

Carbon2Value Project Summary

Project: 2S01-094 CARBON2VALUE

More information: www.carbon2value.be

In the Carbon2Value project, ArcelorMittal, Lanzatech, and Dow collaborated with the University of Lille, The Regional Development Office for East Flanders (POMOV) and the Institute for sustainable process technology (ISPT) on the exploration and development of carbon abatement technologies. The project was co-funded by Interreg2Seas (project 2S01-094) and executed in Belgium, France, The Netherlands and the UK to ultimately achieve CO₂ emission reduction in the 2Seas region.

The partners have worked on 3 options to capture CO₂ from steel production. This will potentially allow to avoid CO₂ emissions in two ways: 1) the captured CO₂ can be stored and/or utilized (CCS/CCU); and 2) the carbon monoxide and hydrogen in the CO₂ lean gas could be used to make valuable fuels and materials.

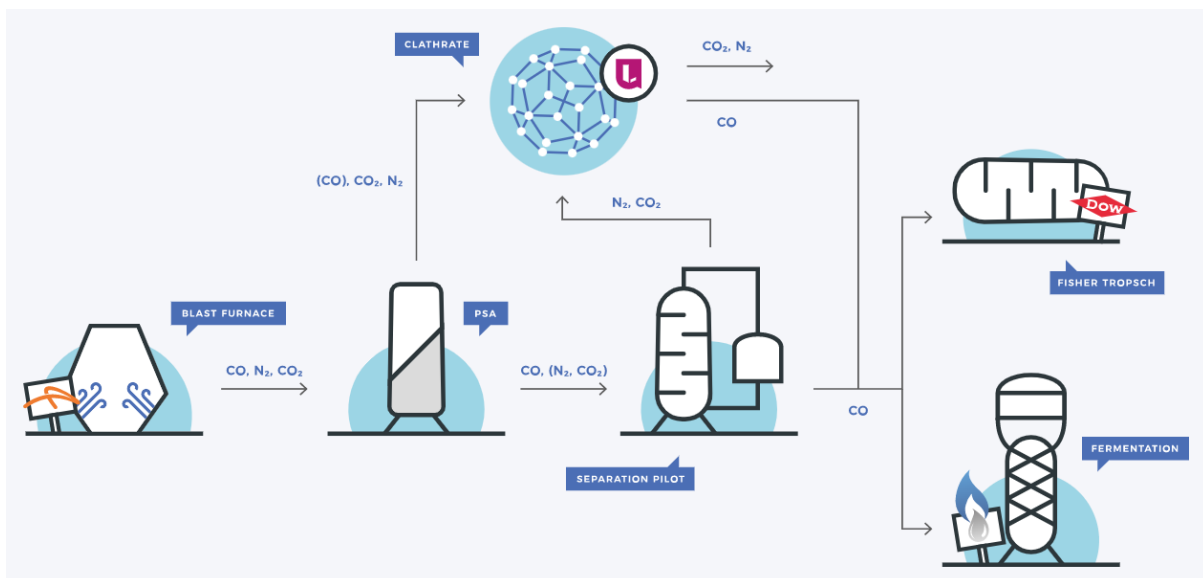
ArcelorMittal has developed a pressure Swing Absorption Unit (PSA) that can be used for the first-generation CO₂ avoidance project (Steelanol). Dow has developed and operated a CO₂ capture unit based on amine technology. It was demonstrated that this technology also works in a demanding environment such as a steel mill and that the resulting gas has a quality that is good enough for valorization in the fuel and material industry. A follow-up project has started, and the Carbon2Value CO/CO₂ separation pilot delivers gas to a new unit since October 2021.

Lanzatech has used the gas from the Dow pilot plant and demonstrated that the treated gas is an excellent feedstock for their technology to make ethanol from industrial waste gases.

POMOV has demonstrated that Carbon2Value options not only deliver affordable solutions for CO₂ abatement, but also that the technology has a great potential in the region to deliver jobs.

U Lille has worked on the development of a novel technology to capture CO₂. Although this method has potential, it still needs further development to be implemented and this work continues.

Overall, the partners were able to demonstrate several options that can now become part of the route towards a carbon-neutral regional industry in 2050. An extensive summary, as well as more detailed information on the outputs and deliverables of the project can be found at the project website.



Project movie: <https://youtu.be/rd4qDRYOMvA> (EN) - <https://youtu.be/8p-kdwa4Z4E> (NL)