

What is the EU FALCON project?

FALCON is a project funded by the EU that aims at turning the lignin-rich industrial waste stream from second generation biofuel plants into higher value products, such as marine fuels, fuel additives and chemical building blocks. FALCON stands for “**F**uel and chemicals from lignin through enzymatic and chemical **conversion**”

Biofuels are a promising alternative to fossil fuels, one of the contributors to global warming. However, the use of crops to generate biofuels is under strong economic pressure. In addition, large amounts of waste are generated in biofuel production. But what if we could use this waste to make biofuel production more profitable and sustainable?

The main component of this waste is lignin, the glue that holds plants and wood together. It is estimated that by 2050 biofuels will generate approximately 200 million tons of lignin. This offers tremendous opportunities for using it as a starting material for many products. However, at present most of this waste is burned to produce green energy (heat or electricity) for the biofuel plant. One challenge is to develop new technology to convert lignin into other valuable products.

FALCON is a project funded by the European Union’s Horizon 2020 Programme to tackle this challenge. It aims to develop an environmentally friendly, low-energy demanding process to turn lignin waste into value-added bioproducts. Falcon will make use of enzymes from fungi and bacteria, which are excellent at breaking down plant fibers. Combining the power of enzymes with other innovative technologies, lignin waste will be turned into an oil that can be readily converted into:

- Marine fuel, a green alternative to conventional fuels currently used.
- Fuel additives to make road transportation more sustainable and more efficient.
- Chemical building blocks to produce bioplastics and other biobased materials.

These new, sustainable products could replace fossil fuels and conventional plastics, as well as help bio refineries transition towards a “zero waste” production. Overall, the project will place lignin transformation at the heart of the economic and ecological viability of biofuels.

Winterthur Gas & Diesel is proud to be a contributing member of the FALCON project.

