



## BioLi2.0



Project kick-off at Innventia 20 September, 2016.

PHOTO: FOTOGRAF JOHAN OLSSON

# From lignin to bio-based fuels and chemicals

The new BiInnovation project "BioLi2.0 – From lignin to bio-based fuels and chemicals" will develop processes for the production of fuels and chemicals based on renewable lignin as a replacement for fossil fuels and petroleum-based products.

The use of oil is constantly increasing in the world. To meet the challenge of increased emissions of carbon dioxide it is necessary to increase the use of renewable raw materials with shorter

**The use of lignin from forest materials is expected to contribute to increased sustainability in Swedish society in many ways:**

- Reduction of carbon dioxide emissions from the transport sector and from chemical products.
- Replacement of fossil-based raw materials with renewable material contributes to increased sustainability.
- More secure energy sources by the use of Swedish resources and raw materials.
- New business opportunities for the industries involved (primarily the forest industry and the petrochemical industry in the refinery sector).
- Potential to use the techniques developed in order to tap into other sources of lignin from other processes.

life cycles. For plants the life cycle is between less than a year and a few decades.

Lignin as a renewable resource has great potential for the chemical and petroleum industries. Lignin is the second most common component after cellulose in plants and functions as a skeleton. Around 20-30% of trees and other plants consist of lignin. Lignin is used on a large scale today in the pulp- and paper industry for producing steam and electricity, but through energy savings, greater effectiveness and the use of other side-streams from the forest for energy production, the potential for other uses is large and increasing.

"By using new chemical processes, that will be developed by the project, the lignin can be extracted, refined and modified so that it has similar properties, and will work as an alternative, to petroleum raw materials like coal and oil," says project manager Marie Anheden.

### Upscaling and evaluation

One goal of the project is to develop chosen technologies and establish value chains for lignin, as well as to increase the technological maturity level – from development on a small scale to the demonstration of prototypes in relevant industrial environment.

The project will contribute to establishing a first demonstration plant, which can exemplify a full value chain from lignin to final product in the form of chemicals or fuels, to be in production

in Sweden within five years of the start of the project.

28 parties from industry, research institutes and universities are involved in BioLi2.0 which covers the chain from raw materials to products via chemical processing and purification.

"Our aim is that the project will contribute to development and scale up of new processes and also evaluate the technical and economic potential for different value chains," says Marie Anheden. ●

**CONTACT:** [marie.anheden@innventia.com](mailto:marie.anheden@innventia.com)

The project will run for 2.5 years and has a budget of 46.9 MSEK. It is financed by Vinnova, the Swedish Research Council Formas and the Swedish Energy Agency as well as the participants in the project.



**"BioLi2.0 – Från lignin till biobaserade drivmedel och kemikalier"** är ett nytt projekt inom det strategiska programmet BiInnovation. Inom ramen för projektet ska företag, forskningsinstitut och akademi under 2,5 år samarbeta för att utveckla processer för framställning av drivmedel och kemikalier baserade på förnybart lignin som ersättning för fossila, petroleum-baserade produkter. Projektet kommer att ledas av Marie Anheden från Innventia och har en total budget om 46,9 Mkr. Projektet ska bidra till att ha en första demonstrationsanläggning för hela värdekedjan från lignin till slutprodukt i form av kemikalier eller drivmedel, i drift i Sverige inom fem år.