

# Accelerating a Circular Economy for Packaging and Consumer Goods

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# We are leading in consumer and industrial businesses

## Over 140 years of success

### Adhesive Technologies

47%



**TECHNOMELT**

**LOCTITE**



### Beauty Care

19%



syoss

Schwarzkopf



### Laundry & Home Care

33%

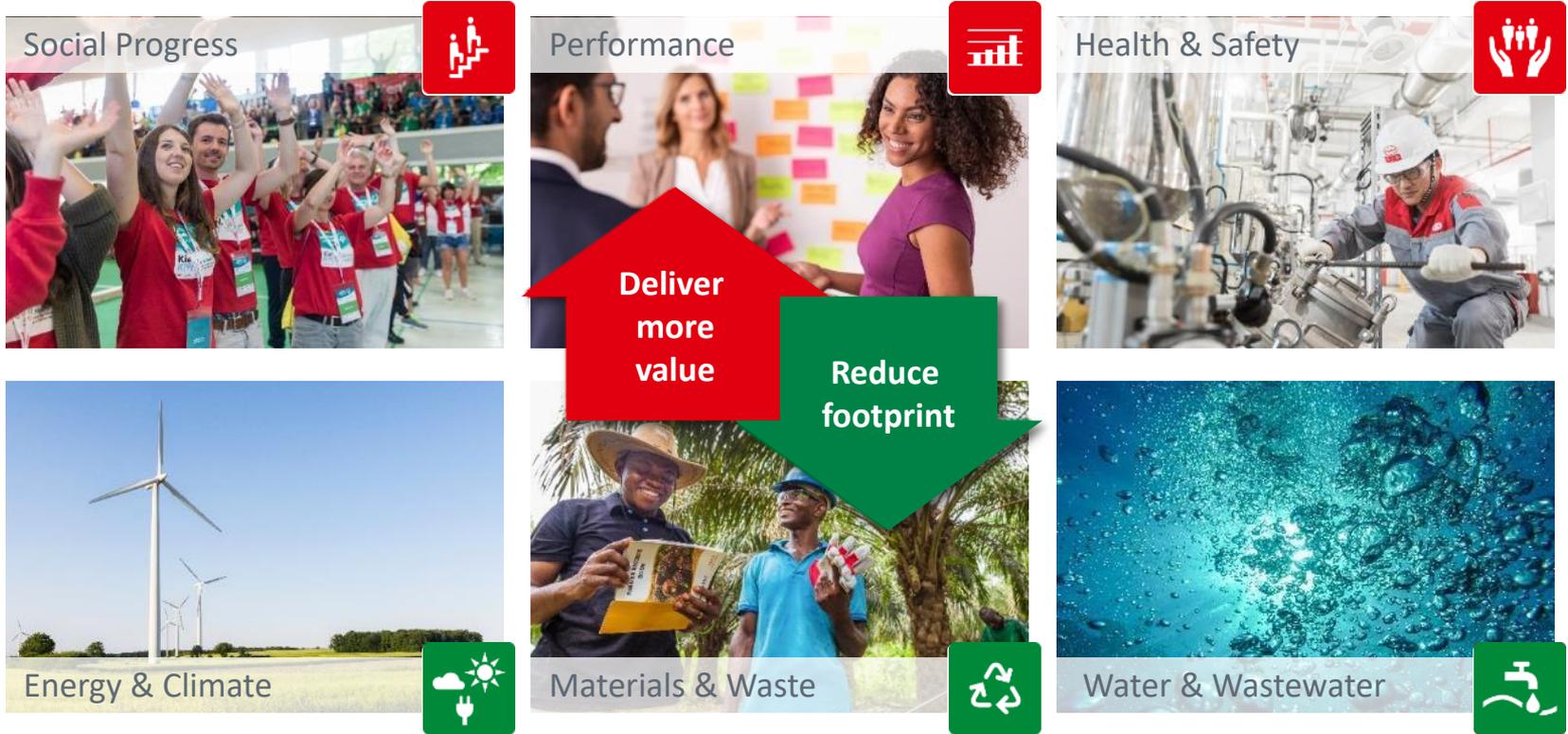


Somat



# Translating value and footprint into concrete challenges

## We concentrate on six focal areas



# | We are leading with high-impact solutions worldwide

## Five business areas covering all major markets



**Packaging and  
Consumer Goods**



**Transport and  
Metal**



**General Industry**



**Electronics**



**Consumer,  
Craftsmen and  
Building**

# | Top-of-mind issues for consumers



Consumers, especially millennials, are increasingly focused on sustainability.

Sustainable brands are growing up to 50% faster.



Public outcry over plastics pollution.

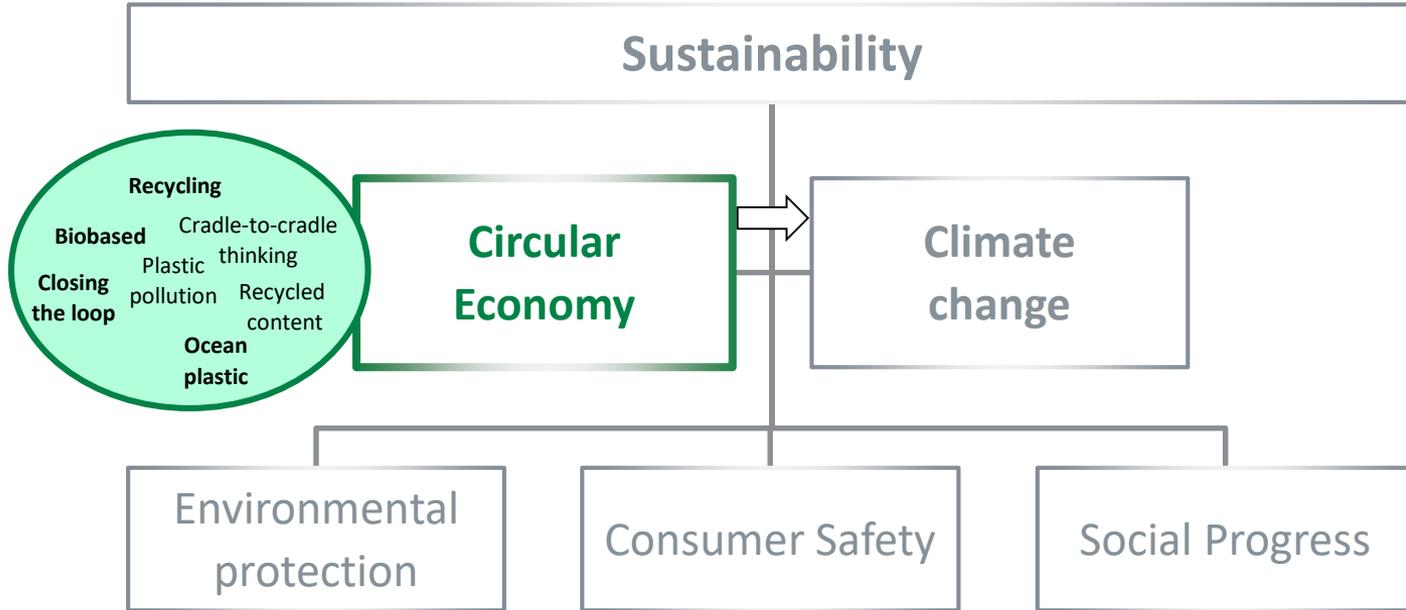
**Brand owners commit to circular economy targets.**

**We help them make in this transition.**



# | The Circular Economy

An important part of sustainability



> **We want to accelerate the transformation to a circular economy as part of our contribution to fight climate change.**

# | The Circular Economy

## More than just recycling

**It is a model for a future economy.**



**It is broader than just recycling.**



**It covers also design and the use of recycled materials.**

**It is a new paradigm: to include the end of life in the design of articles.**



**It allows Henkel to present new, differentiated solutions that will change the market.**

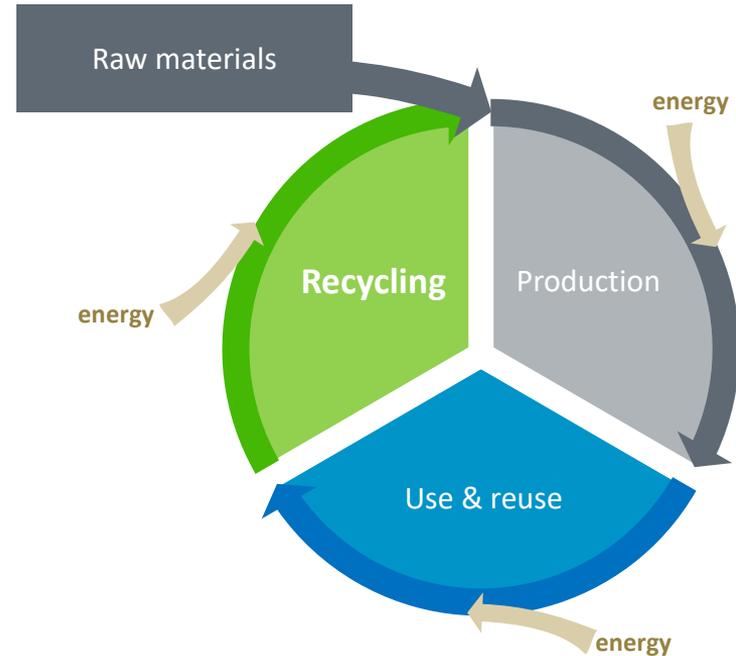


# | The Circular Economy Definition

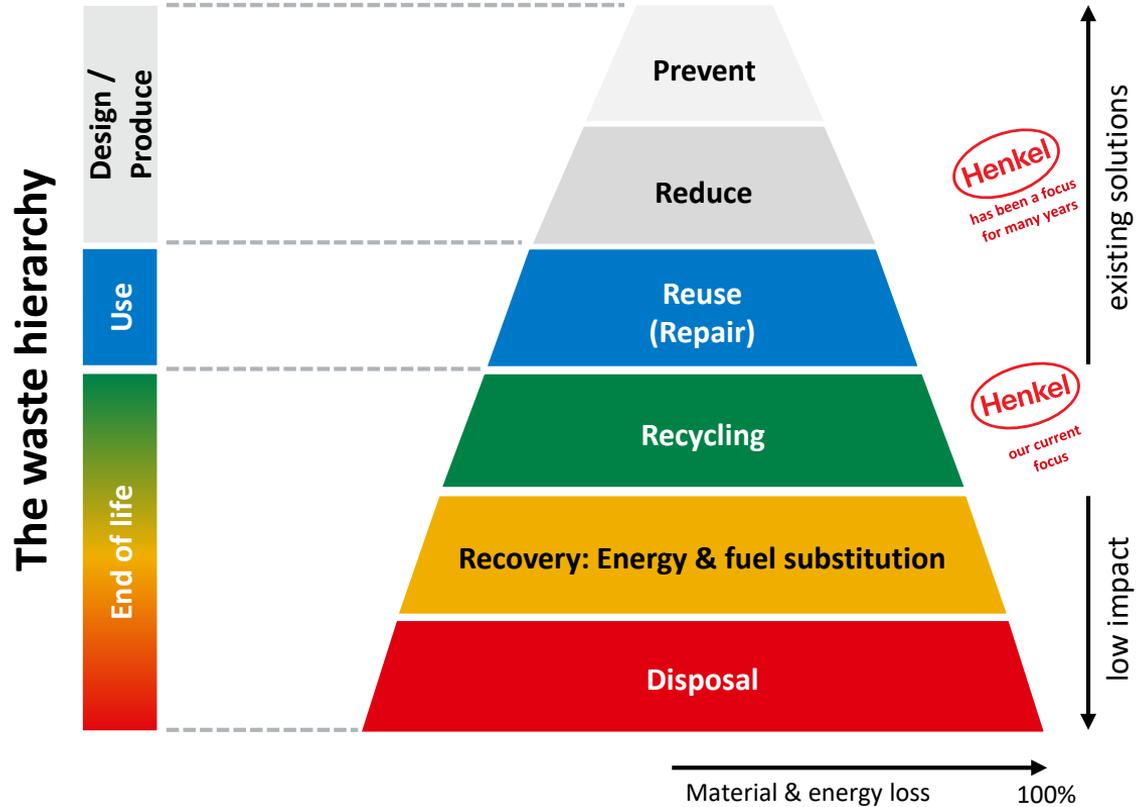
*“A **circular economy** is a regenerative system in which resource input and **waste**, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops.”<sup>[1]</sup>*

This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and **recycling**.

<sup>[1]</sup> Geissdoerfer et al., *Journal of Cleaner Production* **143**, 757–768.



# | Waste management principles



# | Recycling of consumer goods



”Closed loop“

Needs excellent compatibility  
and stream purity



”Open loop“

Needs compatibility



Final  
downcycling

Needs limited compatibility



> **Compatibility of materials is key.  
Incompatible materials need to be separated before recycling.**

# | Recycling: where do we stand today?



>75%



>90%



>70%



>60%



>90%



~ 0%

incompatible  
multi material  
items

Illustrative examples without claim to a complete overview

# | Henkel adhesives & coatings for a more circular economy

## Compatibility



## Debonding



## New designs



Sustainable raw materials

Sustainable packaging of our products

# Compatibility: Solvent free adhesives for PE/PP recycling

LOCTITE LIOFOL adhesives optimized for mechanical recycling of flexible packaging

- **Optimized adhesives** provide optimum recycle quality
- Improved **color and quality** over standard adhesives



# Debonding: debondable adhesives for flexible packaging

## LOCTITE LIOFOL adhesives optimized for separation at Saperatec GmbH

- **Optimized adhesives** allow for separation of layers
- Enables recycling of complex, high value flexible packaging
- Collaboration with innovative startup



# New designs: replacing layers with coatings

## Heat sealable coating LOCTITE LIOFOL HS1138

- **A new coating** allows for all-PET tray (lid and body)
- Replaces a PE film and the lamination process
- Enables recycling of food trays
- High value recyclate as trays are often only lightly printed



# | New designs: paper based straws

## AQUENCE waterbased adhesives for paper straws

- **Replacement of single use plastics with paper**
- Biobased and biodegradable base material
- Solution in line with the European single use plastics ban



# | New designs: replacing concrete with wood

**LOCTITE PURBOND adhesives for engineered wood**

- **Replacement of concrete with wood elements**
- Replaces a very heavy footprint material with a renewable one
- Reduced weight and transportation effort
- Benefits in indoor VOC level



# | Takeaways

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- **The world is in motion – and asking for new solutions.**
- Our *Packaging & Consumer Goods business* is at the center of this megatrend.
- The world can **[be more] sustainable** with Henkel adhesives and coatings:
  - **Compatible with recycling**
  - **Debonding** of incompatible materials
  - More circular and sustainable **New Designs**

# | Thank you!



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