



Deliverable 5.3

## Report on Business Case of GVL based on Furfural

**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 often rely on sugar and starch crops for feedstock. The European Demonstration project - 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 to produce high added value adhesives and consumer products.

### Project Coordinator



### Project Office



### Consortium



## About this document

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## Publishable Summary

Gamma-valerolactone (GVL) is an excellent and versatile solvent, which has been discussed in numerous publications and named as a potential alternative to the reprotoxic NMP. The possibility to manufacture GVL based on sustainable raw materials is a further benefit. However, it has never been produced on a large industrial scale.

Since GVL is competing with large scale commodities the overall production costs and ultimately the raw material costs will largely influence the market development and acceptance of GVL.