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Deep decarbonisation is within reach of Europe’s industrial regions

- International ALIGN-CCUS partnership unveils guidelines for accelerating transition to low-carbon economy through climate technologies
- Full set of results, presentation videos and themed infographics at: http://www.alignccus.eu/our-results

An international partnership of science and industry has concluded three years of multi-disciplinary research aimed at transforming Europe’s industrial regions into economically robust, low-carbon centres by 2025.

The ALIGN-CCUS project, funded through the ERA-NET ACT programme, focused on delivering tools and guidelines to support the quick and cost-effective delivery of large-scale carbon capture, utilisation and storage (CCUS) technologies in Germany, the Netherlands, Norway, Romania and the UK.

Later this year, nations will gather at the COP26 climate talks in Glasgow, Scotland, to review Paris Agreement commitments and assess progress on limiting the global temperature increase to 1.5C above pre-industrial levels. CCUS is now widely accepted as a key part of climate action across Europe.

The ALIGN-CCUS project’s key results include:

- Rigorous pilot-scale testing of carbon dioxide (CO₂) capture technology over a record number of hours to address technical challenges
- New standards and solutions for cost-effective, reliable CO₂ transport and injection
- A new standard for characterising geological CO₂ storage sites during CCUS development
- Ambitious large-scale demonstration of synthetic fuel production from CO₂ in an industrial setting
- Practical guidelines for developing full-chain CCUS for industrial clusters
- The most extensive international research on societal perceptions and impact of CCUS
Peter van Os, TNO, Project Coordinator, said: “World-leading expertise, teamwork and cross-border cooperation have defined our project and produced results, which will contribute to meeting Europe’s climate targets through the deep decarbonisation of its industrial centres.”

Ragnhild Rønneberg, Research Council of Norway and ERA-NET ACT Programme Coordinator, said: “International R&D collaboration and knowledge sharing are key elements in the successful development and implementation of CCUS. ALIGN-CCUS has really shown that joining forces, resources, skills and tools across borders provides results that the CCUS community itself can be proud of but which also have great implications for society and policy development for CCUS in Europe.”

The ALIGN-CCUS [www.alignccus.eu] project saw 30 science and industry partners from five European nations collaborate on climate action. Researchers shared their findings online late last year during two half-day sessions attended by a wide range of international stakeholders: from potential CCUS operators to policy makers and NGOs.

*Carbon capture, utilisation and storage* (CCUS) technologies capture CO₂ from large emitting sources and either store it permanently in deep geological storage sites or use it to make everyday products. CCUS can deliver significant cuts in emissions from industrial and power sectors. Its deployment is recognised as crucial to limiting global temperature increases to below 2°C and averting the worst impacts of climate change.

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Notes to Editors

- **The ALIGN-CCUS project** focused on specific regions in five European countries: namely, North Rhine-Westphalia in Germany, Rotterdam in the Netherlands, Grenland in Norway, Oltenia in Romania, and Teesside and Grangemouth in the UK.
- **Accelerating CCS Technologies (ACT)** is a European initiative to accelerate the deployment of safe and cost-effective CCS [http://www.act-ccs.eu/](http://www.act-ccs.eu/). The ACT ALIGN CCUS Project No 271501 was co-funded by ACT and received funding from participating countries: Forschungszentrum Jülich (Germany), the Executive Agency for Higher Education, Research and Innovation Funding (Romania), Ministry of Economic Affairs/Rijksdienst voor Ondernemend Nederland (The Netherlands), The Research Council of Norway (Norway) and the UK Department for Business, Energy & Industrial Strategy (BEIS) (UK). It is co-funded by the European Commission under the Horizon 2020 programme ACT, Grant Agreement No 691712.
- The ALIGN-CCUS international project consortium included:
  - **Germany**: Asahi Kasei Europe, Bosch, FEV Europe, Forschungszentrum Jülich, Mitsubishi Power Europe, RWE Power, RWTH Aachen University
  - **The Netherlands**: Rijksuniversiteit Groningen, TAQA Energy, TNO, University of Leiden
o **Norway:** Bellona, IFE, NORCEM/Heidelberg Cement, NTNU, SINTEF Industry, Technology Centre Mongstad, University of South-East Norway, Yara
o **Romania:** CO2 Club Association, GeoEcoMar, NUSPA, PicOil
o **UK:** British Geological Survey, Heriot-Watt University, Imperial College London, Scottish Enterprise, Tees Valley Combined Authority, SCCS/University of Edinburgh, University of Sheffield

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