



# Carbon Negative Biofuels from Organic Waste

**Margarita de Gregorio**

**BIOPLAT**

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# This is CARBIOW



<https://www.youtube.com/watch?v=CZXAn0ZDhVo>



# CARBIOW Team





## From organic waste to green maritime and aviation fuels

**CARBIOW (Carbon Negative Biofuels from Organic Waste) is a Research and Innovation Action funded by the European Commission under the Horizon Europe Programme, which addresses green transition and circular economy by proposing novel technologies that cover the whole process of conversion of organic waste to maritime and aviation biofuels.**

The goal of CARBIOW is to establish an efficient and scalable process to convert the Organic Fraction of Municipal Solid Waste (OFMSW) and other hard-to-utilize solid organic wastes to biofuels



# Key Targets



**Establishing a new pre-treatment process of OFMSW** where a cleaner, denser, carbon-rich, dry, and homogenous solid biofuel is produced



**Utilization of pure oxygen (nitrogen-free gas)** in combustion and gasification to produce clean syngas



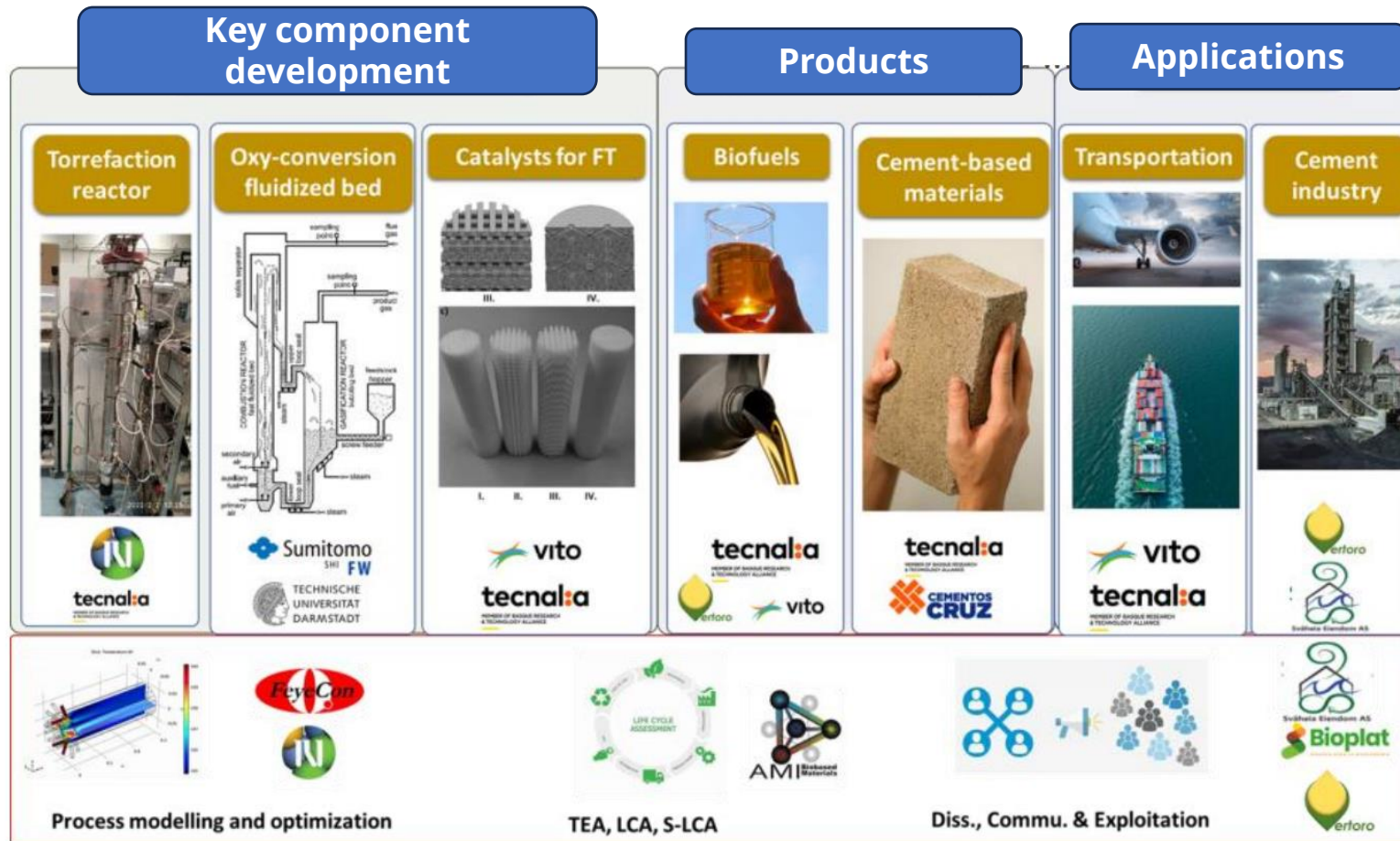
**Carbonization of gasification ashes with CO<sub>2</sub>** through innovative carbonation techniques to decarbonize the cement industry and address carbon negativity



**Production of Fischer-Tropsch fuels** for the maritime and aviation industry. The latter target will focus on the production of alcohols for maritime, and kerosene for the aviation sector



CARBIOW starts with **torrefactions** of the organic waste as a pre-treatment, followed by **oxygen-gasification** of the torrefied matter to **produce clean syngas**, then **aviation and marine fuels** are produced via **Fischer-Tropsch process**. The **ashes from the gasification** are used to **capture the CO2** to **synthesize cement-based materials**.



# CARBLOW project added value



The ambition of CARBIOW closely contributes to the key aspects of sustainable development, green transition, and (bio)circular economy by:

**Establish novel techniques** such as torrefaction for organic waste pre-treatment and clean biofuel production.

**Boost novel technology** advancement in oxy-conversion of waste biofuels.

**Valorization of OFMSW** as a reliable, abundant, and secured source of biomass; besides boosting collaboration to establish a true bioeconomy.

**Decarbonization of hard-to-abate sectors** like aviation and maritime.

**Decarbonization of large industries**, such as cement, through CO<sub>2</sub> fixation by promoting innovative and efficient techniques and generation of new negative carbon footprint mineral feedstocks.







**Thank you for your attention**

<https://carbiow.eu/>  
<https://www.linkedin.com/showcase/carbiow-project>

[margadegregorio@bioplat.org](mailto:margadegregorio@bioplat.org)

