

[Learn more about EU projects on advanced biofuels](#)[View this email in your browser](#)

Dear Waste2Fuels reader,
we are pleased to welcome you to our second newsletter!

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In this issue you will be provided with some key updates on activities, upcoming events and overview on past events attended. Are you ready to discover more about Waste2Fuels? We hope you find it interesting and you will follow us on social network and get engaged with us!

Highlight of the month

On January 17th the European Parliament voted on the RED II report and endorsed a set of proposals that establish new goals for renewable energy, energy efficiency and renewable transportation fuels.

In a vote on revising the Renewable Energy Directive, MEPs agreed a 12% transport target for renewable energy by 2030.

The contribution of so-called “first generation” biofuels, made from food and feed crops, should be capped to 2017 levels, with a maximum of 7% in road and rail transport. The share of advanced biofuels, which have a lower impact on land use than those based on food crops, renewable transport fuels of non-biological origin, waste-based fossil fuels and renewable electricity will have to be at least 1.5% in 2021, rising to 10% in 2030. [Read more](#)



Insights from the biofuel world

Last summer, the SFT (Sustainable transport Forum) approved the Final Report elaborated by the Sub-Group on Advanced Biofuels, which consists of 32 industry experts representing all advanced biofuels value chains and transport sectors, such as aviation and maritime. The mandate of the sub group was to develop strategies facilitating the deployment and use of advanced biofuels in the EU.

[Read more](#)

The project in a nutshell

Waste2fuels is a project funded by the European Commission under Horizon 2020 (GA no 654623), the main European Programme for Research and Innovation. It involves 20 partners and will last 36 months.

Following the political path set out by the European Commission, Waste2Fuels aims at the development of next generation biofuel technologies capable of converting **agrofood waste streams into high quality biobutanol** for use as a direct substitution for virgin fossil fuels. **In doing so, the project would make a major contribution to leading the EU into the next generation of sustainable butanol, domestic bioenergy production and advanced agrofood waste management.**

Waste2Fuels main innovations are:

Development of novel pre-treatment methods for converting agro-food waste to an appropriate feedstock for butanol production



Improvement of the production process with the use of systems enhancing techniques achieving higher conversion efficiencies



Valorization of post process waste streams recovering energy and added value by-products, reducing production costs



Demonstration of feasibility of the produced biobutanol to be burned in industrial system and design of industrial scale-up



The project is also performing environmental and economic sustainability assessments and biomass supply chain studies. It also designs a waste management strategy for rural development.

Key updates on the project

The activities of the Waste2Fuels project are regularly going on as scheduled.

WP1

Under the **WP1, (Selection of renewable feedstock for ABE fermentation)**, between two and three pretreatment methods have been proposed by ITACyL for each of the four agrofood wastes. These methods allow an equilibrium between maximal sugar release and minimal generation of fermentation inhibitors in the hydrolysates.

[Learn more on activities](#)

WP3

Under the **WP3 (ABE fermentation and solvent recovery)**, since the last status update TU Wien has conducted extensive research regarding different membrane materials as well as potential membrane module designs for the separation of ABE from fermentation broth. The focus was put on commercially available PDMS (polydimethylsiloxane) and newly developed POMS (polyoxymethylsiloxan) membranes by different vendors. Flat sheet modules were tested for both materials while hollow fiber modules were only considered for PDMS membranes as they are not commercially available yet for POMS.

[Learn more on activities](#)

WP4

In the **WP4 (Catalytic conversion of ethanol to butanol)**, Bio-ethanol can be catalytically converted into butanol through alcohol dimerization called Guerbet reaction. This reaction is promoted by catalysts with a suitable combination of both acid and basic sites. Furthermore, addition of an active metal can favor the initial dehydrogenation of the alcohol to form the carbonyl intermediate.

[Learn more on activities](#)

WP6

Under the **WP6, (Industrial Scale-up)**, TU Wien is supporting the WP6 with simulation tasks for the overall process in Aspen Plus. Up to now, the focus was put mainly on potential in-situ recovery methods. The results generated in other work packages were used to develop simulation models for adsorption, stripping, pervaporation, distillation as well as coupled approaches. UNIZAR performed experiments on combustion. Oxidation experiments of 1-butanol has been

carried out for different oxygen concentrations that go from fuel-rich to fuel-lean conditions.

[Learn more on activities](#)

Events attended

During these months, Waste2Fuels team has been actively involved in presenting and disseminating projects results in several international events:

19-20 June 2017 Torun, Poland.	The 2nd Workshop on ABE Fermentation and Recovery
20-23 June 2017 Torun, Poland.	The 5th International Scientific Conference on Pervaporation, Vapour Pervaporation and Membrane Distillation
6-9 September 2017 Bologna, Italy	The 9th International Conference on Environmental Engineering and Management
26 September 2017 Brussels, Belgium	Sustainable First and Second Generation Bioethanol for Europe
3-6 October 2017 Barcelona, Spain	The 10th World Congress of Chemical Engineering
17 October 2017 Brussels, Belgium	Agri-food Waste Day Conference

Upcoming Events



The banner features the logos for ISCRE25 Florence 2018 (Science & Technology) and EFCE event # 743. The text on the right side of the banner reads: "25th International Conference on Chemical Reaction Engineering", "20-23 May 2018", and "Florence, Italy".

Synergies with other projects

Waste2Fuels is proud to announce that synergies have been created with other European projects:



a EU-funded project under the Horizon 2020 programme for research, technological development and demonstration. The objective of BIOSURF (BIOMethane as SUSTainable and Renewable Fuel) is to increase the production and use of biomethane (from animal waste, other waste materials and sustainable biomass), for grid injection and as transport fuel, by removing non-technical barriers and by paving the way towards a European biomethane market. The BIOSURF consortium consists of 11 partners from 7 countries (Austria, Belgium, France, Germany, Hungary, Italy and United Kingdom).

Science news

Last September, in the framework of the annual showcase EUCYS 2017 dedicated to the young scientists, Gal Levy (Israel) received Bioeconomy Bio-based Industries prize award in 2017 with the project **PRODUCTION OF BIODIESEL FROM ORGANIC WASTES BY THE “BLACK-SOLDIER” FLY LARVAE**.

More information about the project and its results are available [here](#)



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