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Circular Economy

Jenny Barnett – BASA
Environmental Working
Group Chair

Definition

- “A circular economy is a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing energy and material loops.
- This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and closed recycling loops.
- This is in contrast to a linear economy which is a 'take, make, dispose' model of production”
- *Wikipedia*

Introduction

- Circular economy is about ensuring materials and resources remain available for use both now and in the future
- The world is changing with populations expanding from circa 2.5 billion in 1950 to a predicted 8.9 billion by 2040
- As technology, digitalisation and globalisation continue to move forward, the strain on resources will also continue to grow
- Over the last few years, we have seen policies put into place to address waste, resource efficiency and circular economy
- The most recent example of this being plastic

Circular Economy Models

There are many models
for circular economy:



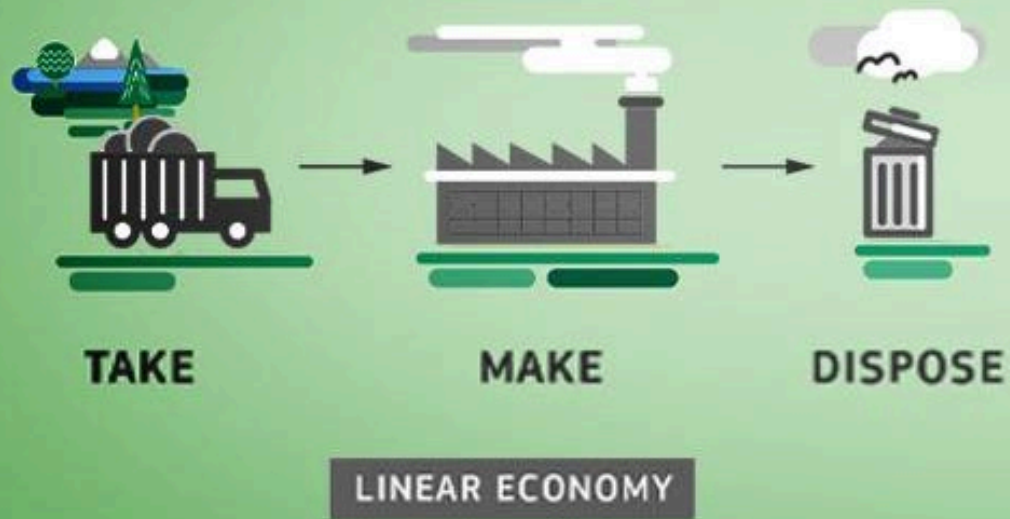
Circular Economy Models

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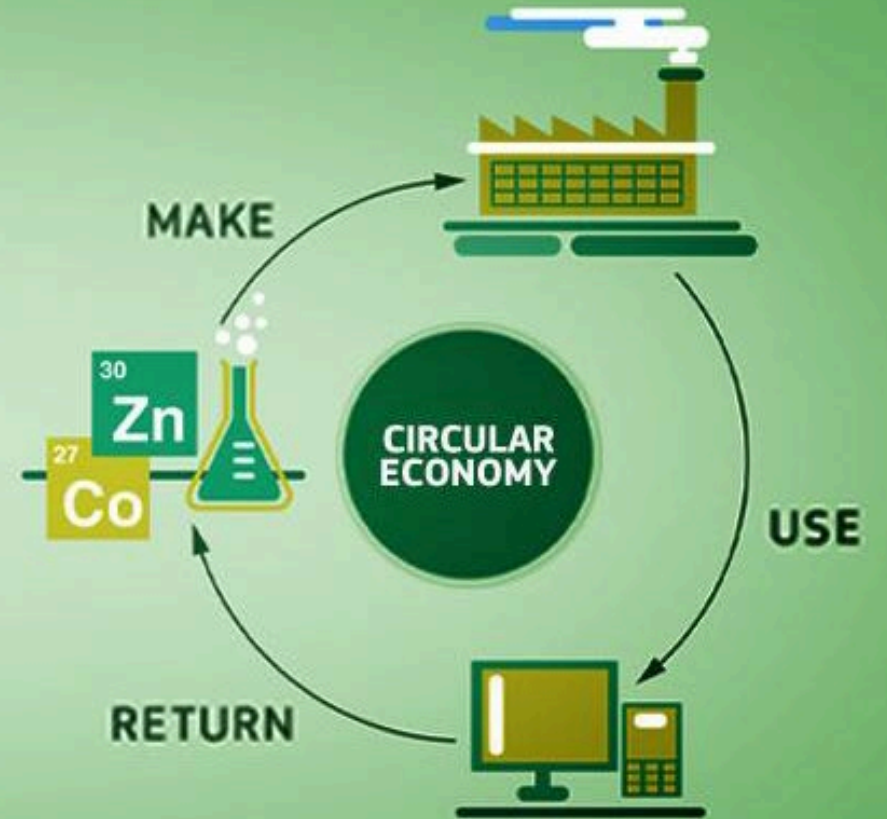


Circular Economy Models

Are we today throwing away
the resources of tomorrow?

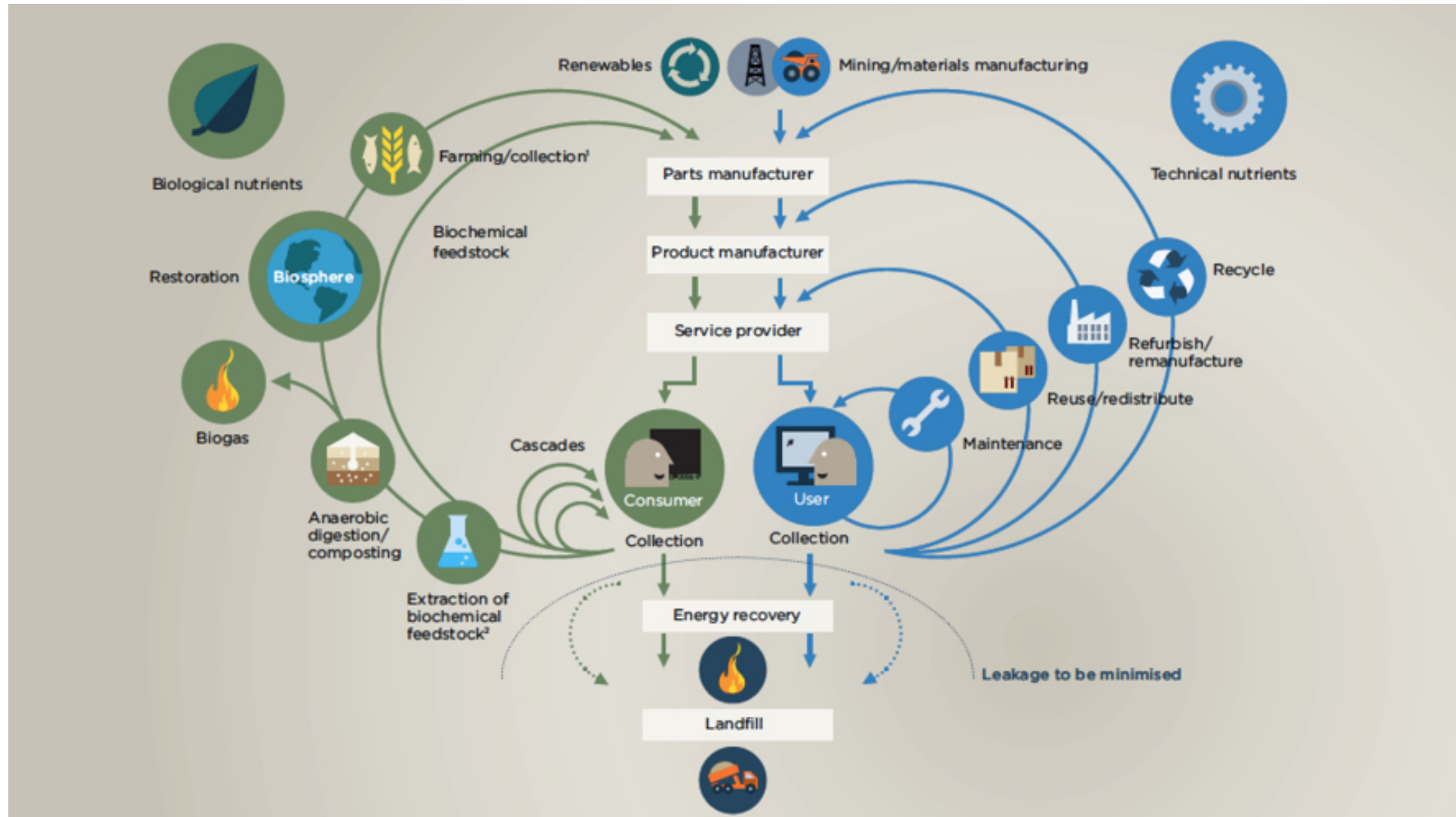


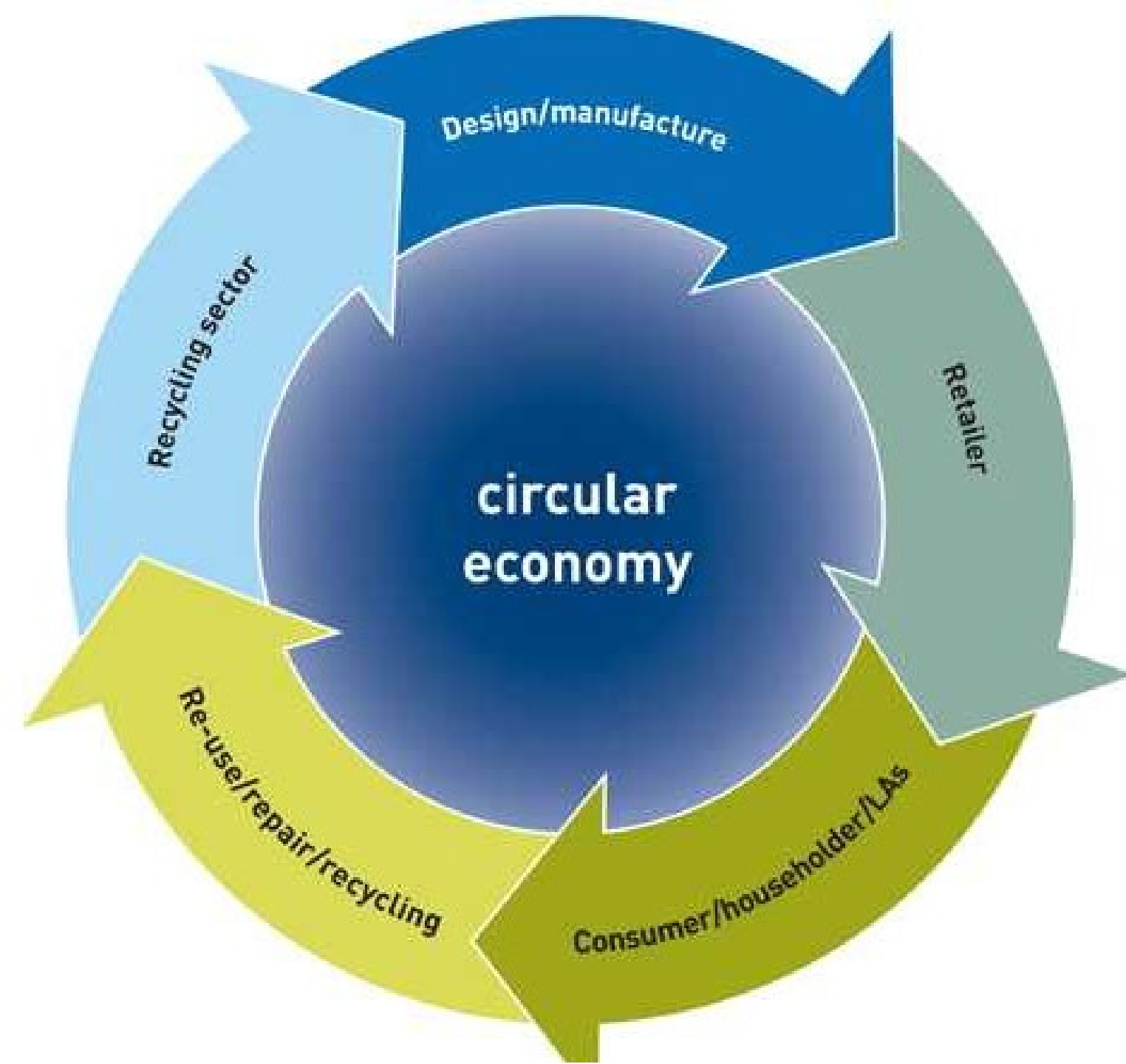
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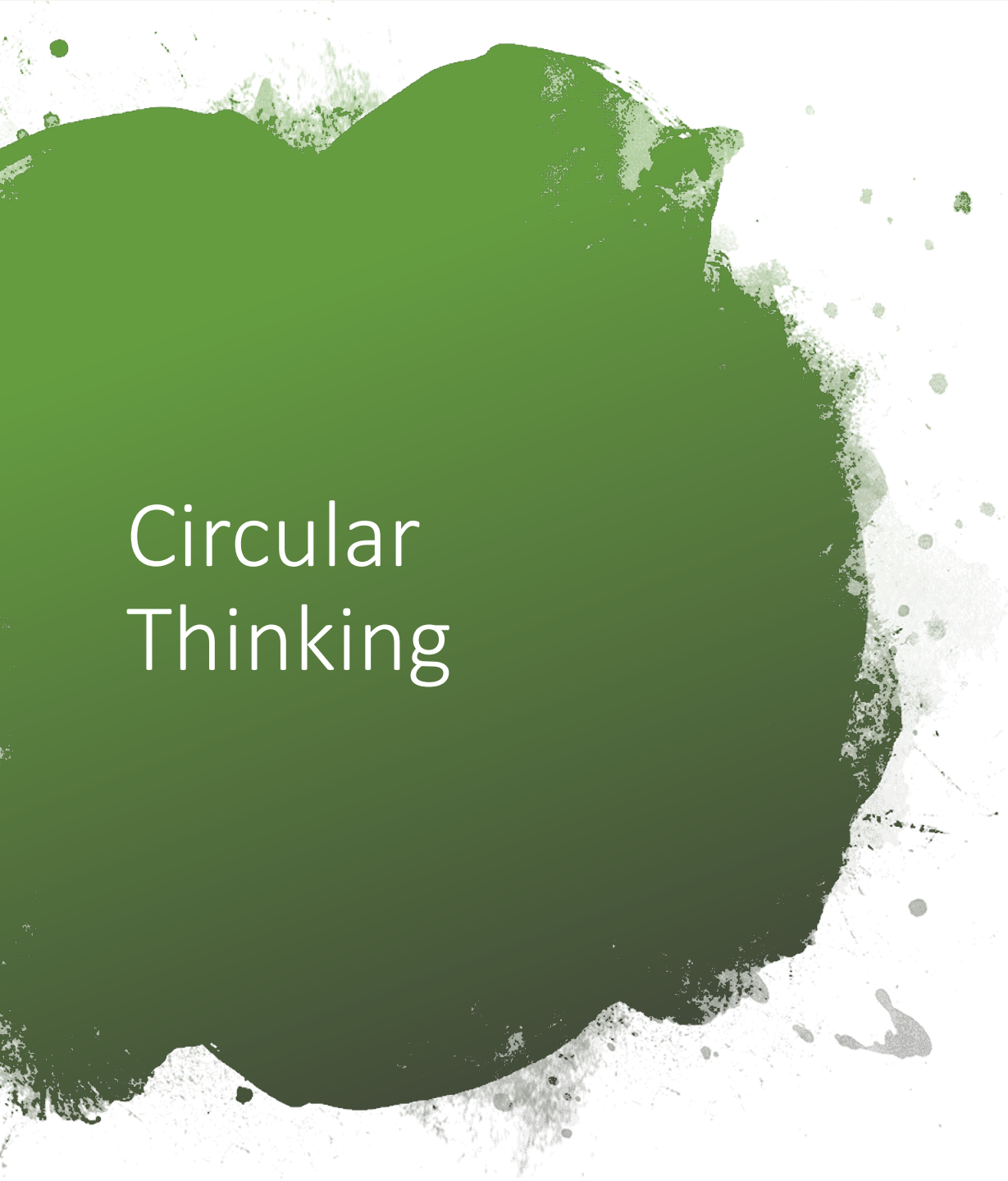
Circular Economy Models

Circular Economy Models





Circular Economy Models



Circular Thinking

- In order to ensure the availability of resources in the future, we need to consider this way of thinking at design/concept stage
- Working with suppliers, consumers and recyclers we can start to investigate solutions with end of life in mind
- The design, scope and use of adhesives is extremely broad with life span varying from the short term (temporary) to long term (decades)
- This is a positive challenge that is creating opportunity for exciting innovation and forward thinking

Where do we start?

- Consider the life cycle of the product:
- What part does the product play in the end product/usage?
- What impact does this have at the end of life?
- What energy is being used throughout life cycle?
- What materials are being used (raw materials and packaging)?
- How do we reduce waste both in manufacturing and for the end user?
- How does design positively benefit sustainability e.g. longevity, repair instead of replace etc?
- How do we balance the positive benefits with the end of life challenges with regard to dismantlability?
- How can we innovate for new technologies?
- What do adhesives do to enable the use of alternative materials?

Success stories

There are many good news stories in the adhesives and sealants industry. Examples from the FEICA website:

Adhesives for Sustainable Development:

Adhesives enable wooden structural elements for innovative construction technologies, thus saving energy and reducing CO₂ emissions by the use of renewable and recyclable materials.

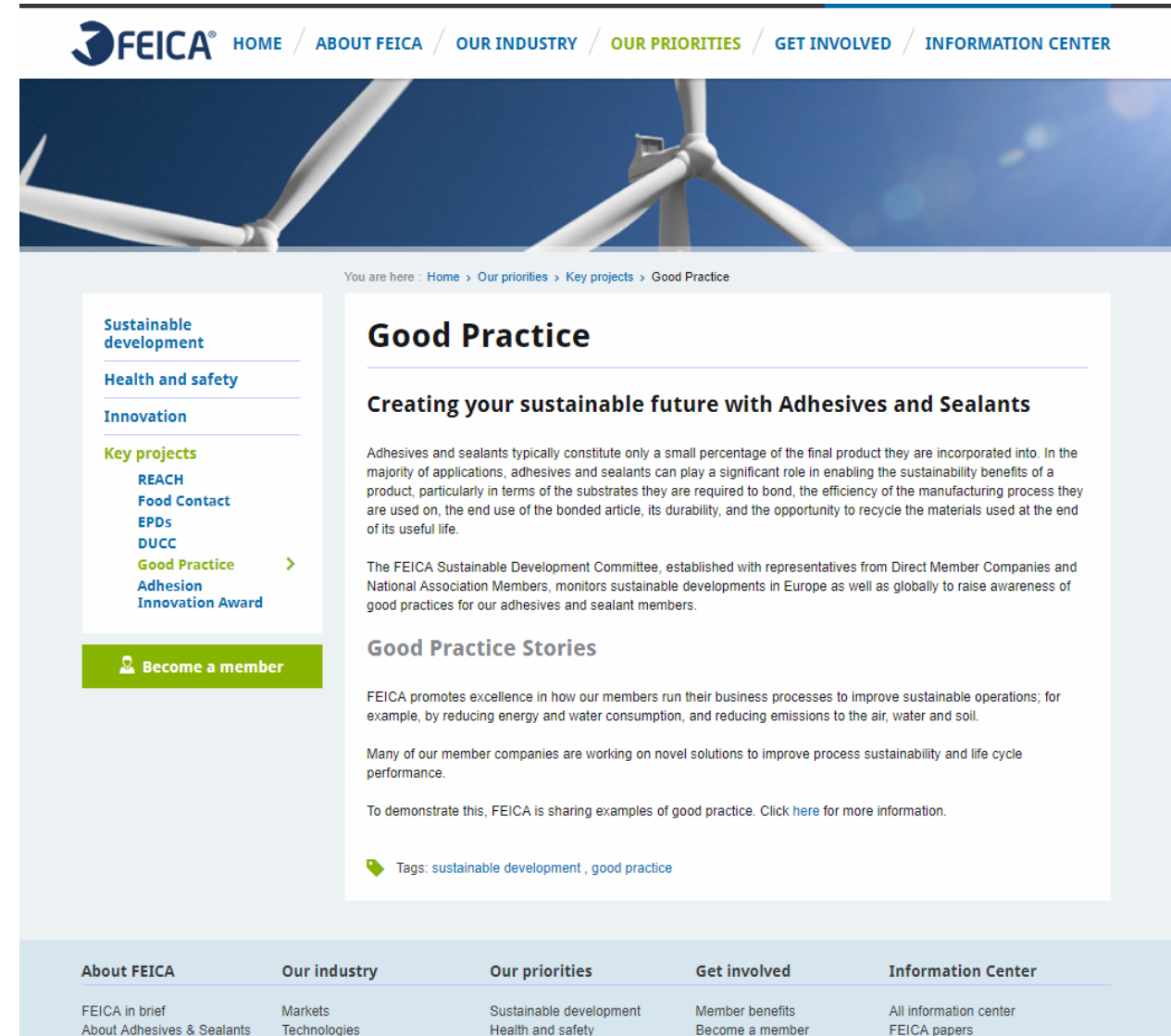
Paper glues based on natural ingredients and packed in mainly plant-based packaging help to reduce CO₂ emissions and save fossil resources

Sealants for Sustainable Development

1-component high performance sealants packed in foil packs cut solvent emissions in use and reduce the GWP of their packaging by 75%

Crash-resistant structural adhesive solutions for lightweight composite materials in the automotive industry allow the reduction of the CO₂ footprint during production and use phase, while at the same time improving passenger safety.

- Conserving resources is a key driver in sustainable development. Lightweight composite materials can save material and energy in the production and use phase.
- Adhesives enable the bonding of dissimilar materials (e.g. steel/aluminium/plastic) to create composite materials, which combine the properties of the constituent materials while reducing weight and improving the mechanical performance.
- Crash-resistant structural adhesive solutions enable the elimination of welding points and the use of thinner metal sheets while increasing the car's rigidity and crash resistance.



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You are here : Home > Our priorities > Key projects > Good Practice

Good Practice

Creating your sustainable future with Adhesives and Sealants

Adhesives and sealants typically constitute only a small percentage of the final product they are incorporated into. In the majority of applications, adhesives and sealants can play a significant role in enabling the sustainability benefits of a product, particularly in terms of the substrates they are required to bond, the efficiency of the manufacturing process they are used on, the end use of the bonded article, its durability, and the opportunity to recycle the materials used at the end of its useful life.

The FEICA Sustainable Development Committee, established with representatives from Direct Member Companies and National Association Members, monitors sustainable developments in Europe as well as globally to raise awareness of good practices for our adhesives and sealant members.

Good Practice Stories

FEICA promotes excellence in how our members run their business processes to improve sustainable operations; for example, by reducing energy and water consumption, and reducing emissions to the air, water and soil.

Many of our member companies are working on novel solutions to improve process sustainability and life cycle performance.

To demonstrate this, FEICA is sharing examples of good practice. [Click here](#) for more information.

Tags: [sustainable development](#) , [good practice](#)

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Success stories

- Circular economy successes:
- Gypsum recycling – www.gypsumtogypsum.org
- Paint recycling – www.paintcare.org.uk
- Recovering flooring – www.recovinyl.com

Conclusion

- There is no singular approach to circular economy thinking
- Successes have demonstrated that adhesives can be used to create sustainability in end use, during manufacture and to enable the use of new/improved technologies, innovation and effective use of resources
- BASA Environment and Sustainability Working Group continue to monitor this subject closely and would welcome any feedback and positive stories to share

Thank you

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**BRITISH ADHESIVES &
SEALANTS ASSOCIATION**

Come and talk to us on Stand K5

