**ECRA CCS Project Information**

**Project Developer Website**

ECRA <https://ecra-online.org/homesite/>

(European Cement Research Academy)

**Project Location**

Dusseldorf, Germany

**Project Type**

CO2 Capture

**Project Description**

ECRA has been working for more than 10 years on the development of carbon capture technologies for the cement industry with a special focus on oxyfuel technology. In that time an oxyfuel cement kiln has been developed to a level, which would allow to demonstrate this technology on industrial scale.

**Operational Status**

Operational Phase

ECRA’s CCS Project is in Phase IV, in which the possibility of initiating an industrial-scale oxyfuel kiln has been examined. An extensive site selection process for the demonstration of the oxyfuel process was carried out and two cements plants – one in Italy and one in Austria – were chosen for the conduction of the trials. However, basically due to difficult funding possibilities ECRA decided not to pursue these oxyfuel trials in the selected cement plants.

Instead, based on ECRA’s work many cement producers have started to work on different carbon capture projects. They all have their own approaches, depending on the local conditions at the plants but also with respect to the use of storage potential for the CO2. One project is taking immediate advantage of ECRA’s oxyfuel approach: four ECRA members have founded the research corporation CI4C (Cement Innovation for Climate) which has the objective to investigate the practical applicability of the oxyfuel technology in the clinker burning process. The trials shall be carried out in a cement plant in Southern Germany.

ECRA continues its research work on carbon capture technologies. A main focus has been extended to the question of what will be the right CO2 infrastructure to connect cement plants in which CO2 is captured with appropriate storage sites or processes to reuse the CO2. Also ECRA will have a look at the political and legal framework for CO2 infrastructures to give a technical input whenever necessary.

**Technology Description**

ECRA has gained experience in research about different CO2 capture technologies including post-combustion, partial oxyfuel and total oxyfuel CO2 capture, specifically applied in the cement industry. Furthermore, ECRA has studied different options for the reuse of CO2 which can be achieved by various processes which convert CO2 into value-added products.

For several years ECRA has cooperated with the Norcem Brevik cement plant in Norway where different post-combustion technologies (amine scrubbing, adsorption technology, membrane technology, calcium looping process) have been tested under realistic conditions. Meanwhile it was decided to realize an industrial-scale project with Aker Solutions’ amine technology. Transport and storage of the captured CO2 will be carried out by the Northern Lights Project. The final decision for the project depends on the funding from the Norwegian Government which is expected in 2021.

**Project Financing**

Up to now the ECRA CCS Project has been funded by the ECRA members.