



After 10 years of research, the FUTUROL<sup>™</sup> project has been successfully completed.

Second-generation ethanol production technology from edible feedstock, developed in France with the support of the 11 project partners, has now entered the marketing phase.

An agreement has been signed between PROCETHOL 2G, the structure created by the project's partners to host and lead FUTUROL<sup>™</sup>, and AXENS, the company now tasked with marketing the technology worldwide.

## The advantages of FUTUROL<sup>™</sup> technology

One of the advantages of FUTUROL<sup>™</sup> technology is its autonomy. Technological autonomy, first of all, thanks to the in situ production of the enzymes and the propagation of yeasts adapted to the raw materials treated. And also in terms of energy, since FUTUROL<sup>™</sup> technology enables total industrial autonomy and even energy exports.

The competitiveness of FUTUROL<sup>™</sup> technology also lies in its adaptability to different biomass types. This flexibility makes it possible to optimize the local supply of raw materials, ensure marketing on a global scale, as well as easy integration within existing conventional ethanol production plants.

#### The future of the Pomacle-Bazancourt continuous pilot

The pilot unit set up in 2011 at Pomacle-Bazancourt (Marne) validated the technology on a scale of 1 tonne of biomass per day. The facility is a small-scale version of a complete advanced ethanol production plant, from biomass preparation right through to final distillation.

The facility, unique in France, and the experienced team that operated it, played a crucial role in the development of FUTUROL<sup>™</sup> technology.

Once the Research and Development phase was complete, on 31 October 2018 the pilot plant was sold to ARD, one of the partners in the FUTUROL<sup>™</sup> project, based in Pomacle-Bazancourt. ARD, which also took over all the pilot unit's personnel, will maintain the facility and the operational skills required to operate it in order to support the marketing of FUTUROL technology.

## The FUTUROL<sup>™</sup> project: the development in France of a technology of the future

Launched in 2008, the FUTUROL<sup>™</sup> project brought **together 11 major partners, covering the entire process, from the plant resource to the fuel tank**: R&D players, industrial players and financial players.

The individual partners brought their own particular skills and cutting-edge expertise, to ensure the project's objective was met: **the design and development through to a stage enabling the bringing to market of an original process and technologies capable of guaranteeing competitive and sustainable cellulosic bioethanol production**.

Genuine expertise was developed around the FUTUROL<sup>™</sup> project, with the support of Bpifrance,

confirming France's position as a leader in the bio-economy.

## Key figures for the Futurol<sup>™</sup> project

**Partners:** ARD, IFP Energies nouvelles, INRA, Lesaffre, Office national des forêts, Tereos, Total, Vivescia, Crédit Agricole Nord Est, CGB, Unigrains.

Budget: 76.4 million euros, including 29.9 million state funding (Bpifrance).

Date of validation of the technical and economic feasibility of the process chain: 2017

**Biofuels** 

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