

## Carbon Capture Coalition Statement for the Record

### United States House Committee on Energy and Commerce Energy, Climate, and Grid Security Subcommittee Hearing: "Fueling America's Economy: Legislation to Improve Safety and Expand US Pipeline Infrastructure"

January 18, 2024

The Carbon Capture Coalition (the Coalition) appreciates the opportunity to submit this statement for the record for the House Energy, Climate, and Grid Subcommittee hearing on legislation to improve safety and expand US pipeline infrastructure. Carbon management technologies, including carbon capture, removal, reuse, transport and storage from industrial facilities, power plants, and ambient air, are essential tools in a broader federal strategy to reduce greenhouse gas emissions while providing health and economic benefits to affected communities and regional economies in the form of air quality benefits and the preservation and creation of family-sustaining jobs. Robust policies that ensure the safe and efficient expansion of CO<sub>2</sub> pipeline infrastructure across the country are crucial pieces in ensuring continued American leadership in the carbon management sector and environmental stewardship, more broadly.

The [Carbon Capture Coalition](#) is a nonpartisan collaboration of more than 100 companies, unions, and conservation and environmental policy organizations building federal policy support to enable economywide, commercial-scale deployment of carbon management technologies. Coalition members recognize that economywide adoption of carbon management technologies is 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 education and workforce development.

Over the course of the past several decades, multiple international scientific climate assessments have continued to emphasize the need for carbon management to be an available tool, among a broad set of greenhouse gas emissions reduction strategies, to help meet midcentury climate targets. Congress has, in turn, heeded this call, investing in significant policy support to incentivize the widescale deployment of the full suite of these technologies, including transformative enhancements to the federal Section 45Q tax credit, the foundational policy mechanism for incentivizing carbon management projects that permanently store or reuse captured CO<sub>2</sub>. These widely supported enhancements, coupled with historic investments in research, development, and deployment included in the [Bipartisan Infrastructure Law \(BIL\)](#), now form the most forward-looking portfolio of governmental policy support for these technologies in the world. The positive impact of that policy portfolio on the carbon management industry is clear—historic federal investments will translate into real-world projects.

In the year since critical enhancements to the tax credit were made law, there have been 59 project announcements, with an estimated annual capture capacity of more than 28 million metric tons per year. Of note, the majority of these newly announced projects intend to store captured CO<sub>2</sub> deep underground safely and permanently in saline geologic formations. However, for these technologies to reach their full emissions reduction and job creation and retention potential, an urgent and substantial buildout of safe and reliable CO<sub>2</sub> pipeline infrastructure will be needed 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 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. In the near term, we anticipate additional proposed CO<sub>2</sub> pipeline regulations from the Pipeline and Hazardous Materials Safety Administration (PHMSA), including updates to key operating procedures and policies. **As Congress considers the reauthorization of the nation’s pipeline safety laws under PHMSA, the Coalition has identified a slate of comprehensive and targeted measures Congress and the administration should take to ensure these transport networks are designed, constructed, and maintained at rigorous standards delivering the highest levels of reliability and safety.** These recommendations further support the continued buildout, management and operation of these essential energy infrastructure systems and further enable the deployment of these technologies at levels sufficient to meet decarbonization goals.

### **The Need for Expanded CO<sub>2</sub> Pipeline Infrastructure**

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. The International Energy Agency’s (IEA) [Net Zero Emissions by 2050 Scenario](#) estimates that the current slate of projects under development globally will capture and store about 40 million tons of CO<sub>2</sub> in the next five years. That number must increase to 1.6 gigatons by 2030 and 7.6 gigatons by midcentury to reach net zero.

Commercial-scale deployment of carbon management technologies requires an urgent and responsible buildout of an interconnected, nationwide network of carbon dioxide transport and storage infrastructure. This buildout is multifaceted and requires policy mechanisms for CO<sub>2</sub> transport, permanent geologic storage, and carbon reuse. Through the enactment of critical policy tools such as the bipartisan Utilizing Significant Emissions with Innovative Technologies (USE IT) Act, Title 41 of the Fixing America’s Surface Transportation (FAST) Act, and most recently the Bipartisan Infrastructure Law, CO<sub>2</sub> transport infrastructure is poised to expand to support the vital decarbonization of key industries and regions. It is estimated that this infrastructure in the US will need to expand up to 25,000–65,000 miles to meet net zero and midcentury climate targets. In contrast, nearly 385,000 miles of operational pipelines in the US currently carry petroleum, natural gas, oil, and other products.

The strategic importance of access to CO<sub>2</sub> transport and secure geologic storage can be seen in the announcement of more than [190 carbon management projects under development](#) in direct response to the critical enhancements to the 45Q tax credit made in 2022. As these projects come online in the future, many will require a significant expansion of CO<sub>2</sub> pipeline infrastructure to transport captured CO<sub>2</sub> from the source to points of secure geologic storage or reuse. Absent the development of this crucial network, the ability for these projects to meaningfully contribute to greenhouse gas reductions consistent with reaching midcentury climate targets will be significantly impeded.

### **The Past, Present, and Future of CO<sub>2</sub> Pipelines**

Safe and permanent injection and storage of CO<sub>2</sub> in deep saline geologic formations represents a well-understood commercial practice worldwide. The longest operating CO<sub>2</sub> storage facility, the Sleipner

carbon capture and storage project operating offshore of Norway in the North Sea, has safely and permanently stored about 1 million metric tons of CO<sub>2</sub> annually since storage operations began in 1996. Once captured from industry, power, or directly from the atmosphere, CO<sub>2</sub> may be transported via pipeline to suitable sites for safe, permanent geologic storage or points of reuse. While pipelines are the safest and most cost-effective mode of transport at large scale, rail or trucks are occasionally used.

The US Department of Transportation (DOT) has regulated CO<sub>2</sub> pipelines since the [Hazardous Liquid Pipeline Act of 1979](#), establishing PHMSA in 2004 as the agency charged with oversight of CO<sub>2</sub> pipeline safety. CO<sub>2</sub> pipelines have been operating safely in the United States for more than half a century. Today, 50 operating pipelines span over 5,000 miles and safely transport millions of tons of CO<sub>2</sub> annually across entire regions of the country. Since reporting began, CO<sub>2</sub> pipelines have had a strong safety record, though a rare, but serious pipeline failure in Satartia, Mississippi in 2020 has increased public and policymaker concerns surrounding pipeline safety and the overall reliability of these systems as they scale. While data reported by PHMSA shows that CO<sub>2</sub> pipelines have been and can be operated at the highest level of safety by best-practice industry operators, the Coalition supports the agency's announced intention to build upon the existing standards to ensure that all industry operators meet these high levels of safety operations, for every pipeline, every time.

Under current federal statute, there are multiple steps that CO<sub>2</sub> pipeline operators must take to ensure pipelines are built and operated safely, including:

- **Mandated specifications for pipeline design;**
- **Monitoring for leaks;**
- **Protecting pipes against corrosion;**
- **Pressure valves on pipelines to safeguard against overpressure;**
- **Annual reports to PHMSA including length of the pipeline and amount of CO<sub>2</sub> transported each year; and**
- **Periodic structural and safety inspections.**

Moreover, PHMSA has several required safety programs that CO<sub>2</sub> pipeline operators must adhere to, such as:

- **Operations Maintenance Emergency training**, the Operations & Maintenance Enforcement Guidance document provides guidance and regulations for operators;
- **Control Room Management**, the Control Room Management safety program provides regulations for operators monitoring and managing pipelines to help reduce control room errors, especially in emergency situations;
- **Public Awareness**, CO<sub>2</sub> pipeline operators are required to have a public awareness program that provides pipeline safety information to the affected public, emergency officials, local public officials, and excavators;
- **Damage Prevention**, includes regulations for excavations around CO<sub>2</sub> pipelines to prevent damage to pipelines;
- **Operator Qualification**, requires operators to have designated employees that are trained to respond to abnormal operating conditions, such as severe weather, related to their pipelines; and
- **Drug and Alcohol Testing**, operators must have a drug and alcohol testing plan for employees who work on certain aspects of pipeline operations.

Additionally, in PHMSA's current regulations, all newly constructed CO<sub>2</sub> pipelines must include automatic shut-off valves, contributing to faster shut down times. Faster shut down times help improve safety by allowing faster access to emergency first responders who respond to fires and injuries.

While these measures have proven effective, project safety is best guaranteed when prioritized at every step of the approval and implementation process. Recognizing this, in formulating the Coalition's [2023 Federal Policy Blueprint](#), Coalition membership identified several recommended steps Congress and the administration can take to ensure these transport and storage networks are designed, constructed, and maintained at rigorous standards delivering the highest levels of reliability and safety while enabling the deployment of these technologies at levels sufficient to meet decarbonization goals, including:

- **Expand first responder safety training for CO<sub>2</sub> pipeline safety incidents;**
  - Congress should require PHMSA to update training programs for first responders of potential CO<sub>2</sub> pipeline safety incidents. Additionally, this training should be expanded to include local hospital employees and 9-1-1 operators.
- **Require that project proponents more rigorously consider potential geohazard impacts on CO<sub>2</sub> pipelines during design, siting, construction, and maintenance;**
  - Additional considerations of these potential impacts would ensure that pipeline networks are resilient and continue to operate safely over time in a changing climate with more extreme weather patterns.
- **Request that PHMSA conduct additional reporting on the public safety record of CO<sub>2</sub> pipelines; and**
  - Congress should require PHMSA to provide a report containing further public information on the safety record of CO<sub>2</sub> pipelines, an update on the current status of the CO<sub>2</sub> pipeline regulatory regime including annual agency funding levels, and considerations for additional funding necessary for agency staffing as CO<sub>2</sub> pipeline infrastructure projects are deployed. PHMSA has also identified areas of research needed on CO<sub>2</sub> pipelines that may require additional agency funding, including the study of controlled releases on CO<sub>2</sub> pipelines, which should also be included in this report. Additional areas of study may include assessment of the potential role existing or retired natural gas pipeline infrastructure could play in CO<sub>2</sub> transport.
- **Carry out a national assessment of the CO<sub>2</sub> network necessary to meet net zero emissions.**
  - Building off research conducted by stakeholder groups, the federal government should carry out a national assessment to quantify the capacity and miles of CO<sub>2</sub> pipelines that may be required to meet net zero emission goals.

By implementing these recommendations, the Committee can ensure that any future CO<sub>2</sub> pipeline infrastructure is built and operated using best practices that seek to continually improve upon the strong safety record of the past 50+ years.

## **Conclusion**

Carbon capture, removal, transport, reuse, and storage technologies are essential tools for achieving emissions reductions in critical-to-decarbonize sectors, increasing domestic energy production, protecting and growing a high-wage jobs base, and fulfilling midcentury climate obligations. The groundbreaking policies to scale deployment of associated CO<sub>2</sub> transport and storage infrastructure enacted as part of the BIL, and subsequent enhancements to the 45Q tax credit, are essential to placing America's energy, industrial, and manufacturing sectors on track to reach net zero emissions by 2050. With the number of carbon management projects announced increasing month to month, the need for an urgent expansion of CO<sub>2</sub> transportation infrastructure is crucial in order for these projects to fulfill their economic and emissions reduction potential. At the same time, by enabling domestic industries to capture and manage their carbon emissions, the development of CO<sub>2</sub> transport infrastructure will help safeguard current family-sustaining jobs at existing industrial, energy and

manufacturing facilities, while creating tens of thousands of new jobs and generating tens of billions in capital investment.

The Carbon Capture Coalition appreciates the opportunity to comment on the important topics of today's hearing and the Committee's support in ensuring the safety and reliability of these infrastructure systems. We look forward to working with the Committee and other members of Congress in a bipartisan manner to enact common-sense steps to build upon comprehensive existing CO<sub>2</sub> pipeline regulations and support the responsible buildout of these essential systems. 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).