

Zurich, July 31, 2023

CarbonPool is pleased to make this follow-up submission in response to the UNFCC structured call for inputs on recommendations for activities involving carbon removals. CarbonPool is a recently founded insurance startup focused on carbon removals, specifically removals of carbon dioxide via nature-based and engineered solutions (referred to herein as emissions removals or ER). CarbonPool is seeking an insurance license in Switzerland; its investors include former board members of the world's largest insurance companies, and its staff is comprised of insurance executives, economists, climate scientists and weather modelers.

As set forth in our submission dated June 16, 2023, in response to the UNFCC call A6.4-SB005-A02 (<https://unfccc.int/sites/default/files/resource/CarbonPool.pdf>), we strongly believe that requiring the purchaser of an ER credit to maintain ***in-kind reversal insurance indefinitely*** for ER reversals (with one year insurance policies that are renewed on an annual basis, much like marine pollution and auto liability insurance), where the insurance payout is in the form of another ER credit, will offer the following critical benefits:

- ***secure the ER indefinitely since*** any reversal of an insured ER credit would be compensated with a new unallocated ER credit from the insurance reserves.
- ***eliminate the need for labor-intensive evaluations and determination of crediting periods*** for a wide variety of projects.
- ***eliminate the need for buffer pools and complex risk assessments*** by replacing them with in-kind reversal insurance, thereby ***allowing insurance companies, who are experts in quantifying and holding risk, to provide insurance which will replace reversed ER credits one for one with new ER credits*** from their own actuarially calculated insurance reserves.

CarbonPool has created its own preliminary model of ER projects using probabilistic modelling techniques and advanced weather, hazard and climate data. CarbonPool posits as a result that the cost of such insurance is affordable, at an annual insurance premium per ton of sequestered CO<sub>2</sub> roughly estimated at 1% or less of the cost of a ton of carbon dioxide removed.

### *2.1 Monitoring and reporting – questions 5-10*

CarbonPool believes that, in order to limit further damage to the atmosphere from re-released greenhouse gases, monitoring of ER reversals should occur on a daily or monthly, not annual basis, so as to quickly undo the damage caused to the atmosphere by such ER reversals.

Insurance companies have long been engaged in remote monitoring of weather that is used for products such as parametric crop insurance, where the insured party will automatically receive a payout if the insurance company's weather monitoring has detected an event which will adversely affect the insured party's crops, for example a shortage or excess of rainfall.

Such insurance technology, which relies on real-time monitoring elements like satellite imagery, geothermal imaging, weather data, and remote soil monitoring, allows for the monitoring of removal projects remotely. If ER reversal events are detected, the monitoring entity would (a) notify the project proponent so that the proponent may take mitigating actions right away, and (b) trigger the insurance claim to replace the reversed ER credits with new ER credits from its reserves.

To avoid any conflict of interest, monitoring should be done by an independent third party acting as a custodian which tracks all issued ER credits and monitors them via a technological solution, already in use by insurers, as described above.

#### *2.2.1 General - questions 11-14*

CarbonPool posits that buffer pools based on static risk frameworks and a one-time, upfront contribution are wholly insufficient as a mechanism to manage ER reversal risk. Buffer pools do not:

- Hold capital to manage unexpected outcomes
- Reflect the continuing variety and innovation of project types, risks and geographies through granular and differentiated risk assessments and corresponding determinations of the appropriate buffer contributions on the individual project level, or
- Capture the dynamic nature of the underlying risks, which change over time (driven by factors such as the changing climate, regulatory requirements, and new technologies).

Therefore, buffer pools will not have the required amount of ERs to compensate for scenarios in which serious unexpected risks materialize and cumulate or if the risk profile of a project changes over time. In fact, recent experiences of buffer pools demonstrate acute failure.

**Buffer pools do not have capital to manage unexpected outcomes.** The financial sector has centuries of experience in dealing with risk. As a result of multiple failures over time, no advanced banking or insurance regulatory regime allows for the use of a rule-based buffer pool or similar construct to deal with risk, as history has proven this to be inadequate when serious risks have materialized and cumulated. In the face of global warming and the damages it has wrought and continues to wreak on communities everywhere, it is imperative that we learn from the experiences of banking and insurance and move directly into a risk-based regime with capital requirements to effectively address and mitigate the danger posed by ER reversal risk. The insurance sector is readily able to do this with modest adjustments in regulation, primarily to translate the existing regulations to allow for risk-based capital requirements which account for the nature of ERs.

**Standardized risk assessments underlying buffer pools do not sufficiently account for the diversity of project types or the changing nature of risk.** CarbonPool believes that buffer pool standardized approaches fail to capture underlying risks to the permanence of ERs, which are natural catastrophes (disturbing CO<sub>2</sub> sequestered primarily in soil, trees and rock) and technology breakdowns (disrupting the use of CO<sub>2</sub> capture and storage technologies). A standard assessment does not sufficiently address the probability of the risk occurring, variability as a result of different geographies, different project types and the changing nature of risk (for example, due to impacts of climate change over time).

Critically, standardized rates for buffer pool contributions are often set to arbitrary numbers (e.g., 10% buffer), creating unintended arbitrage opportunities and distorting incentives, as the riskiest project buffer pool contribution is the same as the most prudent project's buffer pool contribution.

By contrast, modelling of risks such as natural catastrophe and technology breakdown is exactly the expertise maintained by insurance companies like CarbonPool, as well as many other catastrophe risk insurers. Therefore, the insurance industry is best placed to insure ER reversal risk and hold a risk based insurance reserve, crucially further strengthened by additional capital due to risk based capital requirements, in order to pay out in ER credits on a one for one basis, even in the event of unexpected outcomes.

Insurance companies' reserves are closely regulated and continuously stress tested by insurance regulators to ensure that they are sufficient to compensate for the risks carried by the insurance company. The composition of ERs in an insurer's reserves will also reflect a prudent, diversified portfolio of ERs mirroring the investment management principles implemented by regulated insurers today. In contrast, unregulated carbon credit buffer pools undergo no such testing – they are simply an approximation.

***In sum, buffer pools are inadequate to compensate for ER reversals.*** Buffer pools create a false sense of security, since they purport to make up for ER reversal events, but do not entail rigorous measurement of the impact of the reversal event or quantification of the ensuing loss and cannot cater for unexpected outcomes. The accuracy and sufficiency of the buffer pools is not tested and the contribution levels are not differentiated enough to incentivize investment in risk mitigation of the underlying projects.

#### *2.2.2, 2.2.3 reversal risk tools, general and specific*

Today, insurance is not used as a tool to adequately address carbon reversal risk because any insurance maintained by a project developer today produces, in the event of a claim, a cash payout to the project developer.

This cash payout may be used to restore damage to the underlying asset, or to mitigate other operational losses, but it does not actually address the damage, which is that an ER reversal results in the emission of a previously sequestered ton of CO<sub>2</sub> back into the atmosphere. By contrast, the in-kind insurance offered by CarbonPool would address precisely this problem, by compensating in ERs.

In-kind ***ER reversal insurance will allow us to maintain our society on a path to net zero*** – we cannot afford to make educated guesses, nor should we, especially when we have tools at our disposal today which allow us to make mathematically sound calculations based on the latest scientific understanding and the insurance industry's decades of historical data on natural catastrophes.

CarbonPool is actively engaged in applying for an insurance license. While prevailing risk capital regimes under current insurance regulations make it extremely costly to allow for at-scale in-kind payouts in carbon removals, only slight adjustments to these regulations are required to both (i) accommodate in-kind payouts and (ii) to allow investment of insurance premiums and capital into ERs for the insurer's insurance reserves. We strongly urge regulators to engage with insurers like CarbonPool such that these changes can be made promptly to allow for the widespread use of in-kind reversal insurance as a solution to the challenges of carbon crediting, monitoring, and reversals.

Sincerely,

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