

Landbell Group and CARBIOS join forces to increase circularity of PET waste at first biorecycling plant

- Landbell Group and CARBIOS sign agreement to develop and implement solutions for the sorting, preparation and enzymatic recycling of post-consumer PET waste
- Landbell Group and CARBIOS combine expertise and innovation to significantly increase PET recycling from packaging and textile waste
- This partnership contributes 15kt/year of PET flakes to CARBIOS' sourcing roadmap for its first commercial plant, 70% of which has been sourced
- This collaboration demonstrates Landbell Group's commitment towards building closed-loop solutions for plastic waste through innovative recycling technologies

Mainz, 29 February 2024 Landbell Group, a global operator of more than 40 producer responsibility organizations (PROs) and a leading provider of closed-loop recycling solutions, and CARBIOS (Euronext Growth Paris: ALCRB), a pioneer in the development and industrialization of biological technologies to reinvent the life cycle of plastic and textiles, announce the signing of a non-binding Memorandum of Understanding for the sourcing, preparation and recycling of post-consumer PET waste using CARBIOS' biorecycling technology at its first commercial plant in Longlaville from 2026.

The partnership will leverage Landbell Group's expertise and network in the sourcing of PET packaging and textile waste which will be prepared for biorecycling. Thanks to CARBIOS' highly selective enzyme, less sorting and washing is required compared to current recycling technologies, offering future savings in energy and water use. From 2026, Landbell Group will supply CARBIOS with 15 kt/year of PET flakes, ensuring a steady supply chain for sustainable PET production. These flakes will serve as essential feedstock for CARBIOS' production of food-grade PTA and MEG, further re-polymerized into PET.

Through the partnership with Landbell Group in Germany, the supply of multilayer trays through the CITEO tender in France and the MoU with Indorama Ventures, CARBIOS will have sourced over 70% of its feedstock required for the 50kt/year capacity when its first commercial plant in Longlaville, France, will operate at full capacity. Close to the borders with Belgium, Germany and Luxembourg, the plant's location is strategic for nearby waste supplies.

Through this partnership with CARBIOS, Landbell Group will ensure that the problematic PET fractions such as multilayered, colored and opaque trays from packaging waste and polyester textile waste are redirected towards recycling. In this way, Landbell Group strengthens its commitment to the development of innovative recycling solutions to enable a circular economy.

Emmanuel Ladent, CEO of CARBIOS: *“Through our new partnership with Landbell Group, CARBIOS secures a significant feedstock supply for our first commercial plant, and we are pleased to make biorecycled PET available to Landbell’s extensive client portfolio, powering a circular economy for plastic. CARBIOS’ innovative biorecycling technology enables the conversion of diverse wastes into valuable products, enhancing flexibility and competitiveness. By minimizing bottle usage and diversifying raw material sources, we’re advancing sustainability while meeting market demands effectively. Together, we’re forging a future where waste becomes a valuable resource.”*

Uwe Ehteler, COO of Landbell Group: *“PET trays are extensively used in food packaging due to their excellent barrier properties, transparency and strength. However, PET trays, especially with a multi-layered structure, currently pose a challenge for mechanical recycling. The innovative depolymerization process developed by CARBIOS facilitates the recycling of PET waste into high-quality recycled PET. Landbell Group and CARBIOS together will enable closed-loop recycling of problematic PET waste to allow its customers – packaging manufacturers and brands – to use recycled content in food packaging and meet their sustainability targets.”*



Figure 1 : (left) Uwe Ehteler, COO of Landbell Group, (right) Emmanuel Ladent, CEO of CARBIOS

The environmental benefits of CARBIOS' biorecycling technology

Recent life-cycle analyses¹ show a 57% reduction in CO₂ emissions compared with the production of virgin plastic², and for every ton of recycled PET produced, 1.3 tons of oil are avoided. Compared with conventional recycling, enzymatic recycling is 5 times more circular (calculated according to the Ellen MacArthur Foundation's Material Circularity Indicator³). Thanks to its highly selective enzyme, optimized for efficient PET degradation, CARBIOS' depolymerization process can process all types of PET waste, including colored, multilayer or textile waste that cannot be recycled using current technologies. Furthermore, the two monomers produced (PTA and MEG) make it possible to recreate recycled PET products of identical quality to petro-sourced ones, and suitable for food contact.

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About Landbell Group:

Landbell Group is a leading provider of environmental and chemical compliance solutions with local expertise and global presence. Established as a producer responsibility organisation (PRO) for packaging in Germany in 1995, the Group has since evolved into a platform for extended producer responsibility (EPR) worldwide.

Landbell Group's comprehensive core services – compliance, consulting and software – help companies to meet their global EPR obligations. The Group's PROs have collected more than 10 million tonnes of waste batteries, electronics and packaging, and are now starting to collect textiles. Its consulting companies provide global consultancy for EPR, chemical compliance and takeback, and its software business develops digital tools for environmental and chemical compliance.

In 2014, Landbell Group also launched the Green Alley Award, which is presented every year to innovative startups in the environmental sector.

The circular economy is crucial for reducing greenhouse gas emissions – and EPR is one of the key elements for building a circular economy. Landbell Group is delivering EPR services worldwide to create a more sustainable future.

For more information, please visit: www.landbell-group.com

¹ Database ecoinvent 3.8

² French scenario, taking into account the detour of 50% of PET waste from conventional end-of-life. Virgin PET: 2.53 kg CO₂/kg (cradle to gate)

³ The Material Circularity Indicator (MCI) is a methodology developed by the Ellen MacArthur Foundation to measure how restorative the material flows are. The MCI gives a value between 0 and 1 where higher values indicate a higher circularity. The MCI value for CARBIOS' enzymatic recycling is 0.8.

About CARBIOS:

CARBIOS is a biotech company developing and industrializing biological solutions to reinvent the life cycle of plastic and textiles. Inspired by nature, CARBIOS develops enzyme-based processes to break down plastic with a mission to avoid plastic and textile pollution, and accelerate the transition to a circular economy. Its two disruptive technologies for the biorecycling of PET and the biodegradation of PLA are reaching industrial and commercial scale. Its biorecycling demonstration plant has been operational since 2021 and a first industrial plant, in partnership with Indorama Ventures, is due to be commissioned in 2025. CARBIOS, founded in 2011 by Truffle Capital, has received scientific recognition, notably with the cover of Nature, and is supported by prestigious brands in the cosmetics, Food & Beverage and apparel industries to enhance their products' recyclability and circularity. Nestlé Waters, PepsiCo and Suntory Beverage & Food Europe are members of a packaging consortium founded by CARBIOS and L'Oréal. On, Patagonia, PUMA, PVH Corp. and Salomon collaborate with CARBIOS in a textile consortium. Visit www.carbios.com/en to find out more about biotechnology powering plastic and textile circularity.

For latest news and media assets, visit our newsroom: www.carbios.com/newsroom/en/
LinkedIn: [CARBIOS](#) / Instagram: [insidecarbios](#)

**Information on CARBIOS shares:**

ISIN Code: FR0011648716
Ticker Code: Euronext Growth: ALCRB
LEI: 969500M2RCIWO4NO5F08

CARBIOS is eligible for the PEA-PME, a government program allowing French residents investing in SMEs to benefit from income tax rebates.

This press release and the information contained herein do not constitute an offer to sell or a solicitation of an offer to buy or subscribe to shares in CARBIOS in any country.

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