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Study Says China Is Ripe for Carbon Storage

By *TODD WOODY*

China has vast underground repositories that could store more than a century's worth of carbon emissions from coal-fired power plants and industrial facilities, according to a report to be released by the United States Department of Energy's [Pacific Northwest National Laboratory](#).

Researchers have identified a number of potential [geologic formations](#) that could be used to store CO₂ emitted by China's coal power plants and other industries. (Click to [enlarge](#).)

The study, conducted with scientists at the [Chinese Academy of Sciences](#), found that the geologic formations are in close to a large percentage of the country's power plants.

That could permit "the continued use of cheap, domestic coal within China while supporting CO₂ emissions reductions via the capture and geologic storage of the associated CO₂," according to an [eight-page summary of the study](#) [pdf].

The full report will be released in November.

"A lot of the policy dialogue and technical discussions have this really sharp dichotomy — either you use coal and bad things happen to the environment, or you forgo coal and bad things happen to the economy," [James Dooley](#), a scientist at the laboratory and an author of the report, said in an interview. "We're trying to say maybe there's a third way here."

Such technology, which remains untried on a commercial scale, comes with high costs, because capturing and storing carbon emissions consumes significant amounts of energy and water. The potential environmental impact of putting billions of tons of carbon dioxide underground also remains unknown.

The Energy Department report does not put a total price tag on pumping China's carbon underground, but it found that transportation and storage costs could be less than \$6 per ton of carbon dioxide.

A new [study](#) on carbon capture and storage from the International Energy Agency estimated that by 2050 it could cost more than \$5 trillion to retrofit fossil fuel plants that represent 17 percent of worldwide electricity.

In China and India alone, as many as 62,000 miles of pipelines would need to be built at an estimated cost of \$275 billion to transport greenhouse gases to underground repositories, according to the agency.

But the American and Chinese scientists found that 90 percent of China's big carbon-emitting industrial facilities are within 100 miles of a geologic reservoir. The scientists have identified 90 potential repositories on the Chinese mainland that could store an estimated 2,300 billion metric tons of carbon dioxide equivalent.

Coal-fired power stations, cement plants and other industrial facilities emit 3.8 billion metric tons of

carbon dioxide a year, or 64 percent of China's carbon emissions, according to the report.

The scientists also found 16 offshore formations that could store an additional 780 billion metric tons of carbon under the seabed.