



# GREEN CAPITAL

ADVANCING CORPORATE SUSTAINABILITY

AN INITIATIVE OF TOTAL ENVIRONMENT CENTRE

## Snapshot on: Extended Producer Responsibility (EPR)



**Australian Government**

**Department of the Environment, Water, Heritage and the Arts**



## Contents

• What is Extended Producer Responsibility (EPR)?	3
• EPR: A Life Cycle Approach	4
• Goals of Extended Producer Responsibility (EPR)	5
• Embodied energy: the total sum of energy	6
• EPR and Innovation	7
• International/ Australian EPR Policies	8
• Example 1: Fuji Xerox	9
• Example 2: Herman Miller	10
• Example 3: South Australia's Container Deposit	11
• Benefits/ considerations per party	
• Design/ Manufacture:	
Designers, engineers/ producers, importers	12
• Distribution: wholesale/ retail	13
• Product use: Consumers/ community	14
• What can be done?	15
• References/ Reading more	16

## What is Extended Producer Responsibility (EPR)?



Extended Producer Responsibility (EPR) is a policy principle that aims to improve environmental performance of products and their connected systems. It is based on producers taking responsibility for the end-of-life management of their products.

### Read more:

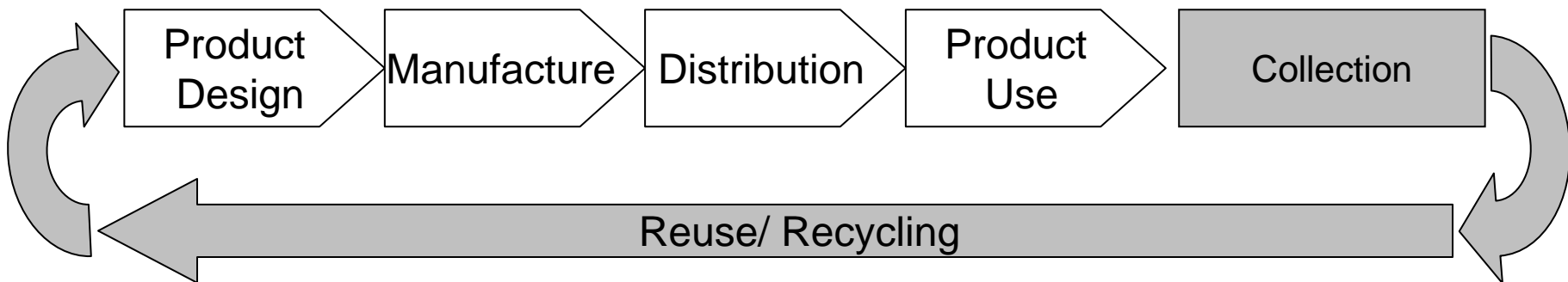
1. West, D. and M. Hogarth. Extended Producer Opportunity. Making EPR & zero waste work for business and society. Boomerang Alliance. 2005
2. Rossem, C. van, N. Tojo, T. Lindhquist. EPR- Extended Producer Responsibility- an examination of its impact on innovation and greening products. The International Institute for Industrial Environmental Economics. Sep. 2006 [http://www.foeeurope.org/publications/2006/Extended\\_Producer\\_Responsibility.pdf](http://www.foeeurope.org/publications/2006/Extended_Producer_Responsibility.pdf)



## EPR - A Lifecycle Approach



*Current take-make-waste approach to production and consumption in which products normally end up as waste in landfill at the end of their life cycle.*



*Returning products, parts and materials at the end of a product's life cycle for reuse or to manufacture into the existing or new product stream.*

## Goals of Extended Producer Responsibility (EPR)

### **1. Design improvement of products**

If a producer is financially responsible for its own product at end-of-life, then he has an incentive to improve design to minimise these costs. This means designing products for improved environmental performance from a life cycle perspective with a specific focus on avoiding end-of-life waste.

### **2. High value use of product and materials through effective collection and re-use or recycling**

This goal can be sub-divided into:

- effective collection (helping avoid contamination and maximising the amount)
- environmentally-sound treatment of collected products; and
- high use of products and materials in re-use and recycling.

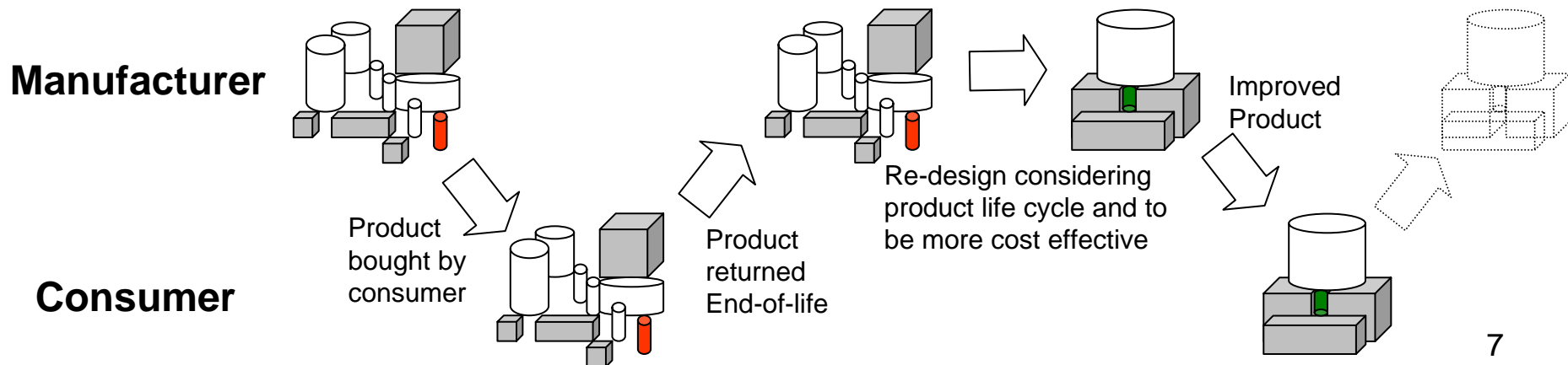
## Embodied energy: the total sum of energy

Embodied energy is the sum total of the energy used in a product from raw material extraction and transport to manufacturing, installation, use, disassembly, recycling and disposal and/or decomposition. The reuse of products/ materials through Extended Producer Responsibility can save an enormous amount of embodied energy, which would otherwise be used in production.



## EPR and Innovation

EPR programs provide the incentive to producers to innovate by designing products for improved environmental performance from a life cycle perspective with a specific focus on end-of-life. The reason for this is that if a producer is financially responsible for his own products at end-of-life, then he/she will be rational and design products to minimise cost. This stimulates technology and product development that has less impact on the environment.



## Example 1: Fuji Xerox Design for Remanufacturing



Fuji Xerox products are designed to support remanufacturing and recycling at end-of-life. Every piece of equipment is built to allow the disassembly of standardised, long-life parts and the use of high-rigidity materials that can be easily remanufactured or recycled. Fuji Xerox recycle 99% of resources gathered from end-of-life products across the Asia Pacific region. In 2007, 14,000 products were manufactured with reused parts, increasing the total number of such products to 290 Thousand. As a result the manufacturing operation's new resource input was reduced by 2,000 tons and carbon emissions were reduced by 15,500 tons.

### Read more:

1. Fuji Xerox Sustainability report 2007: [http://www.fujixerox.com.au/docs/2007\\_Sustainability\\_Report\\_concise.pdf](http://www.fujixerox.com.au/docs/2007_Sustainability_Report_concise.pdf)
2. Kerr W.<sup>1</sup>; Ryan C. Eco-efficiency gains from remanufacturing - A case study of photocopier remanufacturing at Fuji Xerox Australia [Journal of Cleaner Production](#), Volume 9, Number 1, February 2001 , pp. 75-81(7)

## Example 2: Herman Miller Office Chairs Design for Environment



Herman Millers' Design for Environment (DfE) team, used the "Cradle to Cradle" protocol developed by McDonough Braungart Design Chemistry, to evaluate new and existing products based on their material chemistry, and increase ease of disassembly, recyclability, and recycled content. In 2001 Herman Miller became the first in its industry to adopt "Cradle to Cradle" criteria for all new products. Since that time the DfE team has influenced multiple new product and product material introductions, including the Mirra office chair, introduced in 2003. Mirra was the first wholly new Herman Miller product under the DfE program and the first ergonomic work chair in the industry to undergo such scrutiny. Following the "cradle-to-cradle" philosophy, Mirra is 96% recyclable, is composed of 42% recycled material, contains no polyvinyl chloride (PVC), and is produced using alternative "green" energy.

Read more:

1. Herman Miller office chairs: <http://www.hermanmiller.com/>
2. McDonough, W. & M. Braungart. Cradle to Cradle - Remaking the way we make things. North Point Press. 2002

## Example 3: South Australia's Container Deposit



One of Australia's few EPR related schemes is the Container Deposit Legislation Scheme (CDL) of South Australia. A wide range of beverage containers sold in South Australia are required to carry both a refundable deposit and approved refund markings.

CDL is very effective in reducing beverage litter as well as achieving higher resource recovery rates and educating the community to recycle beverage cans and bottles. CDL enjoys wide public support in South Australia.

The materials commonly used for beverage containers are aluminium, glass, liquid paperboard, and the plastics polyethylene terephthalate (PET) and high density polyethylene (HDPE). Recycling these materials is valuable because it reduces the energy and new raw material used in the production of new items and greenhouse gas emissions.

Read more:

1. EPA (SA) Waste: <http://www.epa.sa.gov.au/cdl.html>

## EPR and related schemes in Policy Directives

- **Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC**

Adopted by the European Parliament and Council in 2003, the main objectives are to prevent the generation of electrical and electronic waste and to promote re-use, recycling and other forms of recovery to reduce the quantity of such waste to be disposed, while improving the environmental performance of economic operators involved in its treatment.

- **Restriction of Hazardous Substance (RoHS) Directive 2002/95/EC**

This European Directive restricts the use of certain hazardous substances in electrical and electronic waste; cadmium (Cd), mercury (Hg), lead (Pb), hexavalent chromium (chromium VI) and two brominated flame-retardants: polybrominated diphenylethers (PBDEs) and polybrominated biphenyls (PBBs).

- **Australian EPR programmes**

In Australia the few examples of mandatory EPR programmes include used oil, ozone depleting substances and SA's container deposits. For most other products, a voluntary approach to product stewardship is encouraged. At the national level, the Department of the Environment, Water, Heritage and the Arts has encouraged the development of nationwide programs for plastic packaging, TVs and tyres.

Read more:

1. (WEEE) Directive 2002/96/EC: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0096:EN:HTML>
2. (RoHS) Directive 2002/95/EC: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0095:EN:HTML>
3. Australian Government: <http://www.environment.gov.au/settlements/waste/index.html>

Product Design/  
manufacture

Distribution

Product Use

## Product design/ manufacture: Designers, Engineers/ Producers, Importers

- Improving product design through Design for Environment (lifecycle focused product development) stimulates innovation, can give your company a competitive advantage and to be better prepared for the future.
- Design according EPR principles can help to reduce resource use, hazardous substances; improve logistics and quality of products; and lower energy use.
- EPR will help to combat climate change and related costs by saving embodied energy through recycling of materials and product parts.
- Showing leadership/ best practice will contribute to being a good corporate citizen, improve community buy-in and bring reputational benefits.
- EPR creates opportunities to engage with consumers, which can help in better understanding and attracting new consumers.
- EPR helps to stay ahead of draconian regulations and to be internationally compliant, opening up the opportunity of international trade
- EPR can lower a companies risk profile and increase shareholder/ investment value.

Product Design/  
manufacture

Distribution

Product Use

## Distribution: Retail

- Showing leadership/ best practice will contribute to being a good corporate citizen, improve community buy-in, the long term viability/ survival of the company and bring reputational benefits.
- EPR brings opportunities to better engage with consumers, which can help in understanding and attracting new consumers.
- EPR helps to stay ahead of draconian regulations and to be internationally compliant, and opens up the opportunity of international trade.
- EPR can lower a companies risk profile and increase shareholder/ investment value.

Product Design/  
manufacture

Distribution

Product Use

## Product Use: Consumers/ Community

- EPR will help to reduce waste/ litter, which can result in cleaner neighbourhoods and less waste going to landfill.
- EPR (and related schemes as Restriction of Hazardous Substance (RoHS) Directive) will help to reduce the amount of hazardous materials being released into the environment, reducing the health risk for the people using the product and for people handling the end of life products
- EPR will help to conserve non-renewable resources
- EPR will help to combat climate change and related costs by saving embodied energy through recycling of materials and product (parts)
- EPR helps communities to recycle and reuse in order to become more sustainable

Read more:

1. Greenpeace. Where does all the e-waste go? 21 February 2008  
<http://www.greenpeace.org/international/news/e-waste-toxic-not-in-our-backyard210208>

## What can be done?

- Take responsibility for the products you manufacture after the consumer has used them
- Convince your industry association to support EPR policies and embrace sustainability
- Measure/ calculate your environmental footprint (product, company)
- Develop/ implement your reduction action strategy/ plan
- Start designing for the environment
- Lobby government for comprehensive industry coverage so there are no free riders
- Cooperate with and influence your supply chain
- Interact with your consumers about environmental and social issues related to your product



## References/ Reading more

- Fuji Xerox Sustainability report 2007  
[http://www.fujixerox.com.au/docs/2007\\_Sustainability\\_Report\\_concise.pdf](http://www.fujixerox.com.au/docs/2007_Sustainability_Report_concise.pdf)
- Greenpeace. Where does all the e-waste go? 21 February 2008  
<http://www.greenpeace.org/international/news/e-waste-toxic-not-in-our-backyard210208>
- Hamilton, C. Growth Fetish. Crows Nest: Allen & Unwin. 2003
- Hamilton, C. & Denniss, R. Affluenza. When too much is not enough. Sydney: Allen & Unwin.2005
- Kerr W.1; Ryan C. Eco-efficiency gains from remanufacturing - A case study of photocopier remanufacturing at Fuji Xerox Australia [Journal of Cleaner Production](#), Volume 9, Number 1, February 2001 , pp. 75-81(7)
- Klein, N. No Logo: No Space, No Choice, No Jobs. Taking Aim at the Brand Bullies. New York: Picador USA, 1999
- McDonough, W. & M. Braungart. Cradle to Cradle - Remaking the way we make things. North Point Press. 2002
- Product Policy Institute. A US Product Policy Institute that stimulates a strong framework for product-focused environmental policies that advance sustainable production and consumption and good governance.  
<http://www.productpolicy.org/>
- Rossem, C. van, N. Tojo, T. Lindhquist. EPR- Extended Producer Responsibility- an examination of its impact on innovation and greening products. The International Institute for Industrial Environmental Economics. Sep. 2006.  
[http://www.foeeurope.org/publications/2006/Extended\\_Producer\\_Responsibility.pdf](http://www.foeeurope.org/publications/2006/Extended_Producer_Responsibility.pdf)

## References/ Reading more

- Shah, A. Behind consumption and consumerism. January 08, 2008  
<http://www.globalissues.org/TradeRelated/Consumption>
- West, D. and M. Hogarth. Extended Producer Opportunity. Making EPR & zero waste work for business and society. Boomerang Alliance. 2005

### TEC releases on EPR

- EPR and lead acid batteries:  
[http://www.tec.org.au/index.php?option=com\\_content&task=view&id=612&Itemid=270](http://www.tec.org.au/index.php?option=com_content&task=view&id=612&Itemid=270)
- Mobile Phone recycling  
scheme [http://www.tec.org.au/index.php?option=com\\_content&task=view&id=581&Itemid=270](http://www.tec.org.au/index.php?option=com_content&task=view&id=581&Itemid=270)
- Sydney City e-waste Recycling  
[http://www.tec.org.au/index.php?option=com\\_content&task=view&id=542&Itemid=270](http://www.tec.org.au/index.php?option=com_content&task=view&id=542&Itemid=270)
- Action on Computer Recycling Laws  
[http://www.tec.org.au/index.php?option=com\\_content&task=view&id=488&Itemid=270](http://www.tec.org.au/index.php?option=com_content&task=view&id=488&Itemid=270)  
[http://www.tec.org.au/index.php?option=com\\_content&task=view&id=492&Itemid=270](http://www.tec.org.au/index.php?option=com_content&task=view&id=492&Itemid=270)
- Dell Urged to Recycle Battery  
Millions [http://www.tec.org.au/index.php?option=com\\_content&task=view&id=489&Itemid=270](http://www.tec.org.au/index.php?option=com_content&task=view&id=489&Itemid=270)

For more information please contact:  
Total Environment Centre - Green Capital  
Irmine van der Geest/ Danielle Domone  
+61 2 9261 3566