

Carbon dioxide storage potentials of deep geological formations in Hesse

Dr. Matthias Kracht, Anne Kött

Longterm storage (> 10 000 years) of carbon dioxide (CO₂) by pressure injection into deep geological formations (800–1000 m) is an option for CO₂ mitigation. The technologies to be used have been developed for and applied by the oil and gas industry.

Potential geological sites for CO₂ storage are:

- deep saline formations
- depleted oil and gas fields
- coal beds

Data from approximately 1 200 drill cores, obtained from the core archive of the “Hessisches Landesamt für Umwelt und Geologie” (HLUG), were evaluated in the study entitled „**Carbon dioxide storage potentials of deep geological formations in Hesse (Potenziale der CO₂-Speicherung im tiefen Untergrund von Hessen)**” to identify suitable stratigraphic units of potential carbon storage sites in Hesse. 500 drill cores reach depths of more than 500 m while approximately 200 exceed 800 m depth. First results are published in maps with depth extrapolation of potential geological units. In Hesse, storage of carbon dioxide is only feasible in deep saline formations or in depleted oil and gas fields. Other storage options are not applicable to Hesse.

This project will continue as part of an ongoing study on the feasibility of carbon dioxide storage in Germany, with the HLUG as the regional coordinator in Hesse.