Running Tide - Input to SB005 annotated agenda and related annexes for Article 6.4

Prepared for the fifth meeting of the Article 6.4 Supervisory Body

May 24, 2023

Dear Supervisory Body,

Thank you for the opportunity to respond once again to this critical work via the Call for Input in advance of the fifth meeting of the Article 6.4 Supervisory Body.

As a reminder, Running Tide is a global ocean health company. Ocean health is critical to planetary and human health — but ocean health is in rapid and accelerating decline. At Running Tide, our mission is to restore ocean health and productivity, rebalance the carbon cycle, decarbonize global supply chains, and revitalize coastal communities. We do this by developing integrated software and hardware systems, designing cutting-edge monitoring and measurement capabilities, and deploying comprehensive nature-based interventions, including solutions for open ocean carbon removal and ocean acidification.

Running Tide was pleased to see the inclusion of *"*Removal of CO_2 from oceans*"* as an area of planned discussion for the Supervisory Body within the *Information note: Removal activities under the Article 6.4 mechanism Version 4.0* (A6.4-SB005-AA-A09) that was prepared by the UNFCCC Secretariat. We commend the Supervisory Body for considering this inclusion, which will serve to leverage the large mitigation potential of the ocean for carbon sequestration and encourage innovation among countries and in coastal nations that are bearing the brunt of the climate crisis. These ocean-based carbon sequestration solutions that remove CO_2 from the ocean provide an opportunity for significant sustainable development co-benefits, including the adaptation and socio-cultural benefits of significant job creation, equitable local employment, and retraining in high-use, vulnerable areas. These solutions bear similarities to established land-based activities, including reforestation and sustainable agricultural practices, and as such have a wealth of best practices under compliance and voluntary carbon and land management mechanisms that can be adapted and fit-for-purpose to deliver global climate mitigation at scale. This combination of economic and sustainable development growth with highly scalable and permanent carbon removal solutions combines the benefits of both traditional nature-based solutions on land and engineering-based solutions.

In terms of the presentation of the pros and cons of “land-based” and “engineering-based” activities in the A6.4-SB005-AA-A09 document, we are concerned that a false dichotomy may be presented in the current framing. As an example, many of the promising “engineering-based”

open system solutions, such as ocean-based carbon removal or enhanced weathering, are designed to replicate and amplify the natural pathways by which the Earth durably stores carbon, and cannot be conducted without nature or natural processes.

Many of the “pros” presented in the discussion of “land-based” activities – sustainable development co-benefits, economic benefits and employment opportunities, environmental and socio-cultural benefits – can be observed and thoughtfully designed for within “engineering-based” activities, especially open-system removal solutions. In contrast, the “cons” of the “land-based” activities – that they may be re-released and subject to reversal risk, thus limiting their mitigation value – should be of much more concern, given that the objective of Article 6.4 of the Paris Agreement is to contribute to emissions mitigation and support sustainable development. If a land-based solution is prone to reversal risk that limits its mitigation potential, it is not contributing to the Agreement’s goals and is also likely to reduce or reverse the sustainable development gains realized upon reversal.

As such, the durable (or permanent) removal of this CO_2 in a reservoir that is not prone to risk of reversal, such as the deep ocean, the ocean’s bicarbonate reservoir or geologic storage, is of the utmost importance when determining eligible solutions under the Article 6.4 mechanism. While this range of solutions will continue to require technological and economic improvement, and some will be more successful and scalable than others, they are at the core of the Article 6.4 mechanism’s goals, in line with the latest IPCC science, and are generally accepted as a necessary component of our global climate mitigation strategy. In the “cons” of the “engineering-based” activities section, it is presented that engineered activities *“account for removals equivalent to 0.01 MtCO2 per year compared to 2,000 MtCO2 per year removed by land-based activities”*; because these land-based activities are subject to regular risk of reversal and limited durability of the carbon stored, this presents a false equivalency, since land-based solutions do not remove carbon on the timescales necessary or securely enough to reach our mitigation goals. The rules and methodologies established under the Article 6.4 mechanism provide the opportunity to standardize and catalyze a range of potential durable removal solutions with a high bar for rigor and quality, but only if solutions are evaluated in a manner that is holistic and led by science.

Again, this false dichotomy is the result of an incomplete definition of carbon removal, and as such leads to potential frictions between project types, incomplete solutions, and the potential to undermine carbon accounting rules. A more complete definition and framing would focus on carbon removal as **the intentional movement of carbon from the fast carbon cycle to the slow carbon cycle, where the total fast carbon removed exceeds the total slow carbon emitted within a given project boundary.** Such removal activities could shift carbon to rebalance the natural carbon reservoirs by transferring carbon from fast cycling reservoirs (i.e. the biosphere, the atmosphere, and the upper ocean) to slow cycling reservoirs (i.e. the deep ocean and marine sediments, geologic storage). Rebalancing of carbon reservoirs will also serve the broader goals of sustainable development, which include an equitable net-zero transition, socio-ecological sustainability, and the pursuit of broad economic opportunity. Because land-based activities primarily address fast cycle carbon sinks, those activities alone

cannot rebalance the greater carbon cycle at a scale that effectively combats climate change. For this, we must engage in carbon removal by transferring carbon from fast cycle sinks to slow carbon sinks – an exercise in physically moving mass back into durable storage.

Thank you for your consideration and for your continued work in combating the climate crisis.

Brad Rochlin
Running Tide
brad@runningtide.com