

ValChem - a



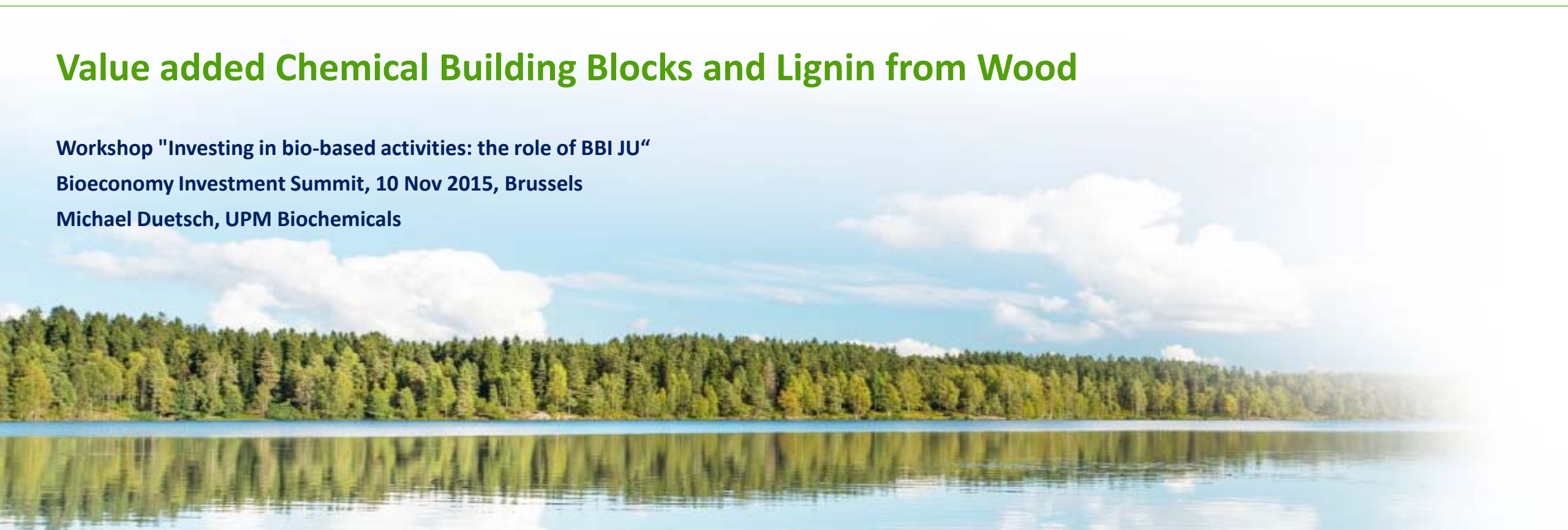
Demonstration Project

Value added Chemical Building Blocks and Lignin from Wood

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

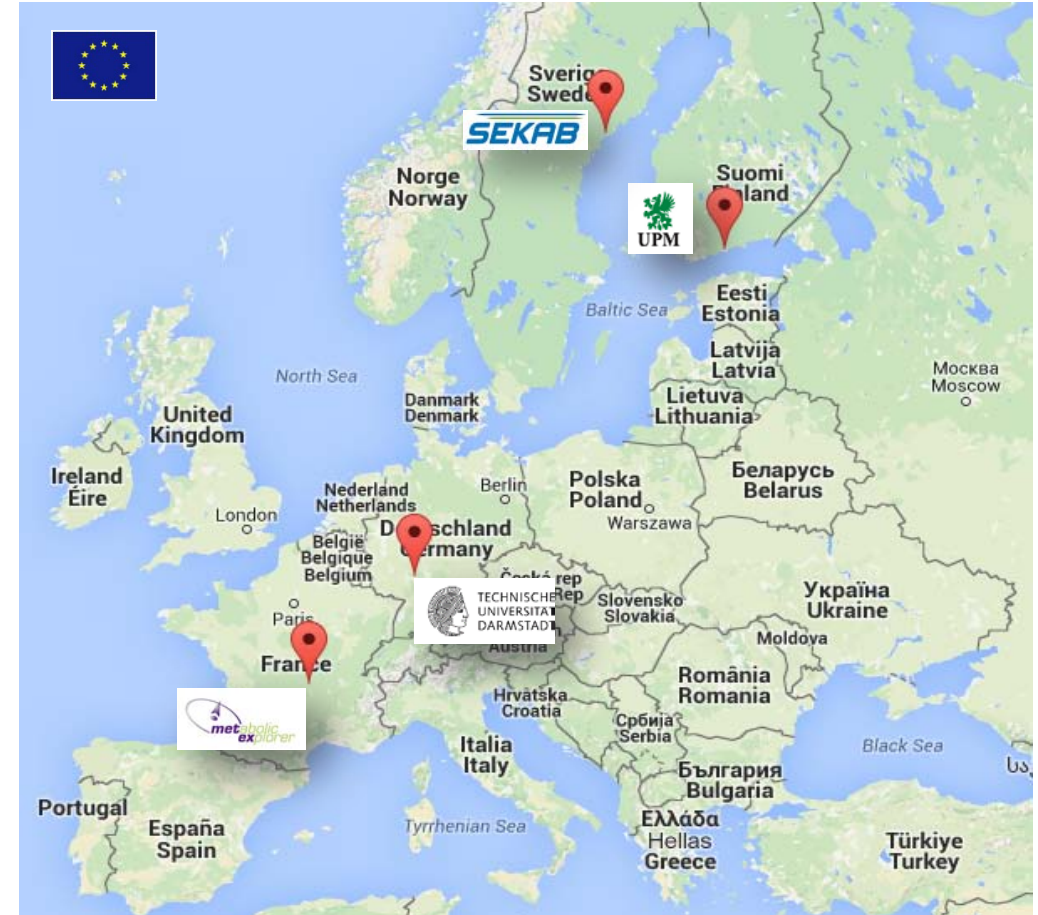
Bioeconomy Investment Summit, 10 Nov 2015, Brussels

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

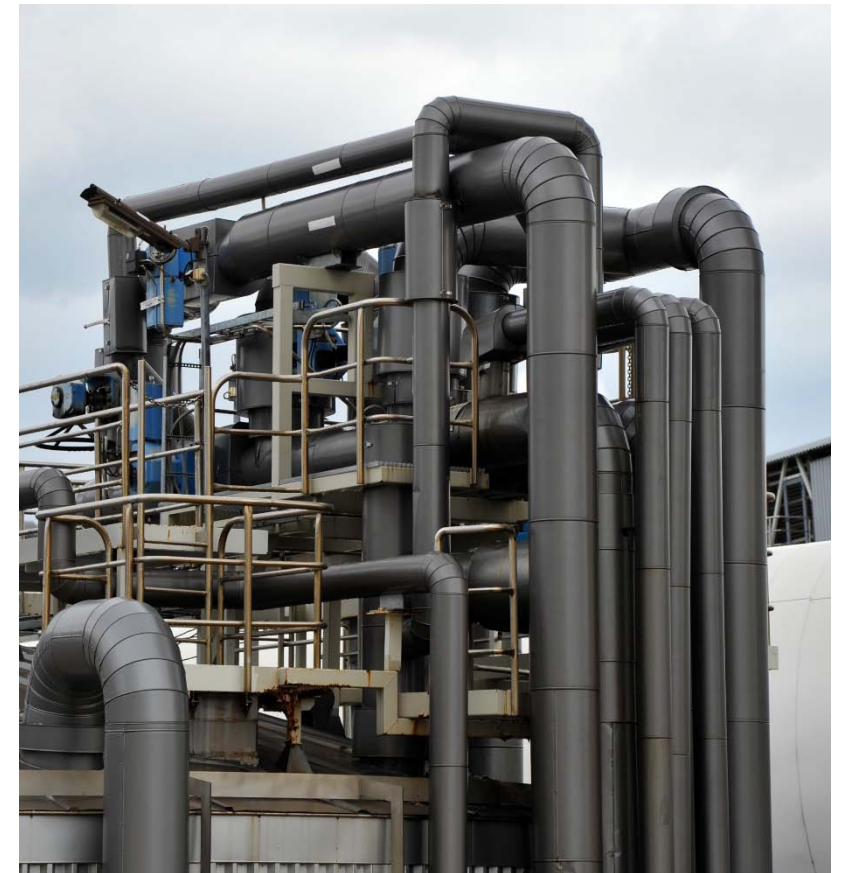
- Demonstrate integrated process chain from sustainably sourced wood to mono-propylene glycol (MPG) and lignin-based performance chemicals
- Individual technologies have been validated on pilot scale

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



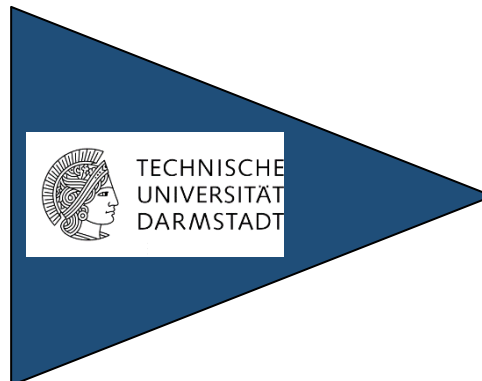
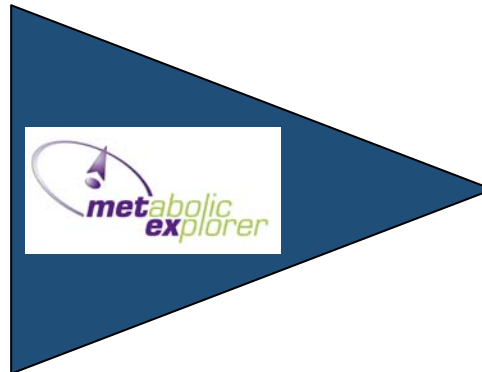
Adding value to wood ensured by smart integration of processes, site and market approach

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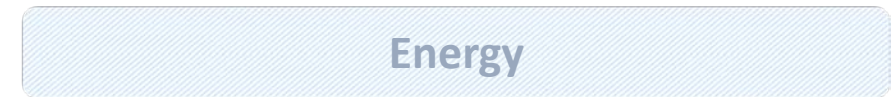
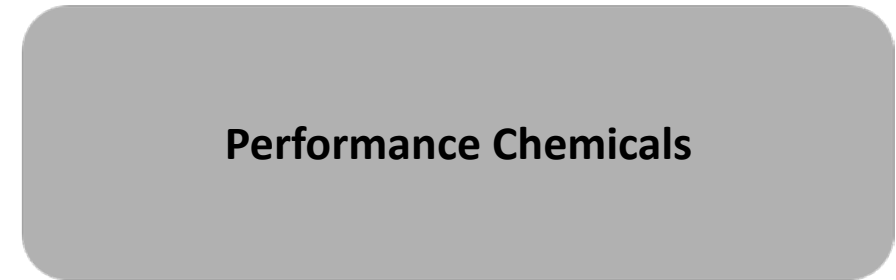
2ndG Biomass



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**

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Project

Acknowledgements



Horizon 2020
European Union Funding
for Research & Innovation

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 669065.

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.

