Captured Carbon Utilization Parity Act (S.542/H.R.1262)

CARBON CAPTURE COALITION

Carbon emissions can be captured from industrial and power facilities as well as directly captured from the atmosphere and subsequently reused (also referred to as utilization) to make a wide variety of useful products. These range from low- and zero-emissions fuels, building materials, and other products that reduce greenhouse gas emissions as compared to incumbent processes or products.

While still nascent relative to the other technologies in the carbon management value chain, carbon reuse can serve as a key driver to pursuing capture and removal technologies. Reuse supplements efforts to geologically store captured carbon dioxide with less pressure on supporting infrastructure. These technologies will also play a complementary role in a broader portfolio of strategies to reduce greenhouse gas emissions, decarbonize and introduce circularity to the American economy, and create new manufacturing sectors resulting in the creation of family-sustaining jobs; **therefore, Congress should ensure that carbon reuse innovation and deployment is properly incentivized.**

THE CAPTURED CARBON UTILIZATION (CCU) PARITY ACT:

- Supports carbon utilization technologies that reuse captured carbon in the manufacturing of low- and zero-carbon products including fuels, chemicals, building products, and other products of economic value that are not yet cost competitive with other incumbent, well-established products and processes, or face other barriers to market entry by providing the following credit levels—in line with those provided for geologic sequestration— under the 45Q tax credit:
    - **$85 per metric ton for the reuse of captured emissions from industrial and power generation facilities;** and
    - **$180 per metric ton for the reuse of captured emissions from direct air capture projects.**

- Ensures carbon utilization technologies can fulfill their role as an important complement to large-scale carbon storage. Federal support for the carbon utilization sector will boost deployment of carbon capture, while creating sustainable, circular supply chains that support local jobs and regional economies.

Reusing captured carbon to produce useful products is just one component of the carbon management sector and estimates of the volume of carbon emissions reused in a net-zero economy depend on the available market for these products and value of carbon dioxide as a commodity.

THE CASE FOR CCU PARITY

Competitiveness of the Carbon Reuse Sector: The U.S. is uniquely positioned to lead the globe in the reuse of captured carbon emissions. Today, innovative companies are engineering sustainable processes for converting millions of tons of captured carbon in the United States each year into useful products such as plastics, concrete, and fuels, among many others. To achieve this, they will need to invest billions of dollars in private capital to construct new manufacturing facilities.

Section 45Q of the tax code is the foundational tax credit used to help make carbon management projects economical. Under the current statute, there is a $25 per ton disparity between those projects that reuse carbon emissions versus those that securely and permanently store the captured carbon. **This disparity effectively disincentivizes the development and deployment of relatively nascent carbon reuse technologies, essentially acting similarly to a new tax on such operations.** This disparity rises to $50 per ton in relation to direct air capture projects.

Carbon reuse may be particularly useful in addressing some of the largest sources of industrial carbon emissions, such as steel, cement, chemicals and refining. According to EPA emissions data, the industrial sector is responsible for 30 percent of domestic emissions when associated emissions from electricity use at industrial facilities are included. What's more, certain industrial processes have limited or no emissions reduction strategies beyond capturing carbon emissions for reuse or long-term storage.

Reuse applications for carbon emissions from industrial and power facilities will help to provide incentives to install carbon capture in a number of cases, including; early market incentives for capturing carbon emissions while transport and storage infrastructure scales, for those facilities whose sources of emissions that are too small to be economically captured and transported, or for those that are too far removed from appropriate storage sites. Further, re-used carbon can create a circular carbon economy where carbon emissions are recycled into essential fuels, chemicals and products even in a fully "decarbonized" economy.

Jobs and economic development: In addition to reducing or removing carbon emissions and simultaneously helping to reduce other air pollutants, the widescale deployment of carbon management technologies, including carbon reuse, has the potential to safeguard and create highly skilled jobs that sustain local economies and the families that depend upon them. These jobs in the traditional manufacturing, industry and energy sectors, as well as new job types associated with carbon reuse, can bring significant benefits to communities and regions through high wages and benefits that have long been a traditional pathway to the middle class for many American families. Removing policy barriers like the credit level disparity between carbon reuse and storage in 45Q is a critical factor in boosting the availability of carbon feedstocks for reuse applications across the value chain of carbon-based commodities, specialty products, and chemicals.

Pathway	Removal Potential in 2050 (Million tonnes of CO_2 per year)	Utilization Potential in 2050 (Million tonnes of CO_2 per year)	Break-even cost of CO_2 utilization (2015 US$ per tonne of CO_2 utilized)
Chemicals	10 to 30	300 to 600	-$80 to $320
Fuels	0	1,000 to 4,200	$0 to $670
Microalgae	0	200 to 900	$230 to $920
Concrete Building Material	100 to 1,400	100 to 1,400	-$30 to $70

Figure 1: Sectoral Carbon Utilization and Market Potential by 2050 and Present-Day Breakeven Cost

Provide environmental co-benefits: Communities that are most vulnerable to climate change also typically suffer the greatest impacts from criteria air and other pollutants generated by nearby industrial and power facilities; carbon capture and reuse have the potential to play a role in addressing cumulative pollution in overburdened communities.

Common air pollutants that can be removed or significantly reduced using carbon capture and reuse include sulfur dioxide, nitrous oxides, and particulate matter, all of which are criteria air pollutants regulated by the EPA and recognized as harmful to human health and the environment. Carbon capture is a flexible emissions control technology that works on a wide range of industrial facilities and power plants, and in many instances carbon capture retrofits or reuse applications reduce these conventional air pollutant emissions.