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CCS Initiative Uses Carbon Accounting and Verification Standards to Boost Low-Carbon Energy Investments

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Last month, a number of the world's leading carbon capture and storage (CCS) stakeholders launched a new initiative to advance carbon accounting methods and verification standards for CCS projects, called the CCS + Initiative. The CCS + Initiative, led by Northern Lights, TotalEnergies, Oxy Low Carbon Ventures, South Pole, Perspectives Climate Group and Carbon Finance Labs, seeks to advance carbon accounting methods for a variety of CCS technologies. The development of these accounting methods and verification standards are key in attracting large-scale investment for CCS projects. This article discusses some of the initiative's efforts as well as recent developments to scale low-carbon energy markets.

The Purpose of the CCS + Initiative

The CCS + Initiative intends to develop a comprehensive modular methodological framework for carbon accounting and verification of climate benefits of CCS technologies and projects. The initiative's first objective is to develop modules to address carbon accounting for the capture of carbon from point sources, the removal of CO₂ from ambient air through direct air capture and the storage of CO₂ through mineralization and geologic storage. Notably, these methods will include independent reviews from auditors and technical experts.

The initiative will also seek to have the framework approved by Verra's Verified Carbon Standard, which is considered a leading developer and manager in voluntary greenhouse gas offset accreditation. The standardized methodologies developed under the framework seek to enable project operators to quantify and certify the emission reductions associated with their CCS projects.

An important goal of this framework is to allow stakeholders, investors and regulators to distinguish removed (or negative) emissions (i.e., emissions that are pulled from the atmosphere, for example, through direct air capture or through photosynthesis) from avoided emissions (i.e., captured emissions that would have otherwise been emitted, for example, from a point source) through the use of the initiative's methodologies. The

ultimate goal of the framework is to increase the transparency of carbon accounting and reporting, which is an important component of decarbonization projects for investors.

The initiative has enlisted the Global CCS Institute, the International Emissions Trading Association and the Negative Emissions Platform to serve as advisory groups to oversee the initiative's work. The advisors will help examine the application of the methodologies to existing global policies such as the Paris Agreement as well as carbon pricing models developed by national and local governments. In particular, standardization of carbon accounting methodologies is expected to help scale the use of voluntary carbon markets, which are likely to play a critical role (especially for industries with hard-to-abate emissions) in achieving net-zero carbon emissions by 2050.

Development of Low-Carbon Energy Markets and Private Fund Investments

Standardized accounting methods and trustworthy verification standards are critical in scaling a low-carbon energy marketplace. The growth of ESG-minded investments is well documented. Another recent trend is demand for products with lower carbon intensity (i.e., the total lifecycle emissions associated with a product) scores relative to similar products with higher carbon intensity scores. The accounting methods and framework developed by the initiative will help scale markets to embrace low-carbon products such as carbon-neutral oil, low-carbon liquefied natural gas, carbon-neutral cement and low-carbon biofuels.

Earlier this year, Oxy Low Carbon Ventures and Macquarie Group's Commodities and Global Markets group announced the first delivery of "carbon-neutral oil" to Reliance India. The transaction reportedly marked the industry's first commercial delivery of crude where the greenhouse gas emissions associated with the entire crude lifecycle, including extraction, transportation and combustion, were offset with Verified Carbon Standard certification. According to a press release, the transaction represented a landmark achievement with respect to Oxy's efforts to establish a new marketplace for

The Texas Lawbook

“climate-differentiated crude oil.” Given the climate targets set forth in the Paris Climate Agreement and government incentives supporting CCS, it is possible that products such as net-zero oil and carbon-neutral oil could be established as benchmark competitors with products such as West Texas Intermediate crude in the not-so-distant future.

Advocates of low-carbon products say they receive not only green points but also green dollars. A research scientist with the University of Texas’ Bureau of Economic Geology recently found that the return for each enhanced oil recovery (EOR) barrel of oil injected with 10,000 standard cubic feet per barrel of anthropogenic CO₂ could approximate \$4.60/bbl. The finding noted that if the utilization ratio was increased to 50,000 standard cubic feet/bbl the return may improve to \$16.20/bbl, compared to non-CO₂ EOR barrels. The findings noted that even higher returns were possible for projects that included a mixture of EOR utilization with permanent sequestration. With these findings in mind, it is not surprising Vicki Hollub recently told The Associated Press that Oxy aims to become the Tesla of carbon capture. What is perhaps less clear is whether she was referring to Tesla’s innovation in electric vehicle technology or the manner in which Tesla has incorporated tax credits into its business model.

Shell has also developed a number of low-carbon products in order to advance its own net-zero ambitions. Last year, the company extended its “Drive Carbon Neutral” program from Europe into Canada. The program allows consumers the option to select carbon-neutral gasoline at their local gas stations in exchange for a marginal premium at the pump. In return, Shell offsets the emissions associated with the amount of fuel purchased by the consumer. The company has also made significant investments in other low-carbon products such as carbon-neutral LNG and carbon-neutral lubricants. In March, the company made headlines when it received the first shipment of carbon-neutral LNG in Europe from Gazprom. The shipment helped the company supply its carbon neutral gasoline products throughout the United Kingdom. According to a recent report prepared by the company, Shell has now delivered seven shipments of its carbon neutral LNG to Asia and plans to continue its efforts in developing low carbon markets.

But these premiums are not limited to oil and gas companies. Green Plains Inc. and Summit Carbon Solutions in February announced a CCS project designed to capture CO₂ emissions generated from bio-refineries in Iowa and sequester the emissions in North Dakota, adding that they expect to receive a margin uplift for the reduced carbon intensity of their products. The CEO of Green Plains stated in a press release that they believe that they will “achieve a minimum of 15 cents per gallon margin uplift as well as potential carbon credits, 45Q tax incentives and direct returns on our investment.”

We have also seen growing interest by private fund advisors in raising energy transition or

climate funds focused on low-carbon energy, renewable energy and even CCS. In our own practice, we have seen keen interest from certain prospective limited partners in the “negative” or “avoided” emissions potential of these funds from a carbon accounting perspective.

All of these developments underscore a rapidly developing demand for low-carbon products; however, they also illustrate the need for standardized carbon accounting methods. According to a recent Bloomberg article, investors’ appetite for low-carbon products is outpacing stakeholder’s ability to finalize standardized guidelines for carbon offset credits. Bloomberg reports that commodity exchange markets in Chicago and Singapore have already announced plans to start trading contracts later this year, despite the absence of uniform accounting standards and lack of government oversight.

Conclusion

As consumers, investors and regulatory authorities continue to place increasing emphasis on the carbon footprint of companies in the face of rising pressures to curb greenhouse gas emissions, the development of carbon accounting mechanisms and the advancement of low-carbon markets will be essential to accomplish the ambitious net-zero goals that experts have agreed are necessary to mitigate the most severe consequences of climate change. These efforts increase the confidence of investors and consumers participating in low-carbon markets and are essential to scaling low-carbon energy markets and ensuring the environmental integrity of these projects.

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