RANDELL ENVIRONMENTAL CONSULTING

# Beneficial reuse and resource recovery of waste materials

## An inventory of national Commonwealth and state and territory objectives and guiding principles in waste and resource recovery

Final Report

9th January 2013

# Beneficial reuse and resource recovery of waste materials – An inventory of Commonwealth and state and territory objectives and guiding principles in waste and resource recovery

## Client

National Waste Policy Implementation

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)

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## Project Number: PREC016

## Report Disclaimer



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# 1 Executive Summary

In March 2012, the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) engaged Randell Environmental Consulting Pty Ltd (REC) to compile an inventory of the over-arching objectives and guiding principles that are used by Australian jurisdictions (**states and territories only**) to promote beneficial reuse and resource recovery of waste. In response, REC produced the report *Beneficial reuse and resource recovery of waste materials – An inventory of Australian over-arching objectives and guiding principles* (REC report 1) which is included at Appendix 1 for reference.

In November 2012, DSEWPaC engaged REC once more to complete this report which aims to:

1. provide stakeholders with the context of why the review of waste related principles is being undertaken, how it relates to the Australian Government *National Waste Policy: Less waste, more resources* (NWP) implementation and to provide some explanation of how these principles relate to defining waste
2. document the inventory of current **Commonwealth principles** used to promote beneficial reuse and resource recovery of waste
3. provide a comparison of this set of Commonwealth principles with the principles in use by states and territories (as outlined in REC report 1).

Figure 1 (see page 18) provides the comparison of Commonwealth principles with the principles in use by states and territories in a concise and simple summary and should be review as part of this executive summary.

The following summary is based on Figure 1 and provides a summary of the comparison of the key elements of the Commonwealth and states and territories principles and over-arching objectives.

1. The following key elements were identified in all jurisdictions (both Commonwealth and state) frameworks:
    - *the waste hierarchy*
    - *ecologically sustainable development. Typically defined as the effective integration of economic and environmental considerations in decision-making including –*
        - *(a) the precautionary principle*
        - *(b) the inter-generational equity principle*
        - *(c) conservation of biological diversity and ecological integrity*
        - *(d) improved valuation and pricing of environmental resources.*
2. The following key elements were identified in the Commonwealth and the majority of states and territories frameworks:
    - *reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery*
    - *shared responsibility of waste management*
    - *extended producer responsibility (including product stewardship and life cycle principles)*
    - *wastes to resources for beneficial reuse.*

3. There were 16 other key elements identified in the Commonwealth framework (that were not identified in the states and territories frameworks). The additional elements relate to international obligations, greenhouse gas reduction, pricing emissions, local hazardous waste management (haz waste proximity principle), and nationally consistent and regular reporting of data.
4. There were 8 other key elements identified in the states and territories frameworks that were not identified in the Commonwealth framework. The additional elements are often state specific and relate to supporting national objectives, industrial efficiency, carbon neutrality, using local waste management solutions (proximity principle), and landfill bans.

# 2 Introduction

In March 2012, the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) engaged Randell Environmental Consulting Pty Ltd (REC) to compile an inventory of the over-arching objectives and guiding principles that are used by Australian jurisdictions (**states and territories only**) to promote beneficial reuse and resource recovery of waste. In response, REC produced the report *Beneficial reuse and resource recovery of waste materials – An inventory of Australian over-arching objectives and guiding principles* (REC report 1) which is included in Appendix 1 for reference.

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1. provide stakeholders with the context of why the review of waste related principles is being undertaken, how it relates to the Australian Government *National Waste Policy: Less waste, more resources* (NWP) implementation and to provide some explanation of how these principles relate to defining waste
2. document the inventory of current **Commonwealth principles** used to promote beneficial reuse and resource recovery of waste
3. provide a comparison of this set of Commonwealth principles with the principles in use by states and territories (as outlined in REC report 1).

## Approach

The following approach was used to compile this report.

1. A desktop review was conducted to develop a Commonwealth inventory of over-arching objectives and guiding principles included in legislation, policy and strategies.
2. The principles and over-arching objectives for each of the inventory references were then assessed to derive the 'key elements' of the principles and over-arching objectives. The key elements are intended to be as generic as possible and where appropriate use the same wording as the key elements that were identified in REC report 1. The key elements identified are listed at the end of each inventory reference.
3. The key elements from the Commonwealth inventory listings and state and territory listings were then summarised into an overview table (Figure 1) that enabled a comparison of the key elements of the Commonwealth and state principles.

## Scope and limitations

This report provides an inventory and comparison of state and territory and Commonwealth over-arching objectives and guiding principles used to encourage beneficial reuse and resource recovery. This report does not provide a detailed analysis of this inventory or attempt to derive a recommended set of national over-arching objectives and guiding principles.

## Issues to note

Over-arching objectives and guiding principles are often difficult to differentiate from one another and what is defined as an objective in one jurisdiction may be a guiding principle in another. This issue should not distract from the intent of this report – to compile an inventory of state and territory and Commonwealth principles and over-arching objectives to promote beneficial reuse and resource recovery.

This paper has attempted to identify the objectives and principles that are directly related to beneficial reuse and resource recovery. The inventory also includes some objectives and principles that are indirectly related to beneficial reuse and resource recovery. These were included to provide a more complete inventory and also because some of the directly related objectives and principles were unclear in isolation from the complete text.

# 3 Context for this review

In 2010, the Council of Australian Governments (COAG) endorsed the National Waste Policy (NWP) which sets out a 10 year plan for Australia towards: producing less waste for disposal, and managing waste as a resource to deliver economic, environmental and social benefits.

The purpose of the NWP is described on page 6 of the policy and includes improving the efficiency with which resources are used, reducing the impact on the environment of waste disposal and improving the management of hazardous waste.

The NWP outlines 11 principles and 8 outcomes (discussed in section 4).

The NWP also sets out 16 priority strategies and 'result' measures that are identified as needing a national or coordinated approach. The two strategies and results that are of particular relevance to this report are as follows.

- Strategy 4: 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.

  **Result: 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…**

- Strategy 5: 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.

  **Result: national principles to encourage safe re-use of waste are agreed…** (NWP page 10, 11).

**This report and REC report 1 are intended to aid DSEWPaC and the states and territories to move towards the two result areas noted above.**

## How do principles relate to the definition of waste or resources?

A significant result from strategy 4 and 5 will be to set out principles that enable clear definitions of when a material is a waste or when it is a resource. The principles listed in this report and REC report 1 are not clearly linked to defining waste, however, they are all related directly or indirectly to reducing waste generation or the impacts of waste generation. An example of a principle directly related to defining when a waste no longer a waste is the 'waste to resource for beneficial reuse' principle.

Whilst it is important for principles not to restrict (and that they encourage) appropriate resource recovery, the principles alone do not define when a material is a waste or ceases to be a waste. As stated under strategy 4 the principles need to "enable definitions to be applied as to when a material ceases to be a waste".

The combination of an agreed set of national principles **and** definitions to define when a material is a waste or when is it a resource is required to provide a sufficient level of detail and clarity.

# 4 Current Commonwealth principles related to waste and resource recovery

The section includes an inventory of current Commonwealth principles used to promote beneficial reuse and resource recovery of waste. It is provided in two sub sections, firstly by policies and programs and secondly by legislation and regulation.

## 4.1 Policies & programs

### 4.1.1 National waste policy: Less waste, more resources

The NWP includes a detailed list of principles on page 7 as follows.

**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; and
- implementation of policy by the appropriate level of government, industry or the community.

The NWP also includes a detailed list of outcomes on page 7.

**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.

## Key elements of the above principles and over-arching principles

- The waste hierarchy.
- Manage waste in accordance with international obligations.
- Reducing greenhouse gas emission, energy used and water consumed in waste management.
- Ecologically sustainable development. Including:
    (a) the precautionary principle
    (b) the inter-generational equity principle.
- Extended producer responsibility Including:
    (a) product stewardship
    (b) life cycle principle.
- To minimize the generation of hazardous wastes and other wastes (in terms both of quantity and potential hazard).
- Minimisation of intergenerational legacy issues (by management of the risks).
- A nationally consistent and efficient waste management framework.
- Regular provision of nationally consistent and comprehensive data on waste and re-use of materials to assess performance and inform policy.

- Provide for broad community involvement on issues.
- Wastes should be managed as a resource.
- Wastes to resources for beneficial reuse.
- Provision of appropriate waste management services to all areas (including remote regional areas).
- Reduce local stockpiling of hazardous waste (particularly for rural areas).
- Consistent and clear requirements for disposal of hazardous material.
- Consistent and clear hazardous material content labelling.

### 4.1.2 National strategy for ecologically sustainable development

(Prepared by the Ecologically Sustainable Development Steering Committee

Endorsed by the Council of Australian Governments

December, 1992)

The National strategy for ecologically sustainable development (NSESD) was not available for download. This content below is taken from the website:
http://www.environment.gov.au/about/esd/publications/strategy/index.html

The NSESD defines ESD as:

Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The core objectives are stated as:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations
- to provide for equity within and between generations
- to protect biological diversity and maintain essential ecological processes and life-support systems.

The NSESD guiding principles are listed as:

- decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- the global dimension of environmental impacts of actions and policies should be recognised and considered
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised
- cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms

- decisions and actions should provide for broad community involvement on issues which affect them.

These guiding principles and core objectives need to be considered as a package. No objective or principle should predominate over the others. A balanced approach is required that takes into account all these objectives and principles to pursue the goal of ESD.

Part 3 sub-section 19 of the NSESD includes content that is relevant to waste management.

**Waste Minimisation and Management**

**Part 3 Intersectoral Issues - Chapter 19**

**Challenge**

To improve the efficiency with which resources are used and reduce the impact on the environment of waste disposal, and to improve the management of hazardous wastes, avoid their generation and address clean-up issues.

**Strategic Approach**

In order to develop an effective approach, governments will seek to develop an integrated approach to waste prevention and minimisation, based on a hierarchy of measures at both the government and industry level. These measures will include actions to achieve cleaner production, reduced use of resources, recycling and reuse. In addition, attempts will be made to develop a common approach to waste management programs between various jurisdictions.

**Objective 19.1**

- **to improve the efficiency of resource use and reduce the impact on the environment of waste disposal**

Governments will:

- seek to develop improved means for providing support for local councils for increased recycling activity including kerbside recycling collections, and planning and operation of landfill disposal sites
- work towards introduction of pricing and charging structures which adequately reflect the full economic and environmental costs of waste disposal, while assisting the funding of rehabilitation and maintenance of facilities for waste disposal
- work to ensure the costs associated with changing waste management practices does not fall disproportionately on industry and local authorities
- encourage greater levels of involvement by industry in recycling activities and recognise the contribution already being made by industry in this area
- have regard to the principles and recommendations in the National Waste Minimisation and Recycling Strategy and the Industry Commission's report on recycling
- provide further support for the development of whole-life-cycle methodologies and a methodology for full social cost pricing of landfill and waste disposal facilities, taking into account social equity considerations in charges for waste disposal
- develop methodologies for the evaluation and assessment of the costs and benefits of various options for waste minimisation
- develop indicative targets for waste reduction

- at the Commonwealth level, continue work on development of a national pollutant inventory.

Objective 19.2

- **to avoid the generation of hazardous wastes, improve management of those wastes which are generated and improve mechanisms for their clean up**

Governments will:

- assess recommendations on the range of technologies available for the destruction of intractable wastes and decide on the preferred options, and appropriate regulatory and legislative mechanisms for the control of intractable wastes
- cooperatively work towards early finalisation and adoption of a national approach to regulation of intractable wastes and a memorandum of understanding for their management
- undertake a siting study to identify a short list of suitable sites for a repository of low-level radioactive wastes
- have regard to the guidelines for the Assessment and Management of Contaminated Sites
- through ANZECC, give further consideration to the issue of liability for clean-up of contaminated sites, including the issue of generating a public register of contaminated sites.

## Key elements of the above principles and over-arching principles

- Ecologically sustainable development. The effective integration of economic and environmental considerations in decision-making, including:

  (a) the precautionary principle

  (b) the inter-generational equity principle

  (c) conservation of biological diversity and ecological integrity

  (d) improved valuation and pricing of environmental resources.
- The pricing of waste disposal (to land, waterway, or atmosphere) reflects the full economic and environmental cost and enables reinvestment in alternatives or rehabilitation of the environment.
- Provide for broad community involvement on issues.
- Improve the efficiency of resource use and reduce the impact on the environment of waste disposal.
- Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery.

## 4.2 Legislation and regulations

### 4.2.1 Product Stewardship Act 2011

The Act provides the following definition of product stewardship:

Product stewardship is an approach to reducing the environmental and other impacts of products by encouraging or requiring manufacturers, importers, distributors and other persons to take responsibility for those products (page 3).

The Act also sets out the following types of product stewardship.

*Voluntary product stewardship*

Part 2 (of the Act) is about voluntary product stewardship. This involves accrediting voluntary arrangements designed to further the objects of this Act in relation to products, and authorising the use of product stewardship logos in connection with such arrangements.

*Co regulatory product stewardship*

Part 3 is about co regulatory product stewardship. This involves requiring some manufacturers, importers, distributors and users of products (called liable parties), who have been specified in the regulations, to be members of co regulatory arrangements approved by the Minister.

These arrangements must have outcomes, specified in the regulations, that are designed to further the objects of this Act.

Administrators of approved co regulatory arrangements are required to take all reasonable steps to ensure those outcomes are achieved in accordance with the regulations.

*Mandatory product stewardship*

Part 4 is about mandatory product stewardship. This involves enabling regulations to be made that would require some persons to take, or not to take, specified action in relation to products (page 3).

Division 3 of the Act sets out the objectives as follows.

**Objects of this Act and product stewardship criteria**

**4 Objects of this Act**

Object – reducing impact of products

(1) It is an object of this Act to reduce the impact:

- (a) that products have on the environment, throughout their lives; and
- (b) that substances contained in products have on the environment, and on the health and safety of human beings, throughout the lives of those products.

(2) It is Parliament's intention that this object be achieved by encouraging or requiring manufacturers, importers, distributors and other persons to take responsibility for those products, including by taking action that relates to the following:

- (a) avoiding generating waste from products;
- (b) reducing or eliminating the amount of waste from products to be disposed of;
- (c) reducing or eliminating hazardous substances in products and in waste from products;
- (d) managing waste from products as a resource;

(e) ensuring that products and waste from products are reused, recycled, recovered, treated and disposed of in a safe, scientific and environmentally sound way.

Other objects

(3) The following are also objects of this Act:

(a) to contribute to Australia meeting its international obligations concerning the impacts referred to in subsection (1);

(b) to contribute to reducing the amount of greenhouse gases emitted, energy used and water consumed in connection with products and waste from products (page 7).

### Key elements of the above principles and over-arching principles

- Extended producer responsibility. Including:

  (a) product stewardship

  (b) life cycle principle.
- Wastes should be managed as a resource.
- Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery.
- Manage waste in accordance with international obligations.
- Reducing greenhouse gas emission, energy used and water consumed in waste management.

## 4.2.2 Hazardous Waste Act 1989

The Act provides the following objectives and aims:

**Object**

(1) The object of this Act is to regulate the export, import and transit of hazardous waste to ensure that exported, imported or transited waste is managed in an environmentally sound manner so that human beings and the environment, both within and outside Australia, are protected from the harmful effects of the waste.

**Aims**

(2) The aims of this Act are:

(a) to give effect to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; and

(b) to give effect to agreements and arrangements of the kind mentioned in Article 11 of that Convention (page 1).

The goals of the Basel convention are:

**1.2 Goals of Convention**

The main objectives of the Convention are:

- to reduce transboundary movements of hazardous wastes and other wastes to a minimum consistent with their environmentally sound management;

- to treat and dispose of hazardous wastes and other wastes as close as possible to their source of generation in an environmentally sound manner;

- to minimize the generation of hazardous wastes and other wastes (in terms both of quantity and potential hazard). (Source: *Manual for the Implementation of the Basel Convention* published here http://www.basel.int/TheConvention/Publications/GuidanceManuals/tabid/2364/Default.aspx).

The first 2 goals of the Basel convention represent the 'proximity principle' as identified in the Queensland principles key elements of REC report 1 for hazardous wastes.

#### Key elements of the above principles and over-arching principles

- Hazardous waste export, import and transit waste is managed in an environmentally sound manner.
- Manage waste in accordance with international obligations.
- To minimize the generation of hazardous wastes and other wastes (in terms both of quantity and potential hazard).
- Hazardous waste proximity principle.

### 4.2.3 Product Stewardship (Televisions and Computers) Regulations 2011

The regulations were reviewed and no principles or over-arching objectives were identified beyond those that are set out in the Product Stewardship Act.

### 4.2.4 Environment Protection and Biodiversity Conservation Act 1999

The Act provides the following objectives:

**3 Objects of Act**

(1) **The objects of this Act are:**

(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and

(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and

(c) to promote the conservation of biodiversity; and

(ca) to provide for the protection and conservation of heritage; and

(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land holders and indigenous peoples; and

(e) to assist in the co-operative implementation of Australia's international environmental responsibilities; and

(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and

(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

The Act also outlines the following principles:

**3A Principles of ecologically sustainable development**

The following principles are principles of ecologically sustainable development:

(a) decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations;

(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

(c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;

(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making;

(e) improved valuation, pricing and incentive mechanisms should be promoted.

### Key elements of the above principles and over-arching principles

- Ecologically sustainable development. The effective integration of economic and environmental considerations in decision-making, including:

  (a) the precautionary principle

  (b) the inter-generational equity principle

  (c) conservation of biological diversity and ecological integrity

  (d) improved valuation and pricing of environmental resources.

- Manage waste in accordance with international obligations.

## 4.2.5 The Clean Energy Legislative Package

The Department of Climate Change and Energy Efficiency (DCCEE) website (see http://www.climatechange.gov.au/government/clean-energy-future/legislation.aspx) details the objectives of the Clean Energy Legislative Package as follows.

The legislation:

- implements the carbon pricing mechanism for Australia to reduce carbon pollution and move to a clean energy future
- sets out how the carbon pricing mechanism will be run, and what businesses will have to do
- links the carbon price to the Carbon Farming Initiative and to credible schemes overseas
- provides for assistance to emissions intensive and trade exposed industries through the Jobs and Competitiveness Program and to electricity generators to ensure energy security
- excludes emissions from agriculture, the land sector, and the combustion of biomass, biofuels and biogas from the mechanism
- sets up a Clean Energy Regulator to administer the carbon pricing mechanism, the National Greenhouse and Energy Reporting scheme, the Renewable Energy Target and the Carbon Farming Initiative

- sets up an independent Climate Change Authority, which will advise the Australian Government on the setting of carbon pollution caps and periodic review of the carbon pricing mechanism and other climate change laws
- applies an effective carbon price to transport fuels used in rail, shipping and aviation (fuels used by motorists and in light commercial vehicles are excluded), to off-road use of transport fuels by businesses (other than in the agricultural, forestry and fishery industries), and to synthetic greenhouse gases
- provides a refundable tax offset for conservation tillage equipment, and
- assists those Australian households that need it most, including pensioners and low- and middle-income earners.

### 4.2.6 Clean Energy Act 2011

The objective of the Act are as follows:

**3 Objects**

The objects of this Act are as follows:

(a) to give effect to Australia's obligations under:

(i) the Climate Change Convention; and

(ii) the Kyoto Protocol;

(b) to support the development of an effective global response to climate change, consistent with Australia's national interest in ensuring that average global temperatures increase by not more than 2 degrees Celsius above pre industrial levels;

(c) to:

(i) take action directed towards meeting Australia's long term target of reducing Australia's net greenhouse gas emissions to 80% below 2000 levels by 2050; and

(ii) take that action in a flexible and cost effective way;

(d) to put a price on greenhouse gas emissions in a way that:

(i) encourages investment in clean energy; and

(ii) supports jobs and competitiveness in the economy; and

(iii) supports Australia's economic growth while reducing pollution.

### 4.2.7 National Greenhouse and Energy Reporting Act 2007 and regulation 2008

The Act includes the following objectives:

**3 Object**

The object of this Act is to introduce a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations to:

(a) underpin the introduction of an emissions trading scheme in the future; and

(b) inform government policy formulation and the Australian public; and

(c) meet Australia's international reporting obligations; and

(d) assist Commonwealth, State and Territory government programs and activities; and

(e) avoid the duplication of similar reporting requirements in the States and Territories (page 2).

#### Key elements of the above principles and over-arching principles (from 4.2.5, 4.2.6, 4.2.7)

- Reducing greenhouse gas emission, energy used and water consumed in waste management.
- The pricing of waste disposal (to land, waterway, or atmosphere) reflects the full economic and environmental cost and enables reinvestment in alternatives or rehabilitation of the environment (at least in this case, the climate change related externalities).
- Pricing waste disposal to promote economic growth while decreasing pollution.
- Manage waste in accordance with international obligations.
- Ecologically sustainable development. The effective integration of economic and environmental considerations in decision-making, including:

  (a) the precautionary principle

  (b) the inter-generational equity principle

  (c) conservation of biological diversity and ecological integrity

  (d) improved valuation and pricing of environmental resources.

# 5 Comparison of the Commonwealth principles with the principles in use by states and territories

The summary chart Figure 1 (over leaf) illustrates the following:

1. the key elements of the states and territories principles and over-arching objectives (from REC report 1)
1. the key element of the Commonwealth principles and over-arching objectives that are derived from section 4 of this report
2. the key elements of the principles and over-arching objectives that are common to the Commonwealth and some or all of the states and territories (as listed)
3. the key elements of the principles and over-arching objectives that are only common to the Commonwealth or some states (as listed).

The following provides a summary of the comparison of the key elements of the Commonwealth and states and territories principles and over-arching objectives.

1. The following key elements were identified in all jurisdictions (both Commonwealth and state) frameworks:
    - *the waste hierarchy*
    - *ecologically sustainable development. Typically defined as the effective integration of economic and environmental considerations in decision-making including –*

        *(a) the precautionary principle*

        *(b) the inter-generational equity principle*

        *(c) conservation of biological diversity and ecological integrity*

        *(d) improved valuation and pricing of environmental resources.*
2. The following key elements were identified in the Commonwealth and the majority of states and territories frameworks:
    - *reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery*
    - *shared responsibility of waste management*
    - *extended producer responsibility (including product stewardship and life cycle principles)*
    - *wastes to resources for beneficial reuse.*
3. There were 16 key elements identified in the Commonwealth framework (that were not identified in the states and territories frameworks). The additional elements relate to international obligations, greenhouse gas reduction, pricing waste disposal, local hazardous waste management (haz waste proximity principle), and nationally consistent and regular reporting of data.
4. There were 8 key elements identified in the states and territories frameworks that were not identified in the Commonwealth framework. The additional elements are often state specific and relate to supporting national objectives, industrial efficiency, carbon neutrality, using local waste management solutions (proximity principle), and landfill bans.

| Summary of key elements of state and territory principles and objectives | Summary of key elements of Commonwealth principles and objectives | List of key elements common to Commonwealth and jurisdictions (as listed) | List of key elements common to only one or some jurisdictions as listed |
|---|---|---|---|
| The waste hierarchy | The waste hierarchy | All: The waste hierarchy | |
| Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery | Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery | ACT, NSW, QLD: Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery | |
| | Improve the efficiency of resource use and reduce the impact on the environment of waste disposal | | COMM: Improve the efficiency of resource use and reduce the impact on the environment of waste disposal |
| Shared responsibility of waste management | Shared responsibility of waste management | ACT, NSW, QLD, SA, VIC: Shared responsibility of waste management | |
| | Manage waste in accordance with international obligations | | COMM: Manage waste in accordance with international obligations |
| | Provision of appropriate waste management services to all areas (including remote regional areas) | | COMM: Provision of appropriate waste management services to all areas (including remote regional areas) |
| | Provide for broad community involvement on issues | | COMM: Provide for broad community involvement on issues |
| | The pricing of waste disposal (to land, waterway, or atmosphere) reflects the full economic and environmental cost and enables reinvestment in alternatives or rehabilitation of the environment. | | COMM: The pricing of waste disposal (to land, waterway, or atmosphere) reflects the full economic and environmental cost and enables reinvestment in alternatives or rehabilitation of the environment. |
| | Pricing waste disposal to promote economic growth while decreasing pollution | | COMM: Pricing waste disposal to promote economic growth while decreasing pollution |
| Support and implement national objectives | A nationally consistent and efficient waste management framework | | COMM: A nationally consistent and efficient waste management framework |
| | Regular provision of nationally consistent and comprehensive data on waste and re-use of materials to assess performance and inform policy | | COMM: Regular provision of nationally consistent and comprehensive data on waste and re-use of materials to assess performance and inform policy |
| Ecologically sustainable development<br>The effective integration of economic and environmental considerations in decision-making<br>Including:<br>(a) the precautionary principle<br>(b) the inter-generational equity principle<br>(c) conservation of biological diversity and ecological integrity<br>(d) improved valuation and pricing of environmental resources | Ecologically sustainable development<br>The effective integration of economic and environmental considerations in decision-making<br>Including:<br>(a) the precautionary principle<br>(b) the inter-generational equity principle<br>(c) conservation of biological diversity and ecological integrity<br>(d) improved valuation and pricing of environmental resources | All: Ecologically sustainable development<br>The effective integration of economic and environmental considerations in decision-making<br>Including:<br>(a) the precautionary principle<br>(b) the inter-generational equity principle<br>(c) conservation of biological diversity and ecological integrity<br>(d) improved valuation and pricing of environmental resources | QLD: Support and implement national objectives |
| | | | SA: Best practice standards in environmental management |
| Industrial efficiency | | | ACT, VIC, NSW: Industrial efficiency |
| Extended producer responsibility<br>Including:<br>(a) product stewardship<br>(b) life cycle principle | Extended producer responsibility<br>Including:<br>(a) product stewardship<br>(b) life cycle principle | ACT, NSW, QLD, VIC, TAS, WA: Extended producer responsibility<br>Including:<br>(a) product stewardship<br>(b) life cycle principle | |
| Carbon neutrality | | | ACT: Carbon neutrality |
| | Reducing greenhouse gas emission, energy used and water consumed in waste management | | COMM: Reducing greenhouse gas emission, energy used and water consumed in waste management |
| Wastes to resources for beneficial reuse | Wastes to resources for beneficial reuse | NSW, QLD, VIC, SA: Wastes to resources for beneficial reuse | |
| | Wastes should be managed as a resource | | COMM: Wastes should be managed as a resource |
| Eliminate waste generation or disposal to landfill | To minimize the generation of hazardous wastes and other wastes (in terms both of quantity and potential hazard) | | COMM: Minimisation of intergenerational legacy issues (by management of the risks) |
| | | | COMM: Reduce local stockpiling of hazardous waste (particularly for rural areas) |
| The proximity principle | Haz waste proximity principle | | COMM: Haz waste proximity principle |
| Regulation to prohibit disposal (where resource recovery is practicable) | Consistent and clear hazardous material content labelling | | COMM: Consistent and clear requirements for disposal of hazardous material |
| Regulation to enforce the waste hierarchy (where practicable) | Consistent and clear requirements for disposal of hazardous material | | COMM: Consistent and clear hazardous material content labelling |
| Best practice standards in environmental management | Minimisation of intergenerational legacy issues (by management of the risks) | | COMM: Hazardous waste export, import and transit waste is managed in an environmentally sound manner |
| | Hazardous waste export, import and transit waste is managed in an environmentally sound manner | | SA: Eliminate waste generation or disposal to landfill |
| | | | QLD: The proximity principle |
| | | | SA: Regulation to prohibit disposal (where resource recovery is practicable) |
| | | | VIC: Regulation to enforce the waste hierarchy (where practicable) |

Figure 1 Comparison of the key elements of the Commonwealth set of principles with the principles identified for the states and territories

# Appendix 1 Beneficial reuse and resource recovery of waste materials – An inventory of Australian over-arching objectives and guiding principles (REC report 1)

RANDELL ENVIRONMENTAL CONSULTING

# Beneficial reuse and resource recovery of waste materials

## An inventory of Australian over-arching objectives and guiding principles

Final Report

May 2012

# Beneficial reuse and resource recovery of waste materials

# An inventory of Australian over-arching objectives and guiding principles

## Client

National Waste Policy Implementation

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)

## Author

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## Project Number

PREC006

## Report Disclaimer



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# 1 Introduction

In March 2012, Randell Environmental Consulting Pty Ltd (REC) was engaged by Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) to compile an inventory of the over-arching objectives and guiding principles that are used by Australian jurisdictions to promote beneficial reuse and resource recovery of waste.

## Aims

This report aims to deliver the following.

- An inventory listing of the over-arching objectives and guiding principles that are used by Australian jurisdictions to promote beneficial reuse and resource recovery.
- A list of the key elements from these objectives and guiding principles.

## Approach

The following approach was used to compile this report.

1. A desktop review was conducted of the over-arching objectives and guiding principles used by jurisdictions (in legislation, policy and strategies) to develop an inventory for each jurisdiction. Generally, legislation provided the objectives and principles which are then included in policies and strategies and therefore legislation was the main reference for the review. The references used are tabulated at the beginning of each jurisdiction's inventory.
2. The inventory listings were then summarised into a brief jurisdiction overview.
3. A summary table including each jurisdiction's overview was developed. The table includes a listing of the key elements included in the over-arching objectives and guiding principles.
4. The report is structured with the summary table first (see section 2) and is followed by the inventory (see section 3).

## Scope and limitations

This report provides an inventory of the over-arching objectives and guiding principles used to encourage beneficial reuse and resource recovery in the states and territories. This report does not provide analysis of the inventory or derive a recommended set of national over-arching objectives and guiding principles.

The inventory only includes relevant regulations (and other instruments used to implement the objectives and principles) where they provide an additional objective or guiding principle to those identified in legislation, policy, and strategy.

The inventory does not include objectives and principles that may be listed in Australian Government legislation, policy, and strategy.

## Issues to note

Over-arching objectives and guiding principles are often difficult to differentiate from one another and what is defined as an objective in one jurisdiction may be a guiding principle in another. This issue should not distract from the intent of this paper (to compile an inventory of the approaches used to promote beneficial reuse and resource recovery in each jurisdiction).

This paper has attempted to identify the objectives and principles that are directly related to beneficial reuse and resource recovery. The inventory also includes some objectives and principles that are

indirectly related to beneficial reuse and resource recovery. These were included to provide a more complete inventory and also because some of the directly related objectives and principles were unclear in isolation from the complete text.

## Definitions

The following definitions were used in completing the inventory.

**Reuse** is the use of products or materials for the same or a different purpose without reprocessing or remanufacture. These products may also be repaired to extend their use.

**Resource recovery** is the sum of materials sent to recycling and energy recovery facilities minus contaminants/residual wastes sent to disposal.

## 2 Summary table of over-arching objectives and guiding principles promoting beneficial reuse and resource recovery

**Over-arching objectives and guiding principles promoting reuse and resource recovery**

| State | Overview of jurisdiction framework | List of key elements of the objectives and principles | Summary list of key elements |
|---|---|---|---|
| ACT | The ACT *Waste Minimisation Act 2001* includes the majority of ACT's over-arching objectives and guiding principles to encourage reuse and resource recovery. The implementation of the waste hierarchy is identified as the main objective and is en acted along with the need to minimise the consumption of natural resources by increasing reuse and recycling. The ACT objectives are to be implemented according to the principle of ecologically sustainable development (ESD). ACT defines ESD as "the effective integration of economic and environmental considerations in decision-making processes achievable through implementation of the following principles: (a) the precautionary principle; (b) the inter-generational equity principle; (c) conservation of biological diversity and ecological integrity; (d) improved valuation and pricing of environmental resources".<br>The *Waste Minimisation Act 2001* also includes legislation that drives industrial efficiency and extended producer responsibility in the ACT.<br>The *ACT Waste Management Strategy 2010–2025* also includes outcomes related to the ACT principles and adds the principle of carbon neutrality to ACT's inventory. | The waste hierarchy<br>Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery<br>Shared responsibility of waste management<br>Ecologically sustainable development<br>Industrial efficiency<br>Extended producer responsibility (product stewardship)<br>Carbon neutrality | The waste hierarchy<br>Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery<br>Shared responsibility of waste management<br>Ecologically sustainable development<br>The effective integration of economic and environmental considerations in decision-making<br>Including:<br>(a) the precautionary principle<br>(b) the inter-generational equity principle<br>(c) conservation of biological diversity and ecological integrity<br>(d) improved valuation and pricing of environmental resources<br>Industrial efficiency<br>Extended producer responsibility<br>Including:<br>(a) product stewardship<br>(b) life cycle principle<br>Carbon neutrality<br>Wastes to resources for beneficial reuse<br>Support and implement national objectives<br>The proximity principle<br>Eliminate waste generation or disposal to landfill<br>Best practice standards in environmental management<br>Regulation to prohibit disposal (where resource recovery is practicable)<br>Regulation to enforce the waste hierarchy (where practicable) |
| NSW | The NSW *Waste Avoidance and Resource Recovery Act 2001* includes the majority of NSW's over-arching objectives and guiding principles to encourage beneficial reuse and resource recovery. Implementation of the waste hierarchy in accordance with the principle of ESD is identified as a main objective and is en acted along with objectives to minimise the consumption of natural resources and waste generation. NSW defines ESD as including the following: (a) the precautionary principle, (b) inter-generational equity, (c) conservation of biological diversity and ecological integrity, (d) improved valuation, pricing and incentive mechanisms.<br>The NSW *Waste Avoidance and Resource Recovery Strategy 2007* includes an extensive list of principles broadly focused on ESD, economic analysis, and community and industry involvement.<br>NSW *Protection of the Environment Operations (Waste) Regulations* enable NSW to issue 'resource recovery exemptions' which allow for the beneficial reuse of wastes via land application or for use as a fuel. These regulations enable the principle of 'wastes to resources for beneficial reuse' (where the wastes are fit for beneficial reuse). | The waste hierarchy<br>Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery<br>Shared responsibility of waste management<br>Ecologically sustainable development<br>Industrial efficiency<br>Extended producer responsibility (product stewardship)<br>Wastes to resources for beneficial reuse | |
| QLD | The QLD *Waste Reduction and Recycling Act 2011* includes the majority of QLD's over-arching objectives and guiding principles to encourage beneficial reuse and resource recovery. Reducing resource consumption (and the effects of), shared responsibility for achieving objectives, and support of national objectives are identified as key objectives. The principle of the 'waste and resource management hierarchy' is combined with the polluter pays principle, the user pays principle, the proximity principle, and the product stewardship principle. The Act also allows for the 'approval of resource for beneficial use' which enables the principle of 'wastes to resources for beneficial reuse' where the wastes are fit for beneficial reuse. | Reducing consumption of natural resources by decreasing waste generation and increasing reuse and resource recovery<br>Shared responsibility of waste management<br>Support and implement national objectives<br>The waste hierarchy<br>The polluter pays principle<br>The user pays principle<br>Extended producer responsibility (product stewardship)<br>Wastes to resources for beneficial reuse<br>The proximity principle | |
| SA | The SA *Zero Waste SA Act 2004* includes the majority of SA's over-arching objectives and guiding principles to encourage reuse and resource recovery. These objectives include the elimination of waste generation, or disposal to landfill, and the objectives are guided by the principles of the waste hierarchy, ESD, the application of best practice, and the principle of shared responsibility.<br>The *Environment Protection (Waste to Resources) Policy 2010* provides a significant range of wastes that are prohibited from disposal to landfill. Prohibiting landfill disposal is more an implementation tool (than an objective or principle).The extent to which this tool is applied in SA warrants listing as principle of resource recovery. This principle is listed as 'regulation to prohibit disposal (where resource recovery is practicable).'<br>The *Environment Protection (Waste to Resources) Policy 2010* also provides definitions of wastes and when a waste becomes a product. SA publish 'waste to product standards' that enable the principle of waste to resources for beneficial reuse to be implemented in SA. | Eliminate waste generation or disposal to landfill<br>The waste hierarchy<br>Ecologically sustainable development<br>Best practice standards in environmental management<br>Shared responsibility of waste management<br>Regulation to prohibit disposal (where resource recovery is practicable)<br>Wastes to resources for beneficial reuse | |
| TAS | *The Tasmanian Waste and Resource Management Strategy* provides the most complete summary of the objectives and guiding principles for Tasmania. Based on the core objective of sustainable development, the strategy promotes the principles of the waste hierarchy, environmental stewardship, precautionary principle, life-cycle principle, and the polluter pays and user pays principles. | The waste hierarchy<br>Ecologically sustainable development<br>Life cycle principle | |
| VIC | The Victorian *Environment Protection Act 1970* provides the majority of the over-arching objectives and guiding principles for Victoria. The Act includes an extensive range of principles, which can be summarised into: the principle of ESD, the principle of shared responsibility, the principle of product stewardship, and the principle of wastes hierarchy.<br>The *Environment Protection (Industrial Waste Resource) Regulations 2009,* which applies only to industrial and hazardous industrial wastes, enables the principles of 'wastes to resources for beneficial reuse' and 'regulation to enforce the waste hierarchy (where practicable).' | The waste hierarchy<br>Ecologically sustainable development<br>Extended producer responsibility (product stewardship)<br>Shared responsibility of waste management<br>Wastes to resources for beneficial reuse<br>Regulation to enforce the waste hierarchy (where practicable) | |
| WA | WA objectives and principles are set out in the *Waste Avoidance and Resource Recovery Act 2007* and the *Environmental Protection Act 1986.* They include objectives to use resources efficiently, to minimise waste generation, to implement the waste hierarchy, to implement product stewardship, and to have regard for the principles of ESD. | The waste hierarchy<br>Ecologically sustainable development<br>Extended producer responsibility (product stewardship) | |

Table 1 Overview of over-arching objectives and guiding principles and summary listing of key elements.

# 3 Inventory of over-arching objectives and guiding principles promoting beneficial reuse and resource recovery

This section includes:

- a lists of the key references for each jurisdiction
- an brief overview of the over-arching objectives and guiding principles promoting beneficial reuse and resource recovery for each jurisdiction
- relevant content from the jurisdictions legislation, policies, and strategies.

## 3.1 Australian Capital Territory (ACT)

**References list**

| |
|---|
| Australian Capital Territory, *Waste Minimisation Act 2001*, 2011 |
| Australian Capital Territory, *Environment Protection Act 1997*, 2011 |
| ACT Government, *ACT Waste Management Strategy 2010–2025*, 2011. |

### 3.1.1 Overview of ACT over-arching objectives and guiding principles

The ACT *Waste Minimisation Act 2001* includes the majority of ACT's over-arching objectives and guiding principles to encourage reuse and resource recovery. The implementation of the waste hierarchy is identified as the main objective and is en acted along with the need to minimise the consumption of natural resources by increasing reuse and recycling. The ACT objectives are to be implemented according to the principle of ecologically sustainable development (ESD). ACT defines ESD as "the effective integration of economic and environmental considerations in decision-making processes achievable through implementation of the following principles: (a) the precautionary principle; (b) the inter-generational equity principle; (c) conservation of biological diversity and ecological integrity; (d) improved valuation and pricing of environmental resources".

The *Waste Minimisation Act 2001* also includes legislation that drives industrial efficiency and extended producer responsibility in the ACT.

The *ACT Waste Management Strategy 2010–2025* also includes outcomes related to the ACT principles and adds the principle of carbon neutrality to ACT's inventory.

### 3.1.2 Inventory of ACT over-arching objectives and guiding principles

#### Waste Minimisation Act 2001

Part 1, section 5 of the Act sets out the following objectives for the ACT.

"**The main objects of Act:**

The main objects of this Act are as follows:

(a) to establish a waste management hierarchy of the following

order:

(i) avoidance;

(ii) reuse;

(iii) recycling and reprocessing;

(iv) disposal;

... (c) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste;

(d) to ensure that industry shares with the community the responsibility for minimising and managing waste".

Part 1, section 6 of the Act, sets out the principles to be used in achieving the above objectives.

"**Principles of ecologically sustainable development**

(1) The objects of this Act are to be achieved in accordance with the principles of ecologically sustainable development.

(2) In this section:

***ecologically sustainable development*** means the effective integration of economic and environmental considerations in decision-making processes achievable through implementation of the following principles:

(a) the precautionary principle;

(b) the inter-generational equity principle;

(c) conservation of biological diversity and ecological integrity;

(d) improved valuation and pricing of environmental resources.

***the inter-generational equity principle*** means that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

***the precautionary principle*** means that, if there is a threat of serious or irreversible environmental damage, a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."

Parts C and D (above) of ESD are not defined in the Act.

Part 2 of the Act includes legislative powers to drive industrial efficiency and to enable extended producer responsibility.

There are several definitions (from page 34) that are worth noting from the Act as follows:

"**recycle,** in relation to a product, means to recover the product and use it as a raw material to produce another product."

"**reuse,** in relation to a product, means to use the product for the same or similar purpose as its original use, without subjecting the product to a manufacturing process."

"**waste** includes the following:

(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;

(b) any discarded, rejected, unwanted, surplus or abandoned substance, whether or not intended for sale, recycling, reprocessing, recovery or purification by a separate operation

from that which produced it;

(c) any other substance declared by regulation to be waste."

## Environment Protection Act 1997

Part 2 of the Act includes the following objectives.

"(1) The particular objects of this Act are—

... (b) to prevent environmental degradation and adverse risks to human health and the health of ecosystems by promoting pollution prevention, clean production technology, reuse and recycling of materials and waste minimisation programs; and

(c) to require people engaging in polluting activities to make progressive environmental improvements, including reductions of pollution at the source as such improvements become practical through technological and economic development;

... (l) to control the generation, storage, collection, transportation, treatment and disposal of waste with a view to reducing, minimising and, where practical, eliminating harm to the environment".

Other relevant principles from this Act are included in the *Waste Minimisation Act* inventory (above).

## ACT Waste Management Strategy 2010–2025

This strategy includes several aims that are relevant to reuse and resource recovery principles.

Part 5, A Sustainable Waste Strategy, includes the following.

"The aim of the ACT Sustainable Waste Strategy 2010–2025 is to ensure that:

The ACT leads innovation to achieve full resource recovery and a carbon neutral waste sector.

The four overarching outcomes of the *ACT Sustainable Waste Strategy 2010-2025* are:

***Outcome 1: Less Waste Generated.***

***Outcome 2: Full Resource Recovery.***

***Outcome 3: A Clean Environment.***

***Outcome 4: Carbon Neutral Waste Sector.***"

## 3.2 New South Wales (NSW)

References list


| |
|---|
| New South Wales Government, *Waste Avoidance and Resource Recovery Act 2001 No 58,* 2009 |
| New South Wales Government, *Protection of the Environment Operations Act 1997 No 156*, 2012. |
| New South Wales Government *Protection of the Environment Operations (Waste) Regulation 2005,* 2011. |
| Department of Environment, Climate Change and Water NSW *NSW Extended Producer Responsibility Priority Statement 2010,* 2010. |
| Department of Environment and Climate Change NSW *Waste Avoidance and Resource Recovery Strategy 2007,* 2007. |


### 3.2.1 Overview of NSW over-arching objectives and guiding principles

The NSW *Waste Avoidance and Resource Recovery Act 2001* includes the majority of NSW's over-arching objectives and guiding principles to encourage beneficial reuse and resource recovery. Implementation of the waste hierarchy in accordance with the principle of ESD is identified as a main objective and is en acted along with objectives to minimise the consumption of natural resources and waste generation. NSW defines ESD as including the following: (a) the precautionary principle, (b) inter-generational equity, (c) conservation of biological diversity and ecological integrity, (d) improved valuation, pricing and incentive mechanisms.

The NSW *Waste Avoidance and Resource Recovery Strategy 2007* includes an extensive list of principles broadly focused on ESD, economic analysis, and community and industry involvement.

NSW *Protection of the Environment Operations (Waste) Regulations* enable NSW to issue 'resource recovery exemptions' which allow for the beneficial reuse of wastes via land application or for use as a fuel. These regulations enable the principle of 'wastes to resources for beneficial reuse' (where the wastes are fit for beneficial reuse).

### 3.2.2 Inventory of NSW over-arching objectives and guiding principles

#### Waste Avoidance and Resource Recovery Act

The relevant objectives are set out in part 1 of the Act, section 3, as follows.

"The objects of this Act are as follows:

> (a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development,
>
> (b) to ensure that resource management options are considered against a hierarchy of the following order:
>
> > (i) avoidance of unnecessary resource consumption,
> >
> > (ii) resource recovery (including reuse, reprocessing, recycling and energy recovery),
> >
> > (iii) disposal,

(c) to provide for the continual reduction in waste generation,

(d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,

(e) to ensure that industry shares with the community the responsibility for reducing and dealing with waste..."

Part 4 of the *Waste Avoidance and Resource Recovery Act 2001* sets out the framework for industrial efficiency and extended producer responsibility schemes in NSW

NSW also publish the *NSW Extended Producer Responsibility Priority Statement* which provides an update on existing schemes (both regulatory and voluntary) and outlines 'wastes of concern' which are listed to provide an early indication of future wastes that may be included in a scheme.

## Protection of the Environment Operations Act

The relevant objectives set out in chapter 1 of the Act, part 3, as follows.

"The objects of this Act are as follows:

(a) to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development,

... (d) to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote the following:

(i) pollution prevention and cleaner production,

(ii) the reduction to harmless levels of the discharge of substances likely to cause harm to the environment,

(iia) the elimination of harmful wastes,

(iii) the reduction in the use of materials and the re-use, recovery or recycling of materials,

(iv) the making of progressive environmental improvements, including the reduction of pollution at source,

... (g) to assist in the achievement of the objectives of the Waste Avoidance and Resource Recovery Act 2001."

There are several definitions (from page 257) that are worth noting from the Act as follows:

***"ecologically sustainable development*** has the same meaning as in section 6 (2) of the *Protection of the Environment Administration Act 1991*.

***waste includes***:

(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

(b) any discarded, rejected, unwanted, surplus or abandoned substance, or

(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

(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

(e) any substance prescribed by the regulations to be waste.

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.

***waste facility*** means any premises used for the storage, treatment, processing, sorting or disposal of waste (except as provided by the regulations)."

Section 6 (2) of the *Protection of the Environment Administration Act* defines ESD as:

"... **ecologically sustainable development** requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

(a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity— namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms— namely, that environmental factors should be included in the valuation of assets and services, such as:

(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems."

## Protection of the Environment Operations (Waste) Regulation 2005

These regulations enable NSW to issue 'resource recovery exemptions' which allow for the beneficial 'reuse' of wastes via land application or for use as a fuel. These regulations enable the principle of 'wastes to resources' where the wastes are fit for beneficial reuse.

Applicants must demonstrate that the waste reuse is genuine, beneficial, and will cause no harm to the environment or human health.

NSW can issue both general and specific resource recovery exemptions. "A general exemption can be issued for commonly recovered, high-volume and well-characterised waste materials. These exemptions may be used by anyone, without seeking approval from OEH, provided the generators, processors and consumers fully comply with the conditions they impose.

... Where no general resource recovery exemption is available for the intended use, an application may be made to the Office of Environment and Heritage for a specific exemption, which would then be issued by the agency, if appropriate."[1]

## Waste Avoidance and Resource Recovery Strategy 2007

Section 4.1 of the *Waste Avoidance and Resource Recovery Strategy* (WARR) includes a list of principles which are included below. Whilst these principles are covered within the NSW principles discussed above, they are included as there is some differences in wording and emphasis.

### "4.1 Principles

Waste must continue to be tackled across the whole life cycle of goods and materials including extraction, manufacturing, distribution, consumption and recovery for reprocessing or disposal. Action to avoid and prevent waste needs to be considered at every step in this cycle with a focus on those points in the chain where the impact and results will be most effective.

*Waste Strategy 2007* continues to recognise the importance of the waste hierarchy to guide effective resource management. It acknowledges, however, that different materials require different approaches. The choice of approach, including re-use, recycling and energy from waste, will depend on a balance of factors including economic and environmental considerations. Other factors that will influence the approach adopted for specific materials include: availability of supply; markets for recyclate; economic; environmental and social impacts; community responses to different collection; reprocessing and disposal options; and emergence of new technologies. All other principles identified in *Waste Strategy 2003* remain important and will continue to underpin NSW policy and actions to conserve resources and reduce waste. These principles include a commitment to ecologically sustainable development as well as other principles set out in NSW legislation and international instruments. In summary these principles are:

- *the precautionary principle* – lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation if there are threats of serious or irreversible environmental damage;
- *inter-generational equity* – the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations;

[1] NSW Government Office of Environment and Heritage *Resource recovery exemptions Fact Sheet,* August 2011.

- *polluter pays* – those who generate pollution and waste should bear the cost of containment, avoidance or abatement;
- *full life cycle costing* – users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste;
- *market incentives* – environmental goals should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems;
- *shared responsibility* – industry should share (with the community) the responsibility for reducing and dealing with waste;
- *system integration* – waste and resource management planning, programs and service delivery need to be integrated on a State-wide basis ;
- *sustainable production and consumption* – environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated, and should seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption;
- *public involvement in decision-making* – environmental issues are best handled with the participation of all concerned citizens, who should have full opportunity to participate in decision making processes, including appropriate access to all relevant information on the environment held by public authorities;
- *economic development* – environmental protection should constitute an integral part of the development process and cannot be considered in isolation from it;
- *continuous improvement* – policy and actions should support and seek to deliver continuous improvement in the frameworks, infrastructure and systems established to support waste reduction and resource recovery;
- *contribute to other environmental sustainability issues* - policy and actions on waste should support and identify their contribution to other key environmental issues such as greenhouse gas abatement and reduction in energy and water use."

## 3.3 Northern Territory (NT)

**References list**

Northern Territory Government, *Department of Natural Resources, Environment, the Arts and Sport, Annual Report 2010–11*, 2011.

This review did not identify any over-arching objectives or guiding principles to promote reuse and resource recovery in the NT. The *Department of Natural Resources, Environment, the Arts and Sport, Annual Report 2010–11* report does identify the following target relating to waste disposal.

"Target EN2.11 Reduce the amount of waste being taken to our rubbish dumps by 50% by 2020."

## 3.4 Queensland (QLD)

References list


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|---|
| Queensland Government, *Waste Reduction and Recycling Act 2011,* 2011. |
| Queensland Government, *Environmental Protection Act 1994*, 2012 |
| Queensland Government, *Queensland's Waste Reduction and Recycling Strategy 2010–2020,* 2010. |


### 3.4.1 Overview of QLD over-arching objectives and guiding principles

The QLD *Waste Reduction and Recycling Act 2011* includes the majority of QLD's over-arching objectives and guiding principles to encourage beneficial reuse and resource recovery. Reducing resource consumption (and the effects of), shared responsibility for achieving objectives, and support of national objectives are identified as key objectives. The principle of the 'waste and resource management hierarchy' is combined with the polluter pays principle, the user pays principle, the proximity principle, and the product stewardship principle. The Act also allows for the 'approval of resource for beneficial use' which enables the principle of 'wastes to resources for beneficial reuse' where the wastes are fit for beneficial reuse.

### 3.4.2 Inventory of QLD over-arching objectives and guiding principles

#### Waste Reduction and Recycling Act 2011

Part 2, section 3, of the Act sets out the following objectives.

"The objects of this Act are the following—

(a) to promote waste avoidance and reduction, and resource recovery and efficiency actions;

(b) to reduce the consumption of natural resources and minimise the disposal of waste by encouraging waste avoidance and the recovery, re-use and recycling of waste;

(c) to minimise the overall impact of waste generation and disposal;

(d) to ensure a shared responsibility between government, business and industry and the community in waste management and resource recovery;

(e) to support and implement national frameworks, objectives and priorities for waste management and resource recovery."

Part 2 section 4 continues with the following regarding the principles used to achieving the above objectives.

"... the achievement of the objects of this Act must if practicable be guided by—

(a) the waste and resource management hierarchy; and

(b) the following policy principles (the waste and resource management principles)—

(i) the polluter pays principle;

(ii) the user pays principle;

(iii) the proximity principle;

(iv) the product stewardship principle"

Part 3, division 2 of the Act includes detailed definitions for all of the terms used above, some of which are included below.

"9 Meaning of waste and resource management hierarchy

The waste and resource management hierarchy is the following precepts, listed in the preferred order in which waste and resource management options should be considered—

(a) AVOID unnecessary resource consumption;

(b) REDUCE waste generation and disposal;

(c) RE-USE waste resources without further manufacturing;

(d) RECYCLE waste resources to make the same or different products;

(e) RECOVER waste resources, including the recovery of energy;

(f) TREAT waste before disposal, including reducing the hazardous nature of waste;

(g) DISPOSE of waste only if there is no viable alternative.

10 Meaning of polluter pays principle

(1) The polluter pays principle is the principle that all costs associated with the management of waste should be borne by the persons who generated the waste.

(2) The costs associated with the management of waste may include the costs of—

(a) minimising the amount of waste generated; and

(b) containing, treating and disposing of waste; and

(c) rectifying environmental harm caused by waste

11 Meaning of user pays principle

(1) The user pays principle is the principle that all costs associated with the use of a resource should be included in the prices of the goods and services (including government services) that result from the use.

(2) In deciding what are the costs associated with the use of a resource, an amount received from a government as a subsidy, incentive payment, grant or similar payment, that would otherwise reduce the costs, must be disregarded.

12 Meaning of proximity principle

The proximity principle is the principle that waste and recovered resources should be managed as close to the source of generation as possible.

13 Meaning of product stewardship principle

(1) The product stewardship principle is the principle that there is a shared responsibility between all persons who are involved in the life cycle of a product for managing the environmental, social and economic impact of the product.

(2) The product stewardship principle recognises that different roles and responsibilities may apply at each stage in the life cycle of a product..."

Chapter 8 of the Act 'Approval of resource for beneficial use' allows for the beneficial use of wastes which enables the principle of 'wastes to resources' where the wastes are fit for beneficial reuse.

## Environmental Protection Act 1994

Part 2, section 3 of the Act includes the following objective:

"The object of this Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (***ecologically sustainable development***)."

This Act includes other relevant broad principles related to reuse and resource recovery, however, they are provided for in the inventory of the *Waste Reduction and Recycling Act 2011* (above).

## Queensland's Waste Reduction and Recycling Strategy 2010–2020

This strategy includes a set of principles that are broadly based on the *Waste Reduction and Recycling Act 2011.* They include: the waste and resource management hierarchy, resource efficiency, engagement, and capacity building.

## 3.5 South Australia (SA)

References list


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|---|
| South Australia Government, *Environment Protection Act 1993,* 2010. |
| South Australia Government, *Environment Protection (Waste to Resources) Policy 2010,* 2010. |
| Zero Waste SA, *Zero Waste SA Act 2004,* 2010. |
| Zero Waste SA, *South Australia's Waste Strategy 2011-2015,* 2011. |


### 3.5.1 Overview of South Australian over-arching objectives and guiding principles

The SA *Zero Waste SA Act 2004* includes the majority of SA's over-arching objectives and guiding principles to encourage reuse and resource recovery. These objectives include the elimination of waste generation, or disposal to landfill, and the objectives are guided by the principles of the waste hierarchy, ESD, the application of best practice, and the principle of shared responsibility.

The *Environment Protection (Waste to Resources) Policy 2010* provides a significant range of wastes that are prohibited from disposal to landfill. Prohibiting landfill disposal is more an implementation tool (than an objective or principle).The extent to which this tool is applied in SA warrants listing as principle of resource recovery. This principle is listed as 'regulation to prohibit disposal (where resource recovery is practicable).'

The *Environment Protection (Waste to Resources) Policy 2010* also provides definitions of wastes and when a waste becomes a product. SA publish 'waste to product standards' that enable the principle of waste to resources for beneficial reuse to be implemented in SA.

### 3.5.2 Inventory of South Australian over-arching objectives and guiding principles

#### Environment Protection Act 1993

Part 2, section 10 of the Act includes the following objectives relevant to reuse and resource recovery.

"(1) The objects of this Act are—

... (b) to ensure that all reasonable and practicable measures are taken to protect, restore and enhance the quality of the environment having regard to the principles of ecologically sustainable development, and—

(i) to prevent, reduce, minimise and, where practicable, eliminate harm to the environment—

(A) by programmes to encourage and assist action by industry, public authorities and the community aimed at pollution prevention, clean production and technologies, reduction, reuse and recycling of material and natural resources, and waste minimisation; and

(B) by regulating, in an integrated, systematic and cost-effective manner—

- activities, products, substances and services that, through pollution or production of waste, cause environmental harm; and

- the generation, storage, transportation, treatment and disposal of waste..."

## Environment Protection (Waste to Resources) Policy 2010

Part 2, section 7 of the policy includes the following objectives related to reuse and resource recovery.

"**7—Waste management objective**

(1) The objective of this policy (the waste management objective) is to achieve sustainable waste management by applying the waste management hierarchy consistently with the principles of ecologically sustainable development set out in section 10 of the Act.

(2) In order to meet the waste management objective, waste management in this State should also—

(a) promote best practice and accountable waste management, taking into account regional differences within the State; and

(b) include effective recording, monitoring and reporting systems with respect to waste transport, resource recovery and waste disposal; and

(c) promote environmental responsibility and involvement in waste avoidance, waste minimisation and waste management within the community."

Part 1 section 4 of the policy includes the following, which enables the principle of 'wastes to resources for beneficial reuse' in SA.

"**4—Certain material declared to be waste**

For the purposes of the definition of waste in section 3(1) of the Act, waste or material resulting from the treatment of waste continues to be waste except insofar as—

(a) it constitutes a product that meets specifications or standards published from time to time or approved in writing by the Authority; or

(b) if no specification or standard published or approved in writing by the Authority applies to such waste or treatment of waste—it constitutes a product that is ready and intended for imminent use without the need for further treatment to prevent any environmental harm that might result from such use."

SA have developed several 'standards' which detail the specifications required for a waste to be fit for purpose as a product.

The policy does not provide further objectives or guiding principles. Schedule 4 of the policy does provide a significant range of wastes that are prohibited from being landfilled. Prohibiting landfill disposal is more an implementation tool (than an objective or principle).The extent to which this tool is applied in SA warrants listing as principle of resource recovery. In figure 1, this principle is listed as 'regulation to prohibit disposal (where resource recovery is practicable)'.

## Zero Waste SA Act 2004

Part 2, section 5 of the Act outlines the objectives and guiding principles of Zero Waste SA.

"**5—Primary objective and guiding principles**

(1) The primary objective of Zero Waste SA is to promote waste management practices that, as far as possible—

(a) eliminate waste or its consignment to landfill; and

(b) advance the development of resource recovery and recycling; and

(c) are based on an integrated strategy for the State.

(2) Zero Waste SA, is, in the exercise of its functions, to be guided by—

(a) the waste management hierarchy; and

(b) the principles of ecologically sustainable development as set out in section 10 of the Environment Protection Act 1993; and

(c) best practice methods and standards in waste management; and

(d) the principle that government waste management policies should be developed through a process of open dialogue with local government, industry and the community in which local government, industry and the community are encouraged to contribute to decision making."

Part 1, section 3 of the Act defines and discusses the waste hierarchy as follows.

"In this Act, a reference to the ***waste management hierarchy*** is a reference to an order of priority for the management of waste in which—

(a) avoidance of the production of waste; and

(b) minimisation of the production of waste; and

(c) reuse of waste; and

(d) recycling of waste; and

(e) recovery of energy and other resources from waste; and

(f) treatment of waste to reduce potentially degrading impacts; and

(g) disposal of waste in an environmentally sound manner,

are pursued in order with, first, avoidance of the production of waste, and second, to the extent that avoidance is not reasonably practicable, minimisation of the production of waste, and third, to the extent that minimisation is not reasonably practicable, reuse of waste, and so on."

## South Australia's Waste Strategy 2011-2015

The objectives and principles of the strategy are based on the *Zero Waste SA Act 2004* and are covered in the inventory above.

## 3.6 Tasmania (Tas)

References list

Tasmanian Government, *Environmental Management and Pollution Control Act 1994.*

Tasmania. Department of Environment, Parks, Heritage and the Arts, *The Tasmanian Waste and Resource Management Strategy,* 2009.

### 3.6.1 Overview of Tasmanian over-arching objectives and guiding principles

*The Tasmanian Waste and Resource Management Strategy* provides the most complete summary of the objectives and guiding principles for Tasmania. Based on the core objective of sustainable development, the strategy promotes the principles of the waste hierarchy, environmental stewardship, precautionary principle, life-cycle principle, and the polluter pays and user pays principles.

### 3.6.2 Inventory of Tasmanian over-arching objectives and guiding principles

#### Environmental Management and Pollution Control Act 1994

Schedule 1 of the Act provides the following objectives.

"... 3. The objectives of the environmental management and pollution control system established by this Act are ...

(a) to protect and enhance the quality of the Tasmanian environment; and

(b) to prevent environmental degradation and adverse risks to human and ecosystem health by promoting pollution prevention, clean production technology, reuse and recycling of materials and waste minimization programmes; and

(c) to regulate, reduce or eliminate the discharge of pollutants and hazardous substances to air, land or water consistent with maintaining environmental quality; and

(d) to allocate the costs of environmental protection and restoration equitably and in a manner that encourages responsible use of, and reduces harm to, the environment, with polluters bearing the appropriate share of the costs that arise from their activities; and

(e) to require persons engaging in polluting activities to make progressive environmental improvements, including reductions of pollution at source, as such improvements become practicable through technological and economic development; and

(f) to provide for the monitoring and reporting of environmental quality on a regular basis; and

(g) to control the generation, storage, collection, transportation, treatment and disposal of waste with a view to reducing, minimizing and, where practicable, eliminating harm to the environment, and

(h) to adopt a precautionary approach when assessing environmental risk to ensure that all aspects of environmental quality, including ecosystem sustainability and integrity and beneficial uses of the environment, are considered in assessing, and making decisions in relation to, the environment..."

## The Tasmanian Waste and Resource Management Strategy

Chapter 4 of the strategy elaborates on the objectives above, providing the following guiding principles for Tasmania.

"The Tasmanian Waste and Resource Management Strategy is developed and guided by the overarching framework of the Resource Management and Planning System (RMPS) which also provides the framework for Tasmania's environmental and planning legislation and policies. The cornerstone of the RMPS is the promotion of sustainable development requiring the effective integration of economic, social and environmental considerations in decision-making processes and strategic planning.

Further to the principle of sustainable development, there are other guiding principles in the Strategy which form its foundations and also of other industry-specific, waste-specific, or region-specific strategies and action plans aligned with it. The principles are as follows:

### 4.1 Waste Management Hierarchy

The Waste Management Hierarchy is a hierarchy of actions which are, in order of preference: waste avoidance, reduction, reuse, recycling, energy recovery, treatment and disposal

### … 4.2 Environmental Stewardship

In a waste management context, Environmental Stewardship recognises our roles and responsibilities to appropriately and effectively manage the wastes we produce to reduce any adverse environmental impacts and to protect the environment now and for future generations.

### … 4.3 Precautionary Principle

Where there is a lack of scientific information relating to the impact of certain activities, and there is the potential of serious and irreversible damage, or unknown risks associated with these activities, a precautionary approach to waste management should be taken to protect the environment and human health and safety.

### …4.4 Life-Cycle Principle

The Life-Cycle Principle is the notion that a fair, holistic assessment of environmental impact requires the assessment of raw material production, manufacture, distribution, use and disposal including all intervening transportation steps necessary or caused by the product's existence.

### …4.5 Polluter Pays and User Pays

In the context of waste, the Polluter Pays Principle is based on the premise that those who generate waste or cause pollution from inappropriate waste management practices should bear the cost of its treatment, containment, or disposal. The User Pays Principle is similar but is based on the premise that those who use services pay for them."

Chapter 5 of the strategy continues by listing and describing the key objectives for Tasmania. The list of objectives is as follows:

- "Improved Partnerships, Coordination and Planning
- Waste Avoidance and Sustainable Consumption
- Waste Minimisation and Resource Recovery
- Improved Regulation and Management of Residual Wastes
- Improved Data Collection and Management Systems
- Reduction of Greenhouse Gas Emissions"

## 3.7 Victoria (Vic)

| References list |
|---|
| Victorian Government, *Environment Protection Act 1970,* 2011. |
| Victorian Government, *Environment Protection (Industrial Waste Resource) Regulations 2009,* 2009 |
| Victorian Government, *Towards Zero Waste Strategy,* 2005. |
| Victorian Government *Sustainability Victoria Act 2005,* 2011. |

### 3.7.1 Overview of Victorian over-arching objectives and guiding principles

The Victorian *Environment Protection Act 1970* provides the majority of the over-arching objectives and guiding principles for Victoria. The Act includes an extensive range of principles, which can be summarised into: the principle of ESD, the principle of shared responsibility, the principle of product stewardship, and the principle of wastes hierarchy.

The *Environment Protection (Industrial Waste Resource) Regulations 2009,* which applies only to industrial and hazardous industrial wastes, enables the principles of 'wastes to resources for beneficial reuse' and 'regulation to enforce the waste hierarchy (where practicable).'

### 3.7.2 Inventory of Victorian over-arching objectives and guiding principles

#### Environment Protection Act 1970

Part one of the Act includes an extensive list of guiding principles most of which are included below.

"**1B Principle of integration of economic, social and environmental considerations**

(1) Sound environmental practices and procedures should be adopted as a basis for ecologically sustainable development for the benefit of all human beings and the environment.

(2) This requires the effective integration of economic, social and environmental considerations in decision making processes with the need to improve community well-being and the benefit of future generations.

(3) The measures adopted should be cost-effective and in proportion to the significance of the environmental problems being addressed.

**1C The precautionary principle**

(1) If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(2) Decision making should be guided by—

(a) a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and

(b) an assessment of the risk-weighted consequences of various options.

**1D Principle of intergenerational equity**

The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

### 1E Principle of conservation of biological diversity and ecological integrity

The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.

### 1F Principle of improved valuation, pricing and incentive mechanisms

(1) Environmental factors should be included in the valuation of assets and services.

(2) Persons who generate pollution and waste should bear the cost of containment, avoidance and abatement.

(3) Users of goods and services should pay prices based on the full life cycle costs of providing the goods and services, including costs relating to the use of natural resources and the ultimate disposal of wastes.

(4) Established environmental goals should be pursued in the most cost effective way by establishing incentive structures, including market mechanisms, which enable persons best placed to maximise benefits or minimise costs to develop solutions and responses to environmental problems.

### 1G Principle of shared responsibility

(1) Protection of the environment is a responsibility shared by all levels of Government and industry, business, communities and the people of Victoria.

(2) Producers of goods and services should produce competitively priced goods and services that satisfy human needs and improve quality of life while progressively reducing ecological degradation and resource intensity throughout the full life cycle of the goods and services to a level consistent with the sustainability of biodiversity and ecological systems.

### 1H Principle of product stewardship

Producers and users of goods and services have a shared responsibility with Government to manage the environmental impacts throughout the life cycle of the goods and services, including the ultimate disposal of any wastes.

### 1I Principle of wastes hierarchy

Wastes should be managed in accordance with the following order of preference—

(a) avoidance;

(b) re-use;

(c) re-cycling;

(d) recovery of energy;

(e) treatment;

(f) containment;

(g) disposal…"

## Environment Protection (Industrial Waste Resource) Regulations 2009

**Note:** these regulations only apply to the management of industrial and hazardous industrial waste in Victoria (defined as Prescribed Industrial Waste (PIW)).

Part 1 of the regulations includes the following relevant objectives to promote reuse and resource recovery.

"The objectives of these Regulations are to—

(a) assist industry to implement the principle of wastes hierarchy as set out in section 1I of the Environment Protection Act 1970;

... (c) encourage industry to utilise industrial waste as a resource through exempting material from categorisation as prescribed industrial waste where a secondary beneficial reuse is established..."

Part c, above, enables the principle of 'wastes to resources for beneficial reuse' for hazardous waste to be implemented in Victoria."

The regulations define 'direct beneficial' and 'secondary beneficial reuse' as follows:

"**direct beneficial reuse** means use as an input or raw material substitute in a commercial, industrial, trade or laboratory activity without prior treatment or reprocessing"

"**secondary beneficial reuse** means use as an input or raw material substitute in a commercial, industrial, trade or laboratory activity following any form of treatment or reprocessing".

Part 2 of the regulations includes legislation that has the potential (where the technology and facilities are available) to require that PIWs wastes be avoided or reduced, reused or recycled, or treated or reprocessed. This appears to be the only example of legislation that can potentially enforce the waste hierarchy. In figure 1, this approach has been termed 'regulation to enforce the waste hierarchy (where practicable).'

## Towards Zero Waste Strategy

This strategy sets out over-arching objectives and principles, which are included within the Victorian inventory (above).

## Sustainability Victoria Act 2005

This Act does not include over-arching objectives and principles that are directly related to reuse and resource recovery of wastes.

## 3.8 Western Australia (WA)

References list


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|---|
| WA Government, *Waste Avoidance and Resource Recovery Act 2007,* 2010 |
| WA Government, *Environmental Protection Act 1986,* 2011. |
| WA Government, *Western Australian Waste Strategy: "Creating the Right Environment"*, 2012. |


### 3.8.1 Overview of WA over-arching objectives and guiding principles

WA objectives and principles are set out in the *Waste Avoidance and Resource Recovery Act 2007* and the *Environmental Protection Act 1986.* They include objectives to use resources efficiently, to minimise waste generation, to implement the waste hierarchy, to implement product stewardship, and to have regard for the principles of ESD.

### 3.8.2 Inventory of WA over-arching objectives and guiding principles

#### Waste Avoidance and Resource Recovery Act 2007

Part 1, section 5 of the Act includes the following objectives.

"5. **Objects of this Act**

(1) The primary objects of this Act are to contribute to sustainability, and the protection of human health and the environment, in Western Australia and the move towards a waste free society by —

(a) promoting the most efficient use of resources, including resource recovery and waste avoidance; and

(b) reducing environmental harm, including pollution through waste; and

(c) the consideration of resource management options against the following hierarchy —

(i) avoidance of unnecessary resource consumption;

(ii) resource recovery (including reuse, reprocessing, recycling and energy recovery);

(iii) disposal.

(2) The principles set out in the EP Act section 4A apply in relation to the objects of this Act."

Part 5 of the Act provides a framework for product stewardship (extended producer responsibility).

#### Environmental Protection Act 1986

The Act provides additional principles that are included below.

"4A. **Object and principles of Act**

The object of this Act is to protect the environment of the State, having regard to the following principles —

1. The precautionary principle

Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, decisions should be guided by —

(a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and

(b) an assessment of the risk weighted consequences of various options.

2. The principle of intergenerational equity

The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

3. The principle of the conservation of biological diversity and ecological integrity

Conservation of biological diversity and ecological integrity should be a fundamental consideration.

4. Principles relating to improved valuation, pricing and incentive mechanisms

(1) Environmental factors should be included in the valuation of assets and services.

(2) The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.

(3) The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.

(4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.

5. The principle of waste minimisation

All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment."

## Western Australian Waste Strategy: "Creating the Right Environment"

Under the 'Vision, Scope and Key Approach' section of the strategy the WA inventory of principles is included as follows.

"Principles

The following principles are referenced in the Waste Avoidance and Resource Recovery Act 2007 and underpin the development of Creating the Right Environment:

- Intergenerational equity – ensuring that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- Waste minimisation and waste avoidance – in which all reasonable and practicable steps should be taken to minimise the generation of waste and its discharge to landfill and the environment
- Promoting the most efficient use of resources, including resource recovery
- Considering management options against the waste hierarchy of avoidance, recovery (including reuse, reprocessing, recycling and energy recovery) and disposal
- User pays and polluter pays – where those who generate waste bear the full lifecycle cost of managing their waste".