

# Synergetic Utilisation of CO<sub>2</sub> Storage Coupled with Geothermal Energy Deployment – **SUCCEED**

An **industrial CO<sub>2</sub> storage** project utilising the **existing** wells and infrastructure at producing geothermal fields in **Kizildere** (Turkey) and the **CarbFix** technology site **Hellisheidi** (Iceland).



## The objectives of the project include:

- i) to research and demonstrate the feasibility of **utilising produced CO<sub>2</sub>** for re-injection into a **carbonate** reservoir to **maintain reservoir pressure** and **improve geothermal performance**, while also storing the CO<sub>2</sub>,
- ii) to develop further, test and demonstrate **innovative monitoring** technologies applicable in all CO<sub>2</sub> storage field sites:
  - a. the new higher signal-to-noise ratio **Distributed fibre-optic Acoustic Sensing** systems iDAS and Carina®
  - b. the new permanent and **highly repeatable** and environmentally friendly seismic monitoring **EM-vibrators** to provide **semi-continuous** seismic monitoring capability at **HPHT** environments,
- iii) to investigate **rock-fluid interactions** under simulated **HPHT** conditions in the laboratory and determine **geochemical, geomechanical** and **geophysical** response of the reservoir rocks to **supercritical CO<sub>2</sub>**,
- iv) to model and investigate **injected CO<sub>2</sub>** and **reservoir rock** behaviour in the geothermal reservoir,
- v) to develop strategies for **pressure management** in geothermal reservoirs through **supercritical CO<sub>2</sub>** injection at the **Kizildere** field site.
- vi) to develop reliable **technoeconomic** and **life cycle environmental impact** assessment methodologies for **CO<sub>2</sub> storage** in geothermal projects and implement these models to evaluate the **geothermal resource** in the Büyük Mendres Graben.



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