



## **CARBIOS and Zhink Group enter official discussions for long-term partnership to build PET biorecycling industrial capacities in China in view of first licensing agreement for 50k tons per year**

- This partnership would allow Zhink Group to meet its leadership ambitions through increased recycled PET capacities and sustainable competitiveness by offering recycled PET from enzymatic recycling
- This agreement confirms strong traction for CARBIOS biorecycling technology in China, the world's leading PET producer
- Based in China, the future plant will depolymerize minimum 50k tons of PET waste per year, with potential to expand capacities, to serve regional and global packaging and textile markets

**Clermont-Ferrand (France) and Hangzhou (China), Thursday 27 June (6.45am CEST).** CARBIOS, (Euronext Growth Paris : ALCRB), a pioneer in the development and industrialization of biological technologies to reinvent the life cycle of plastic and textiles, and Zhink Group, one of China's Top 500 Private Enterprises, specializing in two global industries, PET and textiles, announce today the signing of a joint Letter of Intent to build a biorecycling plant in China using CARBIOS' revolutionary enzymatic depolymerization technology to serve the global market. This agreement officializes collaboration towards a long-term partnership in view of a first licensing contract to build a plant with a minimum annual processing capacity of 50k tons of prepared PET waste and would contribute to accelerating a circular economy for plastic and textiles. China, as the leading producer of PET in the world, is a key market for CARBIOS, and this agreement would establish a presence in this dominant market.



*Figure 1 : Emmanuel Ladent, CEO, CARBIOS (fifth from right) and Zhu GuoYang, President of Zhink Group (fourth from right) surrounded by their teams at Zhink Group's Headquarters in Hangzhou.*

## China: the world's largest PET producer

With 67 million tons of PET produced annually, representing 61% of global production<sup>1</sup>, China is the world's largest PET producer. With regional and global demand for recycled PET growing, China also has the potential to take the lead in recycled PET (r-PET) production. In 2021, 58% of the world's r-PET was consumed in Asia (with 38% in China<sup>2</sup>) underscoring this region's importance both as a major producer and consumer.

Furthermore, China is a key transformer of PET into resins and fibers used in numerous applications in the packaging and textile industries. Most notably, China is the primary country for transforming PET into fiber, representing 78% of all PET fiber transformation in the world<sup>3</sup>.

Sustainability and the “dual carbon” policies are considered as main drivers for the Chinese PET recycling industry. [Click here to refer to the Government Guidelines to establish a waste recycling system.](#)<sup>4</sup>

## Strategic partnership for Zhink and CARBIOS

For Zhink, the strategic focus is on the development of two global industries, PET and textiles, and to be a leader with sustainable competitiveness. Zhink is a major actor within the PET market with an annual production of 3 million tons of PET, serving domestic and global markets. CARBIOS has developed a revolutionary enzymatic depolymerization technology that enables efficient and solvent-free recycling of PET plastic and textile waste into virgin-like products. The initial agreement between the two groups would allow Zhink to increase its recycled PET capacities and meet its sustainable competitiveness objectives by offering r-PET from enzymatic recycling: a circular recycling solution that can process all types of PET waste including hard-to-recycle waste (such as opaque and colored bottles, multilayer food trays and textile waste) while reducing CO<sub>2</sub> emissions by 57%<sup>5</sup> compared with virgin PET production. For CARBIOS, this agreement marks a significant step in the deployment of its technology worldwide and roll-out of its licensing model to achieve its ambition to become a leading technology provider in the recycling of PET by 2035. This Asia-based plant under license by Zhink would come in addition to the world's first industrial-scale enzymatic PET recycling plant which is currently under construction in Longlaville, France.

## A milestone for CARBIOS' China market entry

The opening of official discussions with Zhink for a licensing agreement marks an important milestone in CARBIOS' market entry into China. Since its inception, CARBIOS has proactively protected its innovations in all key regions of interest. With China considered as a major market, all of CARBIOS' families of patents<sup>6</sup> own one or more titles in this country. For its PET biorecycling technology, CARBIOS currently has 28 titles in force in

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<sup>1</sup> HIS Markit 2021, Market Research Future 2021

<sup>2</sup> HIS Markit 2021, Market Research Future 2021

<sup>3</sup> HIS Markit 2021, Market Research Future 2021

<sup>4</sup> [https://english.www.gov.cn/policies/latestreleases/202402/09/content\\_WS65c5ea15c6d0868f4e8e3e8a.html](https://english.www.gov.cn/policies/latestreleases/202402/09/content_WS65c5ea15c6d0868f4e8e3e8a.html)

<sup>5</sup> Database ecoinvent 3.8; French scenario, taking into account the detour of 50% of PET waste from conventional end-of-life. Virgin PET: 2.53 kg CO<sub>2</sub>/kg (cradle to gate)

<sup>6</sup> 1 innovation = 1 family of patents

China covering both the industrial process and the enzymes used (including variants that will be used in the industrial process).

**Emmanuel Ladent, CEO, CARBIOS:** *“There is great momentum in China to accelerate the circular economy and meet its target of carbon neutrality by 2060. The technology developed by CARBIOS makes perfect sense in this context: capable of recycling all types of PET waste, it promotes a circular economy with high-quality products and significantly reduces the carbon footprint of industries. As a leader in PET production, Zhink is considered as a key partner for introducing our technology into China and will stimulate our international deployment.”*

**Zhu Guoyang, President, Zhink Group:** *“For Zhink, the strategic focus is on the development of two global industries, PET and textiles, and to be a leader in the industry with sustainable competitiveness. We are actively promoting our subsidiaries to develop our PET recycling portfolio and are very interested in CARBIOS’ revolutionary biorecycling technology to reduce carbon emissions.”*

**Tina Sejersgård Fanø, Executive Vice President, Planetary Health Biosolutions, Novonesis:** *“With a 20-year presence in China and a solid R&D and manufacturing footprint in the region, Novonesis is keen to share its local know-how for the successful implementation of CARBIOS. Novonesis has a strong long-term partnership with CARBIOS, and an exclusive one for the production of its patented enzymes for PET biorecycling plants under license. We are ready to meet CARBIOS’ needs for future licensing projects in the region and beyond.”*

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**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 currently under construction. 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](http://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/](http://www.carbios.com/newsroom/en/)

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**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.

**About Zhejiang ZHINK Group.**

Founded in 1997, Zhejiang ZHINK Group is a modern group focusing on the development of PET and textiles. The group locates its headquarter in the Noble Center of Qianjiang Century City, Hangzhou, Zhejiang Province and its subordinate industrial bases lie in Xiaoshan, Haining (Zhejiang Province), Fuling (Chongqing City), Zaozhuang (Shandong Province), Xuzhou (Jiangsu Province), Jinhua (Zhejiang Province) and Dazhou (Sichuan Province). The Group now owns one listed company, two national high-tech enterprises, one academician workstation, one post-doctoral workstation, one national textile product development base and three provincial-level technology centers, and the businesses cover hundreds of countries and regions around the world.

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