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Kick Starting Carbon Storage Industry Goal of New Project

SEPTEMBER 25, 2024



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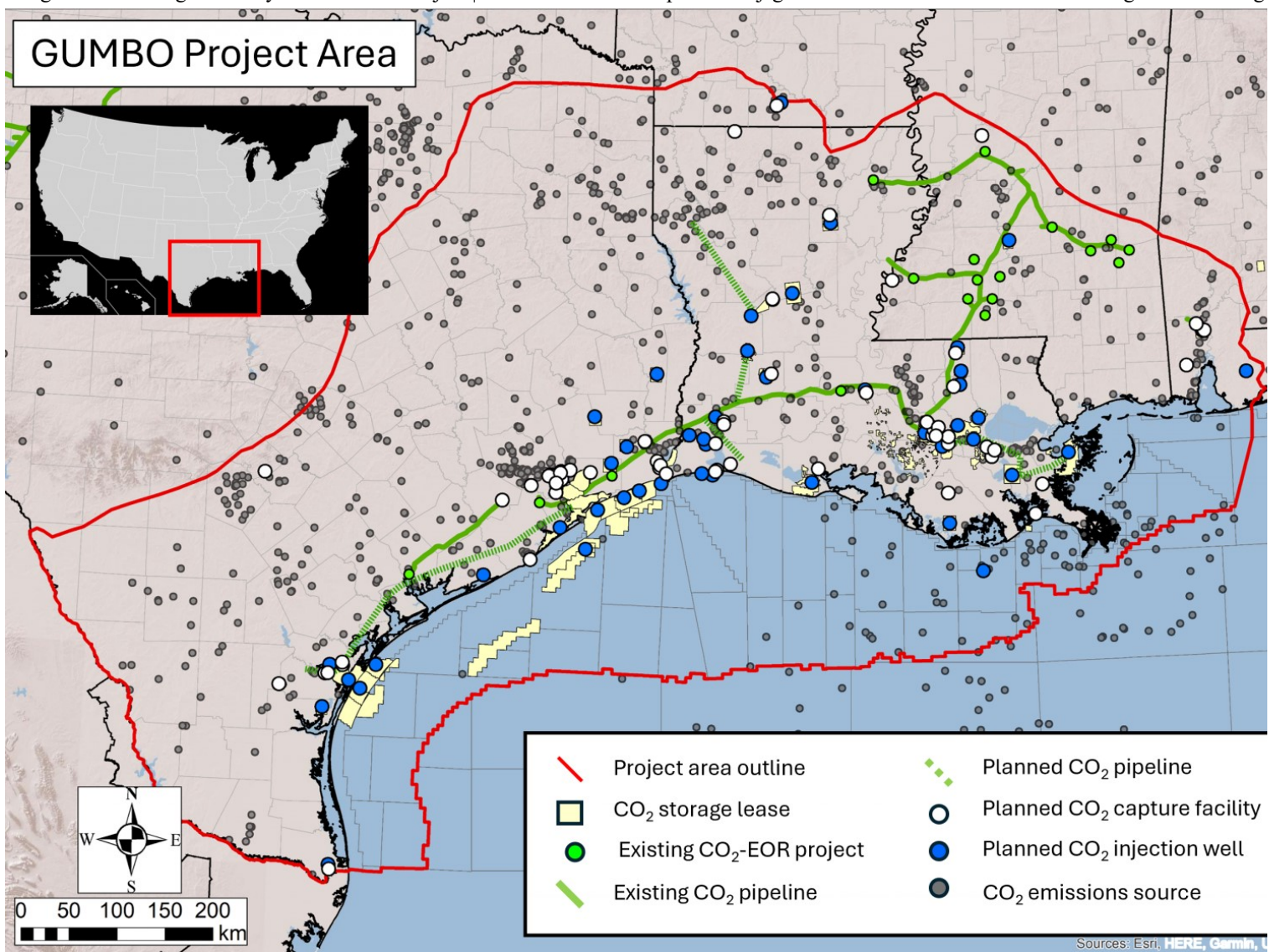
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(<https://www.jsg.utexas.edu/news/files/Gumbo-CO2-map-for-press-release.png>)

Existing and planned carbon capture and storage infrastructure in the Gulf Coast region. credit: University of Texas Jackson School Geosciences

The U.S. Department of Energy (DOE) has enlisted the aid of researchers at The University of Texas at Austin to help create a safe and reliable carbon capture and storage industry along the Gulf Coast.

Carbon capture and storage (CCS) is a strategy to reduce greenhouse gas emissions by trapping carbon dioxide (CO₂) permanently in the Earth's subsurface. The Gulf Coast is thought to be an ideal area for the technology because it is home to a variety of CO₂-emitting industries, pre-existing pipelines and infrastructure, and well-understood geology suitable for storage projects.

There are dozens of CCS projects already underway in the region.

The DOE's Office of Fossil Energy and Carbon Management has selected a UT-led research consortium to receive \$5 million to help guide the burgeoning industry in three areas: technical assistance to resolve subsurface storage issues; workforce development; and community outreach and environmental stewardship. The effort is officially called Project GuMBO (Gulf of Mexico Basin

Opportunities).

“There are already more than 50 projects developing on the Gulf Coast, which is absolutely stunning and phenomenal news for mitigation of climate change,” said project leader Alex Bump, a research associate professor at the UT Jackson School of Geosciences. “One challenge is, how do the many projects interact? A lot of my recent work is on pressure interference between carbon storage projects and this grant will enable us to deepen that work.”

Bump and many of the researchers on the project work at the Gulf Coast Carbon Center, a longstanding research group within the Jackson School’s Bureau of Economic Geology. Other partners in the three-year project include the Houston Advanced Research Center, Louisiana State University, Texas A&M University Energy Experiment Center, Texas A&M Kingsville, Los Alamos National Lab and the University of Houston. The team also includes a number of community colleges and private companies.

One of the major goals of the GuMBO project is to help to train the next generation of technical professionals, from electricians and welders to geoscientists and engineers. UT and the partner institutions plan to develop both online and in-person training to serve the community across disciplines and across the region.

The project area spreads across parts of five states in or near the Gulf of Mexico: Texas, Louisiana, Mississippi, Alabama and Arkansas. This region includes more than 1,200 facilities that collectively emit more than 532 megatons of CO₂ a year. It also leads the nation, and potentially the world, in the development of CCS projects. They are mostly concentrated in dense clusters of industrial activity near Houston, Corpus Christi, and Port Arthur, Texas; Lake Charles, Louisiana; and the Mississippi River Industrial Corridor.

Bump said the team will also investigate potential synergies between CCS and other fields. This includes potentially co-locating CCS projects with geothermal energy and hydrogen production/storage projects along the Gulf Coast. What’s more, geothermal energy could power direct air capture and storage of CO₂ projects, where CO₂ is captured directly from the atmosphere and stored deep underground.

“UT’s Gulf Coast Carbon Center and our partners have decades of experience in geological carbon sequestration,” said Jackson School Dean Claudia Mora. “This is an exciting opportunity for UT to lead the way in decarbonizing and expanding energy systems along the Gulf Coast, helping to ensure that the energy supply remains sustainable and reliable.”

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FRIDAY: Global warming has put Arctic deltas in turmoil, but what does that mean for coastal erosion?

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TODAY, OCT 10: Join us for our DeFord Lecture at 4 p.m. in JGB 2.324!

Our speaker is John Bolten of [@NASAGoddard](https://twitter.com/NASAGoddard) (<https://twitter.com/NASAGoddard>).

He will be speaking about global water resource management using NASA Earth observations. 🌐

All are welcome! 📷 (<https://twitter.com/txgeosciences/status/1844404552428343370>)

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