Chemical Recycling Europe

INNOVAPLASTICOS

SEPTEMBER 2020

CHEMICAL RECYLING EUROPE – WHO ARE WE?

CHEMICAL RECYCLING EUROPE

ChemRecEurope is the professional representative body **representing the whole chemical recycling industry*** in Europe – set up in February 2019

Vision

Closing the loop for the plastics industry by offering the technologies to endlessly recycle all polymer waste back into its original components and/or other chemical products.

Mission

- To represent the interest of the European Chemical Recycling Industry towards the public and European Institutions
- As a unique driving force, we aim at promoting and implementing innovative chemical recycling technologies and to boost circular plastics economy
- Creating a supportive framework to fully exploit the potential of chemical recycling technologies

*depolymerization, pyrolysis/hydrothermal cracking, gasification, dissolution

CHEMICAL RECYCLING - DEFINITION

CHEMICAL RECYCLING EUROPE

Definition

According to Chemical Recycling Europe, Chemical Recycling is defined as any reprocessing technology that directly affects either the formulation of the polymeric waste or the polymer itself and converts them into chemical substances and/or products whether for the original or other purposes, excluding energy recovery.

Note

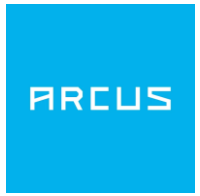
Although we support the fact that creating alternative fuels reduces the dependency on fossil fuels and ensures that no polymeric waste is left without value to enter the environment, it does not take part of the scope of the definition of chemical recycling.

- ChemRecEurope is working with the Coalition on Chemical Recycling to ensure that a clear industry definition is established and accepted across the full value-chain.

OUR MEMBERS

CHEMICAL RECYCLING EUROPE

Members of ChemRecEurope cover all stages of the development of chemical recycling technologies



JOIN US?

ChemRecEurope is open to all stakeholders throughout the value chain who want to ensure chemical recycling will truly find its way in the circular polymer value chains.

- Full membership
- Associate membership

DRIVERS FOR MORE RECYCLING

CHEMICAL RECYCLING EUROPE

PLASTIC WASTE

GHG EMISSIONS

FOSSIL RESOURCES

- **All plastic packaging reusable or recyclable by 2030**
- **Circular Plastics Alliance: 10 Mta plastics recycled to products by 2025** and in 2030 all plastics are recyclable and > 50% is recycled.
- **EU Green Deal:** reductions in EU greenhouse gas emissions
- **New EU Circular Economy Action Plan**; accelerating the transformational change required by the European Green Deal

CHEMICAL RECYCLING – A KEY SOLUTION TO REACH SUSTAINABILITY TARGETS

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Increase Recyclability

- Reducing pollution
- More recycling and less landfill and incineration
- Prioritizing highest waste management option

Increase Recycled Content

- Developing recycling infrastructure
- Increasing recycled content in food contact materials

Reach EU Targets of Recycling

- All plastics packaging reusable or recyclable
- >50% of plastic waste recycled

CHEMICAL RECYCLING COMPLEMENTS MECHANICAL RECYCLING

CHEMICAL RECYCLING EUROPE

Chemical recycling is a solution for:

- Increasing EU recycling rates
- Upcycling of waste streams and/or create new products from waste, otherwise following linear solutions (WtE, landfill)
- Solving the quality issues by removing contaminants, odor,…
- Achieving virgin-quality recycled plastic (food grade)
- Reducing crude/NG dependency

Forecast*:

Chemical recycling could recycle 17% of plastic waste by 2030 globally.

* McKinsey & Company

CHEMICAL RECYCLING – DIFFERENT TECHNOLOGIES

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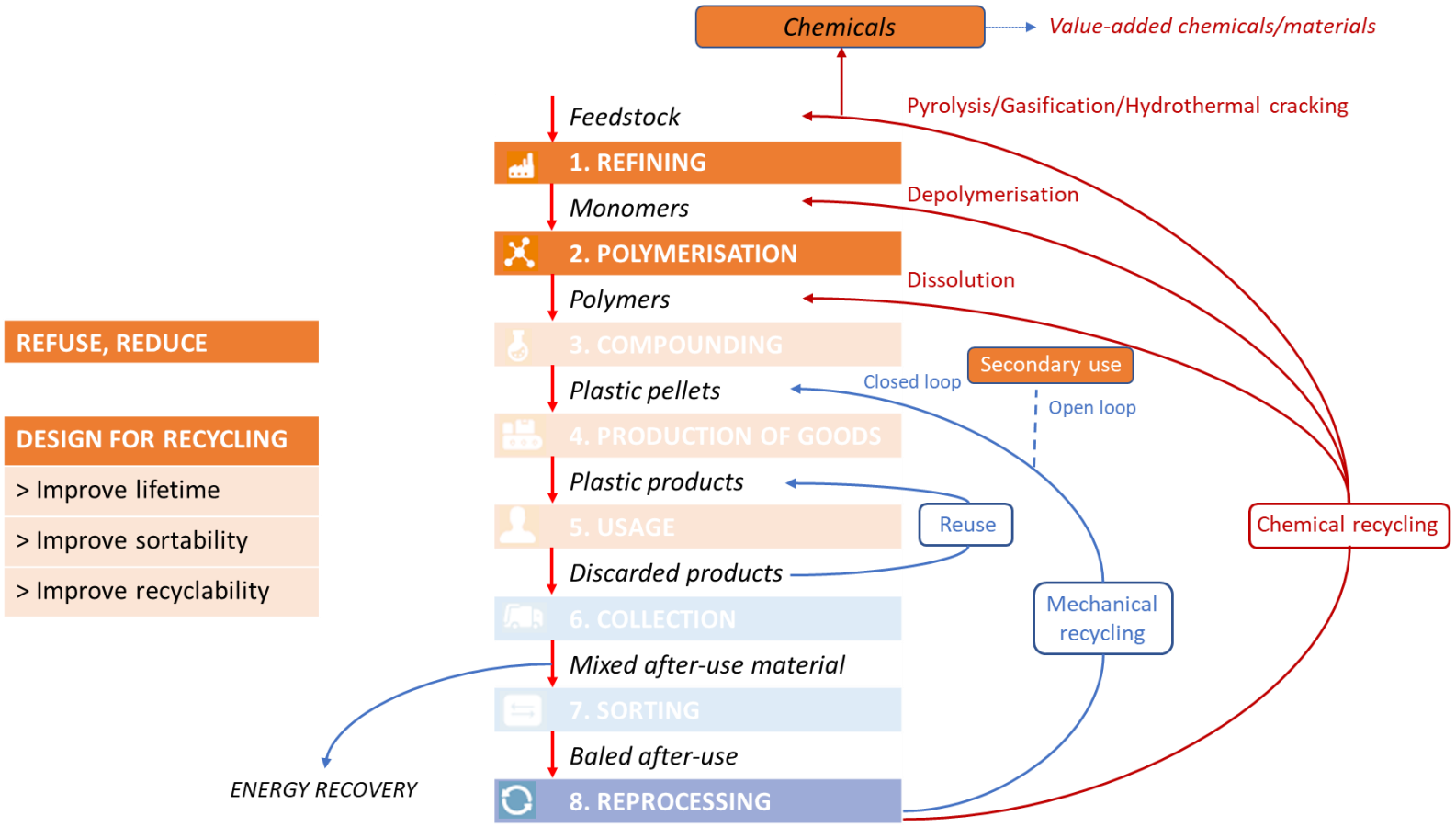
Different technologies = different feedstock and output



Potential Feedstocks:

- Depolymerisation: PET (including fibers), PA, PU and PLA
- Pyrolysis/Hydrothermal cracking: mixed polymers (focus on PE, PP, PS)

Outputs

- Monomers or final polymers
- Final chemical products
- Intermediates/feedstocks for chemical industry

POLICY NEEDS TO CATCH UP FASTER TO UNLOCK THE POTENTIAL OF CHEMICAL RECYCLING

CHEMICAL RECYCLING EUROPE

- **Fully recognizing chemical recycling as a recycling method,** though the development of new methodology for calculating recycling rates and creating a level-playing field for all recycling methods though inclusion in EPR schemes.
- **Further incentivizing recycling over linear alternatives** to broaden plastic collection (and harmonization), facilitate access to plastic feedstock, develop recycling infrastructure, reduce exports.
- **Clarifying, align and harmonized legislations on end-of-waste status and recycled content** to create a market for food-grade recycled content
- **Applying existing technical traceability tools to this new industry** and collaborate for clarity and harmonization (ie: mass-balance)

CHEMRECEUROPE – WORKING GROUPS (2019-2020)

CHEMICAL RECYCLING EUROPE

Technical and Scientific

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

EU Policy

- Raise the current limitations in legislations on chemical recycling
- Establish the legal framework for chemical recycling by working with EU institutions & Associations (ie: definition, end-of-waste status, mass-balance, food-contact regulations…)
- Collaborate through the Circular Plastics Alliance and the Coalition on Chemical Recycling

Communication

- State-of-the-art of chemical recycling in Europe
- Position papers and responses to opinion pieces (2 position papers, 4 responses)
- Provide information and clarify potential and benefits of chemical recycling to the public
- Organize event

CHEMICAL RECYCLING EUROPE – EVENTS

CHEMICAL RECYCLING EUROPE

JUNE 2019: The first European Chemical Recycling Conference in Brussels

JUNE 2020: Second conference postponed to H1 2021

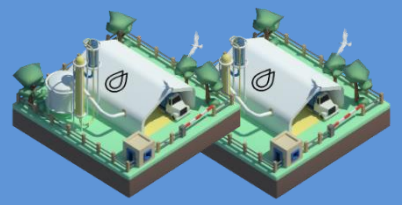
- Webinars will be organized in H2 2020
- 1st webinar on 24 September 2020 on “How depolymerisation technologies contribute to the creation of a circular economy for plastics”


PLASTIC®
ENERGY
Recycling Plastic No-One Else Can
PLASTIC ENERGY
PLASTIC ENERGY

PLASTIC ENERGY – WHO WE ARE

INDUSTRY LEADER IN CHEMICAL RECYCLING
Convert end-of-life plastic waste into hydrocarbon oils.

PATENTED TECHNOLOGY
We have been developing for the past 10 years the Thermal Anaerobic Conversion



INDUSTRIAL PLANTS & OPERATIONAL EXPERIENCE
2 industrial and commercial plants operating for the past 3 years

PLASTIC2PLASTIC PROCESS
Only company to have validated and certified the Plastic2Plastic process for a circular economy of plastics

PARTNERSHIPS
Long-term partnerships with major industry players

CLICK THE PLAY BUTTON ABOVE TO FIND OUT MORE ABOUT SPAIN'S POTENTIAL IN PLASTICS RECYCLING

PROVEN RECORDS IN THE VALIDATION OF THE CIRCULAR ECONOMY – PLASTIC2PLASTIC

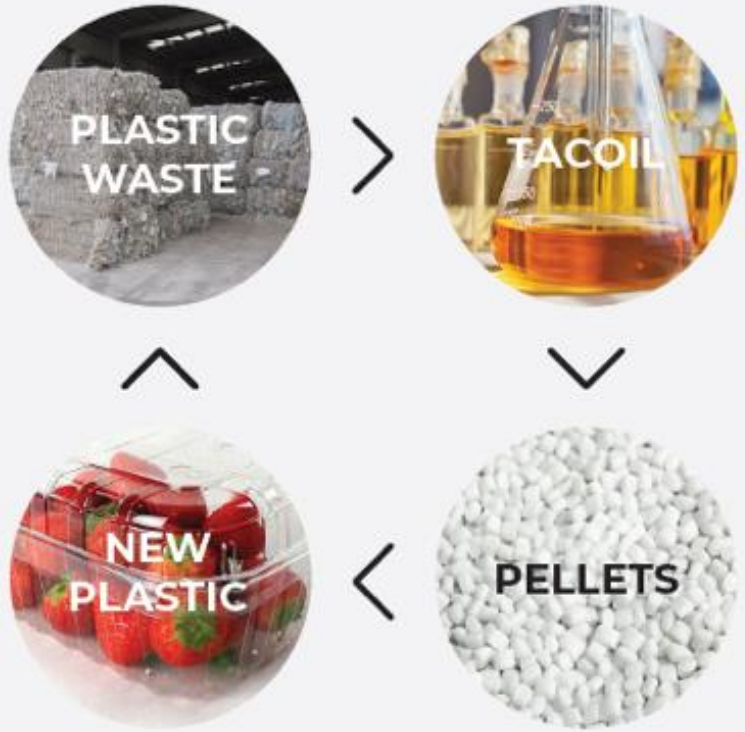
CERTIFIED CIRCULAR POLYMERS :

1ST company worldwide having validated & certified the circular economy of end-of-life plastics.

- Announced in Davos 2019
- Renewi, PLASTIC ENERGY, SABIC, Unilever / Vinventions / Walki Group / Tupperware
- Certified circularity and traceability by the ISCC+
- Recycled content following mass-balance approach

PROPERTIES:

- Alternative 'naphtha like' feedstock made from end-of-life plastic waste, replacing traditional fossil fuel in the manufacturing process
- Food-grade plastic packaging



DEMONSTRATION OF CLOSING THE LOOP - COMMERCIALIZATION OF FOOD-GRADE PACKAGING WITH RECYCLED CONTENT FROM TACOIL

Food-grade Magnum and Knorr packaging from recycled content from Plastic Energy's chemical recycling plant, commercialized on the European market

Traceability validated provided through plastic certification

Certified Sustainability ISCC ISCC PLUS

Sealed Air

Plastic Energy to convert plastic waste from Sealed Air into new feedstock for Sealed Air to make recycled plastic packaging again.

Will include R&D of eco-design and recyclability of packaging to further develop the circular economy

Value chain collaboration with Sealed Air, petrochemical company SABIC, UK-based Tesco supermarkets, and Bradburys Cheese.

PLASTIC ENERGY

We invite you to watch the video of our company: https://www.youtube.com/watch?v=j5hIoBo-uuI&t=3s

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