

## Structured Public Consultation - Removal Activities - Article 6.4 Framework

The following are the comments from the South Pole on the Structured Public Consultation on Removal Activities which is proposed under Article 6.4 framework

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Overview:

- South Pole sees all forms of GHG mitigation as critical to limit global warming to 1.5 degree celsius, i.e., GHG reduction, avoidance and removals all are indispensable. Removals can only be effective if there are economy wide decarbonisation efforts, otherwise the pressure on achieving scale of removals would become increasingly impossible to remain within the remaining carbon budget.
- While drafting rules, modalities and procedures pertaining to removals, A6.4 supervisory board shall ensure that there is no negative impact on decarbonisation efforts from the RMP perspective, at least.
- When A6.4 SB consider removals as a category, SB shall also consider that removal projects can be of multiple types, each with different characteristics and each may need to be treated differently (from one perspective or another). Some might even fit the existing RMP of CDM (e.g., CDM sectoral scopes) while other may warrant operationalisation of newer sectoral scope (CCS).
- BECCS as removals: BECCS (in all its different types - such as biomass to energy, biomass fermentation) must be considered as removals if the biomass source is sustainable, i.e., there is not net reduction in amount of biomass at the source. In such cases, additional carbon is being captured and stored in geological reservoirs., while the original biomass is being replenished at the biomass source (e.g.. Sustainably sourced wood from FSC certified forest). [There seems to be contradiction within market stakeholders that BECCS should or should not be considered as removal]
- Activities such as ocean fertilization (OF), ocean alkanisation, kelp sinking, etc, the science is still evolving and these activities should only be considered when the uncertainty around MRV is resolved and there is consensus on their impact (positive and negative) from environmental and social aspect.

Question	Response / Comment / Suggestions
<b>B. Monitoring and</b>	- For land based activities and other project activities such

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<p><b>Reporting:</b> What timeframes and related procedures should be specified for these elements referred to in A6.4-SB003-A03? a. For initial monitoring and submission of monitoring reports (paragraph 3.2.14); (a) For subsequent monitoring and submission of monitoring reports (paragraph 3.2.14); (b) For monitoring and submission of monitoring reports following an observed event that could potentially lead to a reversal (paragraph 3.2.14); (c) For monitoring and reporting, including any simplified reporting, conducted after the end of the last crediting period of activities involving removals (paragraphs 3.1.10 and 3.2.13).</p>	<p>as DACCS and BECCS<sup>1</sup> (terminology such as per table 4 - ab-sb0005-aa-a09), the first monitoring report should be within 5 years. Such projects would take significant time in setting up (preparation of land / construction of DAC plant). For activities such as biochar ((biochar project could have similar sectoral scope of AMS III BG or or AMS III L - as it uses similar technologies as those methodologies) and in some cases of CCUS (CCUS such as production of concrete using CO<sub>2</sub> could have sectoral scope of manufacturing industry and/or construction)- it could be within 2-3 years of project registration Subsequent monitoring - monitoring report ideally should be submitted at least once every 5 years</p> <ul style="list-style-type: none"> <li>- An event leading to potential reversal (e.g., forest fire in case of forestry project or atmospheric leakage of CO<sub>2</sub> from reservoir in case of DACCS project) should be notified with 90 - 120 days (subject to further consultation), evaluation of such event could be submitted within 6 months of the notification.</li> <li>- Simplified reporting for DACCS and BECCS could be once every 5 years post crediting period to ensure no reversal has occurred. This could end when there is sufficient data to support that CO<sub>2</sub> plume is stable and reservoir is stable. For land based activities such as forestry, it may continue till 100 years to conclusively report about no reversals.</li> </ul>
<p><b>C. Accounting for removals:</b> 2. For activities involving removals that also result in emissions reductions, what are the relevant considerations, elements, and interactions between this guidance and the requirements for the development and assessment of mechanism methodologies, including.</p>	<ul style="list-style-type: none"> <li>- For engineered removals such as CCS - DACCS, BECCS, CCUS, there could be projects that involve multiple sources of CO<sub>2</sub>. Removals, in this case could be based on the source of CO<sub>2</sub> (or percentage). E.g., incase of CCS in Waste of Energy plants, a fraction of waste would be biogenic in nature, in such scenarios guidance at methodology levels would be required to differentiate between reductions (co<sub>2</sub> capture from fossil sources) and removals at the equation level in the methodology (or some other monitoring parameters). Similar guidance would also be required if a project is geologically storing CO<sub>2</sub> from multiple sources (e.g., CO<sub>2</sub> from natural gas processing and CO<sub>2</sub> from direct air capture). In case of BECCS (e.g., biomass to energy plants or bioethanol plants), only fraction of biomass that is demonstrated by to be sustainable biomass should be eligible as removals.</li> <li>- Similarly, for integrated project activities such as</li> </ul>

<sup>1</sup> Here we are only mentioning about geological based engineered removals.

	<p>agriculture land management that would combine multiple practices, methodologies should ideally provide requirements (where possible) to quantify benefits from each measure e.g, GHG benefit of reduced fertilizer use and GHG benefit in terms of SOC increase due to reduced tillage).</p> <ul style="list-style-type: none"> <li>- A6.4 registry should consider having an optional label for A6.4ERs that are classified as removals, as removals might be required to comply with net zero pledges. Alternatively, removals can be called as A6.4 CDR/A6.4 RR</li> </ul>
<p><b>D. Crediting Period:</b> Discuss any further considerations to be given to the core elements for crediting periods in A6.4-SB003-A03; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.</p>	<p>Crediting period is proposed as 15 years, renewal twice, i.e., total of 45 years.</p> <p>The Crediting period should be based upon the removal activity (category - land based/ engineered) and also specific project activity (e.g., biochar or DACCS).</p> <ul style="list-style-type: none"> <li>- In case of nature based removals - forestry, agriculture, mangroves - the crediting period seems to be appropriate. A6.4 SB also requires reassessment of baseline at every CP, i.e., every 15 years. This seems to be a longer gap between two baselines. Ideally, baseline reassessment should be more frequent, this is also necessary due to ever changing landscape of policies, incentives, etc at national and regional level. A6.4 should evaluate similar requirements for baseline reassessment in the VCM e.g., Verified Carbon Standard / Gold Standard, where it 5-10 years. This will also help ensuring robust quantification.</li> <li>- In case of removals such as biochar and long term product storage (CCUS e.g., CO2 storage in concrete/cement) - they should come under the existing sectoral scope (or equivalent). For projects like biochar, These project types can have crediting period similar to other as proposed by A6.4 (e.g, 5 years, renewable twice - 15 years). For projects like CCUS, it can be the same crediting period of 5 years, but can be renewed 3 times (total 20 years).</li> <li>- For projects such as ocean fertilization, Ocean alkanisation, there should be further evaluation of project types and when it is determined (through scientific evidence) that all the major concerns such as those with health, safety, environment impact and MRV are resolved, then the crediting period should be determined. Determining 15 years, renewal twice may not be appropriate at this stage.</li> <li>- For geological carbon sequestration Projects for removals, DACCS, BECCS - even they should go through 5 years</li> </ul>

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	<p>renewal period - can be renewed 7 or 8 times to each 40-45 years total. This would allow checking regulatory surplus more often and also updation of methodological requirements in the project design. As these projects would be fairly new (new to carbon markets but Oil and gas industry has decades of experience in managing reservoirs), this could serve as a safeguarding mechanism against any uncertainty in MRV systems.</p> <ul style="list-style-type: none"> <li>- Renewal of crediting period should also require proving on going financial need. This may not be in the form of full IRR calculations but in more simplified RMP where project must demonstrate how they stil require carbon financing. This could in future help filter out project that do not need any more financing due to multiple reasons (e.g., govt is proving incentives to continue projects).</li> </ul>
<p>E: Addressing Reversals: 1. Discuss the applicability and implementation aspects of these approaches, including as stand-alone measures or in combination, and any interactions with other elements of this guidance:</p> <ul style="list-style-type: none"> <li>a. Non-permanence risk buffer (pooled or activity-specific);</li> <li>b. Insurance / guarantees for replacement of ERs where reversals occur (commercial, sovereign, other);</li> <li>c. Other measures for addressing reversals in full.</li> </ul>	<ul style="list-style-type: none"> <li>- Ideally, there should two separate non - permanence risk buffer (pooled) - one for land based activities(e.g., forestry, ALM, mangroves, other wetlands) and other for engineered solutions (as of now - only for DACCS and BECCS or any other form of geological sequestration - like sub surface mineralisation). Permanence risk for solutions such as OF, OA and ERW still needs more scientific conclusions. This is due to differentiating nature of the CDR in terms of impacts and durability/permanence.</li> <li>- PAs with buffer pool, non permanence assessment, must be based on specific non permanence risk tools for Nature Based, Terrestrial based and Geological based sequestration projects. E.g, Verra has different NPRT for NBS projects and Geological sequestration projects. GS has Land Use and Forestry risk and capacity guidelines and is also proposing risk assessment in BECCS Project in their BECCS methodology. ACR has NBS risk assessment mechanism but for CCS projects they prefer 10% deductions</li> <li>- Insurance mechanisms via private parties (insurance agencies or re-insurnace agencies) may not be mature enough to completely replace buffer mechanism. However, they can be complimentary to the buffer mechanism. They also have risk of bankruptcy or insolvency for 100 years period (assuming permanence is considered for at least 100 years). Insurance may take up some of the risk associated with the project based on the appetite of the insurer and other variables associated with projects and project proponents. E.g, insurer might take up risk associated with fire or extreme weather events (similar products occur in case of crops to protect them from natural risks).</li> </ul>

	<ul style="list-style-type: none"> <li>- Activities such as biochar - can have permanence factors/requirements built into the methodology (e.g. VM0044 of Verified Carbon Standard) and may include a flat deductions, without contributions to buffer pool (e.g., 5% of the issuance) if deemed appropriate or for purpose of conservativeness.</li> <li>- Similarly, activities such as long term CCUS (CO2 storage in products such as concrete/cement), the risk associated with reversals is minimal and might be based on the product specifications and/or where the product is used. In such cases, methodology itself could have applicability criteria in such a way that risks are mitigated. E..g, resultant product shall meet quality criteria of the baseline product that is made without CO2 infusion. This can be supplemented by flat deductions, without contributions to buffer pool (e..g, 5% of the net ERs)</li> </ul>
<p>2. Discuss the appropriate timeframe(s) for applying the approaches, including any interactions with other elements of this guidance and the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.</p>	<ul style="list-style-type: none"> <li>- For Non permanence risk tools assessment - it should be done at the time of validation/registration of the project to understand the overall risk associated with that particular project in the next 100 years. It should be updated at every verification and based on the risks analysed at the time of that verification, the amount of credits should be contributed to the buffer.</li> <li>- Insurance mechanism may be added as an extra/complimentary either at the start of project or for that specific monitoring period.</li> <li>- Flat deductions happen at the time of issuances, but the percentage must be specified either at the standard level or at that specific methodology.</li> </ul>
<p>3. What risks of non-permanence need to be minimized, and how can these risks identified, assessed, and minimized?</p>	<ul style="list-style-type: none"> <li>- Non permanence risk would differ based on the project activity. E.g., for forestry, drought could be a great risk, however for CO2 stored in concrete, drought, exposure to fire and other natural (biotic/abiotic factors) may not be that relevant.</li> <li>- The non permanence tool (specific for NBS and other for geological sequestration) must identify relevant reversal risk at the tool level, however, these risks must be evaluated at the project level, as risk and subsequent relevance maybe different for same project type but other different scenarios. E.g., a forestry project near the coastline may face risk of sea level rise during its project period, however, this may not be a risk for a forestry project near mountains.</li> <li>- The terms of the buffer pools must be clear, in the case the permanence is for 100, 200 or 300 years. And if the buffer pool can be claimed at different stages if no</li> </ul>

	<p>reversals had happened.</p>
<p>4. In respect of risk assessment, how should the following elements be considered in the implementation of the approaches in (a) and any other relevant elements in this guidance?</p> <p>a. Level of non-permanence risk assessment, e.g., activity- or mechanism-level</p> <p>b. Timing for risk assessment(s)</p> <p>c. Entity(ies) responsible for risk assessment(s), e.g., activity proponent, 6.4SB, actuary</p>	<ul style="list-style-type: none"> <li>- Level of non permanence risk assessment would depend on the removal project type. The one with non permanence risk tool, risk assesment should be a project level. As each project is unique on its own</li> <li>- At the time of valiation/registration, repeated at every verification</li> <li>- Responsible entities: Development of requirements, RMP - 6.4, conducting risk assessment - activity proponent, DOE - evaluation of risk assessment at the time of validation/verification. For insurance - actuary - should be backed by reinsurer.</li> </ul>
<p>5. How should the following elements be considered in the implementation of the approaches in (1) above and any other relevant elements in this guidance?</p> <p>a. Methods for determining the level of buffer pool contributions</p> <p>b. Composition of buffer pool, including in relation to ER vintages and contributing activity types or categories</p> <p>c. Intentional and unintentional reversals</p> <p>d. Treatment of uncancelled buffer ERs, including after the end of the last crediting period of the contributing activity</p> <p>e. Specifications for ERs that cancelled for compensate for reversals, including in relation to ER vintages and contributing activity types or categories</p>	<ul style="list-style-type: none"> <li>- Buffer pool contribution by each project must be based on the individual risk assessment. Level of contribution can be achieved by the risk scoring methods - e.g, those adopted by VCS, ACR, GS, etc</li> <li>- Buffer pool contribution should be deducted from the net issuance possible. ERs being contributed to buffer pool, should not have serial number. NBS buffer pool could have contribution from forestry, agriculture and other land use projects (including mangroves, seagrass,etc). CCS buffer - to have contribution from BECCS, DACCS. Vintage contributed would be the same as that of issuance - equally divided.</li> <li>- Treatment of uncancelled buffer - one way to treat them is to cancel the buffer at the end of crediting period to compensate for any future reversals that may happen. However, with this approach, it is not sure if and how much reversal would happen after crediting. Another approach could be that buffer could be allocated back to the activity proponent over the years if they continue the monitoring of the project and the project does not have any reversals. The latter might be the preferred one as it would incentivise the proponent beyond the just the rules to continue monitoring.</li> <li>- Specifications of ERs that are cancelled - the ERs cancelled should be in the chronologically order of vintages i.e, older vintages should be cancelled.</li> <li>- Replenishment - in case of a reversal, where the buffer</li> </ul>

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<p>f. Replenishment in case buffer cancellations exceed contributions; slide language on re-raising baseline level of storage before new crediting</p>	<p>contribution of the specific project exceeds the reversal occurred, the buffer can be replenished in two ways</p> <ul style="list-style-type: none"><li>- Transferring any remaining ERs in the activity proponent account to the buffer</li><li>- Proponent buying additional ERs from the market (preferably of the same activity or the category) to compensate for additional ERs cancelled to compensate for reversals</li></ul>
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