

## **Morphic acquires energy technology company, Helbio S.A.**

**Morphic has reached an agreement to acquire 55 percent of the Greek energy technology company, Helbio S.A. The company is a leading producer of systems for efficient and environmentally friendly production of hydrogen from renewable fuels, such as ethanol and natural gas. The acquisition gives Morhic access to expertise that accelerates the market introduction of Morhic's energy systems that are widely considered to have great commercial potential.**

Since its establishment in 2001, Helbio has reached a leading position regarding development of technology for cost-effective production of hydrogen. The company's systems can be used both in conjunction with industrial use of hydrogen and as a pre-stage to fuel cells for electricity and heat production.

The core of Helbio's patented technology consists of so-called "reformers" that make it possible to convert liquid and gaseous fuels, such as alcohols and hydrocarbons, to hydrogen. The technology's strength lies in its great efficiency, low production costs, and, not least, the ability to produce hydrogen gas locally. Thus, two factors are eliminated that have for a long time been hurdles to a more widespread use of hydrogen gas technology; namely, high production costs and difficulties associated with distribution.

"Through the acquisition of Helbio we strengthen our position within fuel cells and energy systems based on renewable fuels in a number of ways. The fact that we now can also offer products for hydrogen production means that the market introduction of several types of complete energy systems can be sped up considerably. A current example is the great possibilities for converting biogas from the agricultural sector into electricity. We also gain valuable competence for the development of our own energy converters that make it possible to store energy from renewable energy sources such as wind power. This acquisition is strategically very important for us," says Jonas Eklind, President and CEO of Morhic Technologies AB.

The consideration for the acquisition of 55 per cent of the shares in Helbio Holding S.A. is EUR 3 780 000 in cash. The remaining owners are Professor Xenophon E. Verykios (42 percent), Helbio employees (2 percent) as well as the University of Patras (1 percent). In conjunction with the acquisition, Morhic will inject EUR 500,000 new capital into Helbio. Closing of the transaction is planned to take place during September 2007.

### **Facts about Helbio**

Helbio was founded in 2001 as a spin-off from the University of Patras. It was started to commercialize results based on 20 years of research on catalysts, fuel processors, and fuel technology. The research has resulted in several patented solutions that, in turn, form the basis for the company's product series consisting of complete fuel processors, advanced reactors, and highly efficient, stable catalysts. In the beginning of 2007, Helbio's patent portfolio consisted of three patents and three patent applications. Its market consists primarily of fuel cell manufacturers and companies with biogas-producing plants.

Helbio currently has eight employees, each with considerable experience from the energy sector.

Among the key employees are:

- **Xenophon E. Verykios**, Professor of Chemical Engineering at the University of Patras. More than 25 years experience in catalyst technology, fuel processes and fuel cells and founder of Helbio S.A. and Patras Science Park.
- **Dimitris K. Liguras**, Head of R&D with many years experience from the fuel and petrochemical industry., B.Sc. in Chemical Engineering from the University of Illinois; MBA and PhD in Chemical Engineering from the University of California.

Since its founding, the company has been financed by venture capital from Emporiki Bank and through government funding. In 2006, sales of the company's products were initiated, and company sales amounted to approximately SEK 1 million. The operating result was a loss of approximately SEK 2 million. Sales continued in 2007 and resulted in a backlog corresponding to SEK 6 million. The company's assets were valued at SEK 5 million and debts totaling SEK 0.5 million. An acquisition analysis will be presented in the six-month report for the fiscal year.

### Facts about hydrogen

Hydrogen is one of the key components in the fuel cell society. From an energy efficiency perspective, hydrogen is, bar none, the best fuel for a fuel cell system.

Hydrogen does not exist naturally in nature, but must be produced from other fuels (fossil or non-fossil) or through electrolysis in water. In order for hydrogen to be considered a viable alternative to oil and other fossil fuels, more effective methods are required to enable large-scale production.

Up until now, all hydrogen used within industry has been extracted from fossil fuels, for example, natural gas and petroleum. As technological advancement continues, hydrogen derived from renewable fuels (such as ethanol and biogas) or through electrolysis of water is expected to be the primary extraction method. The advantage comes from the limited or almost non-existent negative environmental impact and near unlimited access to water.

"The principles for hydrogen production through a so-called reformation of different types of hydrocarbons are well-known, but available systems have been large, expensive, and with unsatisfactory performance and efficiency. Through its research and development, Helbio has taken this area of technology a large step forward", says Jonas Eklind.

### Morphic and fuel cells

The fuel cell operations within the Morphic Group operate within two subsidiaries: Cell Impact AB and Morphic Business Development AB (MBD). Cell Impact AB's operations consist primarily of cost-effective production of so-called "flow plates," one of the most important parts of a fuel-cell system. In 2006 and 2007, several important cooperation agreements have been signed with large operators within the automotive, laptop computer, and consumer electronics industries. Cell Impact currently produces test series of flow plates for fuel cells for, among other things, vehicles, power generators, mobile electronics and laptop computers. The test series are meant to adapt the client's own flow plate design in preparation for possible mass production in Cell Impact's production facilities.

## Press Release



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At MBD, complete energy systems are being developed based on fuel cells combined with different renewable energy technologies. Since autumn 2005, MBD has been conducting a comprehensive development project with a premise to combine fuel cells with wind power. The purpose is to enable a stable and safe production of electricity, independent of the general electricity grid. The system consists of an energy converter and fuel cells that are combined with own-developed, smaller wind turbines. The first pilot facility has been installed and is being evaluated in Karlskoga.

The use of a reformer as a first stage in a fuel-cell system enables efficient production of electricity and heat from a number of renewable hydrocarbons, for example natural gas and bio-alcohols (methanol and ethanol) but also from present fuels such as fossil gases, gasoline, kerosene, and diesel. Within a short period of time, energy systems such as these can be an environmentally friendly and more efficient alternative to gasoline and diesel-run generators. Even the possibility of using locally produced agricultural biogas for producing electricity and heat attracts a great deal of attention, as well as the possibility to make use of the large amounts of energy generated in the form of methane at all communal waste facilities and that currently constitute a serious environmental problem.

Development and commercialization of energy systems based on fuel cells in combination with reformers are a strategic priority for Morphic and this acquisition is a clear route in this strategy.

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*Morphic Technologies is a Swedish industrial group that specializes in energy systems for renewable electricity production as well as resource-light production techniques for efficient component manufacture. The operations are located in Karlskoga, Kristinehamn, Filipstad, and Gothenburg, Sweden. The Company's class B shares are listed on the Stockholm Stock Exchange's trading site, First North, with Remium Securities as Certified Advisor. For more information, see [www.morphic.se](http://www.morphic.se)*

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