

## PRESS RELEASE



# Carbios successfully concludes CE-PET<sup>1</sup> project supported by the French State and operated by ADEME, which demonstrated the application of its PET biorecycling technology to textiles

- The Carbios technology proven with waste bottles and trays has been transposed to textile waste at pilot scale, a major advance for this sector which represents 60% of the world's PET production
- A world premiere with the very first textile fibers produced in 100% recycled PET (r-PET<sup>2</sup>) via the biological process developed by Carbios

**Clermont-Ferrand, France, 2 February 2023 (6.00pm CET).** Carbios (Euronext Growth Paris: ALCRB), a pioneer in the development and industrialization of biological technologies for reinventing the life cycle of plastics and textiles, has validated the final key stage of the CE-PET research project supported by the French State as part of the Investments for the Future Programme, now integrated into France 2030, and operated by ADEME, and for which Carbios was coordinator alongside its academic partner INRAE<sup>3</sup> via the TWB<sup>4</sup> and TBI<sup>5</sup> joint research units. The CE-PET project, which lasted four years, confirmed **the enzymatic PET recycling process at pilot stage in order to scale up to the industrial demonstrator** - which has been operational since September 2021 – capable of processing plastic PET waste. The initial feasibility of the process, both environmentally and economically, has allowed to move further forward towards its industrialization.

**The other major success of the CE-PET project was validating the technology on textile waste at pilot scale**, a considerable feat, as textiles represent about 60% of the global PET market. To date, PET bottles represent the main raw material used to manufacture recycled polyester fiber. Being able to use Carbios' technology on textile waste increases its application possibilities, especially in view of new European regulations on the separate collection of textile waste which will become mandatory from 1 January 2025. The inclusion of textile PET waste in the demonstrator will be carried out in 2023, notably within the framework of the "LIFE Cycle of PET" project co-funded by the European Commission.

*"We are extremely pleased with the results of the CE-PET project. We have demonstrated our ability to enzymatically recycle complex waste to produce new bottles and fibers and have proven the robustness of our*

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<sup>1</sup> CE-PET = acronym used for the project « Circular Economy PET ». This project was supported by the French State as part of the Investments for the Future Programme (PIA n°1882C0098), now integrated into France 2030, and operated by ADEME (The French Agency for Ecological Transition)

<sup>2</sup> r-PET = recycled PET

<sup>3</sup> French National Research Institute for Agriculture, Food and Environment

<sup>4</sup> Toulouse White Biotechnology, INRAE-INSA-CNRS joint research unit

<sup>5</sup> Toulouse Biotechnology Institute, Bio&Chemical Engineering, INSA-INRAE-CNRS joint research unit

process," said **Emmanuel Ladent, CEO of Carbios**. "The success of this project is a springboard for a sustainable future and an introduction of plastics and textiles into a true circular economy. Carbios' teams are very proud and grateful for the French State's support throughout its development, from the research phase to industrial deployment."

"The joint achievements of the INRAE team associating TBI and TWB, and Carbios on the CE-PET project are a resounding success and a great showcase for the development of enzymatic recycling processes. These achievements are part of a long-standing collaboration," continues **Isabelle André, Research Director at CNRS**. "All the research teams are proud to contribute to leading scientific advances for the sustainable and ecological management of the life cycle of plastics and synthetic textiles, and to highlight biocatalysis."

The last key step of the CE-PET project was approved without reservation by ADEME.

### **Main technical achievements of the CE-PET project:**

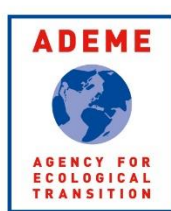
- The development and optimization of an efficient enzyme for the depolymerization of plastic and textile PET waste
- The replicability of the process performances at pilot scale, and the definition of the different operational units for the transposition of the process at industrial demonstrator scale
- The characterization and specifications of PET feedstocks that can be treated by the process
- The production of bottles made of 100% r-PET from plastic and textile PET waste, suitable for food contact applications
- The production of a white fiber made of 100% r-PET from plastic and textile waste, even colored

For the validation of the whole project, Carbios will have received a total amount of €4,136,000 (€1,034,000 in grants and €3,102,000 in repayable advances) and its partner INRAE-TWB €3,416,000.

This project was supported by the French State as part of the Investments for the Future Programme, now integrated into France 2030, and operated by ADEME.

### Funded by

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### **About Carbios**

Established in 2011 by [Truffle Capital](#), [Carbios](#) is a green biotech company, developing biological and innovative processes. Through its unique approach of combining enzymes and plastics, Carbios aims to address new consumer expectations and the challenges of a broad ecological transition by taking up a major challenge of our time: plastic and textile pollution. Carbios deconstructs any type of PET (the dominant polymer in bottles, trays, textiles made of polyester) into its basic components which can then be reused to produce new PET plastics with equivalent quality to virgin ones. This PET innovation, the first of its kind in the world, was recently recognized in a scientific paper published in front cover of the prestigious journal Nature. Carbios successfully started up its demonstration plant in Clermont-Ferrand in 2021. It has now taken another key step towards the industrialization of its process with the construction of a first-of-a-kind unit in partnership with Indorama Ventures.

In 2017, Carbios and L'Oréal co-founded a consortium to contribute to the industrialization of its proprietary recycling technology. Committed to developing innovative solutions for sustainable development, Nestlé Waters, PepsiCo and Suntory Beverage & Food Europe joined this

consortium in April 2019. In 2022, Carbios signed an agreement with On, Patagonia, PUMA, and Salomon, to develop solutions promoting the recyclability and circularity of their products.

The Company has also developed an enzymatic biodegradation technology for PLA-based (a bio sourced polymer) single-use plastics. This technology can create a new generation of plastics that are 100% compostable at ambient temperatures, even in domestic conditions, integrating enzymes at the heart of the plastic product.

For more information, please visit [carbios.com](https://www.carbios.com) / Twitter: [Carbios](https://twitter.com/Carbios) / LinkedIn: [Carbios](https://www.linkedin.com/company/carbios) / Instagram: [insidecarbios](https://www.instagram.com/insidecarbios)



Carbios (ISIN FR0011648716/ALCRB) is eligible for the PEA-PME, a government program allowing French residents investing in SMEs to benefit from income tax rebates.

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