



Partners



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Örnköldsvik (Sweden), www.sekab.com



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VALue added
CHEMical building blocks
and lignin from

WOOD

Demonstration of a sustainable
wood-to-chemicals value chain
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www.valchem.eu



Raw material – sustainable wood

Diversification of the raw material base as well as efficient and sustainable use of local biomass is one of the focal requirements towards a European bioeconomy. Forests are already a significant pillar of today's bioeconomy, providing wood, recreational value, biodiversity and improved air quality. ValChem will build on sustainably sourced wood only.

Process technology

ValChem combines the competences of forest, chemical and bio-technology industries to realise a sustainable and innovative process to produce chemicals from wood.

Wood is disintegrated to sugars and crude lignin, applying SEKAB's CelluAPP® technology. The two intermediate streams are then upgraded at UPM's biorefinery development center. While further tailoring of the properties of lignin is developed with the University of Darmstadt, the upgraded sugar is converted to monopropylene glycol (MPG) in METabolic EXplorer's sugar-to-MPG process.

Objectives and goal

ValChem utilises the existing demonstration plants of the project partners. The project aims to combine and integrate the individual processes as well as to demonstrate the complete value chain.

The main objectives are:

1. Demonstrate the technical and economic viability of an integrated process to produce bio-MPG and lignin-based performance chemicals from wood
2. Demonstrate the suitability of such bio-chemicals for downstream processes and applications in terms of quality and production cost

The overall goal is to achieve readiness to invest in a "Wood-to-MPG" flagship plant.

Product applications

Monopropylene glycol is a so-called chemical building block and has a wide range of downstream applications. The largest markets are unsaturated polyester resins, paints and coatings, industrial use and personal care.

High value added lignin applications are for example in the field of lignin-based reactive resins and composites.

Impact of ValChem

The following impacts are expected:

- Introduction of a new value chain, utilising European forest resources
- Expanded portfolio of green products, sourced and produced locally
- Revitalisation of forestry and wood harvesting structures
- Increased resource efficiency by shifting the utilisation of wood towards chemicals, away from energy and increasing the added value compared to conventional lignocellulosic forest products

