

Advanced technologies for environmentally safe CO₂ reuse



CARBON CAPTURE, UTILISATION AND STORAGE

Supporting climate goals

As part of the EU Green Deal, the European Commission aims at fostering the continent's transition to a reliable, affordable, publicly accepted, sustainable and competitive energy system, and decrease our dependency on fossil fuels.

Achieving these objectives requires a thorough transformation of the energy system, combining low carbon profile and the development of safe and affordable alternatives to fossil fuels, while reinforcing Europe's economy.

The four projects involved in this Project Group - GICO, SO-FREE, BLAZE and LAURELIN - respond to the need for environmentally safe technologies for innovative carbon capture, utilisation and storage (CCUS), and CO₂ re-use technologies, working on larger scale, lower cost, and with higher conversion efficiency and higher availability.

Advanced solutions for different uses

The projects in this group focus on innovative technologies to support capture and convert carbon for a range of different uses, such as the transport sector.

The projects offer relevant exploitable results, such as:

Key results



Gasification Integrated with CO₂ capture and conversion



Solid Oxide Fuel Cell (SOFC) system for combined heat and power (CHP) generation



Low cost, Advanced and Zero Emission first-of-a-kind small-to-medium Biomass CHP



Advanced hydrogenation technologies



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Challenges

- ▶ SOCIETAL: Raise awareness of SOFC CHP across sectors, in support of decarbonisation and the uptake of advanced energy technologies.
- ▶ SCIENTIFIC: Combination of different types of technologies for gasification, demonstrating advanced solutions for a range of uses.
- ▶ INDUSTRIAL: Combination of different types of technologies for gasification, demonstrating advanced solutions for a range of uses.

Who benefits?



Industry



Research & Academia



Civil Society

Project Group



GICO

Gasification Integrated with CO₂ capture and conversion

gicoproject.eu



GA 101006656



SO-FREE

Solid oxide fuel cell combined heat and power: Future-ready Energy

so-free.eu



GA 101006667



BLAZE

Biomass Low cost Advanced Zero Emission small-to-medium scale integrated gasifier fuel cell combined heat and power plant

blazeproject.eu



GA 815284



LAURELIN

Selective CO₂ conversion to renewable methanol through innovative heterogeneous catalyst systems optimized for advanced hydrogenation technologies laurelin.eu



GA 959072



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