



America Can Lead Climate Solutions with Carbon Capture Utilization and Storage

As the world moves toward a lower-carbon energy system, the U.S. is uniquely positioned to lead widespread CCUS deployment because of our expertise, capability, infrastructure, and natural resources.

Over the last decade, the United States has led the world in both emissions reductions and production of oil and natural gas—demonstrating that the two are not mutually exclusive. Going forward, widespread Carbon Capture Utilization and Storage (CCUS) deployment is essential to satisfying the world’s growing demand for energy, while meeting the goals of the Paris Agreement and making climate progress.

The U.S. Department of Energy’s (DOE) non-partisan National Petroleum Council (NPC) found that “widespread CCUS deployment is essential to meeting the dual challenge of climate and affordable energy at the lowest cost.”ⁱ Panel on Climate Change (IPCC) found that achieving a 2°C climate target without CCUS will cost on an average of 138 percent more than with CCUS.ⁱⁱ The International Energy Agency (IEA) has assessed that a five-year delay in developing and deploying CCUS technologies would halve the CO₂ emissions being captured worldwide in 2030 compared to the International Energy Agency’s Sustainable Development Scenario, which is fully aligned with the objectives of the Paris Agreementⁱⁱⁱ

The IEA also determined that the United States is the leader in global CCUS deployment, home to more than 60 percent of current CCUS capacity and around 50 percent of capacity under development.^{iv}

To achieve CCUS deployment at scale before 2050, the U.S. will need substantially increased support from both the public and policymakers. For this reason, AXPC members support:

- **Increased Government and Private Research, Development, and Demonstration**
Sizeable near-term investment and support for research, development, demonstration, and deployment is needed to improve performance, reduce costs, and advance the economic feasibility of carbon capture projects to achieve commercial viability. The NPC’s 2019 report recommended that the US Congress appropriate \$1.5 billion a year in RD&D funding for CCUS (roughly 4-5 times today’s funding levels) and allow for all CO₂ sources and fuel types in the allocation, to enable the continued development of new and emerging CCUS technologies and demonstration of existing CCUS technologies.
- **Incorporating CCUS projects into any market-based climate solution**
In IEA analysis of net-zero pathways,^v the need global for CO₂ storage grows from around 50 million tonnes a year today to more than 100 times that by mid-century,^{vi} roughly equivalent to offsetting US annual CO₂ emissions.^{vii} National policies should be developed in coordination with America’s upstream producers to ensure that CCUS deployment, including enhanced oil recovery, is a recognized and needed approach for reaching nationally determined contributions, corporate net zero goals and other carbon reduction targets and policies.
- **Building Public Confidence in CCUS**
The nature and mechanisms for reliable and effective CO₂ storage and transport are well-understood thanks to decades of experience within industry and by regulators of injection, dedicated storage and managing risks of induced seismicity. Increasing the public understanding of and confidence in CCUS as a safe and reliable technology and the strength of regulatory programs is essential for broad scale acceptance and deployment.

➤ **The following policy approaches for CCUS in alignment with AXP's Climate Principles:**

- **Incentives and financing for technology, innovation and development of critical infrastructure** and storage needed for widescale deployment of CCUS in the U.S.
 - Enhancing the Section 45Q tax credit - Direct pay of the tax credit and increased funding for direct air capture and storage, including projects in conjunction with oil and natural gas
 - Expansion of the US Department of Energy loan program for multi-state pipelines to include infrastructure needed for CCUS
- **Embracing the Federal Role for R&D Investment:** The federal government must play its role in helping to make CCUS technology reach a commercial scale of deployment.
 - Access to grants for R&D of CCUS technologies and novel approaches for expanding market applicability or lowering costs.
 - Access to government procurement opportunities for CCUS deployment
 - Support for private sector RD&D of CCUS technologies through economy wide policy incentives.
- **Market-based solutions that embrace and credit CCUS** as a legitimate carbon reduction option, including projects in conjunction with oil and natural gas.
 - Allows CCUS to be counted as avoided emissions in any GHG control program, including offsets
 - Recognizes early and/or voluntary actions.
 - Utilizes highly transparent public reporting systems.
 - Incorporates protocols developed through multi-stakeholder engagement.
- **Ensure states and federal regulators have resources needed for a qualified, efficient permitting** framework that also allows proponents to choose the best approach for their business.
 - Funding and support for states seeking primacy and enhancing needed data systems
 - Avoids prescriptive directives of carbon capture
 - Predictable and efficient National Environmental Policy Act reviews for timely federal permit decisions and clarified authority to approval interstate CO2 pipelines

ⁱ "Meeting the Dual Challenge: A Roadmap to At-Scale Deployment of Carbon Capture, Use, and Storage"; National Petroleum Council; <http://dualchallenge.npc.org>

ⁱⁱ IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

ⁱⁱⁱ <https://www.iea.org/reports/ccus-in-clean-energy-transitions/accelerating-deployment>

^{iv} <https://www.iea.org/commentaries/the-world-has-vast-capacity-to-store-co2-net-zero-means-we-ll-need-it>

^v <https://www.iea.org/reports/ccus-in-clean-energy-transitions>

^{vi} https://iea.blob.core.windows.net/assets/181b48b4-323f-454d-96fb-bb1889d96a9/CCUS_in_clean_energy_transitions.pdf

^{vii} Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019 (published 2021)