PACKAGING & SUSTAINABILITY
MEETING THE 2025 NATIONAL PACKAGING TARGETS

Western Australian Government,
Department of Primary Industries and Regional Development
WA Food and Beverage Packaging Forum
Perth, Western Australia
30 October 2019
Australian Institute of Packaging

Members are individuals who wish to enhance their knowledge of packaging.

Having served the industry for over 56 years the AIP is the only professional body designed to provide professional and personal development to all levels of the packaging industry.

Members are individuals looking for professional and personal development, educational offerings and access to a like-minded community to network with.
SUSTAINABLE PACKAGING - AGENDA

• 2025 National Packaging Targets. What are they? What is the future role of packaging?
• Sustainability – what is it and how does it influence my business?
• Recycling in Western Australia. How does a MRF work? What are its limits?
• The role of packaging in our Community and Food Waste
• Core Packaging Design factors
• Traditional Packaging Materials
• Sustainable Packaging Awards – Best Practice Examples
• Australian Packaging Covenant – APCO
• ACCC – Sustainable Packaging Claims
• What is LCA? (Life Cycle Analysis)
• Packaging Design Issues not to be forgotten
100% of packaging to be reusable, recyclable or compostable

70% of plastic packaging recycled or composted

2025 National Packaging Targets

30% average recycled content across all packaging

Phase out problematic and unnecessary single-use plastic packaging through redesign, innovation or alternative delivery methods
The 2025 National Packaging Targets – where are we now?

In 2018, Australia’s state and federal environment ministers endorsed the 2025 National Packaging Targets and, in the process, set Australia on a new sustainable pathway for managing its packaging waste. The four targets will require a complete and systemic change to the way we create, collect and reprocess our product packaging.

APCO is the agency charged with making this change happen. There’s a huge amount of work to be delivered over the next seven years, with engagement and collaboration needed from across the supply chain.
SUSTAINABLE PACKAGING

• Sustainability – what is it and how does it influence my business

• Food and Packaging are intimately linked.
• Packaging has core roles in the food industry.
• Protect. Transport Safely. Shelf Life
The Role of Packaging today

The old ‘3Ps’ of **Protect, Preserve and Promote** the product will be supplemented by such things as **Trace, Authenticate, Inform, Add Value, Secure and Reduce Waste**.

Today’s hierarchy is what?

1. Recycle, Reduce, Reuse……OR
2. Reduce, Reuse, Recycle…… OR
3. Reuse, Recycle, Reduce.

Which one do you think is correct order of priority?
Is RENEW the 4th R?
SUSTAINABLE PACKAGING

HOW DO YOU DEFINE SUSTAINABLE PACKAGING?
What is Sustainable Packaging?

- Maximizes the use of **renewable or recycled source materials**;
- Is sourced, manufactured, transported, and recycled using **renewable energy**;
- Is manufactured using **clean production technologies** and best practices;
- **Meets market criteria** for performance and cost;
- Is physically **designed to optimize materials and energy**;
- Is **beneficial, safe & healthy** for individuals and communities throughout its life cycle;
- Is made from materials **healthy in all probable end of life scenarios**;
- Is **effectively recovered and utilized** in biological and/or industrial cradle to cradle cycles.

Source: Sustainable Packaging Coalition
SUSTAINABLE PACKAGING

Definition of Sustainable Packaging

Global Protocol on Packaging Sustainability (GPPS)

is a helpful document that provides the consumer goods and packaging industries with a common language with which to discuss and assess the relative sustainability of packaging.

SUSTAINABLE PACKAGING

Recycling in Western Australia
How does a MRF work?
What are its limits?
Recycling is more than what an item is made of...

It's also about...

...Its shape

...Its size 
XS, S, M, L, XL

...Its weight

...The inks used

... Adhesives

(Some dyes make plastic not recyclable!)

... Colourants etc...
Food and drink material hierarchy

Most preferable option

Prevention
- Waste of raw materials, ingredients and product arising is reduced – measured in overall reduction in waste.

Optimisation
- Redistribution to people.
- Sent to animal feed

Recycling
- Waste sent to anaerobic digestion; or
- Waste composted

Recovery
- Incineration of waste with energy recovery.

Disposal
- Waste incinerated without energy recovery.
- Waste sent to landfill.
- Waste ingredient/product going to sewer.

Least preferable option
The Not-for-Landfill Waste Hierarchy

- Reduce
- Reuse / Repair
- Recycle / Compost
- Recover / Waste-to-Energy (WtE)
- Dispose / Landfill

Design & Purchasing
Practices

Most desirable
Least desirable
SUSTAINABLE PACKAGING

Recycling should be considered the last line of defence. What should be the first consideration is reducing the need for that product or packaging in the first place.
Follow up on recycling resources in Australia

Australian Council of Recycling
https://www.acor.org.au/

Waste Management Association of Australia
https://www.wmaa.asn.au/

NWRIC – National Waste and Recycling Industry Council

AMRIA – Australian Metal Recycling Industry Association
The Role of Packaging in our Community and Food Waste

Helpful information about the packaging

Able to recycle it

Recycled packaging

Extends shelf life, reduces waste

Renewable resource packaging
The Role of Packaging in our Community and Food Waste

Packaging has the challenges of meeting consumer needs/expectations.

• Minimal quantity
• Sustainable materials
• Assessable/Re-sealable
• Low cost/High performance
• Socially responsible
• Minimal impact on the Environment
PACKAGING ROLE IN REDUCING FOOD WASTE

How Much Food Do You Waste?

Australia's role in the global food waste race

Only 1 in 7 Australians say they waste more food than they should

But Australia generates 4,000,000 tonnes of food waste a year

That's about 345kg of food per household

Australia wastes $8 billion worth of food a year

Where the rubbish goes

NSW Waste Disposal and Recycling Volumes in 2010/11

Source: NSW Environmental Protection Authority
Food waste averages $3800 per household, yet food insecurity at 'crisis' point

Equivalent to 298 kg of food per person per year in Australia or 6 adult kangaroos
AUD $1.75 Trillion Problem

The production and consumption stages of the value chain account for much of the food lost or wasted.
SUSTAINABLE PACKAGING

Packaging role in reducing food waste

Innovative ways that packaging can be used to reduce food waste:
- Effective resealable packs

Tear Here

Once opened, zip to keep fresh

Storage instructions
Life Cycle Assessment (LCA) - Carbon Footprint Packaging’s impact Kg CO₂ eq/Kg product

Average carbon footprint of food product production, processing and packaging

- Beverages: 33%
- Cereals and Grains: 33%
- Dairy: 2%
- Fish and seafood: 18%
- Fruit: 13%
- Legumes and Nuts: >1%
- Meat: 13%
- Vegetables: 2%

kg CO₂ eq/kg product

Average CF of food production
Average CF of processing
Average CF of packaging
What does a world without packaging look like?
Is it an option to be considered?
Let’s watch this brief video on an alternative supermarket from France.

https://www.youtube.com/watch?v=cDtl8v5f77k
SUSTAINABLE PACKAGING

Core Packaging Design factors
Solutions: Packaging

PRIMITIVE FUNCTION
- Contain
- Preserve
- Protect

SECUNDARY FUNCTION
- Information
- Convenience
- Presentation
- Brand Communication
- Promotion
- Economy and environmental responsibility

Source: http://www.chep.com/resources/case_studies/how_packaging_can_reduce_food_waste/
Solutions: Packaging

- Life Cycle Analysis
- Trade-offs between food waste and packaging

“As little as possible, as much as necessary”
Underpacking as a Danger

= Waste of Food
= Waste of Packaging Material
Packaging for people, planet and profit - a sustainability checklist
Large retailer uptake

Recycling labels on Woolworths products

We understand that knowing what is recyclable can be confusing, especially when an item has multiple types of packaging. That's why we have the first supermarket to roll out a new on-pack recycling label, and you can find this label on our Woolworths-branded products. Each label clearly tells you how to best dispose of each type of packaging, from plastic bags to plastic film. Living three distinct logos by Planet Ark, our labels will tell you:

- What to recycle in your recycling bin
- What to recycle at our stores in store recycling bins
- What to place in your general waste bin

Recyclable packaging
Please recycle this item by placing it in your household or General waste recycling bin.

Recyclable soft plastics
Please recycle this item by returning it to our store or recycling bins.

Non-Recyclable packaging
This item cannot be recycled. Please place in your General waste bin.
SUSTAINABLE PACKAGING


There are many packaging waste issues bombarding our media. Most are an alert and call to action in our behaviours as well as to the packaging industry to find worthwhile alternatives.

But please be aware that we are focusing on facts and prioritising our efforts for maximum improvement.

I am presenting this video to stretch your mind and be alert to competing interests demanding your attention.
SUSTAINABLE PACKAGING—SOCIAL ISSUES

China
China has long been the biggest global importer of recyclable paper, metals and plastic, which it uses in manufacturing, but introduced a new policy in January 2019 of refusing to accept shipments of waste above a certain contamination level.

Thailand
Thailand to ban plastic waste imports by 2021. As waste exporters re-route their trash to Southeast Asia following China’s waste ban, Thailand bans imports of plastic waste to prevent the kingdom from becoming the world’s next dumping ground.
SUSTAINABLE PACKAGING—SOCIAL ISSUES

Vietnam
In May 2019, Vietnam temporarily banned plastic waste imports and ceased issuing new licenses for waste imports two months later. The country also revealed plans to crack down on illegal shipments of materials such as paper, plastic and metal.

Malaysia
Malaysia Sends back plastic waste to Australia. 450 metric tonnes of waste that was illegally exported to Malaysia to be sent back.
SUSTAINABLE PACKAGING—SOCIAL ISSUES

Traditional Materials

Paper, Glass, Metals & Plastic
Traditional Packaging Materials.
Did these pass through the MRF and be sorted suitable for reuse/recycle?
SUSTAINABLE PACKAGING—TRADITIONAL

• **Paper** – Originates from natural fibres called cellulose that were once part of a living plant. Mostly softwood (trees with needles) tend to be longer and more comfortable and hardwood (from trees that lose their leaves) tend to be shorter and stiffer.

• **Paper’s** applications are many and the relationship of these fibres has a key influence on that application.

• **Paper** products can be recycled many times. This by-product is called OCC (Old Corrugated Containers). Issue is that the fibre length gets shorter with each process changing the characteristics of the paper.

• Contaminates can be coatings, inks, adhesives, food / product.
SUSTAINABLE PACKAGING — TRADITIONAL

Glass – Originates from Silica (quartz), the principle component of sand – high purity silica sand is required. Also required is sodium (soda ash) and calcium carbonate (limestone) and colours (Iron and Sulphur for amber/beer – Chromoe Oxides for green/wine).

All Glass is not the same – Soda-lime glass for Food and Beverage containers; Borosilicate Glass (Pyrex) for high temperature applications; Float Glass (windows); China glass, Pharmaceutical glass and house hold glassware are ALL different formulations and processing conditions. They cannot be mixed in the recycle stream. They are contaminates to each other.

Glass Recycling – called cullet. Yes it can be recycled indefinitely as long as it is clean and pure.

Glass Cullet – can be added up to 50% if clean and does require substantially less energy to process than the dry raw materials.
SUSTAINABLE PACKAGING – TRADITIONAL

METALS – TIN PLATE STEEL (FOOD), ALUMINIUM CANS (BEVERAGE), MIXED (AEROSOLS).

- **Food Cans.** Light weight, inexpensive, high speed processing, safe.
- **Food cans** – Made of steel which is electrolytically tin-plated which allows for corrosion resistance. Coating can be applied for product or processing requirements.
- **Beverage cans** – These days mostly made of Aluminium due to cost and very light weight. Aluminium from this application can be recycled many times with minimal negative impacts.
- **Aerosol cans** – Used in personal care, household products, paints, automotive.
- **Aerosol cans** – Have many non-metal components – Actuator (many sub-parts), Valve cups, dip tube etc.
- **Aerosol cans – both steel and aluminium** – Can be recycled IF EMPTY.
SUSTAINABLE PACKAGING—TRADITIONAL

PLASTICS – RIGID and FLEXIBLE – Numerous applications throughout our lives.
(Refer earlier section on labelling to identify resin used)

- **RIGID PLASTICS** – Dominated by PET in beverage, HDPE in Milk, PP in Tubes, Closures and most of them have a good story to tell and to varying degrees are recycled. Polystyrene is being replaced quickly.

- **Colour or more correctly Clarity** – has a significant impact at MRF’s with their present equipment’s ability to identify the resin and separate it. Clear is great – Black is not.

- **FLEXIBLE PLASTICS** – Normally thin, light and inexpensive per unit. Can be customised to a product or food’s individual need and have a big positive influence of shelf life of the item.

- **FLEXIBLE PLASTICS** – Often a laminate (multiple layers of different materials) which makes it difficult to be recycled into its original format. Flexible films are light and cannot be controlled in a MRF, therefore not recycled along with other materials.

- **FLEXIBLE PLASTICS** – **REDcycle.** Through Coles and others. Collects and reuses the films.
SUSTAINABLE PACKAGING—TRADITIONAL

References that relate to Traditional Packaging Materials

Paper

Glass Jars
http://www.gpi.org/recycling/glass-recycling-facts

Aerosol cans

Flexible plastics
https://www.plasticsmakeitpossible.com/plastics-recycling/can-recycle-flexible-plastic-packaging/

Flexible plastics
http://www.redcycle.net.au/
What is the impact of Traditional Packaging Materials on the Environment?
**The future of innovative and inspirational packaging**

4 & 13 September 2018 • Olympia, London

Ahead of the Packaging Innovations and Luxury packaging London shows at Olympia on 12th & 13th September, we tasked The Recycling Association with dispelling some of the myths around recycling and plastic waste. Here is their take on the top 9 Recycling Myths:

1. **Biodegradable and oxo-biodegradable packaging is OK**
   - No. Oxo-Degradable/Oxo-Biodegradable packaging materials simply incorporate an additive designed to make it break down more quickly. If there are any type of plastics involved, this will simply result in microplastics causing environmental problems sooner. Search-based biodegradable products are also concerning if they are mistakenly mixed with standard recyclable polymers they will cause contamination. The result will be more material that cannot be reused.
   - Recyclable materials should always be selected above those that decompose. We need a hierarchy that makes this clear.

2. **Plastic should be avoided at all costs**
   - No. Many recyclable plastics such as PET and HDPE should be used. They have been developed as a sensible, safe and efficient packaging solution. In some cases, designs might need tweaking to facilitate better and more extensive recycling.
   - In fact, recycled PET (rPET) and HDPE (rHDPE) can be used again and again and there is increasing demand for their inclusion in new, forward-thinking designs; and if minimum recycled contents become mandatory, we can help create markets and our own circular economy.
   - The focus should be on switching away from more difficult/impossible to recycle plastics and designs. By doing this, we will reduce the number of polymers in circulation, making it easier for consumers to recycle and easier for industry to reprocess, while simultaneously growing the recovered polymer markets.

3. **Drinks bottles are single use**
   - Everyone keeps talking about single use plastics. Single use should only be applied to those plastics that cannot be recycled. Instead it is frequently being applied to those items that consumers decide to throw away after one use.
   - We must be careful not to demonise existing recyclable packaging and focus attention on the real unrecyclables.

4. **Black plastic is a no go**
   - Black plastic is tricky. There hasn’t been a commercial recycling route for it - but there are ongoing trials which, in the current climate, we hope will provide a solution.
   - This is important because black plastic manufacturing provides a recycling route for mixed coloured plastics and coloured film. Either we give up using these, or we persevere with the black plastic market.

5. **“Food protection requires a multi-material approach”**
   - No. There are plenty of clever designs out there that use either single materials (the ideal in terms of ease for the consumer) or detachable elements. If your packaging takes a composite approach, it’s time for a review.

6. **“Shrink wrapped bottles are the only solution for good branding”**
   - Wrong. No-one wants to see plain boring bottles, but it would be preferable to avoid shrink wrapping. Designers should apply the waste hierarchy to ideally eliminate, if not reduce, label waste. This will make the whole recycling process easier.

7. **Recyclability doesn’t matter because we can burn waste and create energy**
   - We can indeed burn waste packaging. And we can generate renewable energy from it. But we can only do that once. The next piece of packaging must then be made from virgin materials. If we truly care about the planet, we’ll use virgin resources more sparingly and choose recyclable materials instead.

8. **“Coffee cups are not recyclable”**
   - Untrue. Coffee cup recycling is one of the positive outcomes of the Blue Planet 2 future. We now have capacity to separate paper/plastic composite material. However, as with much of the ‘on the go’ food and drink packaging, collection and sortation remain difficult. There’s still a way to go to reduce the environmental impact of take away cups.

9. **“Paper is better than plastic”**
   - Yes, paper is easy to recycle. But not if you cover it in glitter, nor if it is contaminated with food.
   - In fact, when it comes to food packaging, unlike fibre, plastic containers are easy to wash and so the problem of contamination is reduced.


by EASYFAIRS
“Biodegradable and oxo-biodegradable packaging is OK”

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**Continued...**

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“Drink bottles are single-use”

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Australasian Packaging Innovation Design (PIDA) Awards
Sustainable Packaging Design Special Award Category
The Sustainable Packaging Design Special Award is designed to recognise companies that have developed innovative packaging solutions that incorporates sustainability considerations. Elements would include Social, Material, Source Reduction, Energy and Recovery. This is a WorldStar Packaging Awards category.
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Punchbowl Packaging for the Kaituna Blueberries peel-able, re-sealable, tamper-proof top seal fibre punnets. Punchbowl’s design approach was to deliver a simple, practical and sustainable solution for customers, while ensuring a range of ‘end of life’ options for the packaging. In designing this sustainable packaging format, Kaituna have been able to achieve a 10% weight reduction compared with the standard 125 grams blueberries plastic labelled clamshell. The punnet is made from renewable unbleached wheat straw and is compostable in industrial compost systems. The punnet is also recyclable, with pulpability testing indicating a 95% fibre yield result and cleverly Kaituna have developed reuse opportunities for the punnet as seedling plant pots.
2019 SUSTAINABLE PACKAGING DESIGN SPECIAL AWARD - MATERIALS

The Sustainable Packaging Design Special Award is designed to recognise companies that have developed innovative packaging or processing solutions that incorporates sustainability considerations. Elements include Social, Material, Source Reduction, Energy and Recovery. This is a WorldStar Packaging Award Category.

Plastic Technologies for the NEAT Meat Tray using PLANTIC™ RV high barrier Skin Pack recyclable material to replace their previous non-recyclable tray made from black HIPS (High Impact Polystyrene). The PET is sourced from New Zealand and Australian recycled post-consumer PET bottles and in plant PET waste from both the manufacturing of the PLANTIC™ RV tray and other waste PET streams. The addition of the Australasian Recycling logo to the Neat Meats pack will assist consumers to correctly dispose of the packaging.
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Impact International have taken an innovative & sustainable approach to offer to their customer three tube packaging options to replace fossil fuel plastic tube packaging. The Sarah, Craig and Margorie range are 100% recycled PE and sugar cane PE tubes. The Sarah & Margorie tubes use of recycled PE meets the 2025 Targets of including recycled content. Impact International is a registered public drop off point for a global recycling program which provides consumers an additional facility to return and recycle tubes.
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This special commendation recognises Detpak’s initiative and investment in the development of the RecycleMe system, combining circular economy thinking to maintain high material value to address a single use packaging item. In the development of the program, Detpak started at the end-market (mill) perspective to ensure the acceptance of their innovative cup lining technology. The system also provides a solution for the cup lid which can now be collected and recycled into products such as plastic photo frames. With this right industry partnerships, the RecycleMe™ System is scalable and able to be rolled out across many locations in Australia and New Zealand.
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Woolworths have undertaken a major project in replacing their previous black plastic non-recyclable plastic trays with a renewable sourced pulp/plant-based fibre sourced from unbleached bamboo (40%) and unbleached sugarcane (60%). This national change over into all stores for over 50 in-store bakery products, represents 75% of all products that were previously packed in the black plastic non-recyclable tray. This reduced 265 tonnes of plastic annually from their bakery department.
The Sustainable Packaging Design Special Award is designed to recognise companies that have developed innovative packaging or processing solutions that incorporate sustainability considerations. Elements include Social, Material, Source Reduction, Energy and Recovery. This is a WorldStar Packaging Award Category.

**Ranpak** for their Thermal Paper Packaging Solution. Ranpak’s packaging is biodegradable, recyclable and renewable and using the Ranpak equipment it provides companies with flexibility to generate packaging as required, pre-sized and pre-cut. This flexibility provides huge space saving opportunities compared to plastic and EPS versions of thermal protection.
2018 SUSTAINABLE PACKAGING DESIGN SPECIAL AWARD

The Sustainable Packaging Design Special Award is designed to recognise companies that have developed innovative packaging or processing solutions that incorporates sustainability considerations. Elements would include Social, Material, Source Reduction, Energy and Recovery.

BIOCANE RANGE FOR THE FOOD SERVICE INDUSTRY

Company: BioPak
Country: Australia

BioPak specialise in designing packaging using a unique substrate made from refined sugarcane pulp. The pulp packaging and any remaining food residues can be composted after use, effectively diverting waste from landfill and aligning with the principles of a circular economy. Their moulded bagasse (sugarcane pulp) packaging is sturdy and provides a moisture and grease resistant surface that allows the packaging to retain liquids and food for a longer period of time. Their production facility is certified to ISO 14001 environmental standards and the products are made from rapidly renewable plant based agricultural byproducts designed to be compostable at the end of their life.
The Sustainable Packaging Design Special Award is designed to recognise companies that have developed innovative packaging or processing solutions that incorporates sustainability considerations. Elements include Social, Material, Source Reduction, Energy and Recovery. This is a WorldStar Packaging Award Category.

PACT Group for the New Zealand brand Lewis Road Creamery post-consumer sourced PCR 100% recycled rPET milk bottle range. The rPET bottles and simple label design stand out on shelf as they are based on the old-style glass milk bottles. This has enabled the boutique brand to achieve a nostalgic feel and a new level of authenticity. The rPET bottles have a sturdy glass like premium feel that captures the brand’s history and credentials. This is the first Australasian milk producer to change to 100% rPET, that is also 100% recyclable.
2017 SUSTAINABLE PACKAGING DESIGN
SPECIAL AWARD MATERIALS & PACKAGING – RETAIL

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rPET MOISTURELOCK MEAT TRAY
Company: Pact Group
Country: Australia

Creating a suitable alternative to the hard to dispose of expanded polystyrene (EPS) meat trays has been a long running environmental challenge. Pact Group developed, designed and manufactured the rPET (Recycled Polyethylene Terephthalate) Moisturelock Tray. The new tray comprises 50% recycled material and is accepted by every kerbside recycling scheme. It is made from clear plastic, not black, so it can be easily separated in the recycling centres. The real innovation however lies in the trays ability to capture fluid in the base. The little ‘dimples’ in the bottom of the tray hold the fluid there even when tilted or turned upside down, meaning customers don’t have to worry about any meat fluids sullying their shopping or having to remove and dispose of the unsightly blood soaked pad prior to preparing their meat.
The Australian Packaging Covenant Organisation (APCO) is a co-regulatory, not-for-profit organisation that partners with government and industry to reduce the harmful impact of packaging on the Australian environment. APCO delivers this model of shared responsibility through the promotion of sustainable packaging activities including sustainable design, recycling initiatives, waste to landfill reduction and circular economy projects.
SUSTAINABLE PACKAGING

Sustainable Packaging Guidelines
12 design principles & strategies:

1. Maximise water and energy efficiency
2. Minimise materials (source reduction)
3. Use recycled materials
4. Use renewable materials
5. Minimise risks associated with potentially toxic and hazardous materials
6. Use materials from responsible suppliers
7. Design for transport
8. Design for reuse
9. Design for recovery
10. Design for litter reduction
11. Design for consumer accessibility
12. Provide consumer information
RECYCLABLE
This can be placed in your kerbside recycling.

CONDITIONALLY RECYCLABLE
Can be recycled if the instructions below the symbol are followed.

NOT RECYCLABLE
This cannot be placed in kerbside recycling. Please dispose in your rubbish bin.

PREP: https://prep.org.au/main/content/home  Planet Ark: https://planetark.org/recyclinglabel/
ACCC Plastic bag claims
– Biodegradable, degradable and recycling claims on plastic bags. // Trade Practices Act 1974 //

Pick any product off a supermarket shelf and there's a good chance it's either made from plastic or packaged with it in one form or another. Not surprisingly, all this plastic adds up. Australians send more than a million tonnes of plastic waste to landfill every year, where it will sit for generations as it ever so slowly breaks down.
SUSTAINABLE PACKAGING — CLAIMS

Environmentally friendly, environmentally safe, planet safe or green are vague claims that could mislead consumers into thinking that a product causes no, or minimal harm to the environment in its production, usage and disposal.

In reality, almost all products have some adverse impact on the environment at some stage in their life cycle. Do not use these claims unless they can be supported through verifiable testing methods.
SUSTAINABLE PACKAGING — CLAIMS

100% biodegradable or 100% degradable

This descriptor is an absolute claim that usually means ‘entirely’ or ‘totally’.

Describing a product as ‘100% biodegradable’ or 100% degradable indicates that the whole of the product will biodegrade or degrade in the same way and over the same time period—and that’s not likely.
SUSTAINABLE PACKAGING — CLAIMS

**Biodegradable**—no single understanding of or definition for ‘biodegradable’ exists.

The term itself may convey a range of meanings to consumers and should not be used indiscriminately.

As with any unclear or uncertain term, extra care should be taken to avoid misleading consumers and breaching the Trade Practices Act.
Degradable—material can be called degradable under particular environmental conditions if it undergoes degradation to a specified extent within a given time measured using a relevant and identified standard test method.

Most substances will degrade or deteriorate given sufficient time and exposure to the right conditions, so it may be misleading to claim that a product is ‘degradable’ without qualifying how the process occurs.
SUSTAINABLE PACKAGING — CLAIMS

Biodegradable versus Compostable
Single understanding of or definition for ‘biodegradable’ exists. The term itself may convey a range of meanings to consumers and should not be used indiscriminately.

As with any unclear or uncertain term, extra care should be taken to avoid misleading consumers and breaching the Trade Practices Act.
COMPOSTABLE PACKAGING

Industrial: Packaging or a packaging component is compostable in industrial systems if, in a particular geographical area, at least 80% of the overall population has convenient access to a service that collects the packaging or packaging component, and that this item can be recovered and processed in a system of composting in compliance with accepted industry standards.

Home: Packaging or a packaging component is compostable in a system of home compost if, in a particular geographical area, at least 80% of the overall population has convenient access to a home compost, and if it can be processed and undergo complete degradation in a system of home compost in compliance with accepted industry standards.*
BIOPLASTICS

How do I know it's biodegradable?

Compostable will biodegrade in a commercial compost facility. Look for the Australian Standard number (AS 4736-2006) on the label.

Home compostable is the best option if you have a home compost bin. Look for the Australian Standard number (AS 5810-2010) on the label.
New Age Materials

Plant based, Bioplastics……

Bioplastics are plastic materials produced from renewable biomass sources, such as vegetable fats and oils, corn starch, straw, woodchips, sawdust, recycled food waste, etc.

Bioplastic can be made from agricultural by-products and also from used plastic bottles and other containers using microorganisms.
SUSTAINABLE PACKAGING – BIOPLASTICS

So where can the compostable plastics go? How do I know it's biodegradable?

Compostable will biodegrade in a commercial compost facility. Look for the Australian Standard number (AS 4736-2006) on the label.

Home compostable is the best option if you have a home compost bin. Look for the Australian Standard number (AS 5810-2010) on the label.
BIOPLASTICS EXPLAINED

What differentiates bioplastics from conventional plastics?

Bioplastics – Sugar cane derived bio-sourced plastics for closures

What to look for when buying bio-degradable plastic products?

Australian Bioplastics Association
SUSTAINABLE PACKAGING — CLAIMS

**Recyclable**—using the term ‘recyclable’ or symbols.

Suggesting a plastic product can be recycled may be misleading unless you qualify that a product can be only recycled through specialised independent recycling and collection facilities.

This is particularly the case when no or only a few facilities exist, when they are not available to the public or they are only pilot plants.
SUSTAINABLE PACKAGING

Sustainable sourcing

[Icons for PEFC, FSC, and Sustainable Forestry Initiative]
Looking beyond the current "take, make and dispose" extractive industrial model, the circular economy is restorative and regenerative by design. Relying on system-wide innovation, it aims to redefine products and services to design waste out, while minimising negative impacts.
What is Closed Loop?
A circular economy keeps materials in use for as long as possible, maximising their value and reducing waste. A linear economy goes: harvest then use then dispose. A circular economy goes: harvest then use then reuse then reuse, etc.
What is LCA – Life Cycle Assessment?

Life-cycle assessment (LCA, also known as life-cycle analysis, ecobalance, and cradle-to-grave analysis) is a technique to assess environmental impacts associated with all the stages of a product's life from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling. Designers use this process to help critique their products. LCAs can help avoid a narrow outlook on environmental concerns by:

• Compiling an inventory of relevant energy and material inputs and environmental releases;
• Evaluating the potential impacts associated with identified inputs and releases;
• Interpreting the results to help make a more informed decision.
SUSTAINABLE PACKAGING – LCA

Diagram showing the life cycle assessment (LCA) of packaging, including inputs, processes, and outputs such as raw materials acquisition, manufacturing, operation/use/maintenance, recycle/waste management, atmospheric emissions, waterborne waste, and solid wastes.
SUSTAINABLE PACKAGING

Variants of LCA’s

• Cradle to grave
• Cradle to gate
• Cradle to cradle or closed-loop product
• Gate to gate
• Well to wheel
• Economic input – output life cycle assessment
• Ecologically-based LCA
References for Life Cycle Analysis

http://www.o-i.com/uploadedFiles/Content/Stacked_Content/OI_LCA_031010.pdf


Design Issues – Not to be Forgotten

• Accessibility
• Readability
• Sustainability Packaging Guidelines
• Be aware of the materials chosen and their consequences through the Recycle process
Accessibility / Readability
Accessibility meets: Ageing population

65+ Australian population is growing

- 8.7 million (22% of the Australian population) in 2056
- 12.8 million (24% of the Australian population) in 2096

Living independently

- 56% lived in a private dwelling with a husband, wife or partner
- 25% lived alone in a private dwelling
Accessibility meets: Arthritis consumer needs

Arthritis is a leading cause of disability + particularly common among persons with multiple chronic conditions

4 million Australians currently live with arthritis

this will rise to 5.4 million by 2030

2 million are of working age (25-64 years)

<24 include 6006 children increasing to 7,335 in 2030
Key factors to consider in designing the packaging:

1. Start with commodity materials that are commonly recycled at major municipalities: #1 PET, #2 HDPE, glass, aluminum, steel, paper, paperboard.

2. Design the package from a single material. Single-material packages are easier to identify and separate during recycling.

3. Undertake a PREP analysis to understand the recyclability issues.
1. Ageing: A changing narrative
2. Consumers in training
3. Extraordinary
4. Faster shopping
5. Get real: The allure of authenticity
6. Identity in flux
7. Personalise it
8. Post-purchase
9. Privacy and security
10. Wellness as status symbol
References for Recycling and Sustainability

https://www.greenerpackage.com/recycling/global_definition_plastics_recyclability_announced?ajs_uid=2026A2669790C7L&oly_enc_id=2026A2669790C7L&ajs_trait_oebid=6890E1361578B3P

https://www.unilever.com/sustainable-living/
Lengthy and so comprehensive but an excellent model from this European Global business. Sustainability is more than just packaging.

Local packaging company who does have a very good track record in this area.

This version is from a retailer but it is structured in a manner not too different from Unilever in that it separates its visions into different but complimentary categories Waste and recycling / Food waste / Soft Plastic Recycling / Energy Efficiency / Green House Gas Emissions / Sustainable Packaging /
References that relate to Packaging Solutions 101

http://www.chep.com/resources/case-studies/

How packaging can reduce food waste

www.incpen.org

INCPEN Sustainability Checklist

www.incpen.org

References that relate to Design Issues – Not to be Forgotten


New courses available through the AIP throughout Australia and New Zealand

Introduction to Lifecycle Assessment Tools for Sustainable Packaging
Introduction to Sustainable Packaging Design
Tools to meet the 2025 National Packaging Targets: ARL & PREP
The Future of Flexible Packaging
The Role of Packaging in Minimising Food Waste

Please email info@aipack.com.au or visit the events page on the website www.aipack.com.au