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SiteChar - Characterization of European CO2 storage

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The European SiteChar project (FP7), dedicated to set the criterion for characterization of sites for the geological storage of CO2, was launched in January 2011. The project's objective is to provide a methodology for assessing potential storage sites by combining, testing and improving new and existing methodologies. By developing a methodology for the preparation of storage license applications, incorporating all the technical and economic data, as well as the social dimension, SiteChar will provide a valuable tool for the roll-out of geological storage on an industrial scale in Europe. Coordinated by IFP Energies nouvelles, the project brings together another sixteen partners from research and industry, as well as the consultancy sector, from ten EU countries: AGH, BGS, ECN, ENEL, GEUS, GFZ, IMPERIAL, OGS, PGNiG, SINTEF-PR, Statoil, TNO, UfU, UniRoma1-CERI, Vattenfall and the Scottish Government. The SiteChar project is also supported by Veolia Environnement.
SiteChar will examine the entire site characterization chain and develop a workflow to integrate site characterisation, risks assessment and development of monitoring plans necessary to reach the final stage of licensing. Estimates of the theoretical capacities of storage sites have been undertaken in previous projects, but will be refined. Detailed evaluation of site-specific techno-economic factors and of injection strategies based on credible and realistic sources of CO2 will be performed and public engagement activities will be undertaken.
The SiteChar workflow will be tested at a range of onshore and offshore, open and structural traps and depleted hydrocarbon reservoirs, located across Europe. Five European potential storage sites have been selected as test sites for the research work because they are representative of various geological contexts: a North Sea offshore multistorage site (gas field and aquifer) in the United Kingdom, an onshore aquifer in Denmark, an onshore gas field in Poland, an offshore aquifer in Norway and, finally, a carbonatic aquifer in the Southern Adriatic Sea.
A key innovation will be the development of internal dry-run licence applications at two sites, evaluated by a regulatory advisory panel. This iterative process will refine the storage site characterisation workflow and identify gaps in site-specific characterisation needed to secure storage licences under the EC Directive, as implemented in 'host' member states. In addition, critical points of the workflow will be addressed such as screening of multiple options, fault geomechanics, reactive flow simulation, presence of geological heterogeneity, trapping mechanisms, risk assessment and sensitivity analysis.
Parallel to technical site characterisation, SiteChar will perform social site characterization and public engagement activities via the internet and information meetings. Site-specific information will be made available that is tailored to the assessed levels of public awareness, knowledge, and information needs. Results of public engagement will be evaluated to contribute to the evidence base of effective public engagement strategies.
SiteChar will produce practical guidelines for technical and social site characterisation for use by storage site operators and regulatory bodies and communication teams of stakeholders involved, and advance a portfolio of sites to a (near-) completed feasibility stage, ready for detailed front-end engineering and design. By developing a methodology for the preparation of license applications, incorporating all the technical and economic data, as well as societal aspects, SiteChar will provide a valuable tool for the roll-out of geological storage on an industrial scale in Europe.