

Environment Protection and Heritage Council

A Framework for Product Stewardship in Australia



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This report has been prepared solely for the use of the Environment Protection and Heritage Committee (EPHC). Its aim is to assist policy officers in assessing product stewardship as an appropriate policy response and if so, the elements required for an efficient and effective model.

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Executive summary

Product stewardship is an approach that recognises that manufacturers, importers, governments and consumers have a shared responsibility for the environmental impacts of a product throughout its full life cycle.¹ Product stewardship has arisen as a key policy response to rising concern regarding the negative environmental impacts associated with products and their associated waste.

This framework sets out the generic principles associated with the consideration of product stewardship as a policy choice. The framework provides guidance to government on the development of effective product stewardship policies and approaches.

The framework is a tool to assist in determining whether product stewardship is appropriate for a product, whether the market characteristics will support a product stewardship intervention and, if so, the approach to product stewardship that should be taken.

The framework provides a four step approach to apply this tool:

- Step one focuses on when is product stewardship a possible response. This involves considering the role for government and/or industry intervention. Firstly it must be assessed that there is a market failure or some form of overarching policy objective, however this alone does not justify government intervention. The problem must be of significance and the market must be unable to provide a solution to justify action.
- Step two assesses the market characteristics of a product to determine if product stewardship is likely to be successful and where it should be targeted. For example, product stewardship is easier to implement and more likely to be successful where there is concentration in the supply side of the market and governments, industry and the community are committed.
- Provided the product passes the above two steps, step three provides guidance on what approach product stewardship should take. The framework sets out a number of principles for the effective design and development of a product stewardship scheme. Depending on the issues or problems that product stewardship seeks to address, the principles for the scheme will differ, the principles to be chosen will depend on the nature of the issues and market characteristics identified in step two. A product stewardship approach can be targeted anywhere along the life-cycle of the product, where to target will be determined by the market characteristics of the product.
- Step 4 aims to ensure that a review is conducted within an appropriate time period.

Importantly, the framework is not a substitute for a detailed benefit-cost analysis of genuine policy alternatives. The Council of Australian Governments (COAG) has agreed guidelines to help ministerial councils and national standard setting bodies enact best practice regulation and review. These guidelines set out the regulatory impact statement process that would need to be completed if a regulatory option is considered, and this assessment would form the ultimate decision tool. The framework is however, a tool to think through product stewardship and its application. The framework therefore complements regulatory impact statement processes and supports wider policy discussion. While many Australian jurisdictions refer to product stewardship in legislation and policy documents, the choice of whether to implement product stewardship should flow from consideration of market failures, government policy objectives, industry characteristics, and the relative merit of other options.

This framework is summarised in the following figure.

¹ Environment Protection Heritage Council (2009), *Product Stewardship*, site: <http://www.ephc.gov.au/taxonomy/term/45> accessed 20 April 2009

Step 1: When is Product Stewardship a possible response?

- Market failure or policy objective
- AND
- Consequences are high
 - A market solution is unlikely
 - There is no effective remedy for consequences

Will inform what product stewardship policy approach is best suited to:

- Waste
- Residual value
- Life cycle

Is there a market failure? Is a market solution no possible? Are consequences of inaction high?

Yes

Step 2: When is Product Stewardship most likely to be successful?

Factors which may influence the success of Product Stewardship (not mutually exclusive)

- Concentration in supply side of the market
- Significant local production relative to imports
- Governments and industry are committed
- Consumer concern and commitment to action is high
- The overarching regulatory framework is stable
- Product Stewardship is complementary to existing regulation
- Strong industry cohesion
- Mature or maturing market
- Industry characterised by repeat business
- Industry associations are strong and have comprehensive coverage
- All stakeholders are covered by the scheme
- Current policy pressures are considered
- A literature review is undertaken
- Consultation with all relevant stakeholders

Will inform:

- When product stewardship is likely to be successful
- What product stewardship policy approach is suitable

Does the market exhibit enough of these characteristics to will make Product Stewardship more likely to be successful?

Yes

Step 3: What should Product Stewardship entail?

Overarching Key Principles*

- Targeted to objectives
- Shared responsibility
- Delivers a net community benefit
- Environmental effectiveness
- Economic efficiency
- Ease of administration
- Innovation
- Transparency and accountability
- Ownership and acceptability
- Incentives

These reflect the core attributes of any product stewardship program

Policy Approaches

- Voluntary Industry Agreements
- Voluntary Industry Government Agreements
- Co-Regulation
- Regulation

Funding Approaches

- Rates
- Customer charge
- Consolidated Revenue
- Excise tax
- Association fee / levy

Instrument Measures**

- Product take-back
- Deposit Refunds
- Product leases
- Performance Targets
- Disposal or recycling fees

Outcomes

- Market failures addressed
- Improved environmental quality
- Improved efficiency of resource use
- Behaviour modification

Step 4: Ensure scheme is reviewed within an appropriate time period

* See table 2 for more information on Key Principles

** Trial programs / pilots can be used to test measures

1 Context

Introduction

This framework was first presented to the Environment Protection and Heritage Council (EPHC) in November 2008. The EPHC communiqué from the November 2008 meeting stated that Ministers “agreed to develop a Product Stewardship Framework to facilitate decisions about when product stewardship is likely to be appropriate, and if so, the elements required for an effective and efficient model”.² While many Australian jurisdictions have their own legislative and policy agenda, the intention of this framework is to have a nationally consistent approach to managing product stewardship. The framework is aimed at policy officers within each of the Australian environment departments, to assist them to assess whether product stewardship is likely to be an appropriate policy response, and if so, the type of product stewardship approach suitable for that particular product.

There are a number of other policies to be considered when determining a response to waste. The Council of Australian Governments (COAG) has agreed guidelines to help ministerial councils and national standard setting bodies enact best practice regulation and review.³ The guidelines set out the principles of best practice regulation and guidance for preparing a regulatory impact statement. While the framework should not be considered to replace the COAG guideline to inform best practice regulation, the framework is designed to help consider the problem and product stewardship as one possible solution.

The Waste Policy Taskforce within the Australian Government Department of Environment, Water, Heritage and the Arts has recently released a consultation paper to help to develop a national waste policy. The national waste policy will help “to identify best practice in waste management and resource recovery and to ensure that Australia has the right mix of incentives and regulation to achieve environmental, economic and community benefits from these activities.”⁴ The national waste policy outlines product stewardship as one of the approaches for dealing with waste management and resource recovery at a national level. It is intended that this product stewardship framework will complement the national waste policy by helping to provide specific guidance on product stewardship as an option for managing waste at a national level.

The framework does not assess current product stewardship schemes. However, if the current schemes are to be reviewed, the framework would be an appropriate basis to assess the effectiveness of current schemes.

Focus of the report

Over the last two decades, both domestically and internationally, there has been an increased emphasis on waste management policies that incorporate waste avoidance and materials recovery initiatives, and that extend beyond those traditionally involved in direct waste disposal. Amongst others, product stewardship has arisen as a key policy response. It calls on those involved in the life cycle of a product to share responsibility for reducing its environmental impacts. This life-cycle approach incorporates end-of-life management and recognises that shared responsibility must be targeted at those participants along the supply chain where reduced impacts on the environment can be most effectively and efficiently achieved.

² Environment Protection and Heritage Council (2008), *17th Meeting of EPHC Communiqué*, website: <http://www.pca.org.au/uploads/00666.pdf> accessed 20 April 2009

³ The *Best Practice Regulation Guide* can be found at: http://www.coag.gov.au/ministerial_councils/index.cfm

⁴ Department of Environment, Water, Heritage and the Arts (2009), *A National Waste Policy: Managing Waste to 2020*, p.3

This report sets out the generic principles associated with product stewardship so as to provide guidance to government on the development of effective product stewardship policies and approaches. Specifically, the report establishes a framework that:

- clarifies the circumstances in which product stewardship is likely to be an appropriate policy approach;
- identifies principles that will deliver effective product stewardship outcomes; and
- can be used to determine the core attributes of a product stewardship program, including the appropriateness of specific policy approaches and instruments.

The report is focused primarily on:

- identifying the circumstances that give rise to product stewardship;
- the market characteristics conducive to product stewardship; and
- the principles for effective product stewardship design.

Background

Product Stewardship

Product stewardship has emerged in response to the increasing societal concerns about environmental impacts of waste. These environment concerns are largely two-fold:

- Potentially valuable and useable resources are being ‘thrown-away’ — this can reduce the benefit that we as a society extract from resources which results in less efficient industry and can add to resource depletion rates.
- Waste disposal can be detrimental to the environment if not properly managed. For example, potential groundwater pollution and greenhouse emissions can be long term legacies of landfill in addition to odour, litter and amenity impacts.

As awareness of these issues grows, there has been an increasing interest in programs to enhance product recyclability and increase end-of-life recycling as well as a focus on end of life issues from a whole of life perspective – which might include design standards and requirements for components and materials to be recyclable. This in turn reduces the potential for pollution and the associated health and safety impacts from land filling of products containing potentially hazardous materials such as heavy metals, and increases resource efficiency.

Governments around Australia also want to build on existing achievements in reducing the volume of waste requiring disposal to landfill. In some cases, product stewardship approaches can be a valuable means to divert particular products from landfill at their end of life. The box below highlights waste issues related to a number of high profile consumer items.

Key waste facts and figures

As a nation, Australia is one of the highest per capita waste generators in the world creating over 32 million tonnes of solid waste per annum. In 2002/03 construction and demolition waste contributed the greatest percentage of total waste at 42 per cent, with 27 per cent coming from municipal sources and 29 per cent from the commercial and industrial sector. Waste recovered for recycling was approximately 15 million tonnes.⁵

Some key products issues

Televisions and computers

In 2007/08 there were over 30 million televisions and computers imported into Australia.⁶ In the same period, it is estimated that almost 17 million computers and televisions reached the end of their useful life.⁷ Despite the increasing trend in television and computer ownership, only around 10 per cent of computers imported each year and 1 per cent of imported televisions are recycled.⁸

Tyres

A report prepared in 2006 found that approximately 19 million tyres reached their end of life. Of these it is estimated that approximately 64 per cent were landfilled, 23 per cent were used for tyre derived products and 14 per cent were illegally dumped.⁹

Mobile Phones

In 2007/08 it is estimated that 1,775 tonnes of mobile phone components were imported into Australia. In the same year, Mobile Muster collected 97 tonnes of mobile phone components, representing a 5.5 per cent annual collection rate. Independent online market research in February 2009 found that when a consumer bought a new phone:

- 9 per cent recycled their previous mobile phone.
- 2 per cent threw out their previous mobile phone.
- 4 per cent of people lost or had their previous mobile phone stolen.
- 32 per cent stored two or more phones.¹⁰

Product stewardship is an approach which looks at the problems products cause at their end of life and recognises that manufacturers, importers, governments and consumers have shared responsibility for the environmental, health and safety impacts of a product throughout its full life cycle.¹¹ Product stewardship includes end of life management, and seeks to reduce adverse

⁵ Productivity Commission (2006), *Waste Management*, Report no. 38, Canberra

⁶ Television and computer imports consisted of 3.1 million televisions, 3.5 million fully assembled desktops and laptops, 2.8 million separate computer monitors and 29.5 million computer components (known in the industry as 'peripherals')

⁷ Hyder Consulting (2009), *Unpublished report: Report 1*, provided to PricewaterhouseCoopers in preparation of this consultation regulatory impact statement, March 2009

⁸ Hyder Consulting (2009), *Unpublished report: Report 1*, provided to PricewaterhouseCoopers in preparation of this consultation regulatory impact statement, March 2009

⁹ Hyder Consulting (2006), *Market Failure in End-of-life Tyre Disposal, Final Report*, 8 September 2006, Canberra, p. 22

¹⁰ Australian Mobile Telecommunications Association (2009), *Mobile Muster*, website: <http://www.mobilemuster.com.au/> accessed 20 April 2009

¹¹ Environment Protection Heritage Council (2009), *Product Stewardship*, site: <http://www.ephc.gov.au/taxonomy/term/45> accessed 20 April 2009

impacts and internalise unavoidable costs within the product price. It targets action at the point(s) in the supply chain where this can be most effectively and efficiently achieved.¹²

It is important to note that in practice it may be difficult to take a full life cycle perspective if market characteristics do not allow for targeting the product at the early stages of the supply chain. For example when a good is imported it is difficult to foresee the end of life impact of that good prior to its entry into Australia.

In both research and practical application, the term product stewardship is often used interchangeably with extended producer responsibility (EPR). EPR is a policy concept in which a producer's physical and/or financial responsibility for a product extends to the post-consumer phase of the product's lifecycle.¹³ While conceptually similar to EPR, product stewardship is broader in its scope, engaging manufacturers, brand-owners, retailers, consumers, regulators and waste managers in developing programs to effectively and appropriately manage the impacts of products across their lifespan, rather than at the post-consumer waste stage (see Figure 1 following).

Figure 1: Product Stewardship – A Shared Approach



Source: Victorian Government, Towards Zero Waste Energy

Product stewardship should attempt to address some or all of the outcomes suggested in the following list:

- Address/correct market failure.
- Manage/reduce the environmental, health and safety impacts of products and services.
- Improve the efficiency with which we use raw materials.

¹² Environment Heritage and Protection Council (2004), Co-regulatory Frameworks for Product Stewardship: An industry Discussion Paper; Canberra, p.18

¹³ OECD (2001), Extended Producer Responsibility: A Guidance Manual for Governments, Paris, p.9

- Increase resource recovery.
- Extend the life of products.
- Manage solid waste, especially toxic components, at the end of product life.¹⁴

Different products will have different problems and therefore address different purposes.

While there may be an immediate benefit in the form of reduced waste production and diversion to landfill etc, there is the expectation that there will be secondary benefits as producers respond to the incentives created by product stewardship by innovating and changing designs to reduce environmental, health and safety impacts associated with the products.

Product Stewardship in practice

At the national level a number of product stewardship schemes already exist or are in the pipeline. One of the most notable is the National Packaging Covenant (NPC) which is underpinned by a National Environment Protection Measure implemented by the jurisdictions through regulations. Others include a waste oil scheme, mobile phone recovery initiative, collection program for agricultural chemical containers, and foreshadowed schemes for televisions and tyres.¹⁵

In OECD countries, internationally, product stewardship has been used principally for packaging waste, electronic and electrical equipment, batteries, bottles, paint cans, automobiles, waste oil, tyres, refrigerants and other products.¹⁶

The principles of product stewardship are not restricted only to consumer products and apply equally to natural resources. For example, in Victoria, resources stewardship is evidenced through Government leadership on water conservation, through the introduction of permanent water saving rules and four-stage restrictions that empower users to limit consumptive activities, as well as waste management, through restrictions placed on certain waste streams from landfill that can be recovered or recycled.

¹⁴ Sustainability Victoria (2008), *Product Stewardship*, viewed 31 March 2008 www.sustainability.vic.gov.au/www/html/1633-product-stewardship.asp

¹⁵ Productivity Commission (2006), *Waste Management, Inquiry Report*, No 38, p.XXXVII

¹⁶ OECD (2001), *Extended Producer Responsibility: A Guidance Manual for Governments*, Paris, p.3

2 A framework for effective product stewardship

Understanding when and how to implement product stewardship schemes is crucial to ensuring that product stewardship programs are appropriately targeted, maintain their integrity and focus, and achieve core objectives.

From a policy perspective the decision to use product stewardship involves determining whether there is a requirement for government and/or industry led intervention using a product stewardship approach, and if so, the circumstances and conditions in which product stewardship will best achieve the desired policy objectives.

This section proposes a framework to aid policy makers with their consideration of the use of product stewardship and product stewardship approaches that best target policy issues of concern.

The framework is specifically focused on answering the following questions:

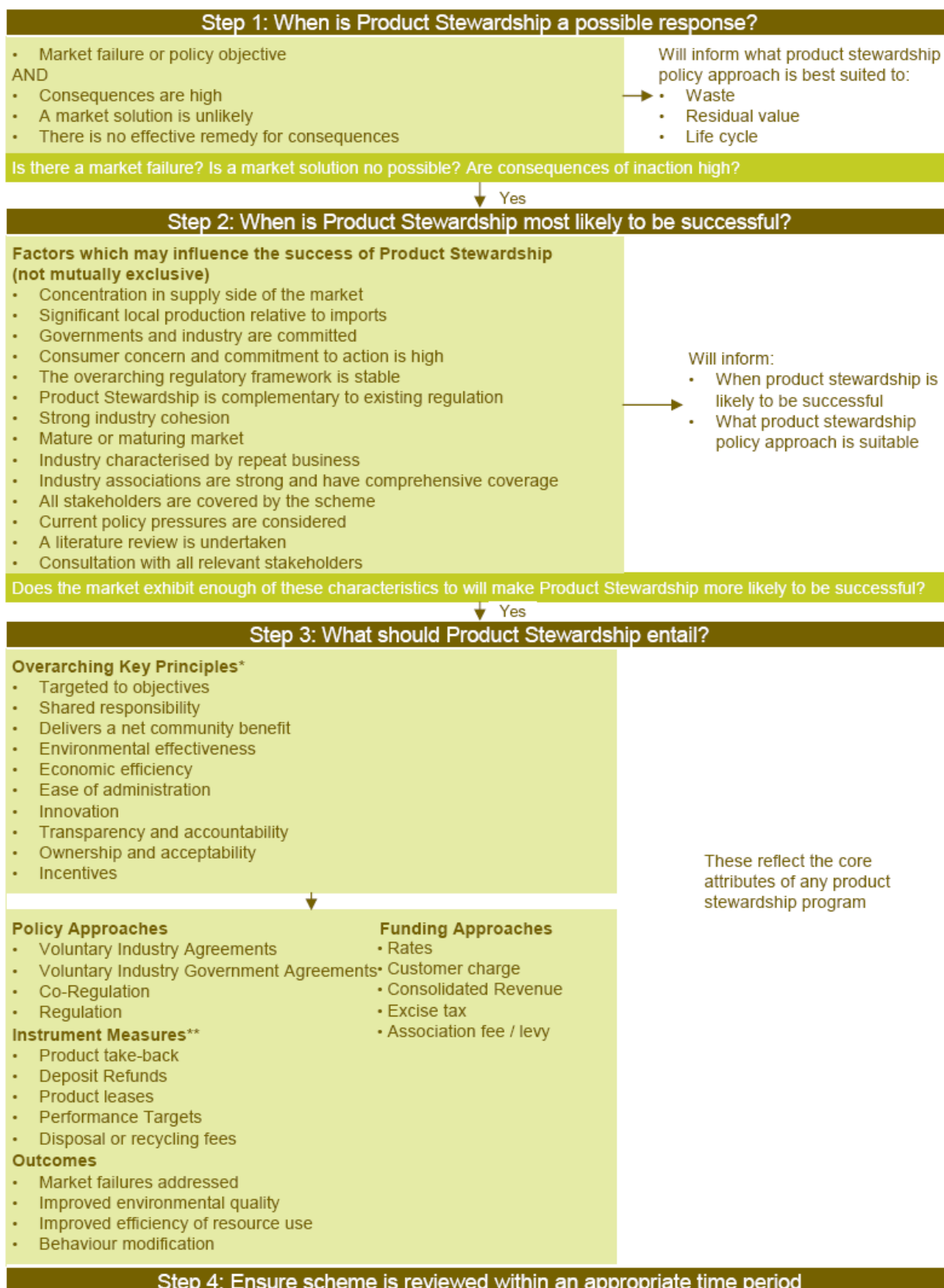
- When is product stewardship a possible policy response?
- When is product stewardship likely to be successful?
- What should product stewardship entail?

The framework conceptualised in Figure 2 is intended for generic application and is broad enough to allow flexibility upon which decision making can occur within the context of various industries and waste product streams.¹⁷

The remainder of this report provides guidance on the perspective from which these questions should be viewed.

¹⁷ Application of the framework may allow identification of products which are not well suited to a product stewardship scheme, but in cases where government legislation is required it will be necessary to undertake a benefit-cost assessment as part of the regulatory impact analysis framework to justify the use of a product stewardship scheme and show that the model developed from the framework's application is the most suitable.

Figure 2: A principles based framework for determining effective product stewardship approaches



* See table 2 for more information on Key Principles

** Trial programs / pilots can be used to test measures

Step 1: When is product stewardship a possible policy response?

The first step in determining whether product stewardship is an appropriate policy response requires considering the role for government and/or industry intervention. This is important to ensure that intervention is problem specific and that policy responses are targeted at addressing these problems, which must be clearly identified and of a size and scale that warrants intervention. (which are the later steps in the framework). This is a two stage test as described below.

Firstly, there must be evidence of a market failure or some form of overarching policy objective

Policy objectives

In this instance, there are a number of Australian jurisdictions who have stated their commitment to the pursuit of product stewardship.

Table 1: Australian jurisdiction's policy and legislative instruments referring to product stewardship

Jurisdiction	Description
Victoria	<p>The Victorian Environment Protection Act 1970 states that "it is the intention of Parliament that in the administration of this Act regard should be given to the principles of environment protection" including:</p> <ul style="list-style-type: none"> 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.¹⁸
South Australia	<p>The South Australia Government's draft Environment Protection (Waste to Resources) Policy that lists among the benefits of the policy helping "broaden the responsibility for waste management amongst stakeholders (from generation through collection and transport to materials recovery or final disposal)".¹⁹</p> <ul style="list-style-type: none"> The Environment & Conservation Minister, Jay Weatherill's press release stated that "the policy could be the first step in establishing 'product stewardship' schemes for some of these types of wastes – where manufacturers and the community take responsibility for the recycling and proper disposal of their products"²⁰.
New South Wales	<p>Under the Waste Avoidance and Resource Recovery (WARR) Act 2001, the NSW Government is required to release an annual priority list for "products that it proposes to recommend for EPR schemes" in the coming year.²¹ The most recent statement listed lightweight plastic bags, tyres, TVs and computers. In doing so, the government:</p> <ul style="list-style-type: none"> "gives notice that those products that are currently identified as priority wastes for national action by the Environment Protection and Heritage Council (EPHC) could require regulations relating to producer responsibility schemes to be initiated in NSW in the coming 12 months. This could involve the introduction of a safety net to underpin a voluntary industry EPR scheme (such as the recent regulation in NSW to give effect to the packaging NEPM) or could involve full regulation"²².

¹⁸ State Government of Victoria (2009), *Environment Protection Act 1970*, Version No. 146, Act No. 8056/1970

¹⁹ Environment Protection Authority (2008), *Draft Environment Protection (Waste To Resources) Policy And Explanatory Report*, Adelaide, November 2008

²⁰ South Australian Government (2008), *Government Crackdown on Waste Going To Landfill*, News Release, Friday, 7 November 2008, Hon Jay Weatherill, Minister for Environment & Conservation

²¹ New South Wales Government (2008), *Waste Avoidance and Resource Recovery Act 2001*, As at 1 July 2008, NSW Parliament

²² New South Wales Government (2007), *NSW Extended Producer Responsibility, Priority Statement*, Department of Environment and Climate Change

Jurisdiction	Description
Western Australia	<p>The Waste Avoidance and Recovery Act 2007 (WARR Act) outlines Western Australia's approach to product stewardship. The Act sets out a requirement for the Waste Authority to:</p> <ul style="list-style-type: none"> • “include in its business plan each year a priority statement with respect to any extended producer responsibility schemes the Waste Authority proposes to recommend for implementation and operation under the regulations; and • advertise the priority statement; and • in the advertisement, invite submissions on any relevant matter relating to the priority statement.” <p>The Act also sets out what must be included in a product stewardship plan and how it should be registered.</p> <p>In the event that a product stewardship approach is deemed to be ineffective, the legislation provides the power to impose an extended producer responsibility scheme. Specifically item 17 of Schedule 2 of the WARR Act allows for regulations to be made regulating the implementation, operation and enforcement of extended producer responsibility schemes.</p> <p>In addition, the Act sets out the Minister's obligations when considering extended producer responsibility schemes including:</p> <ul style="list-style-type: none"> • the nature of the product being considered; • whether there is an effective product stewardship scheme already in place; and • whether there is an Australian national scheme which adequately deals with the product proposed to be dealt with under the proposed scheme.²³
Queensland	<p>Section 13 of the <i>Environment Protection (Waste Management) Policy 2000</i> sets out the Product Stewardship principal such that:</p> <ul style="list-style-type: none"> • The product stewardship principle is the principle that— <ul style="list-style-type: none"> (a) the producer of a product should plan its design and production to minimise the environmental harm that may be caused by waste generated from the production, proper use or disposal of the product; and (b) the importer of a product should take all reasonable steps to minimise the environmental harm that may be caused by waste generated from the importation, proper use or disposal of the product.²⁴
Northern Territory	<p>The Northern Territory Government's <i>Disposal Behaviour & Resource Efficiency Interim Action Plan</i> sets out engagement with industry to set out product stewardship approaches as a priority project.²⁵</p>
Commonwealth	<p>The Senate Standing Committee on Environment, Communications and the Arts made recommendations regarding the introduction of PS and EPR schemes, including:</p> <ul style="list-style-type: none"> • Expediting the establishment of EPR arrangements for identified products of national significance. • Working towards a national container deposit system. • EPR initiatives for e-waste and compact fluorescent tubes as a matter of priority.²⁶

Market failure

Market failure refers to circumstances in which markets do not allocate resources to achieve the best returns for the community. Market failure provides grounds for government (or industry based forms of) intervention. Directly addressing relevant market failures and distortions throughout

²³ Western Australian Government (2007), *Waste Avoidance and Resource Recovery Act 2007*, Department of Environment, Western Australia, December 2007

²⁴ Queensland Government (2000), *Environment Protection (Waste Management) Policy 2000*, 1 January 2009

²⁵ Northern Territory Government (2007), *Disposal Behaviour & Resource Efficiency Interim Action Plan*, November 2007

²⁶ Commonwealth Comment (2008), *The Senate, Standing Committee on Environment, Communications and the Arts, Management of Australia's Waste Streams (including consideration of the Drink Container Recycling Bill 2008)*, September 2008

product life cycles will assist markets to achieve the right balance between waste avoidance, resource recovery and disposal, even if targeting is at the whole of life and not just end of life issues.²⁷

Market failure can occur when there is:

- Imperfect information – where market participants lack sufficient information to make informed decisions, and the consequences of a poor consumer choice are high.
- With insufficient information, market participants may:
 - select goods on the basis of visible aspects such as price and be reluctant to pay a price premium for high efficiency products
 - fail to account for environmental impacts in design stages, generating too much waste, or managing disposal poorly
 - be unaware of the magnitude of benefits of product stewardship
 - be unable, or not have appropriate systems in place, to appropriately monitor the environmental performance or improvement impacts in some parts of their operations.
- Externalities – the imposition of private costs and benefits onto parties not directly involved in an activity or transaction.²⁸ Greenhouse gas emissions are an example of a negative externality.

Combined, insufficient information and externalities can produce rational inefficiencies, whereby markets opt not to combine and use resources in ways that maximises benefits.²⁹ In these instances, private decision makers may have higher priorities than environmental management — particularly if it represents a non-core aspect of their business or cost structure and there is a high opportunity cost of devoting management time to this issue.

Market failure alone does not warrant government intervention. There must be a number of additional conditions to justify actions:

- The consequences of inaction by government must be high to justify intervention, ie. significant environmental degradation or health and safety impacts.
- There must be limited to no capacity for the market or society to remedy these consequences without the intervention of a government or industry led approach. eg. clean up activities can never truly restore soil or environment conditions. Moreover, the incentive for the market to respond tends to be lower when external costs and benefits are borne by other sectors of the community.

Outcomes of step 1

The outcomes of step 1 will be important to assist decision making with respect to market failings and policy objectives relating to:

- Where waste creates environmental costs to the community.
- Where low residual value is not adequately provided for by the market, or where market information is insufficient to facilitate decision making.

²⁷ Productivity Commission (2006), Waste Management, Inquiry Report, No 38, p.4

²⁸ Market failure also occurs in instances of public good or market power, but is not deemed relevant within the proposed framework.

²⁹ Market failures and associated problems are not necessarily mutually exclusive (i.e. each problem can create further problems).

Product stewardship should be considered where the analysis in this stage finds that:

- There is a market failure.
- The market failure cannot be resolved in the market.
- The consequences of inaction are high.

Step 2: When is product stewardship likely to be most successful?

If product stewardship is to effectively achieve its policy objectives, then markets are more likely to exhibit certain characteristics that lend themselves to a product stewardship approach. It is important to note that these characteristics are not always mutually exclusive. That is, the market may exhibit some of these characteristics; however, it does not have to exhibit all of these characteristics in order for product stewardship to be successful. Some characteristics which may mean that product stewardship is more likely to be suitable include:

- A concentration in supply side of the market, where product stewardship schemes involve few participants, making it easier to coordinate and to focus product stewardship oversight.
 - Easier coordination between industry and government means that regulatory costs can be minimised and the potential for regulatory failure (all other things being equal) should be lower.
- Responsibilities are identified, acknowledged and shared.
 - Collectively, industries need to be committed to product stewardship, and there should be significant buy-in from participating firms such as manufacturers, retailers, and other parties throughout the supply chain.
 - There is a high level of commitment, participation and/or cooperation from government stakeholders including:
 - The Australian Government, (eg: foreign policy, trade policy and import control).
 - State governments (eg: environmental protection and natural resource regulation).
 - Local government (eg: waste management).
 - The commitment from consumers for action must be strong, where consumer awareness creates demand for more environmentally efficient production methods and products. Initiatives focussed on the phasing out of plastic bags are a classic example.
- Significant local production relative to imports.
 - Taking a life-cycle approach (rather than an end-of-life approach), product stewardship is more easily targeted at local products and services or where impact can be achieved along local parts of the supply chain (ie: post product disposal). While design standards or import requirements could be specified, given Australia's global share and purchasing power it may be difficult or costly to implement. Local initiatives are easier to achieve, than those where a significant component of the supply chain occurs off-shore.³⁰
- International context.
 - There is a strong push for product stewardship approaches from international trade partners or in international economies (for example, from dominant economies, such as the European Union, where stewardship initiatives are well advanced) which flow to the domestic market. For example, international trade partnerships demand evidence of product stewardship approaches.

³⁰ This influence of this factor will depend on the scheme that is likely to be introduced, for example, design standards are easier to implement with greater local production.

- Regulatory environments are stable.
 - The regulatory environment is stable, enabling product stewardship activities to be developed and implemented with a degree of confidence and benefits to be realised over time. This is particularly important since product stewardship is a long term policy and requires time to be effective.
 - Ideally, product stewardship schemes should be complementary to existing regulation. If this is not possible, then the regulatory objectives for product stewardship will be undermined.
- Markets are mature or maturing.
 - Where markets are immature, evolving or expanding at a rapid rate, the capacity of the sector to identify and track product stewardship across a products lifecycle may be more challenging than for established markets.
 - In mature markets, market participants can embrace and are adaptable to change and innovation.
 - Participants consider product stewardship as an opportunity to remain competitive or obtain competitive advantage.
 - Businesses have the capacity to act upon product stewardship initiatives and actions.³¹
- Industry associations.
 - Industries are cohesive and participants able to demonstrate a capacity to work cooperatively to achieve common objectives.
 - Business transactions are recurring, which promotes and facilitates the formation of relationships and cooperation.
 - Industry associations are strong and have comprehensive coverage.
 - Economies of scale can be achieved.
- Coverage.
 - All stakeholders are covered by the scheme.
 - No stakeholder at the same stage of the supply chain will receive a benefit without others receiving the same benefit. For example, the scheme should not create a commercial disadvantage from participating in the scheme.
- Current policy pressures are considered.
 - current policy pressures and the effect that this will have on a potential scheme over time should be considered.
 - For example, policies related to the carbon pollution reduction scheme may impact on the purchase and disposal of particular products.
 - Energy efficiency, water policy, resource recovery and technological convergence may be other policy considerations.
- A literature review is undertaken.
 - Experience both here in Australia and overseas in implementing similar schemes is collected and considered.
 - Information gained from the literature review should be used to help inform the scheme.
- Consultation with all relevant stakeholders.

³¹ This need not always be the case, it could be that product stewardship may be successful where the market is not yet established but there are clear environmental concerns about the waste.

- Beliefs, views and opinions of all stakeholders, all relevant government agencies (at all levels of government), all relevant industries and all relevant communities and groups, will help improve the success of a scheme.

Outcome of step 2

The outcome of step 2 will assist decision making with respect to market failings relating to what stage of the supply chain product stewardship is best suited. For example, for a product where there are a small number of manufacturers and a large number of suppliers then product stewardship may well be best targeted at the manufacturers with impacts flowing through to suppliers. If the converse was true, then targeting product stewardship at suppliers or at consumers and waste service providers is likely to prove more successful.

The analysis should also help to shape the style of the product stewardship scheme. For example, if the market analysis in step 2 shows a lower capacity for industry associations to assist in the development and enforcement of a product stewardship scheme then that may affect the style of policy approach that may need to be adopted, particularly with respect to the need for government involvement.

Step 3: What should product stewardship entail?

While it is not within the scope of this report to evaluate the effectiveness and advantages of the relative approaches, the framework proposes a series of principles which are important for the effective design and development of product stewardship schemes. These principles and their interrelationship with product stewardship approaches and instruments are conceptualised in Figure 3 following and the key elements are also summarised in Table 2.

Figure 3 highlights that principles are grouped as either outcome principles or process principles. Depending on the issues or problems that product stewardship seeks to address, then it is likely that the outcome or process principles will differ – thereby allowing for different policy objectives to address specific market failures within the relevant market structure.

It is important to note that the framework allows for the prioritising of principles such that a product stewardship approach can focus on addressing market failures of greatest concern ie. some objectives will be prioritised higher than others depending on the product and scheme being considered. These targeted solutions are not necessarily mutually exclusive and flow on effects can meet multiple objectives within a product stewardship scheme (whether these objectives are specified or otherwise).

The administrative arrangements for product stewardship schemes are typically provided for through one of four models:

- Voluntary arrangements established by industry.
- Voluntary agreements established as a partnership between industry and government, in which the participation of individual firms is not obligatory.
- Industry-government co-regulation, which combines industry self regulation and government regulation.
- Regulation established and enforced by government.

The policy instruments that turn product stewardship into practice are many, with common approaches including: take-back requirements, deposit refunds, product leases, performance targets and advance disposal and recycling fees. Others include tradeable recycling or landfill diversion credits, education and awareness initiatives, product labelling and various compliance measures.

Each of these policy approaches and instrument measures will need to be funded. There are a number of approaches that may be used to fund a scheme, these include:

- Local government rates.
- A direct customer charge.
- Federal, state or local government consolidated revenue.
- An excise tax on a good.
- An association fee or levy.

The approach used to fund the scheme will depend on the product, the market characteristics and a separate consideration of the merits of each of those options.

A pilot program can be beneficial for determining if the specific funding regime and policy approach is suitable. The pilot program can help to gather information and data before a national program is implemented.

Figure 3: Framework for Product Stewardship

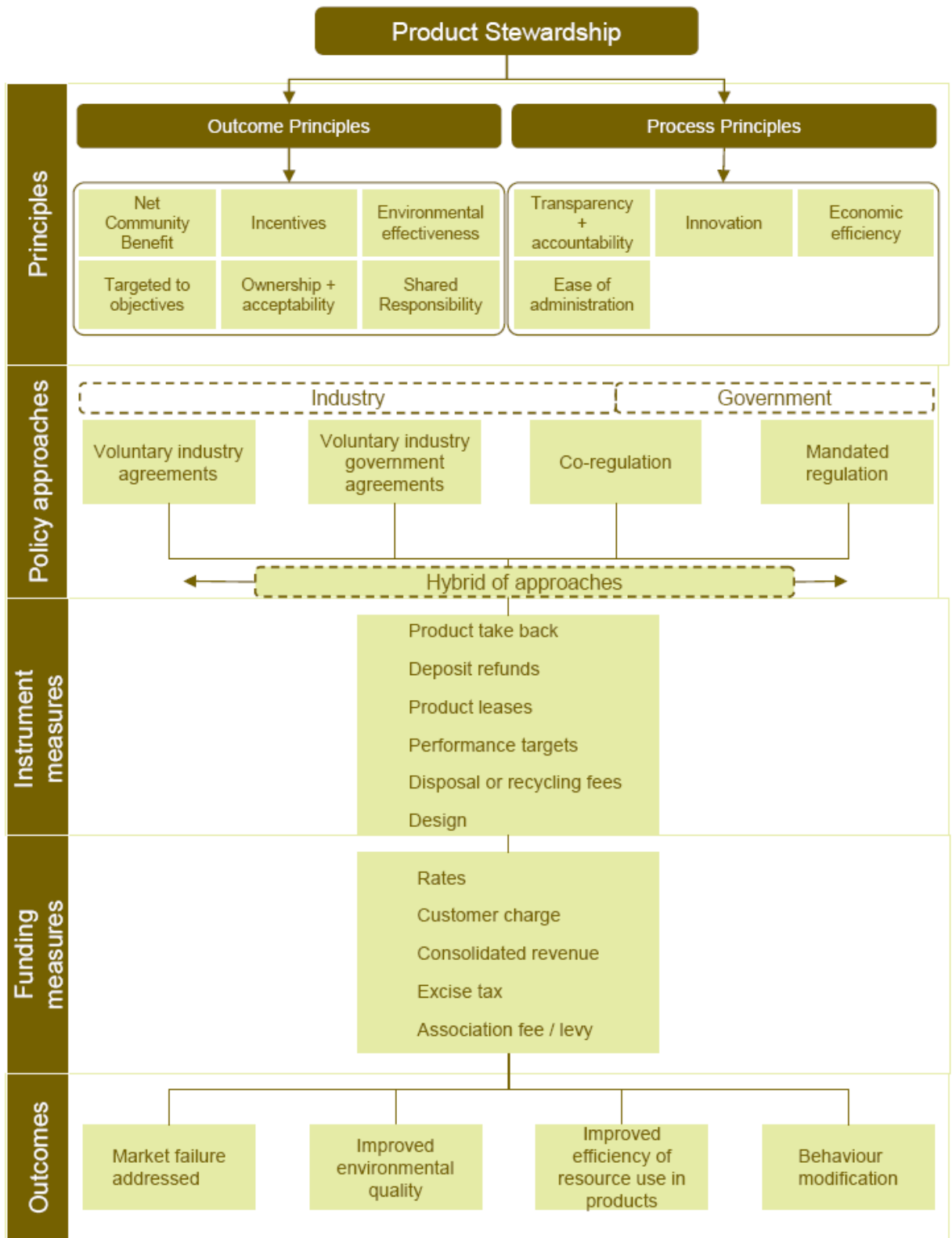


Table 2: Principles for effective product stewardship

Principle	Description
Targeted to objectives	<ul style="list-style-type: none"> Product stewardship initiatives are targeted at addressing problems and achieving clearly articulated outcomes.
Delivers a net community benefit	<ul style="list-style-type: none"> Product stewardship delivers a net community benefit.
Incentives	<ul style="list-style-type: none"> Policies that promote and implement product stewardship principles should create incentives for: <ul style="list-style-type: none"> Product design and manufacturing processes that reduces consumption of energy, water and other resources, and reduces waste and pollution, throughout the product life cycle. The development of a sustainable and environmentally-sound system to collect, reuse, and recycle or dispose of products at the end of their lives. End user recycling.
Transparency and accountability	<ul style="list-style-type: none"> The process of developing and implementing product stewardship policies and programs is transparent and accountable from collection through to end of product life.
Innovation	<ul style="list-style-type: none"> Product stewardship promotes innovation in technological and managerial processes.
Ownership and acceptability	<ul style="list-style-type: none"> Product stewardship achieves the support of political stakeholders at local/State, national and international levels.
Economic efficiency	<ul style="list-style-type: none"> Schemes do not hinder competitiveness, employment, profitability, growth, and trade. Where policy decisions require the internalisation of externalities and produce slightly higher costs, decisions are applied consistently (level playing field) and provide a net benefit.
Shared responsibility	<ul style="list-style-type: none"> Product stewardship promotes a shared responsibility amongst all stakeholders across the whole product lifecycle. Responsibilities are well defined and are not diluted by the existence of a number of participants in the product chain. The obligations of stakeholders are clear. There is a demonstrated investment/cost carried by all lifecycle stakeholders in some form, including end user/consumer.
Ease of administration	<ul style="list-style-type: none"> Product stewardship can be carried out feasibly. Schemes reflect and draw on the capabilities and skills of participants along the production chain. Initiatives reflect key government and industry policies and comply with regulations. Costs associated with monitoring, licensing and enforcement and can be borne by key stakeholders. Implementation timelines are achievable. Evaluation is based on realistic and achievable outcomes.
Environmental effectiveness	<ul style="list-style-type: none"> Initiatives manage/reduce the environmental impact of products and services across their lifecycle, improve resource recovery and use and manage waste, especially toxic components, at the end of product life.

Adapted from: OECD (2001), New Zealand Government (2002), Sustainability Victoria and Product Steward Institute (2008).

Step 4: Ensure that the scheme is reviewed within an appropriate time period

One of the key steps in implementing a new scheme will be to ensure that there is an appropriate review timetable set out from the beginning.

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