Storing CO_2

The storage of carbon dioxide (CO_2) secures the gas deep underground in a geological rock formation.

Geological reservoirs into which CO_2 can be injected include depleted oil and natural gas fields; and deep saline formations.

Since the stored CO_2 will be less dense than the water in and around the reservoir rocks, it needs to be geologically trapped to ensure that it does not reach the surface. The exact trapping mechanism depends on the geology.

In depleted oil and gas reservoirs geological traps contain the CO_2. In some cases these are anticlines, or folds; in other cases fault traps.

In the case of deep saline formations an impermeable caprock above the formation is not needed as the CO_2 is contained by the groundwater flow. This is known as hydrodynamic trapping.

Solubility and mineral trapping are two other important mechanisms. Solubility trapping involves the dissolution of CO_2 into the saline water in the reservoir. Mineral trapping results from the CO_2 reacting with minerals in the rocks to form stable carbonate minerals.

CO2CRC collaborates with leading research institutions and industry to investigate the storage potential of Australia's sedimentary basins (See fact sheet: Geosequestration Storage Sites in Australia, for further information.)

Recent geosequestration research includes:

- a desktop study of SE Queensland storage sites;
- possible CO_2 storage sites in China and SE Asia;
- a regional study on potential CO_2 geosequestration in the Collie Basin and the Perth Basin of Western Australia; and
- an assessment of the storage potential of the Latrobe Valley.

Current studies include:

- Storage assessment of the Gunnedah Basin, NSW;
- Storage assessment of the Sydney Basin, NSW;
- A regional geology study of the Galilee Basin, Qld;
- CO_2 enhanced oil recovery potential in Australia; and
- CO_2 storage in coal systems.