

How are CO₂ storage sites selected?

CCS Site Checklist



Depth of more than 800 meters or 1/2 mile

At high pressures and temperatures in great depths, carbon dioxide can exist in a supercritical state, i.e., a fluid-like state, which allows larger volumes to be stored in small spaces.



Below and isolated from freshwater

Under the Underground Injection Control program, the EPA requires CO₂ injection for geologic storage to protect underground sources of drinking water (<10,000 mg/L TDS).



Porous and permeable

Sufficient space within the grains of rock (porosity) and enough connect pathways for it to flow (permeability) is critical to ensure there is enough storage capacity in a given space.



Overlying rock layers that prevent vertical migration

A confining rock layer above the storage reservoir helps prevent CO₂ from moving upward. This natural barrier is an important part of safely containing the CO₂ underground over the long term.



No leakage paths - natural or man-made

Natural fractures, faults, or other artificial penetrations such as man-made wells can provide pathways for fluids to move between underground layers. These features must be carefully identified and managed to reduce the risk of CO₂ escaping from the storage site.



No risk of big earthquakes

Injecting fluids underground can change pressure in the rock, which may trigger earthquakes or reactivate existing faults. Sites are evaluated and monitored to avoid incidents and ensure safe storage.



Properties willing to lease

Carbon storage projects require access to large areas of subsurface pore space, which is typically owned by private landowners. Projects depend on willing landowners who are open to leasing these rights for injection and storage activities.



Access to drill, operate, and monitor the storage site

Operators need long-term physical access to the surface to drill wells, run injection operations, and install monitoring equipment. This access is also needed over time to check that the stored CO₂ remains safely contained underground