

The Circular Economy Concept

2019 is set to be a key year for the launch of new, more sustainable material structures by plastic converters aiming to comply with the new European Strategy for Plastics – introduced to ensure all plastic packaging is 100 per cent recyclable by 2030.

For Ronzulli the major goals of 2019 are related to sustainability such as:

- 1) Creating mono material structures with the use of coatings to replace incompatible layers
- 2) Developing biodegradable and compostable packaging
- 3) Reducing its carbon footprint with downgauging and Bio based resins and materials
- 4) Using debondable adhesives for layers' chemical separation

The perception of flexible packaging versus myths

The Perception

The Reality

Flexible packaging is unnecessary waste

Before it is waste, flexible packaging plays an essential role as it protects food throughout the supply chain and enables a proper and safe delivery to the end-consumer

Flexible Packaging cannot be recycled

Flexible packaging is increasingly recycled, especially in countries where it is collected

Flexible packaging is not relevant in a circular economy as it is assumed that it is not recyclable

Flexible packaging adds value in a circular economy through very efficient use of materials and energy resources. If on top of that it is collected and recycled, this increases its resource efficiency even further

The environmental impact of the packaged food is mostly due to the packaging

The environmental impact of flexible packaging is typically 5 to 10 times less than the food it protects*

Flexible packaging is a cause of land and marine litter

When flexible packaging is not collected, there is a risk that it might leak into nature. Collection of flexible packaging waste can significantly reduce the risk of it becoming land and marine litter

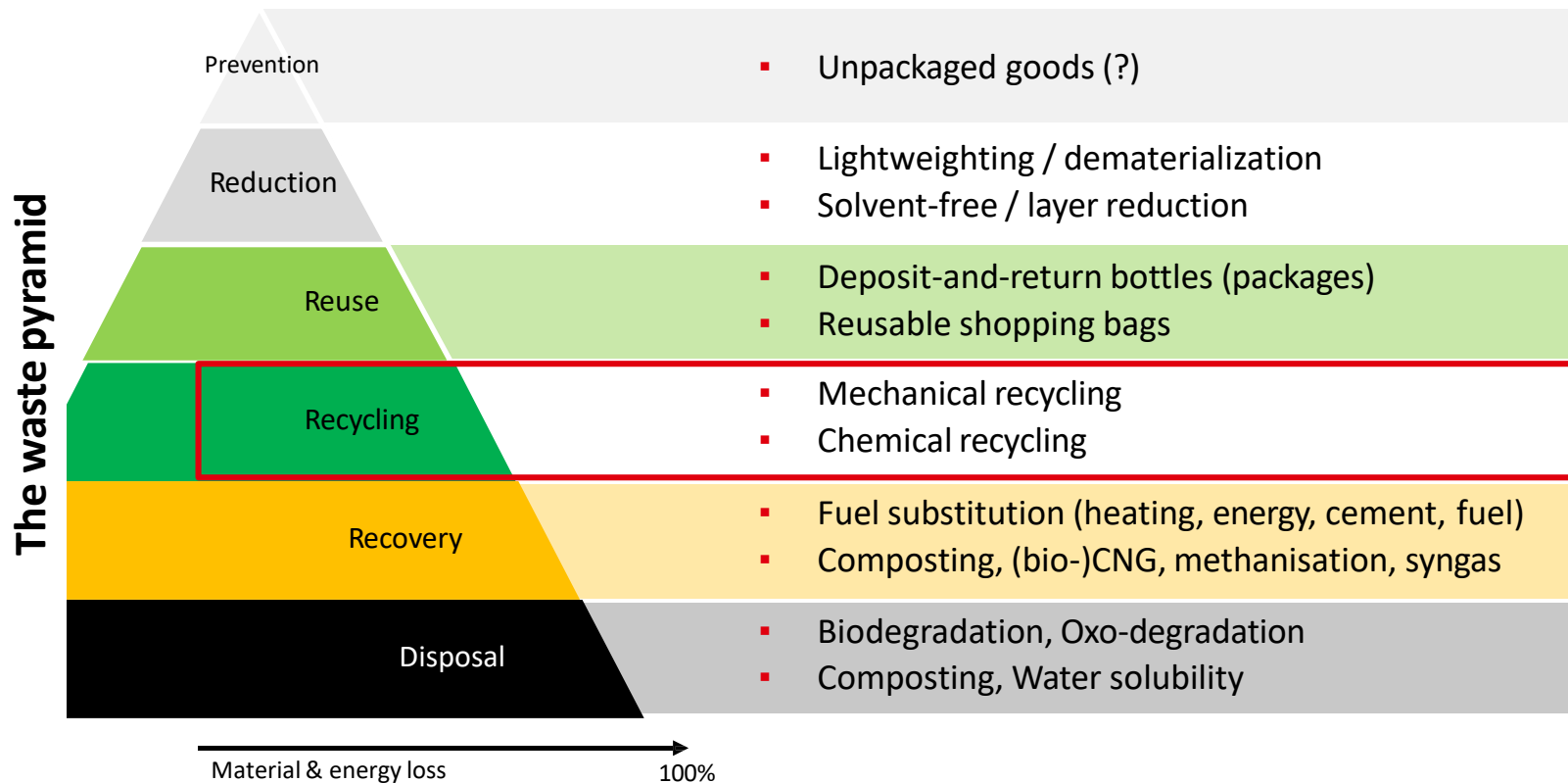
Flexible packaging is a waste of resources

With flexible packaging, customized barrier protection and appropriate portioning reduces the risk of food waste thus saving many resources

The Perception

The Reality

Recycling as the key to a circular economy



The Circular Economy challenge in detail

Collection

Only waste that is collected, can be recycled.

Sorting

Many different types of waste exist that cannot be re-processed together.

Recycling

Components need to be **compatible** or **separable** to get high quality recyclates.

Recycling:

To make it possible we need to work on strong relation between mono material, adhesives and coatings

Increasing regulatory activity on plastics

Circular Economy Package



100%

of plastics packaging
reusable or recyclable by

2030

From needs to actions



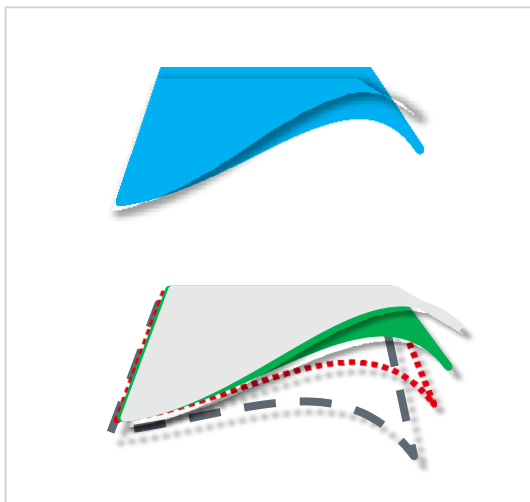
- Mandatory recycling quotas for plastics
- Single use plastics bans
- Eventual ban of specific materials

- Downgauging
- Re-use
- Recycling
- Mono materials
- Replacing incompatible layers

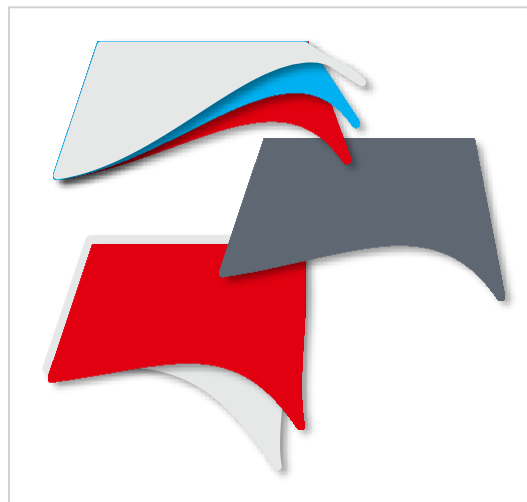
- Pollution of the environment
- Ocean plastics
- Depletion of resources
- Conditions in less affluent countries

Addressing the plastics challenge Solutions in line with future design guidelines

**Mono material
and/or layer replacement**



Layer separation

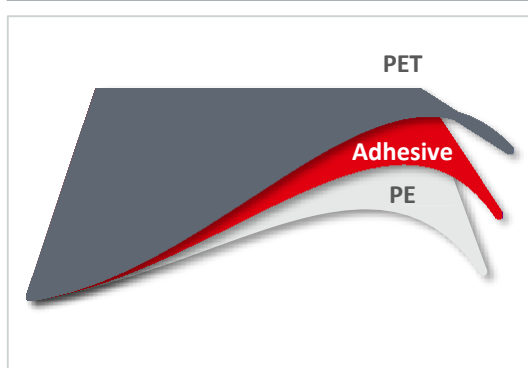


**Compostable, Biodegradable,
Biobased**

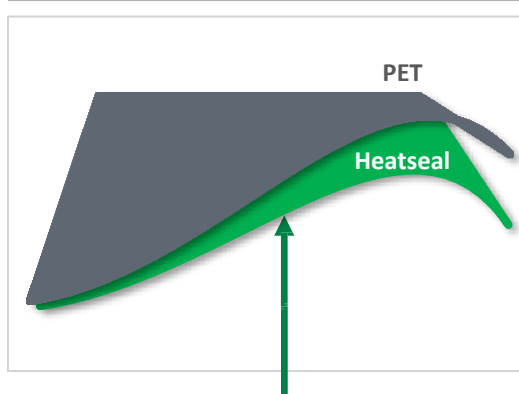


Coatings to replace incompatible layers

Today



Our Approach



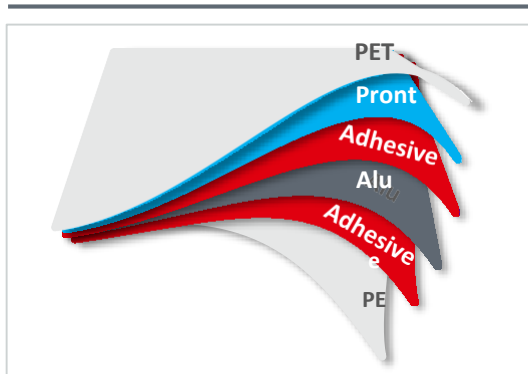
- Compatible with recycling
- Good blending into base plastics
- Seal, Peel, Antifog

Example

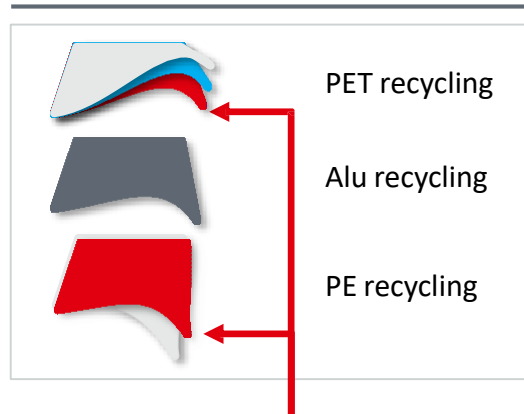


Debondable adhesives

Today



Adhesive supplier Contribution



Example



- Validated debondable adhesives
- Compatible with recycling

Key points

- We enable our customers to **be more sustainable**
- RONZULLI solutions are part of future packaging design guidelines
- R&D department working for both mechanical recycling, layer separation and coatings solutions