

- IDEALFUEL -

Lignin as a feedstock for renewable marine fuels

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HORIZON 2020 PROGRAMME - TOPIC LC-SC3-RES-23-2019

“Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping”



Deliverable Report

D4.2 – Initial fuel system compatibility report



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Publishable summary

IDEALFUEL aims to develop an efficient and low-cost chemical pathway to convert lignocellulosic biomass into a Biogenic Heavy Fuel Oil (Bio-HFO) with ultra-low sulphur levels that can be used as drop-in fuel in the existing maritime fleet. It is also very important for any fuel to be drop-in capable so that the functionality of the current technology is not affected, and the fuel can be easily introduced into the market. In this regard, Tec4Fuels conducts the material compatibility testing in a Hardware in the loop testbench which consists of all the fuel system components of a 4-stroke Marine engine. CoCoS (Complete Common Rail System) is a hardware in the loop testbench in which all the fuel systems components are connected in series and the fuel can be circulated for a specified amount of testing period without combustion [1]. This helps in checking the compatibility of all the fuel components while stressing fuel leading to fuel degradation. This testing can be conducted at different conditions to obtain a detailed picture fuel interaction with the fuel components. In this project the CoCoS test bench will be adapted to the selected marine engine components and the compatibility testing will be conducted.

Currently, the test bench is adapted to conduct the compatibility testing of the high-pressure pump with the IDEALFUEL. For benchmarking tests, the base line fuel (MGO) is tested, and the control is configured according to the fuel. Further, the testing of IDEALFUEL and its blends will follow as soon as the fuel is available.