## Borregaard - European Stock Exchanges Most Innovative Newcomer

Borregaard has been awarded "Most innovative newcomer" in connection with the European Commission's first European Small and Mid-Cap Awards.

"This award represents a positive recognition of Borregaard's competence and results from research and development," says CEO and President Per A. Sørlie.

The European Small and Mid-Cap Awards consist of four categories: "Best new listed company", "Most innovative newcomer", "Most internationally-minded newcomer" and "Rising star". The competition was open to small and mid cap companies, which were listed on European public stock exchanges between 1 January, 2010, and 31 December, 2012. Borregaard was listed on 18 October, 2012. Oslo Stock Exchange nominated Borregaard for the award "Most innovative newcomer".

The award was presented at an awards ceremony in Brussels, on 19 November, 2013. The Awards are a joint initiative by the European Commission and leading European Stock Exchanges. The jury consisted of independent parties from the financial community, journalism and academia.

## New technology

Jury statement: "Borregaard operates one of the world's most advanced and sustainable biorefineries. In April this year the company inaugurated its biorefinery demonstration plant, which showcases its innovative technology used for the production of green chemicals and sugars based on biomass from wood, agricultural and forestry waste."

Borregaard has developed new technology for the production of green chemicals and sugars based on biomass from wood and agricultural and forestry waste. In April 2013 Borregaard officially inaugurated the biorefinery demonstration plant, called Biorefinery Demo, at Borregaard's production facility in Sarpsborg, Norway.

The demonstration plant started preliminary operations in summer 2012, followed by normal operations in the 1<sup>st</sup> quarter of 2013. The plant relies on Borregaard's proprietary BALI technology and is a continuation of today's biorefinery concept. The aim is cost-effective and sustainable production of lignin and bioethanol from new raw materials. The BALI technology involves converting the cellulose fibres in biomass to sugars that can be used for the production of second generation bioethanol, while other components of the biomass (lignin) become advanced biochemicals. These products can replace petroleum-based alternatives, and the raw material cannot be used in food production.

BALI technology consists of several processing steps and has given promising results in laboratory-scale testing. In the demonstration plant, the process will be upscaled by a factor of 1000 times in order to test and develop the technology moving towards full-scale production. The plant has so far processed over 100 tons of biomass.

"If we succeed with this project, we will be able to establish full-scale production of biochemicals with excellent climate accountability. Biorefinery Demo is a good example of how new technology can contribute to environmental solutions and also be commercially viable," says Sørlie.

## **Emphasis on R&D**

Borregaard places a significant emphasis on research and development and has one of the largest and most innovative research divisions in organic chemistry and wood chemistry.

At the Groups research centre in Norway, 80 employees from different parts of the world work in the development of environmental technology and new products.

"We define innovation as a concept which applies to the entire process, from the moment a new idea occurs to the customer's purchase of a new product with an added value," explains Sørlie.

18 percent of Borregaard's sales come from new products that didn't exist five years ago. "Our ambition is to increase further the rate of innovation. Thus we spend between 130 and 150 million NOK annually on research and development. This is an effort that has gained recognition and support from the European Union, Innovation Norway and the Norwegian Research Council," Sørlie says.

## Solving challenges

Borregaard has 1050 employees at plants and sales offices in 16 countries in Europe, Asia, the Americas and Africa. The group owns and operates the world's most advanced biorefinery. By using natural, sustainable raw materials, the Borregaard produces advanced and environmentally friendly biochemicals, biomaterials and bioethanol that can replace oil-based products.

"Chemistry is an important contributor to solving many of the challenges the world faces today in resource consumption, health and the environment. Many of the materials in our everyday lives are chemical products, often made from petroleum-based raw materials," emphasises Sørlie.

In addition to fuel ethanol and biodiesel, there are various materials and chemicals, which can be produced from renewable raw materials harvested in a sustainable manner. "Borregaard manufactures a range of products from wood that does not compete with food production – second generation products. These products also reduce the emissions of greenhouse gases".