Input to SB005 2022 Annotated Agenda and Related Annexes
May 24, 2023

Supervisory Body

United Nations Framework Convention on Climate Change (UNFCCC)

RE: Input to SB005 2022 Annotated Agenda and Related Annexes

Dear Supervisory Body:

We thank you for your consideration of negative emissions, or carbon removal, as an essential component to limit warming to 1.5 °C, as reflected in the Information Note entitled “Removal activities under the Article 6.4 mechanism” (A6.4-SB005-AA-A09 version 0.40). We welcome the note’s concurrence with the IPCC that carbon removal is a critical and necessary complement to deep and widespread emissions mitigation measures in any pathway to limit global warming to even 2°C (IPCC AR6 Synthesis Report). Given the scale at which these technologies are required–billions of tons of negative emissions annually by mid-century according to the IPCC AR6 Synthesis Report–it is therefore critical that the stakeholders come together in an objective, evidence-based, and transparent process for identifying feasible technological, social, and economic pathways for the development and implementation of carbon removal approaches.

As such, we feel it is important to counter the argument presented within the note, specifically Table 3, page 18, which states that “engineered” carbon removal technologies are technologically unproven, not suitable for deployment in developing countries, and do not serve any of the objectives under Article 6.4. Such arguments run counter to an existing and growing body of peer-reviewed scientific evidence, which we outline below.

Cella is a carbon removal company focused specifically on carbon storage in basalt. Amongst our advisors are the world’s leading scientists who have pioneered the field of carbon mineralization in basalt, with over seventy years of combined scientific research experience. The peer-reviewed evidence which they and others have produced over this period demonstrates that carbon storage in basalt offers secure, long-term CO2 storage due to the potential for mineralization. This method involves in-situ injections of carbon into basaltic formations, where carbon is sequestered in mineral form through geochemical reactions (Oelkers et al., 2008, Gislason and Oelkers, 2014). This process simply accelerates nature's long-term carbon cycle, where dissolved carbon (e.g., carbonic acid) chemically weathers silicate minerals hosted in volcanic rocks.

Thus, far from the assertion in Table 3 that this technology is “technologically unproven,” the engineered mineralization of carbon in basalt relies on decades of peer-reviewed science and well understood scientific principles, and it has been demonstrated to be a safe and permanent storage option for carbon dioxide in several real world demonstrations. Engineered mineralization of carbon has been proven safe and effective in two basaltic settings: the CarbFix sites in Iceland (Snæbjörnsdóttir et al., 2020 and references therein) and the Wallula Basalt Pilot Project in Washington, USA (McGrail et al., 2017). The demonstrations indicate no mobilizations

of trace metals, no adverse effects to the biome, and no reduction in injectivity of the reservoir after over 10 years of injections (Clark et al., 2020). They have not only validated the underlying scientific principles but have also highlighted the practical viability of these approaches under diverse environmental conditions.

Given these advancements and the urgent need for safe, effective and durable carbon mitigation and removal technologies, we feel it is prudent to consider deploying engineered carbon removal technologies wherever there are suitable conditions to do so; namely, local and national acceptance, means for rigorous and transparent monitoring of impacts, availability of permanent storage options, and plentiful renewable energy potential. We feel strongly that the notion that such conditions should exclusively pertain to developed economies, as reflected in Table 3, is unfounded and fails to acknowledge the global nature of the climate crisis we face. Such a perspective would ignore countries like Kenya, which hosts important basaltic formations, world-leading geothermal resources, and a strong and public interest from the national government to attract, create, and develop these technologies.

We would be pleased to discuss this further with the Supervisory Body. We very much appreciate your continuing work to achieve a safe and equitable climate future, as well as the opportunity to submit this input for your consideration.

Sincerely,

Corey Pattison

Co-Founder and CEO

References

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