

Press release
Januari 13, 2009
Page 1 (3)

Helbio Receives Order for Fuel Cell Power System with Reformer Operating on Bio-Ethanol

Helbio S.A. in Patras, Greece, a subsidiary company of Morphic Technologies AB, has received an order from the University of Milano for a Fuel Cell Power System operating on bio-ethanol (GH₂-5000 Energy System). A group of Italian investors has subcontracted the University of Milano to evaluate the unique power system, and after this evaluation Helbio has agreed to discuss volume deliveries and/or license cooperation.

The GH₂-5000 Energy System has been designed to operate in remote locations, without the need for external power input. It can be monitored and controlled remotely. The integrated fuel cell is manufactured by Exergy Fuel Cells, a Morhic subsidiary based in Bologna, Italy.

The Power System now ordered is the second ethanol- powered fuel cell of this kind sold by Helbio. The first unit was sold to an ethanol- producing company in Greece, and has now been in operation for about six months.

The GH₂-5000 Energy System delivers 5 kW electrical energy and at least 5 kW thermal energy, using bio-ethanol as the energy source. It consists of a fuel processor which converts bio-ethanol and water into a hydrogen rich stream, suitable to be fed into a PEM fuel cell. Reformation of ethanol is carried out in the steam-reforming mode within specially designed reactor/catalyst system. Elimination of CO is achieved by two water gas shift reactors and a methanation reactor. The effluent contains less than 20 ppm CO. The fuel cell used in this system is manufactured by Exergy Fuel Cells, The fuel processor and the fuel cell are highly integrated and controlled via a common scheme, thus operating in a very efficient manner. The overall efficiency of the system exceeds 90%.

“Helbio and Exergy are the only companies worldwide which can provide integrated fuel cell energy systems based on renewable raw materials such as bio-ethanol, and we are of course very proud that our new power system has been selected by a major industrial actor for evaluation by the highly respected and qualified University of Milano”, says Professor Xenophon Verykios, Managing Director of Helbio S.A.

Facts about Bio-Ethanol

Bio- ethanol is produced via saccharification/fermentation of biomass materials containing starch and sugars. Second generation bio-ethanol production, by use of lignocellulosic materials, is in demonstration phase.

Use of bio-ethanol for power production has many advantages which include CO₂- neutral production, ease of transportation and storage, high energy density of the stored raw material, local availability, etc. It must also be emphasized that the Helbio Energy System does not require pure ethanol but an aqueous solution containing about 60-80% ethanol. This makes the energy carrier considerably less expensive since the energy intensive separation step is reduced to a large extent.

Press release
Januari 13, 2009
Page 2 (3)

Facts about Helbio and Exergy

Helbio and Exergy were acquired by Morphic Technologies during the second half of 2007, as a part of Morphic´s strategic development and ambition to become a world leading provider of fuel cell end energy conversion products for renewable energy.

Exergy manufactures high performance PEM stacks and fuel cell systems for power generation, back- up power for telecom, APU units for recreation vehicles and boats, forklifts etc, and is now ready for volume production of these products.

Helbio has developed reformers for generation of extremely clean hydrogen from raw materials as bio- gas, bio- ethanol, LPG and other hydrocarbons. Helbio also possesses world- leading catalyst know- how and manufacturing technology, which is the real core science for the development of all fuel cell and related energy conversion products

The main purpose of acquiring the companies was to enable co- development and integration of their products, since this is the only way to be able to produce cost- efficient energy systems based on these new technologies.

“It is with great pleasure we note that the cooperation between our highly specialized companies has already resulted in first in class integrated products, and that the companies are receiving break-through orders for these unique products. It means that the synergies between the companies, the people and the technologies has been verified and applied into real products successfully”, says Kurt Dahlberg, head of market development, Morphic Technologies

Morphic’s fuel cell power systems, which operate on renewable raw materials such as bio-ethanol and biogas are addressing the need for power production with zero emissions, using locally available raw materials or energy carriers. Such applications are particularly advantageous in remote, out of grid locations, such as islands, in farming areas, in locations where the network is not stable, in agricultural and food industries which produce large quantities of organic waste and in municipal waste water treatment plants and solid waste disposal sites.

Morphic, Fuel Cells and Energy Systems

Morphic’s fuel cell business is run mainly through the four subsidiary companies Exergy Fuel Cells, Helbio S.A., Accagen S.A. and Cell Impact AB. Morphic Technologies is supporting its subsidiaries in strategic group marketing, market development, as well as in forming of new strategic alliances.

Exergy Fuel Cells produces PEM fuel cells for stationary power systems, where the market for standby generators for telecom applications, electricity supply for house trailers and other areas of application are now starting to take off.

Helbio produces reformers and other fuel processors, and develops technologies for next generation products for renewable energy in the field of catalysts, hydrogen clean-up and storage, generation of synthetic liquid fuels, etc.

Press release
Januari 13, 2009
Page 3 (3)

Accagen manufactures world leading pressurized electrolyzers for hydrogen production from water through electrolysis.

Cell Impact's focuses on cost-effective production of bipolar flow plates, one of the most critical components of a fuel cell system. Cell Impact is currently producing test series of fuel cell flow plates for applications that include vehicles, standby generators, mobile electronics and portable computers, and also has volume orders for flow plates used in portable electronics.

"The integrated development work in all companies of the Morphic group has been efficient, commercial customer product orders are already starting to come. The order to Helbio is very encouraging, since it also verifies that the market is growing fast and the acknowledgment of our revised product offer originating from our focusing following the recent re-organization", says Martin Valfridsson, CEO and President of Morphic Technologies.

Developing and commercializing energy systems based on fuel cells in combination with hydrogen technology and fuel conversion is a strategic priority for Morphic.

Morphic is the only company in the world that has the complete know-how and technology base for fuel cells and related energy conversion and fuel processing systems, including in-house manufacturing technology for most critical components as catalysts, electrodes, bipolar flow plates and MEA:s.

For more information, please contact:

Johannes Falk, Executive Vice President Corporate Strategy & Investor Relations,
Morphic Technologies AB (publ)
Phone: +46 (0)70-676 73 93
E-mail: johannes.falk@morphic.com

This is Morphic

Morphic is a Swedish engineering group operating in the areas of fuels cells and wind power. The Group has about 230 employees and conducts operations in six countries – Sweden, Norway, Japan, Greece, Italy and Switzerland. Morphic Technologies' B shares have been listed on the OMX Nordic Exchange since March 4, 2008, and the number of shareholders is about 28,800.