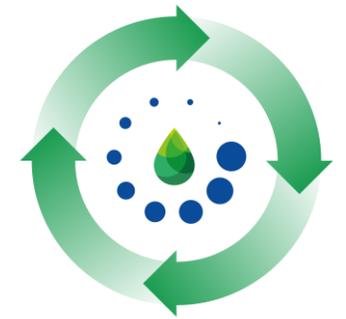


# Chemical Recycling Europe



Carlos Monreal, Chemical Recycling Europe President

# Chemical Recycling Europe: why we are here



CHEMICAL RECYCLING EUROPE

Chemical Recycling Europe was established in 2019 to **promote** and **implement** the **innovative solutions** that the **chemical recycling of plastic waste offers to benefit our economy and society**.

Chemical Recycling Europe **represents the interests of the European chemical recycling industry towards the public and European institutions**. Chemical recycling technologies play a **decisive role in closing the loop** and supporting the transition towards a more sustainable and **circular economy in Europe**.

Chemical Recycling Europe is united by **one common goal: closing the loop for the plastics industry** by **offering the technology to chemically recycle plastic waste** back into its original components and/or other value-added materials.

Come join us: [solutions@chemicalrecyclingeurope.eu](mailto:solutions@chemicalrecyclingeurope.eu)  
[www.chemicalrecyclingeurope.eu](http://www.chemicalrecyclingeurope.eu)

**Chemical Recycling Europe: one  
common goal**

# **Closing the loop in the plastics industry (implementing circularity)**

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# Chemical Recycling Europe members: March 2022



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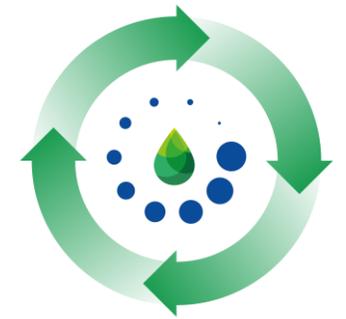


**PYROWAVE**



Members of Chemical Recycling Europe cover all stages of the development (TRL) of chemical recycling technologies

# Chemical Recycling Europe: working groups



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## Technical and Scientific

- Develop and perform life cycle assessment of chemical recycling technologies
- Mass-balance approach standardization
- Develop standards for chemical recycling: ISO and CEN/TC working groups
- EU research projects



## EU Policy

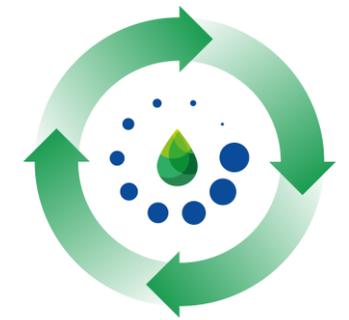
- Create supportive framework to fully exploit the potential of chemical recycling technologies
- Definition of chemical recycling
- Legal framework



## Communication

- Demystify
- Communicate State-of-the-art of chemical recycling in Europe
- Provide information and clarify potential and benefits of chemical recycling to the public

# Chemical recycling feedstocks, technologies and outputs



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Monostreams  
independently  
sorted

PET (incl. fibers), PA, PS, PU,  
PMMA & PLA

Depolymerization

Monomers/oligomers

Mixed streams  
Including multilayers

Mainly PE, PP, PS

Pyrolysis

Feedstock for petrochemical industry

Mainly PE, PP, PS

Mixed polymeric feed

Hydrothermal  
Liquifaction

Feedstock for petrochemical industry

Final products for industry - solvents, oils, lubricants,  
waxes, bitumen binder

Mainly focuses on mixed polymers

Gasification

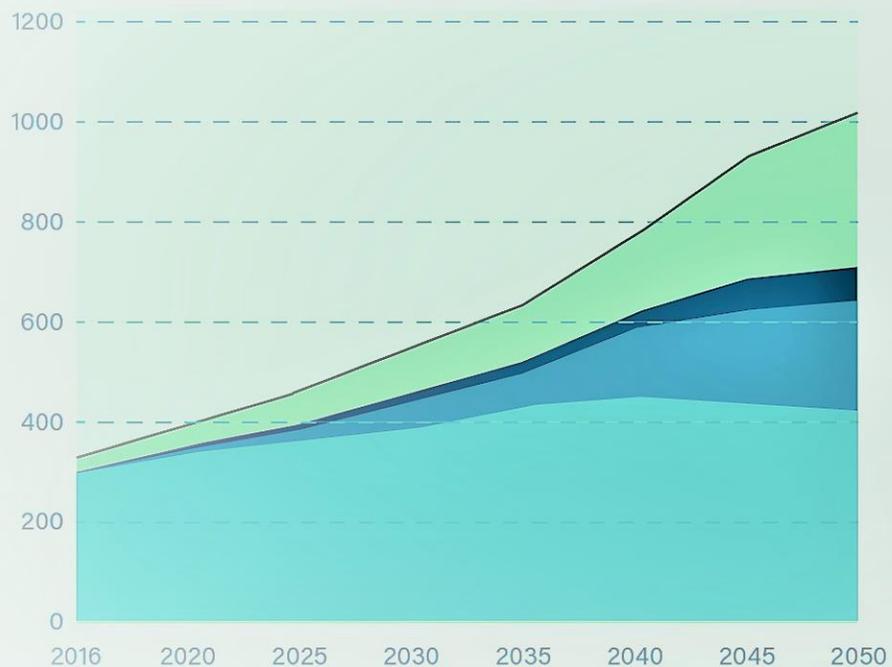
Syngas mainly for use in the petrochemical industry

# The importance of recycling



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## GLOBAL POLYMER DEMAND AND HOW IT COULD BE RECOVERED, MILLIONS OF METRIC TONS



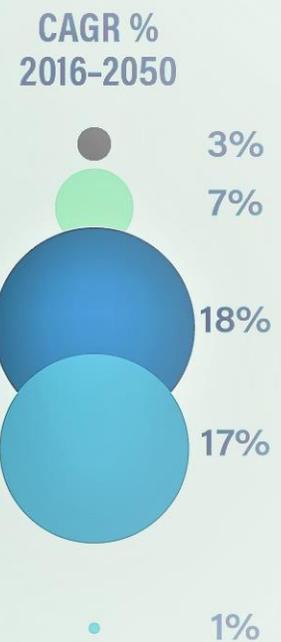
PROJECTED DEMAND GROWTH

MECHANICAL RECYCLING

RECOVERED MONOMER

RECOVERED FEEDSTOCK (PLASTIC EQUIVALENT)

VIRGIN FEEDSTOCK

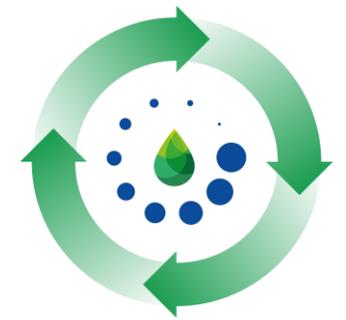


**Together  
chemical and  
mechanical  
recycling  
reducing  
demand for  
virgin feedstock**

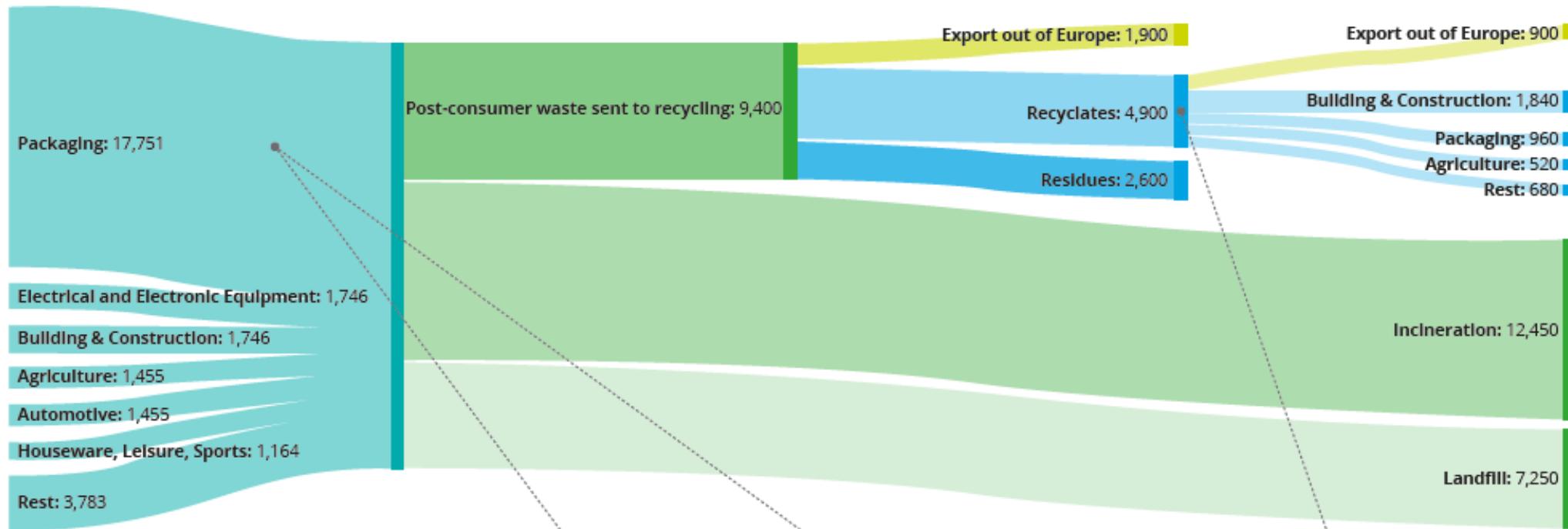
Source: How plastics waste recycling could transform the chemical industry. DECEMBER 2018, MCKINSEY ON CHEMICALS



# The challenge ahead: EU plastic waste volumes and recycling targets



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By 2030, all plastic packaging placed on the EU market has to be reusable or easily recycled

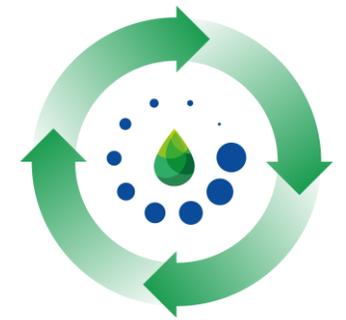
By 2025, at least 55% of all plastic packaging in the EU should be recycled (vs. 30% in 2018)

By 2025, 10 million tonnes of recycled plastics should find their way into new products in the EU (vs. 4,9 million tonnes in 2018)

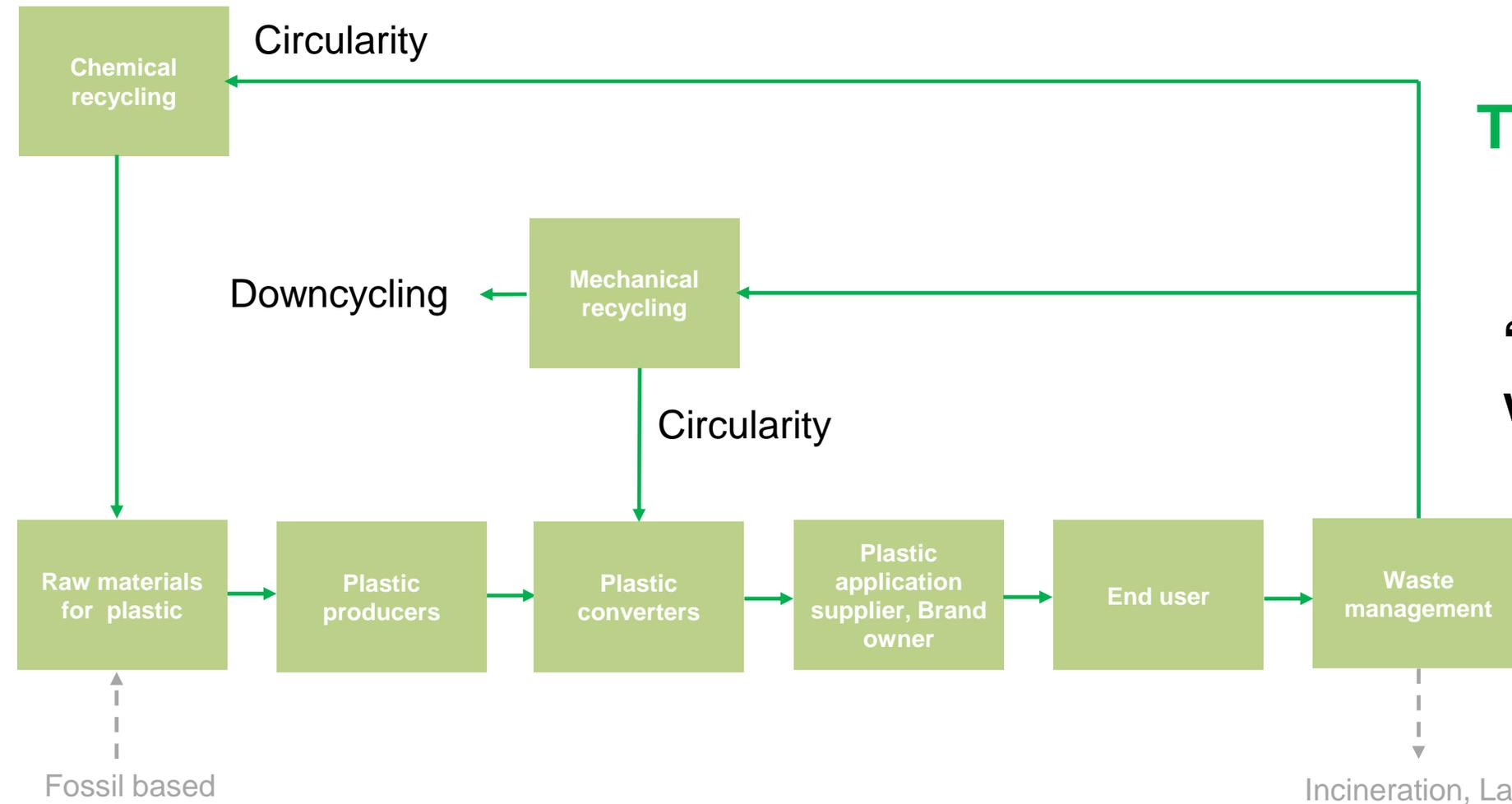
2018 plastic waste volumes (27,000 kt) in the EU compared to the targets

Reference: Deloitte Belgium, April 2021

# Towards circularity in the plastics value chain



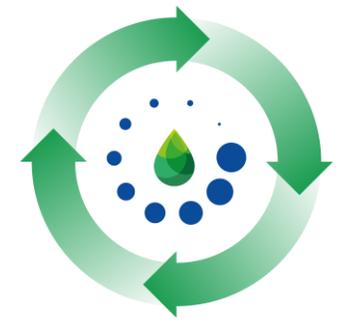
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**The demand signal is sent:**

**“Whenever possible we insist on circular plastics”**

# Chemical recycling industry opportunities and challenges: Policy



CHEMICAL RECYCLING EUROPE

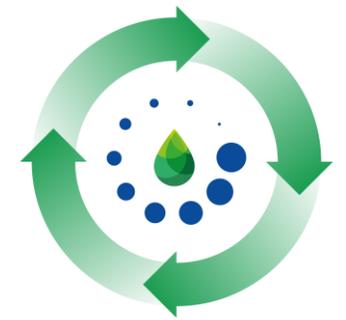
## Opportunities

- Positive evolution towards recognizing chemical recycling as a solution to increase recycling in Europe
- EU policies supporting more collection, sorting, circularity
- Harmonization of regulations on chemical recycling across countries
- Clarity of regulations and incentives enabling further investments in the industry
- Growing policy clarity on the high-quality recyclate created and used in food-grade applications

## Challenges

- Lack of clarity on the methodologies to calculate recycling rates and recycled content
- Lack of level-playing field with mechanical recycling on the inclusion in EPR scheme
- Limited clarity on implementation leads to difficult access to plastic waste
- Lack of harmonization of the End-of-Waste legislation between member-states
- Lack of efficient national systems to enable secure feedstock supply to divert plastic waste away from landfills, incineration, or exportation to countries with less infrastructure
- Lack of policy clarity creates a complicated environment to invest for SMEs

# Chemical recycling industry opportunities and challenges: Value chain



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## Opportunities

- The potential to tackle higher volumes of plastic waste is highly anticipated by many stakeholders across the value chain
- Implemented alongside mechanical recycling, increases recycling capacity and the value of recycled plastic waste
- Brands basing their commitments to 100% recyclable and incorporation of recycled content based on the implementation of chemical recycling
- Plastic producers estimating investments in chemical recycling to reach EUR7.2B

## Challenges

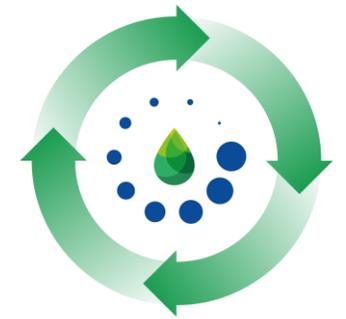
- Feedstock complexity
- Incentive to recycle
- Low gate fees for incineration
- Demystify to communicate the importance, value and environmental benefits for circularity
- Managing expectations. plants take years to plan and build and signing long term agreement with feedstock providers and off-takers

**Chemical Recycling Europe: one  
common goal**

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# Chemical Recycling Europe: come join us



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## Chemical Recycling Europe

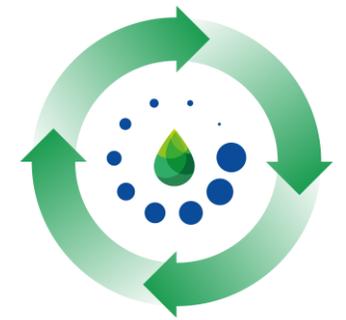
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# Chemical Recycling Europe: membership benefits



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- Chemical Recycling Industry representation of common interests to the European and national authorities
- Early warnings on issues impacting the chemical recycling industry
- Access, influence and contribute to European legislative developments
- Understanding the position of chemical recycling industry
- Networking with members across the supply chain
- Valuable opportunities to participate or get information from ChemRecEurope working groups
- Participation in industry specific workshops and seminars
- Communication initiatives to promote the industry and its activities

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