From: Matt Atwood <matt@aircapture.co>
Sent: Tuesday, 11 October, 2022 23:58
To: Supervisory-Body <Supervisory-Body@unfccc.int>
Subject: Call for input 2022 - activities involving removals under the Article 6.4 Mechanism of the Paris Agreement

To whom it may concern:

Please find enclosed a letter response to the call for input for activities involving carbon removals under Article 6.4 of the Paris Agreement. AirCapture LLC remains available for any discussion or consultation helpful in your process of determining next steps.

Best Regards,
Matthew C. Atwood
CEO, AirCapture LLC

11 October 2022

The Article 6.4 Mechanism Supervisory Body
United Nations Framework Convention on Climate Change
Haus Carstanjen Martin-Luther-King-Strasse 8
53175 Bonn
Germany

Dear Distinguished Members of the Supervisory Body:

AirCapture is a U.S.-based company engaged in the development of modular and scalable technology that captures carbon dioxide (CO_2) directly from the air (DAC) for use onsite as a part of industrial processes and for geologic sequestration and storage. We are submitting this letter in response to the *Call for input 2022 — Activities involving removals under Article 6.4 Mechanism of the Paris Agreement*.

Following the Article 6.4 Mechanism Second Meeting in Bonn, Germany on 19—22 September, the UNFCCC Supervisory Body published draft recommendations for activities involving removals under Article 6.4 Mechanism. Annex 6 (*Information Note: Removal activities under Article 6.4 mechanism*) lists the types of removal activities and associated carbon storage methods considered by the Supervisory Body.

While direct air capture (DAC) is listed as a type of removal through engineering/chemical methods (paragraph 24(b)(i)), the *only* long-term carbon dioxide storage method associated with DAC mentioned in paragraph 25 is geological storage.

Omitted from this list is the storage of carbon over long (100+ year) periods in products that can be produced or enhanced using a DAC-derived carbon source. These include:

- Olefins such as ethylene and propylene, and consequently all of their downstream derivatives such as polyethylene, polypropylene, PET, PVC, polyester fiber and others;
- Solid carbon and its derivatives such as graphite, carbon black, carbon fiber and carbon nanotubes;
- Concrete, both in ready-mix and block form, which can be strengthened by injecting carbon dioxide during mixing/production (and cement); and
- Mineralization such as the production of critical energy materials like lithium carbonate and accelerated carbon of both mine tailing ponds and coal ash ponds to dramatically reduce the risk of catastrophic tailing dam failures and the leeching

of toxic coal waste into local ground water supplies, respectively. Those carbonated materials will remain in this state for geologic time frames.

While long-lasting products — specifically timber in construction, biochar applied to soils and other bio-based products — are mentioned in paragraph 25(b), these are not the types of carbon-based products that can or will be produced using DAC as a carbon source. CO_2 from DAC, on the other hand, can be used for agricultural purposes such as increasing growth rates in greenhouse applications, and in this application some portion of the air captured CO_2 is bound into root structure and soil carbon.

We want to highlight the benefits of carbon utilization methods as outlined above are not limited to the actual carbon that ends up in long-lived products. Because carbon utilization paired with DAC in many of these processes *replaces* a fossil-based carbon feedstock, it also results in the reduction of emissions from activities that would have been undertaken to produce that fossil-based feedstock. The utilization of carbon across supply chains allows for "insetting" of decarbonization technologies to produce carbon-based materials required by hard-to-abate industries. Traditionally, carbon offsets served to offset Scope 1 and Scope 3 emissions. Through carbon conversion such as in the use cases outlined above, and through on-site modular DAC solutions, carbon footprints are significantly reduced by avoiding carbon transport and shifting from traditional materials to carbon-neutral or carbon-negative ones.

Internally, we call this the "multiplier effect", because for every tonne of fossil-based carbon or carbon dioxide that is utilized, two or more tonnes (sometimes exceeding 10 tonnes) of carbon dioxide are typically emitted into the atmosphere in the process of producing and transporting it.

This is true not just for the long-lived products and processes described above, but also for other products and processes which utilize carbon dioxide. Some application opportunities have low permanence levels, such as beverage carbonation, indoor agriculture, synthetic fuel, and dry ice. In all cases, however, the use of DAC results in significant carbon avoidance that should also be included in some form of crediting mechanism.

Therefore, we hereby request that the Supervisory Body consider the inclusion of carbon utilization, as described above, as a storage method under Article 6.4, and to further seek consultation with the large and growing number of experts in the field of carbon dioxide conversion — both in the private sector and in academia — to support its findings.

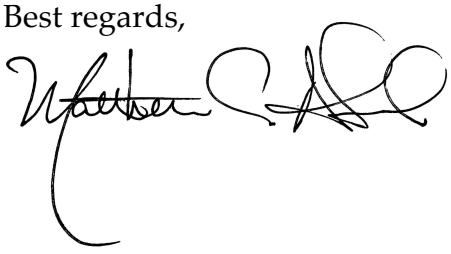
Both the capture and conversion of carbon dioxide into commercial products and services are highly dependent financially on support from carbon markets to ensure their viability in their development. These are industries have the potential to significantly contribute to climate mitigation, social resilience and community adaptation and thus be included under Article 6.4 and thus supported in their efforts. As such, it is imperative for the adoption of atmospheric carbon reduction technologies that sustainable financial mechanisms through both, the private sector and multilateral climate finance frameworks, are put in place for the solution to scale.

To the extent that utilization was not included in the Article 6.4 mechanism because it is traditionally associated with enhanced oil recovery (EOR), we suggest that the end use of the carbon dioxide be included as an attribute of any carbon credit that is generated from the utilization activity with consideration to the reversal or net atmospheric carbon balance.

Finally, we recommend the adoption of a single figure (measured in years) to define what is sufficiently "permanent" to qualify under Article 6.4. Although several parties have suggested different figures and ranges, 100 years has shown itself, in our view, to be a particularly logical threshold, and should thus be adopted.

Thank you very much for considering our suggestions, and we look forward to answering any questions, or otherwise engaging in further dialogue with the Supervisory Body.

Best regards,



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