



AFYREN's fermentation lab reaches 2-million-hour mark as it identifies new raw materials to fuel industrial expansion

- 12 years of research since AFYREN's inception have produced:
 - Unique expertise in the industrial-scale production of bio-based ingredients using a biomimetic process
 - Flexible feedstock sources to ensure short supply chains for international expansion
 - An innovation strategy and partnership framework that enable development of new products and circular value chains

Clermont-Ferrand/Lyon, July 9, 2024, 7:45 am CEST – AFYREN, a greentech company that offers manufacturers natural, low-carbon ingredients produced using unique fermentation technology based on a completely circular model, confirms its innovative approach and identifies the biomass families that will underpin its industrial expansion. The announcement comes as the company hit the milestone of 2 million hours of fermentation in its R&D lab.

Jérémy PESSIOT, Managing Director, R&D Director and co-founder of AFYREN, said: *"We have drawn our inspiration from natural ecosystems, where nothing is lost, nothing is created, and everything is transformed, to build a lean, high-performance technology based on extracting value from biomass. Over 12 years of applied research into the control of methanization in the laboratory, we have developed an industrial-scale fermentation process that is unique in its category. Today, we are continuing to invest in research to identify new ways of extracting value from biomass. This strategy should enable us to secure various sources of raw materials and replicate a profitable industrial model in a diverse array of geographical regions, with a focus on short supply chains."*

A unique technology based on biomimicry

Based on a decade of research in chemistry and biology and protected worldwide by 10 patent families, the AFYNERIE® process converts a wide range of organic raw materials into bio-based molecules using natural, non-genetically modified micro-organisms.

Inspired by living organisms and entirely biomimetic, the process reproduces on an industrial scale the fermentation that has been around for millions of years in natural ecosystems and on which, for example, the methanization process, used today for energy production, is based.

AFYREN's expertise lies in controlling the transformation of the bio-based raw material to promote the production of carboxylic acids. The acids are extracted then processed through separation and purification stages to obtain products that meet industry specifications and current regulations.



This quality is at the heart of the 'drop-in' approach, which enables direct replacement of petro-based molecules by bio-based molecules in our clients' existing production process. The end products are commonly found for example in food products or cosmetics, opening up markets that go well beyond those offered by methanization.

60 biomass families identified and available to support AFYREN's international development and secure its supply of raw materials

On the strength of its successful experience in valorizing by-products from the sugar industry at the AFYREN NEOXY plant in France, AFYREN is continuing its work to identify new sources of raw materials.

Since the company was founded, AFYREN's R&D teams, made up of chemists and biologists, have carried out tests on more than 300 potential raw materials made available by the players and partners in the agri-food and farming industries around the world.

These tests have enabled AFYREN to qualify 60 families of biomass (agricultural by-products, by-products of the food industry, etc.) that can be transformed into 100% bio-based molecules on an industrial scale. The recent partnership signed with SUEZ even paves the way for the recovery of household organic waste.

This work proves that a wide range of organic raw materials can be upcycled in this way, even though they were originally considered to be of little use. This work, carried out on samples from all over the world, is crucial for international development at AFYREN, whose strategy is based on short supply chains with regional sourcing.

Innovation fully dedicated to the development of new circular value chains

AFYREN's innovation approach is based on three strategic pillars. Each project must aim to improve processes, support international expansion by exploring new biomass families, or contribute to the development of innovative products and derivatives. For this work, partnerships are often the preferred option.

Within this framework, R&D is working in particular on perfecting processes to optimize yields and make AFYREN's industrial solution more competitive. Working closely with the business development team, the R&D teams are also trying to expand the company's portfolio of acids and their derivatives. The acids produced by AFYREN are platform molecules which, thanks to additional green chemistry steps (esterification, hydrogenation, etc.) can be transformed into derivatives and new products.

AFYREN's innovation portfolio currently comprises around ten projects aimed at developing partnerships for new products and circular value chains. It follows an eco-design rationale, incorporating corporate social responsibility (CSR) performance criteria such as carbon footprint, energy mix or the nature of raw materials and their transport.

About AFYREN

AFYREN is a French greentech company launched in 2012 to meet the challenge of decarbonizing industrial supplies. Its natural, innovative and proprietary fermentation technology valorizes local biomass from non-food agricultural co-products, replacing petro-sourced ingredients usually used in many product formulations. AFYREN's 100% biobased, low-carbon and sustainable solutions can meet decarbonization challenges in a wide variety of strategic sectors: human and animal nutrition, flavors and fragrances, life sciences and materials, and lubricants and technical fluids. AFYREN's plug-and-play, circular technology combines sustainability and competitiveness, with no need for manufacturers to change their processes.



The Group's first French plant, AFYREN NEOXY, a joint venture with Bpifrance's SPI fund, is located in the Grand-Est region of France, in Saint Avold, serving mainly the European market.

AFYREN is also pursuing a project in Thailand with a world leader in the sugar industry, and is developing its presence in the Americas, following up on distribution agreements it has already signed.

At the end of 2023, AFYREN employed about 120 people in Lyon, Clermont-Ferrand and Carling Saint-Avold. The company invests 20% of its annual budget in R&D to further develop its sustainable solutions.

AFYREN has been listed on the Euronext Growth® exchange in Paris since 2021 (ISIN code: FR0014005AC9, mnemonic: ALAFY).

Find out more: afyren.com

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