

FOR IMMEDIATE RELEASE: 21/10/2024

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PRESS RELEASE | OCTOBER 2024

2 Years Of CHEERS: a New Biorefinery Model for The Brewing Industry



CHEERS consortium meeting at SYSPRO AUTOMATION facilities.

- **CHEERS** EU-funded project aims to transform the brewing industry and other related industries (e.g., food and beverage) towards sustainability by **revalorising under-utilised or side-streams**, by converting these streams into five types of products: **protein drinks, animal feeding, sanitizing, cosmetics and pet food products**.
- These products will be developed **via 2 novel bio-based production platforms**: an **insect platform** and a **microbial platform**, and an expected **substantial carbon footprint reduction** will be achieved in each value chain along with wider impacts on biodiversity and agricultural land use.
- After two years of progress, **CHEERS is more alive than ever!** All platforms are under construction and a promising future is expected for the project.

Madrid, 21st October 2024. After over two years of dedicated effort, the EU-funded CHEERS project is proud to announce its first **results in transforming the beer industry towards greater sustainability**. CHEERS, a groundbreaking initiative, has been focused on developing innovative solutions to reduce the environmental impact of brewing, via revalorization of side-streams of the beer production process into five innovative products. These initial findings mark a significant milestone in the mission to make the beer industry greener and more resource-efficient, paving the way for a future where every pint can be both enjoyable and sustainable. CHEERS focus its developments in two different production platforms that are getting established right now with a promising success.



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Insect platform: construction in progress

The CHEERS insect platform will support the conversion of bagasse, a solid residue from beer production to insect protein ingredients. To do so, *Tenebrio molitor* insects, a mealworm beetle with high nutritional value, will be fed with this residue. As a result, 200 L of two protein-rich drinks will be produced during the project. Thanks to [PROTEINSECTA](#), [AINIA](#), [MAHOU SAN MIGUEL](#) and [THUNDERFOODS](#) efforts, the plant is currently under construction and commissioning in Alovera, and first trials on insect feeding with bagasse have started at lab scale. By the end of the project, we expect to achieve a **bagasse valorization capacity of 40 tons per year!**

Microbial platform: plant development on the right path

The development of a novel microbial platform will ensure the conversion of CO₂ into animal feeding and sanitizing products and the conversion of biogas for cosmetics and pet food products. The expertise of partners [MAHOU SAN MIGUEL](#), [SYSPRO](#), [UVA](#), [AINIA](#), [GENIA BIOENERGY](#) and [AQUALIA](#) will ensure to achieve the expected performance of this microbial platform via a rigorous testing process under real conditions, showcasing its diverse potential applications. The complete design for the demo bioreactors is finished, and lab-scale tests to define operational parameters are currently taking place to ensure a successful scale-up in the upcoming months. By the end of the project, **the team expects the advanced microbial platform to deliver a range of impressive outputs**. During the project, pilot plants with production capacities of 490 kg per year of caproic-rich fatty acids for feed products, 50 kg per year of chlorine for sanitizing solutions, 20 kg per year of ectoine for use in cosmetic formulations and 482 kg per year of Single Cell Protein for pet food will be deployed. These anticipated results will demonstrate the platform's potential to drive sustainable innovation across multiple industries. These are demo scale yearly production capacities, with the prospective to be scaled-up to industrial scale by 2030.

Integration and cascading process

The design and operation of the Down Stream Process (DSP) demo units, which are part of the insect and microbial platforms, will be evaluated to ensure they work effectively over the long term. Right now, laboratory tests are taking place to optimise the parameters for scaling up the downstream processes to produce caproic acid, hypochlorite, SCP, and ectoine in a sustainable and cost-effective way. The construction and operation of the abovementioned platforms and process integration as a biorefinery is expected for the upcoming months.

“Integrating circular economy in a traditional industry such as the brewery industry is still a major challenge,” says Rubén Vera, Environmental Coordinator of Climate Change and CHEERS Project Coordinator at MAHOU SAN MIGUEL. *“However, with CHEERS, we are contributing to bring a shift towards sustainability in this industry, in a context where a societal change in environmental behaviour is highly needed to comply with the EU Green Deal.”*

About CHEERS

CHEERS is an EU-funded project led by [Mahou San Miguel](#) with a consortium of 11 partners from 5 countries, including technology providers, end-users and research organisations: [AQUALIA](#) (Spain), [HIDROTEC](#) (Affiliated entity) (Spain), [AINIA](#) (Spain), [UNIVERSIDAD DE VALLADOLID – INSTITUTO DE PROCESOS SOSTENIBLES](#) (Spain), [PROTEINSECTA](#) (Spain), [INNOVARUM](#) (Spain), [SYMRISE AG](#) (Germany), [GENIA BIOENERGY](#) (Spain), [SYSPRO AUTOMATION](#) (Spain), [THUNDERFOODS](#) (Portugal), [ZHAW](#) (Switzerland), [EARTHWATCH](#) (United Kingdom).

More information from the project is available at: <https://cheers-project.eu/>



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This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101060814. This work was also funded by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee [grant number 10050977].

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