



C2FUEL

NEWSLETTER

Carbon Captured Fuel and Energy
Carriers for an Intensified Steel Off-
Gases based Electricity Generation
in a Smarter Industrial Ecosystem.

COORDINATOR

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Edito by the coordinator

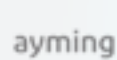
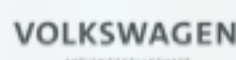
C2FUEL project aims to develop energy-efficient, economically and environmentally viable CO₂ conversion technologies for the displacement of fossils fuels emissions through a concept of industrial symbiosis between carbon intensive industries, power production, and local economy. The project has been successfully launched on the 1-2 Of July, 2019 through the kick-off meeting. It was held in Dunkirk, within the area where C2FUEL concept will be demonstrated between DK6 combined cycle power plant, Arcelor Mittal steel factory and Dunkirk harbor.

The carbon dioxide present in the blast furnace gas will be selectively removed and combined with green hydrogen generated by electrolysis fed with renewable electricity to produce two promising energy carriers. It will allow to simultaneously reuse CO₂ emission from the steel-making factory, electricity surplus in the Dunkirk area and to improve the operational and environmental performance of the DK6 combined cycle. C2FUEL unique circular approach could contribute to mitigate up to 2,4 Mt CO₂ per year while converting up to 11 TWh of renewable electricity into green energy carriers.

Achieving such ambitious objectives involves a strong consortium and C2FUEL partnership gathers the whole value chain necessary for production and use of CO₂ conversion to carbon-captured energy carriers: carbon captured supply, renewable hydrogen and fuel development, integration to power plant and operation, so as end-users and international promoters.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 838014.



C2FUEL Event 2019



DUNKIRK

Visit of DK6 power plant site during C2FUEL kick-off meeting

At the end of the kick-off meeting, all partners were invited to visit DK6 power plant where one of C2FUEL pilot demonstration systems will be installed and tested. A great occasion for each partners to take notice of the industrial-relevant environment of C2FUEL demonstration phase.



NANCY

6-months meeting to be held



BRUSSELS

INEA Workshop on CCU and CCS

C2FUEL project manager officers, Margaux Marot and Pierre Olivier, have attended on the 17th September the 4th INEA workshop of H2020 Carbon Capture Storage/Use (CCS/CCU) and Alternative Fuels. It was a great opportunity to present C2FUEL project and innovative approach to similar projects representatives and identify potential synergies with each of them in terms of communication and dissemination actions.



Future work within the next 8 months

Many actions have started in parallel in the first four months of C2FUEL project. So far, first membranes for DME production have been manufactured and sent by TecNALIA to TU/e facilities and the first studies regarding impurities impacts on CO₂ conversion catalysts have been carried out.

The next 8 months will be dedicated to both technological developments and demonstration phase preparation.

On one side, (i) solid oxide electrolysis cells and stacks will be manufactured by Elcogen and their characterization by DTU will start, (ii) TU/e will start screening potential catalysts for CO₂ conversion into DME (iii) DENS and TU/e will jointly define the most appropriate catalyst for CO₂ conversion into formic acid. On the other side, (i) ENGIE will perform Arcelor Mittal blast furnace gaz exhaustive characterization in order to appropriately design the BFG pretreatment unit with CNRS, (ii) ENGIE will define DK6 pilot system specifications, (iii) CNRS will carry out a first design of the CO₂ capture unit.