

CONSORTIUM

The success of the project will be ensured by a multidisciplinary and international consortium led by the GENOCOV research group of the Universitat Autònoma de Barcelona.

The 16 partners, coming from 9 different EU countries, range from:

Bio-based industries: SunPine AB, Damm and Bioagra

Technology developers: VITO, UFZ, LEITAT, Processium, Avantium, Universitat Autònoma de Barcelona, University of Natural Resources and Life Sciences – Vienna, Luleå University of Technology

End-users: Nutrition Sciences and Novamont

Knowledge hubs: BETA from Universitat de Vic, ISLE and CO₂ Value Europe



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VIVALDI

innovative **bio**-based chains
for CO₂ **val**orisation as
add-value organic acids



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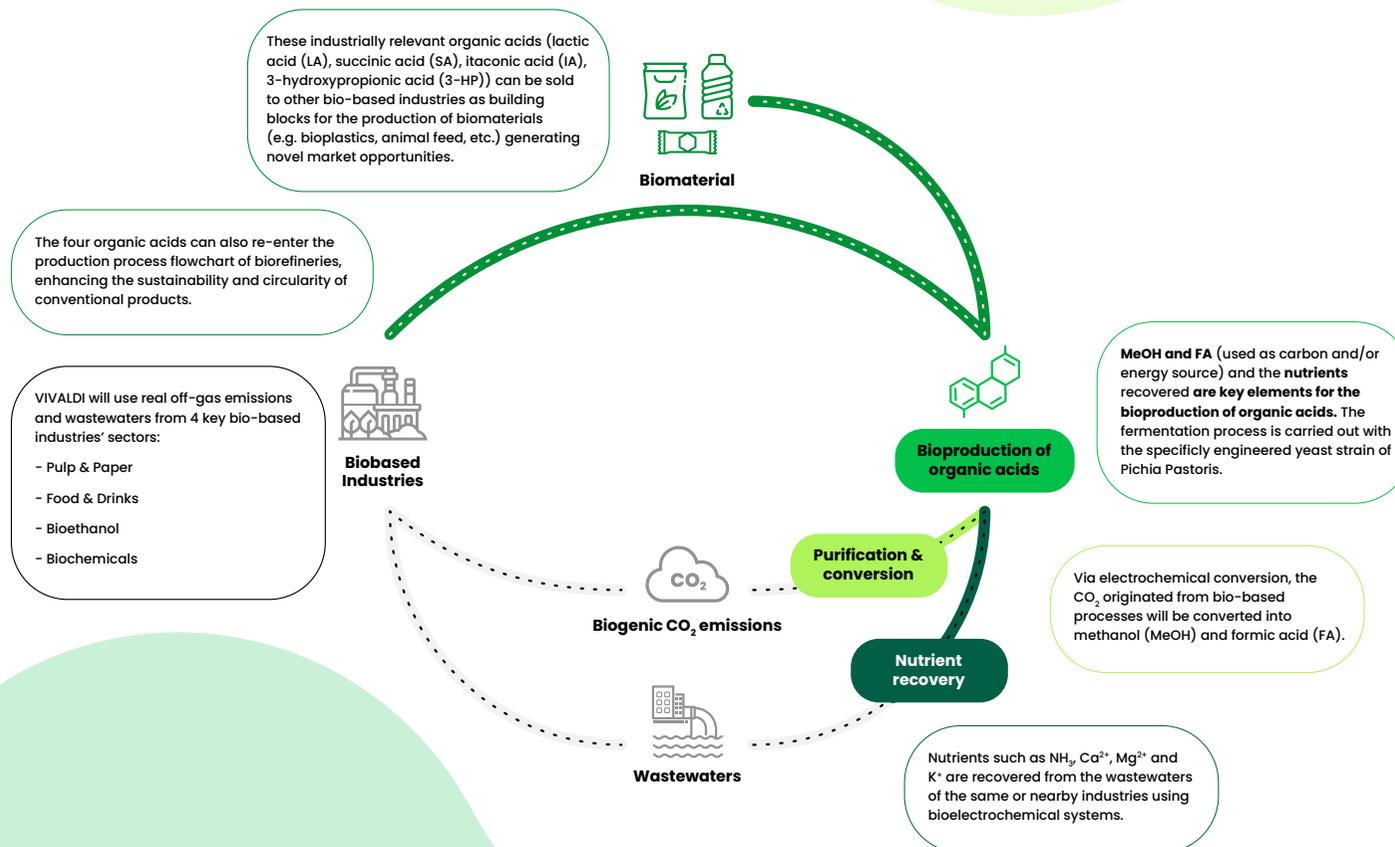
ABOUT THE PROJECT

As a response to the urgent need to reduce greenhouse gas emissions, VIVALDI project develops an innovative and cost-effective solution to recycle the CO₂ emissions of bio-based industries and help this sector to shift towards a circular economy.

Focusing on four key bio-based industries, VIVALDI solution capture, enrich and transform in a two-steps process (electrochemical and biological) real off-gas emissions into four industrially relevant organic acids.

These valuable platform chemicals can re-enter in the production process of bio-based industries, enhancing the sustainability of their current products, or can open new business opportunities as building blocks for novel biomaterials (e.g. bioplastics).

Based on this circular concept, these industries will reduce their greenhouse gas emissions, their dependency on fossil carbon import and the exploitation of key resources such as energy, raw materials, land and water.



PROJECT IMPACT

VIVALDI envisages a new CO₂-based sector that is environmentally and economically competitive with the current fossil-based alternatives.

By adopting the VIVALDI concept biorefineries will "kill two birds with one stone": not only their carbon emissions will be reduced, but the production of organic acids that today is very energy-intensive will become cheaper and more sustainable.



Negative to neutral CO₂ emissions in the production of organic acids



-20% cost & energy demand for the production of organic acids compared to fossil-based industries



-25% cost for ammonia recovery from industrial wastewater

The benefits of VIVALDI's implementation will be quantified with a comprehensive sustainability and circularity assessment. Moreover, a replicability study will be conducted to ensure that the VIVALDI solutions can be early adopted by biorefineries and other industrial sectors that aims to reduce their CO₂ emission.