



**Press Release 17 November 2010**  
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## **SEKAB proves that Taurus Energy's yeast works effectively on a large scale**

**– Important milestone in the production of ethanol from cellulose-based raw materials**

**SEKAB E-Technology and Taurus Energy have successfully carried out a three-week long industrial demo scale evaluation of Taurus Energy's yeast. The yeast has been specially developed, and, in contrast to ordinary yeast, it can ferment pentose as well as hexose. Taurus Energy and SEKAB see this as a crucial step on the way towards commercialising a process for producing ethanol from cellulose-based raw materials.**

The production of ethanol from cellulose-based raw materials from forestry and agriculture is a technology which has the potential to revolutionise the bioenergy sector, since the raw material is virtually unlimited. The ability to produce ethanol from renewable raw materials which are available in large quantities and which do not compete with food production is an important stage in breaking the dependence of the transport sector on oil.

"We have demonstrated that we can achieve the same ethanol yield on an industrial scale as in laboratory experiments. From the cellulose, we have succeeded in fermenting 90 percent of the available pentose, which is an excellent result", says Sune Wännström, Research Manager at SEKAB E-Technology. "It also means that we are now confident that we can transfer the results from optimisation on a laboratory scale to full-scale production".

The conversion of cellulose-based raw materials to fermentable sugars is a complex process, and utilising the sugars efficiently has long been a challenge. SEKAB and the Swedish company, Taurus Energy, can now demonstrate a process which has been verified on an industrial demo scale with a very high yield from pentose (xylose), a sugar which is extracted from hemicellulose, and which ordinary yeast strains cannot convert to ethanol. This means that the raw material can be utilised much more efficiently than in the industrial fermentation processes currently in use.

SEKAB is responsible for the process of using dilute acid and enzymes to convert hemicellulose and cellulose from a range of forestry and agricultural raw materials to pentose (a sugar with five carbon atoms) and hexose (with six carbon atoms). Taurus Energy has developed selective yeast strains which can ferment these and can survive the hostile environment of the process liquid.

The cultivation of yeast is a challenge in itself, since laboratory cultivation is considerably easier to control, and has none of the problems that can arise in large-scale cultivation. SEKAB has successfully demonstrated that the Taurus yeast can be cultivated in large volumes.

"We are delighted that we have confirmation that our yeast strain is robust enough to perform on an industrial scale, and that the yield is the same as we achieved on a laboratory scale", says Lars Welin, CEO of Taurus Energy. "The two essential requirements have now been met".

The trial, which was co-financed by the Swedish Energy Agency, also proves that the process developed by SEKAB and Taurus Energy in collaboration with researchers from Chalmers University of Technology and the Faculty of Engineering at Lund University, is now capable of producing commercially-viable ethanol yields. The successful trial achieved an ethanol yield of four percent by weight, which is the level required for profitable industrial production.



"Taurus' position among the world leaders in the fermentation of pentoses from lignocellulose-based raw materials has been confirmed by the results we achieved", says Professor Lisbeth Olsson, Director of Research at Taurus. "The results of the demo scale trial are the fruits of many years of research and development in the lab".

#### **For further information:**

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##### **About SEKAB**

SEKAB is one of Europe's leading players in ethanol production. The company produces and distributes bioethanol fuel and green chemical products, and is developing the next generation of cellulose-based ethanol processing. Its mission is to create the conditions for and actively promote future sustainable transport using long-term sustainable fuel. For more information, see <http://www.sekab.com/>

##### **About Taurus Energy AB**

Taurus Energy AB is a research and development company which aims to commercialise its extensive research and development programme in the field of ethanol production. Since 2006, the company's mission has been to license energy producers to use the methods developed by the company on a global market. Taurus holds over 10 world-leading patents which have been developed with the help of around 20 internationally-recognised scientists. The company is based in the Ideon Science Park in Lund, Sweden. Taurus is listed on the Aktietorget equities market. For more information, please visit [www.taurusenergy.eu](http://www.taurusenergy.eu)