

Digital Monitoring of CO2 storage projects

Publieke samenvatting / Public summary

Aanleiding

Carbon capture and storage (CCS) is a key component of any realistic strategy for reducing greenhouse gases in the atmosphere. Whilst a number of demonstration projects have shown the feasibility of CCS, operations need to be cost effective and easily scalable in size and number. A key component of any CCS project is measurement, monitoring and verification (MMV), which must demonstrate that projects are planned and executed in a societally acceptable manner and that adequate technologies are implemented to ensure safety and security.

Doelstelling

The overall objective of the DigiMon project is to “accelerate the implementation of CCS by developing and demonstrating an affordable, flexible, societally embedded and smart Digital Monitoring early-warning system”, for monitoring any CO2 storage reservoir and subsurface barrier system, receiving CO2 from fossil fuel power plants, oil refineries, process plants and other industries. The DigiMon project involves development and integration of system components that are available at intermediate to high Technology Readiness Levels (TRLs). It will develop the system components to a uniformly high TRL, prior to integration of components into the DigiMon early-warning system.

Korte omschrijving

The innovation of the DigiMon approach lies in that it integrates a broad range of technologies for MMV at CO2 storage sites (i.e. distributed fibre-optic sensing

Projectinformatie / Project information

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ACT18005

Subsidiebedrag / Grant amount

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Algemene informatie / General information

Penvoerder / Secretariat

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technology (DxS), seismic point sensors and gravimetry). Combined with ethernet-based digital communication and near real-time, web-based smart data processing software, the DigiMon project presents a novel and cost-efficient early-warning solution for monitoring CO₂ storage reservoirs and subsurface barrier systems. In addition, it uniquely considers the possibilities of monitoring technologies for CCS from the point of view of societal acceptability and benefit. Such a system is not currently available. The DigiMon system is easily deployed and cost-effective, enabling a considerable improvement in monitoring capabilities related to CO₂ storage projects. The DigiMon project will have a direct impact on the economics of CCS, reducing capital and operation expenditure (CAPEX and OPEX) for placement and operations of CO₂ storage monitoring. This will lead to expected savings for CO₂ storage operators and improved competitive advantages for suppliers providing monitoring solutions to the market.

Resultaat

A strong international and interdisciplinary consortium with leading research institutions and industry from Norway, the Netherlands, Germany, United Kingdom, USA, Romania and Greece has been established. They possess excellent track records of working across the CCS value chain, with professional capabilities and skills from both natural and social sciences, with transnational expertise. In order to meet the ACT ambitions on reduced time to market for CCS, it is important to secure fast and proper implementation of the DigiMon results. To support this ambition, the DigiMon project introduces an implementation plan for the project, describing how project results and deliverables will be implemented with consortium partners and made available to the market.

Voor meer informatie over de TSE / Energie-Innovatie regelingen die RVO aanbiedt, ga naar www.rvo.nl/tse.