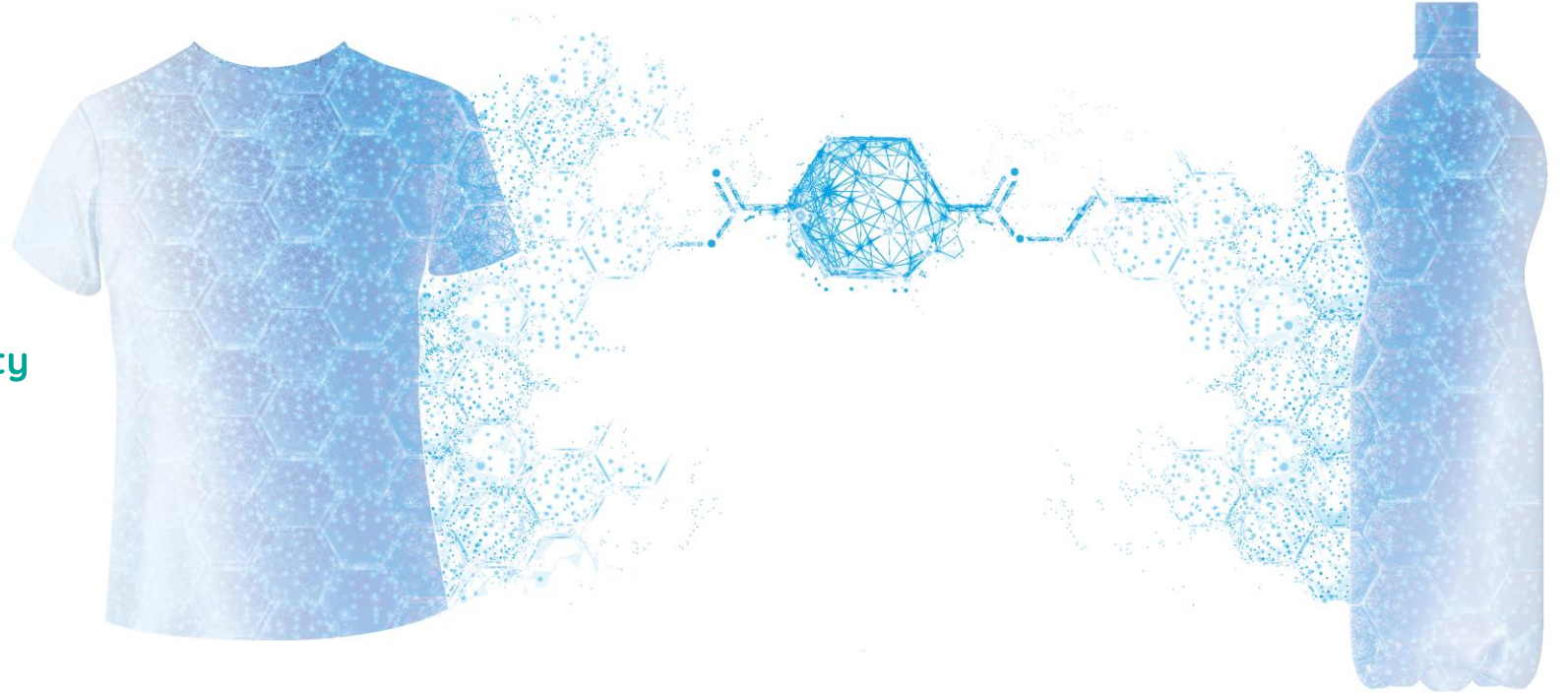




CARBIOS

Biotechnology **powering**
plastic and textile **circularity**



Investor presentation

September 2024

Disclaimer

IMPORTANT INFORMATION - NOT FOR DISTRIBUTION, DIRECTLY OR INDIRECTLY, IN THE UNITED STATES, AUSTRALIA, CANADA OR JAPAN

This presentation was prepared by Carbios (the "Company") for the sole purpose of being used at investor presentations. Neither this presentation nor a copy hereof, or any information it contains, may be conveyed, disclosed or distributed, whether directly or indirectly, in the United States, Canada, Japan or Australia, or to any resident of those countries.

By receiving this presentation and attending this meeting, you acknowledge yourself to be acquainted with the following restrictions.

This presentation is promotional in nature and does not constitute a prospectus within the meaning of Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 (the "Prospectus Regulation").

Neither this presentation nor a copy hereof, or any information contained therein constitutes an offer or invitation to sell or purchase, or a solicitation of any offer to purchase or subscribe for shares of the Company in any country.

This presentation is delivered to you on a personal basis, solely for your information, and may be used only for the requirements of the Company presentation.

The merit and suitability of an investment in the Company should be independently evaluated and any person considering such an investment in the Company is advised to obtain independent advice as to the legal, tax, accounting, financial, credit and other related advice prior to making an investment. Investors should not subscribe for or purchase any securities of the Company except on the basis of information in a final form prospectus that may be published by the Company, which would supersede this presentation in its entirety and would contain a description of risk factors pertaining to the Company, its businesses and such an investment.

This presentation and its contents are confidential and may not be copied, distributed or transferred to any other person, published or reproduced, whether directly or indirectly, wholly or partly, by any means, in any form and for any purpose whatsoever. You must observe all legislation applicable to the possession of such information including insider trading legislation, current regulations or the recommendations of the AMF.

Non-observance of any or all of these restrictions may constitute a breach of statutory restrictions governing the offering of financial instruments in the United States, Canada, Japan or Australia. The distribution of this document in other countries may be subject to legal restrictions, and any persons who may come into possession of it must inform themselves of the existence of any such restrictions and comply therewith.

This presentation was prepared by the Company under its sole responsibility. The information shown hereafter has not been independently verified by the Company, its advisers or any other person, and it may be subject to possibly significant updating, additions and revisions.

The Company, its advisers and their representatives shall under no circumstances incur any liability for any loss or damage, whether arising from any use made of this presentation or its content, or in any way connected with this presentation. The Company is under no obligation to update the information contained in this presentation, and any information contained in this presentation is subject to change without notice.

In the European Economic Area, this information is only addressed to and directed at persons in member states who are "qualified investors" within the meaning of Article 2(e) of the Prospectus Regulation ("Qualified Investors").

Within the United Kingdom, this information is intended for distribution only to persons who are Qualified Investors who (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") or (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations, etc.") of the Order or (iii) are persons to whom it may otherwise lawfully be communicated (all such persons together being referred to as "relevant persons") and in such a case any investment or investment activity to which the Information relates is available only to relevant persons and will be engaged in only with relevant persons.

This presentation does not constitute an offer of securities for sale nor the solicitation of an offer to purchase securities in the United States of America or in any other jurisdiction in which the transaction may be subject to restrictions. The shares or any other securities of CARBIOS may not be offered or sold in the United States of America except pursuant to a registration under the U.S. Securities Act of 1933, as amended (the "Securities Act"), or pursuant to an exemption from such registration requirement. CARBIOS shares will only be offered or sold outside the United States of America and in offshore transactions in accordance with Regulation S under the Securities Act, and, subject to certain conditions, to a limited number of qualified institutional buyers or institutional accredited investors in the United States. CARBIOS does not intend to register the offering in whole or in part in the United States or to make a public offer in the United States.

This presentation contains statements about the Company's aims and lines of development. These statements are sometimes identified by the use of the future tense or conditional mood, as well as terms such as "estimate", "have the objective of", "intend to", "expect", "result in", "should" and other similar expressions. This data is subject to risks and uncertainties that may later result in actual results that are substantially different. This forward-looking information does not reflect historical data and as such may not be interpreted as warranties that the facts and data cited will occur, that the assumptions have been verified and the objectives will be met. By nature, these objectives might not be achieved and the assumptions on which they are based may prove to be erroneous, without the Company, its advisors and their representatives being subject to any obligations to update this forward-looking information, subject to applicable regulations. This information about the objectives and any other statements which may be made by the Company from time to time are subject to certain risks and uncertainties linked to the Company's operating performance as well as any other future events and their potential effects on the Company subject to risks and uncertainties, where the Company's results, performances or achievements may differ significantly from future results, performances or achievements expressly or implicitly indicated in these forward-looking statements on objectives. In addition, these forward-looking statements necessarily depend upon assumptions, estimates and dates that may be incorrect or imprecise and involve known and unknown risks, uncertainties and other factors. Accordingly, any forward-looking statements included in this announcement do not purport to be predictions of future events or circumstances and may not be realized.

Except as required by applicable law, the Company assumes no obligation to update any of these forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting these forward-looking statements. Nothing contained herein shall be deemed to be a forecast, projection or estimate of the future financial performance of the Company.

We all face the same challenges worldwide



> Limited fossil resources



460 million tons ⁽¹⁾
of plastic produced
per year (2019)

1. OECD, 2022.



99% of virgin plastic
is **petrosourced**



> Extensive plastic pollution



353 million tons ⁽¹⁾
of plastic waste generated per year (2019)

<10% recycled today

1. OECD, 2022.

Carbios: a biotech pioneer reinventing plastic & textile life cycle



Founded
in **2011**



58 patent
families



~150
employees
including 2/3
dedicated to RDI



Multi-sources
revenue business
model

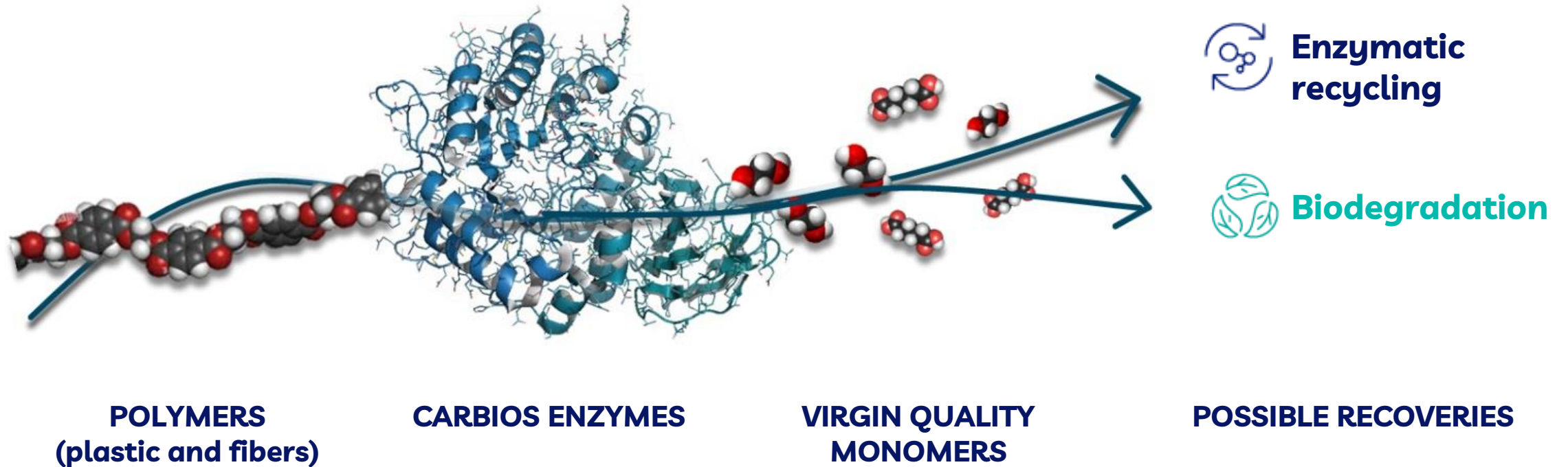


French biotech
connected
worldwide

-  *Global and Regional partners*
-  *More than 20 international academic collaborations*
-  *Teams in EMEA, North America and Asia*

Our mission

To develop enzymatic solutions to deconstruct plastic and textile waste



Our technologies

Two breakthrough technologies reaching industrial and commercial scale



PET
BIORECYCLING



PLA
BIODEGRADATION

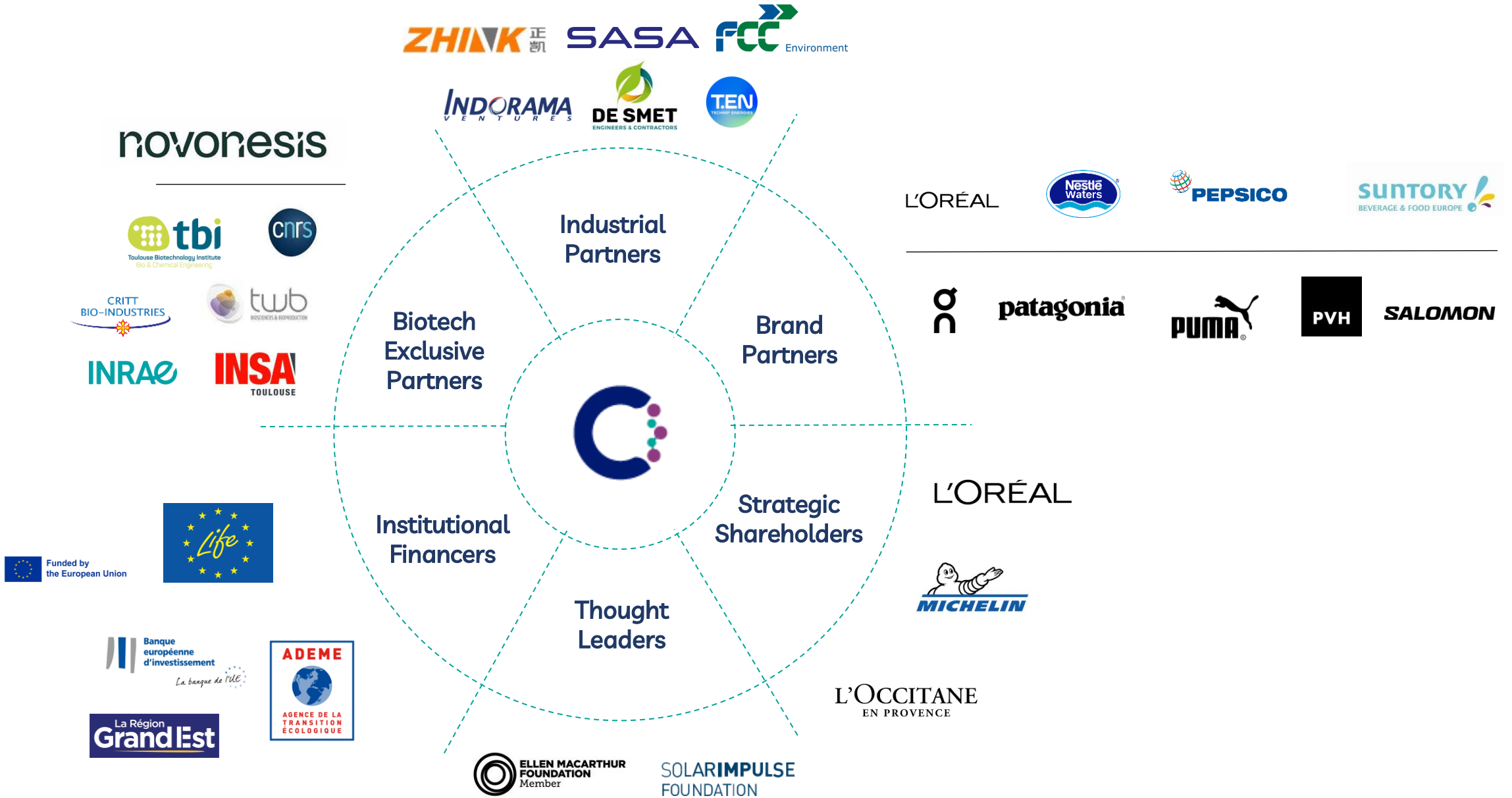


INNOVATION

on other polymers
(notably polyamides and polyolefins)

Ongoing research to bring an extensive portfolio of technologies to the market

Carbios unites a strong ecosystem of leading partners



Public and shareholders renewed support to Carbios

Constant and strong public support

- Public support from the European Investment Bank, the European Commission, and French institutions, totaling ~€97m since Carbios' creation.



Strong shareholder base

- Global strategic shareholders (Bold by L'Oréal, L'Occitane, Michelin Ventures), Tier 1 institutional investors (Swedbank Robur, Fidelity, Axa, Blackrock, Mirova...) and solid retail investor base
- €314m raised since Carbios' creation. Includes the 2023 capital increase of approximately €141m*, the largest on Euronext Growth since 2015.



Global and exclusive partnership with Novonesis (ex. Novozymes)

novonesis

Long-term supply of Carbios enzyme ensured at industrial scale (Jan. 2023)

- **Exclusive and global agreement with Novonesis (ex. Novozymes)**, world leader in enzyme production, derived from initial partnership established in 2019
- Development, optimization, production and supply ensured for Carbios' proprietary enzyme



CARBIOS PET biorecycling, a game-changing technology



PET, a versatile material with broad scope of applications

Housing
Furniture



Cosmetics



Apparel
Textile



Outdoor apparel
Shoes



Automotive
Mobility



Medical
Healthcare

Beverage



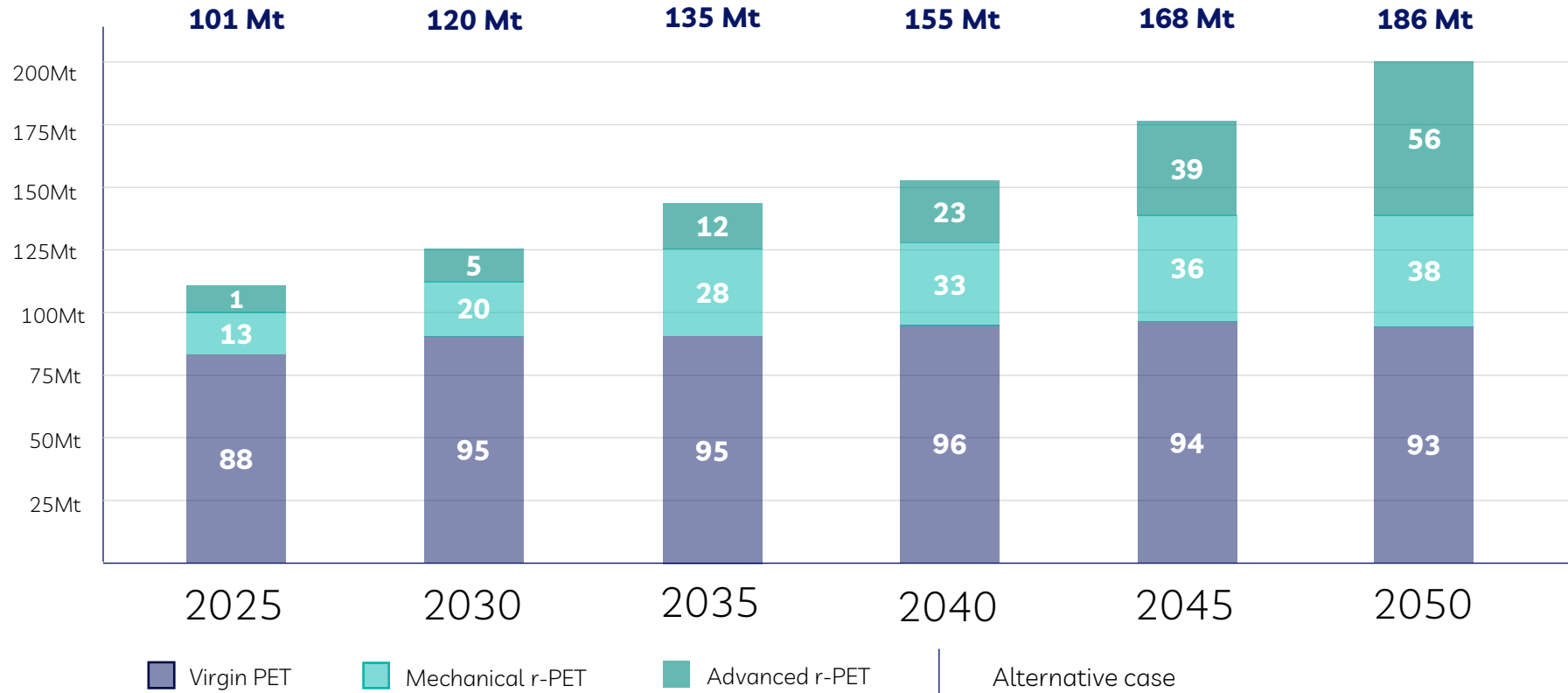
Food



Industrial
Packaging



PET market set to double over the next 25 years driven by advanced r-PET



Advanced
56MT
€200B

Highly differentiated
CAGR 2025-2050
per r-PET category:

- Total r-PET
+8,4% CAGR
- Advanced r-PET
+17% CAGR
- Mechanical r-PET
+4% CAGR

Feedstock mix will limit mechanical r-PET growth *
Lower demand for petrosourced material will limit virgin PET growth

* Mechanical recycling allows lower PET waste recyclability

Expanding governmental regulations accelerate trend worldwide



North America

2018 – Canada

Consultation on “Moving Canada toward zero plastic waste” by 2030

July 2022 – USA

EPR* legal framework voted in California and Michigan

Similar bills in Maine, Oregon, Colorado, Washington, Tennessee and New Jersey since 2022



Europe

2022 – EU

Draft Packaging and Packaging Waste Regulation:

- All packaging to be recyclable
- Incorporation of recycled PET up to 30% in packaging in 2030 and **up to 65% in 2040**

2022 - UK

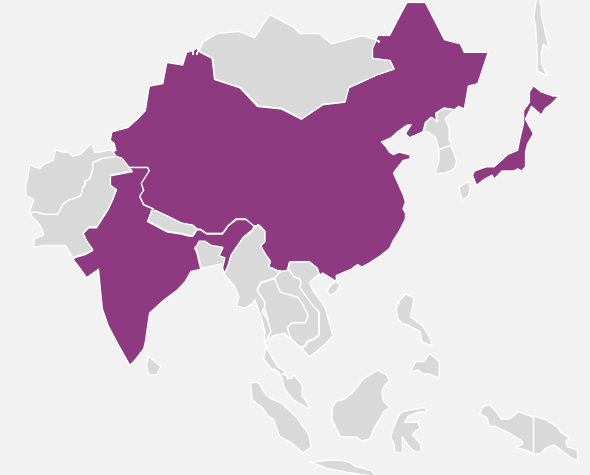
Plastic Tax implemented on virgin plastic

2023 Jan - France

Ambitious recycling targets set for 2028 by EPR* textile ReFashion

2023 – EU

Intensification of collection rate by further implementation of deposit scheme in EU States



Asia

2018 – China

Waste import ban

2022 - China

Ban on non-degradable plastic bags in shopping malls, supermarkets

2022 – India

National ban on single use plastic

2022 – Japan

New national law promoting recycling

Brand pledges support r-PET market growth in all sectors



Housing

IKEA

“... renewable or recycled materials by 2030 – reaching **56%** renewable and 17% recycled materials ...”



Sport & Apparel

PUMA

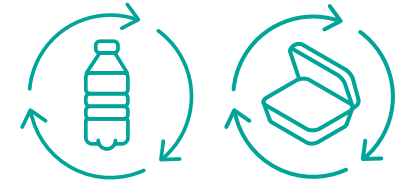
“... increase recycled polyester use to **75%** (apparel & accessories) by 2025...”



Automotive

BMW

“... secondary materials in the thermoplastics used in new vehicles from around 20% at present to an average of **40%** by 2030...”



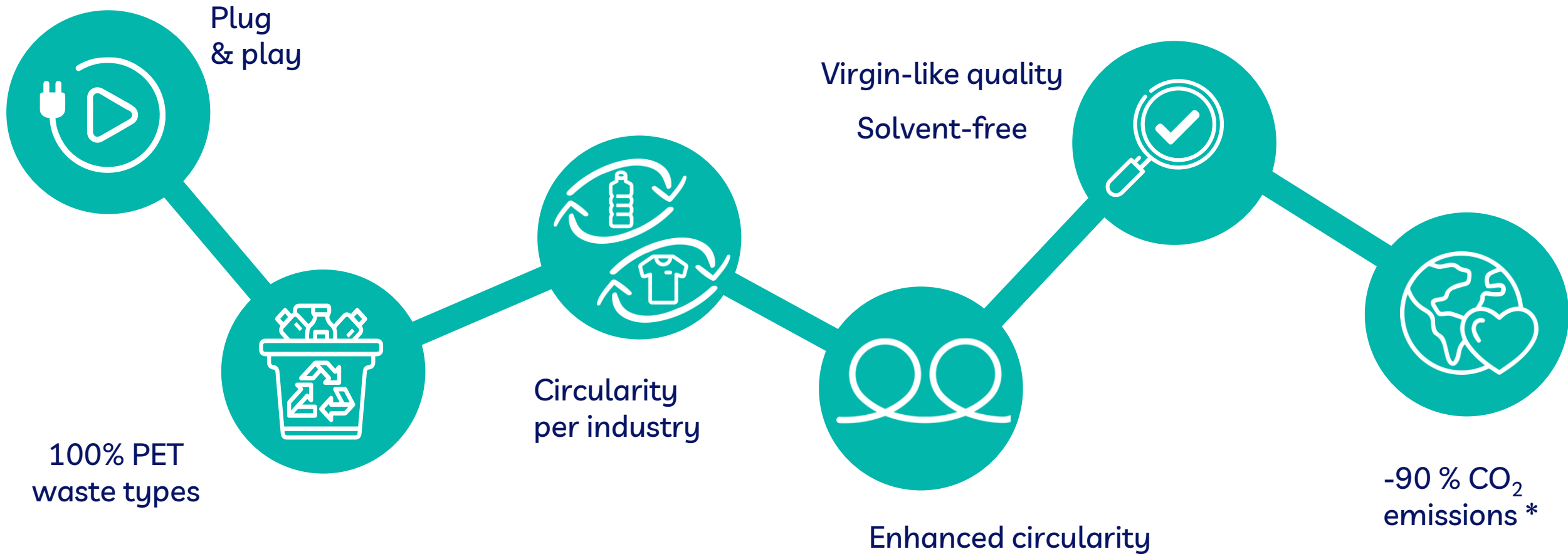
Food & beverage

PEPSICO

“... to **100%** recyclable / compostable / biodegradable / reusable packaging by 2025 ...”

Quotes from annual Corporate ESG Report (2021 & 2022) – available on official websites

Carbios brings value along the chain while preserving the planet



(*) -90% CO₂ emissions vs virgin PET ie : 0.28 kg CO₂ eq per kg of Bio-Recycled PET produced, with a diversion of 75% PET waste from conventional end of life management 2,9 kg CO₂ eq per kg of virgin PET produced in Europe - (ecoinvent 3,10)

Technology highlights (1/2)

... COMPETITIVE ADVANTAGES...



**PLUG &
PLAY**

- PTA and MEG output fits >95% of existing PET plants
- Same processability as virgin monomers
- Blow-molding of Carbios r-PET by converters under the same conditions as virgin PET



**BRINGS CIRCULARITY
PER INDUSTRY**

- More cycles with constant r-PET quality
- Fiber-to-fiber circularity / Colored or opaque to clear
- Non-food to food-grade
- 5 times more restorative than conv. recycling



**ALL TYPES OF
PET WASTE**

- Converts all kind of PET plastic and polyester fiber waste
- More competitive and flexible feedstock mix
- Higher intrants recovery rate

Growing feedstock competitiveness

Conventional recycling feedstock

Clear bottles



Colored bottles



Price evolution trend



Residues from conventional recycling (fines)

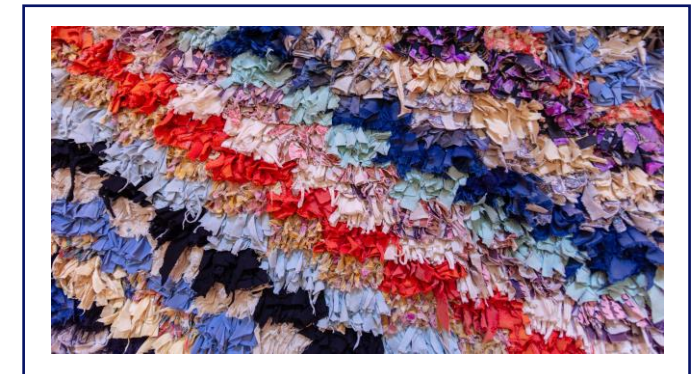


Carbios biorecycling feedstock

Food packaging trays mono/multilayer



Textile



Technology highlights (2/2)

... COMPETITIVE ADVANTAGES...



-90%⁽¹⁾

- Reduces environmental impact as compared to virgin PET based on fossil fuels
- **90% CO₂ emissions**
- Conventional end-of-life avoided (incineration with energy recovery)



**SOFT
BIOLOGICAL
PROCESS**

- Solvent-free and low temperature depolymerization
- Water-based



**HIGHEST
QUALITY**

- Maintains material highest quality through recycling
- Food-grade quality whatever the intrant feedstock

(1) -90% CO₂ emissions vs virgin PET ie : 0.28 kg CO₂ eq per kg of Bio-Recycled PET produced, with a diversion of 75% PET waste from conventional end of life management 2,9 kg CO₂ eq per kg of virgin PET produced in Europe - (ecoinvent 3,10)

Insignificant impact on consumer purchasing power



Material cost impact of Advanced r-PET vs Mechanical r-PET

*

Soft drinks	50cl	Sunscreen	200ml	Fleece jacket (100% polyester)		Formal jacket (90% polyester)	
Selling Price **	0,5€	Selling price **	15€	Selling price **	192€	Selling price **	205€
PET weight	25gr	PET weight	20gr	PET weight	775gr	PET weight	450gr
+ 0,03€ / Unit		+ 0,02€ / Unit		+ 0,91€ / Unit		+ 0,53€ / Unit	

* Assumptions on April 2023: Virgin PET price index (€/metric ton) 100 - Mechanical r-PET 200 - Advanced r-PET 300

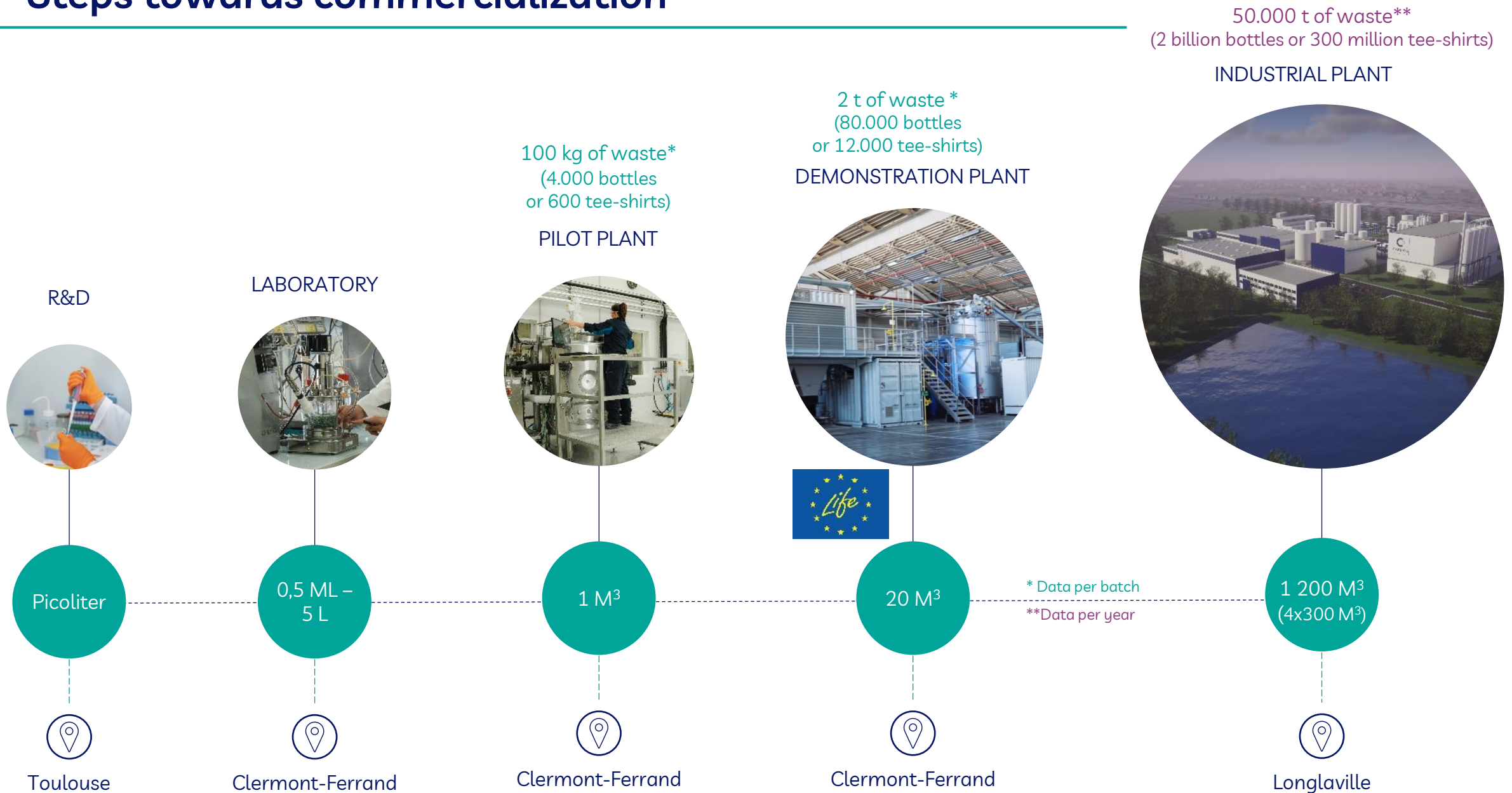
** Unit. Excluding VAT

From demonstration plant...

...to industrial scale and commercialization



Steps towards commercialization



The industrial demonstration plant: from project to operation



Best PET reaction conditions achieved

- ✓ PET selective
- ✓ Not inhibited by feedstock contaminants
- ✓ Limited degradation products because of low temperature and no solvent

Recovery yields at commercial scale target

- ✓ 95% depolymerization yield *
- ✓ 90% overall recovery on PTA**

* On reference feedstock (mixed colored flakes)

** Purified TA

Monomer of virgin-like quality

- ✓ Very high purity allowing food-contact applications



Highest Technology Readiness Level achieved

Overview of the Longlaville project

Industrial project

50.000 metric tons processing capacity p.a.
Permitting : fully cleared

Plant location: Longlaville, France

Industrial partner: Indorama Ventures
EPC partner: De Smet Engineers & Contractors

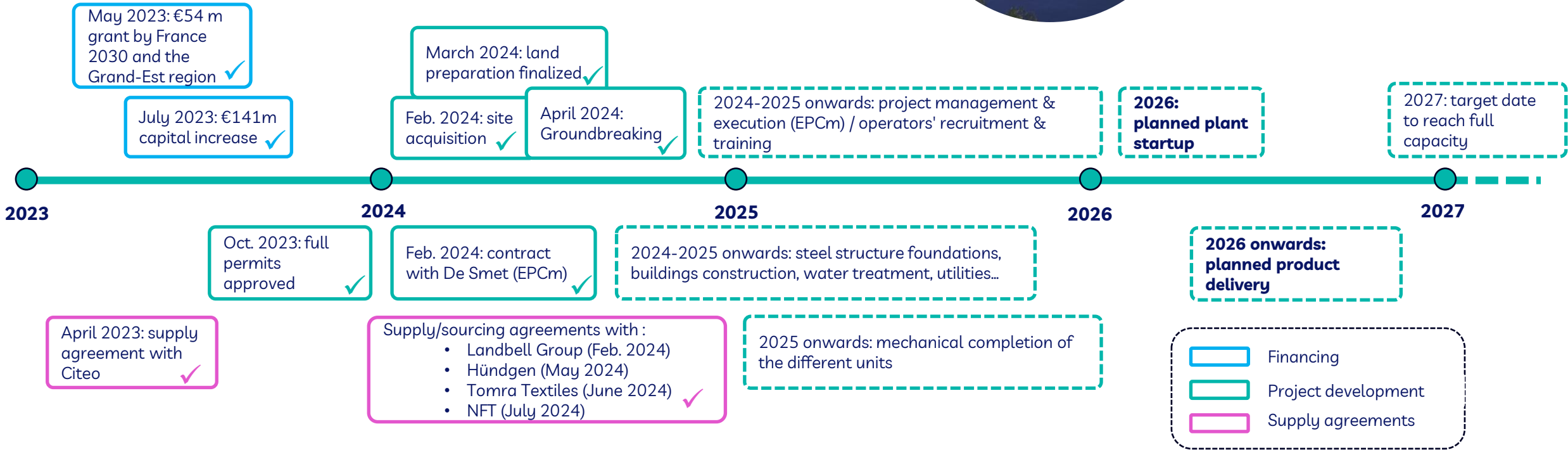
2026: planned delivery of first industrial volumes to customers

Plant capex: €230m
 (FEL 2 estimate – June 2023)
Public subsidies: €42.5m

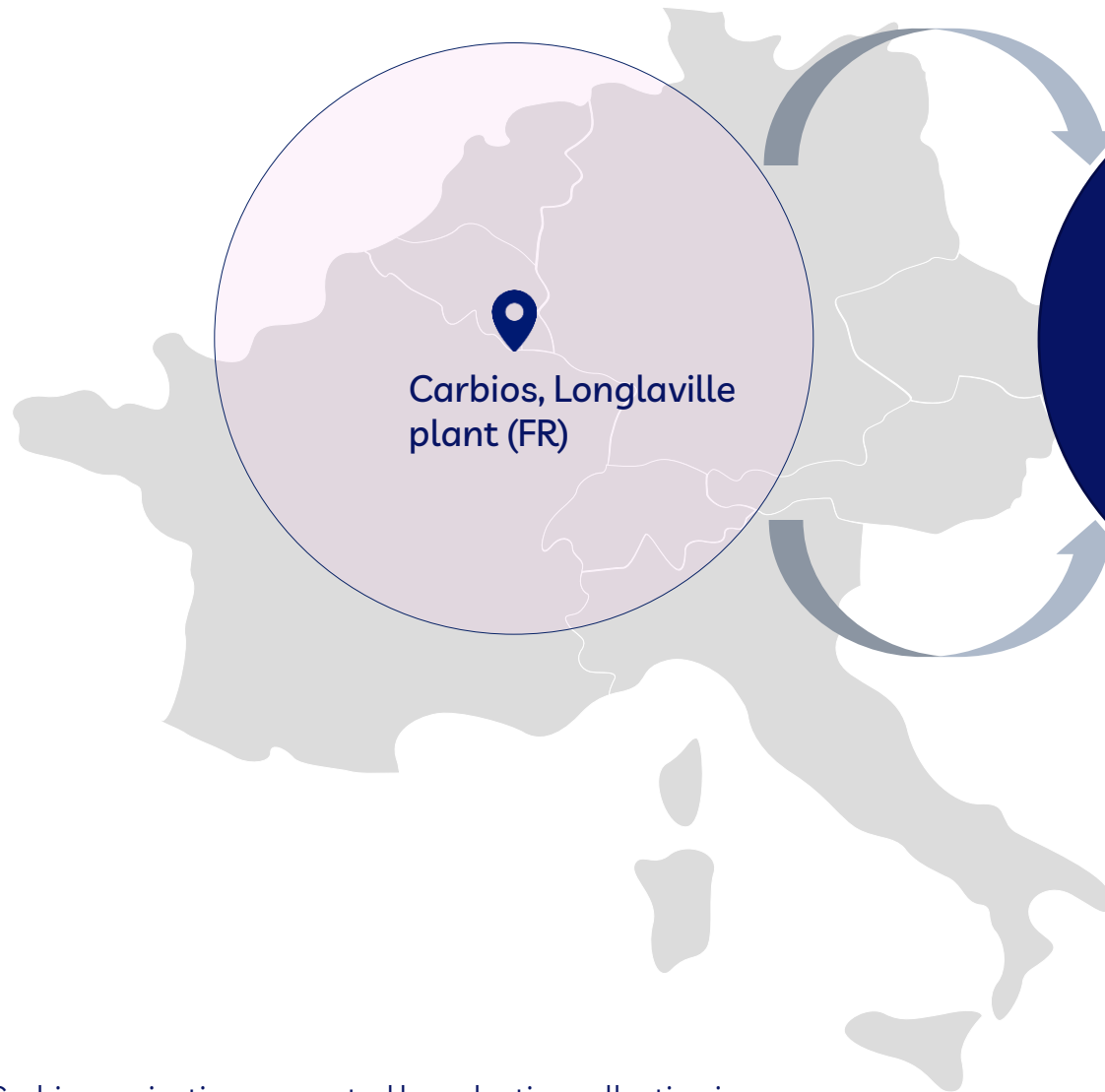


INDUSTRIAL UNIT

50.000 metric tons of waste p.a.



Most of the feedstock supply now secured for Longlaville plant



Feedstock potential:
500kt in 2030*
Includes complex waste that conventional technologies cannot recycle with food-grade quality

Supply agreements:



(April 2023)



(Feb. 2024)



(May 2024)



(July 2024)



Signing of an agreement with TOMRA Textiles to collaborate on establishing an efficient stream in Northern Europe from textile waste collection, sorting and preparation. (June 2024)

* Carbios projection supported by selective collection increase

Targeted profiles for Carbios PET biorecycling technology

Core target



PET Producers

- Sustainable offer with highest value



Chemicals Groups

- Production diversification with highest value



Waste Management Companies

- Downstream integration
- Feedstock valorization

Enlarged targets



Brand owners

- Upstream integration
- Feedstock securization






Public Entities municipalities & sovereign funds

- Investment opportunities

2024 established partnerships in view of licensing agreements

Ongoing discussions for the potential acquisition of a license for CARBIOS' unique PET biorecycling technology:

Partners	Agreement type	Sector	Activity	Location	Project capacity	Date
	Letter of Intent	PET and Polyester fiber production	Zhink Group is one of China's Top 500 Private Enterprises, specializing in PET and textiles	China	50 kt p.a.	July 2024
	Letter of Intent	Polyester fiber production	SASA is one of the world's leading manufacturers of polyester fibers	Turkey	100 kt p.a.	August 2024
	Letter of Intent	Recycling and waste management	FCC Environment is one of the UK's leading recycling and waste management companies	UK	Undisclosed	August 2024

Agreement with ZHINK Group in a view of first licensing in China



PET Producers

- Sustainable offer with highest value



June 2024

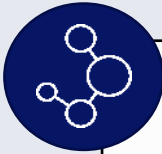


CARBIOS and Zhink Group enter official discussions for long-term partnership to build PET biorecycling industrial capacities in China in view of first licensing agreement for 50k tons per year

- 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

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.

Agreement with SASA in a view of a license in Turkey



Polyester Producers

- Sustainable offer with highest value

Dr. M. Kemal Öz, General Manager, SASA:

“As a leading producer of polyester, it’s our duty to pave the way in terms of sustainability and environmental responsibility. SASA needs to be a part of the recycling business and our partnership with CARBIOS reinforces our commitment to innovation to advance a circular economy for textiles.”

PRESS RELEASE

August 2024



SASA

CARBIOS and SASA enter discussions for license of 100k ton/year PET biorecycling facility in Turkey

Clermont-Ferrand (France) and Adana (Turkey), Thursday 1 August 2024 (6pm 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 SASA, one of the world’s leading manufacturers of polyester, fiber, filament yarn, polyester-based polymers, specialty polymers and intermediates, have signed a Letter of Intent (LOI) to cooperate through SASA’s potential acquisition of a license for CARBIOS’ unique PET biorecycling technology. This licensing agreement would allow SASA to construct and operate an enzymatic depolymerization plant in Adana, Turkey, with a capacity of 100,000 tons per year of prepared PET waste, and would give access to a circular recycling technology, enabling the production of polyester pellets, fibers and textiles from various waste sources, including polyester textile waste. With CARBIOS’ biorecycling technology, SASA would diversify its offering to meet the growing global demand for sustainable materials in the textile industry, primarily catering to the European market.

SASA and CARBIOS’ partnership : a boost for European recycled polyester production

Agreement with FCC Environment UK in a view of a license in the UK



Waste management companies

- Downstream integration
- Feedstock valorization

Steve Longdon, CEO, FCC Environment UK:

“ We are keen to explore with CARBIOS what contribution this technology could make to the UK circular economy and to examine further its place in the UK waste hierarchy from a firm evidence base.”

PRESS RELEASE

August 2024

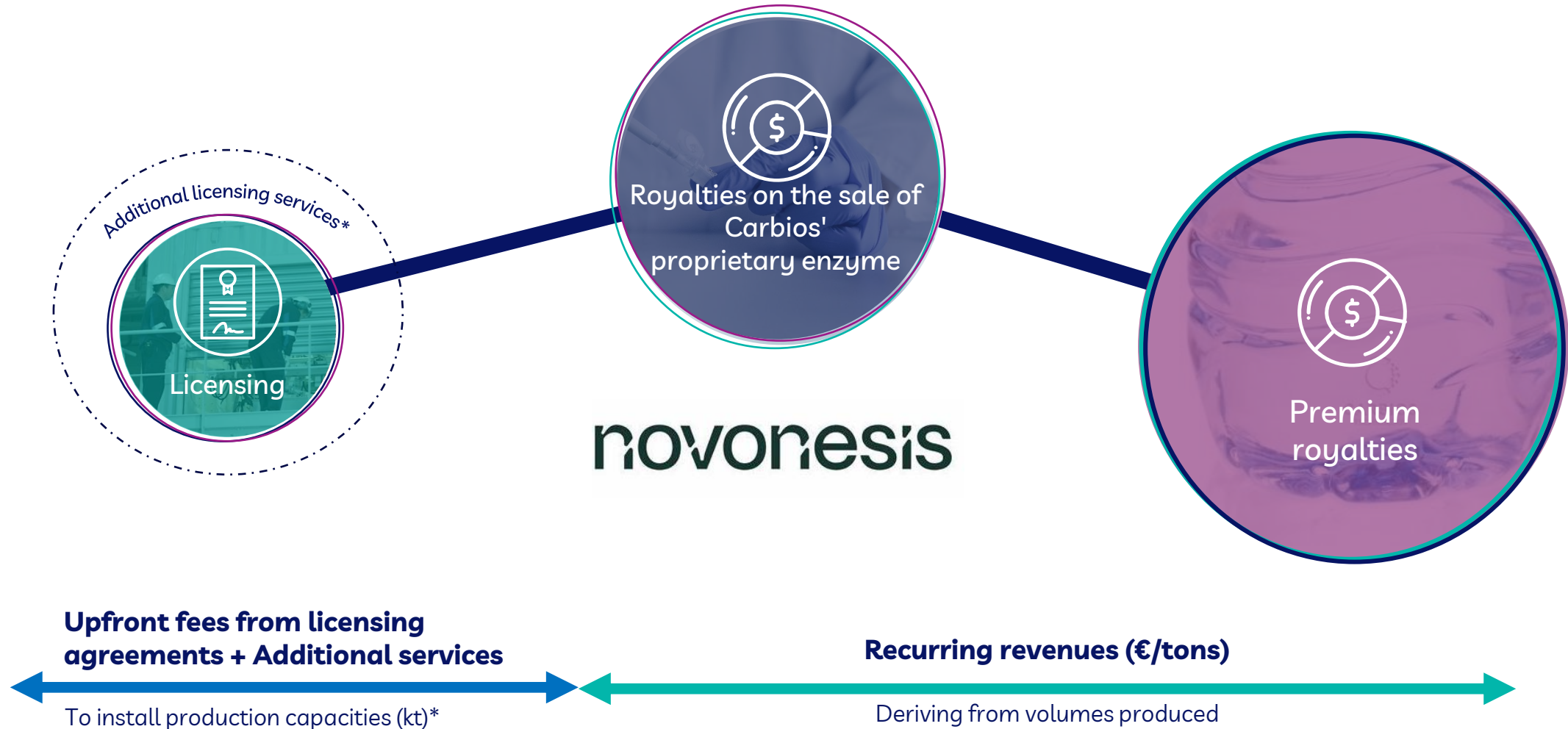


CARBIOS and FCC Environment announce joint project to establish UK-based PET biorecycling facility using CARBIOS' licensed technology

Clermont-Ferrand (France) and Doncaster, England (UK), Tuesday 6 August 2024 (06.45 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 FCC Environment UK (“FCC”), one of the UK’s leading recycling and waste management companies, have signed a Letter of Intent (LOI) to jointly study the implementation of a UK-based plant using CARBIOS’ PET biorecycling licensed technology. CARBIOS’ biorecycling technology is key to supporting **FCC’s continuing goal of contributing to the circular economy** by exploring new processes and technologies to produce recycled PET (r-PET) from PET plastic and textiles. For CARBIOS, this LOI **confirms interest from the waste management sector**, in addition to plastic producers, and would mean a foothold for its technology in the UK.

[FCC’s continuing contribution to the UK circular economy](#)

CAPEX-lean business model and mostly recurring revenues



* : Technical assistance services to licensees such as training and supervision during detailed engineering, construction, commissioning, start-up and performance testing of the industrial plants.

STRONG r-PET MARKET GROWTH

From x4 to x7 by 2050

r-PET MARKET SHARE 2025-2035 (volume)

4% to 8% by 2030

8% to 12% by 2035

REVENUES (MARGIN equivalent) *

Licensing upfront fees
between 100€/t and 200€/t

+

Recurring revenues \geq 250€/t

CAGR COST TO 2035

RDI +15% to +20%

- Maintain & improve PET applications
- Develop new polymers such as Polyamids (PA) and Polyolefins (PE & PP)

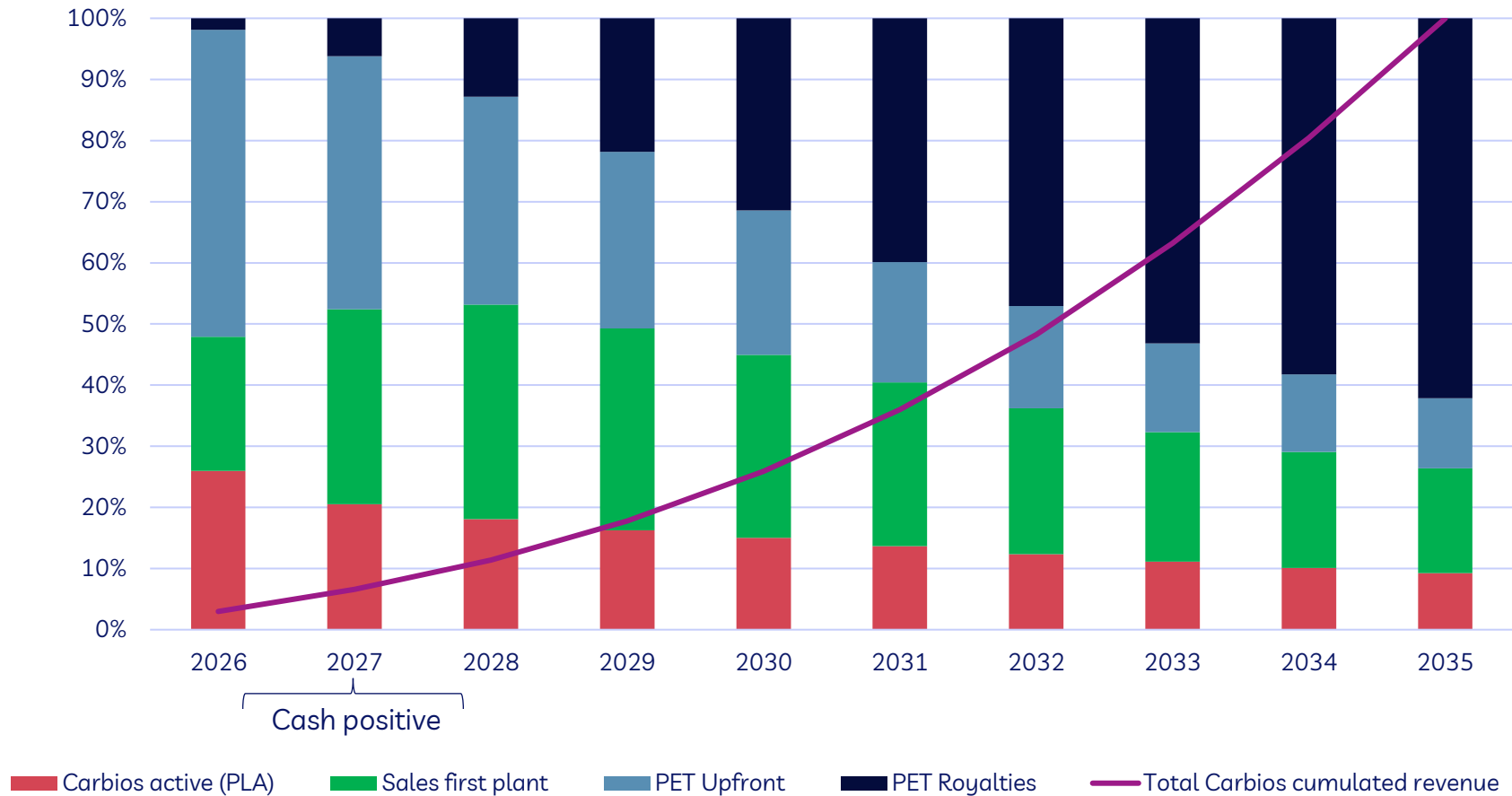
SG&A +8% to +10%

- Licensing efforts

* Applicable to all PET biorecycling plants / Does not include PLA revenues and margins

Carbios revenue forecast 2026 - 2035

Total Carbios cumulated revenue forecast 2026 – 2035
and contribution by streams YoY



Does not include revenue from other polymers (Polyamides, Polyolefins, etc.)

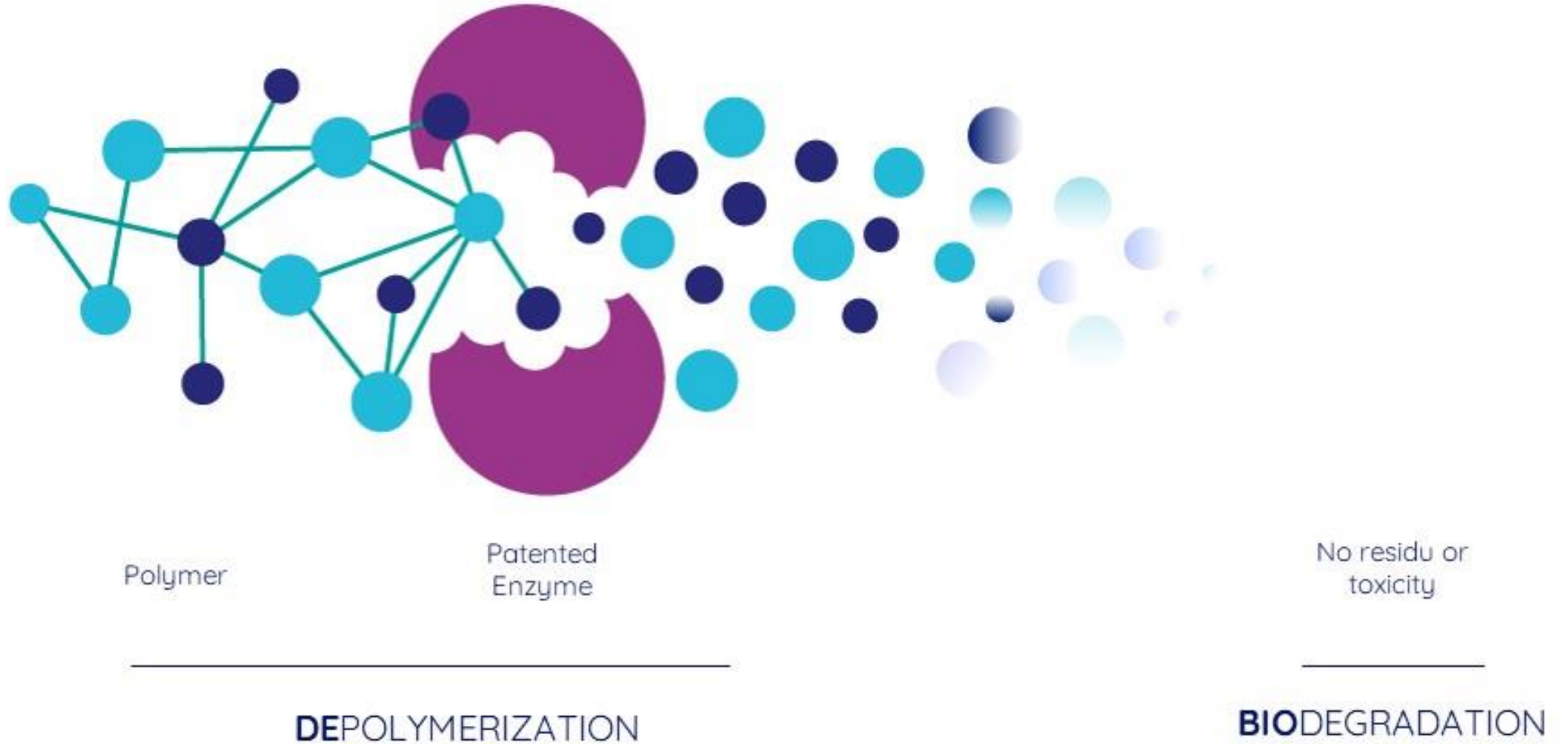
Beyond PET, CARBIOS is developing other sources of revenue

> Enzymated PLA, a major step in the biodegradation offer



PLA depolymerization

A unique expertise to accelerate biodegradation



Carbios Active: the first enzymatic biodegradation solution for PLA

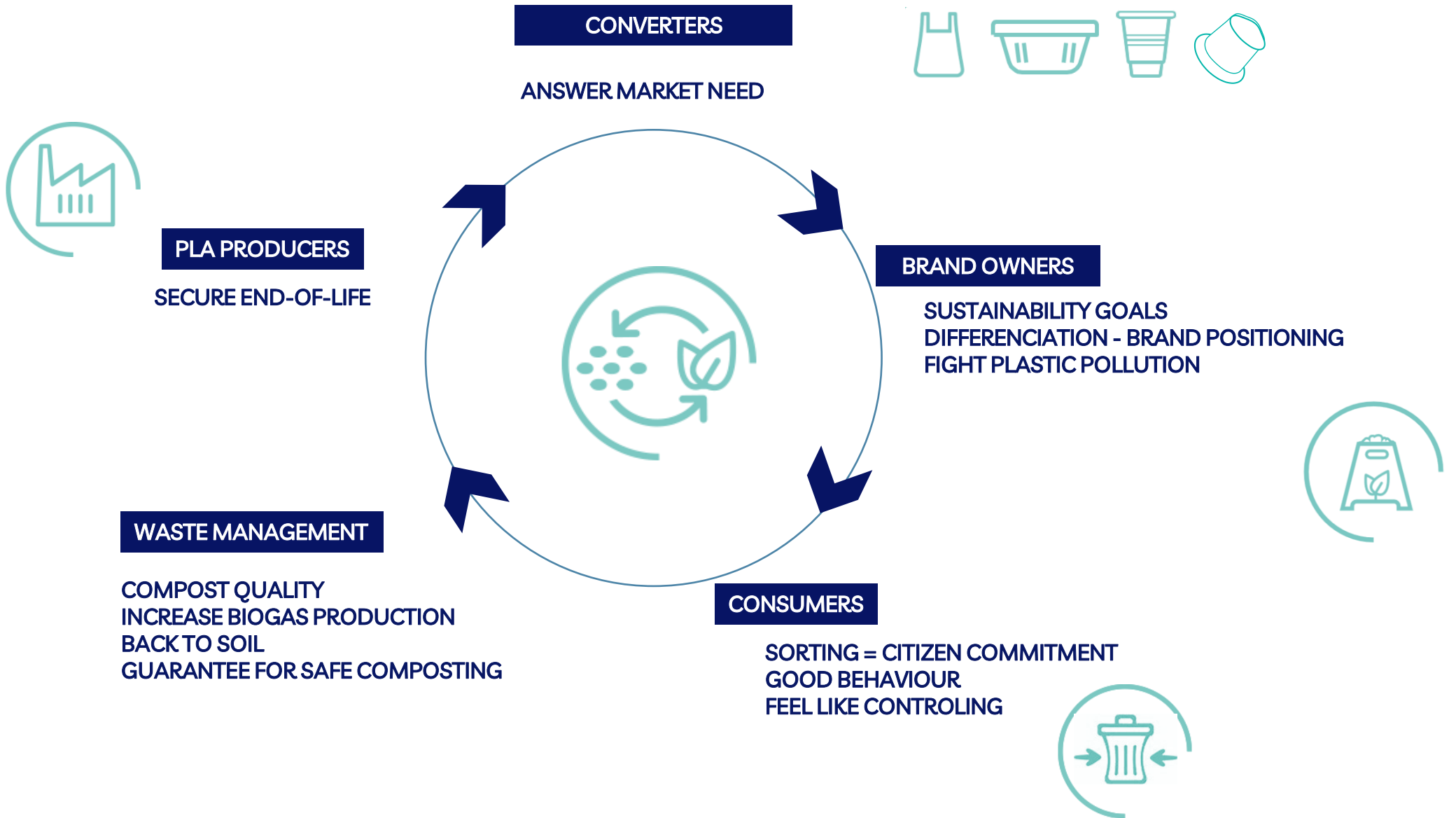
From Plant to Plant!

Carbios encapsulated enzyme guarantees PLA full compostability, even at ambient temperature

March 2024: an innovation added to FDA Inventory of Food Contact Substances

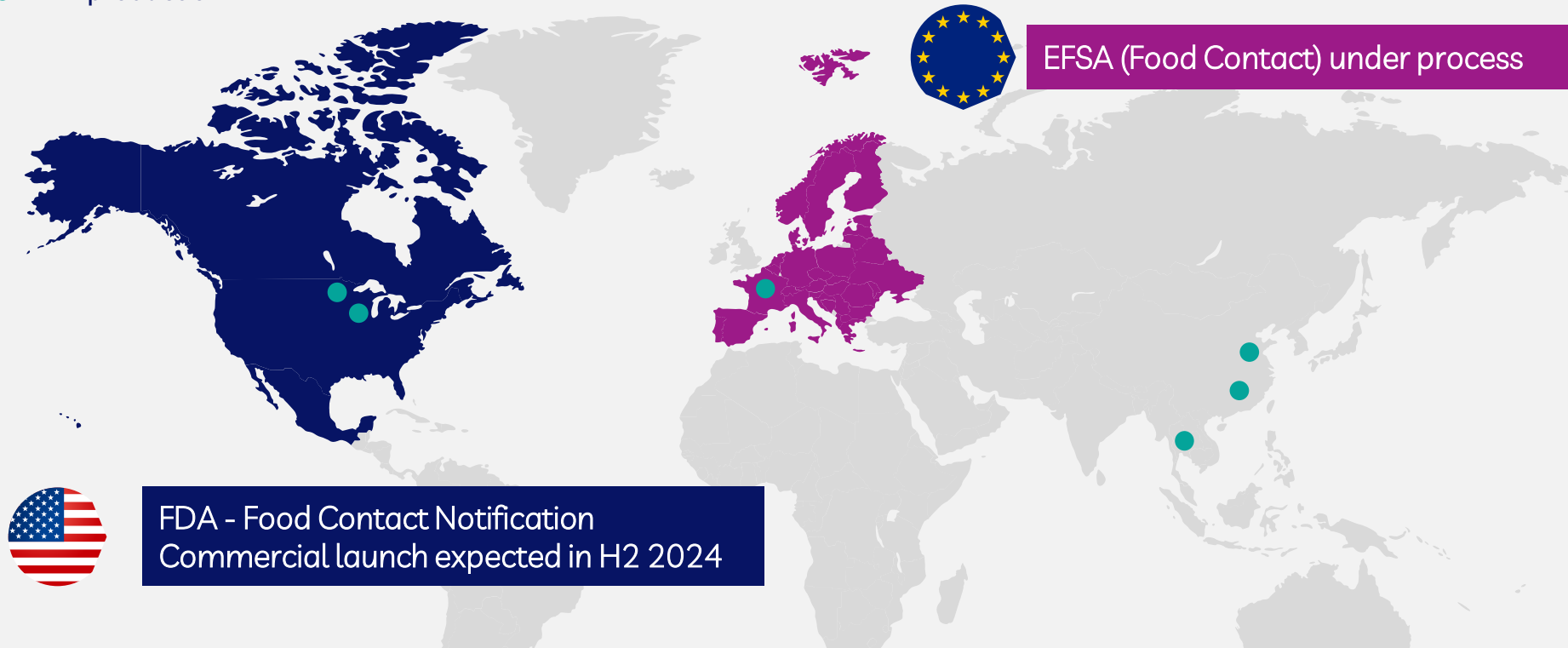


Enzymated PLA value proposition



Consumer market test & first sales in North America in H2 2024

● PLA production



PLA production global market	2022	2026
Global production capacity	400 kT	700 kT
Location	USA, Thailand, China	

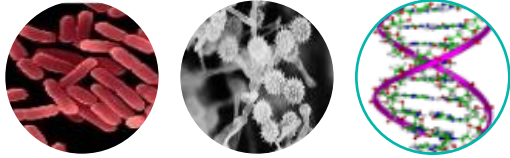
Innovation Outlook



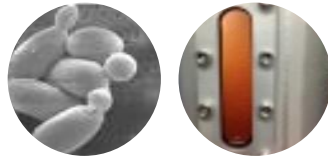
Carbios has the capabilities to advance faster on new polymers



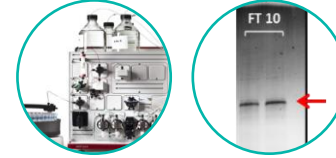
Over 20 international academic partnerships!



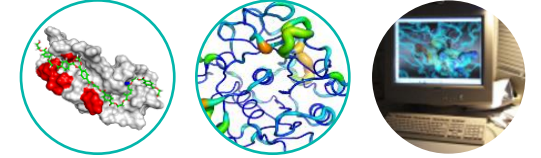
Screening of biodiversity



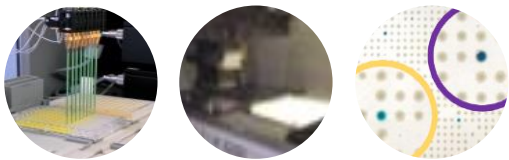
Enzyme production by fermentation



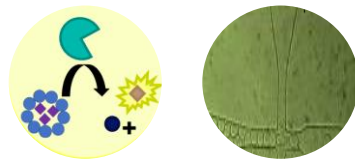
Biochemistry, analytics and molecular biology



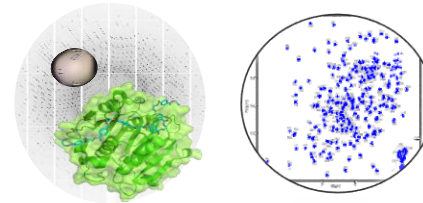
Molecular modeling



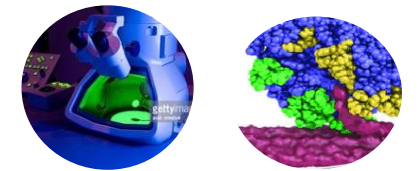
Robotic platform for enzyme screening



Microfluidic screening



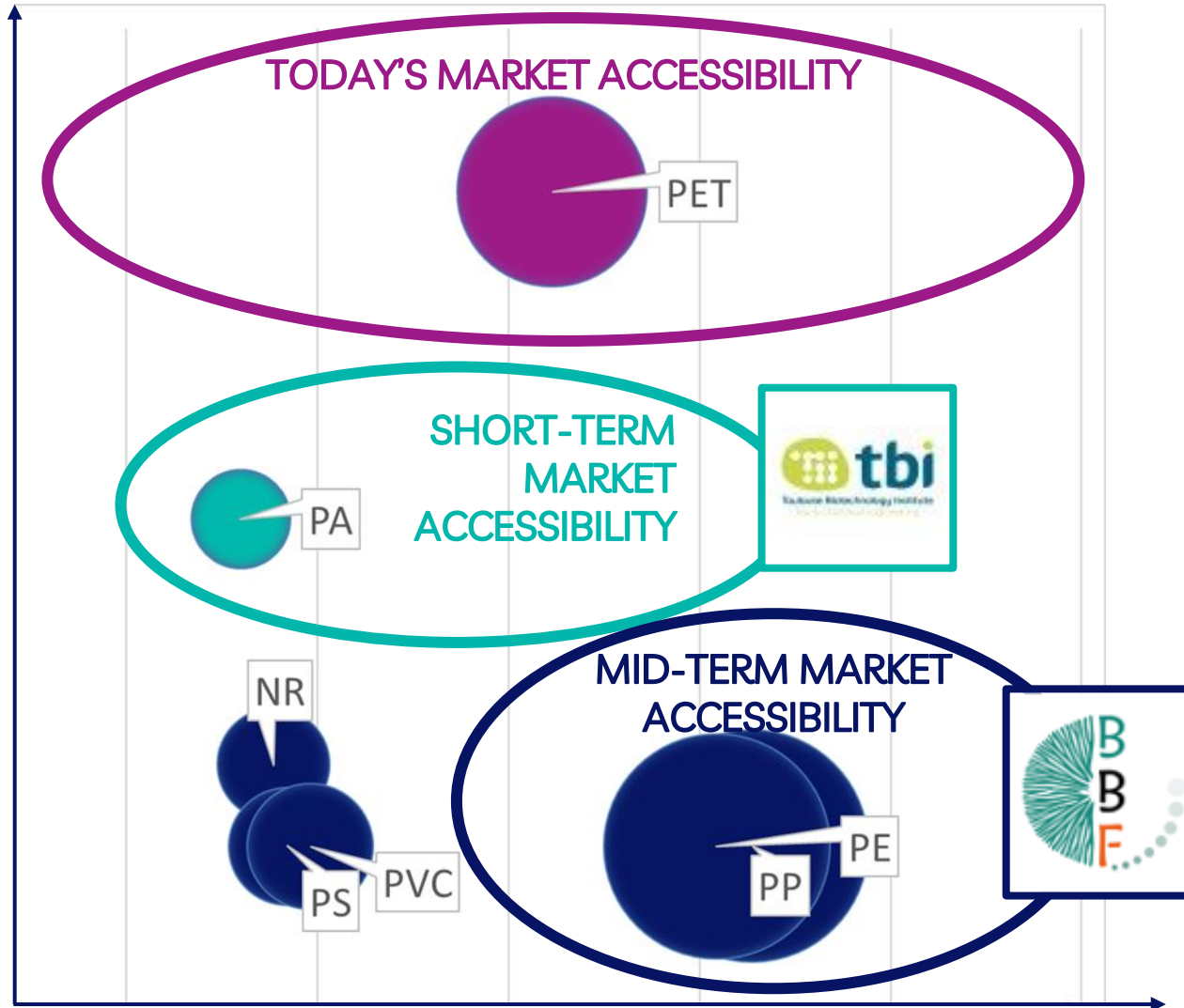
Biophysical analysis (X-rays, NMR...)



Atomic force & Cryogenic electron microscopy

Other polymers in Carbios' innovation pipeline to increase value creation

Enzymatic
readiness



CHEMICAL REVIEWS
pubs.acs.org/CR

Enzymes' Power for Plastics Degradation
Vincent Tournier,¹ Sophie Duquesne,¹ Frédérique Guillaumot, Henri Cramail, Daniel Taton,² Alain Marty,² and Isabelle André²

[Cite This: https://doi.org/10.1021/acschemrev.2c00644](https://doi.org/10.1021/acschemrev.2c00644) [Read Online](#)

ACCESS Metrics & More Article Recommendations

ABSTRACT: Plastics are everywhere in our modern way of living, and their production keeps increasing every year, causing major environmental concerns. Nowadays, the end-of-life management involves accumulation in landfills, incineration, and recycling to a lower extent. This ecological threat to the environment is inspiring alternative bio-based solutions for plastic waste treatment and recycling toward a circular economy. Over the past decade, considerable efforts have been made to degrade commodity plastics using biocatalytic approaches. Here, we provide a comprehensive review on the recent advances in enzyme-based biocatalysis and in the design of related biocatalytic processes to recycle or upgrade commodity plastics, including polyesters, polyamides, polyurethanes, and polyolefins. We also discuss scope and limitations, challenges, and opportunities of this field of research. An important message from this review is that polymer-sustaining enzymes are very likely part of the solution to reaching a circular plastic economy.

CONTENTS

1. Introduction	B	3. Biodegradation of Other Main Polymers	AZ
1.1. Interest and Importance of Polymeric Materials	B	3.1. Polyamides (PA)	AZ
1.2. Some Definitions about Polymers, Main Features and Possible Classifications	B	3.1.1. About PA	AZ
1.3. Environmental Pollution by Persistent Plastics	E	3.1.2. Methods to Identify PA-Active Enzymes and Microorganisms Involved in PA Biodegradation	BA
1.4. Recycling Technologies of Commodity Plastics	E	3.1.3. Surface Modification of PA Fabrics Using Hydrolyases	BA
1.5. Methods to Probe Plastic (Bi)degradation	G	3.1.4. Enzymatic Oxidative Degradation	BD
1.6. General Considerations on Enzymatic Degradation of Polymers	G	3.1.5. Outlook	BE
2. Enzyme-Catalyzed Depolymerization of Polyesters	H	3.2. Polyurethanes (PU or PUR)	BE
2.1. Polyethylene Terephthalate (PET)	I	3.2.1. About PU	BE
2.1.1. About PET	I	3.2.2. Enzymatic Hydrolysis of PU	BG
2.1.2. Biocatalysts for PET Depolymerization	I	3.2.3. Outlook	BJ
2.1.3. Considerations for Industrial Development of Enzyme-Catalyzed PET Depolymerization	J	3.3. Vinyl Polymers	BJ
2.1.4. Strategies to Improve the Reaction Performances	T	3.3.1. Polyolefins (PO)	BJ
2.1.5. Outlook	V	3.3.2. Other Vinyl Polymers	BQ
2.2. Polylactide (PLA)	AF	3.3.3. Other Vinyl Polymers	BQ
2.2.1. About PLA	AG	4. Conclusions and Future Perspectives	BS
2.2.2. Sources of Enzymes Degrading PLA	AG	Author Information	BS
2.2.3. PLA-Depolymerases	AJ	Author Contributions	BS
2.2.4. Application of PLA-Depolymerases for PLA Biorecycling	AQ	Notes	BS
2.2.5. Outlook	AX	Biographies	BS
	AZ		

Special Issue: Bridging the Gap: Learning from Catalysis across Biocatalysis
Received: September 19, 2022

ACS Publications | © XXXX American Chemical Society

Recent achievements and 2024 milestones

	2023	2024
Industrial PET	<ul style="list-style-type: none"> ✓ Textile preparation line at demonstration plant fully operational ✓ First Feedstock contracts ✓ Start of plant construction 	<ul style="list-style-type: none"> • Longlaville plant key staffing completed
Commercial PET PLA	<ul style="list-style-type: none"> ✓ Start of North-America staffing and prospection 	<ul style="list-style-type: none"> • First PET biorecycling licence agreements signed • Brand-owners Off-take agreements on r-PET volumes ✓ Asia staffing and prospection • New Consortiums in other industries ✓ Carbios branding first test with Brand-owners • First PLA sales in North-America
R&D Others	<ul style="list-style-type: none"> ✓ Extend R&D teams on new polymers 	<ul style="list-style-type: none"> • 2nd Scientific Summit • Patents on new polymers
ESG	<ul style="list-style-type: none"> ✓ 40% of Board seats held by women ✓ Over 60% independent Board members 	<ul style="list-style-type: none"> • ISO 14001 & 9001 • First circular LCA published

MARKET

- r-PET market is booming and advanced recycling will have the fastest growth
- Feedstock scarcity for conventional recycling is driving market price up

CARBIOS POSITIONNING

Best positioned to lead the recycling market with its unique biological solution:

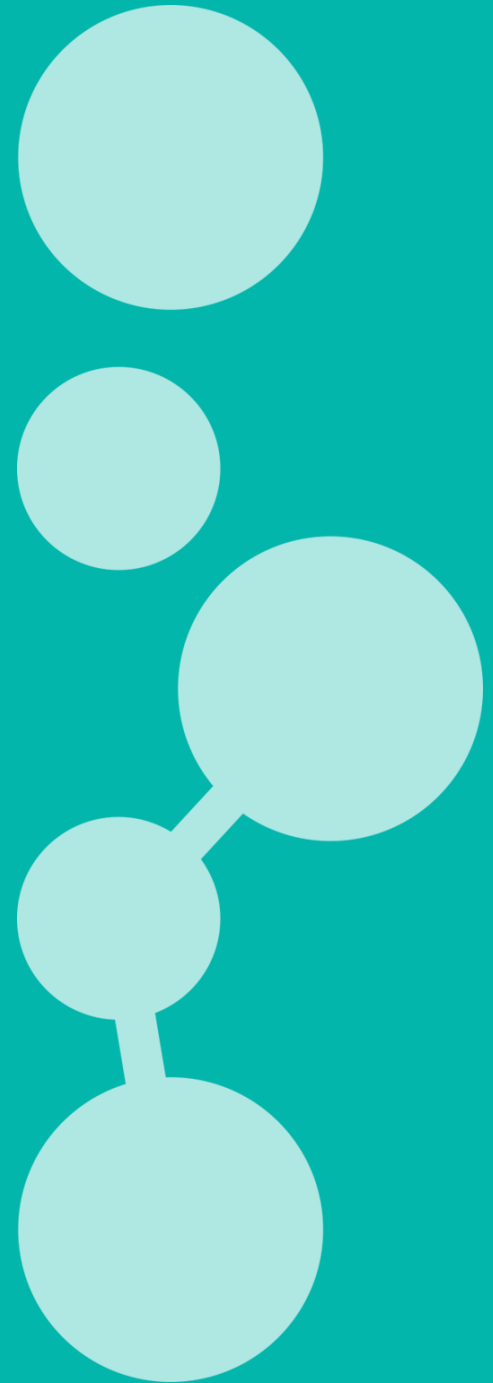
- Plug-and-Play with the existing PET industry
- Access to the most competitive feedstock sourcing
- The most circular solution
- A high-standard LCA
- Virgin-like quality
- High potential for price premium across industries with insignificant impact on retail price

CARBIOS STRENGTHS

- Technological readiness to license
- High profitable and Capex-lean model
- R&D already engaged to expand the pipeline on new polymers (polyamides and polyolefins)



Appendix



Strong, global protection of Carbios enzymes and processes

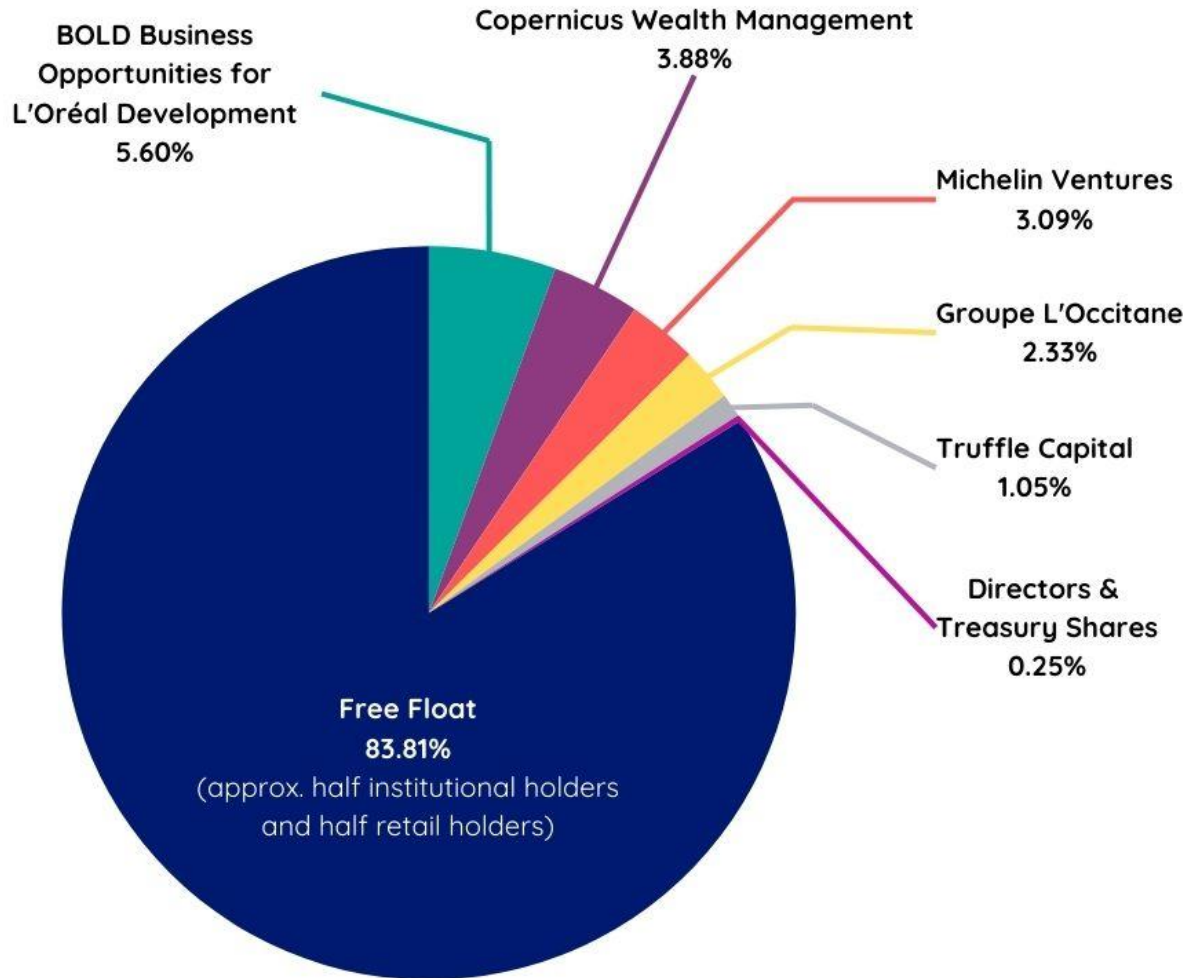
398 patent applications filed across the world's key regions

58 patent families



Number of granted patents doubled in 2 years

Share & shareholders as of April 10, 2024



LISTING	Euronext Growth Paris
TICKER	ALCRB
ISIN CODE	FR0011648716
NUMBER OF SHARES	16.845.630
ICB CLASSIFICATION	Chemistry / Speciality chemistry

ANALYST COVERAGE	
BERENBERG	Bastien Agaud
BNP PARIBAS EXANE	Laurent Gelebart
BRYAN GARNIER	Paul de Froment
KEPLER CHEUVREUX	Baptiste de Leudeville
ODDO BHF	Jeremy Garnier
GILBERT DUPONT	Alexandre Letz



FY 2023 Consolidated statement of income

Consolidated statement of Income (in thousand euros)	December 31, 2023	December 31, 2022	
	12 months	12 months	
Income	24	70	(4)
Net Research and Development expenses	(10,958)	(12,993)	(1)
Research and Development expenses	(18,830)	(19,057)	
Subsidies and other income from activities	5,385	4,776	
Capitalisation of development costs	2,487	1,287	
Sales and marketing expenses	(5,809)	(4,373)	(2)
General and administrative expenses	(12,134)	(8,807)	(3)
Operating expenses	(28,902)	(26,173)	
Other operating income and expenses	-	2	
Operating income	(28,878)	(26,101)	(4)
Financial income	1,655	(1,640)	(5)
Income before tax	(27,224)	(27,741)	
Income tax	-	-	
Share and profit (loss) of equity affiliates	-	-	
Net income (loss) for the period	(27,224)	(27,741)	

(1) R&D expenses

- Slight decrease mainly due to the launch of the OPTI-ZYME project (financed by ADEME) under which academic partners are directly financed through the project

(2) Sales and Marketing

- Increased efforts to secure the commercial roll-out of Carbios technology

(3) G&A expenses

- Increase in the number of employees from 104 in 2022 to 134 in 2023 to further structure the Company's functions with the construction of the Longlaville plant and consulting services.

(4) Income

- Some of Carbios' contracts for the supply of goods and services do not fall within the definition of revenue under IFRS (notably consortium contracts and research collaboration contracts). These revenues are presented as a deduction from the charges incurred by Carbios

(5) Financial income

- Financial income up by €3.7m resulting from interests on investment and term deposits following the 2023 capital increase.

FY 2023 Consolidated statement of financial position

Consolidated statement of financial position (in thousand euros)	December 31, 2023	December 31, 2022
ASSETS		
Goodwill	20,583	20,583 (1)
Intangible assets	21,874	22,457
Tangible assets	49,199	24,965 (2)
Right-of-use assets	6,175	6,765
Financial assets	1,219	906
Non-current assets	99,049	75,674
Trade receivables	6	57
Inventory	511	- (3)
Other current assets	10,621	7,670
Cash and cash equivalents	191,821	100,557 (4)
Current assets	202,009	108,284
Total assets	302,009	183,959

(1) Goodwill

- Calculated between the market value of Carbioice and the net asset acquired – no impact as of Dec. 23

(2) Tangible assets (+ €24.2 M)

- Acceleration of Carbios industrial project in Longlaville (+ €21 M)

(3) Inventory

- Feedstock opportunity for the Longlaville plant

(4) Cash and Cash equivalent

- Increased due to the net proceeds of the 2023 capital increase

FY 2023 Consolidated statement of financial position

Consolidated statement of financial position (in thousand euros)	December 31, 2023	December 31, 2022
EQUITY AND LIABILITIES		
Share capital	11,786	7,870
Share and contribution premium	276,569	146,968
Consolidated reserves	(2,900)	(5,482)
Retained earnings	(23,917)	3,826
Net income – share attributable to equity holders of the parent company	(27,224)	(27,741)
Shareholders' equity	234,314	125,441
Provisions – Non-current portion	216	184
Loans and financial liabilities – Non-current portion	39,226	35,395
Lease liabilities – Non-current portion	4,639	5,142
Other liabilities – Non-current portion	449	546
Deferred tax liabilities	1,694	1,694
Non-current liabilities	46,224	42,961
Provisions - Current portion	-	-
Loans and financial liabilities – Current portion	3,524	2,782
Lease liabilities – Current portion	1,232	1,346
Trade payables	4,829	4,021
Other current liabilities	11,888	7,408
Current liabilities	21,472	15,557
Total liabilities and equity	302,009	183,959

(1) Shareholders' equity

- Mainly impacted by :
 - Capital transactions €133.5 M
 - Net loss for the period - €27.2 M
 - Issuance of equity instruments:
 - Employees warrants plans €2.6M

(2) Loans and financial liabilities

- Leasebacks relating to the industrial demonstratin facility. €4.3 M of equipment depreciated over 10 years (€3.5 M for the non-current portion and €0.8 M for the current portion)

(3) Trade payables and other liabilities

- Variations explained by the activity of the three consolidated entitites

FY 2023 Consolidated cash-flow statement

Consolidated cash flow statement (in thousand euros)	December 31, 2023	December 31, 2022
Cash at beginning of year	100,556	104,956
Cash flow from operating activities	(22,589)	(21,820)
Cash flow from investing activities	(22,391)	(9,327)
Cash flow from financing activities	136,246	26,747
Change in cash position	91,265	(4,399)
Cash at end of year	191,821	100,557

An experienced management team



Emmanuel LADENT
Chief Executive Officer

30 years' experience in the automotive sector



Pascal BRICOUT
Chief of Strategy & Financial Officer

30 years of international experience in Finance, and M&A



Sophie BALMARY
Director of Human Resources and Legal Affairs

25 years' experience in Human Resources and Social Relations



Lionel ARRAS
Industrial Development Director

25 years' experience in the chemical industry & process engineering



Bénédicte GARBIL
Senior Vice-President of Corporate Affairs, Sustainability and Communication

Expert in Public Affairs and innovative projects funding



Prof. Alain MARTY
Chief Scientific Officer

International expert in enzymology & biological processes



Tommy MAUSSIN
Chief Marketing Officer

Over 17 years of experience in international business for several Michelin tire divisions



Lise LUCCHESI
Intellectual Property Director

Biotechnology engineer & intellectual property expert



Mathieu BERTHOUD
Senior Vice-President Business Development, Feedstock Recycling

30 years' experience in the chemical & recycling industry



Stéphane FERREIRA
Chief Biorecycling Business Officer

More than 20 years' experience in the chemical industry



Delphine DENOIZE
Public Funding and Regulation Director

Agricultural engineer & innovation funding expert

Our Board of Directors



**DR. PHILIPPE
POULETTY**
Chairman

- Co-Founder & Executive Director of Truffle Capital



**PROF. KARINE
AUCLAIR***

- Prof. of Chemistry at McGill University
- Tier 1 Canada Research Chair in Antimicrobials and Green Enzymes



**SANDRINE
CONSEILLER***

- Former CEO of Aigle
- Former Marketing and Branding Vice-President at Lacoste



**VINCENT
KAMEL ***

- Managing Director of the Solvay Polyamide Division
- Director of Coatis Business Unit
- Asia Director for Engineering plastics



**ISABELLE
PARIZE ***

- Chairman of the Supervisory Board of DELSEY Paris
- Board member of Air-France KLM



**JUAN
DE PABLO ***

- Prof. in Molecular Engineering at the University of Chicago's Pritzker School



**AMANDINE DE
SOUZA ***

- General Manager Leboncoin
- Ex-General Manager of Le BHV Marais, Eataly and Home, DIY and Leisure Purchasing at Galeries Lafayette Group



**JENNIFER
SAENZ ***

- Executive Vice-President, Chief Merchandising Officer at Albertsons Companies
- Board member of the United Way of Metropolitan Dallas



**MATEUS
SCHREINER
GARCEZ LOPES ***

- Global Director for Energy Transition and Investments at Raizen
- Former Global Manager in Renewable Chemicals at Brasken



**EMMANUEL
LADENT**

- CEO of Carbios
- 30 years' experience in the automotive sector



**LAURENT
SCHMITT**

- BOLD, venture fund created by L'Oréal to support the development of innovative start-ups



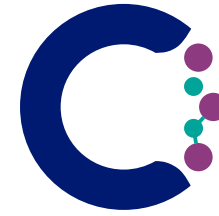
**NICOLAS
SEEBOTH**

- Michelin Ventures, fund created by Michelin in order to materialize Michelin's open innovation approach and to invest in high-tech materials that include a sustainable development dimension



**ALEN
VUKIC**
Observer

- CFO of Copernicus Wealth Management
- Chairman of Thalia Capital Advisors and of Finpartner Financial Services, Board member of different AIFM and UCITS funds



CARBIOS

Biotechnology **powering**
plastic and textile **circularity**



**Ready to shape a circular future
with us?**

Contact:
Benjamin Audebert
Investor Relations
+33 (0)4.73.86.51.76
benjamin.audebert@carbiosa.com