CARBON CAPTURE IMPACT

Thriving Economy Project

Carbon Capture Impact Response

Introduction

Carbon Capture Impact (Impact) appreciates the opportunity to contribute policy recommendations to the Sustainable Energy and Environment Coalition (SEEC) Institute's Thriving Economy Project. Carbon Capture Impact is the premier national advocacy organization to advance common-sense federal policy solutions for the responsible nationwide deployment of carbon management technologies. An allied initiative of the Carbon Capture Coalition (the Coalition), Impact amplifies the voices of a broad network of advocates representing nearly every facet of the carbon management industry and stakeholder community committed to building a cleaner, more competitive, domestic energy and industrial system.

A thriving economy – one that is resilient, provides affordable energy to Americans, and delivers tangible benefits to communities – relies on a comprehensive, durable approach to managing and reducing emissions while sustaining economic growth. The nationwide deployment of carbon management technologies will play an important and complementary role to other emissions reduction strategies.

Carbon management refers to a suite of technologies for managing, abating, and removing carbon dioxide and carbon oxide emissions from industrial facilities, power plants, and directly from the air. It includes carbon capture, removal, utilization, transport, and storage. Taken together, these approaches form a portfolio of safe, effective, and increasingly cost-competitive technologies within emissions-reduction strategies. Carbon Management technologies help ensure the production of clean, reliable, and affordable domestic energy and manufacturing, reinforce American leadership and innovation, bolster local economies by providing high-quality jobs that American families can depend on, while reducing emissions and improving local air quality.

In this context, Carbon Capture Impact offers recommendations across the following priority areas in the Thriving Economy Project:

- Growing rural economies
- Safe, clean, and prosperous ecosystems
- Cheap, abundant, and clean American energy for all
- Next-generation energy technology
- Researched, developed, and built in America
- A nationally secure, globally competitive American energy sector
- Accessible, low-cost finance for a clean energy future

Growing Rural Economies

Carbon management technologies are uniquely positioned to drive economic renewal in rural, industrial, and energy-producing regions. These projects serve as an anchor for long-term regional investment, support the creation and retention of high-quality American jobs, and foster durable economic ecosystems in regions and communities that have historically powered the US economy, all while driving down emissions. To fulfill this potential, project proponents, governments, and stakeholders must work together to ensure that the benefits associated with project deployment flow to the communities that host them and to the workers with a range of skill sets who build and operate them.

Early, consistent, and transparent engagement between project developers and host communities is essential to building public and policymaker support and further ensuring projects reflect local priorities. Tools such as Community Benefit Plans (CBPs) and Community Benefit Agreements (CBAs) can help formalize these commitments, providing structured ways for communities to engage with developers and see direct benefits from project deployment. When designed in partnership with local stakeholders, these frameworks can support outcomes such as local hiring, workforce training, infrastructure investment, and revenue-sharing models tailored to the community's specific priorities.

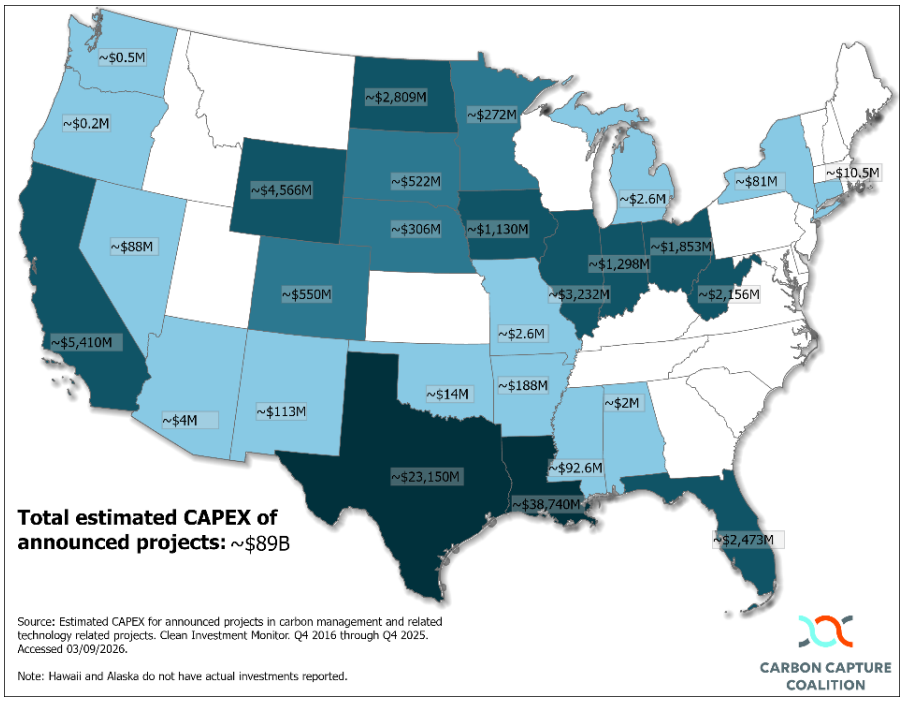

Figure 1: Total estimated capital expenditure of announced and operating carbon management projects

Moreover, carbon management projects are already delivering meaningful economic benefits across various regions and communities, including in rural and underserved areas. Today, the US boasts more than 330 announced and operational projects nationwide, representing more than $89 billion in tangible investments (Figure 1). Sustaining this significant moment will require targeted federal policy support and continuity.

To achieve this, Carbon Capture Impact provides the following recommendations:

- **Ensure project developers can continue to leverage private capital.** Federal tax incentives and grant programs should continue to be structured to reduce upfront project risk and attract private investment. At the same time, policymakers should encourage

project developers to incorporate local hiring, workforce training partnerships, such as apprenticeships, and community benefit agreements to ensure that host communities directly share in the economic benefits of these projects.

- **Expand federal research and development efforts through actions such as annual appropriations and/or focusing on next-generation technology development legislation.** Federal energy innovation should center on jobs and economic investment as drivers of low-carbon technologies. Federal investments should prioritize technology advancement alongside the development of domestic supply chains and skilled labor pipelines. This ensures that economic benefits, particularly in construction, operations, and manufacturing, are realized within the United States and in communities where projects are deployed.
- **Emphasize the importance of the hub model for local workforce development; one strong example is the use of Direct Air Capture (DAC) Hubs.** Regional carbon management hubs, including the Direct Air Capture (DAC) Hubs created under the bipartisan Infrastructure Investment and Jobs Act (IIJA), can serve as anchors for broader economic development by clustering infrastructure, workforce training, and supply chains. This model helps reduce costs, accelerate deployment, and create sustained economic opportunity at the regional level.
- **Support community engagement through US Department of Energy (DOE) technical assistance.** Ensuring that developers have access to resources for meaningful community engagement helps build trust, address local concerns, and improve project outcomes.

Safe, Clean, and Prosperous Ecosystems

The deployment of carbon management technologies promotes healthy ecosystems and the responsible stewardship of natural resources – key pillars of a well-rounded economy. Secure geologic storage of CO_2, supported by rigorous federal and state regulatory frameworks, has been safely implemented for decades, reducing emissions from power and industrial facilities and the ambient air, while minimizing surface impacts and preserving access to public lands. As deployment increases, so too will the amount of carbon pollution safely and permanently stored, contributing to more resilient ecosystems and improved environmental outcomes.

However, carbon management technologies deliver much more than emissions reductions. As deployments scale across various industrial sectors, these projects can significantly improve local air quality and deliver direct public health benefits to the communities that host them. In fact, a study conducted by the Great Plains Institute found that installing carbon capture at 54 representative facilities could generate up to $1.8B per year in health-related economic benefits, with even greater potential nationwide. Positive health impacts were observed across multiple regions and industries (including power, cement, steel, refining, etc.), with regional benefits ranging from millions to hundreds of millions in annual health-related savings. This underscores that carbon management should be evaluated not just as a tool for climate mitigation and energy production, but also to improve public health outcomes.

To ensure carbon management can continue to provide these tangible benefits by scaling the safe, permanent storage of captured carbon, Carbon Capture Impact provides the following recommendations:

- **Provide clear and consistent regulatory pathways for CO_2 storage on appropriate federal lands.** Establishing predictable and transparent permitting processes for carbon storage projects on federal lands will enable responsible project development while ensuring continued stewardship of these important resources, maintaining public access to federal lands, and upholding appropriate land use considerations. Regulatory clarity will reduce project delays and build community confidence.
- **Advance rulemaking for carbon storage on the outer continental shelf (OCS) to unlock additional storage capacity.** Developing a regulatory framework for offshore CO_2 storage would unlock significant additional storage capacity while maintaining rigorous environmental safeguards. This also provides flexibility in siting projects to minimize impacts on communities, specifically.
- **Modernize safety regulations for CO_2 transport systems.** As carbon management project deployment scales, modernizing federal safety standards for CO_2 pipelines and transport infrastructure is critical to ensuring these systems maintain their excellent safety and reliability record. Policymakers should build on existing frameworks administered by the Pipeline and Hazardous Materials Safety Administration to incorporate the latest operational data, reflect evolving pipeline networks, and address community safety considerations. Strengthened and modernized regulations can enhance incident prevention, improve emergency response coordination, and provide greater transparency for communities hosting infrastructure.

Cheap, Abundant, and Clean American Energy for All

Following decades of flat electricity demand, the US power sector is poised for exponential growth driven by artificial intelligence, data centers, and the electrification of industry and transportation. Demand is projected to increase by 35 to 40 percent by 2040 – placing new pressure on the grid to deliver reliable, affordable, and increasingly clean power at scale. Meeting this moment will require a diverse portfolio of energy sources, including carbon management technologies. These technologies represent a critical set of enabling solutions that will allow the United States to expand domestic energy supplies while maintaining system reliability and advancing environmental goals. By reducing emissions from existing and new energy infrastructure, these technologies support a more resilient grid without sacrificing the affordability that households and businesses depend on.

Natural gas is expected to remain a central component of the US electricity mix well into the next decade, currently providing about 40 percent of the nation’s electricity supply. As the need for clean, firm, and dispatchable power grows, pairing natural gas power plants with carbon capture and storage (NG+CCS) offers a pragmatic and scalable pathway to meet rising demand while reducing planet-warming emissions.

That said, realizing the full potential of carbon management technologies, and NG+CCS, hinges on a permitting and regulatory framework that is efficient, consistent, and transparent. Today, the permitting regime for carbon management project deployment is bogged down by lengthy and uncertain permitting timelines for key infrastructure, including CO_2 storage sites and associated transport networks. This presents a significant barrier to seeing project development scale and attract investment. Improving the predictability and timeliness of permitting processes is essential to unlocking projects that can deliver reliable, affordable, and lower-emission power, while maintaining rigorous safety and environmental standards. A coordinated, consistent, and robustly funded federal permitting framework will be critical to ensuring that carbon management projects can move forward in a manner that reflects both community buy-in and the urgency of meeting growing energy demand.

To achieve a more consistent federal permitting framework for these technologies, Carbon Capture Impact offers the following recommendations:

- **Establish a predictable timeline for Class VI well permitting.** A clear 18-month review timeline under the US Environmental Protection Agency's (EPA) Underground Injection Control (UIC) program for decision-making regarding Class VI well permits would provide regulatory certainty, reduce bottlenecks, and enable projects to move forward efficiently while maintaining rigorous safety standards. Predictable processes and timelines for reviewing permitting applications are also critical to maintaining investor confidence in a project's ability to reach final investment decision (FID).
- **Provide sustained funding for federal and state Class VI well permitting programs.** Class VI well permits for the safe, permanent geologic storage of captured CO2 are the linchpin to scaling the carbon management industry. To process these permit applications efficiently and effectively, the US Environmental Protection Agency (EPA) requires robust, sustained funding to support staffing, technical capacity, and program implementation.
- **Create a federal siting authority for interstate CO_2 pipelines.** A coordinated federal pathway for siting and construction of interstate CO_2 pipelines would reduce the patchwork of regulatory frameworks, streamline interstate pipeline infrastructure development, and ensure that projects are built in a timely and responsible manner.
- **Strengthen financing tools such as the Carbon Dioxide Transportation Infrastructure and Financing (CIFIA) program.** Enhancing access to low-interest grant and loan financing through programs like CIFIA can help reduce the cost of capital for large-scale infrastructure projects and improve project viability.

Next-Generation Energy Technology, Researched, Developed, and Built in America

Innovation is foundational to a resilient and competitive economy. Sustained federal investment in innovation is essential to scaling carbon management technologies and reducing costs over time, particularly in industrial sectors where alternatives are limited. Upfront investments will lead to cost reductions for core carbon management technologies and scale-up of carbon

removal and reuse technologies at the US Department of Energy. This, in turn, enables projects to scale from first-of-a-kind to Nth-of-a-kind investments. Given the United States' early leadership in this space, continued investment will ensure long-term global competitiveness and domestic economic benefits.

Our recommendations include:

- **Protect and preserve critical Infrastructure Investment and Jobs Act (IIJA) RDD&D programmatic funding.** Maintaining the more than $12.1 billion in investments secured under the bipartisan IIJA for carbon management research, development, demonstration, and deployment (RDD&D) programs helps to ensure continued progress in demonstration projects, infrastructure development, and early-stage deployment.
- **Provide robust annual appropriations for carbon management research and development.** Sustained funding is necessary to drive technological improvements, reduce costs, and accelerate commercialization across capture, transport, and storage technologies. This funding is designed to keep pace with the rapidly growing industry while providing DOE the necessary tools and staffing to see the various carbon management programs under their purview scale to foster American energy and industrial production, protect and expand a high-wage job base, and maintain the US's global leadership in the development and deployment of these technologies.

A Nationally Secure, Globally Competitive American Energy Sector

The United States has established a strong, bipartisan federal policy foundation for carbon management, enabling early deployment across a range of industrial and power applications. This foundation, grounded in market-based incentives and public-private partnerships, has positioned the US as the current global leader in the development and deployment of carbon management technologies. At the same time, global competition is intensifying as other industrialized nations, which drive much of the global economy, are acting quickly to build supportive policy frameworks, attract investments, and scale project deployment. Therefore, maintaining America's leadership position will require sustained, durable federal policy that continues to attract private investment, supports domestic industries, and ensures that American workers and communities benefit from this sector's growth.

Carbon management technologies are a critical tool for strengthening the competitiveness of US energy and industrial production by enabling the manufacture of low- and zero-emissions goods while preserving existing energy sources, infrastructure, and jobs. As global markets increasingly value lower-carbon products, the United States is well-positioned to lead. US producers often have lower-emissions-intensity products than international competitors, creating an opportunity to elevate American-made energy and industrial goods. Maintaining and expanding on this will further require policies that support the demonstration of emissions-intensity factors for American-made products, alongside trade-related mechanisms that recognize and reward cleaner production.

Taken together, these policies will help ensure that the United States remains the global leader in developing and deploying carbon management technologies, simultaneously supporting domestic job preservation and creation, strengthening global market competitiveness, and strengthening domestic energy and industrial production.

Our recommendations to strengthen America's competitive advantage include:

- **Collect data on the emissions intensity of domestically produced goods vis-a-vis their foreign-made counterparts, to quantify our competitive advantage in producing less carbon-intensive goods.** Developing robust data and methodologies will allow American industries to demonstrate the lower emissions profile of US products, strengthening competitiveness in global markets.
- **Explore trade mechanisms and how they can help the US capitalize on its carbon advantage.** Tools such as carbon border adjustments or sector-specific agreements can help ensure that domestic industries are not disadvantaged while encouraging global emissions reductions.
- **Establish standards to expand the use of carbon marketplaces.** Buyers of clean energy and materials need confidence that what they are purchasing provides tangible emissions reductions. The federal government has long played a central role in establishing accounting standards for emissions reporting and, moving forward, should support these standards for materials and energy sourced from carbon management. Clear, transparent frameworks can unlock additional private investment and create new revenue streams for emissions reductions.
- **Support government procurement efforts for carbon management technologies.** Government purchasing power can help scale markets for low-carbon products and technologies, providing certainty for project developers and manufacturers.

Accessible, Low-Cost Finance for a Clean Energy Future

The federal Section 45Q tax credit provides a performance-based tax credit for carbon management projects that capture carbon oxides (carbon dioxide and carbon monoxide) from eligible industry and power facilities and directly from the atmosphere. It is the foundational federal policy mechanism enabling the development and deployment of carbon management technologies nationwide. A key strength of 45Q is its emphasis on accountability and transparency. Credits are only administered to projects for the verified mass of carbon that is demonstrated to be securely stored or utilized, with reporting requirements under existing federal frameworks such as the Greenhouse Gas Reporting Program (GHGRP) underscoring transparency and environmental integrity. This regulatory mechanism has build bipartisan confidence among policymakers, investors, and stakeholders while reinforcing the credibility of the incentive.

Since its bipartisan expansion and enhancement, 45Q has played a central role in building out the current slate of announced and operating carbon management projects nationwide, supporting a wide range of applications across power generation, industrial facilities, and

emerging carbon removal technologies. Today, more than 330 announced operating carbon management projects nationwide have resulted in more than $89 billion in capital expenditures, driving more than $89 billion in capital expenditures across regional economies.

However, new challenges must be addressed to sustain this momentum. Inflationary pressures, particularly between 2020 and 2022, have significantly increased the cost of materials, labor, and construction, eroding a substantial portion of the intended value of the credit. At the same time, lengthy permitting, siting, and development timelines introduce additional uncertainty, making it more difficult for project developers and investors to reach final investment decisions within the current commence construction window. Strengthening and modernizing 45Q will be critical to unlocking the next generation of projects and ensuring continued US leadership in carbon management. This includes maintaining the credit's core structure while making pragmatic, targeted updates that reflect current economic realities.

Separate from the economic realities of the credit value, ensuring regulatory certainty will be essential to preserving investor confidence and program integrity. Together, these updates can help reduce financing barriers and enable broader deployment of carbon management technologies, delivering on carbon management's role in the American energy system.

Our recommendations include:

- **Increase 45Q credit values according to industry data to help close the cost gap for first-of-kind projects.** Increased credit values for projects electing 45Q will help account for inflation and rising project costs, ensuring that projects across various sectors remain financially viable.
- **Extend the 45Q sunset beyond 2033, to accommodate long wait times associated with permit and project approval.** Carbon management projects have long lead times; an extension to the commence construction window provides project developers and investors the financial certainty and time horizon needed to complete current projects and launch many new ones to begin scaling up carbon capture, direct air capture, and carbon utilization technologies to meet climate and energy goals.
- **Provide regulatory certainty for taxpayers claiming 45Q should the GHGRP be repealed, including extended interim guidance until a final regulatory solution is reached.** Ensuring continuity in regulatory frameworks, including in the event of a potential repeal of the Greenhouse Gas Reporting Program (GHGRP), will maintain investor confidence and program integrity.

Conclusion

Carbon management technologies are a critical component of a broader strategy to meet rising energy demand, strengthen the competitiveness of American businesses, and cost-effectively reduce emissions. The priorities outlined above, if realized, will unlock the full potential of carbon management technologies to help deliver on America's need to expand energy supplies, lower costs to consumers and businesses, and reduce emissions.