

# **Geologic and infrastructure factors for delineating areas for clean coal: examples in Texas, USA**

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**Abstract:**

Texas has a wide variety of areas that can be targeted for new clean-coal facilities. These areas are delineated by mapping spatial linkages between coal- and lignite-bearing formations, groundwater and surface-water resources, and CO<sub>2</sub> sinks in brine formations for long-term CO<sub>2</sub> storage or in mature oil fields with potential for enhanced oil recovery (EOR). However, a variety of infrastructure factors make it feasible to also target numerous areas outside coal and lignite basins in Texas. These infrastructure factors include pipelines for delivery of CO<sub>2</sub> to subsurface sinks and delivery of coal-produced hydrogen to refineries, ease of connection to existing transmission lines, distribution of nonattainment areas where new clean-coal facilities could be constructed and be compliant with strict air-quality standards, and railroads that can transport coal and other feedstock to new clean coal facilities. Primary regions in Texas where favorably co-located CO<sub>2</sub> source-sink factors related to coal and lignite trends include the Gulf Coast, the Eastern Shelf of the Permian Basin, and the Fort Worth Basin. However, areas outside coal and lignite basins, particularly the Permian Basin where a new clean-coal facility is being planned, also have clean-coal potential because of existing CO<sub>2</sub> pipelines and proximity to EOR fields that can economically sustain new clean-coal facilities.

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