



FLASH NEWS

No. 56-2023 – THE BIOTECH INDUSTRY INTELLIGENCE REPORT

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1. EQUIPMENT & TECHNOLOGY

Biocatalysis/Bioconversion

4219 - Presentation of two new disruptive ultra-high-throughput screening technologies.

The lab [Toulouse Biotechnology Institute](#) (TBI) and TWB, in collaboration with the [Institut des Maladies Métaboliques et Cardiovasculaires](#) (I2MC), have combined microbiomics and droplet-based microfluidics to develop a new ultra-high-throughput screening strategy for culturomics, functional metagenomics, and enzyme, strain and microbial consortia engineering. They have devised two disruptive technologies, based on different principals. The first one combines droplet-based microfluidics, imaging, artificial intelligence and flow cytometry to automatically detect and sort positive droplets, at a rate of around 105 droplets per hour. The second technology, focused on culturomics and strain and consortia engineering, directly couples droplet-based microfluidics and flow cytometry to select growing microorganisms, at a rate of 106 droplets per hour. With a scale of around one picolitre – one million times smaller than the sample volumes used with conventional phenotype screening techniques – these technologies are compatible with any type of substrate, regardless of its cost, and the screening of any phenotype, as long as it can be detected by confocal microscopy or linked to the growth of microbial cells. The technologies are currently being used by [CAZIBD](#), a French National Research Agency project, to decrypt the host-microbiota-diet dialogue, and the European project [BLUETOOLS](#), which is looking at the study and biotechnological exploitation of marine ecosystems. The new technologies can be used for functional metagenomics, culturomics, enzyme engineering (even when using acellular systems), and strain or consortia engineering, for example to produce antimicrobials or break down polluting synthetic polymers, such as plastics.

En savoir plus : [Toulouse Biotechnology Institute.fr](#)

4220 - Could the complex architectural design of a mushroom be imitated and used to create new materials to replace plastics?

Having succeeded in describing the complex structural, chemical and mechanical features adapted throughout the course of evolution by hoof fungus (*Fomes fomentarius*), a team of researchers at the [Technical Research Centre of Finland](#) (VTT) believe the mushroom's architectural design and biochemical features could open up new possibilities for the engineering of a range of materials with different specifications. The mushroom is structured into three layers, each with different properties that could be used for multiple applications. Its structure can be adapted to create a wide range of materials with distinct specifications, and tiny changes to the cellular morphology and extracellular polymeric composition 'result in diverse materials with different physico-chemical features that surpass most natural and man-made materials.' According to the researchers, the mushroom could open the door to the design of ultra-lightweight technical structures, nanocomposites with enhanced mechanical properties, or the exploration of new manufacturing routes for the next generation of programmable materials with high-performance functionalities. The mushroom could, then, help us develop nanocompounds or polysaccharides and make impact-resistant implants, sports equipment, body armour and exoskeletons for aircraft, for example. It could also be used in tissue engineering in the medical field, or to make orthopaedic implants.

Publication: The complex structure of *Fomes fomentarius* represents an architectural design for high-performance ultralightweight materials. Journal: Science Advances. DOI: 10.1126/sciadv.ade5417.

More information: [Press release](#)

En savoir plus : [Neozone.org](#)

4221 - Biofuel-producing microalgae: new discoveries made.

Back in 2017, researchers at the French [Alternative energies and atomic energy commission](#) (CEA) discovered an enzyme in the microalgae *Chlorella variabilis* which, when activated by sunlight, enables the microalgae to convert

their fatty acids directly into hydrocarbons. Since then, the international scientific community has been working on getting this fatty acid photodecarboxylase (FAP) to reach its full potential when it comes to producing diesel-like biobased fuels. However, the alleged low activity of FAP on C2 to C12 fatty acids seemed to preclude the use for synthesis of petrol-range hydrocarbons. The teams at the CEA and the [Institut Polytechnique de Paris](#) can now reveal that the FAP enzyme is more effective on a fatty acid with eight carbon atoms. They have observed that it can in fact convert n-octanoic acid (C8) *in vitro* four times faster than n-hexadecanoic acid (C16), its best substrate reported to date. This performance was also observed *in vivo*, as explained Pavel Müller, a CEA researcher who used time-resolved spectroscopy: *'When the FAP decarboxylates n-octanoic acid (C8) in a reaction that produces n-heptane, the n-heptane remains in the binding pocket and mimics the missing part of the long chain, thus contributing to increasing the quantum yield. This autocatalytic effect makes the photodecarboxylation of medium-chain fatty acids (such as C8) almost as efficient as that of long native substrates. In addition, replacing the product with a new substrate is quicker for medium chains than for long ones.'* This is reflected in a FAP production rate ten times higher for n-heptane (C7H16) – a petrol-like hydrocarbon – than n-pentadecane (C15H32).

Next step: continue optimising the FAP enzyme.

Publication: Autocatalytic effect boosts the production of medium-chain hydrocarbons by fatty acid photodecarboxylase. Journal: Science Advances. DOI: 10.1126/sciadv.adg3881.

En savoir plus : [Communiqué de presse](#)

Synthetic biology

4222 - Discovery of enzymes capable of synthesising oligosaccharides.

A team of scientists at the [Toulouse Biotechnology Institute](#) (TBI - INRAE/INSA/CNRS) lab has managed to speed up the discovery of these enzymes of interest using a combined approach exploring i) a broad range of bacterial sequences taken mainly from the human gut microbiome, and ii) glycoside phosphorylase activity detection strategies. After having studied them to properly understand what makes them special and how they work, the researchers managed to synthesise oligosaccharides of interest for human health not only *in vitro* (outside a living being), but also *in cellulo* (in cells grown in a laboratory). Their work opens up new avenues for the improvement of the detection and understanding of glycoside phosphorylases, based primarily on machine learning processes, together with artificial intelligence, to produce a wide range of oligosaccharides of interest to human health.

Info: Toulouse Tech Transfert has filed an international patent for the research. The patent is exploited by [Sweetech](#).

Publication: Discovery and Biotechnological Exploitation of Glycoside-Phosphorylases. Journal: Phosphorylases. Int. J. Mol. Sci. DOI: 10.3390/ijms23063043.

En savoir plus : [Inrae.fr](#)

Modelling/AI

4223 - Presentation of EnzymeML: an automated data exchange format for the results of experiments on enzymes.

Presented by the team at the [Institute of Biochemistry and Technical Biochemistry](#) at the University of Stuttgart, Germany, [EnzymeML](#) facilitates the storage and transfer of data collected during experiments on enzymes. It can record all the results of an enzyme experiment, from the reaction conditions to the measured data, as well as the kinetic model used to analyse the data and the estimated kinetic parameters. As the data stored in EnzymeML are structured and standardised, the results encoded in an EnzymeML document are interoperable and reusable by

other groups. Documents stored in EnzymeML can therefore be used in an automated workflow to store, view and analyse data, as well as re-analyse already published data, with no restriction of data set size or number of experiments. The tool therefore provides a transparent communication channel between experimental platforms, electronic lab notebooks, enzyme kinetics modelling tools, publication platforms, and enzymatic reaction databases. EnzymeML is freely available in standard XML format.

[Publication](#): EnzymeML: seamless data flow and modeling of enzymatic data. Journal: Nature Methods. DOI: 10.1038/s41592-022-01763-1.

More information: [ScienceDaily.com](https://www.sciencedaily.com)
En savoir plus : [Citizenside.fr](https://citizenside.fr)

Processes

4224 - Carbios: use of ultra-high-throughput microfluidic screening; on track for the industrial and commercial deployment of its PET biorecycling technology; and a new paper published in Chemical Reviews.

The French company specialising in the enzymatic recycling of plastic polymers and textiles announced that it was now able to screen far more enzymes than ever before using a microfluidic technology adapted in partnership with [Paul Pascal Research Centre](#) (a joint research unit of the CNRS and the University of Bordeaux, which specialises in microfluidics). The cutting-edge technology can screen millions of enzymes in just one day, compared with a few thousand a week using conventional technologies, and can help speed up the process to optimize enzymes that break down PET. This considerable competitive advantage enables Carbios to reduce the time between the R&D phase and the production of its proprietary enzymes, and therefore to develop its portfolio of innovative processes for different types of plastic even faster. Carbios does currently use microfluidics to develop its PET depolymerisation process, but it will soon be using it for other types of plastic too, such as polyamide, making it possible to greatly accelerate the development of new enzymes. Two Carbios employees are currently working on microfluidics, and are based at its cooperative laboratory with [Toulouse Biotechnology Institute](#) hosted at INSA Toulouse.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#)

Carbios announced that it was ready to commercialise its PET biorecycling technology internationally: the excellent outputs from ongoing operations at its demonstration unit in Clermont-Ferrand, France, and the advanced engineering study for its first commercial plant (due to be commissioned in 2025) define the engineering basis and operational guidelines for units to be operated under licence agreements. From technology promotion with the Technical Information Summary (TIS) to project development with a specific Process Design Package (PDP) and Process Book, future Carbios licensees will be handed all necessary process documentation to reliably engineer, procure, construct and operate their PET biorecycling plants under stringent Health, Safety and Environment standards and with high product quality. By providing value to all types of PET waste, including complex plastic packaging and textiles, Carbios also aims to reach out to other players in the value chain such as waste management companies and public entities. The new industrial milestone complements the collaborations with brand owners within Carbios' two consortia, and the exclusive long-term partnership with Novozymes, the world leader in enzyme production, which ensures the supply of enzymes to the Carbios flagship unit and future licensed plants.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#)

Carbios announced the publication of a paper entitled *Enzymes' power for plastics degradation* in Chemical Reviews, one of the ten most influential scientific journals in the world. The paper is a comprehensive, analytical

review of research published to date on the enzymatic degradation of all types of plastics (PET, PLA, polyolefins, polyurethanes and polyamides) and includes almost 700 references. Co-authored by biotechnology researchers at Carbios and its academic partner [Toulouse Biotechnology Institute](#) (TBI), as well as two eminent professors in polymer science from the University of Bordeaux, the paper brings together expertise at the forefront of enzymology, polymer science and industry to accelerate the transition to a circular economy for plastics. Beyond the comprehensive bibliographical study, the authors analysed the data to discuss the scope, limitations, challenges and opportunities of enzymatic plastic recycling with a view to developing innovations and industrial processes.

Publication: Enzymes' Power for Plastics Degradation. Journal: Chemical Reviews. DOI: 10.1021/acs.chemrev.2c00644.

More information: [Press release](#)

En savoir plus : [Communiqué de presse](#), [L'Usine Nouvelle.com](#)

4225 - Inching closer to another enzymatic recycling technology for dyed, chemically treated polyester textiles.

After having developed an [enzyme technology](#) that breaks down single-use plastics, including polyethylene terephthalate (PET), into their chemical building blocks, researchers at the [Centre for Enzyme Innovation](#) at the [University of Portsmouth](#), United Kingdom, have set their sights on creating a similar process for dyed, chemically treated polyester textiles. According to the British researchers, the addition of dyes and other chemical treatments makes it even harder for these tough oil-based materials to be 'digested' in a natural process. Developing enzymes that can efficiently 'eat' polyester clothing, without energy intensive pre-treatment, is the biggest challenge. To solve it, the researchers will test the compatibility of their engineered enzymes with additives, dyes and solvents to select those enzymes that are best suited to polyester textile deconstruction. They will then apply these enzymes to appropriately pretreated waste polyester textiles in laboratory-scale bioreactors to evaluate the potential and limitations of scaling up the technology. Their research, funded by the [Biotechnology and Biological Sciences Research Council](#) (BBSRC), began in late January 2023 and will run for 18 months. The University's team will work with partners at the [Biomimicry Institute](#), who will provide expertise in biomimetics and developing natural solutions to sustainability challenges, and [Endura Sports Clothing](#), which will share its knowledge of fabric dyes and provide samples of end-of-life polyester textiles.

More information: [Port.ac.uk](#)

En savoir plus : [Futura Sciences.com](#)

4226 - A new purification method that could make protein drugs cheaper.

One of the most expensive steps in manufacturing protein drugs such as antibodies or insulin is the purification step: engineers at [Massachusetts Institute of Technology](#) (MIT) have developed a new way to perform this step. Their approach, which uses specialised nanoparticles to crystallize proteins rapidly and inexpensively, could help to make protein drugs more affordable and accessible, especially in developing countries. '*This work uses bioconjugate-functionalized nanoparticles to act as templates for enhancing protein crystal formation at low concentrations*,' said Kripa Varanasi, a professor of mechanical engineering at MIT and the senior author of the new study. The researchers demonstrated that their approach can be used to crystallize lysozyme (an antimicrobial enzyme) and insulin. They believe it could also be applied to many other useful proteins, including antibody drugs and vaccines.

Next steps: work on scaling up the process so that it could be used in an industrial bioreactor, and demonstrating that it can work with monoclonal antibodies, vaccines, and other useful proteins.

Publication: Enhancing Protein Crystal Nucleation Using In Situ Templating on Bioconjugate-Functionalized Nanoparticles and Machine Learning. Journal: ACS Applied Materials and Interfaces. DOI: 10.1021/acsami.2c17208.

More information: [Mit.edu](#)

En savoir plus : [Ma Clinique.fr](#)

4227 - Design of high-power capacitors using organic biobased polymers according to green chemistry principles.

Scientists at the [Laboratoire de chimie des polymères organiques](#) (CNRS/University of Bordeaux/INP Bordeaux) have devised high-power capacitors using organic biobased polymers similar to polyurethane enriched with hydroxyle (OH) groups – poly(hydroxy urethanes) (PHUs) – obtained in the vitreous state. They show that the high concentrations of highly polar hydroxyl and carbamate groups in combination with the vitreous state are the reasons for their performance, comparable to those of the best available materials in terms of power, working temperature, high discharge efficiency, and energy loss during storage. These biobased PHUs open up a new avenue for the green and sustainable storage of electricity in applications that require high pulse power, such as electric vehicles and the food industry, where high power discharges are used for sterilisation and to encourage seeds to germinate, as well as in medicine, where they power surgical lasers and defibrillators.

Publication: Bio-Based Poly(hydroxy urethane)s for Efficient Organic High-Power Energy Storage. Journal: Journal of the American Chemical Society. DOI: 10.1021/jacs.2c12090.

En savoir plus : [CNRS.fr](#)

4228 - Scientists discover an enzyme that turns hydrogen into electricity.

Researchers at [Monash University Biomedicine Discovery Institute](#), Australia, have discovered that a soil bacterium, known as *Mycobacterium smegmatis*, contains an enzyme, named 'Huc', which can convert hydrogen in the air into electrical current. Their experiments show that this enzyme, even when extracted from the bacterium, can consume the low concentrations of hydrogen present in the atmosphere (barely 0.00005% of the air we breathe). The researchers also showed that Huc can be frozen or heated to 80°C, and that it retains its capacity to generate energy even after a long period of storage. Huc could be used to power small electronic devices such as wristwatches or LED lights. The researchers believe, however, that with greater quantities of the enzyme, it will even be possible to improve hydrogen fuel cells so they can power vehicles.

Next steps: Try to produce several grams of the Huc enzyme and move closer to mass production.

Publication: Structural basis for bacterial energy extraction from atmospheric hydrogen. Journal: Nature. DOI: 10.1038/s41586-023-05781-7.

More information: [Monash.edu](#), [SciTechDaily.com](#)

En savoir plus : [Breageek News.fr](#), [Trust My Science.com](#)

Miscellaneous

4229 - A new European centre for biotechnology and the bioeconomy (CEBB) is on the cards near the Pomacle-Bazancourt biorefinery.

The regional council of the Grand Est region in north-eastern France announced in late March that it would fund the creation of a new CEBB at the Bioeconomy Park, as the existing 2,400 m² CEBB inaugurated in 2016 on the site of the Pomacle-Bazancourt plant biomass feedstock biorefinery has become too small for the teams of AgroParisTech, CentraleSupélec, the University of Reims Champagne-Ardenne and Neoma Business School to work together there comfortably. The project is expected to require an overall investment of around €18 million and will be financed in equal parts by the Grand Est region and the Grand Reims authority, with the support of Europe. The goal is to create a 4,000 m² hub that brings together green chemistry research organisations and a start-up incubator, as well as scientific outreach activities. The former premises will be sold to Givaudan, a Swiss company specialising in the production of fragrances for cosmetics. The Reims authority has also awarded the semi-public company Agencia a contract to provide structure to the zone by creating a designated bioeconomy business park. Covering 140 hectares, the zone is expected to increase in size by several tens of hectares to accommodate

new industrial companies. The investments will 'further consolidate the Pomacle-Bazancourt platform so it can reach a critical mass and weigh in on a European scale.'

En savoir plus : [L'Union.fr](#), [Les Echos.fr](#)

4230 - Fermentation: a new project for Lesaffre and the Laboratory of Biology and Modeling of the Cell (LBMC).

For the *Genomic analyses of baker's yeast* project, Lesaffre and the [LBMC](#) are pooling their expertise in the genomic analyses field to develop an analysis method and software required for the transcriptomic analyses of yeast strains. The strains will be used in Lesaffre's R&D activities. The LBMC is currently developing a new high-throughput transcriptomic analysis method, the aim of which is to quantify, in just one experiment lasting a few days, the transcriptomic profile of thousands of yeast strains. The new method requires the creation of innovative experimental protocols and the development of specific Next Generation Sequencing (NGS) data analysis software. Within the project scope, the main objective will be to obtain a genomic analysis pipeline producing a detailed 'ID card' for any strain of yeast using raw NGS data from the genome of this strain. The software will be used by Lesaffre to characterise industrial strains and by the LBMC to monitor functional mutations to laboratory strains during tests on fundamental cellular and molecular activities. The project will also make it possible to implement high-throughput transcriptomic analysis in various functional exploration projects as part of Lesaffre's work. The LBMC is also interested in designing research into the distribution of the effects of unpredictable mutations on the regulation of gene expression in controlled laboratory environments. Thanks to this partnership, by 2024 Lesaffre could be using new high-throughput analysis methods and IT methods to explore the transcriptomic and genomic profiles of thousands of yeast strains, with the help of the biofoundry at the new Lesaffre Campus in Marcq-en-Barœul, northern France.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#)

4231 - Inauguration of the L'Oréal Green Sciences Incubator @Genopole: a special incubator for start-ups working in green biotechnologies.

Created by French group L'Oréal and the leading French biocluster Genopole, the [call for proposals](#) is aimed at start-ups developing innovative technologies either specifically for the cosmetics/dermocosmetics sector or transferable to that sector, for a more sustainable industry. They are especially interested in solutions in the following fields:

- **Sustainable farming:** farming practices and technologies to manage water resources, respect soil biodiversity and quality, and limit land use and carbon emissions, while providing macroscopic organisms (plants, fungi and algae) for innovative products.
- **Green extraction and physical processes:** environmentally responsible extraction processes for final ingredients that do not require any (bio)chemical transformation of natural resources from plants, algae, fungi, microorganisms, cells or common minerals.
- **Green chemistry:** design of chemicals and processes that reduce or eliminate the use/generation of dangerous substances.
- **Biotechnology and fermentation:** cultivation of microorganisms (bacteria, yeasts, microalgae and fungi) or cells (plant and animal) in bioreactors or controlled environments.

The successful applicants will join the incubator at the Genopole site in Evry, near Paris. They will have access to a fully kitted-out laboratory and will receive support for one year from researchers at L'Oréal and Genopole. At the end of the incubation period, each start-up will retain the intellectual property over its technology, through a patent, and may decide to collaborate with L'Oréal via partnerships or investments or to part ways, 'as best suits their requirements.'

En savoir plus : [Boursier.com](#), [L'Usine Nouvelle.com](#), [Les Echos.fr](#)

2. APPLICATIONS & MARKETS

Food and feed

4232 - Eurogerm

[Eurogerm](#), a French company specialising in the formulation of baking ingredients and solutions for the milling industry, industrial bread and pastry production and the agri-food industry, announced that it had started construction work on its new leavening agent biofermentation plant. Located on the site of the Dijon-Bourgogne ecopark in Saint-Apollinaire, the new plant will produce 100% French leavening agents, meeting customer demand and expectations in terms of quality and origin, especially those associated with Culture Raisonnée Contrôlée (CRC®) – a French product certification network. Complementing the existing range of leavening agents, the new innovative product will expand the signature ingredient offer for companies in the wheat/flour/bread/pastry sector. The new facility will produce 400 tonnes of leavening agent per year, progressively reaching an annual capacity of 1,000 tonnes. Other innovative fermented ingredients will eventually be added to the leavening agents. The new plant, which will have a surface area of 3,650 m² on a 13,000 m² site, is expected to go on line in the first quarter of 2024.

Eurogerm opened a 600 m² research centre – the Eurogerm Technological Innovation Center (ETIC) – in 2022, and will roll out a pilot workshop for leavening agents in March 2023 on the same site, in Quetigny, north-eastern France. It will be used to test leavening agents on a pre-industrial scale, and will provide a made-to-measure demonstration and co-development tool for the Group's clients. The project, which required an investment of €21 million, received €1.8 million in funding from the French government, through the France Relance recovery plan.

[Info:] Eurogerm is a member of the 'Leavening agents of the future' Grand Défi [big challenge, a programme run by the French general secretariat for investment].

More information: [Press release](#)

En savoir plus : [Communiqué de presse](#), [L'Usine Nouvelle.com](#), [Investir Les Echos.fr](#)

4233 - Chromologics

The Danish [biotech](#), which has developed a fungus-based fermentation platform to produce natural food colouring, announced that it had raised €12.6 million in seed funding. [Döhler Ventures](#) (the investment arm of Danish ingredients company [Döhler](#)) and the venture capital firm [Thia Ventures](#) made their first investments in Chromologics, while existing investors contributed €7.1 million in additional equity in an extended seed round. The new funds will go towards setting up a commercial production line and consolidating the go-to-market strategy for Natu.Red, its first red food colouring produced by a non-GMO fungus. On the back of the funding round Chromologics will now also be able to expedite studies required for regulatory approval and expand the portfolio towards additional colours. Chromologics says it has reached a significant R&D milestone in producing 100 kg of Natu.Red. The colour is pH- and temperature-stable, tasteless, water-soluble, naturally vegan and GMO-free, compliant with the dietary requirements of kosher, halal and vegan diets. Natu.Red has applications across the food and cosmetics industries and aims to replace carmine (a colouring sourced from the dried shells of the cochineal beetle), the synthetic colouring Red 40, and other unstable natural colourings.

More information: [Press release](#), [Vegconomist.com](#)

En savoir plus : [Vegconomist.fr](#)

4234 - Launch of the AlinOVeg project: 'Innovating in Plant-Based Food'.

Launched by a consortium headed by the [Roquette](#) group and including the [Eurial](#) group (the dairy subsidiary of [Agrial](#)), the microbial biotech specialist [Greencell](#), Lumière-Lyon-2 university, INRAE and its subsidiary [Agri](#)

[Obtentions](#), the goal of this collaborative project is to develop solutions and innovative products (pea and fava bean varieties, protein ingredients, plant-based alternatives to cheese and plant-based desserts) and create a strong and sustainable French sector. To achieve this, AlinOVeg has decided to let consumer expectations guide its development: it will offer products with optimal functional, nutritional, and organoleptic qualities. In addition, the project will rely on the development of more sustainable processes thanks to a large varietal selection guided by final expectations, new valorisation processes and more resilient local sectors. AlinOVeg will also address farmers directly to better meet their needs and enable them to optimize the value of pea and fava bean crops. Certified by the competitiveness clusters [Vitagora](#), [Bioeconomy For Change](#) and [Clubster Nutrition Santé Longévité](#), the five-year project will be marked by key R&D milestones to remove technological barriers along the value chain. Supported by France 2030 as part of the 'Food Needs of Tomorrow' call for projects operated by Bpifrance as part of the 'Sustainable and Healthy Food' acceleration strategy, AlinOVeg has a budget of €11.4 million, €8.3 million of which from France 2030. It aims to be launched on the world market in the coming years.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#), [L'Usine Nouvelle.com](#), [Agro Média.fr](#)

Biocontrol/Biostimulation

4235 - Amoéba

The industrial biotech specialising in the treatment of microbiological risk, which is developing a biocontrol agent for the treatment of plants in agriculture and a biological biocide for the treatment of industrial water, announced that, in the framework of a Material Transfer Agreement, [Nissan Chemical Corporation](#) had started a performance evaluation study of the mixture of one of its products with an Amoéba biocontrol experimental product. The aim of this evaluation is to determine how well the combination of Nissan's Leimay® (suspension concentrate at 200 g/l amisulbrom) and Amoéba's AXP12 experimental product (suspension concentrate at 215 g/l lysate of *Willaertia magna* C2c Maky) can control grapevine downy mildew. This extemporaneous mixture was tested in two trials against grapevine downy mildew in Italy, in conditions of high disease pressure. Ten applications at seven-day intervals were made. The Leimay®+ AXP12 combination, tested at a reduced dose of both products, was very efficient on leaves and bunches. It is superior to Leimay® and AXP12 used alone at their full dose, which could allow a reduction in the dose of either or both products. These results support the continuation of the experiment in 2023.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#)

Amoéba announced that it had won the France 2030 'Agri-food Competence and Resilience' call for proposals. After examining the application, BPI France recognised the worth and benefit of investing in Amoéba, and announced support amounting to €5,917,676: a subsidy of €3,550,606 and a recoverable advance of €2,367,070. The financing will enable the company to further its industrial project, in particular the creation of its eco-responsible plant in the new Hauts Banquets business park in Cavaillon, south-eastern France, dedicated to natural product development. In addition to the environmental nature of the project, Amoéba's scale-up meets the innovation criteria of France 2030, with 4.0 facilities and the use of artificial intelligence. The payment terms and schedule have yet to be released.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#)

4236 - Micropep Technologies

The Toulouse-based [biotech firm](#), which develops organic products using micropeptides (small, natural proteins that can be used to adjust the intrinsic capacities of plants, from germination to reproduction) announced the appointment of Alexandre Frateschi as its new chief business officer. Prior to joining Micropep, Alexandre worked at BASF for more than a decade, where he fulfilled a variety of roles focused on business development, marketing, financial planning, and identifying relevant trends and technology in the agricultural technology space that provided the greatest opportunity for growth.

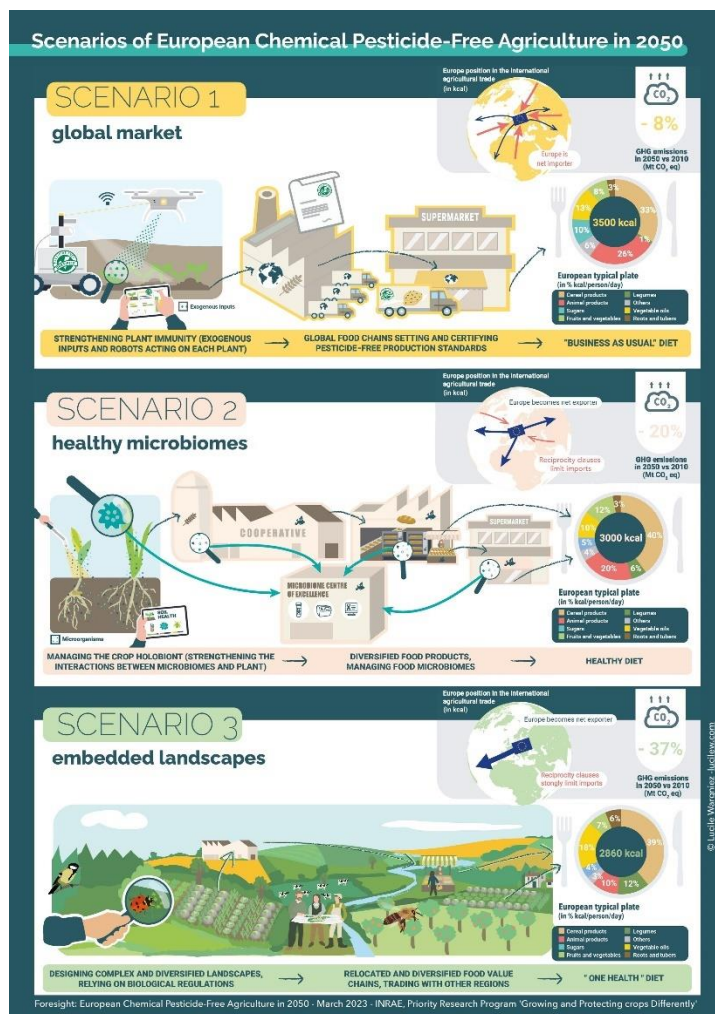
More information: [Press release](#)

4237 - Publication of the foresight study 'European Chemical Pesticide-Free Agriculture in 2050'.

The foresight study, conducted for over two years by INRAE and involving 144 experts, scientists and stakeholders from the agricultural sector, investigated possible ways to eliminate pesticides from agriculture across Europe. Some 1,400 participants of 64 different nationalities attended a feedback conference, where remarks were heard from various French and European stakeholders in the fields of agriculture, regulation and policymaking, farming, the environment and food. A presentation was also given of the three scenarios explored to encourage the evolution of the agricultural and food system:

- 'Global market': global and European food value chains based on digital technologies and plant immunity for a pesticide-free food market.
- 'Healthy microbiomes': European value chains based on plant holobiont, soil and food microbiomes for a healthy diet.
- 'Embedded landscapes': complex and diversified landscapes and regional food value chains for a one-health food system.

For each scenario, pesticide-free cropping systems make use of crop diversification, biocontrol development, the choice of suitable crops and varieties, digital technology and agricultural equipment, and monitoring systems to anticipate the arrival of pests. This ground-breaking attempt to weave together a larger narrative was bolstered by measured impacts on European food sovereignty and the environment for each scenario. Possible pathways forward are given for each scenario for the European and regional transition of the entire food system based on participatory workshops conducted in four regions in Italy, Romania, Finland and France. The study's authors believe that transitioning to chemical pesticide-free agriculture will require a coherent mix of European public policies to reduce pesticide use articulated with other policies such as food policies, support the transition through a redesign of the Common Agricultural Policy (CAP) and economic instruments that can be leveraged, and create pesticide-free markets through trade agreements. The scenarios explored in the foresight study should help decision-makers and the scientific community to identify solutions by 2050.



Source : inrae.fr

More information: [Inrae.fr](https://www.inrae.fr)

En savoir plus : [Communiqué de presse](#), [Agri Mutuel.com](https://www.agri-mutuel.com)

Chemicals & Materials

4238 - Abolis Biotechnologies

[Abolis Biotechnologies](https://www.abolis.com), which develops microorganisms that can produce molecules essential to industries via fermentation, announced its goal to 'become a European powerhouse in its field by 2030.' According to Cyrille Pauthenier, Abolis CEO and founder, 'we doubled our staff levels in two years and hope to triple in size over the next two to three years to achieve a critical mass as our clients' first products appear on the market.' The company wants to develop and invest in its workforce and R&D technical platforms to counter stiff competition from the US and Asia. In the meantime, it has started to deliver its first scalable processes to its clients, ready for the commercial launch of the first products made using its technology next year. This step will validate Abolis' technology platform and skills and boost its development over the next three years.

En savoir plus : [L'Usine Nouvelle.com](https://www.usine-nouvelle.com)

4239 - Avantium & Kvadrat

The Dutch chemicals company Avantium and the Danish design [company](#), which produces a full range of high-quality contemporary textiles for architects, designers and individuals the world over, have signed an agreement whereby Kvadrat will buy the 100% plant-based and fully recyclable polyethylene furanoate (PEF) polymer that will be produced in Avantium's furandicarboxylic acid (FDCA) plant. The agreement positions Kvadrat as one of the leading players in creating PEF-based textiles for commercial and residential interiors.

Recap: Avantium's FDCA plant is currently under construction in Delfzijl, the Netherlands, and is set to open in 2024.

More information: [Press release](#)

4240 - BASF

The German chemicals company announced the start of production of Sovermol® – its first biobased polyol – at its new plant in Mangalore, India. The new production unit will use existing BASF facilities and is located on BASF's largest production site in South Asia. The site makes polymer dispersions, fine chemical catalysts, and coatings for the paper, farming and automotive industries. Sovermol® is a polyfunctional alcohol made of renewable feedstock such as rapeseed, castor, soybean and palm oil. It does not contain any volatile organic compounds (VOCs), meaning customers can reduce their carbon footprint. It can be used in coatings and polyurethane adhesives intended for many industrial sectors in the Asia-Pacific region.

More information: [Press release](#)

En savoir plus : [L'Usine Nouvelle.com](#)

4241 - Bio-On

Bio-On, an Italian company specialising in producing polyhydroxyalkanoate (PHA), which reported bankruptcy in 2020, may resume operations thanks to the Italian group [Maip](#). The group put forward a five-year plan to buy all the assets of the floundering company, a plan accepted by the lower court in Bologna after approval by trade unions and creditors. The proposal to buy the business was submitted by Haruki Spa, a 75:25 joint venture between Maip Compounding and Plastotecnica, two companies belonging to the Maip group. Bio-On's new owner will have initial assets of around €20 million to fully resume operations on the site located in Castel San Pietro, Italy.

En savoir plus : [L'Usine Nouvelle.com](#)

4242 - BluCon Biotech & LG Chem

The German biotech [company](#) that developed a fermentation technology to transform lignocellulosic biomass into lactic acid in a single bioreactor revealed it had signed an investment agreement with the South Korean chemicals company [LG Chem](#). This agreement will allow the two companies to develop and sell BluCon Biotech's proprietary technology to round off LG Chem's bioeconomy portfolio. BluCon Biotech and LG Chem have agreed to work together on a new process to convert non-food lignocellulosic feedstock into high-purity lactic acid, a precursor to biobased, biodegradable plastics.

Info: BluCon Biotech plans to adapt its process for converting feedstock, such as wheat straw, into bioplastics, to other feedstocks such as corn stover, bagasse, cotton stalks, starch and algae. The German company plans to license its technologies to investors, the chemical industry and large bioplastics and feedstock producers. These licences will generate revenue through milestone, royalty and service fees. The factories will probably be located in areas where feedstock is plentiful. Moreover, BluCon's technology platform is sufficiently flexible to be used to produce other biobased products, such as ethanol or succinic acid.

More information: [BluCon Biotech.com](#)

En savoir plus : [Bionity.com](#)

4243 - Carbios

The French specialist in the enzymatic recycling of plastic polymers and textiles announced that it had joined the [Ellen MacArthur Foundation's](#) circular economy network, sharing the goal of accelerating the transition to a circular economy, particularly in fashion and plastics. What's more, its revolutionary biorecycling and biodegradation technologies already uphold the Foundation's stipulated actions:

- Eliminate all problematic, single-use plastic items,
- Innovate to ensure the plastics we need can be reused, recycled or composted,
- Ensure the circularity of all plastic items we use to keep them in the economy and out of the environment.

Becoming a member of the Ellen MacArthur Foundation means Carbios can connect with other leading players in the Foundation's network, such as companies, policymakers, researchers, innovators and opinion leaders worldwide.

More information: [Press release](#)

En savoir plus : [Communiqué de presse](#), [L'Usine Nouvelle.com](#)

4244 - CarbonWorks

This [spin-off](#), created by the microalgae specialist Fermentalg and the French waste and water management group Suez, specialising in CO₂ recycling and upcycling via microalgae, announced that it would progressively pursue the large-scale rollout of its breakthrough technology capturing CO₂ on industrial sites by 2024. For Guillaume Charpy, Managing Director of CarbonWorks: *'By 2026, we will have a slightly bigger bioreactor than the one we currently have, still on the Pot-au-Pin Energie site, which will be a semi-industrial reactor.'* With this, CarbonWorks hopes to come up with a concrete industrial solution within three years. Once the company has ramped up, it is keen to expand its portfolio of partners.

Recap: CarbonWorks developed its first demonstrator plant, a 10 m³ reactor, on the site of Pot-au-Pin Energie, an anaerobic digestion company in Cestas, France. The company also raised €11 million in funds in March 2022.

En savoir plus : [Big media.bpifrance.fr](#)

4245 - Circa Group

The Norwegian biotech firm Circa Group announced that it had hosted industry leaders and academic figures for the launch of the [Circa Renewable Chemistry Institute](#) (CRCI). According to Nick Smith, Head of Development and Commercialisation at Circa: *'The CRCI is the logical progression of our longstanding partnership with the University of York. Market leaders will have access to expert support in application and process development, as they move manufacturing processes to safer and more sustainable products such as Cyrene™.'* The CRCI aims to further and promote the development and commercialisation of renewable chemistry, processes and products that will help the chemical industry switch to biobased products that are commercially viable, sustainable, and environmentally friendly on an industrial scale. A key part of what the Institute does is to carry out research focused on applications that help organisations develop formulations and processes that use Cyrene™, a safe and durable solvent.

More information: [Press release](#)

The Norwegian biochemistry firm and the German group [EKATO](#), specialising in industrial mixers and agitators for laboratories and industrial production, have entered into a long-term technical, strategic partnership that will enable Circa to incorporate EKATO's hydrogenation technology to expand its ReSolute plant. The partnership also covers future commercial-scale plants.

Recap: The ReSolute plant, due to enter into service in June 2024, will produce Cyrene™, Circa's biobased flagship solvent, on an industrial scale.

More information: [Press release](#)

4246 - Ecoat

The French company [Ecoat](#), specialising in designing and manufacturing biobased polymers that enter into the composition of paints and varnishes, announced €10 million in Series A funding. This operation was possible thanks to the participation of [Smart Capital](#), [123 IM](#), Bpifrance, Banque Populaire Méditerranée, BNP Paribas, Crédit Coopératif, Caisse d'Épargne CEPAC, Caisse d'Épargne Côte d'Azur and Région Sud Investissement. In parallel, it sought a loan via the French crowdlending lending platform [Lendosphere](#), securing €1 million from 718 private investors. Ecoat also benefited from funding from the France Relance 2030 recovery plan.

This fundraising operation means Ecoat can accelerate its scaling-up phase and double its annual production capacity to 10,000 tonnes at its Roussillon-en-Isère facility in France.

En savoir plus : [Webtime Medias.com](#)

4247 - Eranova

The French [start-up](#) that developed a technology to produce substitutes for fossil-based plastic materials using green macroalgae took stock of its progress so far. Based in Port-Saint-Louis-du-Rhône, France, the company now has 19 reservoirs across 1.3 hectares. Eranova developed a process on this site to increase the levels of starch naturally present in green microalgae. It then extracts this starch via an enzymatic process to obtain starch on the one hand and fibres on the other. The start-up also developed another process to eliminate the chlorophyll pigments in algae, thus obtaining a bleached, odourless starch. This starch is then transformed to produce biopolymers that can replace fossil-based plastic wrapping made of polyethylene, polypropylene or certain elastomers. Eranova is also looking into other applications. The company can upcycle almost 95% of the algal biomass by recovering starches and fibres. Eranova's pilot facility on this site can process 500–600 tonnes of dried seaweed a year and create around 300 tonnes of biomaterials.

In terms of market prospects, Eranova has already sold products to large retail outlets such as Carrefour and Intermarché. It is also in contact with Le Slip Français and bottle-making companies working for the cosmetics industry. As for developments, Philippe Michon, co-founder and CEO of Eranova, said: *'We are scaling up and aim to operate in an area of 100 hectares thanks to an investment of over €60 million. We successfully tendered for the France 2030 plan, securing a participation of €17 million. The European Investment Bank also backed us with a loan of €30 million. We also ran a crowdfunding campaign on Wiseed to ensure our operations and fund our research. That will also help us to get individuals to buy into this environmental and societal project, given that it encourages reindustrialisation.'* Eranova's first facility is set to enter into service in 2025.

En savoir plus : [Techniques de l'Ingénieur.fr](#)

4248 - Evonik & AMSilk

The German [specialty chemicals company](#) and its compatriot [AMSilk](#), specialising in producing plant-based silk polymers, have signed a partnership agreement to produce *'industrial quantities'* of biopolymers from silk proteins. To achieve this, both partners will use the know-how of Evonik's Health Care business in producing silk via precision fermentation and its expertise in developing strains, optimising processes and producing goods on a large scale. Both partners will use AMSilk's patented technology platform to transform proteins into many formulations such as fibres, hydrogels or silk powders. In terms of applications, these biomaterials can be used in the textiles industry, medical devices and even consumer goods.

More information: [Press release](#)

En savoir plus : [L'Usine Nouvelle.com](#)

4249 - Global Bioenergies

For the 2023 edition of the In-Cosmetics Global tradeshow held in Barcelona, Spain, the French industrial biotech firm announced the launch of its second cosmetic ingredient: a natural, renewable isohexadecane to be sold under the trade name Isonaturane® 16. Isohexadecane is a branched alkane, historically sourced from the oil industry, with a medium volatility that gives skin a dry, soft finish. Global Bioenergies produces this 100% natural biobased molecule (according to ISO 16128) from French sugar: the molecule is sourced and made in France. Isohexadecane is mainly used in skincare, and its texturising agent properties are similar to silicon ones.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#), [Premium Beauty News.com](#)

Global Bioenergies announced that it had joined Bpifrance's [Communauté du Cog Vert](#) of managing directors who are steadfast in the need for action and are already committed to energy and environmental transition. The community, launched by Bpifrance in partnership with the French agency for the environment and energy management ADEME and the Ministry for the Ecological Transition, aims to promote knowledge sharing between committed entrepreneurs.

En savoir plus : [Global Bioenergies.com](#)

Global Bioenergies announced that it has succeeded in raising €5.6 million of the €7.5 million expected for the capital increase, or approximately €5.1 million net of the costs of the operation. Following the subscription period, the overall demand (for statutory, optional and open subscriptions) reached 2,574,934 new shares for a unit price of €2.07, representing around 71.3% of the initial gross amount of the operation. Under their subscription commitments, Marc Delcourt, Global Bioenergies co-founder and CEO, and the L'Oréal Group, through its BOLD investment fund (Business Opportunities for L'Oréal Development), contributed to this statutory capital increase, with €160,000 and €980,000 respectively. During the subscription period, the Cristal Union group also subscribed to the company's share capital for the sum of its portion in the company (i.e., 1.3%) for €100,000. This capital increase aims to provide the company with the means to finance:

- The need for working capital for the Horizon 2 production line (for around 50% of the proceeds of the capital increase);
- Continued pre-project studies into the Horizon 3 facility known as ViaViridia (for around 40% of the proceeds of the capital increase);
- Extra R&D activities, to continue to lower the costs of the process for their subsequent use in Horizon 4, to produce sustainable aviation fuels and sustainable road transport fuels (accounting for around 10% of the proceeds of the capital increase).

Following the capital increase, the cash position of Global Bioenergies will be around €11 million. Given its aim to progressively reduce the divide between cash inflows and outflows, the company will have financial visibility of more than 12 months.

En savoir plus : [Boursier.com](#)

Global Bioenergies revealed that the Prénidem project, designed to produce biobased isobutene in two stages, received €6.2 million in funds from the French agency for the environment and energy management ADEME as part of the 'Biobased products and industrial biotechnologies' call for proposals. Ajinomoto Foods Europe, a leading industrial fermentation company and ARD, specialising in scaling up and using biotechnology processes, are partners in this project. Of the €6 million in funds, €4.4 million went to Global Bioenergies, €1 million to Ajinomoto Foods Europe, and €0.7 million to ARD. In all, 60% of the funds are non-refundable subsidies; the remaining 40% are refundable advances, subject to technical and commercial milestones being met. The funds will be paid in several instalments during the project, with an initial instalment of 15%. The Prénidem project implements a two-step production process: converting residual sugars into 'prenic acid' (DMA) and then converting this DMA to isobutene. The first aim is to promote the commercial applications for biobased isobutene derivatives in the cosmetics industry alongside the high-octane renewable fuel additives Formula 1 stakeholders currently seek. The second aim is to optimise the technology to reduce the production costs for biobased isobutene and its derivatives. The Prénidem project is expected to run until September 2025.

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#), [L'Usine Nouvelle.com](#)

From 2023, Global Bioenergies will start selling its first isobutene batches, around 15–20 tonnes a year, and cover the costs of its facilities while continuing with developments. To this end, the green chemicals company has

announced that it will build a facility with an annual capacity of 2,000 tonnes by 2025. To see this project through, it has founded a company called ViaViridia to secure the funding needed for the work, potentially costing between €50–100 million. Global Bioenergies also announced plans to build a 30,000 tonne/year facility by 2028. The new facility will also use a one-step isobutene-to-sugar fermentation process, which should reduce operating expenses and, in turn, production costs. The biobased solutions under consideration could then outshine kerosene by being three to five times cheaper.

En savoir plus : [L'Usine Nouvelle.com](https://www.usine-nouvelle.com)

4250 - IKEA

The Swedish group specialising in designing and manufacturing ready-to-assemble or pre-assembled furniture and decorative items announced its plan to replace fossil-based glues with biobased ones to reduce its carbon footprint. IKEA estimates that 5% of the carbon footprint for its entire value chain currently comes from the use of fossil-based glues. According to the company, the decision should result in a 40% reduction in the use of fossil-based glues and a 30% reduction in greenhouse gas emissions from glue by 2030.

Info: IKEA recently launched an acceleration programme to test new glue solutions with external partners to ensure it could transition to a 100% biobased glue.

More information: [ikea.com](https://www.ikea.com)

4251 - Locus Fermentation Solutions

The US biotech firm that uses micro-organism fermentation to replace chemicals with biological alternatives announced \$117 million (€106 million) in debt financing, justified by the value of its intellectual property and its library of more than 1,300 patent filings. [Jefferies](#) arranged this debt financing operation with the participation of [Markel Insurance](#), [Liberty Specialty Markets](#), [CNA](#), [Aspen](#) and [Fidelis Insurance](#), bringing the total funding to over \$250 million (€227 million).

More information: [Press release](#)

4252 - L'Oréal & Geno

Through its venture capital fund BOLD, the French industrial group for cosmetics L'Oréal announced that it had invested in a company managed by the US biotech firm Geno. The company, the name of which was not revealed, aims to develop, produce and sell biotech alternatives for surfactants, vital ingredients in the formulations for cosmetics, personal care and everyday cleaning products. This investment means L'Oréal can join the company as a founder alongside the Anglo-Dutch group Unilever and the Japanese group Kao. Thanks to Geno's expertise in biotechnology, L'Oréal will replace conventional ingredients with biobased alternatives, such as those produced using sugars derived from plants. These new ingredients will be used in various L'Oréal products, enabling the company to make great strides towards its goal of 100% eco-designed products and 95% biobased ingredients and formulae sourced from abundant minerals or circular processes.

More information: [Press release](#)

En savoir plus : [Communiqué de presse](#), [L'Usine Nouvelle.com](https://www.usine-nouvelle.com), [Journal du Luxe.fr](https://www.journalduluxe.fr)

4253 - Novozymes & Chr. Hansen

The respective shareholders of the two Danish groups approved the merger announced in December 2022 (see Article No. 4180 in FlashNews 55). These closer links should create 'a global group at the forefront of biosolutions.' It should also result in an annual turnover of around €3.5 billion and financial synergies of €200 million a year within three to four years. This operation, which is now subject to regulatory approval by the authorities, should be completed in the last quarter of 2023 or the first of 2024.

More information: [Press release](#)

4254 - Solvay & Ginkgo Bioworks

The Belgian chemicals company announced a multiyear strategic partnership with the US biotech firm that builds a platform for cell programming and biosecurity to *'harness the power of synthetic biology as a catalyst for more sustainable chemicals and materials.'* Both partners will start by focusing on new sustainable biopolymers, specialties that could have a real impact on many markets, from home and personal care to agriculture and food. As part of this strategic partnership, Solvay will also acquire a Ginkgo laboratory in Cambridge, USA, to bolster its R&I presence in the country. With this collaboration, Solvay will incorporate extensive know-how in bioinformatics and data science, strain engineering, biocatalysis and fermentation processes, boosting and accelerating the ability to research, develop and transform the most valuable biotech opportunities into companies. The collaboration will also help the Belgian group cement its position in the field of biotechnology as part of its [Renewable Materials and Biotechnology](#) growth platform.

More information: [Press release](#)
En savoir plus : [L'Usine Nouvelle.com](#)

4255 - Stora Enso & Kolon Industries

The Finnish paper manufacturer and the South Korean [group](#) specialising in producing chemicals and textiles have entered into a joint development agreement to develop and commercialise furandicarboxylic acid (FDCA) polyesters and renewable binder resin formulations with a 5-hydroxymethylfurfural (HMF). To achieve this goal, the two partners will combine Stora Enso's [FuraCore®](#) technology (consisting in converting fructose to FDCA via HMF) and its packaging industry expertise with Kolon Industries' expertise in developing and manufacturing polyester and phenolic resins for a broad range of applications.

More information: [Press release](#)
En savoir plus : [L'Usine Nouvelle.com](#)

4256 - TotalEnergies Corbion, POSCO International & ESOL

TotalEnergies Corbion has entered into a partnership with the South Korean firms [POSCO International](#) and ESOL to develop PLA recycling technology and infrastructure in the country. With this agreement, POSCO International, specialising in the sale, investment and development of resources, will enter the biobased plastic recycling industry as part of its product offerings to expand its green portfolio. According to the terms of the agreement, POSCO International will oversee and finance the project. Meanwhile, ESOL, which sells an extensive array of polylactic acid (PLA) products in South Korea, will retrieve post-consumer recycled (PCR) PLA waste and build on the technology to collect, sort, clean, purify and rework PLAs. TotalEnergies Corbion will provide the project with its expertise and experience in the advanced recycling of PLA. Over the coming years, the partnership will help the South Korean government move towards its goal of carbon neutrality.

More information: [Press release](#)
En savoir plus : [L'Usine Nouvelle.com](#)

4257 - TripleW

The Israeli [start-up](#), which has developed a fermentation technology to produce lactic acid from food waste, reported \$16.5 million (€15.1 million) in Series B funding. [Firstime VC](#) handled this fundraising operation with the participation of the [Sonol Energy](#) group's Israel Oil and Gas Fund, [LG Technology Ventures](#), [Millennium Food-Tech VC](#), [Consensus Business Group](#), Eddy Shalev, John Zyskind and Tal Shapira. Thanks to these new funds, the company will progress its technology from the pilot phase to a commercial scale by transforming several existing waste management facilities. TripleW has an R&D centre in Israel and an industrial demonstrator plant in Belgium.

[Info] The company previously secured \$19 million (€17.3 million), including major grants from the European Union's Horizon 2020 programme with the [Waste2Func](#) consortium, Flanders Innovation & Entrepreneurship (VLAIO, Belgium), [Israel Innovation Authority](#) and the [BIRD Foundation](#).

More information: Calcalistech.com

4258 - ZYMBOL

The Spanish biotech [company](#) specialising in computer-aided enzyme discovery and engineering reported that it had secured €1.3 million in seed funding. The fundraising operation, headed by the venture capital firm [Elia Partners](#), will help the company grow, boost its workforce, and inaugurate a new lab space in Barcelona Science Park. These additional funds will also help it maximise the potential of its own portfolio of enzymes with applications in fields such as the sustainable production and degradation of materials and create better ingredients for the food and cosmetics industries.

More information: [Press release](#)

4259 - BIOMATA, a new international associated laboratory (LIA).

This new LIA brings together the Materials, Engineering and Manufacturing and Chemistry and Physics research groups of Scion, New Zealand's national forestry research institute, the Montpellier-based joint research unit for agropolymer engineering and emerging technologies (supervised by INRAE, the University of Montpellier and Institut Agro), the biopolymers interactions and assemblies research unit in Nantes, and the joint research unit for the fractionation of agrosources and environment in Reims. BIOMATA will provide fundamental, applied knowledge using resources from plant biomass to develop biobased materials to design the materials of the future. The research projects conducted within LIA focus on three areas:

- Characterising wood-based plant materials, wood by-products and various plant materials to manufacture advanced biobased materials;
- Developing sustainable processes to manufacture these materials;
- Designing functional materials and objects with 3D and 4D printing and studying their properties.

The research is part of a circular economy approach designed to minimise the environmental footprint of manufacturing processes by considering a product's end-of-life options from the design phase. The research will be conducted through concurring studies carried out in facilities in different laboratories. It will focus on joint methodological developments to characterise and process advanced biobased materials, jointly supervise trainees, PhD students and post-doctoral researchers, accommodate reciprocal exchanges of researchers from the various partner laboratories, and conduct scientific mediation. Seminars will also be held primarily by videoconferencing to be environmentally friendly, given the distance between France and New Zealand.

En savoir plus : [Communiqué de presse](#)

Energy

4260 - Airbus

The European aircraft manufacturer announced the start of a series of flight tests powered exclusively by sustainable aviation fuel. Airbus chose the A321neo for these tests, its first single-aisle aircraft equipped with CFM International LEAP 1-A engines that can fly with sustainable aviation fuel only. This aircraft was followed closely by another chaser aircraft collecting data to gather information on CO₂ emissions and the creation of contrails. These tests were part of the VOLCAN project (*Vol avec Carburant Alternatif Nouveau* in French – flight with new alternative fuels) financed by the French aerospace companies Safran and Dassault Aviation, the French aeronautics, space and defence research lab ONERA and the French Ministry of Transport.

More information: Airbus.com

En savoir plus : Capital.fr

4261 - Daher

The French [group](#) revealed that it had installed a 30,000-litre PUR-XTL biofuel tank on its logistics platform in Cornebarrieu, France, to fuel the lorries that transport aeronautical parts between Airbus sites. [Altens](#), a company specialising in 100% renewable alternative fuels, is handling all set-up and alternative fuelling operations. PUR-XTL biofuel is manufactured with used cooking oils, animal fats and other residual products, cutting up to 90% of vehicle CO₂ emissions. Alongside the initial €50,000 investment, there is a 10% surcharge in relation to traditional fuels. Daher plans to install a second tank in 2024, this time on the Roissy site. On the one hand, the aim is to enable local trips using biofuels and, on the other, create a 100% biofuel route between Toulouse, Roissy and Hamburg (80% of the total distance covered by Daher lorries). From 2023, lorries leaving Hamburg can fill up with biofuels at German petrol stations.

More information: [Press release](#)

En savoir plus : [Communiqué de presse](#), [Dossier de presse](#), [La Tribune.fr](#)

4262 - Inauguration of the SOLIDIA Biogaz platform.

This new R&D platform aims to scale up technologies to treat and enrich biogas into biomethane for injection into the transport and distribution networks. It was inaugurated by the gas operator [Teréga](#), the French national institute of applied science (INSA) in Toulouse and [CLER VERTS](#), specialising in collecting and upcycling organic waste. The platform, designed for all stakeholders in the biogas value chain – technology developers, SMEs, large groups, universities or research labs – enables:

- Large-scale phenomenon studies,
- Assistance with scaling up.

SOLIDIA Biogaz is located in Bélesta-en-Lauragais, France, and could house up to six semi-industrial-sized pilots at the same time –three spots under a covered hanger and three outside. This platform is also a teaching aid for higher education, providing concrete technical tools for R&D projects. Support can come in the form of services or a collaboration agreement.

En savoir plus : [Communiqué de presse](#), [La Dépêche du Midi.fr](#), [Le Journal des Entreprises.com](#)

4263 - Conditions no longer favourable for the development of agricultural methanation.

At a time when biogas was expected to cover 20% of gas requirements by 2030 (compared to 2% currently), Mauritz Quaak, Vice-President of the French association of farm biogas plant owners, the *Association des agriculteurs méthaniseurs de France* (AAMF), believes that there are two serious obstacles to scaling up methanation. The first stems from the current situation: *‘methanation, like every other activity, is being rocked by inflation, rises in raw material prices, and greater energy costs. This last point is having a sizeable impact on our facilities.’*

Mauritz adds that *‘the production costs for a biogas plant have gone through the roof, from €3 million a few years ago to €4.5 million.’* He no longer sees the financial viability of new methanation projects *‘for regulatory reasons: standardisation and new rates in 2020.’* The AAMF is asking for *‘the rates to be re-evaluated to make such projects viable and restore the development dynamics during 2015–2017 that the previous rates enabled’* to encourage the development of agricultural methanation once again.

[Info] The 500 farm biogas plants registered in France can produce 9 TWh per year: *‘more than a nuclear reactor’*, according to Mauritz.

En savoir plus : [Agri Mutuel.com](#)

Health & Cosmetics

4264 - Avowell & Microba Life Sciences

The [start-up](#), which develops processes to identify and produce bacterial communities for livestock, and [Microba Life Sciences](#), which specialises in intestinal microbiomes, have entered into a strategic partnership agreement. The agreement will accelerate the identification and sale of direct-fed microbials (DFM) that will contribute to

improved animal health and growth in livestock farming. This partnership, expected to last around two years, will combine Microba's cutting-edge skills in metagenomics and precision microbiome profiling with Aviwell's extensive capabilities in microbiome multi-omics analyses and *in vivo* field applications

More information: [Press release](#)
En savoir plus : [Communiqué de presse](#)

4265 - Fytexia & Plant Advanced Technologies (PAT)

[Fytexia](#) and [PAT](#) have entered into a strategic nutrition partnership as part of the N'GINS programme. Fytexia develops functional ingredients for the food supplements industry while PAT is scaling up the production of a new generation of food supplements via the metabolic engineering technologies of its subsidiary [Cellengo](#), specialised in microbial fermentation. N-GINS stands for *Nouvelle Génération d'Ingrédients Nutraceutique Santé* (new-generation nutraceutical ingredients for health). As a successful tenderer in France's Future Food Needs call for proposals, backed by the France 2030 programme for an overall budget of €4.8 million, this project aims to market food supplements with new classes of polyphenols that are 'identical to nature' and produced with a low environmental impact thanks to metabolic engineering. The health benefits of this new range of polyphenols are directed at high-growth market segments in the USA, Asia and Europe in particular. With the N'GINS programme, the partners hope to become the go-to actors for producing phenolic compounds with a high nutritional value via breakthrough technologies. By doing so, they will actively help strengthen France's bioeconomy value chain in the fields of biotechnology and nutrition.

En savoir plus : [Plant Advanced.com](#)

4266 - Iktos

The French [start-up](#), which has developed an artificial intelligence (AI) platform to accelerate the discovery and design of new medication, announced €15.5 million in funds raised through Series A funding. [M Ventures.com](#) and [Debiopharm Innovation Fund](#) jointly led this operation, with the participation of [Omnes Capital](#). With this funding, the company will develop its AI capabilities and broaden its existing SaaS software offerings. Iktos plans to launch Iktos Robotics, an automated molecule discovery platform that combines AI and automated chemical synthesis to really step up medicine discovery times. These new funds will also enable the company to expand the application of its solutions to biological products (peptides, antibodies, etc.). Iktos will, therefore, become one of the first companies to offer fully integrated medicine discovery services to the pharmaceutical industry.

More information: [Press release](#)
En savoir plus : [Planète Grandes Ecoles.com](#)

4267 - SolasCure

The British biotech [firm](#), which has developed a hydrogel containing a recombinant enzyme derived from maggots to accelerate wound debridement and thereby aid healing, announced £10.9 million (€12.3 million) in Series B funding. [Seneca Partners](#) led this fundraising operation with the participation of many other investors, in particular [BRAIN Biotech AG](#), [EVA Pharma](#), Jonathan Milner and the [Wealth Club](#). With the new funds, SolasCure will continue to develop Aurase Wound Gel, its first experimental product that passed the first test phases with flying colours on subjects suffering from chronic venous leg ulcers.

More information: [Press release](#)
En savoir plus : [Ma Clinique.fr](#)

4268 - Seamless Therapeutics

The German biotech [firm](#), which developed a new gene editing platform based on programmable recombinases to transform how serious illnesses are treated, announced €11.8 million in seed funding. [Wellington Partners](#) and [Forbion](#) co-led the operation, which includes non-dilutive funding from [GO-Bio](#), a German government initiative designed to support the most innovative start-ups in life sciences. Representatives from Wellington and Forbion

will join the company's new board of directors. Seamless Therapeutics will use the funds to accelerate the scaling up of its technology platform to create a pipeline of candidate therapeutics for an initial clinical assessment and extend its presence in the European Union and the United States.

More information: [Press release](#), [Sci News.com](#)

4269 - Sulapac

The Finnish company specialising in producing biobased packaging materials announced the launch of Sulapac® Luxe, a new biobased material designed to replace hard plastics, including ABS plastics. Such plastics are typically used to produce perfume caps and other luxury packaging components. This biobased material, however, is fully recyclable and can be produced using recycled material. Sulapac® Luxe is a high-density material that can withstand temperature fluctuations. It feels like ceramic and sounds like it too, but it has a smooth, shiny surface. This new biomaterial is a perfect fit for existing injection moulding production lines.

More information: [Sulapac.com](#)

En savoir plus : [Premium Beauty News.com](#)

4270 - Willow Biosciences & Suanfarma

The Canadian [company](#) and [Suanfarma](#) announced the completion of the development and pilot-scale production of Willow Biosciences' cannabigerol (CBG) ingredient. The 36 m³ production units needed for qualification and recording will be completed during 2023. On the back of this success, the two partners plan to further their working relationship by offering an end-to-end synthetic biology solution and expanding their joint product portfolio. The companies will unite their current pharmaceutical and biotechnology capabilities under this partnership to produce ingredients, including anti-infectives and other active pharmaceutical ingredients (APIs) and intermediates for pharmaceutical ingredients, natural ingredients designed for the health, well-being, and food and beverage sectors. Willow Biosciences develops and produce plant-derived ingredients for food, beverages and pharmaceutical products, while Suanfarma specialises in life sciences.

More information: [Press release](#)

Other

4271 - Axelera

The French competitiveness [cluster](#) specialising in the chemical, process and environment industries announced that the government had certified it as a Phase V competitiveness cluster for 2023–2026. The positive results from Phase IV (2019–2022) explain this certification:

- 11% growth in the number of members compared to 2018, reaching more than 400 members by the end of 2022, despite the hardly promising outlook given the health crisis,
- Strong project performance – 131 projects funded (+50% over the period), €24 million raised as part of France's recovery plan (17 projects), 7 assisted fundraising operations (€35 million), and 36 successful EU tenders with a budget of €215 million allocated by the EU,
- Increased number of partnerships with other clusters such as Tenerrdis and CARA for hydrogen, Polymeris for plastic recycling, and Minalogic for digital operations,
- A consolidated economic model, with greater private revenues equalling 58% of the cluster's budget.

For Phase V, Axelera has several priorities:

- Continuing to grow the cluster to reach its target of 480 members,
- Developing a strategic partnership for sustainable chemistry on a national level with B4C (bioeconomy) and positioning itself as an environmental performance resource cluster for industrial activities in other ecosystems: health (Lyonbiopôle), digital technology (Minalogic), and energy production equipment (Tenerrdis),

- Deploying partnerships on a national level in two new regions in partnership with local stakeholders to serve ecosystems,
- Cementing its European ambitions with new EU projects involving its partners,
- Increasing the share of private funding to more than 60%.

En savoir plus : [Communiqué de presse, L'Usine Nouvelle.com](#)

4272 - Bioeconomy For Change (B4C)

The competitiveness [cluster](#) dedicated to bioeconomics announced that the French government had certified it as a Phase V competitiveness cluster for 2023–2026. This certification follows on from the *'more than satisfactory results of Phase IV'* during which the cluster met all its objectives:

- A 47% rise in the number of members (500 at the time),
- 108 projects funded for an investment of over €600 million,
- 18 successful European projects accounting for €99 million in EU subsidies, four of which were for flagship industrial projects,
- Three international exploratory missions (USA, Brazil and Bangladesh).

B4C will concentrate on the following priorities in Phase V:

- Intensifying its foothold in local areas by focusing on its three partner regions (Grand-Est, Hauts-de-France, Normandie) while continuing to support its members nationwide,
- Structuring a new service, DEPLOY, to optimise its support and maximise the chances of success of new industrial facilities,
- Championing sustainable growth and contributing to achieving French and European sustainability goals,
- Bolstering its position as a leader in bioeconomics for strategic subjects such as synthetic biology,
- Continuing its actions within Europe, namely setting up projects and ensuring representation within bodies.

En savoir plus : [Mailchi.mp](#)

4273 - New strategic partnership between Axelera & Bioeconomy For Change (B4C)

The two French competitiveness clusters announced they had entered into a strategic partnership with one another in the fields of chemistry and the bioeconomy to accelerate the scaling up and development of responsible solutions in France to encourage industrial, environmental and societal change. The partnership translates into strengthened interactions and synergies between their ecosystems and activities in biobased materials and products and energy-efficient factories. The goals are to:

- Combine Axelera and B4C's wealth of expertise to accelerate the development of sustainable solutions to help industry and society transition and transform,
- Better cover the whole of France with the two competitiveness clusters as a springboard,
- Promote the chemistry/bioeconomy ecosystems, strengthen their representation within strategic industry agreements and EU bodies to support innovation and scaling up in France.

Thanks to this alliance, Axelera and B4C members can benefit from greater service offerings:

- One cluster's events will now be open to members of the other cluster on concessional terms. More events focused on biobased materials or products and energy-efficient factories will be planned and organised together,
- The members of both clusters will receive support for their needs and projects thanks to the joint expertise of Axelera and B4C teams of specialists,
- The members of one cluster will benefit from part of the service offerings provided by the other cluster.

En savoir plus : [Communiqué de presse, L'Usine Nouvelle.com](#)

4274 - Bpifrance

The Bpifrance observatory measures changes in the number of industry start-ups and SMEs, the number of innovative sites opened (product, process, eco-design or organisation) and fundraising operations. At the end of

2022, it counted 1,900 industry start-ups across France. It also registered 76 industrial sites inaugurated in 2022 by innovative start-ups and SMEs, which created 3,000 jobs, and more than 200 fundraising campaigns for industrial operations. Of the industry start-ups, 44% were deep tech start-ups – companies from all sectors that provide high-added value innovation based on a technology breakthrough developed closely with research entities. In all, 38% of green tech start-ups offer an innovative solution that lessens the environmental impact of companies and end users while significantly contributing to at least one EU taxonomy goal. Lastly, 35% were labelled 'French Care' start-ups, developing innovations in healthcare excellence.¹ Fundraising campaigns for French industry start-ups rose by 36% in 2022, going against the global downward trend. In all, €3.78 billion was raised through these fundraising operations, representing 28% of the total amount secured by French start-ups. They have helped France overtake Germany to take first place within EU countries.

¹ Companies could be included in several categories.

En savoir plus : [Communiqué de presse](#), [Economie.gouv.fr](#), [L'Usine Nouvelle.com](#)

4275 - BioInnovation Institute (BII)

The international non-profit [foundation](#) announced that ten new businesses in bioindustry, therapeutics, women's health and healthcare technologies had joined its [Venture Lab](#) acceleration programme for early-phase start-ups. BII incubates start-ups to provide them a leg up in accelerating their R&D. Three of the start-ups joining the programme are more specifically in white biotechnologies:

- [Agoprene](#) is developing foam for furniture using biomass to help the furniture industry wean off petrochemicals.
- [FÆRM](#) provides an enzymatic solution for plant-based cheese. The company transposes dairy practices to legumes in cooperation with dairy plants.
- [Norfolk](#) is upending the world of soaps, cosmetics and detergents by producing sustainable active and stabilising ingredients known as surfactants.

The other new companies BII has accepted for the acceleration programme are [AIDA Oncology](#), [Alba Health](#), [Droplet IV](#), [METSYSYSTEM](#), Dawn Bio, Fuse Vectors, and Amplify Therapeutics.

Recap: The Venture Lab programme provides a convertible loan of €500,000, access to BII laboratories and offices in Copenhagen, Denmark. As a member of the Venture Lab programme, the early-stage start-ups can also apply for €1.4 million in follow-up funding, an exclusive opportunity available via BII's Venture House programme.

More information: [Bii.dk](#), [LABIOTECH.eu](#)

4276 - Solvay Ventures

The venture capital [fund](#) belonging to the Belgian chemicals group [Solvay](#) announced that it had joined the [Genesis](#) consortium, an international alliance of venture capital companies that support start-ups that use biotechnology to 'promote human and planet health.' Solvay Ventures plans to get involved in the [IndieBio](#) development programme launched by the venture capital company [SOSV](#) (one of the founders of the Genesis consortium). The programme aims to finance early-stage start-ups active in areas such as food, agribusiness, materials, biopharma and climate tech. Some of IndieBio's portfolio is related to Solvay's key markets, especially agritech, food, biobased materials and personal care. With this strategic investment, the Belgian group can accelerate and broaden its range of innovative solutions that use biotechnologies.

Info: The venture capital company SOSV reported that it invested \$50 million (€46 million) over the last five and a half years in IndieBio start-ups, which then raised more than \$700 million (€646 million) in total. According to SOSV, the company value of these start-ups exceeds \$3.2 billion (€2.9 billion) today.

More information: [Press release](#), [CHEManager online.com](#)

4277 - ChemTech welcomes its 100th start-up

A year and a half after its launch, the [network](#) created by Bpifrance and France Chimie to help chemical start-ups live up to their potential announced that it had welcomed its 100th member. The members of this ecosystem are operating in very different fields of the future:

- Biobased chemicals and industrial biotech,
- Solutions for batteries and electrolyzers,
- Chemicals recycling and CO₂ upcycling,
- Healthcare applications,
- Digital solutions for chemistry,
- Process measurement, monitoring and optimisation.

With the ChemTech network, members have privileged connections with SMEs, intermediate companies and large groups operating in the chemistry sector in France. They also have access to Bpifrance's financial and support mechanisms, explanations of French and EU regulations that concern them, and advice and meetings with the entire chemistry ecosystem. Moreover, throughout the year, ChemTech partners (backed by the B4C and Axelera competitiveness clusters) hold a series of events to help them grow (webinars, networking and so on).

Info: [Lantana Bio](#), the company that developed a yeast platform to produce high value bioactive molecules by fermentation from compounds derived from aromatic amino acids, announced that it is now part of the ChemTech ecosystem.

En savoir plus : [Communiqué de presse, L'Usine Nouvelle.com](#)

4278 - Results of the 2nd edition of the SATT network's industry innovation barometer.

This barometer continues to aim to provide a tool to ascertain innovation profiles and practices. It means we can better anticipate and address the needs of industrial companies for transformation and competitiveness thanks to the potential of start-of-the-art innovations, particularly those stemming from public research. This year, 400 people completed the survey, and the results showed that:

- 54% of respondents said that innovation was their company's top priority (2022: 53%), and 62% believed it would become their top priority in the next three years (2022: 68%).
- Even more than in 2022, the push for innovation comes from the need to find new markets (as indicated by 72% of respondents compared to 65% in 2022).
- Like in 2022, the primary challenges for innovation remained digitalisation (53%) and automation (49%). Human resources (48%) and decarbonisation (35%) followed, with the order of these two challenges reversed – in 2022, 39% indicated human resources and 48% decarbonisation.
- The main three obstacles were a lack of skills (48%, a significant jump from 22% in 2022), time (47%) and funding (46%).
- The three leading innovation partners for companies are public research labs (46%), start-ups (34%) and structures such as the French regional centre for innovation and technology transfer CRITT, the technological resource centre CRT, technology platforms, and so on (27%).

The 2023 edition of the barometer confirms and makes plain the trends seen in 2022: R&D budgets are on the up, dedicated teams are getting more staff, and SMEs are once again prevalent in the industrial sector.

En savoir plus : [Communiqué de presse, POC Media.fr](#)

Industrial biotech services

4279 - TWB

In 2022, TWB achieved turnover of €12 million (€9 million in 2021), including €5.7 million in industrial contracts (€5.3 million in 2021 and €2.9 million in 2020) and €3.6 million in subsidies, including a €1.4 million grant from the French National Research Agency ANR (France 2030). Last year, the consortium also recorded a 40% rise in the value of industrial contracts signed. Today, industrial contracts represent 61% of the 88 projects (R&D and services), including 49 new ones, which were concluded in 2022. Moreover, two new service offerings developed in partnership with the new start-ups Processium and Syngulon were made available. These new services mean

greater TWB service offerings and additions to the existing integrated offerings. Around €2.5 million were allocated to equipment to diversify TWB's offerings, acquire new functions, and improve platform performances. In 2022, TWB invested in a new field of application resulting in the arrival of two new members: the French start-up Bon Vivant and the Canadian industrial group Premier Tech. To finish, the Toulouse Industrial Biotechnology for Health (TIBH) integrator that TWB, the Bio-Industries CRITT and Toulouse Biotechnology Institute created in 2020, was once again certified for five years as part of the ANR's Biotherapeutics-Bioproduction Integrators call for proposals.

More information: [Toulouse White Biotechnology.com](https://www.toulousewhitebiotech.com), [2022 annual report](#)

En savoir plus : [Toulouse White Biotechnology.com](https://www.toulousewhitebiotech.com), [Rapport d'activités 2022](#), [Le Journal des Entreprises.com](https://www.lejournaldesentreprises.com)

Cross-sector reports

4280 - Bpifrance unveils its second survey of French green tech companies

In France, green techs operate in the following sectors: new energy (23%), environmental transition (24%), green industry (21%), clean mobility (14%), greening of the agriculture and agri-food industries (13%), and sustainable building (6%). What's more, around half of green techs are industrial companies, 19% of which are deep tech companies, promising innovation using breakthrough technologies to tackle climate change. In 2022, the fundraising campaigns for these French gems that are aiding ecological transition rose to exceed €2.5 billion, 19% of the total funds raised by French start-ups. For the first time, over 100 green tech companies ran fundraising campaigns in France in 2022. The number of campaigns that exceeded the €100 million mark have snowballed, accounting for 51% of the total funds raised, thus confirming investor interest in this sector. These innovative companies have already created 36,000 jobs and generated an average of €260 million in turnover for early-stage start-ups that have been around for less than five years and nearly €2 billion for those less than 12 years.

Info: In 2022, Bpifrance was extremely active among green techs as part of its Climate and France 2030 plan, with more than €2.15 billion in funding (three times more than in 2021), €194 million in direct investments (same as in 2021), €130 million of indirect investment (30% more than in 2021), and more than 100 green techs received guidance.

En savoir plus : [Communiqué de presse](#)

3. PUBLIC POLICIES & REGULATIONS

In France

4281 - Green industry draft bill: progress report

As part of the proposed Green Industry bill designed to 'turn France into a champion of green industry and technologies that pave the way for decarbonisation and support industry in pursuing decarbonisation,' the working groups that met to discuss five topics – taxes, land, purchase, funding and training – have completed their work and made 29 proposals that you can view [here](#) (in French). The press conference was also recorded, and the video is available [here](#) (in French). Following a public consultation to obtain opinions and comments, the French Ministry of Economy hopes to draw up a specific, concise law to, for example, accelerate industrial operations, refocus public procurements and welcome investments more easily. The plan is for this law to be presented to Parliament in June or July 2023.

En savoir plus : [Economie.gouv.fr](https://www.economie.gouv.fr), [L'Usine Nouvelle.com](https://www.usinenouvelle.com), [Les Echos.fr](https://www.lesechos.fr), [Les Echos.fr](https://www.lesechos.fr), [Le Figaro.fr](https://www.lefigaro.fr), [Le Monde.fr](https://www.lemonde.fr)

4282 - New regional network of sub-prefects acting as points of contact to help roll out the France 2030 plan.

Keen to ensure the adoption of public innovation and industrialisation policies across the country, the French Prime Minister wanted to create a regional network of sub-prefects who will act as points of contact for the France 2030 plan and accelerate industrial and logistics projects. This network was launched on 23 March 2023 during a seminar presided over by Roland Lescure (deputy minister for industry), Dominique Faure (deputy minister for local authorities and rural affairs) and Bruno Bonnel (secretary general for investment). These sub-prefects acting as points of contact for the *départements* will:

- Help deploy France 2030 with a territorial approach. This entails relaying the information about the France 2030 plan, mobilising stakeholders within their *départements* to identify projects, facilitating access to France 2030 mechanisms for companies – particularly those operating in areas covered by the 'Territoires d'industrie' programme, and participating in regional steering bodies for this plan.
- Accelerate new industrial and logistics facilities. To do so, they will conduct a review within their *département* of strategic projects to mobilise State action in the area to cut through red tape and anticipate any problems in relation to the location of industrial activities by searching for land and recruiting new employees. The sub-prefects will support key projects for their *département*, whether or not they are covered by the France 2030 plan.

This network of sub-prefects complements the mechanisms already in place, notably those for regional prefects. It should enable all areas and companies, particularly SMEs or intermediate companies, that are part of the 'Territoires d'industrie' programme, for example, to appropriate the dynamics of reindustrialisation and innovation that the French government seeks, and for each company and elected representative to have a point of contact on hand.

En savoir plus : [Communiqué de presse](#),

4283 - INRAE and Université Paris-Saclay build on their common strategy

The French national research institute for agriculture, food and the environment INRAE and Université Paris-Saclay have signed a framework strategic partnership agreement. This agreement is designed to strengthen their collaboration in a common scientific dynamic focused on three main areas:

- Life sciences, agriculture and food;
- Mathematics, engineering and computer sciences;
- Human and social sciences.

With this partnership agreement, INRAE and Université Paris-Saclay have committed to pooling their strengths to address major common societal challenges in a range of areas: health, well-being, agriculture, food and biodiversity, energy, climate, environment, sustainable development and open science, along with digital transformation, industrial renewal, and furthering and sharing knowledge. This agreement builds on the two partners' common strategy and the actions they pursue regarding training, research and adding value. It rests on a shared scientific policy and another that encourages training, with a proliferation of actions to encourage researchers to get more involved in training courses. As for the funding of PhD contracts, both entities undertake to promote the deployment of new initiatives, which is in line with existing practices. INRAE will now participate in setting up PhD programmes on joint topics, and contribute to all the activities of PhD schools it works with by providing staff.

En savoir plus : [Communiqué de presse](#)

4284 - FRANCE INDUSTRIE: Meet the winners of the 3rd year of the Tech Factory club for industry start-ups.

[France Industrie](#) launched the 3rd year of its [Tech Factory](#) club, bringing together 20 CEOs from industry start-ups. This [year](#) the 20 start-ups selected represent France's industrial ecosystem. France Industrie's Tech Factory club was launched in 2021 and is part of its initiatives to improve the economic and regulatory environment for industry start-ups, make them more visible, and accelerate their industrialisation. In June 2022, this initiative reached a new milestone by creating Start Industrie, the network of French industry start-ups, which is the primary point of contact

for public authorities and major prime contractors. It reports on the challenges these early-stage start-ups come up against that determine whether they succeed in becoming a reality and scaling up. France Industrie and its Tech Factory club are some of the 15 founding organisations behind Start Industrie.

Info: Green Spot Technologies, a member of the TWB consortium, is one of the winners.

En savoir plus : [Communiqué de presse](#)

4285 - The Deep Tech Plan, four years on.

Over the last four years, the Bpifrance teams allocated €2 billion in France 2030 funds (for innovation aid, calls for proposals, competitions, etc.) to 1,700 deep tech start-ups. Of that sum, Bpifrance allocated €670 million as equity (€318 million as direct funds and €352 million as funds of funds), that is €1.1 billion invested directly into deep tech start-ups and €1.2 billion as funds of funds since 2019, that is €5 billion with the leverage effect since 2019. In 2022, 320 deep tech start-ups were established (+27% over one year), and 869 start-ups received €673 million in funding. Over the course of the year, 75 of these start-ups received €318 million in direct funds (40% rise for equity). Today, deep tech start-ups represent more than 50% of Bpifrance's active participations. This number has doubled since 2018, driven in particular by the ramping up of a specific funding continuum for deep tech start-ups. France now has around 1,800 active deep tech start-ups. They deploy their technologies in highly strategic areas and have the active backing of France 2030 (BioTech-MedTech and Health, Energy and Ecological Transition and Industry Sovereignty). In 2022, the growth in the market for deep tech investment capital was confirmed, reaching €2.6 billion (+10%). Since the launch of the Deep Tech Plan, this figure is 2.4 times higher. Today, 607 deep tech start-ups are part of the Les Deeptech online community that encourages mutual aid, networking and visibility for its members. With nearly 50,000 jobs, deep tech start-ups are at the heart of the economic dynamics in France and are a key driver for reindustrialisation. They represent 44% of industry start-ups and 118 active sites. In 2023, Bpifrance will further its support for the deep tech ecosystem, in all stages of the value chain, from laboratories to factories, by mobilising all the tools set up by France 2030.

En savoir plus : [Communiqué de presse](#), [POC Media.fr](#), [Maddyness.com](#)

In Europe

4286 - Plan presented to encourage the birth of a green industry in the EU.

As a response to the US 'Inflation Reduction Act' and to counter the risk of delocalisation there, the European Commission wants to introduce a 'Green Deal Industrial Plan for the Net-Zero Age' to create favourable conditions – financial, regulatory and so on – to deploy European net-zero technologies rapidly. This net-zero industry regulation aims to make it easier for clean techs to thrive in Europe. In concrete terms, an annexe to the text lists the sectors that could benefit from more straightforward regulatory procedures and funding. According to the European Commission, the aim is that *'the EU's overall strategic manufacturing capacity for net-zero technologies approaches or reaches at least 40% of needs'* by 2030. This regulation goes hand in hand with another proposal, the European Raw Critical Materials Act, designed to make the EU less dependent on certain strategic metals it currently buys from third countries. The European Parliament, which needs to negotiate the proposals with Member States, has already raised concerns at what it views as a step towards protectionism by the European Commission.

En savoir plus : [L'Usine Nouvelle.com](#), [L'Usine Nouvelle.com](#), [L'Express.fr](#), [Les Echos.fr](#)

Outside Europe

4287 - Climate: Latest G7 environmental commitments

During their meeting in Sapporo, Japan, the Ministers for Energy, Climate and the Environment from the G7 countries (USA, Japan, Germany, France, UK, Italy and Canada) made several commitments in the fight against climate change and plastic pollution. Without setting new timelines, the ministers committed to *'speeding up their move away from fossil fuels in all areas'*. This new goal does not concern fossil fuels with CO₂ capture and storage mechanisms. The G7 countries have limited themselves to underscoring that this goal is part of their efforts to achieve energy carbon neutrality by 2050 *'at the latest.'* The G7 ministers announced their intention to *'eliminate plastic pollution by 2040, thanks to the circular economy and a reduction in or complete move away from disposable, single-use plastics.'* These industrialised countries are also pleased to see that negotiations are underway for an international treaty on plastic. The announcements made in Japan will form the basis of the positions industrialised countries will take during the G20 meeting held in September 2023 in India, and COP 28, which should take place in Dubai in November 2023.

More information: [joint statement](#)

En savoir plus : [France TV Info.fr](#), [Le Figaro.fr](#), [Les Echos.fr](#)

4288 - USA: Can the country really convert at least 90% of the fossil-based plastics it produces into biobased ones?

At the end of March 2023, the government published a report entitled ['Bold Goals for U.S. Biotechnology and Biomanufacturing'](#), unveiling its plan to develop biotechnologies and bioproduction to reduce the country's carbon emissions. This document covers four themes and contains ten goals, with a chapter entitled 'Biotechnology and Biomanufacturing R&D to Further Climate Change Solutions' in which President Biden undertakes to convert at least 90% of the country's production of petroleum-derived plastics to biobased ones. While this chapter gives a 20-year timeline to *'demonstrate and deploy sustainable, profitable methods to convert biobased feedstocks into recyclable polymers from the design phase.'* Jean-Yves Daclin, [Plastics Europe](#) Country Director for France, believes this plan is *'above all, an R&D one rather than an industrial one. The United States wants to demonstrate it has the industrial capabilities to find a biobased alternative for 90% of its plastics within 20 years, which is already incredibly ambitious.'* Jean-Yves also thinks that *'substituting the manufacturing base that currently produces more than 50 million tonnes of plastic predominately from fossil resources entails colossal investments. No doubt, that would cost hundreds of billions of dollars. If the United States were to achieve its goal in 2040, there would still be several decades before you could switch from producing residual virgin plastics to 90% biobased ones.'* According to Plastics Europe, the US goal could only become a reality at the turn of the century.

En savoir plus : [L'Usine Nouvelle.com](#)

4. EVENTS

MAY 2023

World Bio Markets

10-11 May 2023. The Hague, Netherlands.

More information: [Website](#)

Global Bioprocessing Summit

10-12 May 2023. Berlin, Germany.

More information: [Website](#)

BIOKET (BIOeconomy Key Enabling Technology)

23-25 May 2023. Trois-Rivières, Canada.

More information: [Website](#)

SynBioBeta

23-25 May 2023. Oakland, United States.

More information: [Website](#)

17th International Conference on Synthetic Biology and Metabolic Engineering

24-25 May 2023. Barcelona, Spain.

More information: [Website](#)

JUNE 2023

18th Renewable Resources & Biorefineries (RRB)

1-3 June 2022. Bruges, Belgium.

More information: [Website](#)

Trade show for sustainable packaging

7-8 June 2023. Paris, France.

More information: [Website](#)

BIO 2023 (BIO International Convention).

5-8 June 2023. Boston, United States.

More information: [Website](#)

EUBCE 2023 - 31st European Biomass Conference & Exposition

5-8 June 2023. Bologna, Italy.

More information: [Website](#)

Metabolic Engineering Conference

11-15 June 2023. Singapore.

More information: [Website](#)

Plant Based Summit

13-15 June 2023. Lille, France.

More information: [Website](#)

5th International Conference on Bio-Based Building Materials

21-23 June 2023. Vienna, Austria.

More information: [Website](#)

16th International Symposium on Biocatalysis and Biotransformations (BIOTRANS)

25-29 June 2023. La Rochelle, France.

More information: [Website](#)

Soil microbiology for sustainable agriculture: innovative solutions and diagnoses

27-28 June 2023. Paris-Romainville, France.

More information: [Website](#)

JULY 2023

COSM'ING

5-7 July 2023. Saint-Malo, France

More information: [Website](#)

17th International Conference on Synthetic Biology and Metabolic Engineering

19-20 July 2023. Paris, France.

More information: [Website](#)

17th International Conference on Industrial Biotechnology and Synthetic Biology

19-20 July 2023. Toronto, Canada.

More information: [Website](#)

AUGUST 2023

15th annual Bioprocessing summit

14-17 August 2023. Boston, United States.

More information: [Website](#)

OCTOBER 2023

9th NutrEvent

17-18 October 2023. Rennes, France.

More information: [Website](#)

Les rendez-vous Carnot

17-18 October. Lyon, France.

More information: [Website](#)

Cosmetic 360

18-19 October 2023. Paris, France.

More information: [Website](#)

Annual Biocontrol Industry Meeting

23-25 October 2023. Basel, Switzerland.

More information: [Website](#)

European Forum for Industrial Biotechnology and the Bioeconomy (EFIB)

24-25 October 2023. Rotterdam, Netherlands.

More information: [Website](#)

ENZYNOV2. Unleashing the power of Enzymes and Biocatalysis for industrial applications

26-27 October 2023. Paris-Romainville, France.

More information: [Website](#)

JUNE 2024

European Congress on Biotechnology

30 June-3 July 2024. Maastricht, Netherlands.
