

RIO DE JANEIRO CCS HUB

Petrobras is working on a pilot project for the development of the first CCUS hub in Brazil



Refinaria Duque de Caxias. Photograph: Banco de Imagens Petrobras/BIP

Petrobras is developing a pilot project in preparation for Brazil's first commercial CCUS hub in Rio de Janeiro state. The demonstration pilot will store up 100,000 tonnes of CO₂ per year from a Petrobras-owned natural gas processing facility. It is designed to test injection, pressure management, monitoring, and plume migration in an onshore hypersaline aquifer that has similar characteristics to the planned offshore storage site for the hub.

Petrobras is hoping the government will contribute to developing a regulatory framework, based on the CCS bill currently going through Congress, that can embed CCUS as a decarbonization solution for the industry.

Once a regulatory framework is in place, the plan is to develop a commercial hub for a range of industrial emitters in Rio de Janeiro state, home to several large industrial clusters. It is exploring options to re-use existing pipelines and build new ones out to an offshore saline aquifer with a potential storage resource capacity of 20 million tonnes of carbon dioxide a year.

Petrobras has years of experience in natural gas processing CCUS, re-injecting large amounts of carbon dioxide back into pre-salt fields as it develops oil and gas resources, but this is its first foray into supporting Brazil's industrial decarbonization using CCS.

KEY FACTS & STATS

- **Location:** Rio de Janeiro State, Brazil
- **Demo pilot capacity:** 100,000 tCO₂/year
- **Potential impact (after 2030):** 20 MtCO₂/year*
- **Pilot project developer:** Petrobras

- **Initial CO₂ source (pilot project):** natural gas processing
- **Potential CO₂ sources for commercial hub:** cement, power, refinery, metallurgy, gas processing
- **Transport:** pipeline
- **Storage site:** saline aquifer
- **Status:** Storage demonstration to start operations in 2027

[More information](#)

*Further studies and measurements are still needed to confirm storage capacity