

## **Carbon Capture Coalition Statement for the Record**

### **United States Senate Committee on Energy and Natural Resources Full Committee Hearing to Examine Opportunities and Challenges in Deploying CCUS and DAC Technologies on Federal and Non-Federal Lands**

**November 2, 2023**

The Carbon Capture Coalition (the Coalition) appreciates the opportunity to submit this statement for the record for the Senate Energy and Natural Resources Committee hearing to examine opportunities and challenges in deploying Carbon Capture, Utilization, and Storage (CCUS) and Direct Air Capture (DAC) technologies on federal and non-federal lands. Carbon management technologies are essential tools in a broader federal strategy to reduce greenhouse gas emissions, while simultaneously providing benefits to affected communities and regional economies through associated air quality benefits as well as the preservation and creation of family-sustaining jobs.

The [Carbon Capture Coalition](#) is a nonpartisan collaboration of more than 100 companies, unions, conservation and environmental policy organizations, building federal policy support to enable economywide, commercial scale deployment of carbon management technologies. This includes carbon capture, removal, transport, reuse, and storage from industrial facilities, power plants, and ambient air. Coalition members recognize that economywide adoption of carbon management technologies are critical to achieving net zero emissions to meet midcentury climate goals, strengthening and decarbonizing domestic energy, industrial production and manufacturing, and retaining and expanding a high-wage jobs base. Successful commercial deployment of these technologies requires prioritizing meaningful engagement and consultation with local communities as well as associated workforce development.

Building off the historic support provided to carbon management technologies in the 117th Congress, lawmakers can reinforce and grow the role of American leadership in the development and deployment of these technologies throughout the remainder of this decade. This statement details a slate of near-term federal policy opportunities for the committee to consider to catalyze the deployment of carbon management technologies across the economy. The below recommendations address the current economic, financing and project permitting challenges carbon management projects face in today's policy landscape. Enacting these recommendations would further enable these technologies to fulfill their emissions reduction potential, while strengthening American manufacturing and industrial production, and providing communities with tangible economic and health benefits. Specifically, this includes small-scale adjustments to the federal Section 45Q tax credit, the foundational policy mechanism for incentivizing carbon management projects and, critically, considerations for reforming aspects of the permitting process to provide clear and transparent parameters for project developers to abide by as this sector scales in a safe, efficient and responsible manner.

#### **Ensuring Investment Certainty Under Federal Section 45Q**

Over the course of the 117th Congress, the Coalition and its members played a central role in ensuring that key carbon management priorities were reflected in broadly bipartisan pieces of legislation, and eventually included in larger legislative vehicles like the 2021 Bipartisan Infrastructure Law ([BIL](#)) and the [2022 Inflation Reduction Act \(IRA\)](#). Today, the U.S. policy framework is now recognized as the most comprehensive and robust federal policy support for carbon management technologies in the world. Moreover, this wave of increased federal policy support since the 2018 restructuring of the 45Q tax credit has resulted in the public announcement of more than 150 carbon capture projects under development, with many more in the development pipeline.

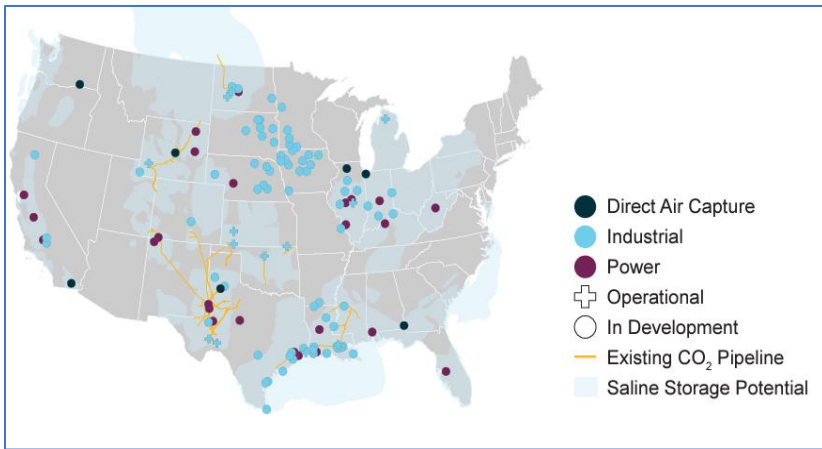


Figure 1 – Publicly Announced Carbon Management Projects. These projects span the development cycle from early stages of development to project construction.

These announced projects span the carbon management value chain and include projects at various stages technology development and deployment—from pilot scale, feasibility (front end engineering and design studies) up to commercial scale projects, signaling that increased federal policy support for carbon management technologies will translate into real-world projects. It remains clear that in order to deploy projects at a scale in keeping with ambitious midcentury climate targets, 45Q must work wholistically for projects across the value chain.

With crucial enhancements to the 45Q tax credit now enshrined in law, along with a portfolio of complementary policies enacted throughout the course of the 117th Congress, project proponents have a strong foundation to bolster the widespread deployment of carbon capture, removal, reuse, and transport and storage technologies in central sectors including heavy industry, power, and direct air capture. However, further adjustments to the tax credit will be necessary to ensure investment certainty and business model flexibility.

- Index 45Q for Inflation:** Increased credit values provided to projects developed in the industry, power, and direct air capture sectors represent the cornerstone of the recent enhancements made to 45Q. However, unlike other low- and zero-emissions technology tax credits recently reformed under the 117th Congress which adjust for inflation beginning in 2022 and 2023, the 45Q tax credit value is not adjusted for inflation until 2027, putting carbon management projects at a significant disadvantage. Already, much of the value increase realized in 2022 has been eroded due to significant inflation in both capital goods costs and energy prices. In numbers, the 2022 Consumer Price Index (a standard metric of inflation) rose by 7 percent. Therefore, value of an \$85 per metric ton 45Q credit would now be only \$74 per metric ton as measured in 2020 dollars, and early modeling suggests by 2026 the value of the credit could diminish by 30 percent. Ignoring these inflationary pressures on 45Q jeopardizes not just the bipartisan investments already made under the 117th Congress, but the economic and environmental returns expected from those investments, including the creation and retention of family-sustaining jobs and tangible health benefits.
- Create Parity Between Credit Levels for Carbon Storage and Carbon Reuse:** Increasing credit levels for the nascent carbon reuse sector, which is the conversion of carbon oxides to produce commercial products, is necessary to realize commercial viability for this portfolio of technologies. While enhancements to 45Q increased credit levels across the board in 2022, the credit was bifurcated between permanent storage of captured CO<sub>2</sub>, and the utilization of CO<sub>2</sub> as a feedstock for commercially valuable products, or to produce additional oil in depleted oil and gas wells. Relative to using CO<sub>2</sub> for the purposes of producing additional oil, reusing carbon to produce valuable products is not yet cost competitive with incumbent technologies. Under the current statute, there is a \$25 per ton disparity between those projects that reuse carbon emissions versus those that securely and permanently store the captured carbon. This disparity effectively disincentivizes the development and deployment of relatively new carbon reuse technologies, essentially acting like a tax on such operations. This disparity rises to \$50 per ton in relation to direct air capture projects.

Luckily, there is already bipartisan support for creating parity between these two credit levels in the 118th Congress. In February 2023, the bipartisan [Captured Carbon Utilization Parity Act](#) was introduced by Senators Sheldon Whitehouse (D-RI) and Bill Cassidy (R-LA), aiming to increase the credit levels provided for carbon utilization to \$180/ ton for products sourced from direct air capture and \$85/ton for those products sourced from industry and power – thereby matching credit levels provided

for geologic storage of CO<sub>2</sub> and making the carbon reuse sector more economically competitive. Properly incentivizing the deployment and innovation of carbon reuse applications to create low- and zero-carbon products, including fuels, chemicals, and building materials is important to provide an alternative pathway to address sources of emissions that are too small to be economically captured and transported, or too far removed from appropriate storage sites. [Current estimates](#) on the potential uptake of CO<sub>2</sub> reuse to make valuable products range from 5 to 10 percent of global emissions, or several gigatons per year. Put simply, carbon reuse is an important, complementary effort to storing captured CO<sub>2</sub> in secure geologic formations. Federal tax incentives should more appropriately reflect carbon reuse's role in a broader portfolio of strategies to reduce greenhouse gas emissions, decarbonize and introduce circularity to the American economy, and create new manufacturing sectors resulting in the creation of family-sustaining jobs.

## Considerations for Overcoming Permitting Challenges

Unprecedented federal bipartisan investments in carbon management technologies have set the stage to scale deployment, but building out associated infrastructure will require efficient and effective permitting, grounded in robust environmental protections and community engagement. Improvements to the current permitting system will be central to help facilitate the build-out of climate-essential projects and encourage private investment. Though the Coalition understands that it is not true in all cases that federal and state agencies will have permitting and siting authority over carbon management projects, Coalition members have developed a set of guiding principles for consideration as permitting reform is discussed amongst lawmakers at the federal level. These principles are meant to represent important considerations for responsible and successful project deployment and would further ensure the benefits associated with deployment flow to the communities that host these diverse projects and the workers that build them.

With this in mind, the Coalition has developed a set of six guiding principles for permitting reform to catalyze the safe, effective and responsible deployment of carbon management communities which centers around the themes of clarity, transparency and efficiency including:

- Ensure federal and state agencies have the resources, staffing, technology, and training to efficiently complete a growing number of reviews and community engagement processes as carbon management projects scale in deployment;
- Ensure early, robust, meaningful, and timely public engagement and input from affected communities is reflected in decision making;
- Ensure environmental standards and protections are maintained, and environmental outcomes are strengthened;
- Direct agencies to appropriately use programmatic review and categorical exclusions for carbon management infrastructure;
- Create a pathway for federal siting authority for interstate CO<sub>2</sub> pipelines, creating appropriate parity for all types of interstate linear infrastructure; and
- Ensure review of Class VI state primacy applications, as well as individual Class VI well applications, occur on a reasonable and predictable timeframe.

Robust infrastructure to safely transport and store captured CO<sub>2</sub> in secure geologic formations is an essential component of any broader strategy to put America firmly on a path toward net-zero emissions reductions. Carbon management projects, like many of their clean energy counterparts, are complex – and ensuring all pieces of a project come together is necessary to scale deployment of these technologies across the economy. While the nation's current permitting regime has been in place for decades, as this industry continues to expand in the near-term, gaps in policy for permitting these projects, among others in the energy sector, have created delays and bottlenecks at critical junctures of project deployment. One example of this is with regard to the buildout of regional CO<sub>2</sub> transport infrastructure systems.

Currently, siting authority for interstate CO<sub>2</sub> pipelines rests with individual states while, in contrast, there is federal siting authority for interstate natural gas pipelines under the Natural Gas Act. Over the course of the past year there has been active discussion in the context of permitting reform over federal siting authority for interstate transmission lines and interstate hydrogen pipelines. Absent from the debate, however, has been providing similar siting authority for CO<sub>2</sub> pipelines. **Establishing a pathway for federal siting authority for interstate carbon dioxide pipelines to provide similar parity for all linear infrastructure types, where appropriate, that face similar siting challenges should be prioritized to allow recent federal historic investments dedicated to carbon management infrastructure to enable efficient and responsible buildout of the necessary CO<sub>2</sub> pipeline network.** Such parity would also enable better coordination, planning, and siting across federal agencies to lower impacts for wildlife and local communities. However, lines that are well served by the current state by state regulatory siting authority should be allowed to continue with that process.

As evidenced by multiple international climate assessments and recent historic levels of bipartisan federal policy support to incentivize the scale up of carbon management technologies, a substantial buildout of CO<sub>2</sub> pipeline infrastructure is necessary to transport large quantities of CO<sub>2</sub> from industrial facilities, power plants and direct air capture facilities to points of reuse and/or permanent geologic storage. For that to occur, there must be full public and policymaker confidence in the safety of CO<sub>2</sub> pipelines and assurances that appropriate regulations and protocols are in place to prevent incidents of pipeline failures.

The Carbon Capture Coalition has long-supported rigorous safety design, inspection and maintenance protocols associated with CO<sub>2</sub> capture, transport and storage infrastructure and recognizes the excellent historical safety record of such infrastructure—one that surpasses other climate-essential energy infrastructure—including electric transmission and distribution systems. CO<sub>2</sub> pipelines have been operating safely in the United States for more than 50 years. Currently, 50 operating pipelines span over 5,000 miles with individual pipelines safely transporting millions of tons of CO<sub>2</sub> annually over hundreds of miles and across entire regions of the country. Safety data reported by the Pipeline and Hazardous Materials Safety Administration (PHMSA), the agency charged with overseeing CO<sub>2</sub> pipeline safety, shows that CO<sub>2</sub> pipelines have been and can be operated at the highest level of safety by best-practice operators. While CO<sub>2</sub> pipelines have had a strong safety record, a rare but serious pipeline failure in Satartia, Mississippi in 2020 has increased public and policymaker concerns about pipeline safety and the overall reliability of these systems as they scale.

As we anticipate additional proposed CO<sub>2</sub> pipeline regulations from PHMSA in the near-term, and Congress prepares to consider reauthorization of the nation's pipeline safety laws, including key operating procedures and policies related to PHMSA, the Coalition offers the following recommendations to policymakers, as identified in our consensus [2023 Federal Policy Blueprint](#):

- Expanding first responder training for CO<sub>2</sub> pipeline safety incidents;
- Requiring that project proponents more rigorously consider potential geohazard impacts on CO<sub>2</sub> pipelines during design, siting, construction, and maintenance;
- Requesting that PHMSA conduct additional reporting on the public safety record of CO<sub>2</sub> pipelines; and
- Carrying out a national assessment of the CO<sub>2</sub> network necessary to meet net-zero emissions.

The Coalition champions common-sense steps to build upon comprehensive existing CO<sub>2</sub> pipeline regulations and looks forward to continuing to engage with PHMSA and bipartisan members of Congress to take steps to support the responsible buildout of these systems.

In addition to the responsible buildout of CO<sub>2</sub> transport systems, it is equally as important to ensure the timely and efficient review of Class VI state primacy applications and individual Class VI well applications to prevent project delays. Federal and state authorities are tasked with ensuring safe and permanent storage in appropriate geologic formations through the Environmental Protection Agency's (EPA) Underground Injection Control (UIC) Class VI injection well program. Class VI wells are used to inject CO<sub>2</sub> into deep geologic formations solely for the purpose of permanently storing CO<sub>2</sub>. Before potential storage sites are allowed to

move forward, they must provide highly detailed models to federal or state regulators, depending on which entity has authority over Class VI wells.

EPA can grant primary enforcement authority—referred to as primacy—to individual states, territories, or Tribal nations, which delegates authority to administer certain injection well classes. Granting primacy empowers states to manage and regulate Class VI injection wells within their jurisdiction, while upholding the same or more rigorous environmental and public engagement standards as the EPA. States, territories, or Tribal nations can be approved for this delegation of primacy only when their regulations meet or exceed the federal UIC requirements. A well-understood and commercial practice in the U.S. and in certain regions of the world, scaling up development and responsible permitting of secure geologic storage at gigaton scale is key to getting industries on track to be able to reach net-zero emissions targets and midcentury climate goals. Through these programs, EPA and established state primacy programs maintain a robust system of monitoring, reporting, and verification to validate secure geologic storage to claim the 45Q tax credit, the cornerstone policy enabling the scale up of carbon management projects.

As stated earlier, due to the groundswell of federal policy support now available to carbon management technologies thanks to recent historic investments from Congress, more than 150 carbon management projects have been publicly announced since

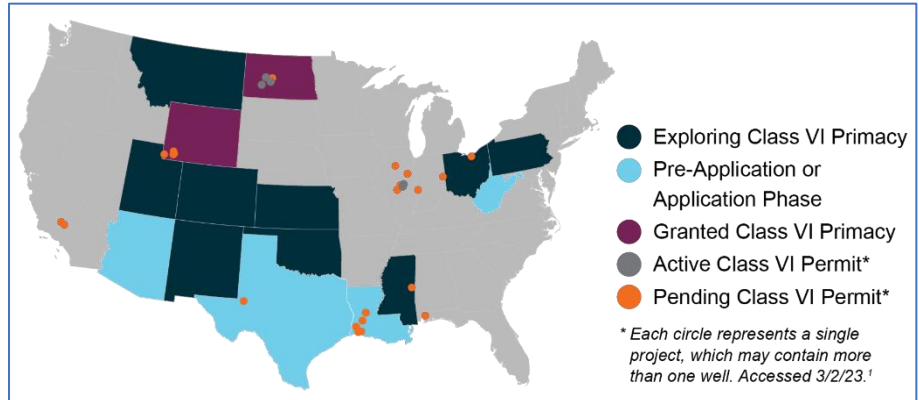


Figure 2 – Class VI Well State Primacy Status and Pending Well Applications at EPA

2018 with more than half of those intending to store their CO<sub>2</sub> in dedicated saline storage sites. This enormous uptick in carbon storage projects reinforces the importance of ensuring that EPA’s Class VI permitting program has adequate staffing and resources to responsibly and efficiently permit worthy projects. To date, EPA has permitted two Class VI wells, with two additional wells in the pre-construction phase; an additional 57 projects, along with a total 163 individual well applications are undergoing more preliminary review stages with the [EPA](#). Additionally, North Dakota and Wyoming have been granted primacy, with North Dakota having permitted two Class VI well applications, and Louisiana’s final determination on primacy from EPA expected imminently. **The notable increase in project applications to obtain Class VI Well permits, as well as the growing interest from states in applying for primacy, highlights the importance of federal and state efforts to prioritize the timely review of state primacy and individual Class VI well applications. Timely decisions on Class VI Well applications are necessary to provide the certainty needed to encourage necessary private investment.**

In recognition of the important role permitting plays in the successful deployment of carbon management technologies, the White House Council on Environmental Quality (CEQ) is moving forward with a mandate from the Coalition-endorsed Utilizing Significant Emissions with Innovative Technologies (USE IT) Act, which included the formation of two regional task forces to improve the performance of the permitting process for carbon management projects on federal and non-federal lands. In [March](#), the White House announced the members of these taskforces, including several individuals representing Coalition member organizations. The Coalition looks forward to engaging with these task forces and reviewing recommendations they may develop to ensure the permitting process works for all stakeholders impacted by and involved in the deployment of these projects.

Finally, following the historic investments in carbon management and associated infrastructure in the 117th Congress, we are now presented with the opportunity to place carbon management technologies at the heart of a national strategy for job creation and retention, workforce development and training, economic renewal, and climate stewardship. For example, through a 2021 [report](#) commissioned by the Great Plains Institute, Rhodium Group found that carbon capture retrofit opportunities at industrial and electric power facilities across

a 21-state region have the potential to create 70,000 to 100,000 jobs per year over the next 15 years. **Up to nearly 20,000 additional jobs would be created per year over this period by the buildout of a regional and national network of CO<sub>2</sub> transport and storage infrastructure.**

### ***Conclusion***

Carbon capture, removal, transport, reuse and storage technologies are essential tools for achieving emissions reduction goals in critical-to-decarbonize sectors, increasing domestic energy production, protecting and growing a high-wage jobs base, and fulfilling our climate obligations. The groundbreaking policies to scale deployment of associated CO<sub>2</sub> transport and storage infrastructure enacted as part of the Bipartisan Infrastructure Law and subsequent enhancements to the foundational 45Q policy framework are essential to placing America's energy, industrial and manufacturing sectors on track to reach net-zero emissions by 2050. At the same time, these will ensure the long-term viability of vital industries that provide millions of existing high-wage jobs, which represent the lifeblood of American workers, their families and communities, and regional economies. Combined with responsible and timely permitting reforms, these incentives will provide certainty to investors in carbon management technologies and create a favorable environment for scaling projects.

The Carbon Capture Coalition appreciates the opportunity to comment on the important topics of today's hearing and the Committee's continued support in advancing federal policies to enable greater deployment of carbon management technologies and associated transport and storage infrastructure. We look forward to working with the Committee in a bipartisan manner to identify the appropriate next steps to ensure these technologies can scale across the economy. Should you have any questions about anything outlined in this statement, please contact Madelyn Morrison, Director of Government Affairs, Carbon Capture Coalition at [mmorrison@carboncapturecoalition.org](mailto:mmorrison@carboncapturecoalition.org).