

CO₂ to Energy: ECRA collaborates with the University of Mons

New academic chair will create a centre of scientific expertise in the field of carbon capture and re-use in cement production

On 24 April 2013 ECRA and the University of Mons (UMONS) in Belgium signed a significant agreement to enable the establishment of an academic chair entitled "CO₂ to Energy: Carbon Capture in Cement Production and its Re-use".

Since 2007 ECRA has been examining the technical and economic feasibility of CCS technology as a potential application in the cement industry, laying particular emphasis on the global perspective of its research and also on the aspect of sustainability.

UMONS, within the framework of its Research Institute for Energy, has for several years been developing multidisciplinary and applied research activities related to carbon capture and storage, as well as more generally to absorption and adsorption techniques for the gas separation and purification in industrial applications.

Now ECRA and UMONS have joined together to create the new chair within the University, which will be financed by ECRA. The main objective of the chair is to create a centre of scientific expertise in the specific field of carbon capture and re-use in cement production, and to promote research and innovation. It will support research activities by financing fellowships for postdoctoral researchers or PhD students, visiting

professors and experts. Graduate students will also be associated with the scientific activities of the chair within the framework of masters' theses and internships.

Professors and researchers from UMONS will share their scientific expertise with experts from ECRA, who will contribute their own expertise and provide funding for the chair's activities. A scientific committee with representatives from ECRA and UMONS will manage the chair's activities and guide its development.

The scientific framework of the chair will contain studies related to CO₂ capture processes applied to the cement industry, and the subsequent potential use of CO₂ as new fuels. A particular research focus will be placed on:

- oxygen production and the subsequent comparison of different production technologies
- flue gas treatment for CO₂ capture, including not only oxyfuel combustion, but also pilot studies and projects on post-combustion technologies
- the re-use of CO₂ which can be achieved by various processes which convert CO₂ into methanol or methane, taking advantage of renewable electrical energy.



ECRA and UMONS celebrate their cooperation. From left to right: Marc Frère (President of the Research Institute for Energy - UMONS), Paul Lybaert (Dean of the Faculty of Engineering UMONS), Daniel Gauthier (Chairman of ECRA), Calogero Conti (Rector of UMONS), Martin Schneider (Managing Director of ECRA).

New environmental legal requirements for the European cement industry

IED and BAT Conclusions document set stricter standards to regulate emissions

European environmental law affects the activities of more than 233 installations producing cement with a total number of around 300 kilns. Over the past decades the European cement industry has continually optimised existing abatement technolo-

gies and established new technologies to reduce emissions such as dust, nitrogen oxide (NO_x), ammonia (NH₃), carbon monoxide (CO) sulfur dioxide (SO₂), mercury (Hg) and several organic compounds emissions. As a consequence, significant im-

provements in air quality and environmental protection have been achieved.

The state of technology requirements and emission limit values in Europe is regulated by the Industrial Emis-