



**BIOSTREAM – Biotechnological Innovation for
Optimised Sustainable Transformation of Refinery
Emissions and Microalgae**

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Key features of BIOSTREAM:

- **Objective:** Develop a novel technology to convert microalgae biomass into sustainable aviation fuel (SAF) and bio-naphtha.
- **Bio-Sequestration:** Integration of refinery waste gas (CO₂) into microalgae cultivation for carbon capture and conversion to blue hydrogen.
- **Technology Focus:** Plate Catalytic Membrane Reactor (PCMR) Technology for the continuous conversion of industrial waste using wet microalgae at low temperature and pressure without dewatering and harvesting. PCMR Technology:
 - Directly converts wet microalgae to SAF and bio-naphtha.
 - Operates at 80°C and atmospheric pressure.
 - Eliminates the need for dewatering and harvesting processes.
 - Modular design allowing easy scaling.

Expected Outcomes of BIOSTREAM:

- **Reduction of GHG Emissions:** Estimated CO₂ savings of 153,720 tons/year in aviation.
- **Product Yield:** Minimum of 25 litres of SAF and 5 litres of bio-naphtha per month.
- **Economic Potential:** Reduction in operational costs by 2.25 times compared to conventional methods.

Looking for partners for BIOSTREAM

- Technological developers of catalysts and catalytic membranes.
- An industrial company interested to develop a suitable bioreactor for the pilot and scale-up phases.
- End-user tester of the SAF, bio-naphta and blue hydrogen, possibly better if they also have waste streams that could be used to produce those end-products.