

# Carbon capture and storage can rapidly reduce emissions in sectors that have few other options

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Today, the Energy Futures Initiative (EFI) and Stanford University released "An Action Plan for Carbon Capture and Storage in California:

Opportunities, Challenges, and Solutions," a report providing policymakers with options for near-term actions to deploy carbon capture and storage (CCS) to meet the state's climate goals.

The study, six months in the making, concludes that CCS offers a clean technology pathway for rapidly reducing emissions from economically vital sectors that have few other options to decarbonize. It can also support clean, firm power, an essential enabler of intermittent renewable generation. The report will be introduced in a virtual briefing led by Ernest J. Moniz, former U.S. Secretary of Energy and founder of EFI and Franklin Orr, Professor Emeritus at Stanford University. They will be joined by the report's co-leads, EFI's Melanie Kenderdine and Sally Benson, Professor at the Department of Energy Resources Engineering at Stanford University.

"California has the most ambitious carbon reduction goals in the nation," said Benson. "Our study outlines the vital role that CCS could play in achieving carbon neutrality by 2045."

EFI, a nonprofit think tank established by former U.S. Energy Secretary Ernest J. Moniz, previously published "Optionality, Flexibility, and Innovation: Pathways for Deep Decarbonization in California," which concluded that the targeted use of CCS could be one of the single largest contributors to California's decarbonization by 2030.

"California has a strong economic base, a skilled workforce, and enviable innovation capacity at its laboratories, universities, and tech companies," said Kenderdine. "The state is well placed to accelerate its progress on developing the clean energy technologies that will decarbonize industry and the power sector, create jobs, and new industries enabled by CCS, such as a [hydrogen economy](#), and become a global leader in deploying CCS technologies."

CCS, like all other emission reduction technologies, is not a "silver bullet" technology for decarbonization. Carbon capture paired with permanent geologic storage (i.e. deep saline reservoir) is a viable and important option for reducing emissions from the industrial and electricity sectors that are key contributors to California's economy and the reliability of its grid.

Technoeconomic analysis done for this study identified 76 existing electricity generation and [industrial facilities](#) as candidates for CCS, in total representing nearly 15 percent of the state's current greenhouse gas emissions.

Successful policy pathways for achieving California's ambitious emission reduction targets are critical. Additional and accelerated actions are needed to ensure that the state successfully transitions to a [carbon](#) neutral economy both economically and equitably. California's economy would be the fifth largest in the world as a stand-alone entity, so the state's success in meeting its emissions targets and as a technology leader have significant implications for the global climate solutions.

Some key takeaways from the report:

- California's economy would see rapid near-term emissions reduction benefits from CCS;
- The state has a strong foundation for supporting CCS projects, and the study has identified 76 facilities suitable for [carbon capture](#);
- California's geology makes it well suited for safe, permanent CO<sub>2</sub> storage; and
- California could prioritize CCS projects that have demonstrable local air quality benefits and local job opportunities in line with the state's climate and equity goals

**More information:** [sccs.stanford.edu/2020-ccs-report-launch](https://sccs.stanford.edu/2020-ccs-report-launch)

Provided by Stanford University

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