

NEXTCHEM COMPLETES ITALY'S FIRST DEMONSTRATION PLANT FOR CHEMICAL RECYCLING OF PET AND POLYESTER FROM TEXTILES

- **NextChem, Maire Tecnimont's energy transition technology company, has completed the construction of the plant as part of the EU Horizon DEMETO project**
- **The plant, based on DEMETO depolymerization technology, co-licensed by NextChem, is located in Chieti, in the Abruzzo Technology Park**

Milan, 6 April 2022 – **NextChem** has completed the construction of the first demonstration plant in Italy for the chemical recycling of PET and polyester from textiles, as part of the European Union's **DEMETO project**¹. The plant is located in Chieti, in the Abruzzo Technology Park.

The depolymerization technology adopted, based on the reaction of alkaline hydrolysis² with the use of microwaves, allows the plant to chemically recycle PET and polyester textile fiber waste and obtain pure monomers to produce new polymers.

The DEMETO project has been co-funded by the European Union under the Horizon 2020 program with NextChem as coordinator of a consortium of 14 partners, covering the entire value chain (NextChem, 3V Tech, SPINDOX UK, Technical University of Denmark, The European Outdoor Group, EuPC, The Fricke and Mallah GmbH, gr3n, H&M Group, NEOGROUP, RECUPRENDA, PETCIA, SUPSI, Synesis).

NextChem is the developer and co-licensor of the depolymerization technology, owned by the Swiss start-up gr3n, as well as designer and constructor of the plant. Various types of materials, including polyester-based textile fibers, will be tested in the plant, which is capable of recycling almost 100% of the incoming material, amounting to one million kg/year.

The project has been supported by an Industrial Advisory Board, which includes companies such as Unilever, Coca-Cola, Oviessa, Danone, Henkel and several others.



¹ DEMETO: Modular, scalable and high-performance DE-polymerization by MicrowavE TechnolOgy. is funded in the Horizon program, the scientific research and innovation funding instrument of the European Commission, under grant agreement no. 768573.

² Splitting process of a compound into its components

This innovative technology could contribute to the solution of some still-unresolved problems in textile waste recycling, such as mixed fibers. In Italy alone, tracked textile waste amounted to 157.7 Kt in 2019, of which 47% consisted of single and mixed synthetic fibers³. In Italy 5.7% of unsorted waste is composed of textiles⁴ with a total estimated at 663 Kta⁵. In Europe, each inhabitant uses 26 kg of textile material each year and disposes of 11 kg⁶, with a total production of textile waste estimated at about 5 Mt/y.

*"We are very proud to have built this plant, the first of its kind in Italy and among the first in Europe, particularly at a time when national systems for the collection and recycling of textile waste are beginning to be created, in Italy and in other European countries, in order to comply with legislation", commented **Maire Tecnimont Group and NextChem CEO Pierroberto Folgiero**. "We are convinced that this technology can contribute to improve a circular economy model on an industrial scale".*

See a time lapse video of the plant being built: [LINK](#)

For more information on the DEMETO project <https://www.demeto.eu>

Maire Tecnimont S.p.A.

Maire Tecnimont S.p.A., a company listed on the Milan Stock Exchange, heads an international industrial group that is a leader in the transformation of natural resources (plant engineering in downstream oil & gas, with technological and execution expertise). Through its subsidiary NextChem, it operates in the field of green chemistry and the technologies to support the energy transition. Maire Tecnimont Group operates in about 45 countries, through approximately 50 operative companies and about 9,100 people. For more information: www.mairetecnimont.com.

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³ REF Research Laboratory Report no.193 of November 2021 entitled *Textile waste: strategy and economic instruments are needed*

⁴ ISPRA, Istituto Superiore per la Protezione e la Ricerca Ambientale (Italian Institute for Environmental Protection and Research)

⁵ National Waste Management Program, March 2022, MiTE (Italian Minister for the Ecological Transition)

⁶ Report European Parliament: *The impact of textile production and waste on the environment, December 2020, Updated March 2021*