

## **Inbicon and Terranol collaboration to develop a high yield process for 2G bioethanol production**

Partners aim to develop, implement and test a combination of recent Danish 2G bioethanol production technologies for efficient pretreatment, enzymatic hydrolysis and fermentation. The work is supported by Danish Energy Authority's Programme for Energy Technology Development and Demonstration (EUDP).

To obtain high ethanol yields it is important to ferment not only the easily accessible C6 sugars (glucose), but also the more difficult C5 sugars (e.g. xylose) and a yeast that ferments C5 sugars is often essential to cost-efficient production of 2G bioethanol.

By applying proprietary technologies, Terranol has designed genetically optimized C6/C5 yeasts demonstrated to fulfill the requirements in industrial settings with respect to robustness, performance and productivity, enabling increased yields of ethanol production. In the time to come, Inbicon and Terranol will collaborate to test and prove the effectiveness of the combination of their technologies, ultimately in Inbicon's facility in Kalundborg, planned for the second half of 2014.

"Our C5 yeast is among the furthest developed in the industry and we are looking forward to be able to test the yeast in 250 000 litre scale together with frontrunners in the industry such as Inbicon" says Birgitte Rønnow, CEO of Terranol.

DONG Energy's Inbicon Biomass Refinery in Kalundborg is one of the world's first cellulosic ethanol demonstration plants in operation. The plant produces cellulosic biofuel for Statoil, which is distributed via gasoline stations throughout Denmark.

DONG Energy has chosen to further develop the facility in Kalundborg due to an increased interest in testing and demonstrating new technologies. The conversion of the facility will among others allow the use of genetically modified yeasts in the fermentation step.

"We continuously develop our technology, and it is important to be ready with different configurations of the 2nd generation process, to fit with the conditions of each specific project", says Jan Larsen, head of R&D, New Bio Solutions, Dong Energy." We are convinced that the use of an efficient fermentation of both C5 and C6 sugars will be a large advantage in many projects".

### **Facts about Inbicon A/S**

Inbicon A/S develops technology for conversion and refining of soft lignocellulosic biomass into fuel, feed, and green chemistry products. The company has operated a pilot plant since 2003, and in December 2009 the first Inbicon Biomass Refinery was inaugurated in Kalundborg, Denmark, to demonstrate the technology. The plant converts wheat straw into fuel grade ethanol, C5 molasses that can be used as animal feed or for biogas production, and lignin pellets for energy production. Inbicon is a subsidiary of DONG Energy A/S and organized under the business unit New Bio Solutions.

For further information, please visit [www.inbicon.com](http://www.inbicon.com)

### **Facts about Terranol A/S**

Founded in 2007 Terranol A/S is a Danish research and development company dedicated to developing and commercializing C6/C5 yeasts, first and foremost for cellulosic ethanol production.

For more information, please visit [www.terranol.com](http://www.terranol.com)

### **Facts about EUDP**

Danish Energy Agency Programme for Energy Technology Development and Demonstration was established in 2007 and promotes new climate-friendly energy technologies that increase security of supply and realizes Denmark's business potential in the energy sector.

For further information, please visit [www.ens.dk/ny-teknologi](http://www.ens.dk/ny-teknologi)