

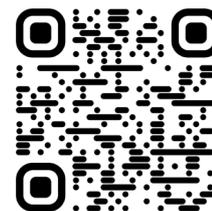
BioMates runs validation-scale production

In the EU-funded project BioMates, the overall production process is now established and running on a validation scale. After producing 1000 kilograms of bio-oil in a test facility for the first time last year, this was another important step for achieving the project's goal to establish a procedure to process sustainable raw materials instead of crude oil on large scale in refineries.

The technology validation phase was carried out in the validation facilities at RISE in Piteå, Sweden, and at CERTH in Thessaloniki, Greece. To date, bio-oil production and post-treatment in validation scale TRL5 – referring to the Technology Readiness Level 5 indicating technologies that are validated in an industrially relevant environment – has been achieved, generating a bio-oil stable enough for storing and shipping. Furthermore, the production of 10 liters of BioMates per day via a mild hydrotreatment process has been successfully conducted. This involved the use of a customized hydrotreatment catalyst developed by Ranido and an electrochemical hydrogen compression and purification system developed by HyET hydrogen, which was installed in CERTH's hydroprocessing validation facility.

Demonstration of functionality

The last stretch of the project focuses on the validation of the end-use of BioMates as co-processing refinery feedstock. The functionality of the processes will be demonstrated by the production of approx. 1,000 liters of transportation fuels consisting of 90 % typical fossil input streams (LCO, gasoil) and approx. 10 % BioMates as feedstock - in a co-processing method in the hydroprocessing unit at CERTH. The final diesel-fuel-cut is expected to fully meet the EN 590 specification. All process steps together thus represent the complete BioMates production process on a validation scale. Further information about the validation process can be found [in this video \(https://s.fhg.de/BioMates-Video\)](https://s.fhg.de/BioMates-Video), see QR-code).



“This is a highly innovative project which brings together not only academic partners, but also a major international energy company and **small and medium-sized enterprises (SMEs)**, holding the potential to reduce Europe's dependence on imports of fossil fuels and securing the energy supply”, says Dr. Stella Bezergianni, Research Director and Head of the hydroprocessing group of CPERI/CERTH.

Recognition of European experts from research and industry

In the course of the ongoing validation phase, BioMates also hosted an online workshop at the 29th European Biomass Conference & Exhibition 2021 attended by key stakeholders from academia and industry, mainly from Europe. Participants agreed on the innovative technology of BioMates and the use of advanced biofuels and coherent policy frameworks.

BioMates is funded by the European Framework Programme for Research and Innovation Horizon 2020 and coordinated by CERTH in Thessaloniki. The nine-partner -project aims to effectively convert residues and non-food/feed plants into high-quality bio-based intermediates compatible with conventional refinery conversion units, as currently, conventional fuels can only be blended with ready-to-use biofuels at the end of the fuel production process. Using BioMates, this step would no longer be necessary, as hybrid fuels with high bio content and full compatibility with conventional combustion engines could be produced directly in the conventional refinery process.

For additional information and contact details, please visit www.biomates.eu. This site continuously provides up-to-date information on the project's progress and upcoming events, and it presents reports and publications that are available for open access.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727463.

This press release reflects only the authors' view; the European Commission and its responsible executive agency CINEA are not responsible for any use that may be made of the information it contains.

The BioMates team comprises nine partners from industry, academia and research centers:

- Centre for Research & Technology Hellas / CERTH - Chemical Process & Energy Resources Institute / CPERI (Project Coordinator) Greece - <http://www.cperi.certh.gr>
- Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT, Germany – www.umsicht.fraunhofer.de
- University of Chemistry and Technology Prague, Czech Republic - <http://www.vscht.cz>
- Imperial College London, United Kingdom - www.imperial.ac.uk
- Institut für Energie und Umweltforschung Heidelberg gGmbH / ifeu, Germany - www.ifeu.de
- HyET Hydrogen B.V. / HyET, The Netherlands - www.hyet.nl
- RANIDO, s.r.o., Czech Republic - <http://www.ranido.cz>
- BP Europa SE, Germany - www.bp.com/en/bp-europa-se.html
- Research Institutes of Sweden / RISE, Sweden - <https://www.ri.se/en>