



CCS European heavyweights form Alliance TRI4CCS

The research institutes SINTEF in Norway, TNO in the Netherlands and IFP Energies nouvelles (IFPEN) in France have joined forces in the newly established "Tri4CCS Alliance", which aims to make the capture, transport and storage of CO₂ (CCS) safer and more cost-effective.

Ready to tackle the coming CCS research challenges

IFPEN, SINTEF, TNO are supporting the efforts of energy utilities, equipment suppliers and authorities via their research and innovation efforts related to CCS - i.e. the future capture, transport and underground storage of CO₂ from fossil-fuelled power stations and process industry. They are major contributors to international research on clean energy and have regularly cooperated during the past 15 years for their own national and regional authorities, the European Commission and industry. The Alliance members contribute to full-scale CCS on the Sleipner and Snøhvit gas fields off the coast of Norway, and in the onshore projects of In Salah in Algeria and Lacq in France.

In a nutshell: TRI4CCS offers a unique gathering of resources, expertise and labs. It relies on a shared vision of the CCS technologies development, a win-win cooperation flexible and reactive to tackle the future CCS market.



Launch of the TRI4CCS Alliance in Trondheim on 15 June 2011. The alliance partners, here represented by Jan Mengelers, President of TNO, Unni Steinsma, President of SINTEF, and Maurice Boutéca, Director at IFP Energies nouvelles. Photo: Gry Karin Stimo / SINTEF.

R&D services on the entire CCS chain

By bringing together some of the world's top CCS experts, TRI4CCS is creating a centre for innovation that will boost new ideas and developments beyond today's possibilities.

The aim of TRI4CCS is to serve the research needs of industry while developing innovative solutions and products that cover the entire CCS chain. TRI4CCS possess a great deal of expertise on each individual link in the CCS chain, which enables it to offer an integrated approach to CO₂ capture, transport, storage and utilization.

Capture

The Alliance is studying a number of novel CO₂-capture technologies that aim to halve energy use and substantially reduce the cost of capturing CO₂. These new technologies encompass solvents, membranes and sorbents, both singly and in combination. Transformational technologies such as chemical looping combustion (CLC) as well as market-nearer technologies such as amine solvents are embedded in our expertise and resource base.

Transport

The Alliance's expertise includes the technical design and safety analysis of CO₂ transport by pipeline and marine transportation of CO₂, including liquefaction. We are thus able to couple the thermodynamics of CO₂ transport with pipeline integrity and safety issues in the event of leaks or ruptures. Flow assurance and the impact of impurities constitute an integral part of our competence and R&D capabilities.

Storage

The Alliance possesses a wide range of expertise in technical evaluation of injectivity, storage capacity, containment and monitoring, in addition to risk analysis and the environmental impact of CO₂ storage in subsurface geological structures. The development of monitoring techniques for long-term storage integrity assessment is an integral part of our portfolio, as are remediation methods and tools. IFPEN, SINTEF and TNO have developed dedicated software based on our experience in those fields.

Utilisation

The Alliance also offers R&D services to promote the use of CO₂, starting with EOR (Enhanced Oil Recovery) but also studying the use of CO₂ as feedstock for new products and industrial applications.

The CCS value chain and the social acceptance of CCS

TRI4CCS can address all the integrated phases of CCS systems, including life-cycle assessment and public perception and dialogue.

The three institutes employ a total of 450 scientists in these fields, with a R&D portfolio in CCS of some €60 million a year. As a group, the Alliance is large enough to tackle the scientific challenges that will emerge when in the course of a few years planned demonstration and full-scale CCS plants are commissioned.



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