

CAGS Project Proposal

Site Selection Methods and Criteria of CO₂ Geological Storage

China Geological Survey

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Background and necessity

Site selection is the first step and one of key technology on CO₂ geological storage. And it is important to launch CCS projects.

Geological conditions: continental sedimentary basins distribute in China. Is it suitable to use site selection methods and criteria in China which are developed in Other organizations and countries.

It is necessary and useful to set a series of site selection methods and criteria according to Chinese geological conditions.

Main Tasks

Task 1: Research on site selection methods and criteria of CO₂ geological storage

Task 2: Research on the characterization of dynamic behaviour and the assessment of the total regional CO₂ storage capacity of a potential storage formation

Task 3: Case study: Evaluation capacity and suitable sites of CO₂ geological storage in Liaohe Oil field

Task 1: Research on site selection methods and criteria of CO₂ geological storage

- To consider different storage options: depleted oil and gas reservoirs, unminable coal beds and deep saline aquifers**
- To identify criteria of general conditions: potential CO₂ sources, basin distribution, natural resources**
- To identify criteria of basic geological conditions: reservoir, caprock, geochemistry, geomechanics, hydrogeology**
- To identify criteria of social and economic conditions: population distribution, political, economic, human activities, etc**
- To research methods and technologies: investigation, exploration, assessment, simulating, drilling, sampling, lab testing**

Task 2: Research on the characterization of dynamic behaviour and the assessment of the total regional CO₂ storage capacity of a potential storage formation

- ◆ **To investigate the suitability evaluation of present storage capacity calculation methods applied in China.**
- ◆ **To investigate the achievable CO₂ saturation in traps under various geological parameters.**
- ◆ **To investigate on the amount of CO₂ that will dissolve into the saline pore fluids.**
- ◆ **To investigate on the amount of CO₂ that will be trapped as a residual saturation.**

Task 3: Case study: evaluation potential capacity and suitable sites of CO₂ geological storage in Liaohe Oil Field

➤ **To research key parameters by laboratory experiments, and to calculate potential capacity of Liaohe Oil Field applying the achievements of Task 1 and Task 2.**

Expected Outcome

The Report on site Selection Methods and criteria of CO₂ Geological Storage

The Guideline on Site Selection of CO₂ geological Storage in China

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Thanks for your attention!