Advanced Biomass Catalytic Conversion to Middle Distillates in Molten Salts

Acronym: ABC-Salt

Duration: April 1st, 2018 – March 31st, 2022

Coordinator: Prof. dr. ir. H.J. Heeres

Partners:

university of groningen

Aston University Birmingham

btg biomass technology group

DLR Deutsches Zentrum für Luft- und Raumfahrt German Aerospace Center

Norwegian University of Life Sciences

RI.SE

GHENT UNIVERSITY

ayming

Centro Interuniversitario di Ricerca in Psicologia Ambientale

Sapienza Università di Roma

Project title: **Advanced Biomass Catalytic Conversion to Middle Distillates in Molten Salts**

Project Acronym: **ABC-Salt** Project Number: **764089** Call: **H2020-LCE-06-2017** Topic: **Sustainable Fuels**

Main Category of the Project: Biofuels from lignocellulosic waste stream.

TRL: 2.

Keywords: Molten salts, Biomass liquefaction, Hydropyrolysis, Hydrodeoxygenation, Biofuels.

Technological approach of the Project: Experimental research supported by system modeling on technology, environmental and social impact. The technology concept will be demonstrated in an integrated bench scale unit.

Expected Impact of the Project: Accomplish TRL 4; create and pursue new, out-of-the-box innovative ideas, to improve the conversion efficiency for sustainable fuels.

Contribution of the Project: Develop novel integrated technology for the efficient conversion of lignocellulosic waste streams to middle distillates using a unique concept. The concept will be investigated using a holistic approach, involving research activities towards a sound scientific understanding of the individual conversion steps as well as optimized process integration.

Highlights (technological/non-technological): Biomass liquefaction in pumpable molten salts.

www.abc-salt.eu

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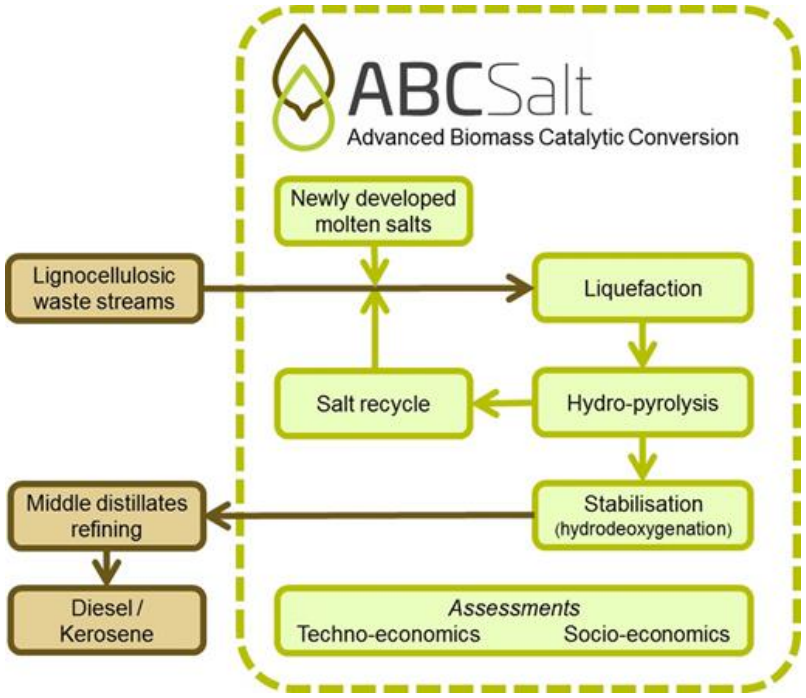
ABCSalt

Overall Objective

Development of a novel route at **TRL level 4** to produce sustainable liquid biofuels (middle distillates) from various lignocellulosic waste streams for the transport industry targeting a yield over 35 wt% to hydrocarbons with 2/3 in the middle distillates range.



Concept - Approach

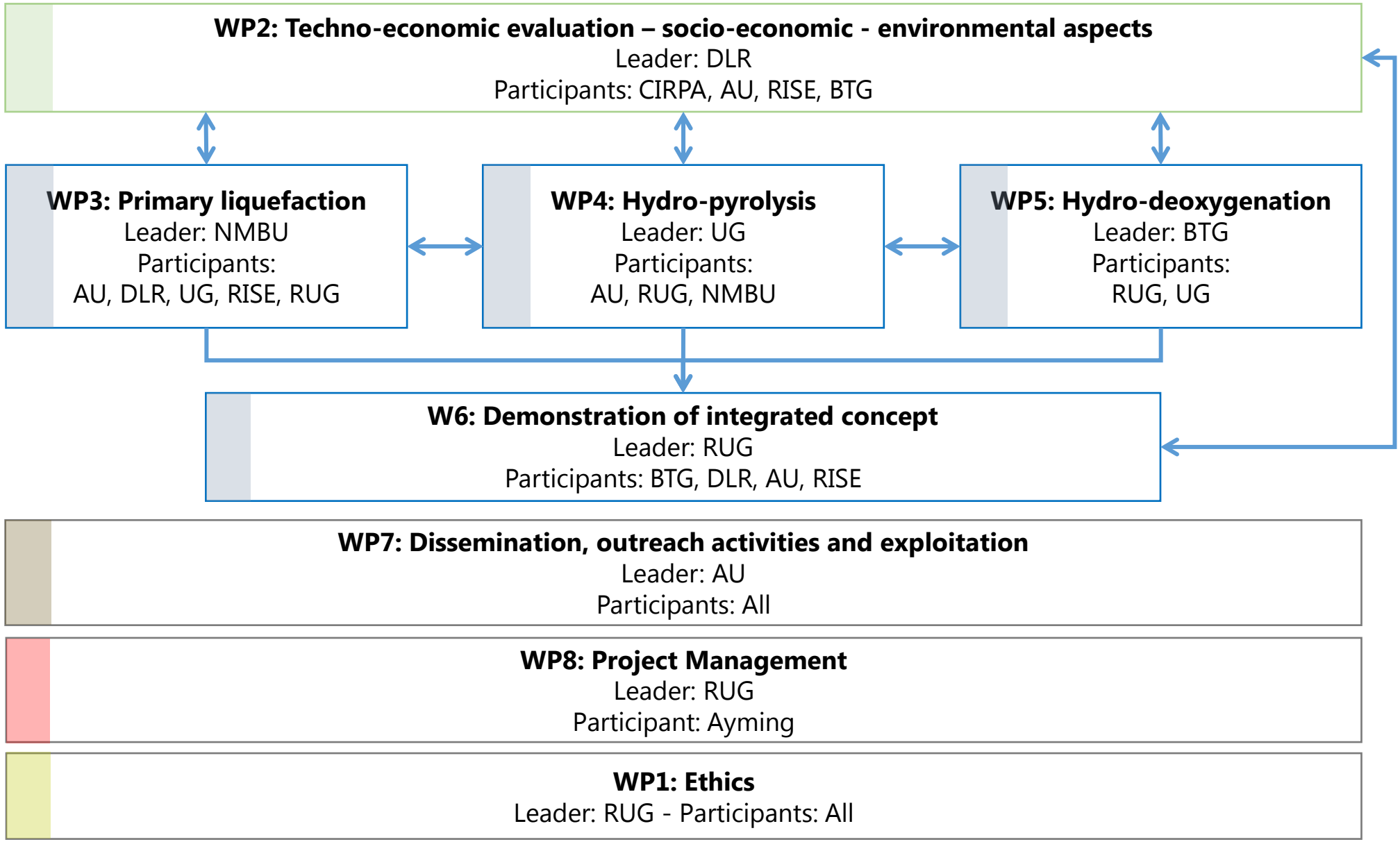
Biomass → Biomass Liquefaction in molten salts → (Catalytic) Hydro-Pyrolysis → (Catalytic) Hydro-deoxygenation

Step 1: Dissolving biomass in novel media at ambient pressure and low temperature

Step 2: Vaporizing the biomass at elevated pressure and temperature

Step 3: Vapour-phase hydro-deoxygenation to produce middle distillates

Project Structure



Summer School 2019

This year the ABC-Salt consortium is organising its first Summer School:

"**Advanced thermochemical biomass conversion technologies**"

Birmingham (United Kingdom) - Aston University (Aston Conference)

12-14th August 2019

40 participants (young researchers and professionals)

Main topics and activities will include:

- Introduction to thermochemical conversion technologies
- Overview to upgrading technologies of pyrolysis liquids
- Introduction on the use of molten salts in different thermochemical conversion technologies
- Applications, properties and standardisation of middle distillates
- Networking opportunities (mini-conference and poster presentations by Summer School attendees)
- Dedicated course - "Set up a project" (MSCA, ERASMUS or ERC) on how to successfully exploit Horizon 2020 Research and Innovation Programme with winning proposals