

# Demonstration project to store CO<sub>2</sub> underground in China

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CSIRO (Australia) is partnering with China United Coalbed Methane Corporation Limited (CUCBM) on a A\$10 million joint demonstration project that will store 2000 tonnes of carbon dioxide (CO<sub>2</sub>) underground in the Shanxi Province and extract methane for use as an energy source. The project will focus on advancing enhanced coal bed methane (ECBM) recovery and providing a pathway to adoption for near zero emissions technology from coal-fired power.

ECBM involves the injection of CO<sub>2</sub> into coal seams to displace methane that can be used to generate energy, while providing the additional benefit of reducing [greenhouse gas emissions](#) by storing the CO<sub>2</sub> underground.

Director of CSIRO's Advanced Coal Technology research, Dr John Carras, says the ECBM project will trial new approaches to maximise CO<sub>2</sub> injection and methane recovery.

"ECBM wells are typically drilled vertically to inject CO<sub>2</sub> into coal seams but this demonstration project will drill horizontally meaning the entry point of the well is more directly embedded in the coal seam, which we predict will increase the flow rate of CO<sub>2</sub> for underground storage," Dr Carras said.

"CUCBM's expertise in drilling practices and methane extraction will combine with CSIRO's capabilities in coal characterisation, reservoir modelling, carbon dioxide monitoring and storage assurance to develop

techniques that maximise both CO<sub>2</sub> storage and methane recovery rates."

CSIRO's research is supported by the Japan [Coal Energy](#) Centre, JCOAL.

This ECBM project received funding from the Chinese and Australian Governments as part of the Asia-Pacific Partnership on Clean Development and Climate.

CSIRO's work with CUCBM addresses the critical issues of low emission energy supply, climate change and emissions reduction on a global scale.

"Working with our partners in China will allow CSIRO to increase its capabilities in pilot-scale demonstrations for carbon capture and storage technologies," Dr Carras said.

"This experience will inform the development of a low emissions coal technology that can also be deployed in Australia."

The ECBM demonstration project builds upon CSIRO's existing collaborations with China, which include supporting the launch of a post combustion capture (PCC) pilot plant in Beijing and the first capture of CO<sub>2</sub> in China using PCC technology.

Work has also begun on a second, transportable PCC pilot plant that is designed to capture 600 tonnes per annum of CO<sub>2</sub>. The collection of robust data from this demonstration will inform the techno-economic assessment of PCC and direct the next steps in commercial-scale technology development.

Provided by CSIRO

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