



ToFuel – AN INTEGRATED BIOREFINERY FOR SUSTAINABLE AVIATION FUEL PRODUCTION FROM TOMATO RESIDUES

Overall project overview



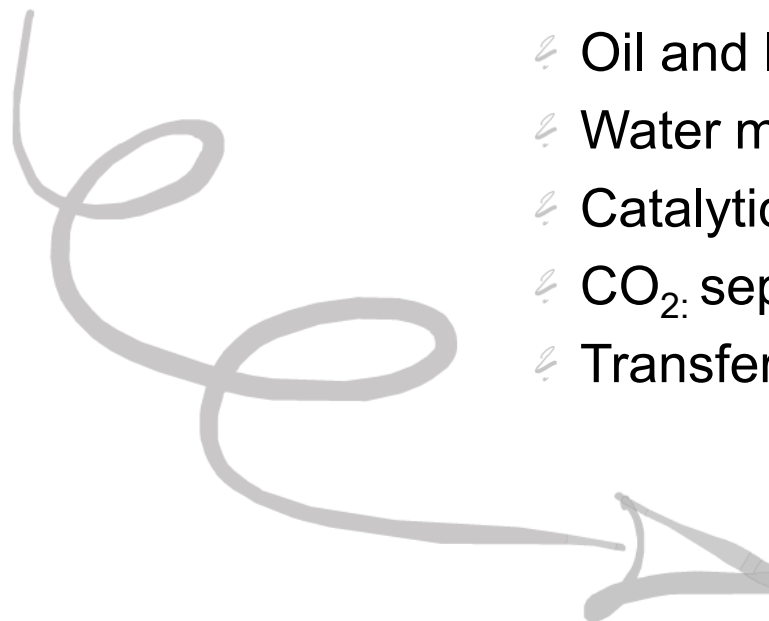
Residues from Tomato production and processing

Accompanying research:

- ⚡ Feedstock procurement
- ⚡ Additional feedstocks
- ⚡ Social and prospective LCA
- ⚡ LCC
- ⚡ Technoeconomic assessment
- ⚡ Exploitation and dissemination

Technical questions:

- ⚡ Fractionation (Extrusion, HTL)
- ⚡ Conversion (Fermentation, HTL)
- ⚡ Oil and lipid purification
- ⚡ Water management
- ⚡ Catalytic conversion to SAF
- ⚡ CO₂: separation and utilization via Algae
- ⚡ Transfer to relevant scale

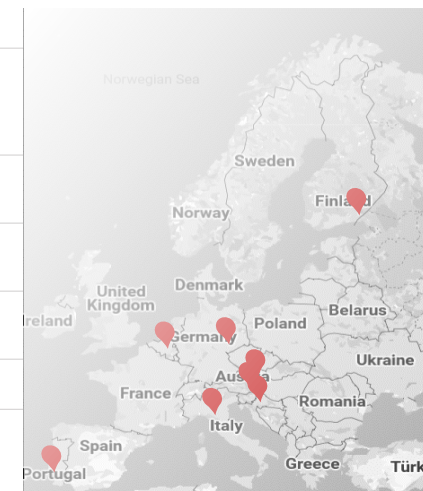


Sustainable aviation fuel
Fertilizer
Fodder
Nutritional oil

Partner institutions and responsibilities



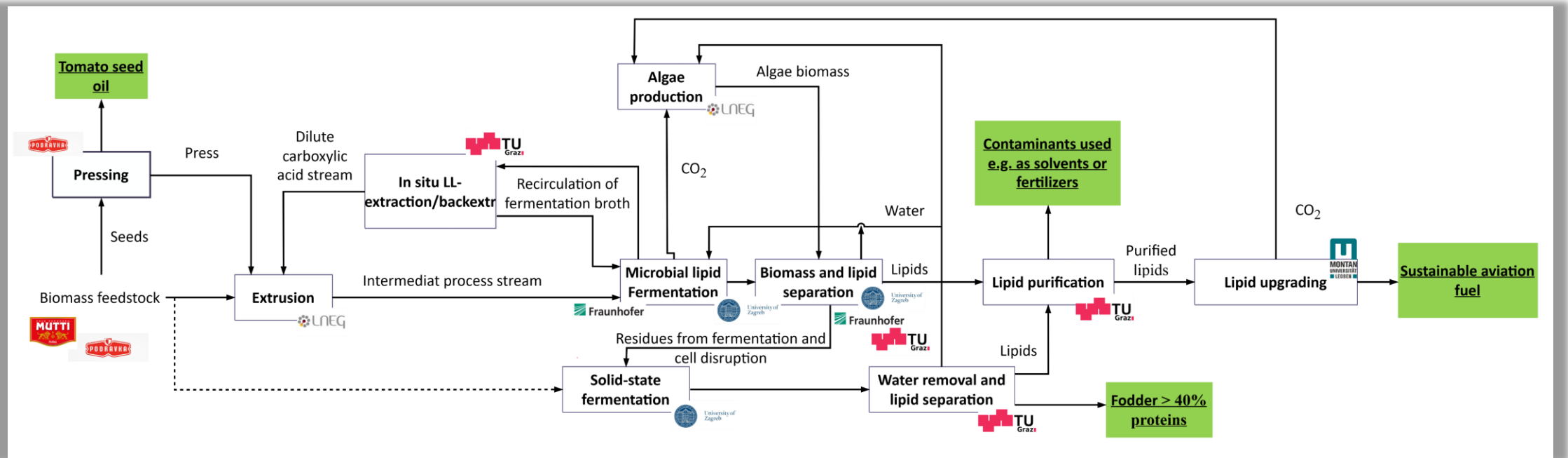
Participant organisation name	Responsibility
Graz University of Technology (Coordinator)	<ul style="list-style-type: none"> • Water management and lipid/oil purification • CO₂ capture – membrane technology for algae growth
Laboratório Nacional de Energia e Geologia	<ul style="list-style-type: none"> • Extrusion • Hydrothermal liquefaction • Algae growth
University of Zagreb, Faculty of Food Technology and Biotechnology	<ul style="list-style-type: none"> • Fermentation processes • Seed pressing
Technische Universität Wien	<ul style="list-style-type: none"> • Mass- and Energy balances • LCA
Lappeenranta-Lahti University of Technology LUT	<ul style="list-style-type: none"> • Prospective LCA • LCC
Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.	<ul style="list-style-type: none"> • Scale up of fermentation processes
Montanuniversität Leoben	<ul style="list-style-type: none"> • Conversion of lipids and oils – SAF
European Sustainable Energy Innovation Alliance	<ul style="list-style-type: none"> • Dissemination and Exploitation
Energy Efficiency in Industrial Processes	<ul style="list-style-type: none"> • Dissemination and Exploitation
Mutti S.p.A.	<ul style="list-style-type: none"> • Feedstock provider
Podravka Food Processing Industry, Inc.	<ul style="list-style-type: none"> • Feedstock provider



Project overview – process path A

Development and comparison of two different fractionation pathways

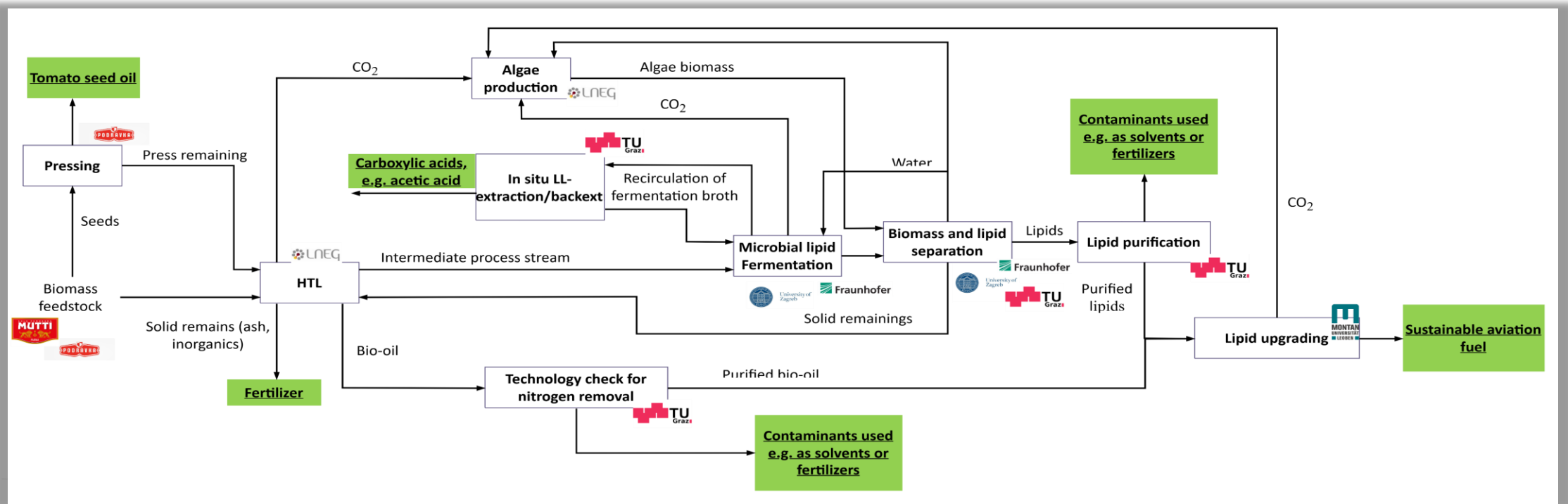
A) Extrusion followed by fermentation



Project overview – process path B

Development and comparison of two different fractionation pathways

B) Hydrothermal Liquefaction





Funded by
the European Union



Funded by
the European Union

Funded by the European Union under Grant number 101235233. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.