CHEERS

Producing novel non-plant biomass feedstocks and bio-based products through upcycling and the cascading use of brewery side-streams.

Project presentation

August 2023

Funded by the European Union
UK Research and Innovation
EU GRANT AGREEMENT Nº 101060814
UK GRANT Nº 10050977
Coordinator MAHOU SAN MIGUEL
D&C ainia innovarum earthwatch EUROPE

Producing novel non-plant biomass feedstocks and bio-based products through upcycling and the cascading use of brewery side-streams.

SEP 1ST 2022 — **AUG 31ST 2026**

48 months

Coordinated by: MAHOU SAN MIGUEL (ES)
Overall budget: € 7,355,347
Project partners: 12
Consortium geography: 5 countries
Grant Agreement: 101060814

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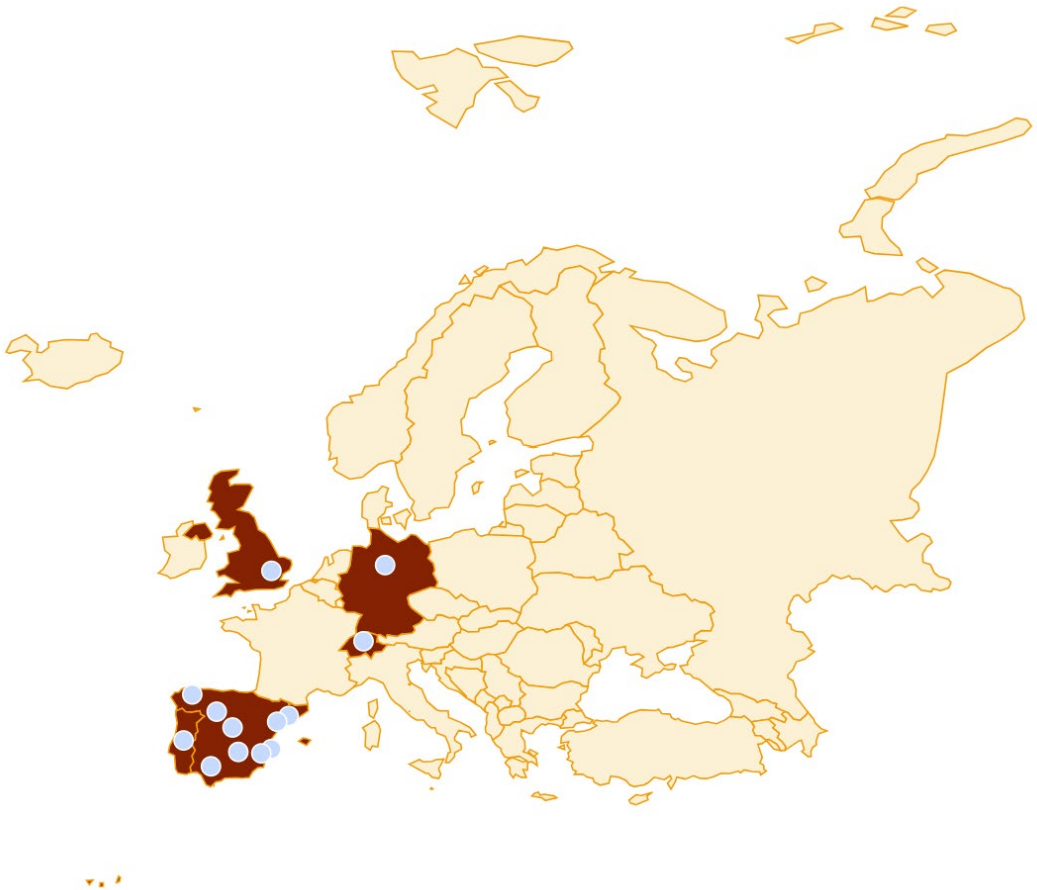
The partners

12 partners & 1 linked third parties from 5 different countries form the entire CHEERS consortium

MAHOU SANMIGUEL
ainia
aqualia
iSP Institute of Sustainable Processes UNIVERSITY OF VALLADOLID
UVa
THUNDER FOODS
proteinsecta
Genia bioenergy
zhaw Life Sciences and Facility Management
Institute of Natural Resource Sciences
innovarum
Fostering innovation in the agri-food sector
earthwatch EUROPE
SYSPRO AUTOMATION BEYOND LIMITS
symrise



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What is CHEERS?

The CHEERS project aims to revalorise under-utilised or waste by-streams from the brewing industry for subsequent conversion into five high value-added industrial bio-products through a biorefinery approach.

The initiative proposes to achieve a reduction in the resource use and environmental impact of the beer production chain and aims to cover wider impacts on biodiversity and agricultural land use.

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The strategy

CHEERS offers a modular solution where bio-based industries can configure their optimal combination by selecting from 5 novel biotechnological routes that generate 5 bioproducts for industrial applications, with attractive market opportunities: insect protein, disinfectant, microbial protein, ectoine and caproic acid-rich fatty acid mixture (or caproic-rich product).

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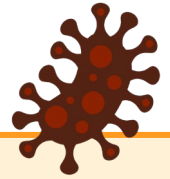

All CHEERS value chains are based on new bioprocesses and innovative biofermenters combined with sustainable transformation processes, which will be validated at a demonstration scale in an industrial brewery. Ultimately, each value chain will achieve a minimum 45% reduction of the carbon footprint.

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The CHEERS solution & impact

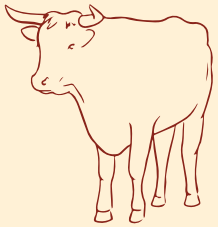
An integral solution for the valorisation of all by-products and side-streams via 2 novel bio-based production platforms (insect and microbial) and 5 bio-based products.

INSECT PLATFORM

Upgrading of bagasse into 200L **insect-based protein drinks**.

MICROBIAL PLATFORM

Conversion of CO_2 and wastewater into 490 kg/y of **caproic-rich fatty acids mixture for feed**.



Conversion of CO_2 into 50kg/y chlorine for **sanitizing products**.

Conversion of biogas into 20kg/y of ectoine for **cosmetic products.**

Conversion of biogas into 482 kg SCP/y for **pet food production**.

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Presentation prepared by Innovarum

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