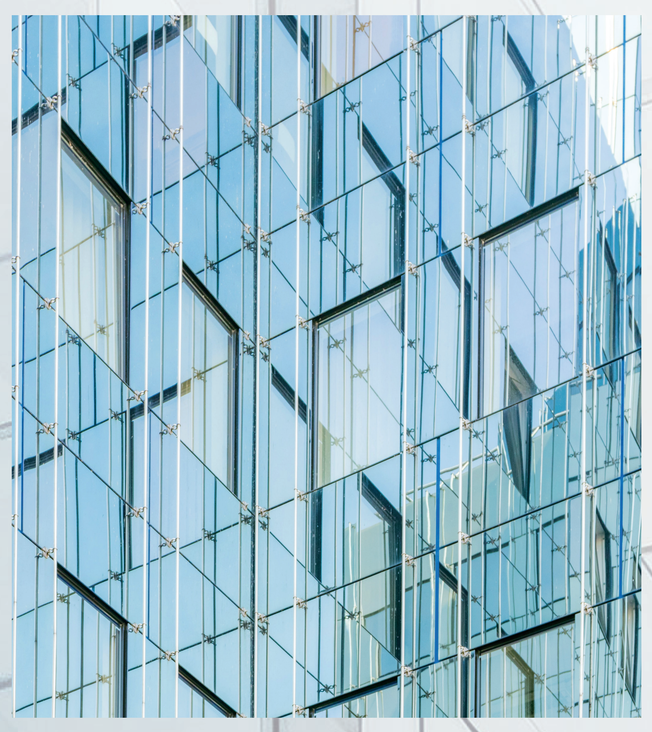
GIFFT Project:
Sustainable Glass Industry with Fuel-Flexible Technology

GIFFT
Sustainable Glass Industry

Context

Description:
The EU stands at the forefront of global glass production, having produced over 39 million tonnes in 2021. This achievement, however, comes with its own set of challenges. Glass manufacturing is notably energy-intensive, consuming 4.5 billion cubic metres of natural gas annually, which is 4% of Europe‘s total industrial consumption. The most energy-demanding stage in this process is the high-temperature melting of raw materials, accounting for over 75% of the total energy requirements.



Challenges

Facing the pressing need for an energy transition and increased circularity to align with the European Green Deal‘s objectives, the glass industry is at a critical juncture. The GIFFT project emerges as a beacon of innovation and sustainability in this scenario. It proposes a novel, sustainable hybrid and fuel-flexible technology aimed at revolutionizing the glass industry. This cutting-edge approach is expected to achieve a 75% reduction in CO_2 emissions per tonne of glass produced.

The GIFFT Innovative Approach

- Novel Heat Generation Process: A sustainable hybrid and fuel-flexible low-CAPEX technology for the glass industry.
- Biomass E-Gasification: Converts biogenic waste into biomass-derived gas (syngas), reducing reliance on natural gas and other fossil fuels.
- Plasma-Assisted Combustion: Enhances process heat production, ensuring cleaner syngas with higher calorific value.
- Utilisation of Ash Materials: Ash from biomass gasification is repurposed as raw material for glass manufacturing, reducing waste and further CO_2 emissions.

Impact

- Decarbonization: Aims for a 75% reduction in CO_2 emissions per tonne of glass produced.
- Energy Efficiency: Improves overall energy efficiency in glass production.
- Economic and Environmental Benefits: Utilises low-cost, locally available biogenic residues, contributing to circular economy principles.

GIFFT is not just a project; it‘s a vision for a cleaner, greener, and more sustainable future in glass production. Be a part of this revolutionary change. Let‘s make a difference together!

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Partners

CHALMERS UNIVERSITY OF TECHNOLOGY · LITHUANIAN ENERGY INSTITUTE · PANEVĖŽIO STIKLAS · PlasmaAir AG · SCHOTT glass made of ideas · Sheffield Hallam University Knowledge Applied · Technical University of Munich · VYTAUTAS MAGNUS UNIVERSITY · WIP RENEWABLE ENERGIES