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News

Innovation and Industry

Renewable energies | Biofuels and e-fuels | Responsible oil and gas | Fuels

The BioTfueL® project demonstration platform, sited near Dunkirk in northern France, was inaugurated today in the presence of Ségolène Royal, French Minister of the Environment, Energy and the Sea, responsible for international climate relations.

Supported by Ademe via its Research Demonstrator Fund, the Hauts-de-France region and the ERDF (European Regional Development Fund), the BioTfueL® project is aimed at developing and bringing to market an end-to-end chain of 2nd generation biodiesel and biokerosene production technologies based on lignocellulosic biomass (agricultural and forestry waste). It brings together six partners, all leaders in their respective sectors: Avril, Axens, the CEA (French Alternative Energies and Atomic Energy Commission), IFP Energies nouvelles, Thyssenkrupp and Total. The synergy of their expertise and skills, acquired over many years working with biofuels, represents a major asset to support the development and global marketing of an innovative 2nd generation biodiesel and biokerosene production technology, using a thermochemical process.

Launched in 2010, the BioTfueL® project has now reached a decisive stage: the objective is to become an established provider of 2nd generation biodiesel and biokerosene production technologies by 2020.

TWO DEMONSTRATORS IN DUNKIRK AND VENETTE: LARGE-SCALE R&D TOOLS

In order to validate the technical and economic feasibility of the technology on a pre-industrial scale, BioTfueL® is operating two demonstration pilot units corresponding to the key stages in the 2nd generation biofuel production chain:

- Validation of the "upstream" part of the process will take place at Avril's Venette site, near Compiègne. A torrefaction demonstration unit will be dedicated to the preparation of biomass to ensure it meets the quality required for the next stage of the process, which will take place in Dunkirk. A dozen or so different forms of biomass, representing the resources available around the world, will be handled: cereal and oleaginous crop straw, forest residue (hardwood and softwood), dedicated crops (miscanthus, switch grass), etc.

- A demonstrator dedicated to the gasification and purification of syngas located at a site provided by Total close to their Flanders facility, near Dunkirk. It will be used to test the adaptation of gasification technology to biomass treatment, on a scale of around 3 t/h of feed.

OPTIMIZED ENVIRONMENTAL AND ENERGY PERFORMANCE

The ambition of the BioTfueL® project partners is to develop a technology with an outstanding environmental performance. By using feeds made up solely of biomass, greenhouse gas emissions may be reduced by more than 90% compared to the use of fossil fuels.

BioTfueL®'s innovative concept hinges around its capacity to treat a very broad spectrum of biomass or to co-treat it with fossil resources. This flexibility will ensure continuity in terms of the supply of feeds to future industrial units while reducing production costs. BioTfueL® is the only project in the world to be targeting such a high degree of flexibility vis-à-vis the resource.

Recourse to lignocellulosic biomass will serve to complete the current 1st generation biofuel offer: the two generations of biofuels are necessary to meet the objectives for renewable energies in the global

energy mix.

Once these developments have been completed by 2020, the chain of BioTfueL® processes will be technically validated for roll-out on an industrial scale. In France, the law concerning the energy transition for green growth (the "LTECV" law) defines ambitious objectives for renewable energies, which, by 2030, will have to account for 15% of overall fuel consumption. This type of technology, if rolled out on an industrial scale across the country, will help achieve this target. The environmental quality of the fuel obtained and its compatibility with current fuels and with all types of diesel engines and aircraft turbojets will ensure the BioTfueL process has a global market.

Key figures for the BioTfueL® project

- Partners:
Avril, Axens, the CEA, IFP Energies nouvelles, Thyssenkrupp, Total.

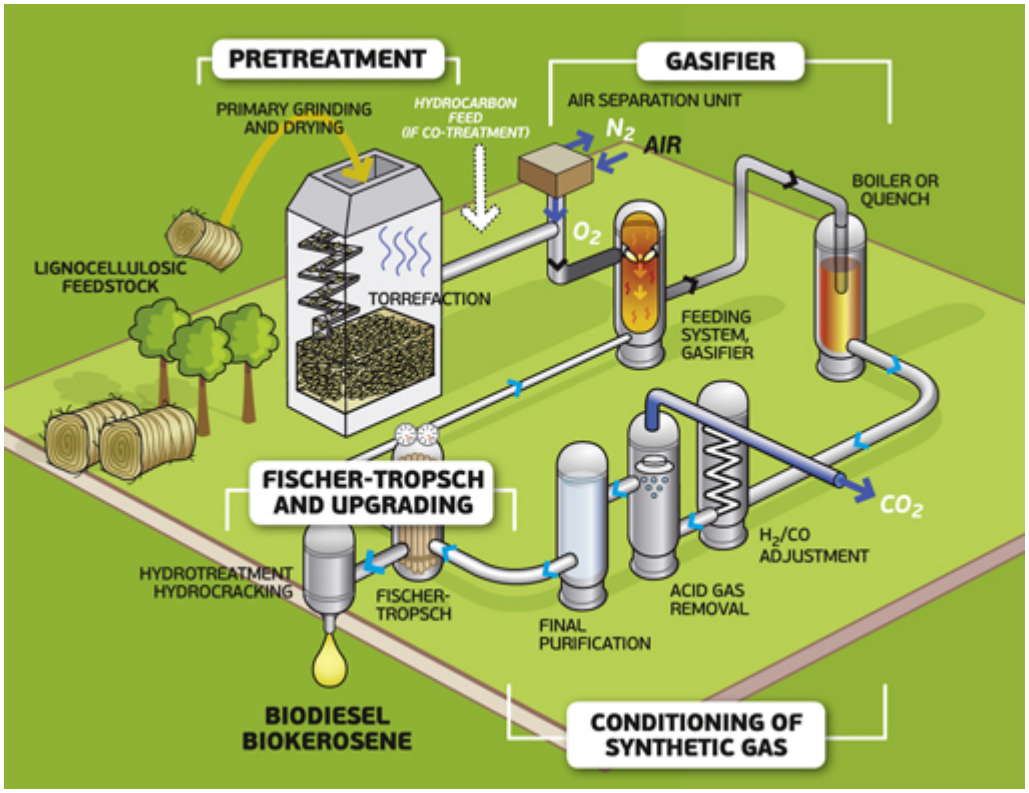
- Budget:
€178.1 million, including €33.2 million state funding.

- Date of validation of the technical and economic feasibility of the process chain:
by **2020**.

- Location of the biomass pre-treatment pilot unit:
Avril's site in **Venette**.

- Location of the gasification, purification and synthesis pilot unit:
site provided by Total, near **Dunkirk**.

BIOTFUEL® PRODUCTION CHAIN IN 4 STEPS



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Inauguration of the BioTfueL® project demonstrator in Dunkirk: 2nd generation biodiesel and biokerosene production up and running
09 December 2016

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