Sustainability Report 2023

OUR CONTRIBUTION TO PLASTIC AND TEXTILE CIRCULARITY

CARBIOS

Biotechnology powering
plastic and textile circularity

Contents

Editorial

Since our first sustainability report, we have considerably improved the structure of our organisation and our Corporate Social Responsibility strategy. This commitment, which is now incorporated into our company statutes, has notably translated into the creation of governance bodies, a CSR committee within the Board of Directors and an Operational Steering Committee. Major works were launched in 2023, particularly with regards to quality of life at work and the implementation of a responsible procurement policy. These reflect our desire to act as committed player within our ecosystem and to provide innovative solutions that meet our stakeholders' expectations.

Our vision remains the same: we must push the boundaries of innovation to build a sustainable future in which plastic and textile waste are high value-added resources. The circular economy is central to our model, and we strongly believe that our efforts to reduce the use of fossil fuel resources are not only a necessity but also an opportunity to transform our industry and society.

Through our innovation in biorecycling and biodegradation, we prove that it is possible to both rise to environmental challenges and create value. In 2023, we achieved significant milestones, notably with the validation of PET depolymerisation technology for textile waste. In addition to preventing waste, this process directly contributes towards reducing the extraction of new fossil fuel resources, by using waste as a raw material.

Now more than ever, our ambition exceeds the limits of our technology. Our goal is to become a global leader, whilst embodying strong corporate social responsibility values at every stage of our growth. Our advances are measured not only in tons of waste processed or factories built, but by our capacity to mobilise and federate our stakeholders around a common vision, that of a world that values what it produces.

We have consulted our partners, collaborators and stakeholders in order to better understand their expectations and prepare our company to meet the requirements set out in the CSRD. These discussions have helped us perfect our grasp of corporate social expectations, and identify key priority issues that will guide our future strategy.

This includes reducing greenhouse gas emissions, optimising our industrial processes but, more importantly, reusing existing resources.

The construction of our first biorecycling plant in Longlaville mirrors this commitment and our ability to develop a circular economy model for plastics on an industrial scale. This is an ambitious goal, but we stand firm in our belief that, with its dedication and innovation, CARBIOS can play a major role in creating a more sustainable future. Together, we will turn complex challenges into concrete opportunities, relying on our teams' daily dedication and our collaboration with committed partners.

Emmanuel Ladent
Chief Executive Officer of CARBIOS

Interview with...

1. What is your view of French biotech industry dynamics and CARBIOS' potential role in this sector?

Throughout my professional career, I have worked in the French biotech ecosystem and witnessed the commitment of these companies towards providing solutions to major societal challenges. CARBIOS is an integral part of this movement: we are at the heart of challenges as critical as the fight against global warming, waste management or the preservation of natural resources. We are convinced that the circular economy is vital to progressively reducing our dependence on fossil fuel resources.

We have a strong belief: that the advent of a circular economy will be the result of mobilisation across the entire ecosystem, with every member having their own brick to lay. The brick we will lay is that of biotechnology in the service of circularity. It is not the first brick that comes to mind when we think about circularity. But we firmly believe that by building a bridge between the sciences of enzymology and plastics processing, CARBIOS will become a key player in plastic and textile circularity.

2. What does your role being placed within the Executive Committee mean for the company's strategy and commitments?

The fact that the CSR role is a part of the Executive Committee shows that CARBIOS intends to become a key circular economy player. We leverage several factors - political, institutional, regulatory, economic and societal - to increase our impact. This position also underlines the importance we accord to societal commitments in our governance. Sustainability is in our DNA, from research to the industrialisation of our innovations, and my task is to bring it to life on a daily basis by working with all CARBIOS teams.

3. What does your appointment to this role represent for the company's CSR governance structure?

My appointment to this role strengthens CSR governance, which is already well integrated into CARBIOS' statutes. Dedicated bodies, such as a CSR committee within the Board of Directors and a steering committee involving employees, have been created to structure our corporate and social responsibility initiatives. In 2024, we will place particular emphasis on the day-to-day life of CSR governance, with a focus on employee involvement. We also aim to enhance the credibility of this commitment by producing concrete results. For example, 87% of our employees were involved in the Climate Fresk 2023, which helped to gather 53 proposals, serving as the basis of our CSR action plan for the upcoming year.

4. What roadmap have you laid out in terms of sustainability?

We have established a three-step approach: "Act, measure and inform". "Act" because that's our mission: to provide solutions to manage the lifecycle of an increasing amount of waste and a wider variety of plastics. "Measure" because this is the key condition to integrating performance and building a continuous improvement approach in all our projects, whether in research or when scaling up to industrial level. And, lastly, "inform" because our aim is to ramp up our interactions with our stakeholders, who must be at the heart of our improvement processes: employees through our well-being at work policy and employee shareholding scheme, suppliers through our responsible procurement policy, and clients through our consortiums. Finally, we are committed to sharing our accomplishments to catalyse the circular economy, on a local and global scale.

Bénédicte Garbil
Senior Vice President of Corporate Affairs and Sustainability

Circularity from all perspectives

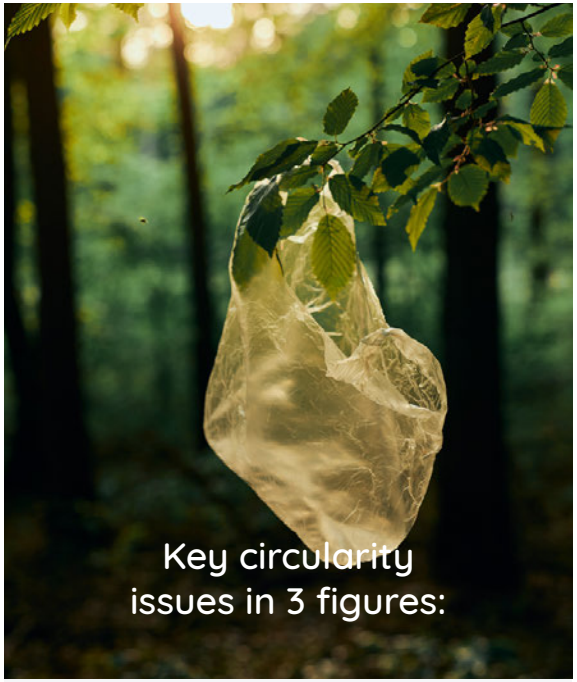
Circularity as seen by...

> **The European Parliament:** a production and consumption model that consists of sharing, reusing, repairing, refurbishing and recycling existing products and materials for as long as possible to ensure they retain their value. This way, product life cycles are extended to reduce the use of raw materials and the production of waste. (*Closing the Loop*, 2016).

> **The Ministry of Ecological Transition:** a circular economy consists of producing goods and services in a sustainable manner, by limiting consumption, resource wastage and waste production. The challenges faced are environmental, economic and social. (*The circular economy* I Ministry of Ecological Transition and Territorial Cohesion, 2023).

CARBIOS:

Contribution made by players in a value chain with the aim of turning a linear economic model into a loop system. This approach relies on collaboration to reduce the extraction of fossil fuel resources and limit the creation of waste, while maintaining a sustainable economic dynamic. The aim is to provide consumers with innovative and sustainable solutions, by integrating responsible practices throughout the value chain.



353 million
tonnes of plastic waste generated every year, with close to

25%
(79 million)
falling between the cracks of the collection system, sent to landfills or incinerated, and only

9%
(31 million)
are recycled.

(OECD, 2022)

A closer look

> **Recycling:** recycling is a process in which used products or materials are collected, processed and reused to create new products. Recycling aims to reduce the consumption of natural resources, minimise the waste that is sent to landfills or incinerated, and reduce the ecological footprint by saving energy and reducing greenhouse gas emissions. Recycling can be “closed-loop”, meaning that materials are reused to create the same product, or “open-loop”, meaning the materials are transformed into different products. Although vital to the sustainable management of resources, recycling has its limits, including the deterioration of materials (known as “downcycling”) and energy costs.

> **Upcycling:** upcycling is a process that consists of transforming waste or unused products into new objects or materials that are of a higher quality or have a higher environmental or economic value. Unlike traditional recycling, in which materials are decomposed to be remade, the aim of upcycling is to reuse objects or materials by assigning them a new function or improving them, without any degradation.

> **Downcycling:** downcycling is a recycling process in which materials or products are transformed into new objects of lower quality, utility, or value compared to the original. Unlike upcycling, which adds value, downcycling causes a deterioration in the quality of the material over the course of the process.

CARBIOS IN A NUTSHELL

Our purpose:

making the circularity of plastics and textiles possible on a large scale

Our key figures
at the end of 2023

147 employees

2 types of breakthrough technology

6 major scientific publications

58 patent families

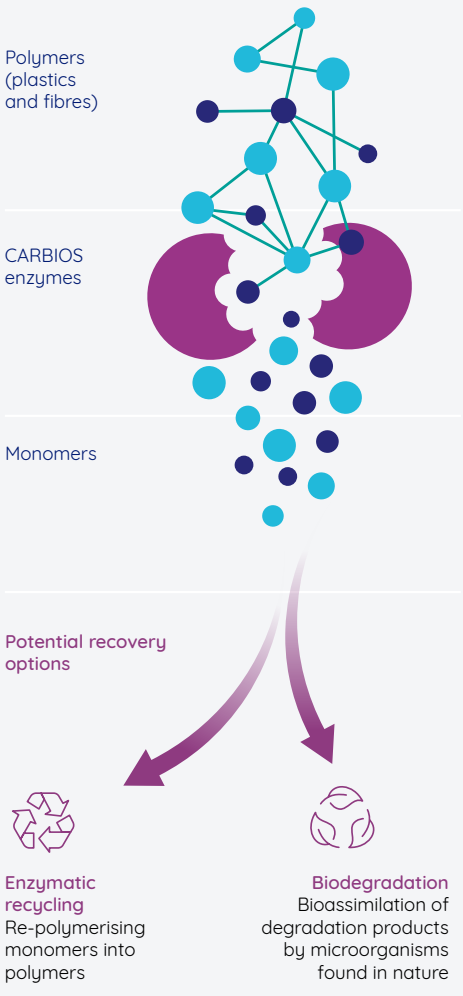
2 consortiums comprised of global leaders in their fields

3 sites

Clermont-Ferrand
headquarters, laboratory, pilot, demonstration plant and commercial unit dedicated to producing CARBIOS Active.
Toulouse,
enzymatic research and engineering centre.
Longlaville,
world's first PET biorecycling plant.

Enzymatic depolymerisation, at the core of CARBIOS' technologies

Enzymes are the chemical industry's new high-performance catalysts



Business model

PET market addressable	PLA market addressable	Other polymer markets addressable
1. Income from licenses	3. Income from CARBIOS Active	4. Potential CARBIOS income from other polymers
2. Income from the Longlaville plant		

Our ecosystem of partners

Scientific partners
tbi Toulouse Biotechnology Institute, cnrs, CRITT Bio-Industries, twb, INSA Toulouse, INRAE

Industrial partners
INDORAMA VENTURES, DE SMET Engineers & Contractors, novonesis

Public financers
Life, Banque européenne d'investissement, La Région Grand Est, République Française, ADEME

Packaging and textile consortiums
Nestlé Waters, L'ORÉAL, SUNTORY Beverage & Food France, PEPSICO, patagonia, PUMA, PVH, On, SALOMON

Opinion leaders
SOLARIMPULSE FOUNDATION, ELLEN MACARTHUR FOUNDATION

Strategic shareholders
L'ORÉAL, MICHELIN, L'OCCITANE EN PROVENCE

ECOSYSTEM

Stakeholders, modes of interaction and impact

Shareholders: department dedicated to Investor Relations, website comprising all regulatory documentation and all useful information for shareholders and investors (presentations, financial and extra-financial reports, stock coverage). Webcast presenting annual and half-year results, meetings with investors (17 conferences, 8 roadshows, 424 investors and 312 management companies met, 20 countries covered), responses to investor and extra-financial rating agency questionnaires.

Employees and applicants: hosting of corporate events (CARBIOS Day, CARBIOS Breakfast News, FAMILY Day, etc.), team building and new employee integration (integration day and introduction to a mentor), social dialogue through Social and Economic Committee initiatives and meetings, participation in the Toulouse Institute of Technology - Chemical Engineering and Process Engineering Job Fair, and in the Job and Professional Mobility Fair at La Grande Halle de la Villette in Paris, responses sent to 100% of applicants having contacted CARBIOS.

Clients: provision of cutting-edge technological solutions to enable industrials and brands to keep their commitments to consumers (77 client visits in 2023).

Suppliers: formalisation of a Procurement Policy which details CARBIOS' commitments and the manner in which the company intends to interact with suppliers. Sending of a questionnaire to all critical suppliers allowing to assess their level of maturity in the field of CSR and, according to requirements, to collaborate to develop even more sustainable practices.

Industrial partners: exclusive and global partnership with Novonesis ensuring the supply of enzymes to the Longlaville plant and future plants operating under license; coordination and management of two consortiums comprising global leaders in their fields (Packaging consortium with L'Oréal, Nestlé Waters, PepsiCo and Suntory Beverage & Food Europe; Textile consortium with On, Patagonia, PUMA, PVH Corp and Salomon); collaboration since 2017 with Technip Energies, the global leader in engineering in the energy, chemical and biosourced industries, for the industrial development of the CARBIOS PET enzymatic recycling process; letter of intent (LOI) with Indorama Ventures for the construction of the first global plant exploiting CARBIOS' PET biorecycling technology (Longlaville, France).

Academic partners: strategic alliance with the National Institute of Applied Sciences of Toulouse (INSA) through its laboratory Toulouse Biotechnology Institute (TBI), joint research unit (INSA Toulouse, INRA, CNRS), academic collaboration for innovation projects, notably with École polytechnique de Paris, the Laboratoire de Génie Chimique de Toulouse, the Synchrotron SOLEIL (Paris), the university of Delaware, the university of Portsmouth, the university of Manchester, the university of Greifswald, Aminoverse (IA), and the CRPP laboratory (Microfluidics), co-publications in some of the most influential scientific journals in the world (Nature, Chemical Reviews, Biophysical Journal and ACS Catalysis).

NGOs: a member of the Ellen MacArthur Foundation and the World Alliance for Efficient Solutions, CARBIOS and L'Oréal received the "Pioneer Awards" in the Industrial Processes category, awarded by the Solar Impulse Foundation during the first World Alliance Summit. This prestigious award was bestowed on CARBIOS for its PET enzymatic recycling solution, having received the "Efficient Solution" label from the Solar Impulse Foundation since 2019, and to L'Oréal for having used this breakthrough technology for the first time in their cosmetic bottle prototype.

Local authorities & institutional actors: support provided to frontline institutional partners, notably through ADEME, France 2030 and the Grand-Est Region, the European Commission with the "LIFE Cycle of PET" programme, the European Investment Bank.

Planet: preservation of natural resources and biodiversity, fight against land and marine pollution, optimisation of the environmental impact of recycling solutions.

Consumers: responses to civil society concerns relating to plastic pollution and the transition towards a more circular economy.

Local communities: creation of sustainable and transparent relations with local players, whether public, economic, social, or from university or school circles. Academic partners assigned to research programmes or with local authorities for the establishments of the first plant in Longlaville (Meurthe-et-Moselle).

MATERIALITY

Our materiality analysis

Although under no obligation to, since 2021 CARBIOS has chosen to voluntarily publish a sustainability report with a view to asserting its social, societal and environmental commitment and ensuring coherency with its purpose.

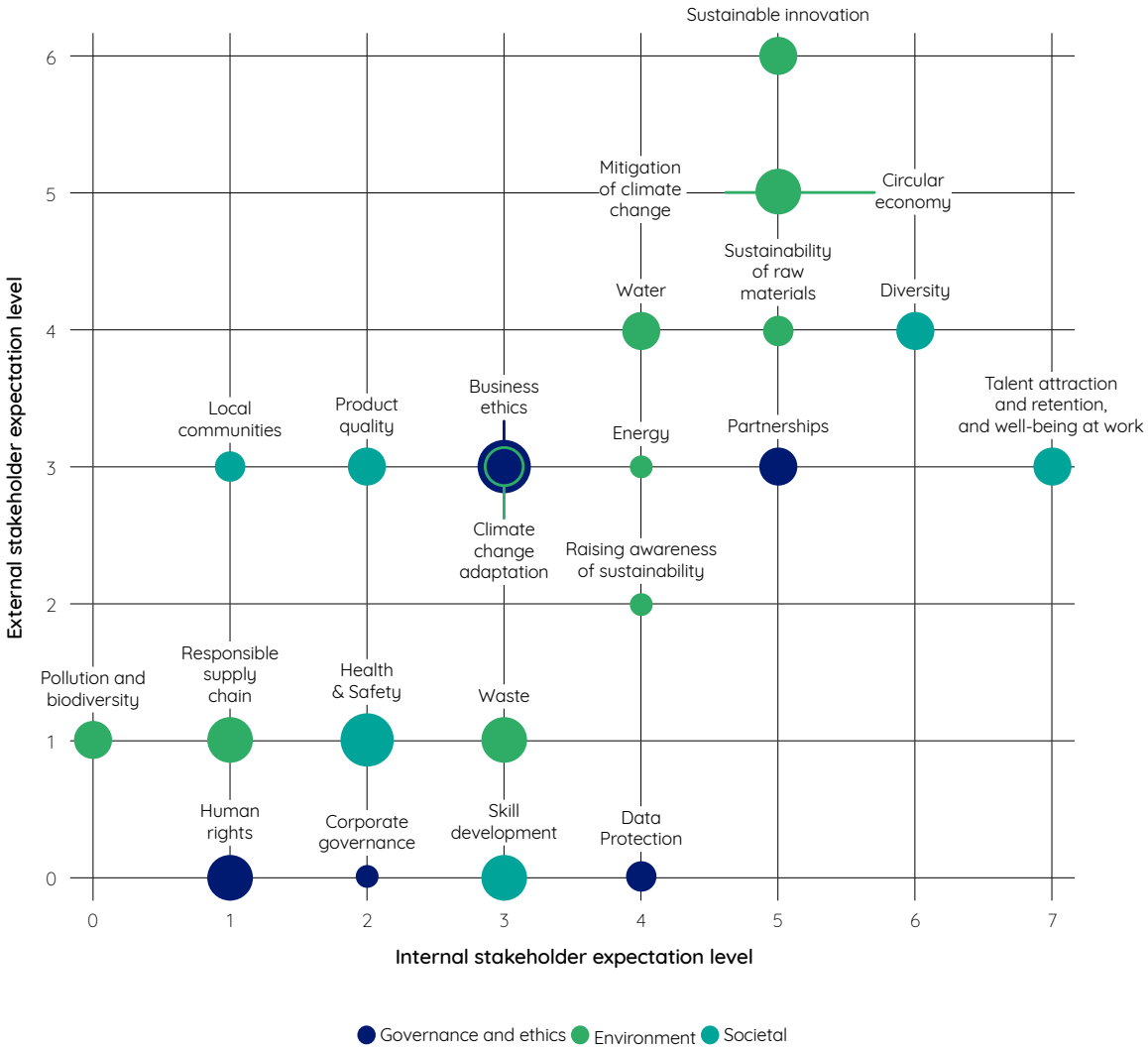
To enhance its credibility and strategic scope, our CSR policy was built by listening to our stakeholders. In 2022, we conducted an initial analysis of our material challenges in the environmental, social and governance fields.

2023 was a pivotal year for CARBIOS, with the implementation of CSR governance and the creation of a dedicated position. One of the main guidelines is to step up discussions in order to better consider the issues faced by shareholders, which must be highlighted in a more central way in the 2024 report, with a view to anticipating European CSRD (Corporate Sustainability Reporting Directive) requirements.

In fact, the CSRD requires that 50,000 European companies publish a non-financial performance report with the goal of identifying the key issues their shareholders face and the measures taken to address these issues. This directive is part of a corporate global performance improvement approach in which social, societal and environmental impacts are placed on the same level as financial performance, with a focus on more equitable value sharing with stakeholders.

The work already carried out has enabled us to identify, map and question our major stakeholders in order to better understand the issues they are faced with and which CARBIOS must respond to. Most of the positions expressed are detailed in this 2023 report. We will continue these efforts in 2024 by analysis CARBIOS' sectoral megatrends, identifying and characterising challenges from an ESG perspective, and building a dual materiality matrix. These steps will help us to identify and select the most appropriate indicators and develop associated improvement plans.

Matrix of key issues for internal and external stakeholders



ROAD MAP

Our CSR road map to an industry serving a more sustainable world

Sustainable development is at the core of CARBIOS' DNA, from its mission to its purpose and the way in which it manages its activities and designs its economic model. Drawing from this initial nature, we have gradually integrated CSR issues and have now placed them at the centre of our corporate strategy.
This comprehensive approach is built on 4 ambitions and 11 challenges grounded in the more general framework of the UN's Sustainable Development Goals.

Our purpose:
making the circularity of plastics and textiles possible on a large scale

Ambition #1
Become a key player in plastic and textile circularity

Ambition #2
Identify and reduce the environmental impact of our solutions and activities

Ambition #3
Be a responsible employer

Ambition #4
Strengthen relations with our ecosystem

11 CHALLENGES

.1 Improve the recovery of plastic and textile waste

.2 Generalise and expand plastic and textile circularity through the commercialization of our technologies

.3 Identify and measure the impact of our technology

.4 Identify and control the impacts of our activities on the environment

.5 Develop a safe work environment

.6 Accompany and improve our employees' skills

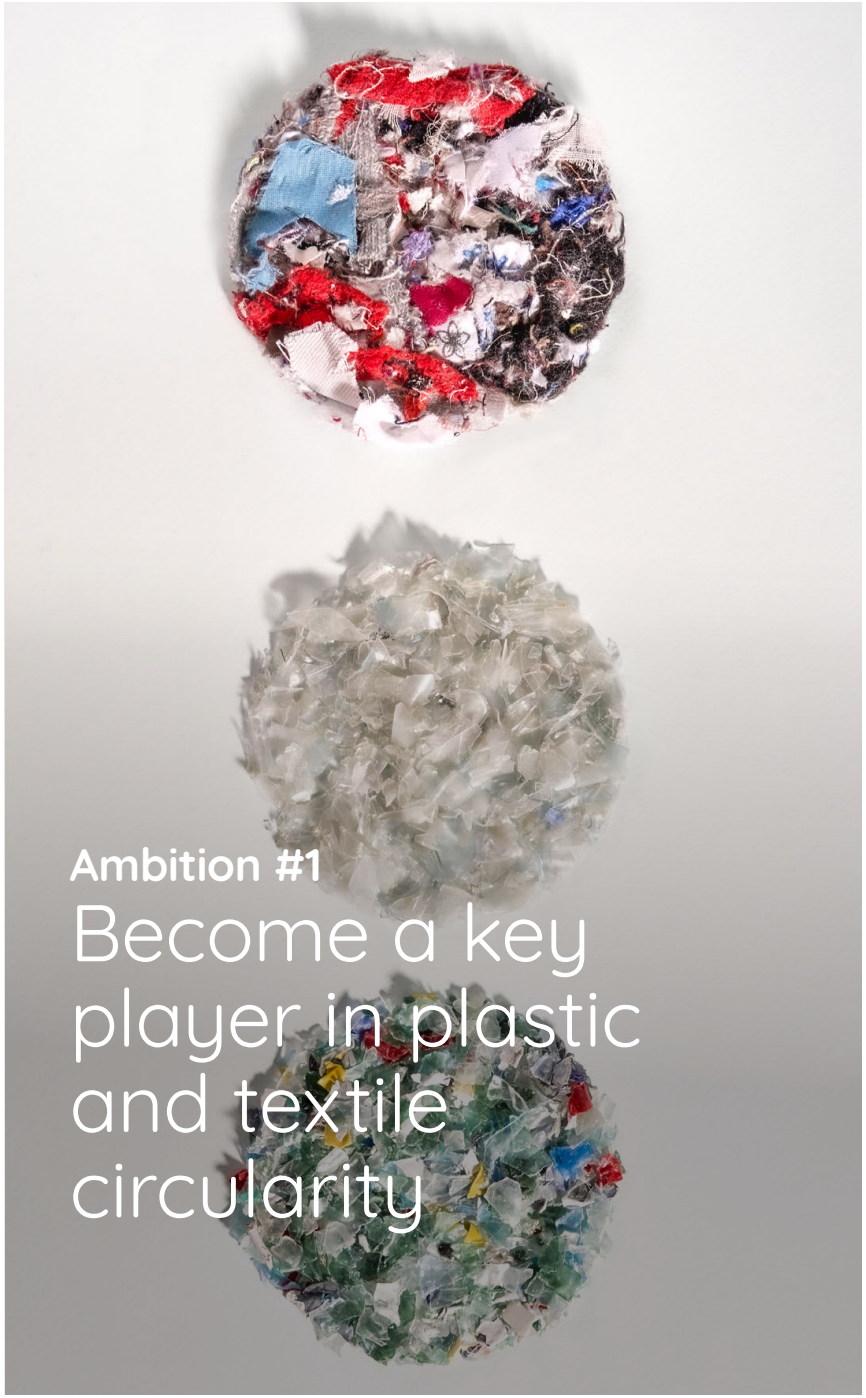
.7 Promote the fulfilment, commitment and well-being of our employees at work

.8 Combat discrimination and promote diversity

.9 Establish lasting relations with our clients

.10 Support and encourage supplier involvement

.11 Grow with local communities



Ambition #1

Become a key player in plastic and textile circularity

Circularity as the only alternative to the impasse that is the end-of-life of plastics and textiles

Some trends do not decline: over the course of twenty years, global production of plastic waste has continued to increase and has almost doubled. Two-thirds of the now 353 million tonnes that accumulate every year are generated by products with a lifespan of less than five years[1]: packaging (40%), consumption goods (12%), clothing and textiles (11%). Only 9% of plastic waste is actually recycled, 50% end up in landfills, and close to 6 million tonnes in waterways. At this rate, the OECD foresees that this type of waste will triple by 2060, with less than 20% of recycling at stake. Despite this ever-approaching sword of Damocles, barely 1.2% of innovations relating to plastics in the last thirty years have tackled their recyclability[2]...

Since 2011, CARBIOS has taken up this challenge in order to develop solutions that will provide lasting change. By being the first to combine biology and plastics processing as part of innovative PET biorecycling and PLA biodegradation processes, we enable all players in the plastic and textile industry value chain to rise to the challenge of circularity.

186
million tonnes,
projected size of the recycled PET market in 2050 (50% of the global PET market, vs 15% in 2025)[3]

+17%
annual growth of new recycling technologies by 2050 (segment estimated to be worth 200 billion euros)[3]

8 to 12%
CARBIOS market share target by 2035 (recycled PET segment)

Innovation and regulation: making recycling the rule, not the exception

Michelle NORMAN,
Director of Sustainability and External Affairs
Suntory Beverages & Food Europe

The recycling of plastics should no longer be an exception, yet continues to face significant challenges today. To meet this challenge, regulation is a real asset: imposing strict quotas on the incorporation of recycled raw materials in new products will allow us to support this market's development and encourage actors to consolidate their recycling and sourcing policies. The Packaging and Packaging Waste Regulation (PPWR) adopted by the EU is a step in the right direction: it provides a legal definition of "high-quality recycling" and aims to increase the mandatory percentage of recycled materials in packaging.

On an economic level, the time has come to restore the balance by prioritising products with a low environmental footprint. It is no longer acceptable for economies of scale to continue to favour virgin materials. The PPWR must ensure priority and equitable access to high-quality recycled materials, in all Member States. Europe must adopt a far stronger framework to support closed-loop systems whilst avoiding downcycling which weakens the quality of materials.

The 2019 European Directive on Single Use Plastics (SUPD) could become an essential lever to support chemical recycling. But to do so, the European legislator must implement the spirit of the act by establishing strict rules for calculating and declaring recycled content in products. To ensure their future, it is vital that recycling technologies be supported by a solid legal framework that differentiates the most efficient methods, such as depolymerisation, and encourages their mass adoption.

(1) OECD Global Plastics Outlook database, 2022. (2) Global Plastics Outlook, OECD, 2022. (3) CARBIOS forecast.

CHALLENGE 1

Improve the recovery of plastic and textile waste

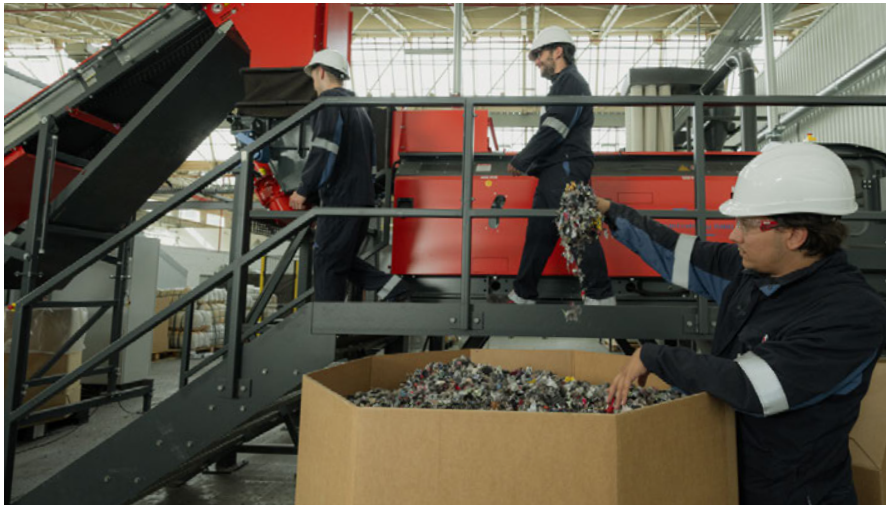
Why is it important?

Despite the constant increase in plastic and textile waste, their recyclability is still challenging. While this topic is discussed, it is only addressed to a limited extent since recyclability only concerns transparent waste, a mere 36.6% of the PET volume in circulation on the European market(1). CARBIOS is the first and only company in the world to have developed a biological technology at industrial scale allowing to recycle all types of PET waste, and has as such revolutionised the lifecycle of plastic and textile materials.

Our objectives

> Become world renowned in the plastic and textile circular economy by making currently non-recyclable waste recyclable, and by preserving their primary qualities for far longer than traditional technologies.

> Expand our portfolio of solutions to other polymers.



PET biorecycling: textile no longer forgotten

In 2023, CARBIOS reached several crucial milestones in the development of polyester recycling. The first came in February, with the validation of PET depolymerisation technology for textile waste. This was the culmination of the CE-PET R&D project carried out over the course of 4 years in collaboration with the academic world and co-funded by the Government(2). This expansion of the scope of application of enzymatic recycling offers a solution to a colossal challenge posed by textile, which accounts for 60% of the global PET market. This solution has already garnered interest from global leaders in the textile industry, as demonstrated by the "fibre-to-fibre" consortium initiated by CARBIOS with players such as On, Patagonia, PUMA, Salomon and PVH Corp (Calvin Klein and Tommy Hilfiger), all of which are committed to making progress on the topic of recyclability in fashion. Finally, this last year witnessed the inauguration of the first automated textile preparation line at the Clermont-Ferrand demonstration plant, marking a crucial step toward the industrialisation of the process applied to textiles.

New polymers in sight

Alain Marty, Chief Scientific Officer of CARBIOS, and his teams at the Toulouse Biotechnology Institute (TBI) and the University of Bordeaux have co-signed a study(3) that will go down in history in the scientific journal *Chemical Reviews*. Citing over 700 references to existing research, the co-signatories analyse the scope, limits and challenges of enzymatic recycling to shape its future and relevance to different types of plastic other than PET and PLA.

"CARBIOS is an R&D company, continuous research is our DNA. Pushing the boundaries of what we know and what is possible is what drives us. Today, CARBIOS is the most advanced company in the field of PET biorecycling. But our mission is far more ambitious since we want to integrate even more plastics into the circular economy and contribute towards creating genuine closed loops, which preserve the value of plastic and textile materials and ensure that they no longer become waste. To expand our expertise to other polymers, the launch of any new scientific research project must start with an exhaustive bibliographical study of the field in question; this is how we started with our PET biorecycling and PLA biodegradation technologies. This new publication in the journal *Chemical Reviews* - a first in our sector - is a step in this direction. I am very proud to have had another opportunity to work with our long-time partner TBI (joint research unit comprised of the INSA of Toulouse, the CNRS and the INRAE), as well as with new partners at the University of Bordeaux, to draft this article. Our work is paving the way to new biological recovery methods for other polymers."

Alain MARTY,
Chief Scientific Officer of CARBIOS

(1) Zero Waste France, 2022. (2) CE-PET, co-financed by the ADEME as part of the Investments of the Future Programme. (3) *Enzyme's Power for Plastics Degradation*, doi.org/10.1021/acs.chemrev.2c00644

40
tonnes of PET depolymerised at the industrial demonstration plant

21
client tests conducted for CARBIOS Active (PLA)

5
new patent families in 2023

At the end of 2023, the CARBIOS group held (owned or under license)
394
titles in
58 patent families,
44 European titles,
48 titles in the USA,
27 titles in Canada,
and **180** titles in Asia

Today

- **First payment for OPTI-ZYME:** CARBIOS has received 1.2 of the 11.4 million euros to be paid by ADEME as part of the project in order to continue optimising its PET depolymerisation process and ensure its competitiveness. This first instalment attests to the project's concrete progress and the achievement of the intermediate targets set by ADEME.
- **Change of scale:** microfluidic screening, developed by CARBIOS and its partners at the CNRS and University of Bordeaux, allows the screening of millions of enzymes in one day, compared to only a few thousand using traditional technologies. This advance will enable CARBIOS to develop its portfolio of innovations at a quicker pace.

Tomorrow

- 1 million tonnes of waste processed in 2030.
- New polymers processed using CARBIOS solutions.

CHALLENGE 2

Generalise and expand plastic and textile circularity through the commercialization of our technologies

Why is it important?

To overcome the challenge of plastic and textile circularity, it is vital that our innovations are disseminated and adopted as widely as possible. Our efforts to validate the scaling up of our technologies and those made to secure our intellectual property must ensure the long-term viability of our business model and its ability to contribute to a more sustainable future that creates economic and environmental value.

Our commercial policy is naturally turned towards the international roll-out of our technologies through licenses, since the majority of plastic production is highly globalised.

9 industrial sectors

3 geographical areas

First steps towards internationalisation of the company and its solutions

At the end of 2022, CARBIOS announced changes to its organisation, a necessary milestone to successfully commercialize the technologies developed by the company, with the appointment of Stéphane Ferreira as Chief Business Officer and member of the Executive Committee. In 2023, the Business Development division was restructured with the arrival of 4 new profiles entrusted with marketing and business development on the textile and packaging markets. At the same time, the roll-out of our international prospecting was also re-organised with the recruitment of a team of 12 consultants spread across 3 main priority geographical zones: North America, Europe and Asia.

Initial prospecting efforts in the United States opened up discussions with the Food & Drug Administration (FDA) to add CARBIOS Active - our enzymatic solution for 100% compostable PLA - to the list of food-contact-approved substances. This first step will enable CARBIOS Active to be used in the manufacturing of food packaging, a clear advantage for American manufacturers seeking to comply with their CSR commitments. CARBIOS Active has also received certification from the Biodegradable Products Institute (BPI), the main North American authority in the field of compostable products and packaging.

Today

- **Strategic partnership:** CARBIOS and Novonesis, a global leader in enzyme production, have entered into an exclusive and long-term global partnership for the supply enzymes to the Longlaville plant and all future plants under license.
- **French innovation ambassadors:** CARBIOS was selected from 22,000 start-ups in the French Tech ecosystem to be one of ten organisations to represent French innovation during the 6th edition of the "Choose France" summit, an international gathering dedicated to France's business attractiveness.
- **New milestones reached for our first plant** with the receipt of a building permit and the start of construction.
- **Biodegradation activity:** obtainment of Food Contact Notification (FCN 2325) for CARBIOS Active in the United States for storage and filling applications from freezing to room temperature.
- **Formalisation of the technical information summary document** relating to our proprietary PET biorecycling technology, a deliverable that is key to the construction and design of plants under license.

Tomorrow

- Client adoption of our PET biorecycling technology.
- Commercialization of CARBIOS Active on the US market by 2025.
- Sales growth for our two technologies (geographical and applicative expansion).
- Prospecting and first agreements for new polymers.

Ambition #2

Identify and reduce the environmental impact of our solutions and activities

Make recycling and biodegradation solutions desirable and environmentally acceptable

It is no secret that plastics have significant environmental impacts throughout their lifecycle: in terms of carbon footprint, this impact was estimated at 1.8 Gt CO_2-equivalent in 2019 (from production to "end-of-life"[1]), a figure that could rocket to 4.3 Gt CO_2-equivalent by 2060, accounting for 4.5% of all greenhouse gas emissions[1]. While recycling represents barely 22% of end-of-life impacts, the environmental cost of this management is necessarily a burden in an increasingly unbalanced situation.

Decarbonising and mitigating the environmental impact across the lifecycle of materials is a key component of the transition towards a more sustainable economy capable of preserving our ecosystems and reducing our dependence on fossil fuel resources. Life cycle analyses (LCA) reveal some of the environmental repercussions tied to the various stages of a product's life. Our enzymatic solutions must continue to prove their worth and their ability to reduce the environmental cost in all its dimensions, and not only in carbon terms. This is the condition for our solutions to widely convince producers, brands and consumers.

"The issue is not plastic in itself, but the plastic pollution it sometimes causes. When plastic is properly collected and sorted, when we are able to recycle it, we can give it a second life. The problem comes when there is a hole in the logistics chain, when plastic is not properly collected from the start, when it is abandoned in the environment only to end up, as is often the case, in rivers, waterways and subsequently oceans. It is then that it irreparably harms the environment and severely impacts biodiversity and the health of marine ecosystems. Critical issues which have been brought to our awareness since the famous words spoken by Ellen MacArthur, approximately ten years ago: "In 2050, there will be more plastic than fish in the oceans". That is the challenge: to avoid plastic pollution at any cost! CARBIOS is working towards this by maximising the recycling of plastic waste which, without this type of enzymatic technology, would still be impossible to recover."

Jean-Marc BOURSIER
President of the Institut National de l'Économie Circulaire (INEC)

(1) Global Plastics Outlook, OECD 2022. (2) Taking account of a 50% diversion of PET waste from a conventional end of life process.

CHALLENGE 3

Identify and measure the impact of our technology

Why is it important?

Because they are the result of continued R&D and cutting-edge innovation that pushes the boundaries of the existing, our solutions must demonstrate their efficiency and robustness in order to convince and be widely adopted. This strength of conviction implies a rigorous analysis of their impact and complete transparency in our commercial relations.

In order to act, measure and inform, we have adopted a quantifiable and communicable continuous improvement approach, focused on reducing the impact of our activities on the environment, and shared with our stakeholders.

Our objectives

> Measure and progressively reduce the impact of our activities on the environment, notably through environmental analysis, a carbon report, and an analysis of our products' life cycle.

> Share the environmental footprint of our activities and technologies with our clients.

> Improve the energy efficiency of our operations by prioritising the most efficient solutions and increasing the share of renewable energies in our energy mix.

> Consider environmental performance in our investment processes and decisions.

Concretely quantify the environmental benefits of our solutions

The life cycle analysis (LCA) conducted using the Ecoinvent 3.8 database highlights a 90% decline in CO_2 emissions* during the production of recycled PET with our solution compared to the production of virgin plastic(1). For every tonne produced, we avoid the use of 1.3 tonnes of oil compared to virgin PET. In terms of circularity, when compared to traditional recycling, enzymatic recycling is 5 times more circular according to the MCI (Material Circularity Indicator) calculation method developed by the Ellen MacArthur Foundation. Furthermore, CARBIOS' technology allows for the processing of 100% of PET waste (compared to only 36.6% for mechanical recycling, which is only able to process transparent waste(1)).

-90%(2)

CO_2 emissions compared to the production of virgin PET taking account of a 75% end-of-life substitution rate.

69,300 tonnes

of extracted fossil raw materials avoided every year(3)

5X

more circular(4)

Today

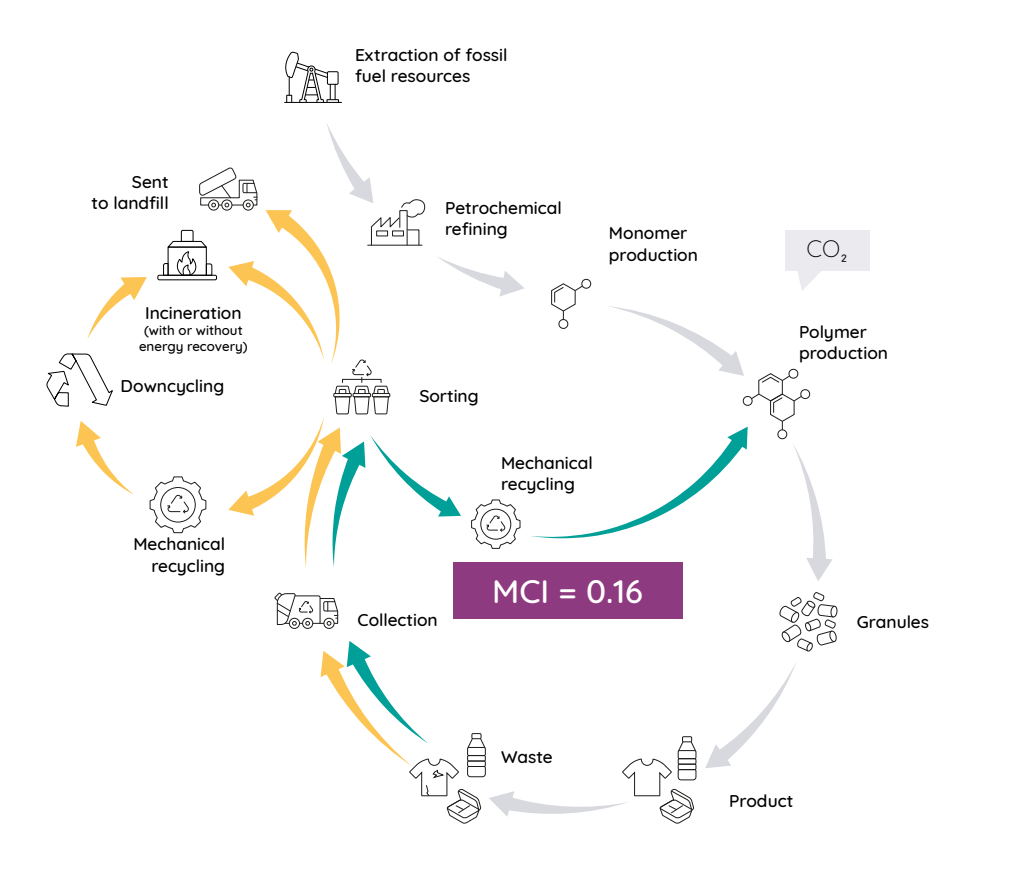
- **Successful tests for CARBIOS Active composting:** the tests conducted in the industrial composting facility in collaboration with the CoPack Chair (AgroParisTech) have demonstrated our solution's high level of performance under real conditions. Similar results were achieved in the United States with the Compost Manufacturing Alliance (CMA). Tests in mesophilic anaerobic digestion units (at a temperature of 38°C) have proven CARBIOS Active's ability to break down PLA at low temperatures and to increase the quantity of green biogas produced. These results mean that the use of PLA packaging is perfectly compatible with the European roll-out of biowaste collection and the processing of such waste through composing or anaerobic digestion.

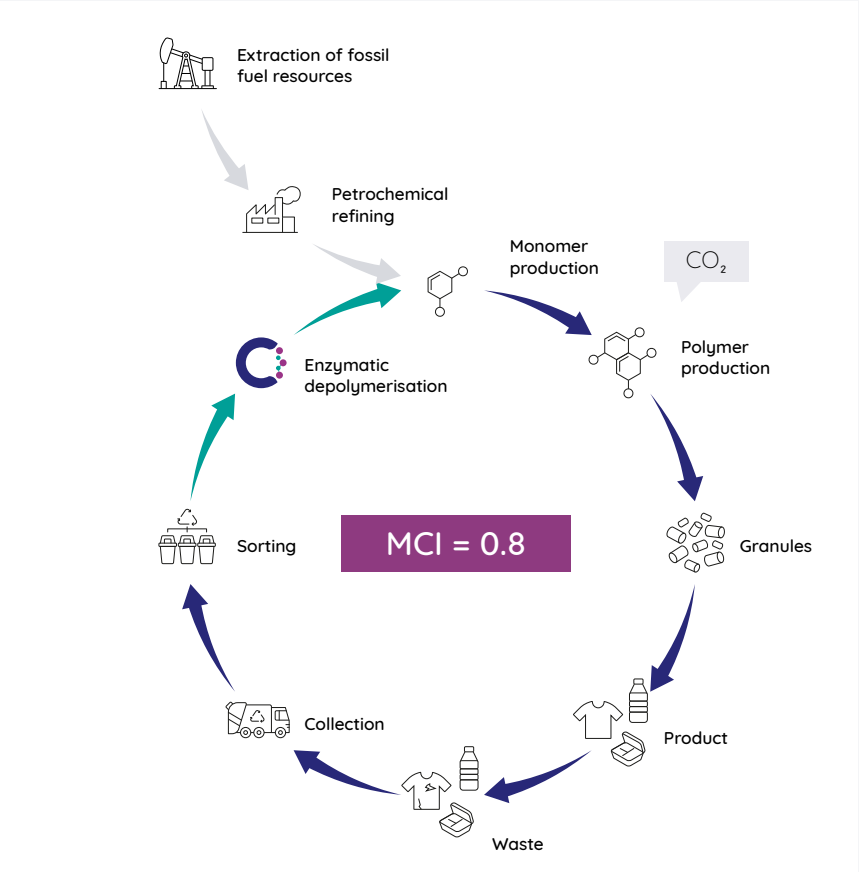
Tomorrow

- Update our life cycle analyses (LCAs) and communication to stakeholders.

(1) *How circular is PET? Zero Waste*, 2022. (2) 0.28 kg of CO_2 eq. per kg of bio-recycled PET produced, with the diversion of 75% of PET waste compared to a conventional end-of-life management process. 2.9 kg of CO_2 eq. per kg of virgin PET produced in Europe. (3) An average of 1.3 kg of oil is required to produce 1 kg of virgin polymer — Source: Halina Marczak, *Energy Inputs on the Production of Plastic Products, Journal of Ecological Engineering*, 2022. 1.54 kg of crude oil to produce 1.3 kg of oil — Source: Muhammad Tamoor et al, *The Cradle-to-Cradle Life Cycle Assessment of Polyethylene terephthalate: Environmental Perspective*, 2022. (4) According to the Material Circularity Indicator, calculation method developed by the Ellen MacArthur Foundation.

Comparison of circularity between PET value chains





> CARBIOS' technology provides a circularity index that is five times higher

Difficult to recycle: coloured bottle flakes, containers, fine materials and textiles

Easy to recycle: clear bottle flakes

CHALLENGE 4

Identify and control the impacts of our activities on the environment

Why is it important?

Mindful of the environmental footprint resulting from the development and operation of our activities, we are continuously working to improve our industrial processes and raise awareness among our teams, in collaboration with our ecosystem. In view of the commercialization of our licenses, the operational excellency of our industrial activities must constitute a reference on an environmental level and contribute towards improving the attraction of our solutions.

Our objectives

> Roll out a certified Environmental Management System (EMS) by 2024.

> Conduct an annual assessment of our carbon impact and take action as part of our daily operations to reduce our environmental footprint.

The future Longlaville site, already mindful of its water footprint

Our very first plant has not yet been built, yet its water resource management is already a priority at every stage of the process. The biorecycling technology developed by CARBIOS does not use any chemical solvents to depolymerize PET waste. The process's many stages, and notably the hydrolysis phase, have been optimised to limit their consumption. In fact, our engineer teams have already succeeded in reducing the water requirements of our proprietary process by more than 20%. We are currently working to implement a closed-loop circuit enabling us to use a part of the recycled water for cooling towers. 90% of the water used by CARBIOS in our industrial processes will be returned to the natural environment after undergoing treatment in compliance with regulatory provisions.

Finally, 15 million euros are being invested in the construction and establishment of a water treatment facility on the Longlaville site. This facility will use biological degradation and membrane filtration to eliminate residual quantities of compounds resulting from PET depolymerisation found in our wastewater.

Furthermore, we work with INSA (CRITT Toulouse), a public research institute, to identify additional water treatment technologies in order to guarantee the high quality of treated water as from the operational phase. Thanks to these efforts, the plant will serve as a model of our process's environmental exemplarity, on a large scale.

20%

drop in water consumption per tonne of waste processed by the demonstration workshop

Total GHG emissions in 2023:

6,392 tCO_2e

Emissions — Scope 1:
100 tCO_2e

Emissions — Scope 2:
168 tCO_2e

Emissions — Scope 3:
6,123 tCO_2e

"Since we will return close to 90% of the water we sample back to the natural environment, the quality of our liquid waste will represent a major challenge. This was the topic of decisive work and discussions with authorities during the authorisation process. In addition to investing in a high-performance treatment facility, we have also decided to install a reverse osmosis pretreatment system that further improves the facility's performance and allows us to leverage the concentrates in our production processes. Reverse osmosis is an advanced filtration process that uses a semipermeable membrane under pressure to separate materials dissolved in water, such as salt, minerals, bacteria, etc., at a molecular level. This technology is used, for example, to create drinking water by desalination of seawater, and in some agrifood industries, such as the production of water for beverages, which require very pure water. On our Longlaville site, we use it to guarantee the quality of water that we reinject into the natural environment. In addition, we have also committed to providing the authorities with a technical and economic study aiming to reduce our water consumption based on the 3R principle (Reduce, Re-use, Recycle), within two years of our launch."

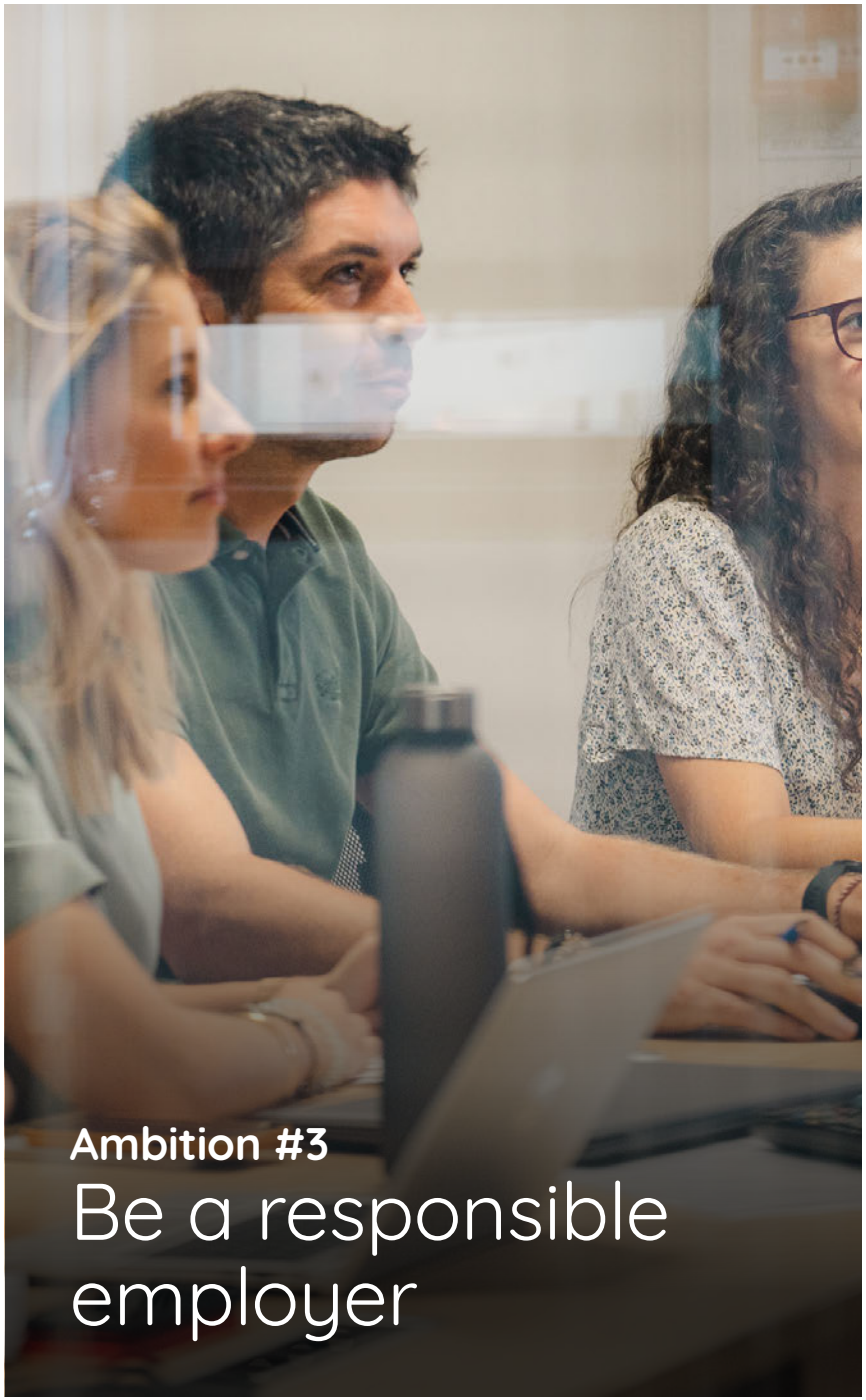
Arman SAMII
Director of the Longlaville site

Today

- **Launch of the certification process** of our Environment Management System according to ISO 14001 requirements.
- **3rd carbon report** drafted in partnership with Carbone 4 (consulting group dedicated to climate issues).
- **Raising employee awareness of environmental challenges:** 11 Climate Fresk sessions were organised, with over 87% employees sensitised and 53 proposals received. The CSR steering committee was then entrusted with formalising and implementing an action plan on this basis. At the same time, our CRS policy was officially launched during our annual seminar, CARBIOS Day, resulting in the organisation of eco-challenges and the presentation of our environmental ambitions. The day was marked by a speech from the PICTURE company, with feedback on B Corp certification. 93.6% of employees stated that they had a better understanding of the challenges tackled by our CSR policy by the end of the event.

Tomorrow

- Recognition of our CSR approach and comittments through the achievement of a leading CSR certification
- Continuation of work to guarantee the efficiency of our processes.



Ambition #3

Be a responsible employer

A matter of meaning

70% of 18-30 year-olds could abandon the idea of applying to a company that does not sufficiently consider environmental issues(1). 57% could leave their job for the same reasons. This search for meaning and utility, which is far more intergenerational than we might have thought, is found in all sectors and is reconfiguring areas of desirability. For the students and alumni of leading schools, the environment tops the list of sought-after fields(2) and companies with a strong impact in this area are top choices, far ahead of major groups. This is a sign that the value of a diploma is now becoming intimately linked to the perceived utility of the mission it grants access to.

A boon for the Greentech sector? It could well be, since our sustainability careers carry this North Star, this environmental and societal utility, this additional meaning that has everything needed to convince, provided we demonstrate coherency and commitment. Because Corporate Social Responsibility is an employer's responsibility, towards its current and future employees; a promise that must be held if we intend to develop and maintain our attractiveness. Attractiveness, a major challenge: second in France in terms of capital raising, the French Greentech sector has an important card to play on the international stage, and talent recruitment is one of the keys.

A search for meaning and social impact when choosing an employer: the Environmental fields answer the call

Aurélie ROBERTET,
Managing Director Universum
France/Benelux

When entering the job market, 1 engineer in 4 wants to work in the Environmental sector. This sector is the most attractive it has ever been, notably to commercial and technological profiles. And this attractiveness goes beyond a good first impression: a comparison of employees' level of satisfaction shows that the Environmental sector achieves the best scores. An all-time high and a sector with particularly good employee retention rates thanks to long-term projects that inspire employees and make them want to commit in the long-term. Things have certainly changed. While applicants continue to prioritise pay and social environment when selecting an employer, the need for meaning is growing. Young individuals want to have an impact on society and align their values with their professional commitment. In fact, almost half of all engineers would turn down a job in a company that is not committed in this field. This shows the importance that employers must grant their actions to protect the environment and promote sustainable development.

2,750
French Greentech companies,
with 18% operating in the green industry(3)

250 to 350
companies created in the sector
per year in France(3)

39,000
jobs created between 2012 and 2023(3)

2.78 billion
euros in capital raised in 2023(3)

(1) Harris Interactive, *Les jeunes et la prise en compte des enjeux écologiques dans les études et le monde du travail (Youths and consideration of ecological issues in studies and the working world)*, October 2023. (2) Ipsos | BCG – CGE – *Talents: ce qu'ils attendent de leur emploi (Talent: what they expect of their job)*, 5th barometer, April 2023. (3) Panorama des greentech françaises (Panorama of French Greentech companies), Bpifrance, April 2024.

CHALLENGE 5

Develop a safe work environment

Why is it important?

The health and safety of our employees are a priority. We are committed to establishing and maintaining working conditions that ensure the physical integrity and the physical and psychological health of our staff through HSSE (Health, Safety, Security, Environment) management and a risk prevention policy.

Our goal

> Cement the QHSE culture in CARBIOS' DNA.

"The introduction of a Quality, Health, Safety and Environment Management System provides companies with a structuring framework. With its systemic approach, it enables them to improve their performance, but also to strengthen their QHSE culture by integrating sustainable practices and engaging all stakeholders in a continuous improvement process. The management system that we have built according to ISO standard requirements helps us to structure our entire continuous improvement process by setting targets, allocating necessary resources, rolling out associated action plans and regularly reviewing performance. This approach is an effective tool for the Executive Committee to identify, measure and classify risks and opportunities, and thereby define priorities for action. It also encourages active participation from all employees, regardless of their occupation or level of contribution, towards this shared project for which their involvement is crucial. In short, this approach internally and externally highlights and solidifies the company's vision, ambition and commitments in an operational manner."

Adeline RAMBAUD,
QHSE Manager

Accident without lost work time
1

Accident with lost work time
4

Incidents
43

Severity rate of accidents with lost work time
0.03

12%
of the training budget allocated to safety

Frequency rate of accidents with lost work time
4.43

Systematic Health & Safety information as part of monthly information meetings.

Today

- **Launch of ISO 9001 and ISO 14001 certification processes.**

Tomorrow

- Continue to develop a health and safety culture across all our processes and in a context of significant workforce and business growth.

CHALLENGE 6

Accompany and improve our employees' skills

Why is it important?

We are convinced that skill development is not only key to ensuring our employees' motivation, commitment and performance, but is also an essential lever to achieve our goals collectively.

Our goal

> Develop our employees' know-how, social skills and employability throughout their career, in line with our company's strategic objectives.

First manager training group

Pivotal to our change of scale from innovative start-up to industrial SME, managers play a key role in the implementation and roll-out of our strategy. To better equip them and structure managerial practices, a custom training programme was launched in early 2023 with a first pilot group. This training programme is based on the managerial charter formalised in 2023 and aims to develop collective and individual knowledge, notably through coaching sessions. To develop our managerial maturity and leverage it for growth, several projects were initiated after this initial session, notably relating to the legibility of our ambitions and orientations.

83%
of managers trained or in training

3,421
hours of training dispensed

€158k
allocated to training, i.e. €1,397 on average per employee

10 **trainees** and **16** **apprentices**
accounting for 6.1% and 9.8% of the workforce respectively

Today

- 57% of employees received training this year, a 2% increase compared to 2022.

Tomorrow

- Balance training provided between know-how and social skills.

CHALLENGE 7

Promote the fulfilment, commitment and well-being of our employees at work

Why is it important?

CARBIOS places employee well-being at the heart of its concerns in order to ensure that each individual feels fulfilled, a vector of daily commitment.

Our objectives

> Formalise a human resource management policy in line with our CSR policy.
> Support the company's rapid growth.
> Promote social dialogue on a daily basis.
> Define an attractive compensation policy.
> Guarantee a motivating work environment enabling a work-life balance.
> Encourage the development of a managerial culture.

Great Place To Work® Certified JUIN 2023 - JUIN 2024 FRANCE

Great Place To Work® certification: an initial assessment and concrete routes for improvement

Since June 2023, as part of a continuous improvement process, CARBIOS has introduced an internal annual barometer (Great Place to Work®) measuring its employees' quality of life at work. The survey addresses various aspects of their experience at the company: trust in leadership, pride in work accomplished, atmosphere, inter-employee relations, management, etc.

With an overall score of 72%, CARBIOS was certified a "Great Place to Work" in its very first year and has put together an action plan to work on the areas of improvement highlighted by the survey. 3 main priority areas were selected: management (implementation of management training, systematic executive committee feedback, formalisation of managerial rituals through the HR cycle and managerial charter), equity and transparency (continued pay during paternity leave, internal sharing of vacancies, mapping of positions and salary scales, discussions on the remote work charter, implementation of QWL conferences and workshops, launch of an intranet portal), internal breakdown and communication of the roadmap.

72%
overall score
Great Place to Work® 2023
(corresponding to the average of positive answers to the 60 barometer questions)

I am proud of our achievements **(98%)**
I am proud to tell others I work for the company **(95%)**
New employees receive a warm welcome **(94%)**
Safety conditions are met **(91%)**
Employees are prepared to put in special effort to finish what needs to be done **(91%)**
Here, we celebrate events that are out of the ordinary **(90%)**
Here, we can rely on help from colleagues and other staff members **(90%)**
Management hires employees who fit in well at the company **(90%)**
I have the necessary resources and equipment to do my work **(88%)**
I appreciate my company's citizen contribution **(88%)**
Management leads the company in an honest manner, in compliance with ethical rules **(88%)**
I think I personally contribute to the company **(86%)**
We are attentive to one another **(86%)**
Our premises and equipment contribute towards providing a pleasant work environment **(85%)**

"CARBIOS employees express a genuine pride in working for a company that contributes towards changing the world in a concrete and positive manner. They feel wholly useful in their work, committed to a mission that provides innovative solution's for the planet's future. The challenges currently faced by the company, linked to industrialisation and marketing, are seen as a vital and exciting stage: although complex, this transition brings the company opportunities for growth. While employees acknowledge that CARBIOS' rapid growth has changed communication methods and internal relations, they see it as an opportunity to optimise processes and strengthen cohesion, whilst adapting to the company's new dimension."

CARBIOS employees' representatives

Today

- **Evolution of the salary package in line with Group performance, regardless of employee status**: this package includes a competitive basic wage, variable compensation components (variable target-based bonus, profit-sharing bonus) and social advantages (sustainable mobility package, providence schemes and supplementary health insurance).
- **Preparation of the first employee shareholding plan.**

Tomorrow

- Further involve employees in CARBIOS' development and performance.

CHALLENGE 8

Combat discrimination and promote diversity

Why is it important?

Firm in the belief that diversity among employee profiles is a source of wealth and performance for the company, we strive to ensure fair employment and equal opportunity based on objective criteria.

Our goal

> Expand the topic of diversity, which is currently centred around relations between women and men, to the complementarity of forms of diversity (age, gender, disability, social diversity, etc.).

"Our goal is to work towards a genuine complementarity of diversities at our company. While we have already taken important steps in terms of gender equality in the workplace, it is vital we recognise that diversity is not limited to one single dimension. We must broaden our approach to include other equally fundamental aspects: age, gender, disability, social diversity and more. By cultivating this wealth of perspectives and experience, we will create a working environment that is not only fairer, but also more innovative and efficient. This requires continued collective commitment, at all company levels, to ensure every individual has the ability to feel fulfilled and fully contribute, regardless of their differences. In future, our priority will be to cement this commitment by implementing concrete and measurable actions: it is by promoting the complementarity of diversities that we will build a sustainable and inclusive future for all."

Sophie BALMARY,
Director of Human Resources and Legal Affairs

Committed towards equality in the workplace

With a score of 94/100, we continue to take important steps on the road to achieving gender equality in our company.
See an overview of our results below:

Comparison of pay gaps: 39/40

This score shows our commitment to reducing gender pay gaps for similar positions, whether for our technicians/supervisory staff or engineers/executives.

Wage increase gaps: 35/35

We strongly believe in recognising performance, and that this should not be influenced by gender. At CARBIOS, women and men are placed on equal footing in terms of wage increases, as proven by our score.

Percentage of employees receiving a wage increase after maternity leave: 15/15

We fully support our employees in their professional careers and personal lives.

Number of women among the 10 best paid employees: 5/10

We are committed to ensuring fair representation of women in management positions and at the highest wage levels. We undertake to continue our efforts to increase diversity at all company levels.

22%
Percentage of seniors (employees over 50) in the permanent workforce

6%
Percentage of employees under 24 in the permanent workforce

37
Average workforce age

42%
Percentage of women in the total workforce

45%
Percentage of women on the Executive Committee

1%
Percentage of employees with disabilities

100%
Score achieved on the question relating to equal treatment of employees based on their sexual orientation (Great Place To Work® 2023 barometer), 84% for gender and 98% for ethnic origin

Ambition #4

Strengthen relations with our ecosystem

A concerted effort for collective success

Reinventing the life cycle of plastic and textile materials and limiting recourse to fossil fuel resources are not only two major challenges of our time, but also an unprecedented economic opportunity to launch this transition towards a circular economy model through innovation. Switching from a linear model to a circular economy involves all players in the value chain with a direct or indirect relationship with plastic: public authorities, industrial businesses, manufacturers, intermediaries, consumers, NGOs. Putting this into motion and pooling energies is an essential precondition for a successful and lasting transition that serves the environment and all stakeholders.

Pressure is growing: from regulatory evolutions to societal expectations, the ecological transition is a cross-cutting concern and an injunction to act differently. At the heart of this dynamic, our economic models must evolve, but so must our methods of cooperation. Our way of working must adapt to these colossal challenges if we are to achieve credible and sustainable solutions.

2

consortiums initiated by CARBIOS
relating to the packaging
and textile industries and comprising
9 global leaders
in the food and beverage, cosmetic
and retail clothing sectors.

In 2023, CARBIOS joined
the **Ellen MacArthur Foundation circular economy network**
and its **195 members** to ramp up
the transition to a circular
economy model.

Cultivating interdependence

Éric BOËL,
President, Les Tissages de Charlieu/
Nouvelles Fibres Textiles

The circular economy is a non-negotiable horizon that the textile industry has, until now, struggled to implement, notably due to the diversity of products and value chains. However, this circular economy can only truly work provided that circular relationships are created between all stakeholders. In this sector, we are both clients and suppliers to one another. As such, we each have a responsibility, because what we produce and how we produce it is eventually returned to us. We must therefore conceive flows of trust and cooperation, alongside material flows, to ensure overall stability. This is the condition that will enable us to transition a currently brutal system towards a system that does good, and even heals.

To this end, we must surpass traditional client/supplier relations which are sometimes demeaning and lack humanity. Let us assume a high degree of mutual dependence, an interdependence that is chosen and maintained, that creates mutually-beneficial relationships, which is, after all, the very definition of an ecosystem. Let us find an equilibrium of reciprocal prosperity in which the value created does not take from another but instead gives. Our industries are built to meet material needs, to fuel markets and support consumption demand: we must now act to ensure our products are not only desirable but also do good from producer to consumer, allowing the act of purchasing to be circularly beneficial, all round. This is a highly collective challenge.

CHALLENGE 9

Establish lasting relations with our clients

Why is it important?

Building a sound, lasting and dynamic client culture is an essential lever of our current industrial and commercial technology roll-out phase and one of the pillars of our economic model. Centring our innovation process on client needs was one of the keys to the success of our consortiums, precious collaborations to develop our offer and ensure our solutions meet market and end consumer expectations. This client culture will be a determining factor to support the adoption of our technologies through the granting of licenses pertaining to our know-how and technologies.

Our goal

> Build a sustainable economic model.

Certifications that benefit our entire ecosystem

After obtaining OK Compost HOME certification from TÜV Austria in 2021 for rigid packaging containing 70% PLA, new certification applications were filed with the same entity for 100% PLA flexible packaging up to a width of 90 µm and 800 µm sheets made of 100% PLA, in order to promote our significant advances in terms of disintegration speed. These certifications also aim to have CARBIOS Active's performance confirmed by a third-party organisation and speed up the certification process for future clients' finished products. In the same vein, CARBIOS has initiated discussions with the Food and Drug Administration in the United States to include its PLA enzymatic biodegradation solution in the list of food-contact-approved substances. CARBIOS Active has also received certification from the Biodegradable Products Institute, the main North American authority for compostable products and packaging. These steps will help to ramp up the commercialisation process and provide future CARBIOS Active clients with the opportunity to rely on the results of tests already carried out.

2
consortiums

9
geographical areas where CARBIOS is present

Today

- **CARBIOS and L'Oréal honoured with the Pioneer Award** for the first cosmetic bottle in the world made using enzymatic recycling. This award bestowed by the Solar Impulse Foundation recognises the disruptive nature of this innovation in the Industrial Processes category and complements the "Efficient Solution" label already awarded to the solution by the Foundation in 2019.
- Launch of the ISO 9001 certification process (Quality Management systems)
- Implementation of an ERP system (Enterprise Resource Planning — Integrated management software package).

Tomorrow

- Help to implement a circular polyester sector and strengthen the PLA sector
- Help to implement other sustainable material sectors.
- Expand existing sectors to other geographical areas.

CHALLENGE 10

Support and encourage supplier involvement

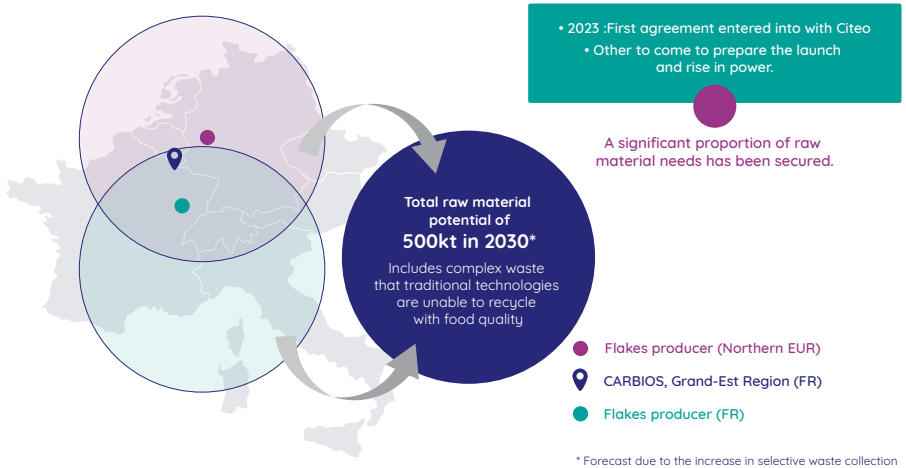
Why is it important?

To successfully fulfil our mission of revolutionising plastic and textile recyclability, we must bring the largest possible ecosystem with us on our journey and drive a dynamic of sustainability that exceeds the scope of our activity. Thus, our suppliers are fully involved in the achievement of our CSR goals. We can only identify the risks and opportunities presented by our value chain and connect them with concrete action plans by taking account of the specificities of all our stakeholders and supporting our clients and suppliers.

Our objectives

> Prioritise suppliers located close to our sites, for a comparable offer.

> When choosing suppliers, consider their commitments and achievements in terms of CSR and assess them accordingly.



* Forecast due to the increase in selective waste collection

Significant supply secured for Longlaville

Three agreements entered into with Citeo, Landbell Group, and Hündgen Entsorgung will enable us to collect raw materials within a perimeter of 500 km, significantly contributing to achieving the target capacity of 500 kt/year of waste collected for the Longlaville plant.

66%
of purchases
in Auvergne-Rhône-Alpes

"By formalising its Purchasing Policy in 2023, CARBIOS' aim is to share its vision, commitments and the manner in which it intends to interact with its partners, suppliers and service providers with its stakeholders. The introduction of a circular economy model requires that all links in the value chain rally around shared values. For CARBIOS, consideration of social and environmental stakes is one of the major pillars of its responsible procurement policy, and therefore the foundation for lasting relations with its partners. In this respect, we have sent our Procurement Policy to all our critical suppliers, along with a CSR survey that will ultimately enable us to integrate social and environmental criteria into their assessment and work together to define potential areas for improvement where applicable. For us, sustainability is achieved by establishing and consolidating mutually beneficial relationships centred around shared goals."

Xavier Listwan,
Head of Purchasing

Today

- Secure the supply of raw materials (waste) for Longlaville and roll out the group Purchasing Policy.

Tomorrow

- Help to secure raw materials/waste needs for all our license holders.

CHALLENGE 11

Grow with local communities

Why is it important?

In keeping with its values, CARBIOS intends to take part developing a local economic landscape and driving territorial dynamism. This is a means of giving back to the territories that support us and that create the conditions facilitating our success. We continue to pursue our goal of actively contributing towards strengthening this economic, academic and social ecosystem that is dear to us, wherever we operate.

Our goal

> Contribute towards developing new sustainable material sectors and become involved in territorial dynamics.

Encourage scientific careers

CARBIOS is partnered with the CGénial competition, jointly organised by the "Science at School" ministerial scheme and the CGénial foundation. This competition promotes science and technology education in middle and high schools. It enables young students to present a didactic and innovative project in a multitude of scientific disciplines, including physics, chemistry, mathematics, technology or life sciences, with the assistance of their teachers. The 2023 instalment saw 91 high school projects and 272 middle school projects, with 7,461 students involved across all academies in metropolitan France and overseas territories. The awards bestowed on winning projects enable them to take part in EU Contests for Young Scientists (EUCYS) or in international contests (CASTIC) and to be invited to visit companies in France and abroad. This provides them with the concrete means of witnessing the prospects offered by scientific and technological studies.

Pushing our doors wide open to present our careers

11 IESF Auvergne (Engineers and Scientists of France) postgraduates met with the CARBIOS teams as part of the "Postgraduates in Companies" programme. This initiative enables postgraduate students to prepare their professional integration by further introducing them to the corporate world and the work a postgraduate can accomplish. This was an opportunity for them to visit our laboratories, the pilot and our industrial demonstration plant, as well as to talk to our own postgraduate employees.

Today

- Develop relations with the employment and training players in Longlaville.

Tomorrow

- CARBIOS is active in its three territories, notably in community life.

5
collaborations
with schools and universities

Taxonomy

Recap of the regulatory framework

Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment, or the Green Taxonomy Regulation, is a system to classify activities that aim to promote sustainable investment. The goal is to establish a common framework to define "sustainable" activities, in order to redirect capital flows towards sustainable investments and limit greenwashing.

To this end, companies must indicate the extent to which the activities they are involved in comply with the economic activities formally defined as sustainable by the Taxonomy, in reference to six environmental objectives set out by the Green Taxonomy Regulation as follows:

- Climate change mitigation (Objective 1);
- Climate change adaptation (Objective 2);
- Sustainable use and protection of water and marine resources (Objective 3);
- The transition to a circular economy (Objective 4);
- Pollution prevention and control (Objective 5);
- The protection and restoration of biodiversity and ecosystems (Objective 6).

For 2022 and 2023, taxonomic reporting concerns the first two environmental objectives, in accordance with the scope of the regulation which will ultimately be extended to the other four environmental objectives.

Article 8 of the Taxonomy Regulation requires that companies already subject to an obligation to publish non-financial information publish the proportion of their turnover, their capital expenditure (CapEx) and their operating expenditure (OpEx) associated with sustainable activities. These obligations are also specified in Article 8 of Delegated Regulation (EU) 2021/2178. This obligation of publication does not currently apply to CARBIOS. However, its activities have been reviewed and its taxonomic indicators calculated with a view to adhering to best reporting practices. The indicators published (turnover, CapEx, OpEx) for 2022 and 2023 relate to the eligibility and alignment of CARBIOS' activities, which contribute towards the objectives of climate change mitigation (Objective 1) and climate change adaptation (Objective 2), according to the technical criteria associated with each of these activities.

According to the Taxonomy, **an activity may be considered sustainable when:**

- It **contributes substantially to one of the six environmental objectives**: mitigation of climate change, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control and protection and restoration of biodiversity and ecosystems;
- It does not **significantly harm** to the five other environmental objectives;
- It complies with **minimum safeguards**.

Learn more
about the scope of reporting and the activities carried out by CARBIOS that are eligible for the Taxonomy

Appendices

Governance

	Suffix	2021	2022	2023
Risk of dilution of minority shareholders				
Share of capital held by founders, families and executives	%	0.60	0.42	1.05
Control of the share capital (≥ 34% shareholding) by a shareholder or group of shareholders	Y/N	NO	NO	NO
Share of capital held in treasury stock	%	0.03	0.03	0.10
Share of capital held by employees (excluding executives)	%	0.00	0.00	0.00
Share of capital held by other shareholders holding at least 5% of total shares	%	11.80	11.73	5.60
Existence of double voting rights	Y/N	YES	YES	YES
Composition of governance bodies				
Separation of the roles of Chairman of the Board of Directors and Chief Executive Officer	Y/N	YES	YES	YES
Number of members of the Board of Directors	VA	10	11	11
Number of women on the Board of Directors	VA	2	4	4
Percentage of women on the Board of Directors	%	20.00	36.00	36.00
Number of executive members on the Board of Directors	VA	0	1	1
Number of board members representing a significant shareholder (holding > 10% of shares or voting rights) (excluding founders and families)	VA	0	0	0
Number of (non-executive) members representing founders and families on the Board of Directors/Supervisory Board	VA	1	1	1
Number of employee representatives on the Board of Directors	VA	0	0	0
Number of independent directors	VA	4	7	7
Number of members on the Executive Committee	VA	6	9	11
Number of women on the Executive Committee	VA	2	2	5
Percentage of women on the Executive Committee	%	33.00	33.00	45.00
Operation of governance bodies				
Commitment to comply with the recommendations of a corporate governance code	Y/N	YES	YES	YES
Assessment of the functioning of the Board of Directors	Y/N	YES	YES	YES
Number of Board of Directors meetings	VA	11	8	9
Average attendance rate of directors at Board meetings	%	92.00	97.00	95.00
Existence of an Audit Committee whose Chairman is independent and has significant experience in audit/finance	Y/N	YES	YES	YES
Existence of a non-statutory Appointments and Compensation / number of meetings per year	Y/N	YES / one meeting in 2021	YES / one meeting in 2022	YES / one meeting in 2023
Existence of a non-statutory CSR committee / number of meetings per year	Y/N	NO	YES / one meeting in 2022	YES / one meeting in 2023
Number of CSR steering committee meetings	VA	0	0	3

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Governance

	Suffix	2021	2022	2023
Compensation of executives and board members				
Total amount of compensation paid to members of the Board of Directors	€K	212.64	298.84	239
Total compensation paid to the Chief Executive Officer (excluding compensation as a Board member)	€K	1,363.64	358.62	674.78
Transparency on variable compensation criteria for the Chief Executive Officer	Y/N	YES	YES	YES
Business ethics				
Publication of a formalized business conduct and anti-corruption policy	Y/N	YES	YES	YES
Activities in countries exposed to corruption risks	Y/N	NO	NO	NO
Existence of an alert system	Y/N	YES	YES	YES
Number of warnings / questions / requests for advice received by the alert system	VA	0	0	0
Share of audit fees out of total statutory auditors' fees	%	64.35	55.87	30.88
Have you been the subject of a public controversy (founded or unfounded), litigation or an unfavorable court decision (conviction) in the last three years?	Y/N	NO	NO	NO
CSR policy / Social and Environmental Performance				
Formalization of a structured CSR/ESG strategy (with or without targets)	Y/N	YES	YES	YES
Analysis and classification of the Group's ESG challenges	Y/N	YES	YES	YES
United Nations Global Compact signatory	Y/N	NO	NO	NO
Existence of a specific manager for CSR / sustainable development challenges	Y/N	YES	YES	YES
Presentation of the CSR strategy to the Board of Directors during the year	Y/N	YES	YES	YES
Annual review of the company's environmental and societal performance conducted by the Board of Directors	Y/N	NO	NO	YES
% of employees trained in CSR challenges	%	N/A	N/A	87.20
Cybersecurity / Data Protection				
Compliance with European GDPR regulation (General Data Protection Regulation)	Y/N	YES	YES	YES
Presentation of IT risks to governance bodies at least once a year	Y/N	YES	YES	YES

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Social

	Suffix	2021	2022	2023
Characteristics and social policy				
Existence of a Human Resources Department at Group level	Y/N	YES	YES	YES
Total workforce at end of fiscal period (in FTE), including fixed-term contracts, interim contracts, etc.)	VA	58	101	147
Permanent workforce - End of fiscal period (in FTE)	VA	57	96	129
Female employee workforce in FTE at end of fiscal period	VA	23	45	54
Share of the total workforce located in the country of headquarters	%	100	100	100
Turnover rate	%		40.40	25.80
Working conditions				
Publication of a commitment to promote freedom of association and social dialogue	Y/N	NO, general commitment	NO, general commitment	NO, general commitment
Departure rate of permanent employees (number of permanent employee departures (FTE) / total workforce (FTE))	%	10.90	17.80	7.50
Existence of profit-sharing schemes (incentives, employee shareholding, etc.), excluding legal schemes	Y/N	YES	YES	YES
Number of employees operating under collective agreements	VA	40	101	147
Employee surveys conducted in the last three years	Y/N	YES	YES	YES
Share of workforce operating in countries sensitive to fundamental rights at work	%	0.00	0.00	0.00
Skill development				
Share of workforce having an annual personal performance review	%	100	100	100
Workforce training rate / Percentage of employees having received training	%	33.30	55.00	57.00
Average number of training hours per employee	VA	42.7	15.3	23.4

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Social

	Suffix	2021	2022	2023
Diversity / Equal opportunity				
Percentage of women in workforce	%	44.00	48.00	42.00
Percentage of women in managerial workforce	%	71.00	48.00	40.00
Percentage of employees with disabilities	%	0.00	1.00	1.00
Percentage of employees over 50 years old in the permanent workforce	%		12.00	22.00
Percentage of employees under 24 years old in the permanent workforce	%		8.00	6.00
Average age of employees	VA		34	37
Health & Safety				
Existence of a HSS (Health, Safety, Security) management system	Txt	YES	YES	YES
Workplace health & safety risk analysis conducted, including psychosocial risks	Y/N	NO	NO	YES
Percentage of training budget allocated to safety	%		21.00	12.00
Percentage of absenteeism for non-justified absences, illness and workplace accidents	%	1.68	3.10	1.20
Number of accidents with lost work time	VA		0	1
Number of accidents without lost work time	VA		3	4
Workplace accident frequency rate	VA		0.00	4.43
Workplace accident severity rate	VA		0.00	0.03

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Environment

	Suffix	2021	2022	2023
Environmental policy and management system				
Existence of a formalized environmental policy	Y/N	NO	YES	YES
ISO 14001 certification	Y/N	NO	NO	NO
Percentage of products/services having been the subject of a Life Cycle Analysis (LCA)	%	N/A	N/A	N/A
Total provisions for environmental risks	€K	0	0	0
Percentage of products/services (or turnover) with an environmental label/ecolabel	%	50.00	50.00	50.00
Biodiversity				
Sites or activities located near biodiversity-sensitive areas	Y/N	NO	NO	NO
Activities resulting in damage to land, desertification or soil sealing	Y/N	NO	NO	NO
Energy and GHG				
Has the company set itself a quantitative climate goal (energy, GHG emissions)?	Y/N	NO	NO	NO
Measures to reduce energy consumption and greenhouse gas emissions	Y/N	YES	YES	YES
Total electricity consumption	MWh	170.9	222.0	896.4
Total gas consumption	MWh		178.6	619.6
Total energy consumption	MWh			2,056
Greenhouse gas emissions for scope 1 (tCO_2e)	tCO_2e	40	68	100
Greenhouse gas emissions for scope 2 - location-based (tCO_2e)	tCO_2e	120	37	168
Greenhouse gas emissions for scope 3 (tCO_2e)	tCO_2e	2,500	4,757	6,123
Contribution to the reduction (or offsetting) of greenhouse gases by financing carbon reduction or sequestration projects outside its sector of activity (tCO_2e)	tCO_2e	NO	NO	NO
Water				
Total water consumption	m^3	1,097	2,357	1,932
Waste				
Existence of an action plan for waste management	Y/N	YES	YES	YES
Non-hazardous waste generated	T		1,250	2,505
Hazardous waste generated	T		8	23

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External stakeholders / suppliers / clients:

	Suffix	2021	2022	2023
Supplier relations / Supply chain				
Responsible procurement policy integrating social and/or environmental criteria	Y/N	NO	NO	YES
Relations with clients, civil society and product responsibility				
Existence of a quality management system and share of activities having obtained external certification	Y/N	NO		
Customer satisfaction surveys conducted in the last three years	Y/N	NO	NO	NO
Presence of subsidiaries registered in countries with a risk of financial opacity or tax havens	Y/N	NO	NO	NO
Number of interns, apprentices, PhD students, etc.	VA		9	14

European green taxonomy

	Suffix	2021	2022	2023
Target 1 – Climate change mitigation				
Percentage of turnover eligible for the European green taxonomy for target 1 - Climate change mitigation (%)	%	0	0	
Percentage of CapEx eligible for the European green taxonomy for target 1 - Climate change mitigation (%)	%	100	85.1	
Percentage of OpEx eligible for the European green taxonomy for target 1 - Climate change mitigation (%)(1)	%	99.00	33.00	
Company activities aligned with the European Taxonomy	Y/N	YES	YES	YES
Percentage of CapEx aligned with the European Taxonomy	%	N/A	85.1	
Percentage of OpEx aligned with the European Taxonomy	%	N/A	27.4	

(1) Evolution of the calculation perimeter between 2021 and 2022. See the chapter on Taxonomy in this report for more information

Contacts

Benjamin Audebert
Investor Relations, CESGA®
benjamin.audebert@carbios.com
Tel.: +33 (0)4 73 86 51 76

Gilles Lhermitte
CSR Manager
gilles.lhermitte@carbios.com
Tel.: +33 (0)4 73 86 51 76

CARBIOS

Biotechnology powering plastic and textile circularity

Head office:
Site de Cataroux - Bâtiment B80
8 rue de la Grolière - 63100 Clermont-Ferrand
Tel.: + 33 (0)4 73 86 51 76 - contact@carbios.com

www.carbios.com