

## **Advantaged Basins and Saline Aquifer Screening: A Gulf of Mexico Perspective**

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### **Abstract**

With the energy transition continuing to gain momentum, there will be an increased emphasis on "advantaged basins", where operators can generate high profit margins and low carbon emissions, and which offer additional decarbonization potential. As a super basin, the deepwater Gulf of Mexico has produced vast quantities of oil and gas with significant remaining reserves. It is also one of the top advantaged basins in the world when considering both net income and emissions on a per barrel of oil equivalent (boe) basis. The Gulf of Mexico also has the potential to play a key role in decarbonizing the Gulf Coast. It is proximal to large industrial sources of carbon dioxide (CO<sub>2</sub>) along the coast and massive volumes of CO<sub>2</sub> storage potential stretching from the onshore to the outer continental shelf.

Saline aquifers such as those found in Miocene-age formations in the Gulf of Mexico represent significant CO<sub>2</sub> storage potential, but it is early days and there are several challenges related to understanding the true volumes and risks associated with this resource. This talk will highlight a model "advantaged basin" and its role in the future, both as a hydrocarbon producer and a major carbon sink. Key questions for the latter are: How can regional geoscience and CCS screening help locate, rank and risk opportunities? What is the impact of complex faulting, stratigraphic compartments, and salt on saline aquifer prospectivity in the Gulf of Mexico?