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Versalis: Hoop® demo plant for chemical recycling of plastics to start at Mantua

San Donato Milanese (Milan), 19 June 2025 – Versalis, Eni's chemical company, unveiled today, at its Mantua site, a demonstration plant based on Hoop®, the company's new proprietary technology for the chemical recycling of mixed plastic waste.

This technology, which complements mechanical recycling, makes it possible to convert mixed plastic waste into feedstock that can be used to produce new plastic materials suitable for all applications, including food contact packaging and pharmaceutical packaging.

Hoop® was developed through a joint project with the Italian engineering firm S.R.S. (Servizi di Ricerche e Sviluppo), leading to an innovative technology that achieves high material recovery yields and offers excellent flexibility in terms of input materials.

This is made possible by combining a high thermal performance pyrolysis reactor with Versalis's expertise in polymer property analysis and production process optimisation through Artificial Intelligence systems.

Construction of the Hoop® demonstration plant, which occupies an area of approximately 5,000 square metres within the Mantua site, began at the end of October 2023. During the construction phase, more than 25 specialised contractors were involved, with an average daily workforce of around 70 people. In recent weeks, the first production tests were successfully completed.

The plant is capable of processing 6,000 tonnes of secondary raw material per year and will serve to validate the technology application on an industrial scale. Under the Memorandum of Understanding on the Eni-Versalis Chemical Transformation Plan signed last March with the Ministry of Enterprises and Made in Italy (MIMIT) a 40,000-tonne facility is planned for construction at the Priolo site in Sicily. The feasibility study has already been completed and the design phase is currently under way in preparation for the start of the permitting process.

"Today we are giving further substance and value to circularity, one of the pillars of Versalis's transformation plan", said Adriano Alfani, CEO of Versalis. "The Hoop® plant we are opening today is a symbol of the path we are following – harnessing innovation to reshape our business through new industrial initiatives based on circularity, biochemistry and specialisation, in pursuit of increased sustainability. We are committed to addressing all three of sustainability core dimensions: environmental, social and economic."

SC-HOOP, Versalis' project name for the realization of the demo plant based on Hoop® technology at Mantua, is the only Italian large scale project to be awarded funding in the 2023 EU Innovation Fund* call, out of 239 proposals submitted and 41 selected overall. The Fund established by the European Commission, supports innovative low-carbon technologies. The patent has also been selected by the Ministry of Enterprises and Made in Italy to be showcased among Italy's successful innovations, both in the themed exhibition 'L'Italia dei Brevetti' [*Italy of patents*] (held in Rome from November 2024 to March 2025) and in the Italian Pavilion at Expo 2025 in Osaka, Japan.

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