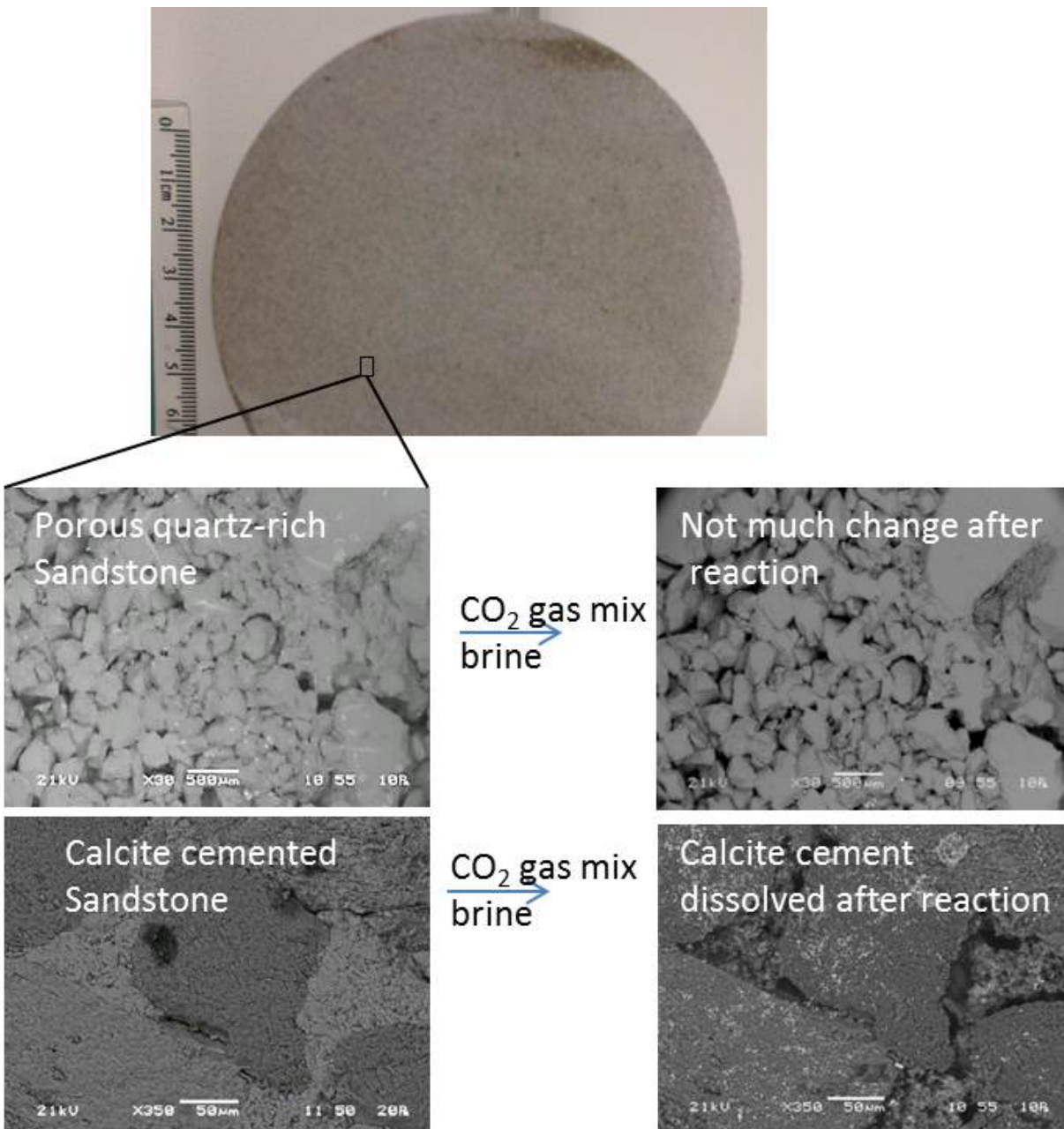


Could storing emissions underground be the answer?

May 12 2016



University of Queensland research is helping identify the safest geological conditions to store CO₂ emitted from power plants deep below the surface, to help Australia reduce its emissions in line with the Paris Agreement.

Research fellow in UQ's School of Earth Sciences Dr Julie Pearce said [burning fossil fuels](#) had increased CO₂ in the atmosphere and oceans above naturally-occurring levels.

"While [carbon dioxide](#) is vital for life on earth, we're emitting way too much of it, which is contributing to [global climate change](#) and ocean acidification," she said.

"The technology known as carbon dioxide capture and geological [storage](#) has been approved by the United Nations' Intergovernmental Panel on Climate Change to mitigate [climate change](#)."

"A pilot project is already being conducted by the CO₂CRC Ltd at Otway in Victoria, as well as overseas.

Dr Pearce said Australia was set to introduce capture and storage systems by 2030.

"Our project at UQ is looking at the reactivity of the storage system rocks, identifying the best geological conditions for storing CO₂ underground, and also developing tools to monitor CO₂ once it's injected a kilometre under the Earth," she said.

"For CO₂ storage to be deployed large-scale, its viability in terms of containing the injected CO₂ and the long-term safety needs to be determined at each site."



Dr Julie Pearce at a field test site in Victoria.

Dr Pearce said CO₂ storage already occurred naturally in some types of rock formations, which had trapped fluids containing CO₂ for millions of years and converted CO₂ to carbonate minerals.

Research has found these formations could hold vast amounts of CO₂, potentially equivalent to hundreds of years of human-made emissions.

She said the proposed new technologies captured CO₂ from [power plants](#) and injected them into porous rock such as sandstone.

"We've been conducting research on underground storage for almost 10 years and have looked at the effect of injecting CO₂ on different rocks containing different minerals like carbonates and clays to identify changes and optimal conditions to trap the gas," she said.

"As far as I am aware, there have been no problems with underground CO₂ storage either in Australia or overseas, but that is why we conduct stringent research, to ensure we identify any potential risks and develop risk mitigation strategies.

Provided by University of Queensland

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