Making the Case for Inflation Adjustment

Issue: Increased credit values provided to projects developed in the power, industry, and direct air capture sectors are the cornerstone of the enhancements made to the federal Section 45Q program in 2022. However, unlike other low- and zero-emissions technology tax credits recently reformed or created under the 117th Congress, the 45Q tax credit value does not adjust for inflation until 2027, using a base index year of 2025. **In a recent analysis completed by the Great Plains Institute, a significant portion of the value increase realized in 2022 has been eroded due to high inflation rates in both capital goods costs and energy price increases.**

Ask: To prevent further reduction of the credit value the Carbon Capture Coalition urges Congress to **begin adjusting 45Q for inflation beginning immediately, using 2022 as the base index year for the dollar figure.**

General Overview

- The enhancements to the federal Section 45Q tax credit enacted by the 117th Congress, coupled with the historic investments made in carbon management technologies under the Bipartisan Infrastructure Law, represent the most significant federal policy investment in these technologies in the nation's history.
    - Increased credit levels for power, industry, and direct air capture were the cornerstone of these enhancements to the 45Q tax credit and have since provided a strong market signal and incentive to begin deploying these technologies to address greenhouse gas emissions.
- As Congress negotiated the historic tax package, some of the highest inflation rates identified in four decades dramatically shifted the economic feasibility of clean energy project deployment.
    - In 2022, the United States was impacted by some of the highest inflation rates in four decades, with the Consumer Price Index peaking in June 2022 at a 12-month change of 9.1 percent. The largest increases were seen in energy, ranging from 13.7 to 70.4 percent.[1]
    - **As a result, the value proposition for carbon management technologies, even with higher 45Q credit levels, changed rapidly over a short period of time.**
        - **In fact, an Energy Futures Initiative (EFI) report and analysis estimated that between 2020 and 2022, inflation had already consumed about half of the value increase of the credit ($85 and $180, respectively) for carbon capture retrofits in power and industry, as well as direct air capture.**[2]
        - **The Great Plains Institute then projected the credit will further erode an additional 14 percent by 2026 if inflation rates ease to three percent by 2026.**
- High inflation rates have also been felt at different levels of project development with rising project costs. Between 2020 and 2022, chemical plant construction costs were estimated to increase 36 percent, pipeline transport costs rose 24 percent, and storage infrastructure costs rose 20 percent.[3]
    - Indeed, project developers and equipment providers identify inflation as a significant deployment barrier, with some developers reporting that, in some instances, equipment costs have increased more than 50 percent since 2021.

[1] US Bureau of Labor Statistics, "Consumer Prices up 9.1 Percent over the Year Ended June 2022, Largest Increase in 40 Years."

[2] Moniz et al., "Turning CCS Projects in Heavy Industry & Power into Blue Chip Financial Investments."

[3] US Bureau of Labor Statistics, "Producer Price Index by Industry: Drilling Oil and Gas Wells"; US Bureau of Labor Statistics, "Producer Price Index by Commodity: Final Demand: Finished Goods"; Chemical Engineering Magazine, "Chemical Engineering Plant Cost Index."

Impact of Inflation on Historic Policy

- With the enactment of the Inflation Reduction Act, Congress recognized the critical need to increase 45Q credit values to spur robust investment in vital carbon management technologies to reduce emissions and remove carbon from the atmosphere.
    - However, by waiting until 2027 to index 45Q for inflation, there is a significant risk that credit values will once again become insufficient to support the commercial scale up of carbon management projects in this crucial deployment decade. This threatens to impede the robust policy efforts enacted by the 117th Congress.
- **Inflation indexation would harmonize the treatment of 45Q with other similar clean energy and industrial tax credits reformed or created under the Inflation Reduction Act, including the Hydrogen Production Tax Credit, which begins adjusting for inflation in 2022.**

Impact on Carbon Management Deployment

- **Reduced Number of Adequately Incentivized Carbon Management Projects**: Analysis conducted by the Great Plains Institute indicates that a delay in adjusting the credit for inflation could significantly reduce the number of cost-effective carbon management retrofits by roughly 25 percent, **resulting in around 100 million metric tons of unabated CO_2 annually** and **$100 billion lost in investments to decarbonize existing facilities** in the United States through carbon management technologies. Furthermore, of the more than 3,000 facilities eligible to claim the revised 45Q tax credit, the Great Plains Institute has identified 542 as prime candidates for carbon capture retrofits over the next 10 – 15 years. However**, inflation is projected to reduce the number of cost-effective retrofits by 21-26 percent by the mid-2030s.**
- **Widening Cost Gap Key Sectors:** The devaluation of the 45Q credit is already exacerbating the cost gap for heavy-emitting sectors with few decarbonization options, including carbon-intensive sectors like cement, steel, chemicals, and aluminum. These sectors provide the essential building blocks for modern lifestyles and form the backbone of regional economies. Current cost estimates indicate that high inflation from 2020 to 2022 has already eroded the increased credit for many sectors, specifically those with low concentrations of CO_2 in their effluent gas streams.[4]

Policy Solution

- As determined by the Great Plains Institute, a significant portion of the value increase realized in recent enhancements to the tax credit has been eroded due to significant inflation in both capital goods costs and energy price increases. **To prevent further reduction of the credit value, 45Q should be adjusted for inflation beginning immediately, using 2022 as the base index year for the dollar figure.**
- Altering the base year to adjust for inflation can have a measurable impact on the value of the credit over time and allow CO_2 capture to be economic in more sectors.
- Adjusting the base index year to 2022 would provide a 14 percent value increase to the credit, compared to using 2025 as the base index year, as is in the current statute.[5] **Importantly, this would be consistent with the automatic inflation adjustments made to many other clean energy and industrial tax credits amended or created under the 2022 Inflation Reduction Act, including the hydrogen production tax credit.**

[4] Moniz et al., "Turning CCS Projects in Heavy Industry & Power into Blue Chip Financial Investments."

[5] Using the Gross National Production: Implicit Price Deflator through 2023, then assuming 2.5 percent inflation per year.