



- PRESS RELEASE -

2021 strategic update & 2020 annual results

- **2021: Carbios announces a new major step in its development with the building of a first of a kind 100% PET recycling facility**
- **Carbios confirms its 2025 ambition of making available recycled PET coming from its enzymatic process**

Clermont-Ferrand, France, April 6th, 2021 (06:45 CEST) - Carbios (Euronext Growth Paris: ALCRB), the company pioneering new enzymatic solutions to reinvent the lifecycle of plastic and textile polymers, announces today plan to build a first of a kind 100% PET recycling production unit exploiting its technology (the “Unit”).

This Unit is expected to enable an annual production of 40.000 tonnes of recycled PET. It will also strengthen the Company’s business model which will remain the licensing of its technologies and know-how and the sale of enzymes to its licensees, who will build their own PET recycling production units.

The key steps for the building of the Unit are the following:

- **September 2021:** Start-up of Carbios PET demonstration facility in Clermont Ferrand, as expected, which will allow to generate process data for the design of the Unit;
- **2021 - 2022:** engineering studies and site selection for the Unit;
- **End 2022:** beginning of the construction of the Unit;
- **End 2024:** Start-up of the Unit; and
- **2025:** First revenues generated from the Unit.

Under this framework, **Carbios announces the signature on March 18th, 2021 of a non-exclusive and non-binding *Expression Of Intent* agreement with Equipolymers**, leading European PET producer, which could host the Unit on its production facilities located in Schkopau (Germany) (the “Agreement”). Equipolymers is a subsidiary of EQUATE Petrochemical Company.

The objective of this Agreement is to bring together Carbios' unique biorecycling technology and Equipolymers world class PET manufacturing and R&D know-how in the field of chemical recycling. It will allow Carbios' technology to rapidly transform the plastic market and fully capitalize on Carbios' unique leadership in this industry.

The Agreement foresees notably:

- An assistance in securing the sourcing of PET wastes for the Unit;
- A mutual access to data coming from Carbios's demonstration plant and the biorecycling technology and from Equipolymers facilities.

The estimated cost of the Unit amounts to around 100 million euros. Carbios has already started to explore various financing options.

"In the unprecedented time we have experienced, I am proud of the significant progress made in 2020. Thanks to the commitment of our employees and the many challenges they have faced, we have succeeded in accelerating the development of our pipeline of technologies and in consolidating our position as world leader in the field of enzymatic recycling and biodegradation of plastics and fibers. We also signed a new structuring agreement with Novozymes to develop the production of our enzymes dedicated to the recycling of PET. 2020, was also marked by a major international recognition with the publication of an article co-authored by Carbios scientists and our partner TBI¹ in the prestigious scientific journal Nature, and by the extension of our recycling technology to PET polyester fibers. In line with our objectives, we will pursue the implementation of our strategy for the industrialization of our breakthrough technologies. 2021 will therefore be a particularly structuring year for Carbios. In September, we will start operating the first industrial demonstration plant for the enzymatic recycling of PET a site made available by the Michelin Group in Clermont-Ferrand, France, which would support the objective to set up with our partner the construction of a PET first of a kind production facility by 2024. Supported by the growing appetite of industrial players for our technologies, we are confident in our ability to create long-term value for our shareholders and all the stakeholders involved in the development of our ground-breaking solutions based on circular economy," **comments Jean-Claude Lumaret, CEO of Carbios.**

¹ Toulouse Biotechnology Institute

2020 ANNUAL RESULTS

– Carbios announces as well its operating and financial results for the year 2020. The financial statements as of December 31st, 2020 were approved by the Company’s Board of Directors at their meeting on March 31st, 2021 and audited by the Statutory Auditors whose certification reports are being issued.

HIGHLIGHTS OF THE 2020 FINANCIAL YEAR AND POST-CLOSING EVENTS

R&D

- Publication of an article co-authored by Carbios and TBI₁ in the prestigious scientific journal Nature
- Creation of a collaborative enzyme engineering research center of international scale on plastic recycling and biosynthesis

Enzymatic recycling of PET-based plastics and fibers

- Joint-Development Agreement with the world leader in enzyme production Novozymes
- Launch of the construction of an industrial demonstration plant for the enzymatic recycling of PET-based plastics and fibers
- Extension of Carbios recycling process to PET-based polyester fibers

Carbiolice²

- Carbiolice: commercial launch of Evanesto[®] at the end of 2020 (enzymatic biodegradation of PLA based single-use plastics)
- Acquisition of Limagrain Ingredients entire stake in the capital of Carbiolice
- Evanesto[®] granted with the *Efficient Solution* label by the Solar Impulse Foundation

Intellectual Property

- 11 patents granted in 2020 including seven in the United States

Finance

- Successful capital increase of 27 million euros with French and international institutional investors (July 2020)
- Cash position of €29 million as of December 31, 2020

² It is recalled that CARBIOS holds a 62.71% stake in Carbiolice. The Company is however exempted from the preparation of consolidated accounts, in accordance with Article L 123-16 of the French Commercial Code

RESULTS AND COMMENTS ON THE COMPANY'S ACTIVITY FOR THE YEAR ENDED DECEMBER 31, 2020

2020 Income Statement

| (in thousand euros) | Dec. 31, 2019 (12 months) | Dec. 31, 2020 (12 months) |
|----------------------------------|------------------------------|------------------------------|
| Operating revenues | 1,450 | 1,643 |
| Operating expenses | 5,986 | 8,464 |
| Operating income | (4,535) | (6,821) |
| Financial Income | (29) | (93) |
| Current Income before tax | (4,564) | (6,914) |
| Extraordinary profit | 15 | (720) |
| Income tax (Tax research credit) | 800 | 1,488 |
| Net income (loss) | (3,749) | (6,146) |

For full-year 2020, the operating revenues stood at €1,643,000 versus €1,450,000 for the previous financial year. As the Company's business is still focused on the industrial development of its innovative processes, most of its operating income comes from subsidies and services.

During 2020, Carbios recorded €242,000 in grants from ADEME³ for the success of the second key stage of the CE-PET⁴ research project.

As part of the research service agreement signed on February 15, 2017 with Carbiolice and extended by an amendment until 2021, €526,000 has also been invoiced by the Company to its subsidiary in 2020.

Due to sustained development policy supporting operational activities and the ongoing improvement of the Company's PET plastic and polyester fibers recycling technology, operating expenses stood at €8.464 million for 2020, of which 61 % was dedicated to R&D (10% increase compared to 2019), as opposed to €5.986 million in 2019.

The difference in the consumption rate of resources allocated to R&D is mainly due to an increase in external R&D expenses and employment expenses (especially R&D) in line with the increase efforts conducted for the industrialisation of the Company's PET plastics and fibers enzymatic recycling technology.

As a result, the operating loss in 2020 settles at €6.821 million and the net loss at €6.146 million after considering the research tax credit of €1.488 million.

³ Funding granted by the French General Secretary for Investment (SGPI) under the Investment for the Future Program (PIA n° 1882C0098) operated by ADEME

⁴ Circular Economy PET (polyethylene terephthalate)

Balance Sheet

| Assets (in thousand euros) | 2019 | 2020 | Liabilities (in thousand euros) | 2019 | 2020 |
|--------------------------------|---------------|---------------|-------------------------------------|---------------|---------------|
| Intangible assets | 858 | 1,086 | Share Capital | 4,833 | 5,674 |
| Tangible assets | 2,415 | 4,793 | Additional paid-in-capital | 31,275 | 59,711 |
| Financial assets | 12,027 | 20,907 | Retained earnings | (10,366) | (14,115) |
| Fixed assets | 15,300 | 26,786 | Investment subsidies | 13 | 11 |
| Inventory | 21 | 39 | Current year profit (loss) | (3,749) | (6,146) |
| Receivables | 1,065 | 2,149 | Shareholder's equity | 22,005 | 45,135 |
| Cash and marketable securities | 15,915 | 29,097 | | | |
| Prepaid expenses | 75 | 139 | Conditional advances | 4,250 | 4,173 |
| Current assets | 17,076 | 31,425 | Loans | 3,818 | 5,647 |
| Deferred financial costs | 11 | 17 | Trade payables and related accounts | 1,387 | 1,952 |
| TOTAL ASSETS | 32,386 | 58,228 | Other liabilities | 750 | 1,146 |
| | | | Deferred revenues | 176 | 176 |
| | | | Payables | 6,131 | 8,921 |
| | | | | | |
| | | | TOTAL LIABILITIES | 32,386 | 58,228 |

With the launch of the construction of its industrial demonstration plant for the enzymatic recycling of PET plastic, tangible assets have risen in 2020, as scheduled.

Financial assets are also up sharply as a result of (i) the acquisition from Limagrain Ingredients entire 18.02% stake in the capital of Carbiolice⁵ and (ii) the subscription to a capital increase of this subsidiary for an amount of €2.8 million paid in October 2020, in accordance with the initial commitments.

As part of its policy to secure Intellectual property, the Company continued to enrich its portfolio and is now owning 38 patent families.

Carbios' equity totalled €45.135 million at year-end 2020 compared to €22.005 million at year-end 2019. This situation reflects the impact of the successful €27 million capital increase dated July 2020⁶.

Under the CE-PET research project, the Company received a funding during the first half of 2020 from ADEME consisting of a redeemable loan for an amount of €776,000 and a grant of €259,000.

Cash flow

| Cash flow (in thousand euros) | 2019 | 2020 |
|------------------------------------|---------------|---------------|
| Cash at start of year | 5,149 | 15,915 |
| Net cash generated by operations | (3,036) | (5,169) |
| Net cash from investments | (2,406) | (12,667) |
| Net cash from financing operations | 16,209 | 31,019 |
| Change in cash | 10,766 | 13,182 |
| Cash at year-end | 15,915 | 29,097 |

⁵ It is recalled that CARBIOS holds a 62.71% stake in Carbiolice. The Company is however exempted from the preparation of consolidated accounts, in accordance with Article L 123-16 of the French Commercial Code

⁶ Cf. [July 23rd, 2020 press release](#)

Benefiting from the second funding of ADEME and from €27 million raised during the exercise, Carbios closed out with a cash position of €29 million at year-end 2020, enabling it to pursue current developments beyond the next 12 months.

COMMENTS ON THE COMPANY'S ACTIVITY FOR THE YEAR ENDED DECEMBER 31, 2020

- **Major milestones reached in the enzymatic recycling of PET-based plastics and fibers**

New strategic agreement with Novozymes

In January 2020⁷, the Company announced the **signature of an exclusive joint-development agreement with Novozymes**, the world leader in enzyme production. This collaboration guarantees the production of Carbios' proprietary enzyme for PET degradation during the demonstration and industrial deployment phases. For the Company, this agreement represents a key stage in demonstrating the environmental benefit of its technology and guaranteeing to its current and future partners, a sustainable infinite recycling solution for PET-based products, such as drinks bottles, containers, plastic packaging, and textiles. It also reinforces the credibility of the business model envisaged by the Company for the large-scale roll-out of its proprietary PET plastic and fiber recycling technology.

Construction of an industrial demonstration plant for the enzymatic recycling of PET

In June 2020⁸, the Company announced the **launch of the construction of its industrial demonstration plant for the enzymatic recycling of PET plastic**. Carbios is supported and advised by Technip Energies⁹ for the engineering and construction of this demonstration plant. Operations to start in September 2021, will enable the complete engineering documents (from waste to monomers) to be drawn up for the construction and implementation of the Unit.

In September 2020¹⁰, Carbios announced the regrouping of its activities on a site belonging to Michelin Group in Clermont-Ferrand, France. The facilities made available to Carbios will accommodate all the Company's activities, currently spread over several locations. They will include the development laboratory, the pilot facility and demonstration plant of Carbios' enzymatic recycling technology for PET plastics and fibers for which the construction was initially planned in Saint-Fons (Rhône, France). **The industrial demonstration plant, now integrated on this new site of the Michelin Group, will be operational in September 2021.** This move will support Carbios' corporate and operational synergies to advance project development and ensure technological and economic optimization. The costs associated with the regrouping of the Company's activities will be accounted from 2021.

Creation of an international collaborative research center with INSA Toulouse

In January 2020¹¹, the Company announced a strategic alliance with INSA Toulouse through its TBI laboratory to set up an enzymatic engineering research center of international scale for the recycling and biosynthesis of plastics. This collaborative laboratory, called **PoPLaB** (Plastic Polymers and Biotechnologies) was inaugurated end of January.

Publication of an article in the prestigious scientific journal Nature

In April 2020¹², Carbios announced the **publication of an article in the prestigious scientific journal Nature** entitled *An engineered PET-depolymerase to break down and recycle plastic bottles*. This

⁷ Cf. [January 30th, 2020 press release](#)

⁸ Cf. [June 29th, 2020 press release](#)

⁹ Since the split of TechnipFMC in two distinct entities on February 16th, 2021, Carbios has been working with the company Technip Energies resulting from the same demerger.

¹⁰ Cf. [September 28th, 2020 press release](#)

¹¹ Cf. [January 17th, 2020 press release](#)

¹² Cf. [April 8th, 2020 press release](#)

article was co-authored by researchers at Carbios and Toulouse Biotechnology Institute (TBI) laboratory. The article describes the development of a novel enzyme which can biologically depolymerize all PET plastic waste followed by recycling into new bottles. After several years of research, Carbios and TBI have succeeded in improving the depolymerization performance of PET waste: the enzyme depolymerizes 90% of post-consumption PET in only 10 hours. By combining engineering and molecular design, the thermostability and activity of the PET-depolymerase have been improved to allow it to very effectively conduct the reaction of PET into terephthalic acid and monoethylene glycol, achieving a productivity of 16.7 g/L/h of terephthalic acid from a suspension of 200 g/kg of PET waste.

Extension of Carbios recycling process to PET-based polyester fibers

In November 2020¹³, Carbios announced it had successfully produced, from textile waste, the first bottles containing 100% recycled Purified Terephthalic Acid (rPTA) with the same properties as those made from virgin PET. This breakthrough enables for the first time polyester textile fibers to be “upcycled” in a high quality grade of PET suitable for the production of clear bottles and therefore opens up access to an additional waste stream of up to 42 million tons per year¹⁴.

- **CARBOLICE¹⁵ crossed a key step in its development with the market launch of Evanesto[®] an enzymated additive for biodegradation of plastic made from PLA¹⁶**

Acquisition of Limagrain Ingredients’ entire stake in the capital of Carbiolice

In October 2020¹⁷, Carbios announced the acquisition from Limagrain Ingredients of its entire stake in the capital of Carbiolice. This acquisition has been paid for a minority portion in cash and for a majority portion through the issuance of new ordinary shares by Carbios. This strategic transaction highlights the confidence in Carbiolice’s growth potential and Carbios’ intention to remain its long-term reference shareholder. This transaction will also support the commercialization of Evanesto[®] and the execution of the Company’s growth strategy.

Commercial launch of Evanesto[®]

In December 2020¹⁸, Carbiolice, a joint-venture owned at 62.71% by Carbios, has announced the commercial launch of Evanesto[®], the first natural enzyme-based additive to make PLA-based plastics compostable under domestic conditions, thus achieving zero waste for various single-use plastics or packaging. This technology accelerates their biodegradation and guarantees compostability in less than 200 days.

Distinction: Grant of the *Efficient Solution* label by the Solar Impulse Foundation

Post-closing, Carbiolice announced, on January 20th, 2021¹⁹, the grant of an *Efficient Solution* label by the Solar Impulse Foundation for its product Evanesto[®]. To receive this label, the technology implemented by Carbiolice has been evaluated by a group of independent experts according to 5 criteria covering the three main themes of technical feasibility, social and environmental impact and economic profitability.

¹³ Cf. [November 19th, 2020 press release](#)

¹⁴ Source: IHS Markit in 2018

¹⁵ It is recalled that CARBIOS holds a 62.71% stake in Carbiolice. The Company is however exempted from the preparation of consolidated accounts, in accordance with Article L 123-16 of the French Commercial Code

¹⁶ PLA: polylactic acid, a plastic made from corn or sugar cane

¹⁷ Cf. [October 8th, 2020 press release](#)

¹⁸ Cf. [December 1st, 2020 press release by Carbiolice](#)

¹⁹ Cf. [January 20th, 2021 press release by Carbiolice](#)

- **Strengthening of the financial structure to support development**

In July, 2020²⁰, CARBIOS announced the **success of a capital increase through an offering to qualified French and international investors** by way of an accelerated book-building process. The Company issued 1,028,572 new ordinary shares with a nominal value of €0.70 per share, at a price of €26.25 per share, issue premium included, **for a total amount of €27,000,015**, which represents 14.79% of the Company's share capital prior to the transaction on an undiluted basis, i.e. a dilution of 12.89%.

In August 2020, the Company also obtained a French Government-guaranteed bank loan of €1 million, repayable in full within one year, with the possibility of extending the repayment date through an additional amortization period of up to five years.

During the first half of 2020, the Company also received a total amount of €1 million from ADEME following the validation of the second key-stage of the CE-PET project. For the record, Carbios and Toulouse White Biotechnology (TWB) have been granted a 7.5 million funding in 2019²¹, which comes in the form of grants and conditional advances paid in several instalments over the period of the CE-PET project (39 months). Since the beginning of the program in 2019, the Company has received €2.4 million and is eligible to receive another €1.7 million for the completion of the next key stages, as stipulated in the framework of the agreement signed with ADEME.

- **Strengthening of Intellectual Property**

In 2020²², the Company's patent portfolio has been enriched by four new patent families on new optimized PET enzymes, significantly consolidating its position as a pioneer in the identification, development, and optimization of degrading enzymes.

Since its creation, Carbios has secured and strengthened its Intellectual Property portfolio by protecting its key innovations in research and industrial development. At the end of 2020, Carbios held 38 patent families worldwide, 18 of which protect its recycling process as well as the associated proprietary PET-degrading enzymes.

In 2020, eleven patents were granted (including 7 in the United States), on all the Company's projects, bringing the total number of granted patents in Carbios' portfolio to 33. Two patents in particular have been granted in the United States on the PET enzymes described in the journal *Nature*²³.

At the same time, Carbios completed the coverage of its historical family of patents on its enzymatic PET recycling process with new grants in Canada, China and India (in addition to the grants already obtained in the United States, Europe and Japan²⁴).

The issuance of these international patents validates the innovative and significant character of Carbios processes and thus confirms the Company's technological advance in the development of sustainable solutions for the management of plastics and textiles lifecycle.

- **Strengthening of the governance**

Evolution of the Board of Directors

At its Annual General Meeting dated January 8th, 2021, **BOLD (Business Opportunities for L'Oréal Development)**, represented by Mr. Laurent SCHMITT, and **Michelin Ventures**, represented by Mr. Nicolas BAZIRE **were appointed Censors** of the Company, for a duration of one year, expiring at the term

²⁰ Cf. [July 23rd, 2020 press release](#)

²¹ Cf. [January 17th, 2019 press release](#)

²² Cf. [January 14th, 2021 press release](#)

²³ Cf. [April 8th, 2020 press release](#)

²⁴ Cf. [October 8th, 2019 press release](#)

of the Annual General Meeting to be held in the course of 2021 and which will be called to approve the financial statements for the year ended December 31, 2020.

Evolution of the Executive Committee

In June 2020, **Mr. Martin STEPHAN** was appointed Deputy Chief Executive Officer.

In September, 2020²⁵, **Mr. Kader HIDRA** joined the Company as Chief Financial Officer and member of the Executive Committee.

About Carbios:

[Carbios](#), a green chemistry company, develops biological and innovative processes to revolutionize the end of life of plastics and textiles. Through its unique approach of combining enzymes and plastics, Carbios aims to address new consumer expectations and the challenges of a broader energy transition by taking up a major challenge of our time: plastic and textile pollution.

Established in 2011 by [Truffle Capital](#), the mission of Carbios is to provide an industrial solution to the recycling of PET plastics and textiles (the dominant polymer in bottles, trays, textiles made of polyester). The enzymatic recycling technology developed by Carbios deconstructs any type of PET plastic waste into its basic components which can then be reused to produce new PET plastics of a quality equivalent to virgin ones. This PET innovation, the first of its kind in the world, was recently recognized in a scientific paper published in the prestigious journal [Nature](#). Additionally, Carbios is working hand in hand with multinational brands — like L'Oréal, Nestlé Waters, PepsiCo and Suntory Beverage & Food Europe — to implement its technology, and to lead the transition toward a truly circular economy.

The Company has also developed an enzymatic biodegradation technology for PLA (a bio sourced polymer) based single use plastics. This technology can create a new generation of plastics that are 100% compostable in domestic conditions, integrating enzymes at the heart of the plastic product. This disruptive innovation has been licensed to [Carbiolice](#), a joint venture created in 2016, in which Carbios now holds a majority stake alongside the SPI fund operated by Bpifrance.

For more information, please visit www.carbios.fr/en

Twitter: [Carbios](#) LinkedIn: [Carbios](#) Instagram : [carbioshq](#)



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.

CARBIOS

Benjamin Audebert
Investor Relations
contact@carbios.fr
+33 (0)4 73 86 51 76

Media Relations (Europe)

Tilder
Marie-Virginie Klein
mv.klein@tilder.com
+33 (0)1 44 14 99 96

Media Relations (U.S.)

Rooney Partners
Kate L. Barrette
kbarrette@rooneyco.com
+1 212 223 0561

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²⁵ Cf. [September 7th, 2020 press release](#)