

ValChem - a Demonstration Project

The logo for Bio-Based Industries features a stylized green leaf above the text "BIO-BASED INDUSTRIES" in blue and green. Below this, it says "Public-Private Partnership" in a smaller font, with three yellow stars to the left.

Value added Chemical Building Blocks and Lignin from Wood

Workshop "Investing in bio-based activities: the role of BBI JU"

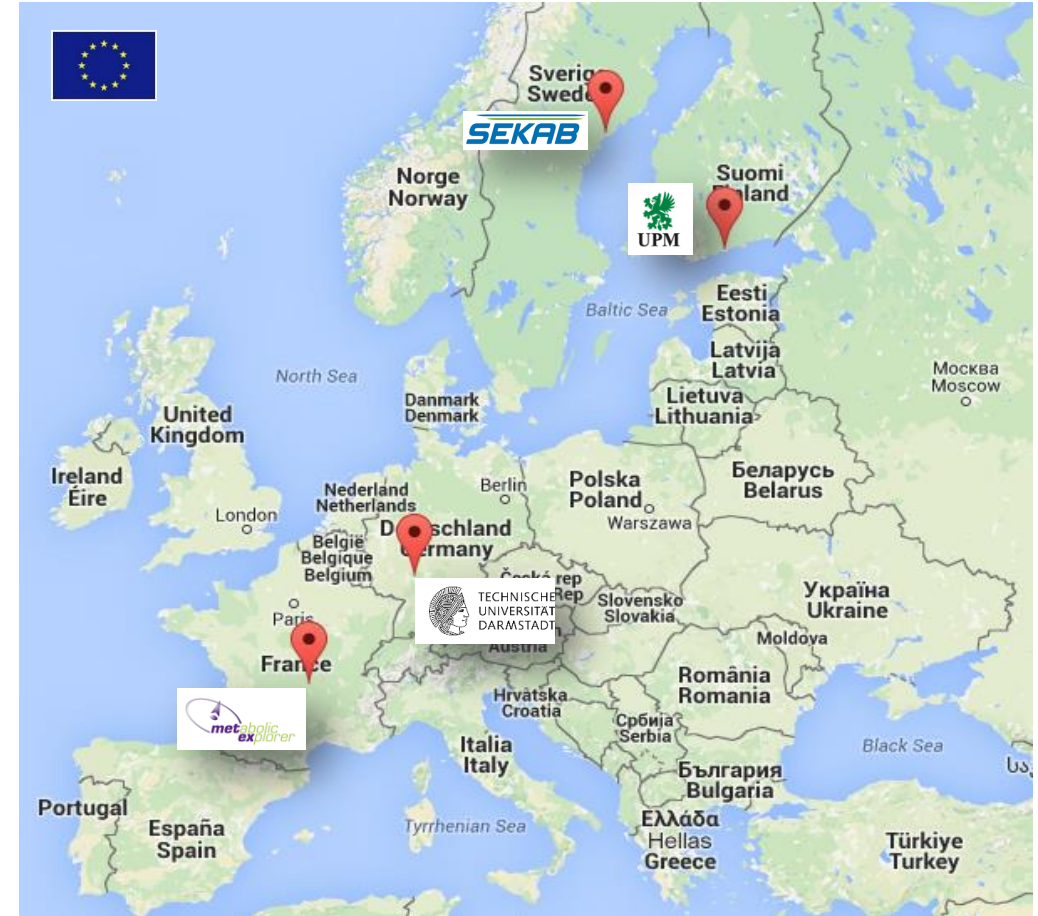
Bioeconomy Investment Summit, 10 Nov 2015, Brussels

Michael Duetsch, UPM Biochemicals



Enablers H2020 and partners with well defined roles

- Funded by the BBI-JU under the EU's Horizon 2020 program
- €13.1 million funding
€18.5 million total project budget
- Project period 4 years
(1 July 2015 – 30 June 2019)
- Consortium of four partners



ValChem aims techno-economic demonstration of a wood-based biorefinery for bio-chemicals



Technologies

- Demonstrate integrated process chain from sustainably sourced wood to mono-propylene glycol (MPG) and lignin-based performance chemicals
- Individual technologies have been validated on pilot scale

Markets

- Demonstrate suitability of bio-MPG for downstream processes
- Demonstrate beneficial price performance ratio for lignin-based products

Biorefinery

- Select concrete site
- Prove techno-economic feasibility

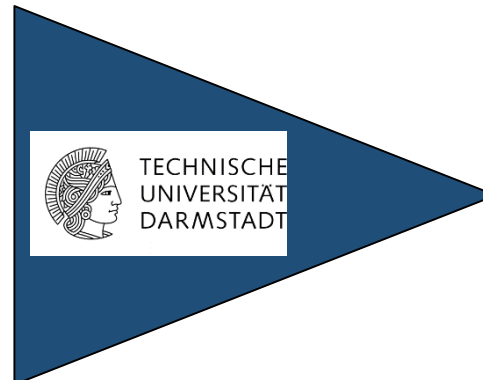
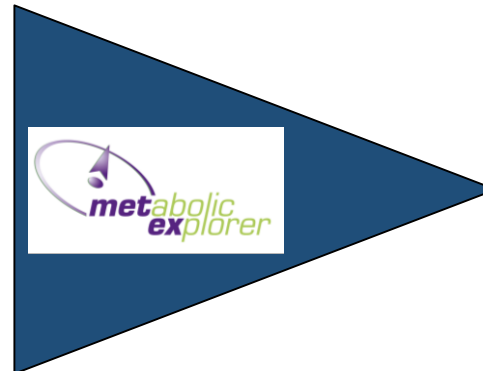


Adding value to wood ensured by smart integration of processes, site and market approach

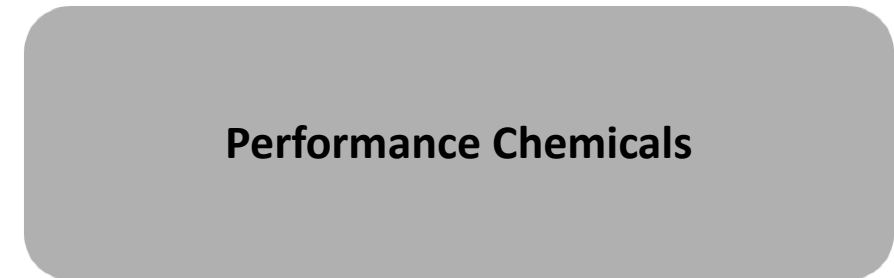
2ndG Biomass



Intermediates



Products



Horizontal and vertical process integration



Marketing of products

Challenging barriers remain for ValChem, although individual process technologies have already been validated



- **Cost competitiveness over fossil value chains**
- **Access to cost efficient biomass**
- **Integration of independently developed technologies**
- **Overall efficiency improvements**
- **Meet established market specifications of bio-MPG**
- **Lignin valorization**



ValChem supports establishing a competitive bioeconomy for growth and job creation in Europe



BBI-JU Ambitions

- Creation of new jobs in rural regions
- Offering of locally produced renewable and sustainable products
- Smart and efficient valorization of resources
- Re-industrialization and sustainable growth
- Improve competitiveness in the global bio-economy development

ValChem Objectives

- Woody biomass
 - certified under established sustainability schemes
 - low volatility of stumpage costs
 - accessible year round with existing supply chains
- Competitiveness and sustainability of local woody biomass determine site selection
- Demonstrating feasibility of an integrated biorefinery
- Unique synergistic integration of cutting edge technologies
- Bio-MPG as drop-in replacement for fossil-based product
- Valorization of lignin

Impact of ValChem: Rural development and improved sustainability



- **Job creation by increased regional development and investment**
- **Future plants based on this biorefinery platform technology will be located in rural areas due to biomass availability.**
- **Valorisation of over 75 % of the wood raw material, and 2-6 times higher added value of wood-based chemicals compared to traditional products.**
- **Improved sustainability of wood production (as more wood with PEFC and FSC certificates will be used) and industrial processing**
- **Significant push for on-purpose lignocellulosic biorefineries in Europe beyond UPM's scope**

ValChem - a



Project

Acknowledgements



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Disclaimer: This presentation reflects only the author's view. The JU is not responsible for any use that may be made of the information it contains.

