

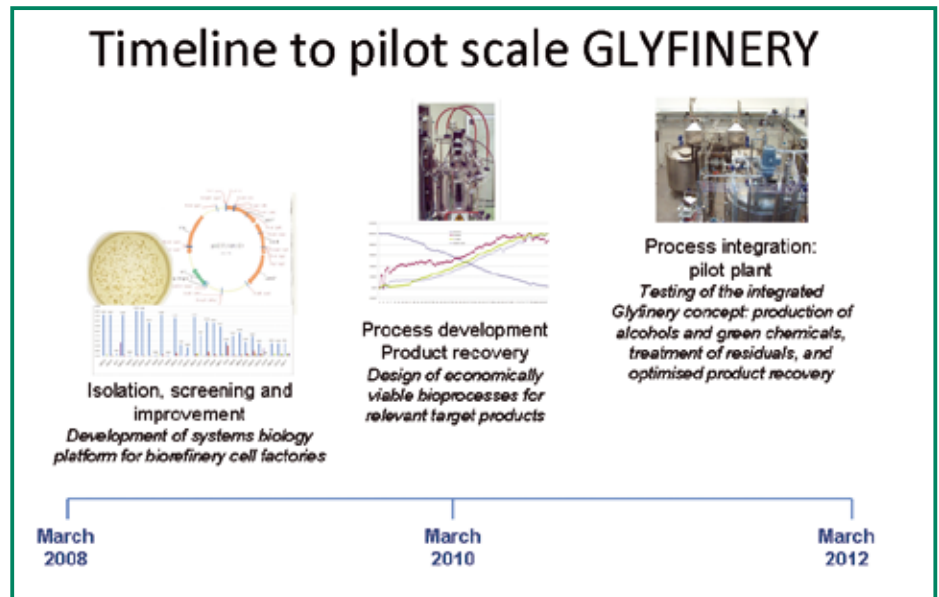


GLYFINERY: Sustainable and integrated production of liquid biofuels, green chemicals and bioenergy from glycerol in biorefineries

The GLYFINERY project is an initiative aimed at the sustainable and integrated production of biofuels, energy and green chemicals from glycerol within integrated biorefineries. The project is funded through the European Community's 7th Framework Research Programme, and involves six industrial and academic partners from four European countries. The partners contribute existing knowledge in the key components of the biorefinery concept.

The GLYFINERY concept represents a sustainable solution for management of the glycerol by-product from biodiesel refineries, where approximately 10% of the reaction volume ends up as crude glycerol. Although over 2000 pharmaceutical, food and other uses are known for glycerol, a large (and increasing) fraction is incinerated or stored as excess in an already saturated market. There is an urgent need, therefore, for research and technological development of processes for conversion of glycerol to valuable products, not only to solve waste disposal problems but also to improve the economy of biodiesel production.

The GLYFINERY project is targeted to development of a novel technology based on biological conversion of glycerol by micro-organisms, into known and new advanced liquid biofuels, bioenergy and biochemicals. The micro-organisms used are either isolated from relevant environments, or are known cell factories capable of bioconversion of the glycerol substrate. Substrate utilisation and product range and capacity of the strains is improved using metabolic engineering strategies and submerged cultivation processes are designed and optimised for each of the target products in turn at lab-scale. The most promising process scheme, identified by a technological, environmental and economic assessment, will be tested at pilot-scale as an integrated concept. Efficient recovery processes are being developed for the products of interest. The project is focused on the production of alcohols (ethanol and butanol), green chemicals (including PDO) and biogas.



The ultimate goal of the project is to demonstrate the suitability and sustainability of the GLYFINERY concept for implementation into large-scale biorefineries. The progress of the project can be followed on our website - www.glyfinery.net. The project runs from March 2008 to March 2012.

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Partners:

Technical University of Denmark, BioGasol Aps (Denmark), A&A Biotechnology (Poland), Institute for Energy and Environmental Research (Germany), Meroco A.S. (Slovakia), ProChimia Surfaces (Poland).

Contact information:

Dr. Mhairi Workman;
Prof. Peter Ruhdal Jensen, Co-ordinator.
Center for Systems Microbiology, Building 301,
Technical University of Denmark,
2800 Kgs. Lyngby, Denmark.
Email: mwo@bio.dtu.dk,
telephone: +45 4525 2502.

