



sustainable  
packaging alliance

# Sustainable Packaging Alliance Round Table Series

Round Table Number 8 Summary Report

## Ecodesign and Material Selection: Creating cyclic packaging

Friday 28<sup>th</sup> October 2005

### Background

The ability to design packaging systems which can be cycled continuously through natural (biological) or technical systems, and therefore create zero waste, is one of the major challenges for advancing sustainable packaging. Many technical, organisational or financial barriers exist to making packaging truly cyclic. The base material may be technically recyclable but necessary additives (e.g. pigments), added components (e.g. labels, inks), constructive features (e.g. lamination) or contamination (e.g. product residues), often obstruct recycling options. Biodegradable materials may provide an alternative for some applications, but often require modification to meet effectiveness and efficiency requirements, leading to reduced composting performance.

The 8th Round Table discussed the potential for cyclic packaging systems implementation and the role of ecodesign in achieving them. Through exploration of a series of industry case studies (plastics, biopolymers and fibre-based packaging) participants:

- gained an understanding of existing and future systems for recovery of packaging, both technical and biological; and
- explored the implications for packaging system design.

This report provides a summary of the presentations and discussions.

### Creating cyclic packaging

**Helen Lewis** (Sustainable Packaging Alliance and RMIT) introduced the ‘cradle to cradle’ cyclic materials model. The ‘Cradle to Cradle’ model aims to recover materials either through natural (‘biological’) or industrial (‘technical’) systems.

Only 48% of single use packaging is currently recycled in Australia, so we are a long way from achieving ‘cyclic packaging’. Achieving the NPC targets is going to represent a significant challenge. One of the most important tools available to help in achieving recovery targets is ecodesign – the integration of environmental considerations during the design process.

Helen presented some generic ecodesign guidelines for the achievement of cyclic packaging:

- Investigation of possible recovery systems
- Selection of recyclable or compostable material
- Elimination of any potential contaminants if possible e.g. labels and coatings, or ensure they are compatible in the recovery process.

More specific guidelines and case studies were presented for plastics, biopolymers and fibre-based packaging.

## The role of ecodesign

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Ecodesign is one of the tools which will help achieve cyclic packaging. Cyclic ecodesign strategies for packaging need to consider first, how the packaging may be recovered choosing a recyclable or compostable material, and eliminating any potential contaminants. The issues vary between material types, so dialogue with waste collectors, recyclers, downstream users and composters is essential during the design process.

Three speakers presented issues and barriers relating to different materials: plastics, biopolymers and fibre based packaging.



**Mr Spring Humphreys**  
National Eco-Efficiency Manager,  
Fonterra



**Mr Warwick Hall**  
President Australasian Bioplastics  
Association and Manager -  
Bioplastics, Plastral P/L



**Ms Leonie Walsh**  
General Manager Technology  
& Innovation, Visy Industries

### Plastics

**Spring Humphreys** discussed Fonterra's Eco-efficiency Programme, and the range of initiatives being introduced in cleaner production, logistics and ecodesign. Two ecodesign case studies were presented: Stretch wrap and Milk bottles

### Biodegradable materials

**Warwick Hall** gave participants an introduction to the Australasian Bioplastics Association, and the different types of degradable polymers supplied by member companies. There are numerous types of biodegradable polymers, including those based on renewable raw materials (e.g. starch, cellulose, PLA, casein) and those based on petrochemicals (e.g. specific polyesters, PVA).

### Fibre packaging

**Leonie Walsh** provided an overview of Visy's manufacturing and recycling operations. Visy has achieved considerable business success by basing its business on sustainability and cyclic packaging; however cradle to grave impacts of products and services needs constant re-assessment. Sustainability needs to be pursued in conjunction with suppliers, customers, government, community and others that impact on cyclic packaging.

## Outcomes and learnings

- Ecodesign is critical to the implementation of cyclic packaging,
- Barriers include the cost of some ecodesign solutions and the need to change consumer expectations if functionality needs to be compromised for recyclability (e.g. shelf life).
- Ecodesign does not need to cost more
- Technology is developing all of the time
- Recovery systems also need to be developed further to accommodate new materials
- Coordination and collaboration across the product chain is essential.

## Find out more

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