



Carbon Capture Policy Options for Inclusion in COVID-19 Economic Recovery Legislation

The Carbon Capture Coalition recommends targeted provisions for inclusion in congressional economic recovery legislation to address the impact that COVID-19 has already had on current carbon capture projects and prospects for future deployment. After the immediate national health emergency has stabilized, the Coalition looks forward to working with lawmakers on a broad-based economic recovery to position our nation as a leader in technology, high-wage jobs and emissions reduction.

In crafting these recommendations, the Coalition was guided by three criteria aimed at ensuring a timely and effective federal response to economic needs. Proposed measures should: 1) rely on existing legislative authorities, whenever possible; 2) avoid or minimize the need for further rulemaking or guidance procedures; and 3) have the potential for broad bipartisan support.

In 2019, the Carbon Capture Coalition released its first-ever [Federal Policy Blueprint](#), which lays the groundwork for a full federal policy portfolio for carbon capture that builds on the landmark 45Q tax credit. The recovery recommendations put forward by the Coalition are drawn from the Blueprint and prioritized for near-term impact on economic development and job creation. Some of the Coalition's recommendations in response to COVID-19 entail little or no additional cost to U.S. taxpayers. Others have costs ranging from low to moderate in a broader economic recovery context, thus providing jobs creation and preservation, domestic energy and industrial production, and emissions reduction benefits cost-effectively.

Near-Term: Immediate Economic Recovery Benefits for Current Projects at Risk of Delay/Cancelation

Allow direct pay for the Section 45Q tax credit to enable financing of carbon capture projects

Proposal: Allow 45Q tax credit recipients to receive a direct cash payment from the Treasury without the need to rely on tax equity markets constrained by the current COVID-19-induced economic and market crisis. The [Ways and Means Majority Green Act](#) discussion draft released late last year includes in Section 104 a direct pay provision for renewable electricity tax credits, but not for 45Q. Because carbon capture and utilization projects remain more challenging to finance than incumbent low and zero-carbon technologies, 45Q should be eligible for direct pay.

Background: Tax equity markets that finance clean energy and industrial projects have been significantly impacted by the COVID-19 crisis, imperiling economic activity and jobs right when they are needed most. Projects under development to capture and use carbon from industrial facilities, power plants and ambient air through direct air capture are especially at risk, just as project developers and investors are gearing up to build out a carbon management industry in response to the reformed and expanded Section 45Q credit enacted by Congress in February 2018. Direct pay would help ensure that carbon capture projects can move forward in the current economic environment at little or no additional cost to the Treasury.

Extend the commence construction window for 45Q to ensure that carbon capture projects qualify for the credit

Proposal: Enact a multi-year extension of 45Q. Extension of the commence-construction window under 45Q to ensure that projects, both announced and under development, continue to move forward despite near-term economic and market headwinds. Significant legislative activity has occurred in the 116th Congress to extend 45Q, including:

- Representative Sewell (D-AL) introduced the Carbon Capture and Sequestration Extension Act of 2019 ([H.R. 5156](#)) to provide for a one-year extension of 45Q.
- Representative Schweikert (R-AZ) introduced [H.R. 5883](#) to make 45Q permanent.
- Senators Capito (R-WV), Whitehouse (D-RI), Barrasso (R-WY) and Cramer (R-ND) proposed a bipartisan amendment (S. Amdt. 1374) to the American Energy Innovation Act ([S. 2657](#)) to extend 45Q for five years.

Background: Carbon capture projects are particularly vulnerable to the market impacts and uncertainty caused by the COVID-19 pandemic, due to the short commence construction timeframe under the current authorization of 45Q, which requires projects to begin construction by January 1, 2024. Most carbon capture projects typically take longer to plan, engineer, permit and finance than projects involving technologies that are well established in the commercial marketplace.

Additionally, carbon capture and utilization technologies have only had a significant financial incentive in federal law since the passage in February 2018 of the [FUTURE Act](#) that reformed and expanded 45Q. The six-year window for projects to begin construction under 45Q has already been reduced to less than four years due to ongoing delays by Treasury on 45Q guidance and rulemaking.

Appropriate funds to advance CarbonSAFE saline geologic storage projects to completion

Proposal: Fully fund CarbonSAFE to allow all current Phase II and Phase III projects to advance through Phases III and IV, as well as an additional four Phase I projects to complete the program, for a total of ten projects. DOE recently selected five projects to advance to Phase III. The total additional cost to advance ten projects through the program is \$455 million.

Background: The Department of Energy's Carbon Storage Assurance Facility Enterprise (CarbonSAFE) focuses on development of large-scale geologic storage sites for CO₂ from power, industrial and direct air capture. Projects advancing through Phases III and IV will lead to development of sites capable of safely storing more than 50 million metric tons of CO₂. Development of cost-effective saline storage sites will increase near-term development of carbon capture projects under 45Q, as well as provide jobs for oilfield service and geoscience professionals hard hit by the COVID-19 crisis, putting them back to work and applying their skills to a future growth industry.

Fix the 48A tax credit to enable carbon capture retrofits of power plants

Proposal: Modify heat-rate requirements contained within 48A to allow carbon capture retrofits to qualify and provide a direct pay option for the 48A credit to support near-term project development and employment at little or no additional cost to the federal government. Representatives McKinley (R-WV) and Peterson (D-MN) and Senators Hoeven (R-ND) and Smith (D-MN) have introduced companion versions of the Carbon Capture Modernization Act ([H.R. 1796](#) and [S. 407](#)) to accomplish the needed technical fixes to 48A.

Background: Multiple front-end engineering and design studies are underway to retrofit power plants with carbon capture, but the current market crisis associated with COVID-19 threatens to derail these projects and their associated economic, jobs and emissions reduction benefits. The 48A tax credit program has roughly \$2 billion in already available funds, but technical changes to heat-rate requirements are required to access the credits, so that retrofit projects can move forward.

Medium-Term: Economic Recovery Benefits via Support for Current Projects and Projects Under Development

Ensure sufficient federal and state Class VI permitting capacity to expedite saline storage and associated capture projects

Proposal: Fully fund the EPA UIC program, both for staffing at EPA, and State and Tribal Grants. To build capacity at the state level to support robust Class VI well programs, a fully funded program would be \$5 million per year for EPA and \$50 million for activities related to Class VI wells at the state level.

Background: The permitting of Class VI injection wells required for saline storage under EPA's Underground Injection Program (UIC), and the related delegation of primacy to states, are critical elements for advancing saline geologic storage projects during the current authorization of 45Q. It is estimated that once the U.S. Treasury issues final guidance for 45Q, up to two dozen projects will seek approval for Class VI wells, and current EPA staffing levels for the Class VI program are inadequate to meet the near-term increase in saline storage project permit applications anticipated under 45Q.

Provide access to tax-exempt private activity bonds to reduce the costs of capital for projects

Proposal: Adopt the Carbon Capture Improvement Act ([S. 1763](#) and [H.R. 3861](#)) to make industrial and power plant carbon capture projects eligible for PABs, together with an amendment to also provide for eligibility of direct air capture technologies. The Joint Committee on Taxation previously estimated the total cost at only \$128 million.

Background: Private activity bonds (PABs) provide a common, well-accepted means of financing large-scale infrastructure projects, yet carbon capture projects are currently ineligible for PABs. Repayment of investors and lenders constitutes roughly two-thirds of the cost of financing carbon capture projects. Compared to conventional bank financing, PABs reduce annual debt payments, both by lowering interest rates and extending the repayment period. Making carbon capture eligible for PABs would thus reduce the cost of financing and allow more carbon capture projects to proceed to later stage development and construction.

Appropriate funds for a temporarily expanded DOE cost-share program for technology demonstration, front-end engineering and design studies, and large-scale saline geologic storage site development

Proposal: Appropriate funds to support a robust and temporarily expanded DOE cost share program to finance the following:

- Commercial demonstrations of industrial and power plant carbon capture and direct air capture (DAC) projects to produce a standard design specification for up to five demonstrations of particular technology types (estimated total cost of \$8.75 billion);
- Front-end engineering and design (FEED) studies for both industrial and power plant carbon capture technologies and DAC technologies (estimated cost of \$500 million); and
- Development of large-scale, commercial saline geologic storage facilities and associated transport infrastructure to serve as hubs for multiple capture projects across industries and regions (estimated cost of \$2.5 billion).

Background: There are long lead times in advancing capital-intensive technologies from concept to demonstration to commercialization, making it challenging even in normal economic conditions to attract private investment to scale up these technologies in the marketplace. DOE cost shares have played a crucial role in the success of recent large-scale carbon capture and storage projects in the U.S. Looking ahead, such programs will remain critical in laying the groundwork for a broader commercial carbon capture industry supported by CO₂ transport and geologic storage hubs, the deployment of which will beneficially generate substantial investment and economic activity, support high-wage jobs across entire regions and multiple industries adversely impacted by the COVID-19 crisis as we work to spur long-term economic recovery.

Implement administrative improvements to the DOE Loan Program to enable access to existing federal financing

Proposal: Implement improvements legislatively to administration of the loan program that:

- Appropriate funding to cover the credit subsidy fee for applicants;
- Reduce applicable fees;
- Eliminate the requirement for projects to employ new or significantly improved technologies in order to include existing commercial carbon capture technologies that are not widely deployed; and
- Remove the requirement in the 2009 Omnibus Appropriations Act that restricts project developers from receiving both a DOE loan and a federal grant.

Background: The Section 1703 Innovative Clean Energy Loan Guarantee Program was established under the Energy Policy Act of 2005 and approximately \$8 billion remains in loan guarantee authority for Advanced Fossil Energy projects, including carbon capture, storage, use, and DAC. No guarantees have yet been finalized for a carbon capture project (although one project has received a conditional guarantee) because loan program costs and restrictions have deterred or prevented participation, including:

- Onerous credit subsidy cost and fees that applicants must pay up-front to secure the loans, which can amount to millions of dollars;
- Requirement that projects be innovative and "employ new or significantly improved technologies," which prohibits the use of existing, but not widely deployed carbon capture technologies; and the
- 2009 Omnibus Appropriations Act restricts project developers from receiving both a DOE loan and a federal grant, thus locking out a substantial number of potential applicants.