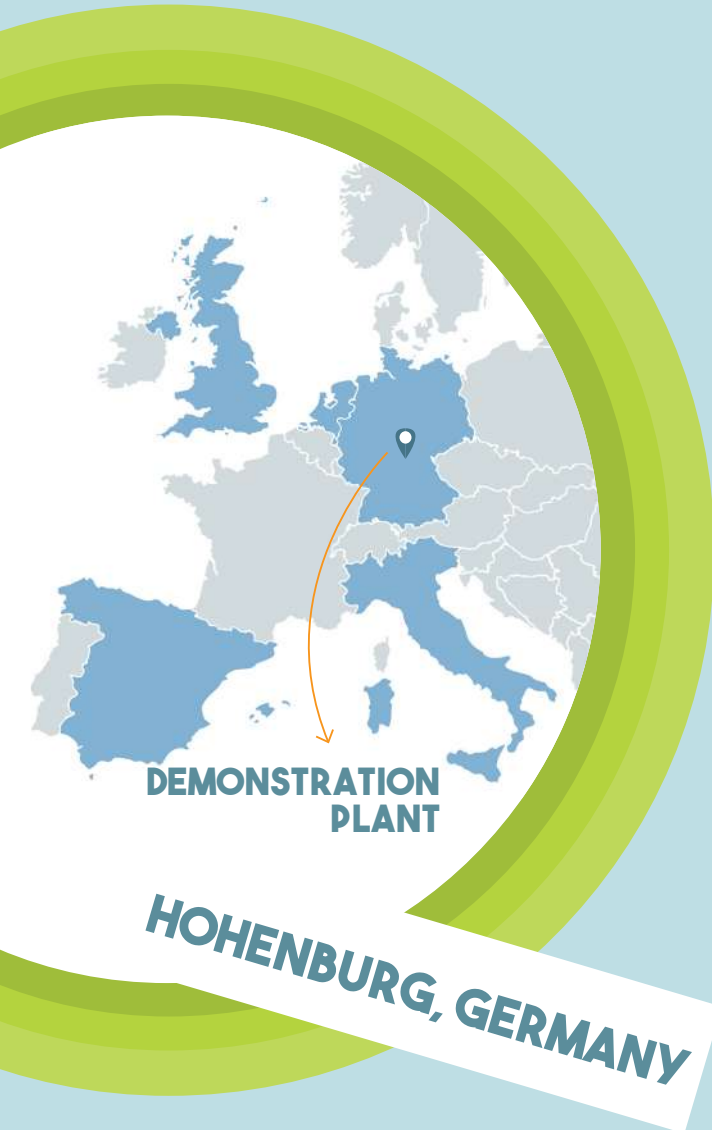


Innovative research activities are focused on contributing to the important goal of bringing advanced biofuels from sustainable raw materials to the market



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PROJECT PARTNERS

The consortium brings together some of the most renowned scientific departments, applied research institutions, small and medium-sized enterprises in the renewable energy sector, particularly in terms of bioenergy studies and the development of relevant projects in Europe.

Partners from 5 different European countries include:



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745749.

Total cost: EUR 14 196 108,72
EU financing: EUR 12 250 528,13
H2020 LCE-19-16-biofuels
Duration: 65 months (2017-2022)

**THE DEMONSTRATION
OF WASTE BIOMASS
TO SYNTHETIC FUELS
AND GREEN HYDROGEN**

esynfuel



PROJECT

The European Commissions proposal for the Renewable Energy Directive for the period following the year 2020 introduces a gradual phase-out of conventional biofuels and sets a minimum target for advanced biofuels for transport.

Therefore, there is a pressing need for research that will pave the way for innovative biofuels from sustainable raw materials to be brought to the market.

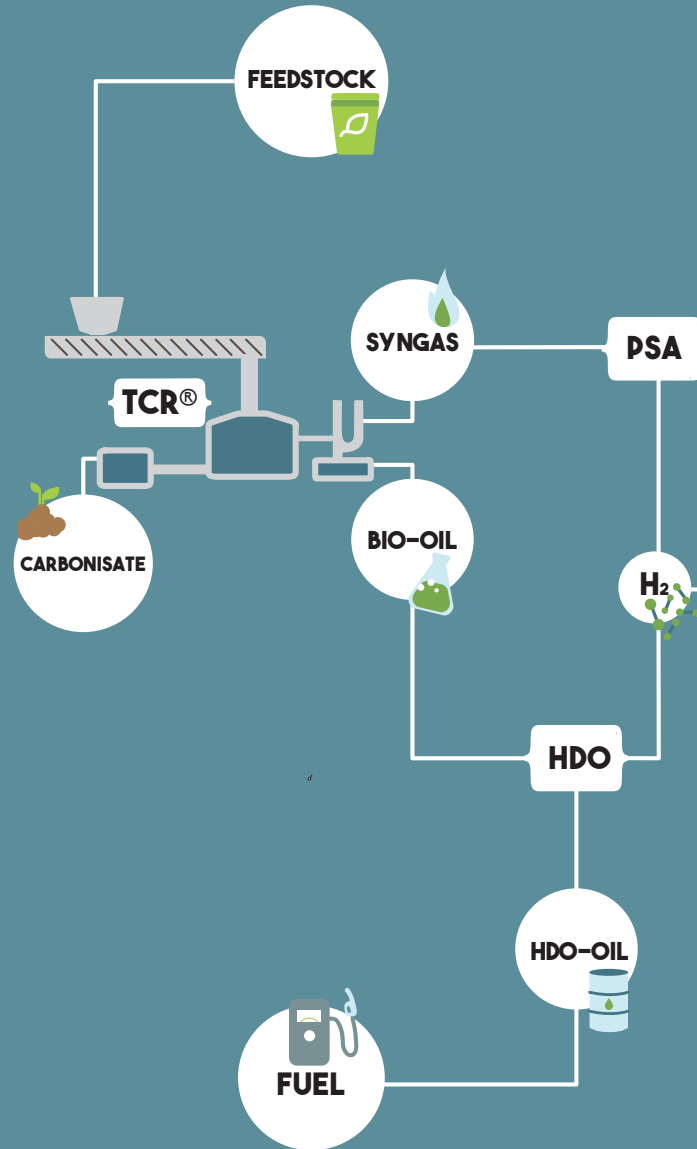
The technology called thermo-catalytic reforming (TCR[®]) converts residual biomass into three main products: H₂-rich synthesis gas, carbonisate and bio-oil.

Using PSA and high-pressure HDO in small scale refining units, the bio oil is upgraded to HDO-oil and can then be refined to a diesel or petrol equivalent (within EN228 and EN590).

Within the TO-SYN-FUEL project, dried sewage sludge will be tested as feedstock, but the technology combination TCR[®]/HDO/PSA can efficiently convert a broad range of residual biomass like digestate from anaerobic digestion plant, biowaste and oil pomace.

As a result, the integrated TCR[®]/HDO/PSA plant opens up long-term opportunities to convert organic waste into renewable fuels and to directly implement these fuels into existing petroleum infrastructure.

PROCESS



OBJECTIVES

Technologies integrated in one plant:
- TCR[®]: Thermo-Catalytic Reforming
- PSA: Pressure Swing Adsorption
- HDO: Hydrodeoxygenation

System demonstration in an operational environment, evaluating economic viability and sustainability. Process chain from feedstock to HDO-oil shown in demo-scale.

Advanced biofuels from sustainable biomasses to the market, complying with European standards EN228 and EN590.

