REGIONAL CARBON CAPTURE DEPLOYMENT INITIATIVE

Louisiana

IMPLEMENTING CARBON CAPTURE AND STORAGE TECHNOLOGY

KEY TAKEAWAYS

- There are 61 facilities that qualify for the 45Q tax credit in Louisiana, which accounts for 75% of all emissions from facilities in the state. Of these 61 facilities, 32 have been identified as likely economically feasible candidates with the estimated potential to capture over 23 million metric tons of CO_2 a year.
- As of 2017, Louisiana has the fourth highest CO_2 emissions in the nation with roughly 60 percent of emissions coming from the industrial sector and 14 percent from electricity generation.
- The Louisiana Geologic Sequestration of Carbon Dioxide Act is the cornerstone legislation within the state for future deployment of carbon capture utilization and storage.
- In addition to having favorable geography for saline storage, Louisiana is also in close proximity to the Permian Basin, which provides an additional storage option by selling captured CO_2 for EOR.

The **Regional Carbon Capture Deployment Initiative** brings together state officials with diverse industry, NGO, labor, and other stakeholders to promote broad scale deployment of infrastructure for carbon capture, CO_2 pipelines, enhanced oil recovery (EOR), other forms of geologic storage, and beneficial utilization of CO_2 in the Western and Midwest regions of the country.

The Initiative is staffed by the Great Plains Institute (GPI), a nonpartisan, nonprofit working to transform the energy system to benefit the economy and environment. For more information on this effort, go to carboncaptureready.org or contact Patrice Lahlum at **plahlum@gpisd.net**.

SOURCES BY INDUSTRY & VOLUME

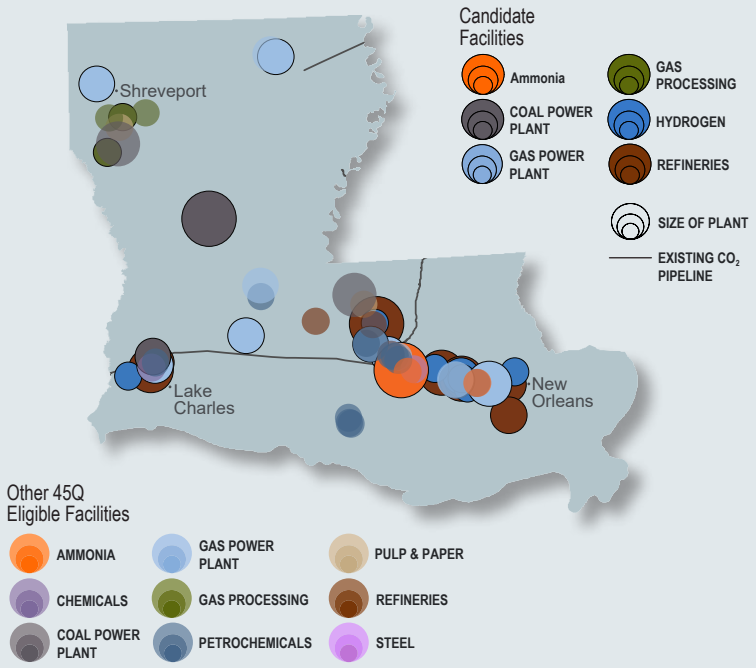
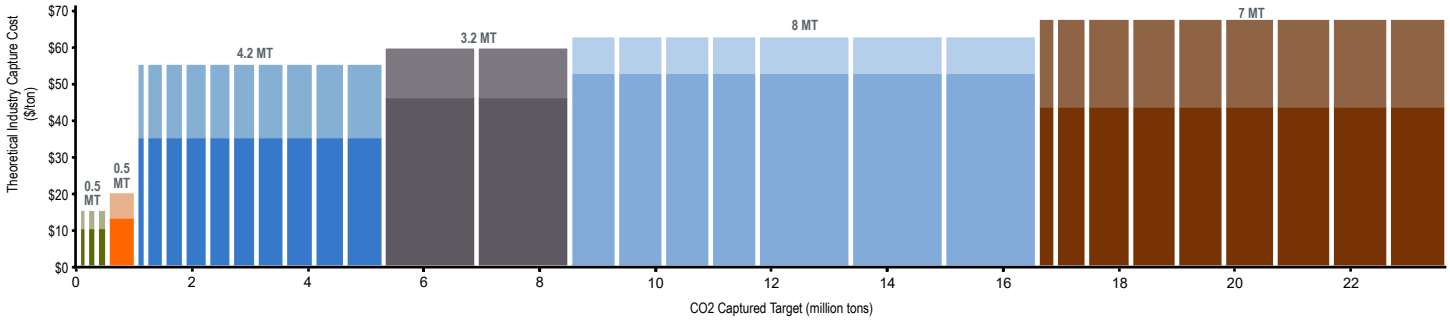


Figure 1: Louisiana has many facilities large enough to qualify for the 45Q carbon capture tax credit, including coal and gas power plants, gas processing facilities, and petroleum refineries. Facilities identified by the Regional Carbon Capture Deployment Initiative as potential early candidates for capture retrofit based on emissions, equipment, and estimated capture cost, are shown with outlines and darker colors. Details on these facilities are listed below.

Source: Great Plains Institute 2019; EPA 2018.

POTENTIAL CANDIDATE FACILITIES FOR CAPTURE WITH ANNUAL EMISSIONS



*Faded areas of each bar represent estimated range of capture costs, with the darker color representing minimum expected cost.

Figure 2: The Regional Carbon Capture Deployment Initiative estimated theoretical facility capture costs based on published capture equipment costs, facility-specific operational patterns, existing equipment, and level of emissions. Most states have a large number of facilities eligible for 45Q. Of those facilities, the above graph depicts likely economically feasible candidates based on estimated capture cost. The facilities represented in this graph are not meant to be definitive. Commercial decisions by participating companies, and policy and regulatory decisions by state governments, will ultimately determine if a project is feasible for carbon capture. CO_2 Captured Target refers to the amount of carbon dioxide that can be expected to be captured at a facility considering relevant technological and economic constraints. Source: GPI 2019; EPA 2018.

Maps and graphics within this document are based on work by the Great Plains Institute (GPI) to help the Regional Carbon Capture Deployment Initiative identify facilities that qualify for the federal 45Q tax credit and are optimal near-term investment opportunities for carbon capture for each state. For more information, visit **carboncaptureready.org**.

LEGISLATIVE CONTEXT

Louisiana has long recognized the benefits of carbon capture and created a favorable legislative context to spur deployment of carbon capture technologies and infrastructure within the state. The Louisiana Geologic Sequestration of Carbon Dioxide Act, House Bill 661, passed in 2009 and is the foundation for carbon capture deployment in the state. The act includes four key facets: it authorizes the Department of Natural Resources to create a regulatory scheme for the injection, use and storage of CO_2; establishes state liability of injected CO_2 after 10 years of storage; creates the Geologic Storage Trust Fund to manage and monitor the stored CO_2; and grants the state the ability to use eminent domain in the case of geologic sequestration projects.

Governor Edwards has made carbon capture utilization and storage a priority for his administration. In 2018 Louisiana joined the Governor's Partnership for Carbon Capture and is one of the most active states observing efforts of the Carbon Capture Coalition. Louisiana is taking charge to emphasize the need for primacy of EPA Class VI injection permits to expedite carbon capture storage projects and capitalize on the 45Q federal tax credit for saline storage.

CAPTURE AND STORAGE POTENTIAL

With existing pipeline infrastructure and rights-of-way for carbon transport, a variety of CO_2 sources, and oil and gas operators with the requisite knowledge to make carbon capture projects work, Louisiana is on the forefront of becoming a new carbon economy. In addition to the state's favorable geography for saline storage, Louisiana is also near the Permian Basin. This is the world's largest existing hub for CO_2 capture, transport, utilization and geologic storage, where captured CO_2 can be sold and used for EOR. The state currently has 271 miles of pipeline, and 52 facilities that qualify for the 45Q tax credit are within 50 miles of existing pipeline.

Along with transport infrastructure and ample nearby CO_2 storage, Louisiana also hosts a plethora of CO_2 emissions sources. Emissions from the industrial sector account for roughly 60 percent of the state's CO_2 emissions according to the EIA. Many industrial facilities present a low-cost opportunity for carbon capture given the high purity of their emissions. The state is also both a heavy producer and consumer of natural gas, accounting for roughly nine percent of the nation's dry gas production and consuming nearly six percent of total U.S. consumption. There are 12 gas power plants eligible for 45Q, seven of which have been identified as economically feasible candidates. These seven facilities have the potential to capture eight million metric tons of CO_2 emissions annually. Additionally, the state supplies nearly one fifth of the nation's oil refining capacity. Nine of the 11 refineries in the state have been identified as economically feasible candidates with the combined potential to capture seven million metric tons annually.

REGIONAL CAPTURE OPPORTUNITIES

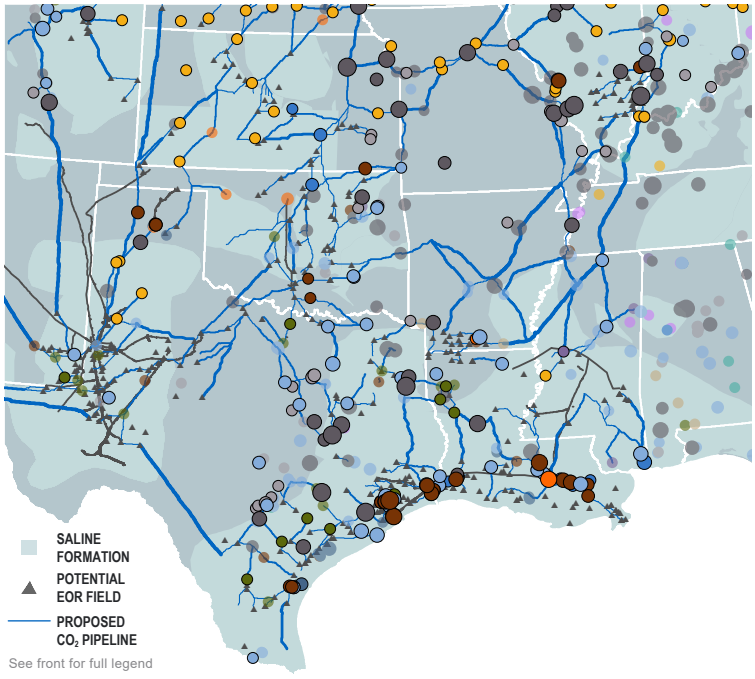
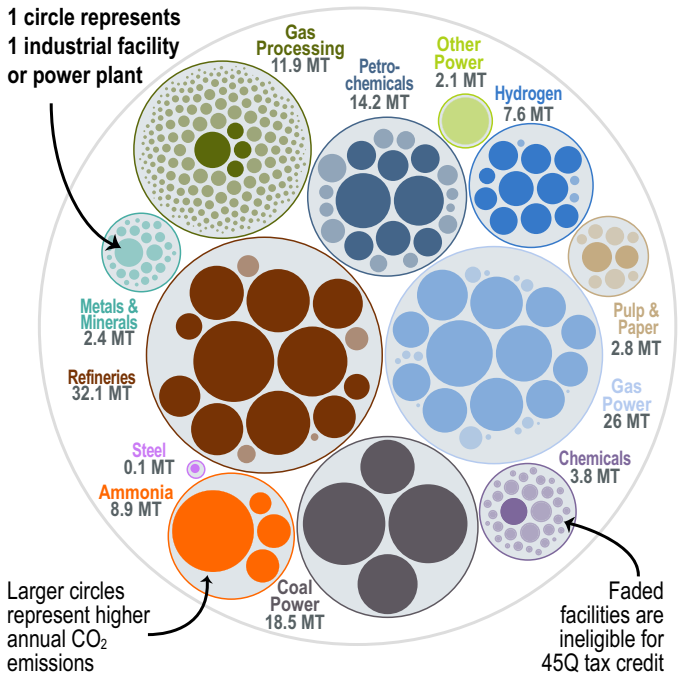


Figure 3: Potential regional CO_2 sources and pipeline corridors for transportation to utilization and storage sites as modeled by the Regional Carbon Capture Deployment Initiative.

FACILITIES AND EMISSIONS BY INDUSTRY



MT: Million metric tons CO_2

Figure 4: This bubble diagram visualizes the number of facilities and corresponding annual CO_2 emissions for each industry in Louisiana. The darker large bubbles are eligible for the 45Q carbon capture tax credit, while the faded bubbles are too small to be eligible. The total amount of CO_2 emissions in Louisiana is listed for each industry.
Source: GPI 2019; EPA 2018.

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