

NX Re™ Suite

Our solution for
plastic waste
chemical recycling

About NEXTCHEM

NEXTCHEM is MAIRE's company dedicated to Sustainable Technology Solutions. Leveraging our deep expertise in nitrogen, hydrogen, carbon capture, fuels, chemicals, and polymers, we deliver innovative solutions and processes that support and enable the energy transition.

Building on the rich legacy of our group for over 70 years, we are dedicated to developing and offering technology solutions, processes, basic engineering designs, as well as proprietary equipment and catalysts, to drive global decarbonization efforts forward.

Chemical recycling: key enabler for plastics circularity

Plastic is a key material for nowadays society. It is light, resistant and relatively cheap.

These characteristics favoured plastics penetration at every level of our society for a total annual production of more than 400Mt/y. Therefore it is paramount to enable plastics circularity under the creation of new levers for recycling. While mechanical recycling is a robust approach and will continue to play a key role – it has clear limitation in performance and in feedstock flexibility.

To overcome such constraints chemical recycling is expected to play a pivotal role by breaking down plastic in its key components (monomers) for further polymerization into '*virgin-like plastic*'.

Depolymerization: Our solution for chemical recycling

NX Re™ Suite is an innovative platform technology targeting well defined plastics typology such as PMMA (Polymethylmethacrylate – commonly known as Plexiglas), PS (Polystyrene), and PO (polyolefins).

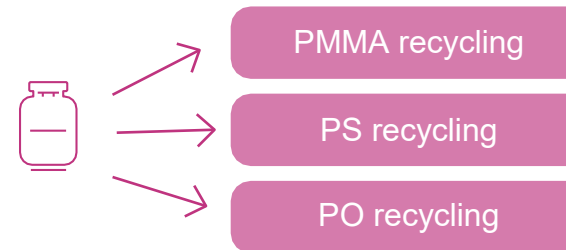
NX Re™ Suite is based on a depolymerization reaction of plastic waste in a reactor operated with a continuous flow of molten metal. The technology produces a high-purity monomer for polymerization into virgin-like recycled plastic.

NEXTCHEM is launching its reference plant on NX Re™ PMMA by 2026 and it will offer license, process design package (PDP), proprietary equipment (PEQ), training, digital & post-sales (O&M) services.

NX Re™ Suite

Chemical Recycling:
enhancing plastics circularity
to a new standard

Applications



Your benefits

- 1 CAPEX and OPEX efficiency
- 2 High conversion efficiency and purity of recovered monomers
- 3 Modular and compact technology design starting from ca. 5kt/y of capacity (single line)
- 4 Technology suitable for treating different plastic waste matrices
- 5 GHG emission reduction compared to virgin monomer production

Technical overview

