

# PUBLICATION

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## Carbon Capture and Sequestration: Can Big Oil Save Money AND the Environment?

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**Carbon capture and storage technologies are seeking to achieve zero net emissions in America by 2050. To that end, a host of legislative initiatives has been proposed at the state and federal levels to research the feasibility of current carbon capture technologies and to determine whether such technologies make economic sense for businesses.**

Of the legislative initiatives, giving businesses the opportunity to receive carbon credits by implementing carbon capture and storage technologies could prove to be an attractive incentive. There are several carbon capture methods. For example, one such technology involves direct-air capture units, which are being used in Texas's Permian region. The solar powered direct-air capture units suck carbon dioxide from the atmosphere and pump it into sedimentary rock formations. Another is bioenergy with carbon capture and storage, which uses trees and crops to absorb carbon as they grow. Those crops, or biomass, are then burned for energy, and the carbon is captured and stored underground. These technologies can help businesses capitalize on carbon credits by utilizing existing infrastructure.

### What Are Carbon Credits and How Do they Work?

In February 2019, the Utilizing Significant Emissions with Innovative Technologies Act (the USE IT Act) (S. 383) was re-introduced in the U.S. Senate. The USE IT Act is designed to support carbon utilization and direct air capture research, which are key to major emissions reductions. The bill also supports federal, state and non-governmental collaboration in the construction and development of carbon capture, utilization and sequestration (CCUS) facilities and carbon dioxide (CO<sub>2</sub>) pipelines, as well as innovation addressing climate change. The bipartisan legislation supports efforts to find profitable uses for captured carbon dioxide and simplifies the process for building carbon dioxide pipelines.

The USE IT Act would:

- Narrowly amend the Clean Air Act to direct the Environmental Protection Agency (EPA) to use its existing authority to support carbon utilization and direct-air capture research;
- Clarify that carbon capture projects and CO<sub>2</sub> pipelines are eligible for the permitting review process established by the FAST Act;
- Direct the Council on Environmental Quality (CEQ) to establish guidance to assist project developers and operators of carbon capture and sequestration facilities and CO<sub>2</sub> pipelines;
- Establish task forces to hear input from affected stakeholders for updating and improving guidance over time; and
- Build on the FUTURE Act, bipartisan legislation – now signed into law – introduced by U.S. Senators Barrasso, Whitehouse and Capito to extend and expand the 45Q tax credit to provide certainty to utilities and other industrial sources and incentivize the build-out of carbon capture projects.

In February 2020, the Internal Revenue Service (IRS) issued guidance ([here](#) and [here](#)) on the [Section Q45 tax credit](#) relating to [carbon capture](#). This credit is designed to pay for carbon obtained from "qualified facilities" that will later be used for tertiary recovery or stored in a geological formation (such as a salt dome). For industrial-source carbon dioxide (that would have otherwise been released into the atmosphere), the amount of the tax credit is scheduled to rise gradually from \$22.66 per metric ton (2016) to \$50 per metric ton (by 2026), and will be adjusted for inflation thereafter. For industrial-source carbon dioxide used as a tertiary injectant in a qualified oil or natural gas recovery project, the amount of the credit is scheduled to rise gradually from \$12.83 per metric ton (2016) to \$35 per metric ton (by 2026).

The Section 45Q tax credit may be claimed during the 12-year period beginning on the date the equipment is placed into service by the person who owns the carbon capture equipment and physically or contractually ensures the carbon capture. However, to be eligible for the Section 45Q tax credit, construction of a qualified facility that includes carbon capture equipment must begin before January 1, 2024. IRS Notice 2020-12 provides guidance on the determination of when construction has begun on a "qualified facility" or on carbon capture equipment that may be eligible for the Section 45Q tax credit.

The Notice provides two familiar methods to establish when construction begins:

1. By beginning physical work of a significant nature; or
2. By paying or incurring five percent or more of the total cost of the qualified facility or carbon capture equipment.

Notice 2020-12 also requires continuous progress towards completion once construction has begun. It should be noted that a carbon sequestration project may be placed in service up to the end of the sixth calendar year after beginning construction in order to qualify for the tax credit.

Additionally, the IRS released [Revenue Procedure 2020-12](#), which establishes a safe harbor structure ensuring that the tax equity investor will be entitled to claim the Section 45Q tax credit. Under Rev. Proc. 2020-12, carbon sequestration transactions are structured as partnership flip transactions, meaning that the allocations of profits and losses are shared among the partners on a certain percentage basis for a period of time, and then shared on a different percentage basis after that period ends. Under Rev. Proc. 2020-12, at least 50 percent of the investor's total capital contributions must be fixed and determinable obligations that are not contingent on the amount or certainty of payment. Another feature is that neither developers nor investors are permitted to have a call right. Put rights are available to investors as long as the price is not more than its fair market value determined at the time of exercise.

### **How Can Louisiana Benefit?**

Louisiana is likewise investigating ways to promote carbon sequestration through financial incentives. In a recent study by Tierra Resources, it was discovered that over the next 50 years, Louisiana could potentially earn up to \$1.6 billion for coastal restoration from the sale of credits for storing carbon in wetland plants and soil. The credits could be sold by private landowners and businesses in Louisiana that create their own restoration projects or participate in publicly financed projects. The credits could also be sold in an existing voluntary market to businesses or individuals looking to offset their carbon "footprint." Additionally, in 2018, La. Rev. Stat. 3:1221 codified that the commissioner of the Department of Agriculture and Forestry is authorized "to take all action necessary to ensure Louisiana's participation, to the fullest extent practicable, regarding carbon sequestration or the reduction of emissions of carbon dioxide and other greenhouse gases from agriculture and forestry." The statute further provided that this requirement does not in any way affect the authority of the Louisiana Department of Natural Resources or benefits, credits or offsets derived from projects approved and undertaken by the Coastal Protection and Restoration Authority in the coastal area.

Because of its geological (e.g., salt domes) and industrial make-up (e.g., a vast network of pipelines), Louisiana could implement carbon capture and storage programs. In fact, at least two locations have already been investigated in this regard: a salt-dome cavern at Bayou Sorrel and an old oilfield in Paradis that is highly faulted. Recent research suggests that an industrial carbon capture and storage project could technically be developed in the Louisiana industrial corridor given the fact that:

- There are a large number of geographically concentrated and diversified sources of CO<sub>2</sub>.
- There are a large number of geographically concentrated and diverse storage locations (or "sinks").
- There are a sufficient number of opportunities to develop transportation infrastructure linking supply to storage in these areas.
- This is a region with a long history and commercial experience in moving and storing a number of different hydrocarbons, as well as other hydrocarbon wastes, into underground geological formations, which should minimize public perception challenges and potential opposition to safely developed and environmentally favorable projects.

Additionally, some of Louisiana's biggest producers of carbon emissions have begun to implement their own technologies in an attempt to limit and reduce the amount of emissions from their facilities. For instance, the ExxonMobil Refinery near Baton Rouge has been investigating and implementing carbon capture and sequestration technology for a number of years. In fact, ExxonMobil is currently working on developing carbonate fuel cell technology, which could be deployed in a modular fashion at industrial sites. They are also developing sub-surface carbon storage in deep geologic storage caverns, a feature that is abundant in Louisiana. Additionally, CF Industries' ammonia plant in Donaldsonville is also implementing technology to reduce its carbon footprint, such as making voluntary investments in carbon capture and nitrous oxide abatement technologies to reduce greenhouse gases. It is an approach that has paid off for CF Industries in recent years as it has been able to reduce carbon emissions per ton of product by 30 percent from 2012 through 2017.

Also, in the recent 2020 Regular Legislative Session that ended in June, an act was passed that seeks to further clarify the framework for carbon capture and storage in Louisiana. Act No. 61, introduced by Sen. Sharon Hewitt, is designed to pave the way for a new market in carbon sequestration in Louisiana. In recent years, refiners have been encouraged to capture emissions from the air, but the regulatory framework around how to accomplish that and how to store it has been unclear. This left companies uncertain as to where they can store and to whom they can sell the sequestered carbon. The new Act, however, provides a way forward for Louisiana to capitalize on its existing pipeline infrastructure to capture and store carbon.

What these initiatives demonstrate is that we, as a nation, are moving closer to zeroing out emissions and attempting to find creative ways to incentivize carbon sequestration to eliminate greenhouse gases in the environment. Because Louisiana has a number of naturally occurring geological features (like salt caverns and vaults) that are operated by various oil and gas companies, it only makes sense that the oil and gas industry, as well as the chemical manufacturing sector, begin to work with federal and state incentive programs to capitalize on possible financial initiatives that could benefit them monetarily, and, ultimately, benefit the environment. The initiatives discussed above are just the tip of the iceberg.