

Isometric comments and responses to removal activities under the Article 6.4 mechanism

Ongoing monitoring of removals

The criteria projects need to fulfill with respect to ongoing monitoring should differ based on the type of carbon removal process. Some processes, such as direct air capture (DAC) with subsurface storage in basalt formations, can lead to the mineralisation of captured CO₂, rendering it functionally stable. If a project is able to provide evidence of this occurring then further monitoring requirements can be substantially relaxed.

There are some project types which do not have a practical route to conduct ongoing monitoring, including enhanced weathering (EW) and ocean alkalinity addition (OAE), which rely on bicarbonate storage in bulk ocean water. For example, after bicarbonate is formed in certain EW processes it will be transported through the watershed and eventually end up in the ocean. At this stage there is limited ongoing monitoring that can be done. More reliance is therefore needed on a scientific assessment of the actual geochemical models that underpin our knowledge of the stability of, in this case, bicarbonates present in the ocean which current estimates would place on the order of thousands of years.

In summary, a one-size-fits-all regime to post crediting monitoring may not be suitable for all carbon removal approaches.

Uncertainty

This call for inputs mentions the use of buffer pools as an option for dealing with reversals. We would like to suggest a complementary approach of uncertainty discounting for the SB to consider. This approach would involve attempting to quantify potential uncertainties in the net negativity and future leakages of a carbon removal approach. Credits would then only be issued after discounting for this uncertainty. If done responsibly this would ensure that credits represent a conservative estimate of the amount of drawn down carbon.

More work needs to be done in a number of pathways to help structure this kind of approach but there are already efforts¹ working towards this type of quantification. This approach can help account in an upfront way for potential reversals in pathways where ongoing monitoring is less feasible.

Baseline updating

¹ <https://www.energy.gov/technologytransitions/articles/doe-selects-four-national-laboratory-led-teams-accelerate>

Baseline updating in certain pathways should be tied to the size of the removal industry itself and conducted periodically. For example, if the SB will be considering the counterfactual usage of certain biomass feedstocks there should be a periodic reevaluation of how certain feedstocks are used. This becomes particularly important if the carbon removal industry will create a new revenue stream for certain types of feedstocks which could lead to direct or indirect land use effects.

Durability

Robust monitoring or the use of sufficiently rigorous models is an important component of ensuring the integrity of carbon removals. We suggest the SB should also specifically look to include the concept of durability in their evaluation of different carbon removal methods. Carbon dioxide emissions stay in the atmosphere over thousands of years. This means that unless removals are done that have equivalent levels of durability a removal is not truly compensating for the long term warming potential of emissions.

There are likely still benefits to removal methods that have lower levels of durability, however, treating these as fungible on a 1-1 basis with longer durability pathways risks placing longer durability options at a structural disadvantage. This could lead to a severe under investment and build out of capacity in these pathways, which need to scale significantly in order to reach the climate goals as laid out in the IPCC reports².

We have only provided direct responses to certain questions, where we have relevant views and insights to share.

For reference - questions from the consultation:

2.1. Monitoring and reporting

5. Should the activity proponent be required to periodically update its monitoring plan every five years and/or at the end of the crediting period?

6. Should monitoring reports be submitted within the first [2] [5] [X] years of activity implementation? After the first report, at least once every [2] [5] [X] years?

Where applicable given the carbon removal process we would favor monitoring reports towards being submitted earlier. Though for pathways where monitoring is less feasible given the characteristics of the carbon removal process the SB should consider alternative arrangements which place more focus on the upfront characterisation of uncertainty.

7. Do the “reversal notification” reports referred to in SB 003 recommendations involve, e.g. digital notification of an observed event that could lead to a possible reversal of removals;

² https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf

submission of notification within [90] [120] [X] days of the observation; follow-up submission of a full monitoring report within [6 months] [1 year] [X timeframe]?

As soon as practical would be advisable.

8. To ensure and demonstrate the continued existence of removals, are activity proponents required to undertake monitoring and address reversals:

(a) Only during active crediting period(s) or

(b) Also [15] [X] years after the last active crediting period?

(c) The longer of [9(a)] [9(b)] or a timeframe specified by the host Party (e.g. communicated in LoA or earlier)

The most robust and practical monitoring plan will differ between pathways. Pathways that claim to have higher durability values should have to present reasonable evidence that this durability is likely to occur. This could include, but is not limited to, (1) providing evidence that a geochemical process has occurred meaning the reversal risk of CO₂ is negligible (2) the use of appropriate biogeochemical models in addition to relevant uncertainty discounts to reach a conservative estimate of the amount of leakage we would expect in an open system (3) some level of ongoing monitoring which would be project specific.

9. Is simplified annual reporting required to ensure and demonstrate the continued existence of removals? In what cases and how long?

10. Are measures required to address the residual risk of reversals beyond the monitoring timeframe? If so, for how long, and what are the options for, e.g. the mechanism(s), responsible entity(ies), oversight?

Upfront work to characterize and quantify sources of uncertainty about the net negativity of a process can be a comparably rigorous option to ongoing monitoring in certain pathways. There are a number of efforts that are being started to tackle this problem in different pathways including some of the recent awardees of the DoE MRV lab call funding³.

2.2. Addressing reversals

2.2.1. General

11. What type of risk rating is used to calculate an activity's buffer contributions? (a) The results of an individual activity's risk assessment; (b) A standard rate determined by the 6.4SB; (c)

³ <https://www.energy.gov/technologytransitions/articles/doe-selects-four-national-laboratory-led-teams-accelerate>

Either measure could be appropriate, depending on the circumstances (in this case, what factors should determine the use of an activity-specific or standard risk rating)?

Any method used to quantify a risk adjustment on the number of credits issued from a project should be specific to the type of project activity. Furthermore depending on the process the specific set of measurements taken might lead to different project level uncertainties being appropriate.

12. What are the options for circumstances/triggers and/or periodic milestones for reviewing and possibly updating activity baselines, risk assessments (so, risk ratings), and monitoring plans, including in relation to:

- (a) Verified reversals of removals; and
- (b) The stages of activity cycle implementation?

Certain pathways such as those in the BiCRS space should have to undergo periodic re-evaluation of potential market drive leakages being brought about through the introduction of new revenue streams from carbon removal activities. These re-evaluations should ideally be geographically scoped and become more pressing the larger the overall market is.

13. On what basis could requirements provide for the use of simplified / standardized elements or mandate the use of more frequent, full, or activity-specific elements and what are the requirements that may be relevant?

- (a) Activity type or category;
- (b) Risk rating level (e.g. above versus below a given %-based threshold);
- (c) Risk assessment contents (e.g. nature, number, variety of risk factors);
- (d) Monitoring plan (e.g. complexity, frequency, responsible entity).

Taking into account activity specific elements will be crucial when designing any fit for purpose framework around monitoring and reporting.