UNFCCC ARTICLE 6.4 CALL FOR INPUT DRAFT REQUIREMENTS FOR THE DEVELOPMENT OF MECHANISM METHODOLOGIES: CARBON ENGINEERING RESPONSE

October 11, 2022

CONTEXT & INTRODUCTION

Carbon Engineering welcomes the work of the UNFCCC to consider technological removals in the creation of the Article 6.4 Mechanism and are fully supportive of its objective to create linkages across international boundaries and signal integrity in carbon markets.

Ensuring integrity and quality in carbon markets is a priority for Carbon Engineering. The Direct Air Capture (DAC) technology we have partnered to deploy at a climate relevant scale will generate high-quality, tangible, and highly durable Carbon Dioxide Removals (CDR) when paired with safe and secure geologic storage. Direct air capture with secure geologic storage (DACCS) plays an important and growing role in potential net-zero pathways. The IEA Net Zero Emissions by 2050 Scenario estimates DAC technologies will need to annually capture more than 85 $MtCO_2$ in 2030 and around 980 $MtCO_2$ in 2050. This will require both rapid technological improvements and unprecedented growth for industrial-scale climate solutions. Today the world has only 18 DAC facilities that annually capture 0.01 $MtCO_2$.[1] In order to meet the herculean task of scaling from present day to the capacities needed, appropriate financial frameworks, carbon accounting methodologies, and interlocking regulatory oversight and appropriate liability structures in both the voluntary and compliance carbon markets must be developed to ensure project financing is achievable and project risk adequately defined and communicated.

We share the following perspectives in hopes that continued development of Article 6 and its methodologies will help us and others finance and deploy carbon dioxide removal facilities, in addition to the myriad actions needed to reduce present emissions, in order to accelerate overall climate action.

Carbon Engineering offers the following comments on Annex 7 and 8 below for your consideration as part of the call for input 2022 - *draft requirements for the development of mechanism methodologies:*

ADDITIONALITY

Currently, voluntary carbon markets have been a first mover to accelerate the transition towards net zero by allocating private capital to carbon dioxide removal projects such as direct air capture while nation states and trading blocs continue to negotiate binding carbon caps and prices. To date, purchasers of carbon removal from the voluntary sector have played a key role in kick-starting some of the first DACCS projects, and we need this trend to both continue and accelerate. Which is necessary to assign value to climate change mitigation through frameworks such as Article 6.4.

[1] https://iea.blob.core.windows.net/assets/78633715-15c0-44e1-81df-41123c556d57/DirectAirCapture_Akeytechnologyfornetzero.pdf

The legacy approach of most VCM frameworks leans heavily on financial additionality, which is not appropriate for assessing technological removals such as DACCS. Facilities that use DAC to capture CO2 from atmospheric air, and subsequently inject it for geological sequestration, have no other purpose than the removal of carbon dioxide and reduction of global net emissions. As there is no other economic motivation to finance and deploy such facilities, they are in fact financially (and climatically) additional by nature. Deploying technology at industrial scale requires high capital, multi-year planning cycles with revenue certainty to secure investment, which is a challenge in existing VCM frameworks. The current financial additionality frameworks require project proponents to disclose detailed financial information that is commercially sensitive in nature, yields results based on first-of-a-kind (FOAK) facility or front-end-engineering-design (FEED) data that have inherent uncertainty, or requires project information that simply does not yet exist. This creates tension between the need for uncertain/commercially sensitive data and the need to create revenue certainty required to deploy projects.

Large-scale carbon removal projects, such as DACCS, are being developed with the single driving purpose of providing an environmental benefit to the climate. This project type and project purpose is an excellent example of why conventional thinking about additionality in carbon markets needs to modernize. Furthermore, the environmental integrity of any geological storage-based capture project, such as a DACCS project, is readily quantifiable; it requires no consideration of counterfactuals nor estimations. Hence, this conventional aspect of additionally can be empirically shown rather than assumed.

ANNEX 7

Carbon Engineering is pleased to see the inclusion of global positive lists as an option for assessing additionality. We are supportive of using this method to evaluate DAC projects. We encourage UNFCCC to allow DACCS on to the global positive list as this would recognize that DAC projects are inherently additional by nature. Assessing the criteria listed in paragraph 49 –Additionality of Annex 7, we believe that DACCS meets all four criteria to be considered for a positive list:

(a) DACCS activities are net negative emissions (removals);

(b) DACCS activities are not legally required;

(c) DACCS activities are not financially attractive in any circumstances and are dependent exclusively on demand from climate policy and revenue from carbon markets;

(d) It is possible to predetermine and specify these necessary conditions with a high degree of certainty regarding DACCS activities.

ANNEX 8

Carbon Engineering supports the inclusion of global positive lists of as an option to assess the additionality of activity types under Article 6.4. Including DACCS on a global positive list under “Option 2, Section 3.10 Requirement for Additionality” would be a significant signal recognizing that DACCS activities are being developed and deployed with the purpose of providing an environmental benefit to the climate and are dependent exclusively on demand from climate policy and revenue from carbon markets.

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ABOUT CARBON ENGINEERING

Carbon Engineering is a global leader in the development of DAC technology capable of removing CO_2 from atmospheric air and, through a series of chemical reactions, delivering it in a pure compressed stream suitable for storage or use.

Carbon Engineering was founded more than a decade ago with the mission to develop and commercialize affordable and highly scalable carbon removal technology. Carbon Engineering is a developer and licensor of DAC technology. A standard commercial-scale Carbon Engineering DAC facility will annually capture over 1.0 $MtCO_2$ directly from the atmosphere. Carbon Engineering's DAC technology is a liquid-based DAC technology (L-DAC) that deploys an aqueous basic solution to pull CO_2 directly from the atmosphere and, after a series of clever chemical looping processes, conditions the atmospheric CO_2 into a dense phase that is optimized for transport and final end-use.

Carbon Engineering's DAC technology can provide highly durable CDR when combined with secure geologic storage. This rock-solid combination of DAC+ secure geologic storage (DACCS) provides a highly scalable and verifiable CDR mechanism for safely storing CO_2 for 1,000+ years, all with relatively low land and water use. Today, leading commercial markets are ready and we're working with global partners to deploy large-scale commercial facilities in multiple locations around the world.

The first large-scale commercial facility to utilize our DAC technology is in active development with our partner, 1PointFive, and is expected to have an annual atmospheric capture capacity of 1.0 $MtCO_2$ when complete.[2] It's our goal to have this first plant ignite an industry by demonstrating that megaton-scale DAC technology is feasible, affordable, and available. We envision fleets of DAC facilities working alongside emissions-free electricity, energy efficiency, and clean innovations in all commercial and industrial sectors to fully tackle the climate challenge. Additional information on Carbon Engineering's technology and commercial developments is provided at www.carbonengineering.com.