tape. | | |
| Strategy | Results | Responsibility |
| The Australian Government, in collaboration with state and territory governments through the EPHC, will facilitate the development of a suite of agreed national principles, specifications, best practice guidelines and standards, to remove impediments to the development and operation of effective markets for potential wastes.<br><br>Key outcomes: 2,3,4,6,7 | National principles to encourage safe re-use of waste are agreed; and national specifications for use of recycled construction and demolition waste in pavements, fit-for-purpose use of recycled organics; and biosolids derived from organic waste are commenced within a three year period.<br><br>Further priorities agreed and work program to develop national guidance and standards for these priorities endorsed.<br><br>National guidance is publicly available, referenced in government guidelines and state and territory licensing arrangements as appropriate. | To be undertaken through EPHC, with the first step being to scope the project, identify priorities and timeframes. This would include looking at existing materials that could be shared or used nationally. |
| The Australian Government, in collaboration with state and territory governments, local governments, industry, business and the community, will provide access to knowledge and expertise in sustainable procurement and business practices.<br><br>Key outcomes: 1,2,3,4,5,6,7,8 | Capability is provided under the auspices of the EPHC that provides access to current information and analyses on waste management and reprocessing technologies; regulatory and institutional settings; research; business case information; and consumer values. | To be undertaken through EPHC, with the first phase being to scope the project, identify priorities and timeframes. |

| Pursuing sustainability | Less waste and improved use of waste to achieve broader environmental, social and economic benefits. | |
|---|---|---|
| Objective: To enhance biodegradable (organic) resource recovery and reduce greenhouse gas emissions from landfills. | | |
| Strategy | Results | Responsibility |
| State and territory governments building on existing commitments, continue their focus to phase down the amount of biodegradable material sent to landfill.<br><br>Key outcomes: 1,2,3,4,6,7 | Biodegradable waste disposed to landfill is significantly reduced. This will be achieved through beneficial re-use such as compost, soil conditioners, biochar, and through the use of alternative waste treatment technologies, waste-to-energy plants and bio-digesters.<br><br>Increased markets are available for beneficial use. | State and territory governments to undertake as part of their existing waste management and program responsibilities. |
| State and territory governments ensure the safety and health risks arising from landfill gas emissions are managed across all landfills through appropriate regulation and licence requirements.<br><br>Key outcomes: 1,2,3,4,6,7 | State and territory governments effectively manage health and safety risks arising from landfill gas emissions through key policies, planning, legislation and licence conditions. | State and territory governments to undertake as part of their existing waste management responsibilities. |
| The Australian Government, in collaboration with state and territory governments, will develop a strategy for measures to address emissions from disposal of waste to landfills and other waste activities, and these support the operation of a future CPRS.<br><br>Key outcomes: 1,2,3,4,6,7 | Strategies for addressing and/or offsetting emissions from landfill that complement the approach to resource recovery from organic waste is released by EPHC by 2011.<br><br>State and territory governments have initiatives for diverting organic waste from landfill and energy production. | Strategies developed through EPHC.<br><br>Australian Government is responsible for the implementation of the proposed CPRS which covers landfill emissions, and continues to support appropriate research, innovation and related activities through relevant programs. |

| Pursuing sustainability | Less waste and improved use of waste to achieve broader environmental, social and economic benefits. | |
|---|---|---|
| Objective: To avoid waste and increase recovery and re-use of wastes from the commercial and industrial and construction and demolition waste streams. | | |
| Strategy | Results | Responsibility |
| State and territory and local governments, in collaboration with the Australian Government, industry and business, to achieve major improvements in waste avoidance and re-use of materials in key areas of the commercial and industrial waste stream.<br><br>Key outcomes: 1,2,3,4,5,7,8 | Significant waste avoidance and resource recovery actions are identified for the commercial and industrial waste stream and initiatives commenced progressively over the period. This will include supply chain, food waste, packaging recycling and central business district initiatives. | All jurisdictions to identify opportunities within the other national waste policy strategies to promote waste avoidance and enhanced resource recovery from the commercial and industrial waste stream.<br><br>State and territory governments to determine areas that could deliver the most significant waste reductions and/or recovery outcomes, and develop partnerships to implement/resource complementary cross-cutting activities as part of existing and prospective initiatives and program responsibilities.<br><br>All jurisdictions to identify areas and processes for national action in the commercial and industrial waste stream and progress these through EPHC. |
| All governments continue to encourage best practice waste management and resource recovery for construction and demolition projects.<br><br>Key outcomes: 1,2,3,4,5,7,8 | Construction and demolition projects apply best practice waste avoidance, waste management and resource recovery procedures. | All governments to progress as part of their existing procurement, infrastructure and waste management responsibilities. |

| Reducing hazard and risk | Potentially hazardous content of wastes is reduced and waste recovery, handling and disposal is consistent, safe and accountable. | |
|---|---|---|
| Objective: A comprehensive nationally integrated system for the identification, classification, collection, treatment, disposal and monitoring of hazardous substances and waste that aligns with international obligations. | | |
| Strategy | Results | Responsibility |
| The Australian Government, in collaboration with state and territory governments, will ensure that: our international obligations are met; hazardous materials entering the waste stream are reduced; transboundary movement of hazardous waste is effectively, efficiently and legally undertaken within Australia and complies with international requirements; product stewardship is adopted to provide for the impacts of a product with potentially hazardous materials being responsibly managed during and at end-of-life; and facilities are available to handle and dispose of hazardous substances that become waste in an environmentally sound manner.<br><br>Key outcomes: 1,2,3,4,5,6,7,8 | The existing hazardous waste arrangements are mapped to a national classification system for wastes, and these classifications referenced in key instruments as they are reviewed or new instruments established.<br><br>Product stewardship schemes address specific products that contain potentially hazardous materials.<br><br>An assessment of options to introduce a labelling system for products and articles containing potentially hazardous content to allow safe disassembly and/or treatment and disposal is completed and a decision made.<br><br>Government systems, policies and regulatory frameworks are aligned to ensure that appropriate transboundary movement of hazardous waste for treatment and disposal can occur in an expeditious, streamlined and legal manner, and the monitoring and reporting system is integrated with a contemporary National Pollutant Inventory.<br><br>Key government policies and legislation use consistent classifications for hazardous wastes, including clinical wastes, and are supported by nationally consistent data collection and tracking systems.<br><br>A monitoring program for chemicals listed under the Stockholm Convention has commenced and priorities for the management of hazardous substances in products and materials completed.<br><br>An analysis of Australia's current and future hazardous waste treatment and disposal capabilities has been completed<br><br>Local stockpiling of hazardous substances and waste is reduced.<br><br>Improved collection of chemical waste and containers. | Australian Government is responsible for the first phase of establishing the basic monitoring program for chemicals listed under Stockholm Convention. Scaling up of monitoring and sampling to occur in the second phase.<br><br>See comments for Strategy 1 re product stewardship scheme.<br><br>See comments for Strategy 4 re hazardous component of national classification to underpin monitoring and reporting.<br><br>Labelling system to continue to be progressed by EPHC.<br><br>Streamlining transboundary movement to be undertaken by jurisdictions as part of their waste management responsibilities.<br><br>Analysis of Australia's current and future hazardous waste treatment and disposal capabilities will be undertaken under the auspices of EPHC.<br><br>Jurisdictions to reduce local stockpiling of waste as part of existing waste management responsibilities.<br><br>Assessment of improved collection of chemical waste and containers to be progressed by EPHC. |

| Reducing hazard and risk | Potentially hazardous content of wastes is reduced and waste recovery, handling and disposal is clear, consistent and safe. | |
|---|---|---|
| Objective: Develop a national system to reduce potentially hazardous substances available in Australia. | | |
| Strategy | Results | Responsibility |
| The Australian Government, with the support of state and territory governments, will adopt a system that aligns with international approaches, to reduce hazardous substances in products and articles sold in Australia that present a potential risk during and at end-of-life to human health, safety or the environment.<br><br>Key outcomes: 1,3,4,6,8 | An assessment of the approach best suited to Australia is complete and a decision made within three years. | The first phase will be for the Australian Government to undertake in consultation with the states and territories, an assessment of approaches to reduce hazardous substances in products and articles sold in Australia.<br><br>The second phase will be to determine the most suitable approach informed by the analysis of costs and benefits and alignment with approaches overseas. Consultation with state and territory governments on the approach to be adopted will occur through EPHC. |

| Tailoring solutions | Increased capacity in regional and remote communities to manage waste and recover and re-use resources. | |
|---|---|---|
| Objective: Support improved waste management and re-use of waste in regional, remote and Indigenous communities. | | |
| Strategy | Results | Responsibility |
| State and territory and local governments to work together to identify regional and remote waste and resource recovery actions to build capacity and ensure an appropriate suite of services is available to communities.<br>Key outcomes: 1,2,3,4,5,7 | Actions are assessed including a regional and remote stakeholder waste network to build capacity. | State and territory and local governments continue to resource and take relevant action as part of existing policies and programs, including waste management. |
| The Australian Government will undertake an audit of existing waste infrastructure and local capability in selected remote Indigenous communities as part of a larger essential services audit under the COAG National Indigenous Housing Partnership Agreement.<br>Key outcomes: 2,4,5,8 | The audit is completed within two years and recommendations provided. | Australian Government is responsible for the audit. |

| Providing the evidence | Decision makers have access to meaningful, accurate and current national waste and resource recovery data and information. | |
|---|---|---|
| Objective: Develop capacity to effectively collect consistent, accurate and meaningful national waste and resource recovery data to inform policy and decisions. | | |
| Strategy | Results | Responsibility |
| The Australian Government, in collaboration with state and territory governments, will develop and publish a three-yearly current and future trends waste and resource recovery report. This will be underpinned by a system that provides access to integrated national core data on waste and resource recovery that is accurate, meaningful and up-to-date and available online.<br><br>Key outcomes: 1,2,3,4,5,6,7,8 | The first periodic national current and future trends in waste and resource recovery report (National Waste Report) will be published in three years.<br><br>The basic national dataset, and how best to improve data collection and streamline business reporting requirements and administration, to align with national directions, will be scoped and developed over a five year period. | Future National Waste Reports will be developed by the Australian Government in consultation with the states and territories and made available through EPHC.<br><br>The first phase will be to assess information needs for policy, regulatory and operational purposes and business needs. Any improvements and streamlining that can be easily made in the short term will be identified and improvements undertaken where feasible. Options for accessing comprehensive, robust, accurate and timely core national waste data and information will be assessed—these could include a virtual, dispersed or an aggregated system.<br><br>The second phase on the integrated national waste data system is for EPHC to agree an approach. |

*Appendix B*

# Examining a national versus jurisdictional product stewardship approach

Table B.1 presents the key estimates from the PwC/Hyder Consulting RIS on computers and television stewardship. These estimates show that a 'horses for courses' approach might be applied to product stewardship. Though the program estimates are still open for comment, the PwC analysis indicates that minimisation of collection and processing costs for computers and TVs might well be achieved through application of a tailored approach at a jurisdictional level. This of, course, is a matter for program designers to contemplate.

What also emerges strongly from the PwC analysis are the administrative savings available from a coordinated approach to implementation and administration by governments. Notably, jurisdictional tailoring and joint consideration need not be mutually exclusive. The PwC figures indicate the magnitude of savings available from application of a national approach to planning versus duplicative and potentially conflicting efforts at a jurisdictional level.

Table B.1

**PRODUCT STEWARDSHIP FOR COMPUTERS & TVS: ADMINISTRATIVE COST ESTS**

| | Joint co-regulatory approach (Option 1) | | Separate co-regulatory approach (Option 2) | | Commonwealth based joint approach (Option 3) | | Commonwealth based separate approach (Option 4) | |
|---|---|---|---|---|---|---|---|---|
| | Annual costs $m | PV costs $m | Annual costs $m | PV costs $m | Annual costs $m | PV costs $m | Annual costs $m | PV costs $m |
| Product collection and processing | variable | 834.8 | variable | 782.4 | variable | 834.8 | variable | 790.6 |
| Policy design & implementation | 0.5 | 0.9 | 0.5 | 0.9 | 0.4 | 0.7 | 0.4 | 0.7 |
| Government administration | 3.6 | 36.3 | 3.6 | 36.3 | 0.7 | 7.1 | 0.7 | 7.1 |
| Importer compliance | 0.5 | 5.2 | 0.5 | 5.2 | 0.5 | 5.2 | 0.5 | 5.2 |
| **Total on- costs** | **4.6** | **42.4** | **4.6** | **42.4** | **1.6** | **13.0** | **1.6** | **13.0** |

Source: PWC/ Hyder (2009) Consultation RIS, p.76
Note: Present values calculated over 20 years using a discount rate of 7 per cent per annum.

### *Insurance value of moving to a national paradigm*

The estimates applied for the product stewardship example give a sense of the risk management issues that are relevant to consideration of policy paradigms and frameworks.

Figure B.1 presents the probability distribution of product stewardship outcomes under Option 1, assuming that these are normally distributed (ie. conform to the standard statistical bell curve).

It shows that if this distribution applies then there is a 90 per cent chance that between 6 and 9 additional products will be progressed under the fragmented approach (Option 1), with an expected value of additional administrative costs (over 20 years) equal to about $127.2 million.

This extra cost is incurred if policy fragmentation occurs. Additional products are assumed to be progressed under the fragmented approach, and reduced coordination results in extra costs to the budget.

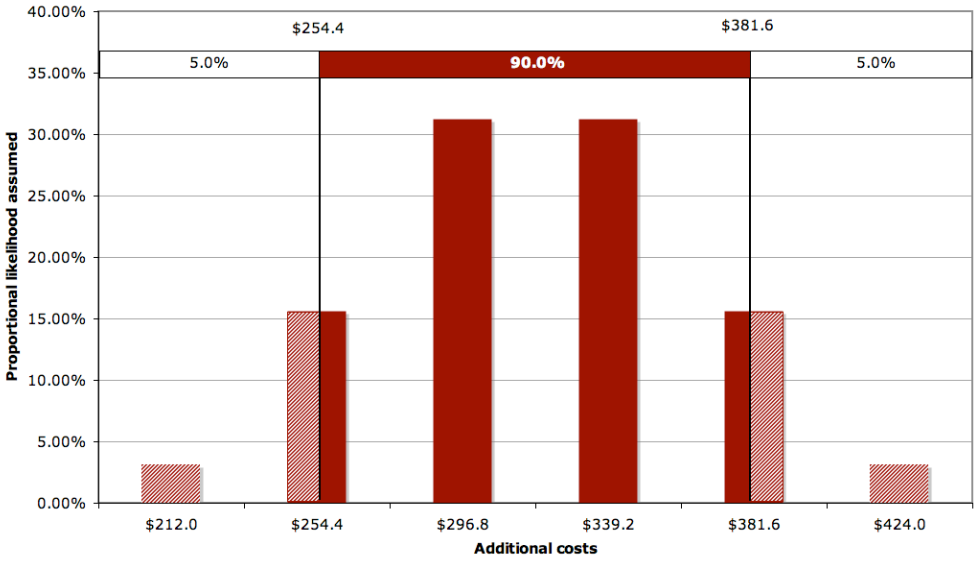
Viewed in this way, adoption of a national framework not only delivers savings in terms of the products expected to come forward in the business as usual case (ie. 5 products, with an NPV saving over 20 years of $147 million), but it also has value in reducing exposure to higher cost outcomes. Such an outcome is represented by Option 1. Here representative implementation costs are the same as in the base case, but fragmentation means jurisdictions drive a greater number of products forward for coverage. If the expected value of these avoided additional costs is attributed to the coordinated national approach, its NPV value is boosted to **$274.2 million.**

**If only the add on administrative cost component (ie. that associated with jurisdictional duplication) is considered (asseumed equal to about $29.4m per product, based on PwC estimates for the proposed computer and television stewardship program) this reduces the premium amount by about 30 per cent, that is to an NPV of $88.8m instead of $127.2m. This gives a revised NPV result of $235.8m.**

Savings associated with resource processing and private compliance costs might also be factored into this calculus. Typically, these are many times the cost of running a scheme. It is reasonable to assume that such projects are 'marginal' in the minds of policymakers and likely to deliver only a marginal pay-off from a societal perspective.

Figure B.1

**ASSUMED RISK OF ADDITIONAL MEASURES UNDER OPTION 2: NORMAL DISTRIBUTION**




And this is based on consideration of product stewardship alone. Only small efficiency gains and risk reductions are needed in other areas of the national waste agenda — that can be attributed to application of a framework approach — to multiply this potential pay-off.

*Appendix C*

# Synopsis of jurisdictional waste related policies and regulations

The following synopsis of jurisdictional waste related policies and regulations has been adapted from (Hyder Consulting 2009).

Table C.1

**AUSTRALIAN CAPITAL TERRITORY**

| | |
|---|---|
| Key legislation and responsible bodies | Waste regulation and policy in the Australian Capital Territory (ACT) sits broadly within the *Environmental Protection Act 1997*. The *Waste Minimisation Act 2001* also enables legislation for waste management in the ACT. The recent Waste Minimisation (Container Recovery) Amendment Bill 2008 amends the Act to ensure that, if the targets for recycling of certain packaging established by the National Packaging Covenant (2005) are not met, a beverage container deposit scheme that provides for the payment of refunds on beverage containers will come into force.<br><br>The ACT was the first government in the world to set a goal of achieving zero waste to landfill. Launched in 1996, the '*No Waste by 2010 Strategy'* Waste Management Strategy for Canberra has been developed to set the vision and future directions for waste management in the Australian Capital Territory. It was always intended that the *Waste Minimisation Act 2001* be amended as necessary to further implement strategies arising from the implementation of the No Waste by 2010 Strategy. The 'Turning waste into resources 2004-2007 Action Plan' outlines a range of programs to deliver the Strategy goal.<br><br>The ACT Environment Protection Agency (EPA), a subdivision of the Department of Territory and Municipal Services, is the regulatory authority with regards to waste and also has the power to enforce legislation. The Department of the Environment, Climate Change, Energy and Water is responsible for monitoring the No Waste Strategy. The ACT Government holds the legislative power. In developing the legislation it receives policy advice from the EPA, NOWaste and the ACT Commission of the Environment. The EPA has statutory powers relating to certain activities, such as authorising commercial landfills.<br><br>NOWaste is a subdivision of the EPA that provides municipal waste services. Until recently, NOWaste also provided the ACT government with strategic policy advice. The ACT Commission of the Environment is an independent agency that also provides strategic policy advice and review to the ACT Government partly through the annual State of the Environment Report. |
| Landfill Levies | In ACT a landfill levy is charged and the revenue is used to fund waste reduction initiatives. The levy for ACT household waste (> 0.5 tonne load) is $62.00 per tonne; the levy for C&I waste (> 0.25 tonne) is $110.00 per tonne. Smaller loads and specific waste items (i.e. tyres, carcasses, mattresses) are charged according to a schedule of fees (updated 2008). Note that non-ACT waste (i.e. imported waste) attracts a higher levy. |
| Waste Targets | ACT has a target of zero waste to landfill by 2010 |
| Waste Definitions and Classifications | Waste is defined under the Environment Protection Act 1997 as "waste means any solid, liquid or gas, or any combination of them, that is a surplus product or unwanted by-product of an activity, whether the product or by-product is of value or not."<br><br>There are 4 solid waste classifications: inert, solid, industrial and hazardous (as taken from the ACT's Environmental Standards: Assessment & Classification of Liquid & Non-liquid Wastes June 2000).<br><br>1. Inert – natural wastes, building and demolition, asphalt, biosolids, tyres, office and packaging waste<br><br>2. Solid - municipal waste, biosolids, Cleaned pesticide, biocide, herbicide or fungicide containers, drained and mechanically crushed oil filters, and rags and oil absorbent materials (not containing free liquids) from automotive workshops, disposable nappies, incontinence pads and sanitary napkins, food waste, vegetative waste generated from agriculture or horticulture, non-chemical waste generated from manufacturing and services (including metal, timber, paper, ceramics, plastics and composites)<br><br>3. Industrial – stabilised asbestos and asbestos fibre and dust waste<br><br>4. Hazardous - any waste that meets the criteria for assessment as dangerous goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail (categorised as one or more of 9 types), Pharmaceuticals and poisons (being waste generated by activities carried out for business, or other commercial purposes and that consists of pharmaceutical or other chemical substances specified in the Poisons List under the Poisons and Therapeutic Goods Act 1966 (NSW)), Clinical waste, Cytotoxic waste, Sharps waste, and Quarantine waste. |
| Waste Data Collection | Unknown |
| Extended Producer Responsibility | Unknown |

Table C.2

**NEW SOUTH WALES**

| | |
|---|---|
| Key legislation and responsible bodies | The waste regulatory framework is administered under the principal legislation of the Protection of the Environment Operations Act (POEO Act, 1997 and amended in 2008) and the Waste Avoidance and Resource Recovery Act (WARR Act) 2001. The Department of Environment and Climate Change (DECC) is the Government department with accountability for waste. Within DECC, the Environment Protection and Regulation Group (formerly the Environment Protection Agency) is responsible for legislation and enforcement. The Climate Change, Policy and Programs Group of DECC (Sustainability Programs) is responsible for formulating waste management strategies and developing and delivering the programs which are identified in the strategies. The Waste Avoidance and Resource Recovery Strategy (WARR) 2007 is the most recent NSW waste strategy.<br><br>Waste is administered across three geographic regions in NSW. These are the Sydney metropolitan area (SMA), the Extended Regulated Area (ERA) which covers the Hunter, Central Coast and Illawarra regions; and the Regional Regulated Area (RRA) which encompasses the remainder of the state. |
| Landfill Levies | From **http://www.environment.nsw.gov.au/wr/h_wcmr.htm**<br><br>"In the SMA the levy will increase by an additional $3 tonne in 2009-10, and $4 in 2010-11 on top of the currently scheduled increases. Under these arrangements, the levy in the SMA will be $58.80 (including CPI) in 2009-10 and $68.80 in 2010-11 (in today's dollars). The levy will increase by $10 a tonne thereafter.<br><br>In the ERA the levy will increase by an additional $3 tonne in 2009-10, and $4 in 2010-11 on top of the currently scheduled increases. Under these arrangements, the levy in the ERA will be $52.40 (including CPI) in 2009-10 and $63.90 in 2010-11 (in today's dollars). The levy will increase by $11.50 a tonne until it reaches parity with the SMA in 2013-14. The levy will increase by $10.00 a tonne thereafter."<br><br>The POEO (Waste) Regulation 2005 (and amended 2008) provides details of the landfill levy, which applies per tonne of waste throughout NSW. Levy rates for the 2009-2010 financial year are: $58.80 (SMA); $52.40 (ERA); and $10.00 (RRA). Under Section 88 of the POEO Act, operators of waste facilities must report to DECC all waste that enters and exits facilities. These reports form the basis for charging the levy and giving deductions (where re-use or recycling activity takes place), and also provide a useful source of data on waste flows in NSW. |
| Waste Targets | Recycling targets for 2014 have been set for NSW, SMA and ERA within the Waste Avoidance and Resource Recovery Strategy (WARR) 2007. The targets are:<br><br>▪ municipal = 66%<br><br>▪ C&I = 63%<br><br>▪ C&D =76% |
| Waste Definitions and Classifications | Under the POEO Act, waste is defined as :<br><br>*(a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or*<br><br>*(b) any discarded, rejected, unwanted, surplus or abandoned substance, or*<br><br>*(c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or*<br><br>*(d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or*<br><br>*(e) any substance prescribed by the regulations to be waste.*<br><br>A substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered.<br><br>Guidelines for waste classification, resource recovery, and landfill are provided by DECC. |

| | |
|---|---|
| | There are 5 solid waste classes: special, hazardous, restricted solid, general solid (putrescible), general solid (non-putrescible). Within these there are various sub-classes:<br>▪ Special: 3 classes (clinical and related wastes, asbestos wastes, waste tyres)<br>▪ Hazardous wastes: 6 classes<br>▪ Restricted solid: none to date<br>▪ General putrescible: 8 classes<br>▪ General non-putrescible: 22 classes. |
| Waste Data Collection | Hazardous waste data is collected using a waste tracking system. This is an on-line system that uses the Controlled Waste NEPM waste codes and the Victorian waste codes to describe waste types.<br>Licensed waste facilities are required to report monthly data, either via the on-line system (preferred) or via paper submission.<br>Waste facilities that do not pay the waste and environment levy and are located in rural areas outside of the SMA, ERA or RRA are required to report annually. |
| Extended Producer Responsibility | The WARR Act 2001 also allows for extended producer responsibility (EPR) schemes to be introduced in NSW. The Act encourages industries to take voluntary action for reduced environmental impacts, however where these are ineffective regulatory schemes may be introduced.<br>There are currently 17 wastes of concern: computers, mobile phones, office paper, paint, plastic bags, televisions, tyres, agricultural and veterinary (Agvet) chemicals, agvet chemical containers, batteries, cigarette butts, end-of-life vehicle residuals, other electrical products, packaging, Polyvinyl Chloride, treated timber, used oil and lubricants. |

Table C.3

**NORTHERN TERRITORY**

| | |
|---|---|
| Key legislation and responsible bodies | Waste policy and regulation is determined by the Department of Natural Resources, Environment, The Arts and Sport (NRETAS), Waste Management and Resource Recovery Group.<br><br>NRETAS administers the Waste Management and Pollution Control Act (in force as of March 2009, replacing 1998 Act), which:<br><br>▪ Gives a definition of waste<br><br>▪ Excludes waste arising from mining or petroleum exploration activity<br><br>▪ Sets out legislation for development and use of 'environmental protection objectives'<br><br>▪ Requires environment protection approvals for waste treatment and disposal facilities (including recycling activities), and licences for waste disposal premises serving more than 1,000 people, waste collection/transport/storage/recycling/treatment/disposal of a listed waste on a commercial basis.<br><br>The Waste Management and Pollution Control (Administration) Regulation 2001 provides for the setting of fees for activities to implement the Act; defines listed wastes as a class of wastes; and specifies the content requirements of Infringement Notices issued for offences under the Act.<br><br>The Environment Protection Authority (EPA) was created in 2007, and is an independent organisation with an advisory role. The EPA:<br><br>▪ Operates under the Environment Protection Authority Act 2007<br><br>▪ provides independent strategic advice to Government, businesses and the community<br><br>▪ has significant independent powers to publicly recommend contemporary legislative and policy frameworks<br><br>▪ not responsible for undertaking environmental regulation directly<br><br>▪ focuses on improving guidelines and standards for environmental practice, monitoring and evaluation<br><br>The EPA issues the 'Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory' (2003)<br><br>The Environment, Heritage and the Arts Division is currently working with key partners to develop a long-term waste management framework for the Northern Territory. The 2007 Re-thinking Waste Disposal Behaviour and Resource Efficiency Interim Action Plan aims to:<br><br>▪ Identify effective incentives for appropriate disposal behaviour in the Northern Territory<br><br>▪ Identify opportunities to maximise resource efficiency and minimise environmental impacts in the Northern Territory<br><br>▪ Establish a sustainable resource-not-waste management framework and effective implementation mechanisms<br><br>▪ Promote greater awareness of resource efficiency issues in the Northern Territory<br><br>The Strategy is funded through the Northern Territory Government's EnvironmeNT Grants and the Packaging Stewardship Forum. |
| Landfill Levies | There is no State-imposed landfill levy in the Northern Territory. |
| Waste Targets | No known landfill reduction or recycling targets for the Northern Territory. |
| Waste Definitions and Classifications | The Act defines waste as:<br><br>(a) a solid, a liquid or a gas; or<br><br>(b) a mixture of such substances, |

| | |
|---|---|
| | that is or are left over, surplus or an unwanted by-product from any activity (whether or not the substance is of value) and includes a prescribed substance or class of substances.<br><br>Under the Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites n the Northern Territory 2003 there are 4 waste classifications:<br><br>▪ Domestic garbage: "Wastes generated from household sources - may include hazardous or putrescible waste"<br><br>▪ Hazardous waste: "any waste containing significant quantities of a substance which may present a danger to the life or health of living organisms when released into the environment. These wastes may both include medical and radioactive wastes".<br><br>▪ Clinical waste: "is that which has the potential to cause sharps injury, infection or public offence, and includes sharps, human tissue waste, laboratory waste, animal waste resulting from medical, dental or veterinary research or treatment that has the potential to cause disease".<br><br>▪ Putrescible waste: "Organic wastes capable of decomposition by micro-organisms". |
| Waste Data Collection | NT landfill licences require annual reporting of "total quantities of wastes land filled during the preceding period." Licences are required for landfills servicing the waste disposal requirements of over 1000 people. |
| Extended Producer Responsibility | The NRETAS is currently (May 2009) running trials of a *Cash for Containers* scheme at major events with the intention of developing a Territory-wide scheme to be implemented by 2011. Legislation will be required to go before Parliament to enact the cash for containers scheme. |

Table C.4

**QUEENSLAND**

| | |
|---|---|
| Key legislation and responsible bodies | The Environmental Protection Agency is developing a new Waste Management Strategy for Queensland to provide a framework within which waste can be managed sustainably under the Environmental Protection Act 1994. The draft strategy, '*Let's Not Waste Our Future – Queensland Waste Strategy'* underwent public consultation in 2007/08.<br><br>The Environmental Services Branch of the Conservation and Environmental Services Group is accountable for enforcement of and compliance to the legislation under the Environment Protection Act. The Strategy and Policy Branch of the Sustainable Futures Group is responsible for preparing strategy and policy proposals and for providing advice to the Minister. The Minister's Office is responsible for developing waste management legislation with advice from the EPA.<br><br>The *Environment Protection Regulation (2008),* among other things, identifies environmental activities that can be included in a regulation, such as waste management.<br><br>The *Environmental Protection (Waste Management) Policy 2000* (Waste EPP) and the *Environmental Protection (Waste Management) Regulation 2000* co-ordinate and clarify waste management practices in Queensland and provide improved environmental safeguards. The Policy outlines the preferred waste management hierarchy and principles for achieving good waste management, with waste avoidance at the top of the hierarchy. The regulation provides provision for the following:<br><br>▪ offences for unlawful activities at waste facilities;<br><br>▪ local government waste management administrative arrangements (transferred from the *Environmental Protection (Interim Waste) Regulation 1996*);<br><br>▪ a waste tracking system that collects data on the movement of regulated waste within Queensland and to and from other states;<br><br>▪ requirements for premises generating clinical and related waste, including preparing waste management plans, segregating clinical and related wastes, appropriate on-site storage and proper disposal;<br><br>▪ a framework for managing and ultimately phasing out certain polychlorinated biphenyls;<br><br>▪ approval processes for beneficial use of wastes; and<br><br>▪ design rules for waste equipment. |
| Landfill Levies | There is no State-imposed landfill levy in Queensland; however, a levy has been proposed and discussed as part of the draft Waste Strategy. |
| Waste Targets | There are no waste targets set in Queensland. |
| Waste Definitions and Classifications | The *Environmental Protection Act (1994)* defines waste as materials that are surplus, left over or unwanted by-products from domestic, commercial, industrial or other activities.<br><br>There are 4 waste classification types: domestic waste, commercial and industrial, construction and demolition, and regulated waste. |
| Waste Data Collection | The reporting of waste movement within Qld is required for "trackable wastes" as defined in the *Environmental Protection (Waste Management) Regulation 2000*. This tracking system is used by waste producers, transporters and receivers of "trackable wastes". These wastes are generally classified as regulated wastes. |
| Extended Producer Responsibility | The Environmental Protection (Waste Management) Policy 2000 provides for: "voluntary industry waste reduction agreements which an industry member or association can enter. These agreements are designed to minimise the amount of waste generated by industry, promote efficient and cost-effective approaches to waste reduction and encourage greater responsibility for waste reduction within industries." (source: **http://www.epa.qld.gov.au/environmental_management/waste/waste_management/waste_management_laws/**) |

Table C.5

**SOUTH AUSTRALIA**

| | |
|---|---|
| Key legislation and responsible bodies | The *Environment Protection Act 1993* is the umbrella legislation for environmental protection, including waste management, and is supported by a suite of regulations. The Act includes the following provisions for waste management:<br>▪ a regulatory scheme for the litter control and waste management of beverage containers including container deposit and prohibits the sale of certain containers.<br>▪ Waste depot levy<br>▪ Collection, storage and treatment of chemical containers may be undertaken by the EPA without a licence or other approval<br>▪ The Act also stipulates which wastes are 'listed wastes'<br>Relevant regulations under this Act are:<br>▪ Environment Protection (Beverage Container) Regulations 2008<br>▪ Environment Protection (Fees and Levy) Regulations 1994, which requires a waste depot levy to be paid based on the volume of waste landfilled<br>▪ Environment Protection (General) Regulations 1994<br>▪ Environment Protection (Used Packaging Materials) Policy 2007, which details requirements of certain brand owners to take responsibility for end-of-life packaging materials/<br>▪ Environment Protection (Waste Management) Policy 1994 (which covers mainly medical waste)<br>The *Zero Waste SA Act 2004* established Zero Waste SA, with the function of reforming waste management in the State and producing a state wide strategy, with coordination with the EPA. This Act also established the Waste to Resources Fund, which is partly funded by the waste levy.<br>South Australia's first state wide strategy 'Waste Strategy 2005-2010' sets out the direction for waste management. A previous strategy for metropolitan Adelaide 'Integrated Waste Strategy for Adelaide 1996-2015, developed by the EPA is also still in effect. The waste management hierarchy is the foundation of the state strategy. Five objectives provide a focus for the strategy:<br>▪ Fostering sustainable behaviour<br>▪ Reducing waste<br>▪ Implementing effective systems<br>▪ Implementing effective policy instruments<br>▪ Successful co-operation |
| Landfill Levies | South Australian has a landfill levy that increased to $23.40/tonne in metropolitan areas and $11.70/tonne in non-metropolitan areas in July 2007, up from $11.20 and $5.60 respectively prior to that date. There is no differentiation made based on the type of waste being deposited. Of the funds that are received, 50% are paid to the Waste to Resources Fund for Zero Waste SA to use for programs aimed at improving waste management and waste minimisation in SA, 5% goes to Environment Protection Fund for specific environmental projects and 45% goes to the EPA recurrent funding for operations and environmental programs. |
| Waste Targets | At least 25% reduction in waste to landfill by 2014, based on a 2004 baseline.<br>By 2010:<br>▪ 75% of all material presented at kerbside is recycled<br>▪ 30% increase in recovery and use of C&I materials<br>▪ 50% increase in recovery and use of C&D materials |

| | |
|---|---|
| Waste Definitions and Classifications | The Act defines waste as:<br>a) any discarded, rejected, abandoned, unwanted or surplus matter, whether or not intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or<br>b) anything declared by regulation (after consultation under section 5A) or by an environment protection policy to be waste, whether of value or not;<br>There are 3 main classifications of waste: municipal solid waste, construction and demolition waste (inert & mixed) and commercial and industrial waste (inert & mixed).<br>Under there waste classifications there is a number of sub groups including: asbestos, biosolids, compost, domestic waste, E-waste, green waste, hazardous waste, Hexachloro-benzene (HCB) waste, inert waste, listed waste, liquid waste, medical waste, Organochlorine Pesticide (OCP) waste, Polychlorinated Biphenyl (PCB) waste, putrescible waste, quarantine waste, radioactive waste, scheduled waste, and used tyres. |
| Waste Data Collection | Waste tracking forms provide the EPA with information on the movement of listed and liquid wastes. |
| Extended Producer Responsibility | Container Deposit Legislation |

Table C.6

**TASMANIA**

| | |
|---|---|
| Key legislation and responsible bodies | Tasmania's *Environmental Management and Pollution Control Act 1994* is the principal legislation governing environment protection. It contains several provisions regarding waste management:<br>▪ best practice environmental management<br>▪ environmental Audit<br>▪ transport of controlled waste<br>▪ the formation of environmental policies and regulations.<br>Amendments to this Act were made in 2007, represented by the *Environmental Management and Pollution Control Amendment (Environment Protection Authority) Act 2007*, which established the Environment Protection Authority.<br>The Act is supplemented by Environment Management and Pollution Control (Waste Management Regulations (2000) which covers:<br>▪ Management and designation of 'controlled wastes' and fines for breaching regulations<br>▪ Management of general waste<br>▪ Permits for handling, production, receipt, storage, re-use, recycling, reprocessing, salvage, incineration, treatment, disposal or use for energy recovery of specified wastes or classes of waste<br>The Department of Environment, Parks, Heritage and the Arts are the principal body that deals with waste and resource recovery. Recently, they have produced two key waste management documents:<br>▪ The Tasmanian Waste and Resource recovery management strategy (2009), whose aims are to facilitate:<br>▪ Improved partnerships, coordination and planning<br>▪ Waste avoidance and sustainable consumption<br>▪ Waste minimisation and resource recovery<br>▪ Improved regulation and management of residual wastes<br>▪ Improved data collection systems<br>▪ Reduction of greenhouse gas emissions<br>This strategy also establishes a new Waste Advisory Committee to implement and report on the success of the strategy.<br>▪ Draft Controlled Waste Management Strategy Current and Future Controlled Waste Practices in Tasmania (Draft Report) 2008<br>The Southern Waste Strategy Authority (SWSA) is another leading waste management body in Tasmania and is funded through a voluntary local government levy equivalent to $2 per tonne. The SWSA has prepared a 'Five year strategy 2006-2011' which provides the key objectives and strategies of the SWSA and sets a path for waste management and resource recovery to 2011. |
| Landfill Levies | Landfill levies are currently not applied to waste disposal in Tasmania |
| Waste Targets | No targets are currently set; they are forecast to be set by end 2012 by the Waste Advisory Committee |
| Waste Definitions and Classifications | The Act defines waste as any:<br>(a) discarded, rejected, unwanted, surplus or abandoned matter, whether of any value or not; or<br>(b) discarded, rejected, unwanted, surplus or abandoned matter, whether of any value or not, intended – |

| | |
|---|---|
| | (i) for recycling, reprocessing, recovery, re-use or purification by a separate operation from that which produced the matter; or<br>(ii) for sale.<br>Solid wastes are classified broadly into municipal, commercial and industrial and construction and demolition wastes. Hazardous waste is referred to a controlled waste. |
| Waste Data Collection | The Tasmanian state and local governments have agreed to jointly pursue improved systems for waste and recycling data reporting. Since 2006, municipal landfill operators have been required to report on waste in accordance with the Tasmanian Solid Waste Classification System. Data from transfer stations is also recognised as an important component of the waste database. A model contract clause has been provided to local governments by the Department of Environment, Parks, Heritage and the Arts for inclusion in contracts for the operation of waste transfer stations. The strategy also provides for the implementation of the controlled waste tracking system. |
| Extended Producer Responsibility | Support and participation in EPR and product stewardship programs a strategic action in the *Waste and Resource Recovery Management Strategy* 2009 |

Table C.7

**VICTORIA**

| | |
|---|---|
| Key legislation and responsible bodies | The *Environment Protection Act 1970* is Victoria's primary legislation for environmental protection, including the management of waste and resource recovery. The Environment Protection Authority Victoria (EPAV) is responsible for administering the Act. The Act contains several tools for the management of waste in Victoria:<br>▪ tradable emissions scheme (i.e. tradable pollution permits)<br>▪ Permits for the transport of prescribed waste<br>▪ Licensing of scheduled premises<br>▪ Resource efficiency plans for operators of scheduled premises (unless exempt)<br>▪ Works approval<br>▪ Penalty units applied for offences<br>▪ Sustainability Covenants<br>▪ Rebate for recycled waste removed from landfill<br>▪ Industrial waste reduction agreements with industry associations (EPA may require such an arrangement)<br>The Act provides for the EPAV to develop waste management policies (WMPs). WMPs administered by the EPAV include:<br>▪ Industrial Waste Management Policy (Movement of Controlled Waste between States and Territories)<br>▪ Industrial Waste Management Policy (National Pollutant Inventory)<br>▪ Industrial Waste Management Policy (Waste Acid Sulfate Soils)<br>▪ Waste Management Policy (Siting, Design and Management of Landfills)<br>▪ Waste Management Policy (Solid Fuel Heating)<br>▪ Waste Management Policy (Used Packaging Materials)<br>The Act also provides for the EPAV to develop State Environment Protection Policies(SEPPs). SEPPs aim to safeguard the environmental values and human activities (benefitical uses) that need protection from the effects of pollution and waste.<br>The *Environment Protection (Industrial Waste Resource) Regulations 2009* came into effect on 1 July 2009. These new regulations establish a system of controls over the management of industrial and prescribed wastes. The regulations classify certain wastes as 'prescribed wastes' and 'prescribed industrial wastes' for the purposes of the Act. The Regulations also establish requirements for the transport of prescribed waste, including a tracking system and a permit system for vehicles transporting prescribed waste. The Regulations ensure consistency with controls in related areas and for the cross-border movement of controlled hazardous wastes. The introduction of these regulations has also seen the *Industrial Waste Management Policy (Prescribed Industrial Waste) 2000* revoked.<br>Sustainability Victoria is responsible for the strategic direction for waste management and resource recovery in Victoria under the Act. Victoria's Towards Zero Waste Strategy sets out priority materials and products for each waste sector and establishes targets focussed on waste avoidance and resource recovery to 2014. Sustainability Victoria is also responsible for producing a Solid Industrial Waste Management Plan (SIWMP) for Victoria. The Act requires that the generation and management of solid industrial waste in Victoria must comply with all elements of the plan, while the waste is in Victoria. The SIWMP also provides basis for the refusal of works approval or licence by the EPA where a waste management facility is inconsistent with the SIWMP.<br>The Act also required the formation of Regional Waste Management Groups to facilitate the management of waste by region. There are 12 RWMGs in Victoria, as well as the Metropolitan Waste management Group. Functions of RWMGs are:<br>▪ to plan for the management of municipal waste in its region, working in partnership with the councils in its region; and<br>▪ to co-ordinate the activities of its members in its region to give effect in its region to State policies, strategies and programs relating to waste; and<br>▪ to facilitate and foster best practices in waste management. |

| | |
|---|---|
| | RWMGs are required to produce waste management plans for their region that are in line with the state strategy. The Metropolitan Waste and Resource Recovery Strategic plan provides a long-term plan for the management of waste and resource recovery in Melbourne. |

| | |
|---|---|
| Landfill Levies | Victoria's landfill levy is administered by the EPA and was first introduced in 1992. Levy rates for non-prescribed waste differ between municipal and rural landfills, and municipal and industrial wastes. Current levy rates are $7 per tonne for municipal waste and $13 per tonne for industrial waste deposited in rural areas, and $9 per tonne for municipal waste and $15 per tonne for industrial waste in metropolitan areas. The last increase in levies for non-prescribed waste was on 1 July 2007.<br><br>The Environment Protection Act 1970 provides for levies to be increased 10% once each year by regulation, however in practice levies have only been changed by Acts of Parliament. Landfills that receive waste from on-site operations only and landfills that receive MSW from an area of population less than 5000 are exempt from levies.<br><br>Funds collected through the landfill levy are distributed as per the Environment Protection (Distribution of Landfill Levy) Regulations 2002. Most of the funds are provided to the agencies responsible for waste management in Victoria: Environment Protection Authority (EPA), Sustainability Victoria and regional waste management groups (RWMGs). The remainder is allocated to a Sustainability Fund, which supports projects and programs that aim to promote sustainability.<br><br>Levies for prescribed industrial waste (PIW) are currently $30 per tonne for packaged waste asbestos, $70 per tonne for Category C waste and $250 per tonne of Category B waste. Levy revenues are reinvested in EPA Hazwaste programs to support industry to avoid the generation of PIW or to find safe re-use alternatives to disposal. |
| Waste Targets | Under the Towards Zero Waste strategy, the following waste reduction targets have been set for 2014:<br><br>▪ 1.5 million tonne reduction in solid waste generated<br>▪ 75% (by weight) solid waste recovered for re-use, recycling and energy recovery<br>▪ Municipal waste – 65% recovery<br>▪ Commercial and industrial waste – 80% recovery<br>▪ Construction and demolition waste – 80% recovery<br>▪ 25% improvement on litter behaviour based on 2003 levels |
| Waste Definitions and Classifications | The Act defines waste as:<br><br>▪ any matter whether solid, liquid, gaseous or radio-active which is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment;<br>▪ any discarded, rejected, unwanted, surplus or abandoned matter;<br>▪ any otherwise discarded, rejected, abandoned, unwanted or surplus matter intended for—<br>▪ recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or<br>▪ sale; and<br>▪ any matter prescribed to be waste<br><br>There are 3 main waste classifications in Victoria; municipal, industrial and prescribed wastes.<br><br>Municipal waste refers to "any waste arising from municipal or residential activities, and includes waste collected by, or on behalf of, a municipal council, but does not include any industrial waste".<br><br>Industrial waste refers to:<br><br>A. any waste arising from commercial, industrial or trade activities or from laboratories; or<br><br>B. any waste containing substances or materials which are potentially harmful to human beings or equipment.<br><br>Prescribed industrial waste means "any industrial waste or mixture containing industrial waste other than industrial waste or a mixture containing industrial waste that—<br><br>a) is a Schedule 1 industrial waste; or |

| | |
|---|---|
| | b) has a direct beneficial re-use and has been consigned for use; or<br>c) is exempt material; or<br>d) is not category A waste, category |
| Waste Data Collection | All prescribed waste movements are tracked via waste certificates and recorded in a central database – the on-line lodgement system is referred to as "WasteCert". The movements are tracked from waste producer, via licensed transporter, through to waste treater and / or waste disposal facility.<br>Under the new Environment Protection (Industrial Waste Resource) Regulations 2009, where PIW has a beneficial re-use opportunity, the waste is exempt from waste transport certificates and permitted vehicles. Where there is a secondary beneficial re-use opportunity, these are subject to an EPA notification procedure.<br>Waste data collection is also undertaken at a regional level by regional waste management groups |
| Extended Producer Responsibility | Yes: within the *Towards Zero Waste Strategy* 2005;<br>EPAV coordinates the Environment and Resource Efficiency Plans (EREP), which require businesses that use produce over a threshold amount of waste to identify resource efficiency actions and implement those actions with a payback period of three years or less. |

Table C.8

**WESTERN AUSTRALIA**

| | |
|---|---|
| Key legislation and responsible bodies | The principal legislation governing Waste and Resource Recovery in Western Australia are is *The Waste Avoidance and Resource Recovery Act 2007*, which is supported by *The Waste Avoidance and Resource Recovery Regulations 2008*.<br><br>The Waste Avoidance and Resource Recovery Act 2007 provides for:<br><br>▪ waste avoidance and resource recovery<br>▪ establish the Waste Authority<br>▪ waste services by local governments<br>▪ levies on waste<br>▪ related and consequential matters.<br><br>The Act also establishes the Waste Authority and repeals the Environmental Protection (Landfill) Levy Act 1998. The Act has provisions for:<br><br>▪ waste plans by local government, which are optional unless specifically requested by CEO of waste Authority<br>▪ the submission of product stewardship plans by producers<br>▪ introducing EPR regulations. The Waste Authority must include in its annual business plan a statement priority statement with respect to any extended producer responsibility schemes the Waste Authority proposes to recommend for implementation and operation under the regulations<br>▪ the provision of waste services by local government<br>▪ the WARR account<br><br>*The Waste Avoidance and Resource Recovery Act 2007* required the formation of the Waste Authority as the principal body responsible for waste and resource recovery. The Waste Authority's key functions are to develop a long term Waste Strategy to improve waste services, reduce waste generation and increase recovery. The Department of Environment and Conservation (DEC) assists the Waste Authority to facilitate, promote and implement new approaches to reducing waste. It is responsible for developing policy in collaboration with the Waste Authority, and for undertaking, on behalf of the Waste Authority, projects to significantly reduce waste.<br><br>The Waste Authority is currently producing their Waste Strategy, which is currently under public consultation. The aim of the strategy is to coordinate a decade of significant improvement in the management of waste in Western Australia. This will be achieved through:<br><br>▪ consideration of resource management options against the following waste management hierarchy<br>I. avoidance of unnecessary resource consumption<br>II. resource recovery through re-use, reprocessing, recycling or energy recovery)<br>III. disposal<br>▪ adoption of best practice performance standards and the pursuit of continuous improvement<br>▪ reducing environmental harm resulting from the generation and management of waste, considering the full life cycle impacts of decisions<br>▪ minimising greenhouse gas emissions through focus on resource efficiency and improved management of emissions from landfills<br>▪ adoption of cost effective solutions<br>▪ cooperation between state and local governments, the waste and resource recovery industry, producers and the community<br>▪ expanding the responsibility of producers for the management of waste associated with their products through adoption of product stewardship and extended producer responsibility |

| | |
|---|---|
| | initiatives<br>▪ consistency with national waste management processes, recognising that WA's unique circumstances and challenges may require separate action<br>▪ application of the 'polluter pays' principle."<br>The Environmental Protection Authority has a role including the development of environmental protection policies and licensing of some waste treatment facilities. Relevant legislation, established under the Environment Protection Act 1986, which is administered by the EPA includes:<br>▪ Environmental Protection (Controlled Waste) Regulations 2001<br>▪ Environmental Protection (Rural Landfill) Regulations 2002<br>Other Authorities that have a role in waste management in WA and work with the Waste Authority to do this are local government, regional Councils and the municipal Waste advisory Council (a standing committee of the WALGA). |
| Landfill Levies | The Waste Avoidance and Resource Recovery Levy Act 2007 is complementary legislation designed specifically to deal with waste levies and is supported by The Waste Avoidance and Resource Recovery Levy Regulations 2008 and legislates the right to impose a levy waste. The regulation dictates levy costs and applies to all wastes received at metropolitan landfills, or collected in metropolitan areas. Waste stored for recycling and some cleanfill is exempt from the levy. Levy amount differs between category 63 and category 64&65 landfills. Formulas are provided in the regulation for calculation of levies based on volumes and tonnes.<br>Current landfill rates are $7 / tonne for putrescible waste and $3 / tonne for inert waste. Increases of 300% were proposed for implementation on 1 July 2009, taking the levies to $28 / tonne for putrescible waste and $12/m3 for inert waste. Note at the time of issuing this paper, the implementation of the landfill levy increases had not occurred. |
| Waste Targets | Waste targets were presented in the 'Strategic direction for waste management in Western Australia' 2003 for 2020. The resource recovery targets are set as follows:<br>▪ Inert – 100%<br>▪ Organics – 95%<br>▪ Recyclables – 100%<br>▪ Problematic – 80%<br>▪ Hazardous – 75% |
| Waste Definitions and Classifications | Waste is defined under the act as matter whether useful or useless, which is discharged into the environment; or matter which is prescribed by the regulations to be waste.<br>There are 3 waste classification types in Western Australia: municipal solid waste, commercial and industrial waste and construction and demolition waste. |
| Waste Data Collection | The DEC currently administers a data collection program, which consists of:<br>▪ an annual survey of waste and recycling services provided by local governments<br>▪ a survey of reprocessing and recycling activity in Western Australia<br>▪ development of standard methodologies for waste composition studies (waste audits)<br>▪ publication of data collected in the form of reports and summary information sheets.<br>A new data collection framework will be developed under the new waste strategy.<br>Waste is reported as municipal solid waste, C&D and C&I. |
| Extended Producer Responsibility | Provisions for EPR under the Waste Avoidance and Resource Recovery Act 2007 |

*Appendix D*

# List of submitters to National Waste Policy consultation paper and draft National Waste Policy Framework

## D.1 Consultation Paper

Table 7.1

**STAKEHOLDERS THAT SUBMITED COMMENTS ON CONSULTATION PAPER**

| | |
|---|---|
| Stephen Magyar | KESAB environmental solutions |
| Keelah Lam | Australian Lot Feeders' Association |
| Telework Australia | Cement Industry Federation |
| John R Sabine | Standards Australia |
| Estelle Ross | GHD Sydney |
| Zero Waste Australia | National Packaging Covenant Industry Association Incorporated |
| Lyndall McCormack | Local Government and Shires Association of NSW |
| Carol O'Donnell | Southern Region Waste Resource Authority |
| Morrie Goodz | National Timber Product Stewardship Group |
| Compost WA | Blue Environment Pty Ltd |
| Jenny Brown | South East Resource Recovery Regional Organisation of Councils |
| City of Casey | Kogarah Council |
| Port Stephens Council | Morton Bay Regional Council |
| Logan City Council | Lake Macquarie City Council |
| Veolia Environmental Services | Manningham City Council |
| InSinkErator | Transpacific Industries Group Ltd |
| Net Balance | Local Government Association Tasmania |
| Kimberley Clark Australia | Thiess Services |
| KDL Products | Local Government Association of SA |
| ALDI | Australian Dental Association Victorian Branch Inc |
| Craig Walters | Keep Australia Beautiful National Association |
| Margaret Davies | 1800 Ewaste Pty Ltd |

| | |
|---|---|
| Consumer Electronics Suppliers Association/ Product Stewardship Australia | Australian Battery Recycling Initiative Inc |
| KESAB environmental solutions | Sunshine Coast Regional Council |
| Australian Lot Feeders' Association | Keep Australia Beautiful Victoria |
| Stephen Magyar | Engineers Australia |
| Keelah Lam | City of Darebin |
| Telework Australia | WMAA |
| John R Sabine | Alcoa of Australia Limited |
| Estelle Ross | Australian Industry Group |
| Zero Waste Australia | Australian Bureau of Statistics |
| Lyndall McCormack | Aluminium Can Group Inc |
| Carol O'Donnell | Metropolitan Waste Management Group |
| Morrie Goodz | Southern Metropolitan Regional Council |
| Compost WA | LMS Generation Pty Ltd |
| Jenny Brown | Woolworths Limited |
| City of Casey | Peter Maganov |
| Port Stephens Council | National Association of Retail Grocers of Australia |
| Logan City Council | Southern Sydney Regional Organisation of Councils |
| Veolia Environmental Services | The LZ Environmental Company Pty Limited |
| InSinkErator | Alliance for a Clean Environment |
| Net Balance | Minerals Council of Australia |
| Kimberley Clark Australia | Visy Industries |
| KDL Products | Paper Round/A3P |
| ALDI | Australian Landfill Owners Association |
| Craig Walters | The Local Government Association of the Northern Territory |
| Margaret Davies | Department of Environment and Conservation |
| Consumer Electronics Suppliers Association/ Product Stewardship Australia | Australian Conservation Foundation - Central Coast Branch |
| Nature Conservation Council NSW | CMA Eco Cycle |
| Lighting Council Australia | Queensland Recycling |
| Perth Region NRM | Queensland Conservation Council |
| Australian Paper Industry Association Ltd | Helmut Kater |
| Eastern Metropolitan Regional Council | Manly Council |
| Eco Products Agency and Nextek Ltd | Environment Institute of Australia and New Zealand |

| | |
|---|---|
| Local Government Association of Queensland | Pumper Dump P/L |
| Crucible Carbon Pty Ltd | Municipal Association of Victoria |
| Product Stewardship Council | Conservation Council of South Australia |
| Jeffries Group | Australian Local Government Association |
| Housing Industry Association | ACOR and Boomerang Alliance |
| Australian Information Industry Association | Global Renewables |
| Australian Food & Grocery Council | Australian Mobile and Telecommunications Association |
| Reverse Garbage Co-op Ltd | Permaculture (Sydney) North Inc |
| Council of Mayors (South East Queensland) | Australian Tyre Recyclers Association |
| City of Townsville | Biohazard Waste Industry |
| The Technical Textiles and Nonwoven Association | Rosalind Ellinger |
| WorkCover NSW | Hope Ashiabor |
| Plastics and Chemicals Industries Association | CropLife |
| Revive Recycling | City of Marion |
| Francis Fisher | Community Environment Network |
| Australian Dental Association Inc | Agsafe |
| Riverina Eastern Regional Organisation of Councils | Stephen Hancock |
| Sunshine Coast Environment Council | |

## D.2 Draft National Waste Policy Framework

Table 7.2

**STAKEHOLDERS SUBMITTING COMMENTS ON CONSULTATION PAPER**

| |
|---|
| Ben Glashoff |
| KESAB environmental solutions |
| VEOLIA |
| Forestry Tasmania |
| Australian Food and Grocery Council |
| Corky's Carbon Consulting |
| City of Mitcham |
| Lyndall McCormack |
| Transpacific Industry |
| Biohazard Waste Industry |
| Keelah Lam |
| Miltek Waste Solutions |
| Crop Life |
| Cement Industry Federation |
| LMS generation |
| AgStewardship |
| WA Local Government Association |
| Motor Trades Association of Australia |
| Wannon Water |
| Blue Mountains City Council |
| South East Resource Recovery Regional Organisation of Councils |
| Craig Walters |
| Close the Loop |
| Metropolitan Waste Management Group |
| National Timber Product Stewardship Group |
| City of Darebin council |
| Southern Sydney Regional Organisation of Councils |
| Centre for Appropriate Technology |
| National Waste Educators Division (WMAA) |
| National Association of Retail Grocers of Australia |
| Standards Australia |
| Australian Industry Group |
| Local Government and Shires Associations of NSW |

| |
|---|
| Lighting Council Australia |
| SITA Environmental Solutions |
| City of Marion |
| South Australian Waste Educators Working Group |
| Local Government Association of Tasmania |
| Australian Battery Recycling Initiative |
| NSW Landfill Working Group (WMAA) |
| Alliance for a Clean Environment |
| Winemakers' Federation of Australia |
| A3P/PaperRound |
| Jill Merrin |
| Jenni Bransgrove |
| Columbus Group |
| Publishers National Environment Bureau |
| Eastern Metropolitan Regional Council |
| Planet Ark |
| Centre for Organic & Resource Enterprises |
| Adelaide Hills Region Waste Management Authority |
| Yarra Valley Water |
| Australian Information Industry Association |
| Global Renewables |
| CMA Ecocycle |
| Council of Mayors South East Queensland |
| Boomerang Alliance |
| Local Government Association of the Northern Territory |
| City of Lake Macquarie |
| Consumer Electronics Suppliers Association/Product Stewardship Australia |
| VD Burnett |

*Appendix E*

# References

1987, 'Montreal Protocol on Substances that deplete the Ozone Layer ', Retrieved 20 August 2009, from **http://www.unep.org/ozone/pdf/Montreal-Protocol2000.pdf**.

1989a, 'Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal', Retrieved 10 August 2009, from **http://www.basel.int/text/con-e-rev.pdf**.

*Hazardous Waste (Regulation of Exports and Imports) Act*, Commonwealth of Australia

*Ozone Protection and Synthetic Greenhouse Gas Management Act*, Commonwealth of Australia

1997, 'Kyoto Protocol to the United Nations Framework Convention on Climate Change', Retrieved 20 August 2009, from **http://untreaty.un.org/English/notpubl/kyoto-en.htm**.

1998, 'Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade ', Retrieved 20 August 2009, from **http://www.pic.int/home.php?type=s&id=77**.

2001, 'Stockholm Convention on Persistent Organic Pollutants', Retrieved 20 August 2009, from **http://chm.pops.int/**.

*Environment Protection Act 1970*, Victoria, Australia State of Victoria

Access Economics, Employment in waste management and recycling, July 2009

AECOM 2009, DEWHA Qualitative Analysis of Submissions to 2006 Productivity Commission and 2008 Senate Inquiries into Waste.

Alex Fraser Group 2009, 'National Waste Policy Submission', May, Retrieved 10 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Australian Bureau of Statistics (ABS) Report No 8226.0 Electricity, Gas, Water and Waste Services 2006-07

Australian Bureau of Statistics (ABS) 2004, *Waste Management Services 2002-2003, Catalogue 8698.0*, Canberra.

Australian Council of Recyclers and Boomerang Alliance 2009, 'An Opportunity too Good to Waste! Joint Response of ACOR & Boomerang Alliance to The Commonwealth of Australia Consultation Paper for A National Waste Policy', 15 May, Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Australian Industry Group 2009, 'Submission - A National Waste Policy: Managing Waste to 2020', 13 May, Retrieved 10 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Australian Information Industry Association 2009, 'Submission - A National Waste Policy: Managing Waste to 2020', May, Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Australian Institute of Refrigeration Air Conditioning and Heating and Institute of Refrigeration Heating and Air Conditioning Engineers New Zealand 2007, 'Part 1 — Self-contained low charge systems and Part 2 — Systems other than self-contained low charge systems'. *Australia and New Zealand Refrigerant Handling Code of Practice*.

Australian Local Government Association 2009, 'Submission on a National Waste Policy: Managing Waste to 2020', May, Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Australian Tyre Recyclers Association 2009, 'A National Waste Policy: Submission in Response to Consultation Paper', Retrieved 10 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

BDA 2009, The Full Cost of Landfill Disposal in Australia, July, Canberra.

Biohazard Waste Industry 2009, 'Submission - National Waste Policy: Managing Waste to 2020', 13 May Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Cement Industry Federation 2009, 'Submission - A National Waste Policy: Managing Waste to 2020', 13 May, Retrieved 7 August, 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Council of Australia Governments (COAG) 2008, *National Partnership Agreement to Deliver a Seamless National Economy*, December.

Department of Climate Change, Tracking to Kyoto and 2020: Australia's Greenhouse Emissions Trends 1990 to 2008-12 and 2020, August 2009, p60

Department of Climate Change, Waste Sector Greenhouse Gas Emissions Projections 2007, p7

Department of Climate Change 2008, *Carbon Pollution Reduction Scheme: Australia's Low Pollution Future*, Canberra, Commonwealth Government.

Department of Environment and Climate Change [NSW] 2007, 'NSW Extended Producer Responsibility: Priority Statement 2006-07', Retrieved 10 August 2009, from **http://www.environment.nsw.gov.au/resources/warr/2007592prioritystatement.pdf**.

Department of Environment and Conservation [WA] 2009, 'Extended Producer Responsibility', Retrieved 10 August 2009, from **http://www.zerowastewa.com.au/ourwork/specificprograms/epr/**.

Department of Environment climate Change and Water [NSW] 2009, 'Product stewardship and extended producer responsibility', 15 January Retrieved 10 August 2009, from **http://www.environment.nsw.gov.au/warr/ProdStewardshipEPR.htm**.

Department of Environment Climate Change and Water [NSW] 2009, 'User guide - WCMR - waste contributions monthly report ', Retrieved 7 August 2009, from **http://www.environment.nsw.gov.au/wr/h_wcmr.htm**.

Department of Primary Industries Water and Environment [Tas] 2006, 'Environment Protection Notice No.77777', Retrieved 10 August 2009, from **http://www.environment.tas.gov.au/file.aspx?id=1733**.

Department of the Environment Water Heritage and the Arts 2009a, 'Montreal Protocol on substances the deplete the ozone layer: Australia and the Montreal Protocol', Retrieved 20 August 2009, from **www.environment.gov.au/atmosphere/ozone/legislation/montp.html#australia**.

Department of the Environment Water Heritage and the Arts 2009b, 'Stockholm Convention on Persistent Organic Pollutants', Retrieved 20 August 2009, from **www.environment.gov.au/settlements/chemicals/international/pop.html**.

Engineers Australia 2009, 'A National Waste Policy: Response to the Consultation Paper released by the

Department of Environment, Water, Heritage & Arts', 13 May, Retrieved 10 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Energy Strategies 2009, Ozone Depleting Substances and Synthetic Greenhouse Gaes in Australia: A study of end uses, emissions and opportunities for reclamation, for the Department of the Environment, Water, Heritage and the Arts, October 2008, Canberra.

Environment Protection Agency [SA] 2009, 'Waste definitions ', July, Retrieved 10 August 2009, from **http://www.epa.sa.gov.au/pdfs/guide_waste_definitions.pdf**.

Environment Protection and Heritage Council 2004, 'Industry Discussion Paper on Co-regulatory Frameworks for Product Stewardship', December Retrieved 10 August 2009, from **http://www.ephc.gov.au/sites/default/files/PS_Tyres_DiscPpr__Industry_Discussion_Paper_for_CoRegulatory_Framework_for_Product_Stewardship_200412.pdf**.

Environmental Protection Agency [Qld] 2007, 'Let's Not Waste Our Future: Queensland Waste Strategy ', Retrieved 10 August 2009, from **http://www.epa.qld.gov.au/register/p02217aa.pdf**.

Environmental Protection Agency [Vic] 2008, 'Landfill levies', Retrieved 7 August 2009, from **http://www.epa.vic.gov.au/waste/landfill_levies.asp**.

EPA 2009 Environment Protection (Industrial Waste Resource) Regulations - Regulatory Impact Statement, p.51

Faragher, Donna and Troy Buswell 2009, 'Landfill levy charges to come into effect January 1, 2010', 23 June, Retrieved 7 August 2009, from **http://www.mediastatements.wa.gov.au/Pages/WACabinetMinistersSearch.aspx?ItemId=132088&minister=Faragher&admin=Barnett**.

Hyder Consulting 2009a, *Waste and Recycling in Australia*, for Department of the Environment Water Heritage and the Arts 3 November

Hyder Consulting 2009b, *Waste, Recycling and Resource Recovery: Current Jurisdictional Differences and Opportunities for Improvement*, for Department of the Environment Water Heritage and the Arts, 22 July, Melbourne.

Hyder Consulting 2009c, *Landfill capacities in to the future*, for Department of the Environment, Water, Heritage and the Arts, 27 August 2009, Melbourne.

IBISWorld 2009, *Waste Disposal Services in Australia: Q9634*, 27 May, Melbourne.

Netbalance 2009, Nationa Waste Data System Requirements for the Department of the Environment, Water, Heritage and the Arts, October 2009, Melbourne.

Organisation for Economic Co-operation and Development 2009, 'Extended Producer Responsibility ', Retrieved 10 August 2009, from **http://www.oecd.org/document/19/0,3343,en_2649_34281_35158227_1_1_1_1,00.html**.

Plastics and Chemicals Industry Association 2009, 'Submission to the Development of a National Waste Policy', May, Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Product Stewardship Australia 2009, 'A National TV Recycling Program: Practical Product Stewardship Funded by Industry', Retrieved 10 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/pubs/027-attachmenta.pdf**.

Productivity Commission 2006, *Waste Management*, no. 38, Canberra.

Quantum, Household and Workplace Recycling Survey, 11 August 2009 for the Department of the Environment, Water, Heritage and the Arts

Refrigerant Reclaim Australia 2009, 'Refrigerant reclaim Australia ', Retrieved 2009, from **www.refrigerantreclaim.com.au**.

Revive Recycling 2009, 'Submission RE: A National Waste Policy', 18 May, Retrieved 10 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

RMIT, Extended Environmental Benefits of Recycling Project, Draft Final Report, 25 May 2009 for NSW DECC, based on Table 4, p14

Territory and Municipal Services [ACT] 2009, *Waste Minimisation (Landfill Fees) Determination 2009 (No 1)*, 21 May.

Transpacific Industries 2009, 'Submission in Reply to the National Waste Policy Consultation Paper ', 13 May, Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

US EPA 2009, 'Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices', September 2009

Visy 2009, 'Submission on National Waste Policy', May, Retrieved 7 August, 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

*Waste Avoidance and Resource Recovery Act 2007*, Western Australia

Waste Management Association of Australia 2009, 'WMAA Response to the National Waste Policy Consultation Paper', May, Retrieved 7 August 2009, from **http://www.environment.gov.au/wastepolicy/consultation/submissions/index.html**.

Waste Policy Taskforce 2009a, *A National Waste Policy: Managing Waste to 2020*, for Department of the Environment Water Heritage and the Arts Canberra.

Waste Policy Taskforce 2009b, *Draft National Waste Policy Framework: Less waste more resources*, Discussion Paper, for Department of the Environment Water Heritage and the Arts, July, Canberra.

Western Australian government 2005, 'Explanatory Notes for the Waste Avoidance and Resource Recovery Bill 2006', Retrieved 10 August 2009, from **http://www.zerowastewa.com.au/documents/external_docs/draft_warr_bill_exnotes.pdf**.

Zero Waste SA 2009, 'Waste levy', Retrieved 7 August 2009, from **http://www.zerowaste.sa.gov.au/About.mvc/WasteLevyReview**.