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# THE DARLING BASIN DRILLING PROGRAM

The Darling Basin Drilling Program will gather information to assess the geothermal potential of the area, and determine whether the area is suitable for storing carbon dioxide ($C0_2$).

The Program is being managed by the NSW Government. The Darling Basin occupies about 100,000 km$^2$ of western New South Wales, ringed in the north by Broken Hill, Wilcannia and Cobar and stretching southward to near the Murray River.

Two holes will be drilled near Cobar and Wilcannia (Figure 1). The holes – about 200mm wide – will be drilled to a depth of about 2400m. 'Core' will be extracted from sections of the holes to sample rocks. Tests will then be conducted, both down the hole and on the samples. This data will improve the understanding of the geology of the Darling Basin and help determine if there are rocks suitable for storing $CO_2$ and what the temperature conditions are like deep underground.

## What is geothermal energy and what is it used for?

Geothermal energy is the energy stored as heat deep beneath the earth and can be found in many parts of Australia. Energy is brought to the surface by extracting hot water that is naturally circulating among the hot sub surface rocks or by pumping cold water into the hot rocks and returning the heated water to the surface to drive steam turbines to produce electricity.

Geothermal energy holds the promise of being a renewable

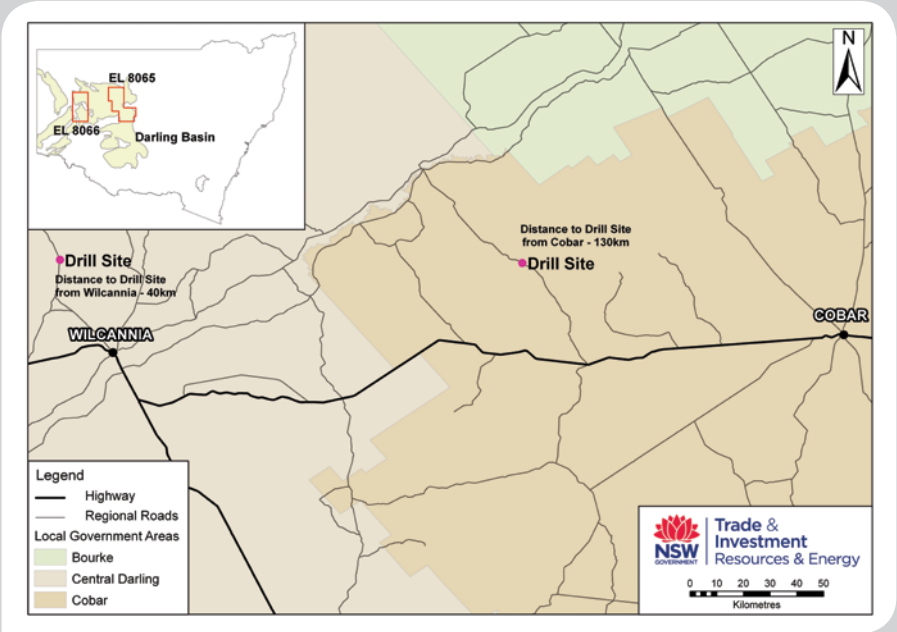


Figure 1 – Location of Exploration Licences within NSW and confirmed drill site in relation to nearest towns.

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> The rehabilitation program will return the site to pre-drilling condition.

energy source that can operate 24 hours a day and provide critical large-scale baseload power for Australian homes and industries.

## What is Carbon Capture and Storage?

Carbon Capture and Storage is the process whereby $CO_2$ (a greenhouse gas) emissions are captured from large industrial facilities, like power stations, before being emitted into the atmosphere. The $CO_2$ is then transported through pipelines to be permanently stored in deep, secure underground formations.

Carbon Capture and Storage is an important measure for reducing $CO_2$ emissions in NSW over the next 40 years and is an essential part of NSW's long-term energy strategy.

Carbon Capture and Storage will allow NSW to sustainably develop coal resources and continue to have a strong economy in a carbon-constrained world. By reducing emissions from industry, Carbon Capture and Storage will help with the transition to low-carbon energy resources.

## Community engagement

Consulting with and keeping the local community informed is an important part of any exploration program. Meetings will take place with council members in the Cobar and Central Darlings Local Government Areas (LGAs) to share information about the program and to address any questions and/or concerns Council may have.

Community meetings will be held in the Cobar and Central Darling LGAs. Presentations will be made by Departmental staff. Community members will be able to ask questions and voice any concerns about the project.

**More information**

Contact Dr Jamie Knight on 0477 366 443 or by email at: assessmentprogram.enquiries@industry.nsw.gov.au

More information about the Drilling Program can also be found at: www.resources.nsw.gov.au/coal-innovation/research-projects/darling-basin-drilling-program

## Minimising disruption to locals

Disruption to locals will be minimal. This is a small project of two holes being drilled in sparsely populated areas. Nonetheless, equipment and personnel movements will be scheduled to reduce impacts and works will be contained to fenced drill and camp sites and site access tracks.

## Environmental monitoring and compliance

Exploration in NSW is regulated by the NSW Government. Every exploration licence has strict conditions attached to it – including a range of environmental conditions. Before anyone can conduct exploration drilling a Review of Environmental Factors (REF) must be approved.

The REF outlines any potential environmental impacts within the drill site and the methods that will be used to reduce these impacts. Threatened species and heritage clearance must be gained and a Rehabilitation Plan must also all be submitted before any work begins.

Disposal of stored drilling fluids and cuttings will be carried out in accordance with relevant legislation and in consultation with the Environmental Protection Authority (EPA). Drilling fluids are used to lubricate the drill head and flush the rock chips to the surface during drilling. Drilling fluids are mixed on-site and are changed during drilling as hole conditions vary.

## The drill site

A small area, about 140m x 140m, will be isolated from the surrounding area to contain the drill rig and associated infrastructure. This area is secured to prevent injury to people and livestock. The drill sites have been chosen to minimise impacts on landholders, the environment and the broader community. An access agreement is in place between the Landholder and NSW Trade and Investment. The landholder will be compensated for allowing access.

## Timeline

Drilling of each hole will take about 40 days to be completed. It will take one week to move and set the drill rig up at the next drill site.

## Rehabilitation

Once drilling has been completed the drill hole is sealed with concrete grout. The drill rig and any infrastructure within the drill site are removed and rehabilitation of the site begins. This involves replacing topsoil to help seed germination and removing site access tracks. Rehabilitation will return the site to pre-drilling condition and to the satisfaction of the landholder and the Department. Photographs are taken before work starts, during drilling and after rehabilitation has begun.