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## Milestones ConsenCUS

Hello ConsenCUS community!

We celebrate a couple of milestones in our H2020 ConsenCUS project in this newsletter! At the end of this month the project is running exactly 1 year. In this first year, a lot of work has been done behind the scenes to prepare for the technology demonstration that begins end of 2023. You can imagine that a lot of work needs to be done to be ready for this operation of demonstrating our pilot-plant in 3 different industrial settings. The sites are visited to improve the integration (see article Site-visit cement factory). We also look back on a very fruitful second physical meeting of the project in Copenhagen on 5th and 6th of April 2022 (see more under Copenhagen). The meeting is an important milestone where we all could align our research, work and views. We are on track with our deliverables. The first ones are ready to go public (see Storage). Please look for the section “Introducing” for more details on the partners Rijksuniversiteit Groningen and Coval Energy BV. So a lot to read about ConsenCUS, enjoy this newsletter!

Dirk Koppert, Project Manager

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## Site-visit to cement-factory for CO2-capture demonstration

The technical team of DTU – the ConsenCUS partner involved in the construction of the demonstration plant- made a visit to Aalborg Portland. Aalborg Portland, a leading site in the CEMENTIR holding with regard to sustainable activities and CO2 emission savings, is the first industry where the ConsenCUS technique will be installed and tested.

[Read more](#)

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## General Assembly Copenhagen

The ConsenCUS team met each other for the second time. In October 2021 the partners Wetsus and New Energy Coalition hosted the first General Assembly in the Netherlands. Because of the great interaction, and the challenging nature of the project, the second meeting was also organized in a physical setting. This time the Danish

Technical University hosted us in Copenhagen. Intensive progress meetings, updates from all workpackages and also a lot of bilateral finetuning was scheduled. We look back on another successful meeting. The site-visit to Copenhill, a waste incinerator that pilots (another) CO2 capture model of DTU was very interesting.


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## Storage

The ConsenCUS project tries to model net-zero CO2 clusters. For the first time, an analysis of optimized cluster formation including emitters, transport, utilisation and storage will be conducted. To really achieve net-zero based cluster, temporary storage is needed to add to the buffering capacity of the energy system. One of our first public reports is a review of literature about the mechanic behavior of salt formations for temporary storage. Although the project only models how to make use of temporary storage for Net-Zero carbon Value Chains, the behaviour of carbon in such intermediate storage facilities should be researched further. You can access the report [here](#).

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# Introducing the partners



# The partners behind ConcenCUS

In each newsletter, we will introduce two partners who are associated with this research project. This newsletter we introduce University of Groningen and Coval Energy.



## University of Groningen

Since its foundation in 1614, the University of Groningen has enjoyed an international reputation as a dynamic and innovative centre of higher education offering high-quality teaching and research. Belonging to the best research universities of Europe and joining forces with prestigious partner universities and networks, the University of Groningen is truly an international place of knowledge. The University of Groningen traditionally ranks among the 100 strongest universities world-wide.

Energy is a key research theme at the University of Groningen. Within the ConsenCUS project University of Groningen will lead the research on CO<sub>2</sub> clusters. The different components (capture, utilisation, transport and storage) among the CCUS value chain, will be analyzed as a whole, considering the interactions and interdependencies among them. Models will be developed for the optimal design and operation of a CO<sub>2</sub> cluster to minimize the total cost of the value chain by considering emission sources, capture facilities, pipelines, intermediate sites and CO<sub>2</sub> utilization and storage sites quantitatively. This provides us the means to integrate all components efficiently and leads to better management of the whole value chain.



## Coval Energy

Coval Energy is a Dutch company dedicated to create value from CO<sub>2</sub>, which is reflected in its name (CO<sub>2</sub>-to-value). Hereto it is developing proprietary patented technology. Basis of the technology is to convert CO<sub>2</sub> with water and sustainable electricity in an electrochemical process to formic acid or formate, under pressure. The reason of producing formic acid or formate is the fact that such process requires the least amount of energy, and that the process has a high selectivity.

Over the last 6 years Coval has worked with reputed partners in several projects to bring its technology further to the market. The ConsenCUS project is for Coval the ideal platform to build a pilot plant for its technology. In such way the technology can mature to a level of TRL-7.

At this moment the Coval team consists of 6 persons, and is growing. Coval is working with partners to enable a large scale market outlet for re-used CO<sub>2</sub>. At this moment a route with fermentation seems the most interesting. In such way the formic acid or formate is used as a feedstock for a fermentation process in which proteins and fatty acids are produced. The proteins can be used as additive for cattle and fish feed and can replace soy beans. The fatty acids can be used to produce jetfuel, to displace kerosene produced from fossil fuels.



## First Deliverables

Are you interested in our results? [Click here](#) to download our first public deliverables.



*This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement N° 101022484.*



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