



Deliverable 2.12

**Report on and production of at least 20 kg  
MeBDO for WP3 trials**

**Demonstration of solvent  
and resin production  
from lignocellulosic biomass  
via the platform chemical  
levulinic acid**

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## About GreenSolRes

The need to establish economic and sustainable large-scale operations for the conversion of renewable resources to chemical building blocks is becoming increasingly urgent in the context of climate change and depleting fossil fuel reservoirs. Pathways for manufacturing of bio-based fuels and chemicals have been developed but most of them rely on sugar and starch crops for feedstock. GreenSolRes aims at a sustainable and competitive industrial production of the platform chemical levulinic acid (LVA) from non-food lignocellulosic biomass. Further, the conversion of LVA and LVA esters into industry relevant building blocks  $\gamma$ -valerolactone (GVL), 1-methyl-1,4-butanediol (MeBDO) and 2-methyltetrahydrofuran (2-MTHF) will take place by new catalytic methods developed during the course of this project. Finally, these chemicals will be upgraded to solvents and resin monomers for the production of high added value adhesives and consumer products. This project was started in September 2016 and has a duration of five years.

### Project Coordinator



### Project Office



### Consortium



## About this document

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## Publishable Summary

Hydrogenation of LVA to MeBDO via GVL has been investigated in detail and tailored molecular catalyst systems for the selective production of MeBDO could be developed. Here, we present the hydrogenation of GVL to MeBDO on kg scale for the production of 20 kg MeBDO for WP3 product development trials. Hydrogenations were performed in batches with low catalyst loading using a 2L 316 stainless steel reactor with mechanical gas impeller to enhance the gas to liquid mass flow. The obtained product purity is in agreement with the requested technical requirements for product development trials.