



Planetary Technologies
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July 31, 2023

Dear Supervisory Body:

Thank you very much for the opportunity to provide feedback on the Article 6.4 [Questions for structured call for inputs on recommendations for activities involving removals](#).

Introduction

Planetary Technologies was founded in 2019. We are based in Halifax, Nova Scotia, Canada. We operate throughout the world, with projects in the UK, Canada, and the United States. Our removal pathway can be used to great benefit at every company that has a population center near a coastline. This of course includes many island nations and countries in the global south.

We are a carbon removal company whose vision is to protect and restore the ocean and climate for generations to come. We do this by using Ocean Alkalinity Enhancement (OAE) to remove and sequester CO₂. According to [The State of Carbon Dioxide Removal](#), OAE has extremely high potential scale - up to twice the potential scale of DACCS¹. Planetary adds a pure, mild antacid or “alkalinity” to the ocean through existing outfalls, such as from a wastewater treatment plant. Once in the ocean, this alkalinity neutralizes acidic CO₂ by converting it into carbonate and bicarbonate, storing it in the ocean for around 100,000 years. As ocean CO₂ is converted, the ocean absorbs CO₂ from the atmosphere to bring the air and ocean back into equilibrium. Our goal is to work collaboratively with all of our stakeholders as we develop cost effective and sustainable tools to remove and store carbon dioxide at gigatonne scale.

The Planetary process is inspired by nature’s own rebalancing process, which has led to nearly 90% of carbon on the Earth’s surface being stored in the form of alkaline bicarbonate and carbonate ions in seawater. In the geologic carbon cycle, the rain brings the CO₂ to the alkaline rock, which goes through the same process described above. Our process is essentially the same, except we bring the alkalinity to the CO₂, and our process works in months rather than the millenia required by the geologic carbon cycle. Just like replanting a forest is man’s way of speeding the land-based sequestration of CO₂, our process is the way we can speed ocean-based CO₂ capture and storage.

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<https://static1.squarespace.com/static/633458017a1ae214f3772c76/t/63e3d4602156db24bc18c91c/1675875445298/SoCDR-1st-edition.pdf>, page 18 and 19.

Specific Responses

Much of this call for information deals with details regarding buffer pools, insurance, and reporting. These questions seem to apply primarily to removal pathways that have relatively shorter expected durations. Because of this, our responses will be general.

Because carbon dioxide released into the atmosphere today will continue to affect our planet's climate for centuries - up to 1,000 years according to NOAA² - Planetary believes that reporting, insurance, buffer pools, and the like should use similar timeframes.

Different CDR pathways, which utilize different sequestration mechanisms, should all be required to provide high confidence of ongoing sequestration. In practice, this means that differing pathways will require vastly different amounts of monitoring and reporting. "High durability" pathways, such as enhanced rock weathering or ocean alkalinity enhancement, naturally provide greater confidence than "low durability" pathways and so should be subject to different requirements.

At this point in the climate crisis, any amount of carbon reversal is incredibly damaging. While there is value in less durable carbon removal projects, especially those that can be deployed quickly and broadly without sacrificing efficacy and safety, our standards for granting and monitoring carbon credits should be as conservative as reasonably possible: carbon credits produced by low-durability storage mechanisms should be audited and monitored for the life of the credit.

Highly durable carbon removal methods, on the other hand, do not need the same scrutiny to provide the same confidence. Where there is great scientific confidence that no reversal will occur, there is less need to monitor the credit to ensure it remains effective.

With or without periodic inspections, there can be high confidence that there will be essentially no change in the amount of carbon stored over time by ocean alkalinity enhancement. This also means there is less or no need for a substantial buffer pool: while some percentage of a re-planted forest can be anticipated to be lost in the future, there is no threat that will take dissolved carbon out of the ocean, and therefore no anticipated reversal.

The Supervisory Body can and should require high confidence verification of all new carbon credits produced by OAE projects, ensuring that they effectively capture all the carbon claimed. Planetary has built a holdback factor into its own MRV practices to account for uncertainty in our carbon measurements, and we plan to reduce this factor only when confidence of a specific project's efficiency is increased. We hope that other CDR groups will acknowledge the uncertainty in their own processes similarly.

² from <https://climate.nasa.gov/news/2915/the-atmosphere-getting-a-handle-on-carbon-dioxide/>, retrieved July 31, 2023.

CDR projects that are highly durable, with 100% additionality and 0% leakage should be accommodated in the design of insurance, reversal and reporting standards. There is simply no need for them to be audited at the same frequency or with the same mechanisms as lower-durability projects with potentially high anticipated reversals. While we must be diligent in monitoring projects to ensure accuracy in reporting and to maximize long-term benefits, we should require insurance practices relative to the certainty of the carbon's long-term removal. More certain projects should be treated differently from less certain projects, and the verification and reporting processes of one should not need to apply to the other.

Thank you again for the opportunity to provide input. We are happy to discuss these comments or any other questions or concerns you might have.

Yours sincerely,

A handwritten signature in blue ink that reads "Pete Chargin". The signature is fluid and cursive, with a small flourish at the end.

Pete Chargin
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