Pilot STRATEGY

Accelerating CO_2 storage for a sustainable future

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PilotSTRATEGY is an ambitious five-year international research project on the use of deep saline aquifers (DSAs) for geological storage of CO_2 to support development of large-scale carbon capture and storage (CCS), a critical technology in the net-zero transition.

Building on the findings of earlier EU-funded projects, notably STRATEGY CCUS, PilotSTRATEGY will carry out detailed studies in three promising regions in France, Portugal and Spain. We will also enhance knowledge of CO_2 storage options in Greece and Poland.

Objectives

- Focus on deep saline aquifers which promise large capacity for CO_2 storage
- Support safe and effective storage pilots
- Engage with citizens & stakeholders; investigate factors affecting CCS acceptance

1. Paris Basin, France

- Industrial facility already capturing > 300 kt/CO_2 per year
- Storage resources within Keuper & Dogger Formations
- Keuper: identified effective storage capacity Tier 2 of 0.22Gt
- Dogger: identified theoretical storage capacity Tier 1 of 0.2Gt

2. Lusitanian Basin, Portugal

- Includes CO_2 emitters in the Setúbal – Figueira da Foz axis
- Onshore effective storage capacity Tier 2 of 0.2Gt; offshore theoretical storage capacity Tier 1 of 1.2Gt
- As elsewhere, societal acceptance will help determine storage pilot's location

3. Ebro Basin, Spain

- Region includes Tarragona and South Aragon industrial areas
- Potential CO_2 storage sites onshore and offshore. Social acceptance one of the criteria determining which proceeds
- DSA CO_2 storage capacity estimated at up to 0.85Gt Tier 2 and 0.2Gt Tier 1

5. Upper Silesia, Poland

- Region includes industrial areas of Katowice, Rybnik and Bedzin
- Poland's most industrialised region, with 16 coal mines and 7GW of power generation
- CO_2 storage capacity of 0.015Gt in uneconomic coal beds and of 0.1GT In DSA

4. West Macedonia, Greece

- Region covers Kozani and Ptolemaida industrial areas
- Storage resource provided by the Mesohellenic Trough
- CO_2 storage in DSA estimated at 1.16Gt Tier 1 (theoretical)

6. Germany (supporting country)

7. UK (supporting country)

Work Packages

Led by France's BRGM, our research team combines the skills and experience of 16 scientific and industrial partners from seven European countries.

WP2 — Geo-characterisation

Assembling, acquiring and interpreting geological data

WP3 — Simulation

Assessment of site storage capacity and integrity

WP4 — Pilot Development

Development concepts and pre-FEED for proposed pilots (Ebro, Lusitanian and Paris Basins)

WP5 — Safety

Ensuring proposed pilots meet the best safety and performance standards

WP6 — Social Acceptance

Investigating societal acceptance and public engagement

WP7 — Communication and Impact

Increasing the visibility and impact of the project

Why is this project important?

- Carbon capture and storage (CCS) – whereby CO_2 is captured from large emitters for permanent underground storage – is pivotal to Europe's climate commitments. Meeting the challenge will depend on sufficient geological CO_2 storage becoming available in time.

- PilotSTRATEGY will help develop CO_2 storage capacity and build confidence in CCS. Further research, policy support, and building public acceptance are critical to ensure CCS becomes a feasible climate mitigation option for local industries and local communities.

- We are focusing on deep saline aquifers – porous rock formations filled with brine more than one kilometre below ground. DSAs promise a large capacity for storing captured CO_2, but have been under-researched for CCS until now.

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info@pilotstrategy.eu @PilotSTRATEGY /pilotstrategy pilotstrategy