

ENGINEERED CARBON REMOVAL: MARKETS AND FINANCE FEDERAL POLICY RECOMMENDATIONS (FACTSHEET)



In July 2023, C2ES launched an engineered carbon removal (ECR) technology working group – one of four technology working groups focused on developing policy solutions that enable the deployment and commercialization of critical-path technologies. This group convenes leading voices across the ECR ecosystem, including direct air capture (DAC) and biomass carbon removal and storage (BiCRS) companies, corporate buyers, financiers, supporting infrastructure, technology providers, and members of C2ES's Business Environmental Leadership Council (BELC). Informed by working group discussions, C2ES has published a shortlist of specific actions the federal government can take to address known markets and finance barriers to scaling ECR.

BACKGROUND

The *Intergovernmental Panel on Climate Change* (IPCC) has stated clearly that carbon dioxide removal (CDR) will be a necessary component of global decarbonization, with nearly every IPCC modeled scenario that would meet the goals of the Paris Agreement including some form of CDR. In recent years, there has been rapid growth in public and private investment in ECR technologies, especially within the United States. There has been increased federal support for ECR in the form of the DAC Hubs Program, the CDR Purchase Pilot Prize, and enhancements to the Section 45Q tax credit for carbon dioxide sequestration, to name a few. These initiatives are made possible by the Bipartisan Infrastructure Law and Inflation Reduction Act's historic climate investments. Despite these federal investments, the ECR industry still faces significant barriers around early project financing, derisking investment, and creating near- and long-term market certainty. We aim to address these barriers in our ECR markets and finance federal policy recommendations below. Increase Program Direction Budget to Fund Staffing in Key U.S. Department of Energy Offices

1. INCREASE PROGRAM DIRECTION BUDGET TO FUND STAFFING IN KEY U.S. DEPARTMENT OF ENERGY OFFICES

Congress should increase funding for the program direction budgets at the U.S. Department of Energy's (DOE) Office of Fossil Energy and Carbon Management (FECM) and Office of Clean Energy Demonstrations (OCED). The timely awarding and disbursement of funds appropriated for the development and scaling of ECR technologies is particularly important for early-stage companies that depend on awarded federal funding to launch or sustain their research, development, or operations. This can only be accomplished if the departments responsible for such disbursement are adequately staffed with the experts needed to negotiate awards, assess technologies, and aid with implementation challenges.

2. ADJUST SECTION 45Q TAX CREDIT FOR INFLATION

Congress should modify the section 45Q tax credit for carbon dioxide sequestration, specifically by making the inflation adjustment of the tax credit effective in 2024 (rather than in 2027, as in the statute), with 2022 as the base year. Inflation has already eroded the value of the 45Q tax credit since it was increased by Congress in 2022. For some ECR projects, the decreased effective value of the 45Q tax credit could be the difference between financial viability and the need to secure secondary financing. If the latter is necessary, this could slow (and potentially eliminate) project development. Adjusting the tax credit for inflation starting in 2024 will ensure that it can effectively deliver support for the nascent ECR industry for the credit period that Congress intended.

3. REQUIRE THAT ALL CLASS VI WELLS HAVE AN ASSOCIATED LONG-TERM MONITORING, REPORTING, AND VERIFICATION TRUST

Congress should establish a long-term monitoring, reporting, and verification (MRV) trust for all Class VI wells—used for the subsurface injection and permanent sequestration of carbon dioxide—to ensure responsible stewardship. Similar to the *Leaking Underground Storage Tank (LUST)* trust fund, the MRV trust would be funded through a small fee per metric ton of sequestered carbon dioxide, paid for by Class VI well operators. The fund would finance the administration and regulatory oversight of active projects by the U.S. Environmental Protection Agency (EPA) (or equivalent state authority for states granted primacy over Class VI wells) and finance the long-term (i.e. century-scale) stewardship of stored carbon projects. For states—including West Virginia, Wyoming, Louisiana, Montana, Texas, and Kansas—that have their own MRV or long-term liability fee, the federal fee would be waived if the state fee for a trust is at least equivalent or greater than the federal fee. Establishing a federal MRV trust fund would complement, expand, and harmonize state-level policy efforts across states in which the burgeoning ECR industry operates. Additionally, it would help alleviate community concerns regarding the long-term monitoring, stewardship, and potential remediation of a project well beyond its initial deployment.

4. DEVELOP A FEDERAL PROCUREMENT PROGRAM WITH INCREASING TONNAGE REQUIREMENTS

The U.S. federal government should establish a long-term federal carbon dioxide procurement policy, with a time horizon of at least ten years, to support the development and scale up of novel carbon removal technologies. The policy should take a portfolio approach across a set of CDR categories, comparable to those laid out in the *CDR Purchase Pilot Prize*. Within each category, offtake contracts would be awarded via reverse auction—where CDR sellers bid for government contracts—with a maximum price per net metric ton of carbon dioxide to incentivize least-cost innovations. Offtake contracts would adhere to the federal *Principles for Responsible Participation in Voluntary Carbon Markets*. A long-term federal procurement program would expand on the success of the CDR Purchase Pilot Prize and ensure that the United States retains its position as the global leader in supporting market-based approaches to CDR innovation.

5. WORK TOWARD A FEDERAL ECONOMY-WIDE PRICE ON CARBON

Congress and the administration should examine options and work toward enacting an economy-wide market-based carbon reduction program, with provisions to credit verified carbon dioxide removals. Setting a price on carbon—whether through a carbon tax or a cap-and-invest program—confers a clear market value to emissions reductions and emissions removals (including through ECR) that is commensurate with the environmental, societal, and economic benefits that reducing global greenhouse gas pollution provides. A price on carbon could provide the demand signal needed to encourage deployment of CDR, build investor confidence in the value of CDR solutions, and generate revenue for the government. The revenue generated from a carbon price could be used to pay for lowering government deficits, reducing distortionary taxes, or for additional carbon management programs.

Please [click here](#) to explore the full brief of C2ES's ECR federal policy recommendations.



The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit organization working to secure a safe and stable climate by accelerating the global transition to net-zero greenhouse gas emissions and a thriving, just, and resilient economy.