



Responsibly Deploy Industrial Carbon Capture, Use, and Storage

This policy memo is part of Data for Progress and National Wildlife Federation's Made Clean in America series, which features analysis and polling on federal investments to build American clean industrial capacity, tackle the climate crisis, and create high-quality manufacturing jobs.

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Background

As the U.S. moves towards a neutral, or even negative, climate emissions economy, new technologies will become available to help achieve that goal. President Biden has aimed high when it comes to U.S. emissions reduction goals: by 2030, U.S. greenhouse gas emissions should be half of what they were in 2005. The world's scientists have asserted that technological carbon capture and removal—either capturing carbon dioxide emissions at their source or removing carbon dioxide from the atmosphere itself—will be essential to meeting climate goals. The President's plans reflect this, especially when it comes to decarbonizing industry.

The industrial sector is a particularly tough nut to crack when it comes to slashing emissions. Materials like cement and steel are produced via chemical reactions that inherently emit CO₂. For these essential industries, where efficiency and electrification can only reduce emissions so much, responsible

deployment of carbon capture, use, and storage (CCUS) will be important. Carbon capture can remove around 90 percent of carbon dioxide emissions from industrial facilities, and with policy support the technology may increase emissions capture to hundreds of millions of tons annually in the United States over the next decade.

CCUS raises red flags for some stakeholders, who express concerns that CCUS could perpetuate the use of fossil fuels, particularly when affixed to power plants or when captured carbon is used to enhance oil and gas extraction. We need smart policy to ensure CCUS is responsibly deployed in the industrial sectors that need it most, reduces other harmful pollution, and promotes local job creation and justice.

Key policy options

Congress has several near-term opportunities to accelerate responsible development and deployment of carbon capture, use, and storage strategies to draw down emissions in difficult-to-decarbonize industrial sectors.

ENHANCE THE 45Q TAX CREDIT FOR INDUSTRIAL RETROFITS, USE, AND STORAGE

The existing 45Q tax credit has enabled carbon capture and storage to take off in America, where more than half of the world's large-scale facilities are now located. But, more support is needed to make this tax credit accessible and economically attractive to a greater number and variety of companies and investors. The 45Q credit is offered for each metric ton of carbon dioxide captured from energy or industrial sources or ambient air which is then either stored or used. Smart new proposals wish to expand 45Q to more CCUS projects—including small ones that may have trouble attracting private investment – as well as to make the credit available for a longer period of time and as a direct payment for those with limited tax liability. Other proposals would increase the value of the credit for CCUS retrofits in industry and manufacturing, and for storing the carbon permanently in underground saline reservoirs (which otherwise carries no value for companies) or re-using the carbon in innovative new products.

BOOST RD&D FOR CARBON UTILIZATION

While tax credits help encourage investment in and deployment of CCUS projects, greater research funding is needed to get new ideas tested and commercially ready. This is especially true for innovative new products that can make use of captured CO₂, such as new types of low-carbon concrete, chemicals, agricultural feedstocks, fuels, and more. Increased federal funding for research, testing, and deployment of carbon utilization technologies in an array of settings will open the door to a whole new “carbon management” market, with quality job opportunities and the chance at revitalizing declining manufacturing areas. The bipartisan infrastructure bill includes \$310 million of additional funding through FY26 for the Department of Energy's utilization program, but this number should be increased for research, development, and demonstration to fully harness the promise of carbon utilization.

SUPPORT RESPONSIBLE BUILD OUT OF CCUS INFRASTRUCTURE

Realizing the potential of CCUS will require the responsible design, siting, and construction of infrastructure to transport carbon dioxide from where it is captured to where it can be stored or used. While direct air capture machines that pull carbon dioxide out of the ambient air could be concentrated near existing industry or storage, industry CCUS retrofit projects may occur a long distance from underground reservoirs or manufacturing sites ready to use captured carbon. Fortunately, the bipartisan infrastructure bill includes the SCALE Act, which offers federal financing to support the necessary infrastructure buildout, including prioritized use of existing infrastructure over breaking new ground. Congress should supplement this by providing adequate funding to the EPA and states to process increased permits for CO2 storage sites, as well as study and prioritize the best siting approaches considering wildlife habitats and natural resources with input and active participation from local communities.

ENSURE CLEAN IS REALLY CLEAN FOR EVERYONE

If done responsibly, CCUS has the potential to reduce the volume of greenhouse gas emissions flowing from the manufacturing and industrial sectors. And, early research shows that CCUS has the potential to reduce some criteria air pollutants that cause smog, public health and environmental justice problems, which could benefit industrialized and fenceline areas. Yet the potential negative effects of CCUS on the local communities where deployed, both directly and indirectly by extending the lifetime of an industrial facility, are poorly understood. Congress should fund federal research that studies the environmental effects of CCUS retrofits in different industrial sectors, and should incorporate air and water quality monitoring and transparent data collection into projects receiving federal tax credits, as well as perspectives from local stakeholders and community members to ensure that the benefits of these projects are local as well as global.

Polling

Previous [Data for Progress polling](#) has found that, despite unfamiliarity with CCUS, voters support federal investments in carbon capture technologies for industrial applications. To assess support for CCUS, Data for Progress gave voters a brief description of how industrial carbon capture works, and presented views from both supporters and opponents of federal investments in CCUS. By a +33-point margin, voters support federal investments in CCUS to remove emissions from industrial processes. Support is bipartisan: Democrats support these investments by a +49-point margin, Independents by a +44-point margin, and Republicans by a +7-point margin.

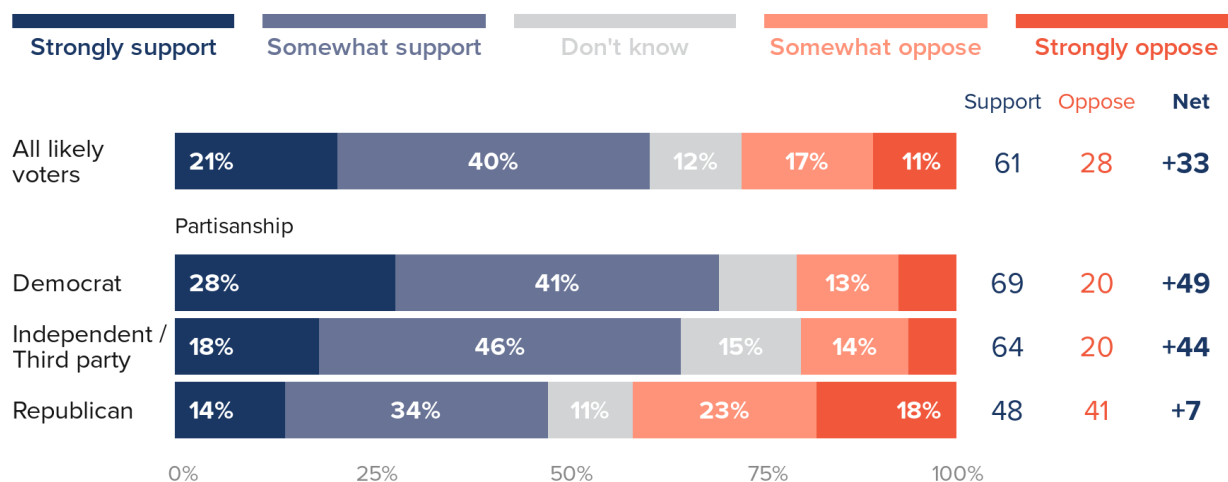
A Majority of Voters Support Investments in Carbon Capture to Decarbonize Heavy Industry

Carbon capture and storage (CCS) technologies can be attached to existing manufacturing facilities to capture carbon dioxide emissions, which contribute to climate change, from the production of industrial materials such as concrete and steel.

Some say that the government should invest in these carbon capture technologies because it is more difficult to transition these industrial processes to clean energy, and we should invest in technologies to start removing harmful emissions from them.

Others say that these carbon capture technologies are just an expensive way to extend the lifetime of using fossil fuels when we should be focusing on transitioning these industrial processes to run on new clean and renewable energy sources.

Would you support or oppose the government investing in carbon capture and storage technologies to remove emissions from industrial processes?



September 15–17, 2021 survey of 1,346 likely voters

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DATA FOR PROGRESS

From September 15 to 17, 2021, Data for Progress conducted a survey of 1,346 likely voters nationally using web panel respondents. The sample was weighted to be representative of likely voters by age, gender, education, race, and voting history. The survey was conducted in English. The margin of error is ±3 percentage points.