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Sent: Tuesday, 11 October, 2022 19:20

To: Supervisory-Body <Supervisory-Body@unfccc.int>

Cc: Gyozo David Ungar <david.ungar@carbonfinancelab.com>

Subject: Call for input 2022 - activities involving removals under the Article 6.4 Mechanism of the Paris Agreement.

Dear sir or madam,

our suggestions are included in the attached word document. All information and sources linked in the document are suitable for public records.

PDF and online versions of documentation are available upon request.

see attached.

regards

Nick Gogerty

Managing Director



Carbon Finance Labs

Contribution by Carbon Finance Labs in response to UNFCCC's Call for input 2022 - activities involving removals under the Article 6.4 Mechanism of the Paris Agreement

Carbon Finance Labs (CFL) welcomes the opportunity to be heard on the development of the modalities of Article 6.4. We believe robust integrity and quality principles for carbon markets and after sales reporting are essential for climate action at scale.

Carbon Finance Labs team has over 20 years in carbon markets and innovation including trading carbon, developing projects on multiple continents and guiding policy for Fortune 500 companies as well as attending every COP since COP4..

Carbon Finance Labs accelerates innovations associated with removals. These include:

- Co-founding the CCS+ global industry initiative for voluntary removal methodology development with Verra and others ccsplus.org
- Co-founding the C-capsule environmental removal attribute certificate program with evident. c-capsule.org
- Founding CarbonSig whose mission is to make the CO2e of all products and services visible to empower better decisions making at any point in the value chain. The CarbonSig tool also creates new uses for removals and instruments. carbonsig.com
- Developing the RIP5 Removal Index Portfolio (carbonfinancelab.com) that supports, accelerating innovation learning curves, north-south equity and acceleration of carbon removal uptake at scale.
- [Research](#) into insurance developments, ratings, risk and the effect of risk in the Carbon Markets.
- Research into the ROI (return on innovation investment) into removals highlighting how policy to accelerate removals today could have over \$1.5 trillion in the coming decade. https://grid.is/@ngogerty/roii-return-on-innovation-investing-investing-billions-in-direct-air-capture-dac-to-save-trillions-o-HogB_rMsQCecI3D30xVglw
- Accelerating digital carbon and climate data sharing by Founding <CarML> Carbon Removal Mark-UP language as an open-source effort to accelerate the sharing and declaring of all carbon-related data including goods and services and carbon-related certificates and instruments. Carbon-ml.org Now at work with GS1 managing 100 million unique Bar Code product ID's for products produced by 2m firms globally.

General comments

We believe that environmental effect¹ measured carefully should be at the heart of the Carbon system. Effects are measured only after the fact that an act has been performed (ex-post). Prior to that ex-ante climate efforts are expected effects.

The integrity of environmental actions is a function of performative time. As such environmental actions need excellent risk management tools and clear data for what works and doesn't over time.

Actions such as carbon removals are taken with a desired effect or outcome. We must learn collectively as quickly as possible how to manage the risk associated with these actions and duration of the outcomes. This means acknowledging and sharing data associated with carbon defaults (project failures) publicly. We only truly learn from our failures.

Suggested language: *Carbon instruments or actions counting towards NDCs including ITMOs should have a monitoring period of 20-50 years with some agreed frequency of measurement to insure desired effect is achieved.*

By measuring and managing the risk associated with effect we can better drive those intended effects from a safety and efficiency (utilization of resources) view. An independent body could be charged with maintaining and even analyzing the outcomes of EOCD (Event of Carbon Defaults) analogous to the NTSB (National Transportation Safety Board) for airlines in the US.

Suggested Actions:

- *Call for recognized body for determining events of carbon default*
- *Call for recognized body Carbon Effect Safety Board CESB to collect and publicly disseminate EOCD data over duration.*

Risk and uncertainty are managed with data and numbers. To that end all risk management actors, insurers, ratings agencies, govts etc. rely on high-integrity data and clear lines of outcomes. Public disclosure of carbon-related activities outcomes over some duration (suggested minimum 20 years) will prove beneficial to all involved.

In addition any actions taken should have a targetted effect declared with an expectation or likelihood estimation. Example 500 tons, sequestered for 100 years with a 95% certainty. This will allow for NDC and actions to be normalized across effective dimensions.

¹ Network Capital: Effective Framework for Carbon:
<https://docs.google.com/document/d/1BQgNpdkeSIAya-CQZAILHdgGYkzC9Fm/edit?usp=sharing&oid=114596658419539904419&rtpof=true&sd=true>

Suggested action: *Call for climate projects/credits/itmos etc. environmental effect reporting to be normalized with estimated duration and likelihood.*

Draft recommendation: Requirements for the development and assessment of mechanism methodologies pertaining to activities involving removals (as Annex 5)

Monitoring for removals, Chapter 1.1

The monitoring requirements suggest a bias for in-person audits.

Suggest the following rephrase:

Mechanism methodologies shall require that all removal activities monitor the achieved carbon stocks through their quantification using field measurements or remote-sensing, or a combination of both.

This would allow for innovations associated with higher frequency more transparent means of monitoring for events of default and carbon performance. This would also allow for better predictive modelling of effective performance of new innovative ways of sequestering or capturing carbon for varying durations with varying performance expectations. We need 1,000 shots on goal.

Information note: Removal activities under the Article 6.4 mechanism (as Annex 6)

Addressing reversal, Chapter 4.5

To date, there is lack of transparency and data on reversals which has led to arbitrary buffer pool contributions with little to no actuarial basis. It is our recommendation that the UNFCCC mandates public disclosure of all Events of Carbon Default (EOCD). These could include, volume, causal factor and / or remediation of the EOCD.

Greater access to data would provide many benefits including

- enable enhanced modeling of risks for actuaries and insurers/reinsurers alike to understand likelihood better.
- Insurers create commercial insurance products for effective underwriting.

Suggest reporting of EOCDs should be standardized, including but not limited to causal factors associated with default, magnitude, impact on future defaults, etc. Ideally stored in a machine-readable public database.

The treatment of EOCD's, i.e. recourse is to be determined.

Call to action

- *A body to formally recognize and declare EOCD events globally*
- *Formal procedure for EOCD compensation or resolution at the NDC level should an EOCD occur within an expected declared time horizon 20,50 or 100 years.*

Determination of permanence period, Chapter 4.5.1

We agree that choosing a time horizon for permanence is a normative judgment rather than the expression of a scientific consensus or physical reality, but it would remain useful for the UNFCCC to clarify what counts as 'permanent'.

Referencing the IPCC suggests this could be anywhere between 42 and 150 years. Carbon Finance Labs normalizes 'durability' over a 100-year time horizon to align with the global warming potential (GWP) determinations and the furthest realistic time horizon of reliable enforcement.

We believe the term durability is a more accurate portrayal of most anthropic actions. Durability also lends itself to quantification along scalar or normalized expected outcomes.

Risk mitigation and compensation mechanism, Chapter 4.5.4

We support the use of existing mechanisms (buffer pool approach) to facilitate insurance and compensation of reversals in the short-term but believe the conventional self-insurance approach adopted by issuers is outdated. Their monopoly on risk roles and responsibilities carries multiple conflicts of interest.

Recommended solutions include: *disaggregating the roles by appointing independent, third-party actors to monitor, rate, declare, report and underwrite against risk of reversal (EOCD).*

Independence of roles would generate more trust amongst stakeholders and demonstrate the necessary rigour for adoption at scale by governments. Similar treatment of risk roles can be found in global credit markets.

Transferring administration of buffer pools to independent, third-party insurers would remove issuers from liability concerns relating to the recourse for carbon default, claim settlement and dispute resolution.

The presence of commercial insurance would increase user confidence for project developers exposed to risk of reversal and buyers concerned about the longevity of their CDR claims. Transition towards financial risk management best-practice would de-risk investments into voluntary carbon instruments and increase stakeholder confidence.

Alternative solutions to buffer pools in the even of carbon default (EOCD) could include:

1. Pre Agreed monetary compensation which could then be applied to Carbon activities.²
2. Pre Agreed carbon deliverables due at the vintage of time of default declaration. Insurer would purchase and then deliver
3. Existing buffer pool approach managed using like for like normalized effective carbon in order to create environmental effective fungibility.

In-meeting working document on “Recommendations for activities including removals under the Article 6.4 mechanism” (SB002 in-meeting working document)

Monitoring for removals, Chapter 3.1

Carbon Finance Labs recognises the impact of potential non-permanence (uncertainties) from CDR activity over a 100-year time horizon. Reversal of GHG emissions in our joint venture C-Capsule’s methodology requirements are recognised in two forms:

² This is suggested as private sector insurance primary returns are driven by investment returns on premiums and not by underwriting risk. The insurance and re-insurance sector is likely the largest pools of capital that could take on the risk related to climate mitigation at scale as represented by removals.

- **Leakage:** predictable reversal events that are accounted for in calculating the eligible volume of certificates per CDR event or activity.
- **Event of Carbon Default (EOCD):** unpredictable reversal events that are accounted for in the Insurance Buffer.

The risk for an EOCD over a 100-year time horizon is a direct reflection of a CDR activity's Expected Environmental Effect, which is a percentage-based likelihood for sequestration over a 100-time horizon. *Example 500 tons sequestered with a 95% certainty for 100 years.* By factoring in the risk of an EOCD over a quantified horizon of 100 years, C-Capsule acknowledges the tragedy of the horizon and provides a risk metric for insurance purposes.

[Normalized Environmental Effect](#) measured with fixed time and certainty dimensions would allow for potential blending of mitigation approaches in portfolios of environmental effect to potentially meet compliance obligations. Obligations could be defined as a portfolio with X tons of effect having a median duration of Y for example. This would allow for maximum degrees of freedom in innovation and risk management innovation, driving more efficient carbon and thus the potential for broader ambitions.

Moving carbon to a quantitative effect basis would allow for more traditional risk management tools from finance to be brought to bare on allocating resources and managing innovations associated with removals.

Crediting period, Chapter 3.4

The suggested crediting period is too short for engineered removals given the significant CAPEX requirements and expected functional life of the project facilities. A minimum crediting period of 30 years should apply for this type of removals to allow for and de-risk necessary investment decisions.