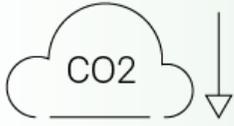


Carbon Capture Utilization and Storage in the New Inflation Reduction Act

By Anna Littlefield

The Inflation Reduction Act of 2022 should offer an immense boost to the carbon capture, utilization, and storage (CCUS) industry. With \$369 billion allocated to energy security and climate change, the expectation is to ‘lower energy costs, increase cleaner energy production, and reduce carbon emissions by roughly 40% by 2030’ ([bill summary](#)). These emission reduction targets will be met in part through enhancing and expanding existing incentives. The 45Q tax credit that provides operators credits per ton of CO₂ capture and sequestered, has been the primary economic incentive for CCUS projects since it was established in 2008 (at \$20/ton) and amended in 2018 (to \$50/ton). With the IRA bill, credits for CO₂ will increase from \$50/ton to \$85/ton for storage and from \$35/ton to \$60/ton for EOR and utilization operations. Direct Air Capture (DAC) technology, that pulls CO₂ directly out of the atmosphere, was also addressed in this bill. DAC will see a significant credit of \$180/ton of CO₂ captured and permanently sequestered, and \$130/ton of CO₂ captured and applied to EOR or other utilization applications. The [Clean Air Task Force](#) succinctly outlined these changes:

Carbon capture tax credit would increase under Inflation Reduction Act (\$/tonne)		Inflation Reduction Act	
	Current	POINT SOURCE	DIRECT AIR CAPTURE
UNDERGROUND STORAGE 	\$50	\$85	\$180
UTILIZATION 	\$30	\$60	\$130
UTILIZATION IN ENHANCED OIL RECOVERY 	\$30	\$60	\$130

As of July 28, 2022.
Sources: Clean Air Task Force; S&P Global Commodity Insights

In addition to these increased incentives for CO₂ storage, the thresholds for what facilities can qualify for credits has also expanded. Currently, to qualify for the 45Q credit, a facility must capture at least 500,000 tons of CO₂ annually. The revised language in the [IRA bill](#) “in the case of any other facility, captures not less than 12,500 metric tons of qualified carbon oxide during the taxable year”, establishing a new, and much lower threshold to qualify for 45Q at only 12,500 tons per year. This should provide operators with more flexibility in what point sources can be utilized for CCUS projects and what kind of capture technologies can be applied. This increased flexibility of scale should only serve to encourage more project development and ideally promote widespread deployment of CCUS operations here in the US.

The provisions outlined in the IRA bill have been positively received by the DOE’s top carbon management Jennifer Wilcox, who had previously expressed frustration over the insufficiency of a \$50/ton credit. Regarding the new metrics set in this bill Wilcox says, “we’re confident that \$85 is priced about right, but for the more concentrated streams, i.e. steel cement, it’s really incentivizing.” In an [article](#) from Energy Intelligence, the bill is described as a mixed bag for oil and gas companies with some concessions around Biden’s previous ‘anti-drilling pledge,’ reviving offshore lease sales and reopening federal lands and waters to drilling, but with increased royalties for these leases. The energy companies that have begun to pivot their business model into the carbon reduction space (most of the major US operators have done so in some capacity), will stand to benefit from the increased support for carbon capture and storage.

These newly revamped incentives for CO₂ capture and storage outlined in the Inflation Reduction Act of 2022 could prove to be the boost this industry needs to make a meaningful impact on emissions reduction targets. CCUS has long faced economic hurdles that have discouraged investment and made widespread deployment impractical. The hope now is that this vastly improved incentive program will encourage further activity from companies already operating in this space, draw more industry investment, and spur further research and technological advancement.

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Anna Littlefield is the Program Manager for Carbon Capture Utilization and Sequestration for the Payne Institute at the Colorado School of Mines. As a current PhD student in the Mines geology department, her research focuses on the geochemical impacts of injecting CO₂ into the subsurface as well as the overlap of geotechnical considerations with policy-making. Anna joins the Payne Institute with 8 years' experience in the oil and gas industry, where she worked development, appraisal, exploration, new ventures, and carbon sequestration projects. Her academic background is in hydrogeology with an M.S. in geology from Texas A&M University, and a B.S. in geology from Appalachian State University. Anna is passionate about addressing both the societal and technical challenges of the energy transition and applying her experience to advance this effort.

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