

REFORMING OF CRUDE GLYCERINE IN SUPERCRITICAL WATER TO PRODUCE METHANOL FOR RE-USE IN BIODIESEL PLANTS

- **Experts in five European countries are researching methods of converting glycerine into methanol for reuse to produce biodiesel**

Madrid, January 2009. Experts from five European countries are researching methods of converting glycerine, a by-product of biodiesel production, into methanol in an effort to reuse it in the fuel-making process. The Supermethanol project is promoted and funded by the European Union and undertaken by a consortium of businesses, universities, and research centres. The project is part of the EU's 7th Framework R&D Programme, through which the Union funds research in Europe from 2007 to 2013.

Biofuel is an emerging sector owing to the need to reduce pollutant emissions from transport. In addition to being a renewable energy, biodiesel substantially reduces sulphur oxide emissions (by 99%) and CO₂ emissions (by 90%), it is less flammable and toxic than diesel derived from petroleum, and it is biodegradable. The EU aims to cover 5.7% of transport needs in the Union with biofuels and other renewable fuels by 2010.

100 kg of vegetable oil and 10 kg of methanol are needed to produce 100 kg of biodiesel; 10 kg of crude glycerine is created as a by-product of this process. This glycerine can be used directly by the agro-food industries or it can be subjected to fractional distillation to obtain pharmaceutical glycerine (99% pure), which is used mainly by the pharmaceutical sector.

Nowadays the agro-food industries might absorb the crude glycerine from the biodiesel production and other processes which also generate crude glycerine. However, the biofuel market is growing up, and the price of glycerine is being affected. Therefore, we should find a new added value sustainable use for the glycerine.

The Supermethanol project aims to develop an economically-viable solution that will bring value-added to this chemical compound, converting crude glycerine into methanol for reuse in making biodiesel.

International consortium

The consortium behind this research into the re-use of glycerine comprises the following members: ACCIONA (Spain), BTG Biomass Technology Group (The Netherlands), Borekov Institute of Catalysis (Russia), University of Groningen (The Netherlands), University of Maribor (Slovenia), Uhde High Pressure Technologies GmbH (Germany)

and SPARQLE International BV (The Netherlands). The project will run for four years -it began in January 2008 and is scheduled to be completed by 31 December 2011.

