

Research Project on biofuels started under leadership of Volkswagen

EU Consortium kicked-off Research Project "OPTFUEL" on Advanced Biofuels

OPTFUEL paves the way to large scale production of 2nd-generation biofuels

OPTFUEL, a European research consortium on 2nd-generation biofuels, has begun under the leadership of Volkswagen AG. This project is expected to demonstrate ‘optimized fuels for sustainable transport’ and pave the way for the large-scale production of 2nd-generation biofuels for transportation based on wood and forestry residues. The OPTFUEL project kicked off in February with a planning meeting of the consortium partners comprising the automotive companies Ford, Renault, and Volkswagen, the Freiberg-based engineering company, CHOREN Industries, CONCAWE, representing the European mineral oil industry, Invensys Process Systems as simulation technology provider, representatives of research institutes, IFP (France), CERTH (Greece), IIT, Delhi (India) and the German project consultant SYNCOM.

Advanced biofuels for evaluation in this project will be produced at CHOREN Industries’ plant located in Freiberg, Germany. The production process involves the gasification of wood residues at very high temperatures of 1,400°C, followed by the recombination of the gasified residues into sulphur- and aromatics-free liquids using the Fischer-Tropsch (FT) process. These “Biomass to Liquid” (BtL) products can then be used in vehicles, either as neat fuels or by blending with conventional fossil fuels. “BtL is one of the biofuels which can make a substantial contribution towards maintaining individual mobility. Therefore OPTFUEL is part of the fuel and powertrain strategy of Volkswagen” says Dr. Frank Seyfried, head of the department for fuels and fuel cells in the group research of Volkswagen.

The OPTFUEL project will establish the technical basis for large-scale production of BtL, up to 200,000 tons per year of liquid products from wood chips. The BtL demonstration will begin with the cultivation of 200 hectares of fast-growing willow, poplar, and robinia on land that is located near CHOREN Industries’ existing pilot plant in Freiberg, Germany. Performance data from the Freiberg pilot plant will be modelled to identify improvement opportunities compared to the current production processes and to create the technical basis for a large-scale BtL production facility. Using BtL products manufactured in the Freiberg plant, the automotive manufacturers and oil industry will work together to blend the BtL liquids, evaluate their exhaust emissions and explore their potential in current and future engine technologies. Earlier projects have shown that considerable reductions in exhaust emissions can be achieved for vehicles operating on neat BtL. In addition, the consortium project will evaluate the economic aspects and the potential to reduce energy and greenhouse emissions from all parts of the BtL production process. Technical issues associated with wood plantations for energy applications will also be thoroughly examined.

Ten partners from five countries are pooling their skills to optimise the production of BtL liquids over a 3,5-year project life. The European Union is supporting this demonstration project with 7.8 million euros of funding within the 7th Framework Programme for Research and Technological Development.