

# SCREENING AND RANKING OF SUITABLE CO<sub>2</sub> STORAGE SITES IN SPAIN

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## Abstract

The process of geologic storage of Carbon Dioxide (CO<sub>2</sub>) has been recognized as an important approach to reduce Greenhouse Gases (GHG) emissions. Identifying the large source of emission, creating a commercial Carbon Capture and Storage (CCS) network to transport captured CO<sub>2</sub>, and injecting it into the suitable geological formations, plays an important role in the development of a successful decarbonization plan. Choosing the best alternatives of the key elements of CCS project including capturing, transportation and storage, requires the Multi-Criteria Decision Analysis (MCDA). This work is an example on how to tackle the challenges related to the evaluation of multidisciplinary data that would give rise to the development a full-chain of industrial CCS. For this purpose, the publicly available information of Spanish Geological Survey (IGME) and Spanish Register of Emissions and Pollutant Source (PRTR-España) were used to select the source of CO<sub>2</sub> emission and the suitable storage reservoir. This was done by applying several selection processes where 20 scenarios of sensitivity analysis were developed by MATLAB to select the best geological formation for CO<sub>2</sub> injection. Finally, the selected site was re-evaluated in more detail by interpreting the petrophysical properties and creating a 3D static model for analyzing the uncertainties of the structure.

