COUPLED

CO_2 Utilisation Process via Looping tEchnology Demostration

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Accelerating Europe's Path to Climate Neutrality

- Achieving net-zero emissions requires a deep transformation of the energy system
- Carbon Capture, Utilization and Storage (CCUS) could deliver up to 20% of global CO_2 reductions by 2050
- In Europe, >450 Mt of CO_2 per year is expected to be captured
- A significant share of captured CO_2 will be reused for low-carbon fuels and materials
- Innovative CO_2 utilization technologies must be validated at industrial scale

The COUPLED Solution

- It combines green hydrogen, biogas, recycle CO2 and industrial waste gas for cost effective renewable fuels
- It enables circular carbon use across multiple energy-intensive sectors
- It builds on advanced chemical looping and membrane technologies
- It converts biogenic and non-biogenic CO_2 into sustainable liquid fuels

Project Objectives

- Design, scale up and demonstrate chemical looping processes converting H_2 or biogas with recycled CO_2 into syngas
- Convert syngas into carbon-neutral fuels, including Sustainable Aviation Fuel (SAF)
- Deliver TRL7 validation and techno-economic, life-cycle and sustainability assessments
- Support rapid scale-up and market uptake through robust business models

Contact us

PROJECT COORDINATOR
Vincenzo Spallina
The University of Manchester
vincenzo.spallina@manchester.ac.uk

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