ARTICLE 6.4 MECHANISM

A6.4-MEP007-A04

Draft Standard

Addressing non-permanence / reversal

Version 01.0

United Nations
Framework Convention on
Climate Change

COVER NOTE

1. Procedural background

1. The Supervisory Body of the Article 6.4 mechanism, at its tenth meeting, approved its workplan for 2024 and requested the Methodological Expert Panel (MEP) to prepare recommendations on products related to addressing reversals.

2. In particular, the Supervisory Body requested the MEP to prepare recommendations on the following products relating to the recommendation on removals:

   (a) Guidance on post-crediting period monitoring, reporting, and remediation of reversals, post-reversal action and host Party roles;

   (b) Guidance on late, incomplete, or missing monitoring report submissions and treatment of activities for which a reversal results in removals level that falls below baseline;

   (c) Reversal risk assessment tool;

   (d) Guidance on avoidable and unavoidable reversals and reversal compensation.

3. At its first meeting, the MEP initiated its work on the above issues and agreed to recommend that, due to the overlap and interdependencies between the four separate elements listed in paragraph 2 (a) to (d), as well as additional removal-related issues in the "Recommendation: Activities involving removals under the Article 6.4 mechanism" on which the Supervisory Body requested input, the four elements mentioned above should be incorporated into a single integrated standard on addressing reversals.

4. The Supervisory Body, at its eleventh meeting, agreed with the recommendation of the MEP to consolidate the four related issues and to develop a standard on addressing reversals covering these issues.[1]

5. At its second and third meeting, the MEP continued to work on the draft standard.

6. The Supervisory Body, at its fourteenth meeting, adopted the "Standard: Requirements for activities involving removals under the Article 6.4 mechanism" (hereinafter referred to as "Removals Standard") and made specific recommendations to the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). At that meeting, the Supervisory Body also requested the MEP to continue its work on the above issues on the basis of the adopted Removals Standard. Subsequently, the CMA endorsed the approach by the Supervisory Body.

7. At its fourth meeting, the MEP continued to work on the draft standard.

[1] See document A6.4-SB011-A02: Workplan of the Methodological Expert Panel 2024.

8. At its fifteenth meeting, the Supervisory Body adopted the work plan for the MEP for 2025. The workplan also includes the development of a "Tool: Reversal risk assessment", including:

   (a) Whether upper limits are needed with respect of the risk rating (overall) or specific risk factors (within the tool), including options and science-based rationales for upper limit(s);

   (b) Risk rating that constitutes a negligible risk;

   (c) Any further categorization of risk; and

   (d) How remediation measures are taken into account in the risk assessment tool.

9. At its fifth and sixth meeting, the MEP continued to work on the draft standard.

2. Purpose

10. The purpose of this cover note and the attached Appendices are to address the mandate provided by the Supervisory Body to develop a standard on addressing non-permanence/reversals.

3. Key issues and proposed solutions

3.1. Document architecture

11. The MEP could not reach consensus on the structure and scope of the regulatory documents to address reversals. Specifically, the MEP was divided as to whether all requirements to address reversals can be provided in a standard directed to activity participants (a view held by one MEP member), or whether it is necessary to address some requirements in a standard directed to activity participants and some requirements in a standard directed to mechanism methodologies (a view held by other MEP members).

12. To reflect the different views and options, the MEP elaborated three different Appendices to this cover note for the purpose of seeking public inputs:

   (a) Appendix 1 provides a draft standard directed to mechanism methodology proponents. It is intended for use with Appendix 2, but not with Appendix 3;

   (b) Appendix 2 provides a draft element for inclusion in the activity standards and activity cycle procedures. It is intended for use with Appendix 1, but not with Appendix 3;

   (c) Appendix 3 provides a draft standard directed to activity participants. It is not intended for use with either Appendix 1 or Appendix 2.

13. Accordingly, the MEP recommends that stakeholders consider the three appendices as representing two alternative proposals for the draft standard on addressing non-permanence/reversals:

   (a) A proposal that includes Appendix 1 and Appendix 2 only, which reflects the views of all MEP members except for one; and

(b) A proposal that includes Appendix 3 only, which reflects the views of one MEP member.

3.2. Key issues and proposed solutions for Appendix 1 and Appendix 2

3.2.1. Structure and scope of documents to address reversals

14. In its work on the mandates provided by the Supervisory Body, as per paragraphs 2 and 8 above, a majority of the MEP agreed that for several issues it is necessary to provide direction to mechanism methodologies on how to implement the requirements of the Removals Standard. In some cases, this direction implements mandatory requirements, such as the requirement to follow the provisions of section 4.4 of the Removals Standard ("Accounting for removals"). In other cases, this direction provides flexibility to mechanism methodologies, such as direction to specify the data and methods needed to prepare a monitoring report or determine that no reversal has occurred in the post-crediting period.

15. In its work on the mandates provided by the Supervisory Body, as per paragraphs 2 and 8 above, all but one member of the MEP (hereinafter referred to as "a majority of the MEP") agreed that for several issues, a single solution could be applicable to all types of Article 6.4 activities that are subject to reversal risks. For example, the issue of late, incomplete, or missing monitoring report submissions, referred to in paragraph 2(b) above, could be addressed in the same way for all Article 6.4 activities that are subject to reversal risks, irrespective of the type of mitigation activity. The same holds, for example, for the operation of the Reversal Risk Buffer Pool Account. These elements should not be addressed in mechanism methodologies, but in other regulatory documents directed to activity participants.

16. A majority of the MEP further agreed that some of these requirements are of procedural nature and relate to elements in the existing activity cycle procedures for projects and programmes of activities. A majority of the MEP therefore recommends that the existing activity cycle procedures be amended accordingly. A majority of the MEP further notes that some requirements be set as a standard. A majority of the MEP notes that these requirements could either be reflected as amendments to the activity standards or in a separate standard that is directed to activity participants and that specifically addresses matters related to reversals.

17. Accordingly, a majority of the MEP elaborated two different Appendices to this document for the purpose of seeking public inputs. The two Appendices are intended to operate together and are as follows:

(a) Appendix 1 provides a draft "Standard: Addressing reversals in mechanism methodologies; and

(b) Appendix 2 provides a document that includes elements directed to activity participants "Elements for inclusion in the activity standards and activity cycle procedures".

3.2.1.1. Appendix 1 (direction for mechanism methodologies)

3.2.1.1.1. Negligible risk of reversal

18. Paragraph 28 of the Removals Standard provides that activity participants may request to terminate their obligations to conduct post-crediting period monitoring if they can

demonstrate that their storage of greenhouse gases or precursors of greenhouse gases is at a negligible risk of reversal. In paragraph **3** of Appendix 1, a majority of the MEP agreed to define negligible reversal risk as a maximum percentage loss of the total number of total A6.4 emission reductions (A6.4 ERs) issued with respect to an activity's emission reductions and/or net removals, as calculated over at least 100 years starting from no earlier than the end of the last active crediting period for an activity.

19. A majority of the MEP agreed to propose options ranging from 5 percent (less restrictive) to 0.1 percent (more restrictive) for the maximum percentage loss and seeks public comment on these options or any alternatives.

3.2.1.1.2. Identification of applicable greenhouse gas reservoirs

20. Section 5 of Appendix 1 provides a procedure for how mechanism methodologies shall identify relevant greenhouse gas reservoirs for the purposes of applying the mechanism's reversal risk assessment tool.

21. Section 5 of Appendix 1 also provides a procedure for how mechanism methodologies may identify greenhouse gas reservoirs that are eligible for certain exemptions related to monitoring and reporting, as specified in the finalized "Concept note: Applicability of removal guidance to emission reduction activities and vice versa". The MEP notes that even where these exemptions may apply, any eligible Article 6.4 activities would still be required to conduct a reversal risk analysis and contribute an appropriate fraction of A6.4ERs to the Reversal Risk Buffer Pool Account. A majority of the MEP agreed that the intention of this section is to align with the provisions of the concept note.

3.2.1.1.3 Quantification of emission reductions and/or net removals and reversals

22. Section 6 of Appendix 1 provides a procedure for how to quantify an activity's emission reductions and/or net removals as well as how to quantify any reversals that may occur. Paragraph 9 of the Removals Standard defines a reversal in relation to section 4.4 of the Removals Standard ("Accounting for removals"). Accordingly, a majority of the MEP agreed to implement a set of equations operationalizing section 4.4 of the Removals Standard to address the following components:

    (a) Net change in storage of a greenhouse gas or precursors of greenhouse gases: Equation 1 specifies how to calculate the net change in storage during the activity's active crediting period, which is calculated in relation to an activity's baseline scenario. Equation 2 specifies how to calculate the net change in storage in the post-crediting period, which, as a default matter, is not calculated in relation to an activity's baseline scenario. Together, both equations provide a formal definition of what a reversal is and how to quantify the amount of a reversal;

    (b) Net change in emissions of greenhouse gases: Equation 3 specifies how to calculate the net change in emissions, which results from emissions in the Article 6.4 activity scenario, emissions in the Article 6.4 activity's baseline scenario, and emissions due to leakage;

    (c) Total A6.4ERs issuance: Equation 4 specifies how to calculate the total number of A6.4ERs to be issued with respect to an Article 6.4 activity's emission reductions and/or net removals, drawing on the earlier equations and elaborating on the crediting deficit concept as discussed below;

(d) Crediting deficit: Because the net change in storage and net change in emissions can lead to a calculation of negative A6.4ER issuance, it is necessary to track any such crediting deficits and include them in the calculation of future credit issuance. Equations 5, 6, and 7 specify how to calculate and update the crediting deficit;

(e) A6.4ER contributions to the Reversal Risk Buffer Pool Account: Equation 8 specifies how to calculate the fraction of total A6.4ERs that would be contributed to the buffer pool, based on the application of the reversal risk assessment tool;

(f) A6.4ER contributions to the Adaptation Fund, contributions to overall mitigation in global emissions, and issuance to activity participants: Equations 9, 10, and 11 specify how to calculate the faction of total A6.4ERs that would be contributed to the Adaptation Fund, to be contributed to the account for cancellation towards delivering overall mitigation in global emissions (OMGE), and to be issued to activity participants. In elaborating each of these equations, a majority of the MEP noted that the Article 6.4 decisions by the CMA and the Removal Standard do not explicitly address the question of how these shares are to be calculated in the context of a contribution to the Reversal Risk Buffer Pool Account. The majority of the MEP therefore developed two alternative options on which it seeks public comment. The alternative options calculate a fraction using different denominators, and have the following implications:

(i) Alternative option 1 calculates the share of A6.4ERs contributed to the Adaptation Fund and OMGE using the total number of issued A6.4ERs as the denominator. Compared to Option 2, this results in a higher contribution to the Adaptation Fund and OMGE and a smaller issuance to the activity participant; and

(ii) Alternative option 2 calculates the share of A6.4ERs contributed to the Adaptation Fund and OMGE using a subset of the total number of issued A6.4ERs, net of the buffer pool contribution, as the denominator. Compared to Option 1, this results in a lower contribution to the Adaptation Fund and OMGE and a larger issuance to the activity participant.

3.2.1.1.4 Identification and quantification of reversals

23. Section 7 of Appendix 1 provides a procedure for how to identify reversals, quantify reversals, and classify reversals as avoidable or unavoidable. It also provides direction to mechanism methodologies to specify the data and methods activity participants should use to prepare monitoring reports and to conduct post-crediting period monitoring.

3.2.1.2. Appendix 2 (direction for activity participants)

3.2.1.2.1. Reversal-related notifications and reports

24. Section 1 of Appendix 2 provides a procedure on how to identify potential reversal events and prepare a preliminary assessment report to determine whether a reversal has occurred. If a preliminary assessment report indicates that a reversal has occurred, a monitoring report is required to determine the amount and type of the reversal. Consistent with section 4.6.2 of the Removals Standard, this section provides for the suspension of an affected activity's registry account functionality when a potential reversal event is

detected and the restoration of that functionality once the activity participants either confirm that no reversal has occurred, or any actual reversal is remediated.

25. Because monitoring reports could be relatively infrequent, section 1 of Appendix 2 also includes a procedure for the preparation of annual reversal reports. In cases where no reversals or potential reversal events occurred, an annual reversal report may simply state this conclusion. In cases where a reversal or potential reversal event occurred, the reversal report will list the relevant notifications provided to the Supervisory Body. A majority of the MEP notes that the purpose of the annual reversal report is to require a regular form of communication with Article 6.4 activities. To reduce the burden on activity participants, the annual reversal report may be verified at the time of the submission of monitoring reports.

3.2.1.2.2. Late, incomplete or missing report submissions

26. Section 2 of Appendix 2 defines late and missing preliminary assessment reports, annual reversal reports, and monitoring reports, along with a procedure for how the secretariat will review report submissions for completeness and a series of escalating consequences for late and missing report submissions.

27. Late reports trigger the temporary suspension of an activity participant's registry account functionality, which can be restored by the submission of the required reports before the reports are classified as missing. An activity participant with a missing preliminary assessment report is required to prepare a full monitoring report. An activity participant with a missing annual reversal report or monitoring report will be deemed to have experienced an avoidable reversal in an amount equal to the total number of A6.4ERs issued with respect to the activity's emission reductions and/or net removals.

3.2.1.2.3. Post-crediting period monitoring and reporting

28. Section 3 of Appendix 2 describes activity participants' obligations to conduct post-crediting period monitoring of greenhouse gas reservoirs and reporting related to any potential or actual reversals. Consistent with section 4.3 of the Removals Standard, the obligation to monitor and report in the post-crediting period is ongoing until activity participants can demonstrate either that the stored greenhouse gases or their precursors have a negligible risk of reversal or that the potential future reversal of this storage has been remediated. This section provides a procedure for how and when activity participants may request the Supervisory Body to terminate their post-crediting period reporting and monitoring obligations. The MEP notes that many other carbon crediting programmes limit the period in which monitoring must take place. In line with this practice, some MEP members are of the view that the post-crediting monitoring period could be limited in time. However, the MEP notes that the Removals Standard does not provide for a maximum duration of monitoring and therefore this option was not included in the Appendices.

3.2.1.2.4. Post-reversal actions

29. Section 4 of Appendix 2 provides a procedure for how unavoidable and avoidable reversals shall be remediated. Unavoidable reversals are remediated by cancelling A6.4ERs in the Reversal Risk Buffer Pool Account, with the number cancelled equal to the amount of the unavoidable reversal expressed in tonnes of carbon dioxide equivalent. Avoidable reversals are remediated in the same manner, with the additional requirement that activity participants shall replenish the buffer pool with an equal number of A6.4ERs.

3.2.1.2.5. Below baseline reversals

30. The MEP considered the matter of treatment of situations where reversals fall below the baseline. A majority of the MEP agreed that a "below-baseline reversal" occurs when the sum of all greenhouses gases or precursors of greenhouse gases stored in all applicable greenhouse gas reservoir(s) in the Article 6.4 scenario is less than the sum of all greenhouse gases or precursors of greenhouse gases stored in all applicable greenhouse gas reservoir(s) in the baseline scenario, at the same point in time.

31. A majority of the MEP agreed that situations of below-baseline reversals shall be subject to the same rules as applicable to other reversals. A majority of the MEP further notes that there are two approaches with regard to the remediation of such reversals:

    (a) Below baseline reversals are not to be remediated by the pooled buffer reserve and may only be remediated if the Article 6.4 activity enhances the storage of greenhouse gases such that they reach a level above those in the baseline;

    (b) Below baseline reversals must be remediated by the Article 6.4 participants through the cancellation of the corresponding number of A6.4ERs.

32. A majority of the MEP notes that these options would require further consideration and elaboration. Accordingly, a majority of the MEP seeks public inputs on these options as well as any alternatives.

3.3. Key issues and proposed solutions for Appendix 3

33. This draft reflects that all components of the Removals Standard that are related to addressing non-permanence are directed towards activities and activity participants, and that this direction is normal within crediting mechanism approaches to establish requirements for addressing non-permanence. The nature of the specifications is that they are project-specific (not methodology-specific) and largely directed at the people who have control of the activity, the activity participants. This proposed standard is therefore directed at activities.

34. This draft Addressing non-permanence standard combines the addressing non-permanence components of the Removals Standard with the requested additional recommendations related to removals. In doing so it proposes adjustments to the Removals Standard specifications that would allow more equal participation opportunity to both technological and land-based activity types without lessening the credibility of the outcome. There are three main areas where alterations are suggested, including:

    (a) Requirement for standard monitoring reports to be used for reversals monitoring and reporting, with specifications that could trigger frequent monitoring, reporting and verification into the long-term incurring substantial cost that would disincentivise participation by the land sector. The proposed amendment is to instead require all activities to provide an 'annual reversal report' alongside a specific 'reversal monitoring plan'. The reversal monitoring plan would be tailored to the need to detect reversals if and when they occur. These reports would be corroborated at each verification event. Punitive measures are included to disincentivise misleading reports;

    (b) Requirement to include avoidable reversals within the risk rating calculation, which would be difficult to undertake and would inappropriately elevate the risk rating for

land sector activities. The proposed amendment is to include unavoidable reversals only within the risk rating as is normal practice. It proposes to deal with the more common avoidable reversal in the normal manner applied by crediting mechanisms that restricts credit issuance to increases in the long-term 'average' carbon stocks only. Further in calculating the risk rating it has been proposed to include an 'insolvency' category. This allows estimation of the likelihood of failure by activity participants to remediate following avoidable reversals and includes this possibility in the assigned risk rating, in effect 'backstopping' all reversals via the risk buffer pool;

(c) Requiring immediate registry suspensions under certain conditions related to observed events, which would create considerable investment risk. The proposed solution is to provide greater detail in provisions that more fairly enforces registry suspensions where activity participant failures are demonstrated, reducing investment risk. Additional punitive measures are included.

35. This draft proposes the terms unintentional and intentional reversals rather than unavoidable and avoidable, which are believed would establish a clearer distinction and reduce subjectivity and dispute, as it will be easier to determine whether an event was intentional rather than avoidable. It is noted that the definition of unavoidable means inevitable, which could be argued is a much smaller subset of conditions or outcomes.

36. This draft suggests making more straight-forward and amending the calculation of net removals, which, like emission reductions, should be calculated as baseline minus project minus leakage. When the negative notation for a removal is applied a double negative then becomes a positive net removal.

37. The Supervisory Body at its 14th meeting request for the additional work items relating to removals, this draft proposes not applying an upper limit in respect of the risk rating. The reasoning for this is that a pro-rata outcome is believed to be a fairer deterrent to incentivising high-risk activities. There is concern that an upper limit would incentivise misconduct. There is also concern that an upper limit would create additional investment risk, especially in the eventuality that such a limit be lowered in the future or that a revised risk assessment would see an existing activity become ineligible. It is suggested that such inclusion be deferred until the proposed evidence-based risk rating determinations are provided and that the issue be re-evaluated at that time. The same applies to any further categorization of risk.

38. In respect to work item (d) "How remediation measures are taken into account in the risk assessment tool" it is requested to provide further clarification or elaboration on what is meant by this request. Reference to a risk assessment tool has been used interchangeably when referring to the addressing non-permanence/reversal standard.

39. It is suggested that combining the Removals Standards specifications relevant to addressing non-permanence with the work items requested of the MEP will provide the clearest outcome for users. This would allow one standard that is applied only by those activities subject to reversals. The Activity Standard and Activity Cycle Procedures would then contain elements that relate to all activities.

4. Impacts

40. The proposed Appendices to this document will provide further clarity on the requirements with regard to addressing reversals.

5. Subsequent work and timelines

41. A call for public input will be launched immediately after the MEP 007 meeting.

42. The MEP will continue working on some elements of the mandates provided by the Supervisory Body, including a reversal risk assessment tool that addresses:

    (a) Whether upper limits are needed in respect of the overall risk rating or specific risk factors are to be included within the tool, including options and science-based rationales for upper limit(s);

    (b) Risk rating that constitutes a negligible risk;

    (c) Any further categorization of risk;

    (d) How remediation measures are taken into account in the risk assessment tool.

43. The MEP will take into account the inputs received and will continue working on the draft standard to be forwarded to the Supervisory Body for consideration at its next meeting.

6. Recommendations to the Supervisory Body

44. Not applicable (Document is published for a call for public inputs).

45. The MEP noted that the Supervisory Body requested the MEP to consider host Party roles in addressing reversals, as referred to in the workplan of the MEP for 2025[2]. The MEP noted that the Removals Standard does not refer to Host Party roles. The MEP seeks clarification from the Supervisory Body whether it should conduct further work on this matter.

[2] https://unfccc.int/sites/default/files/resource/A6.4-SBM015-A02.pdf.

TABLE OF CONTENTS **Page**

Appendix 1. Draft Standard: Addressing reversals in mechanism methodologies

1. Introduction

1.1. Scope

1. This standard sets out the requirements for mechanism methodologies to address reversals. It will be applied by proponents of mechanism methodologies in developing methodologies and by the UNFCCC Secretariat, the Methodological Expert Panel (MEP) and the Supervisory Body in assessing and considering mechanism methodologies for approval.

1.2. Entry into force

2. This document enters into force on # date #.

2. Definitions

3. The following definitions shall apply:

   (a) **Active crediting period:** The first crediting period of an Article 6.4 activity and any subsequent crediting period that has been renewed;

   (b) **Avoidable reversals:** Reversals caused by factors over which the activity participants have influence or control;

   (c) **Carbon stock**: The quantity of carbon in a greenhouse gas reservoir;

   (d) **Crediting deficit:** A net increase in greenhouse gas emissions resulting from an Article 6.4 activity caused by factors other than reversals during the period of time covered by a monitoring report;

   (e) **Greenhouse gas reservoir:** A component or components of the global climate system where a greenhouse gas or a precursor of a greenhouse gas is stored. For the purposes of the Article 6.4 mechanism, this term excludes the atmosphere and includes the biosphere, geosphere, and hydrosphere;

   (f) **Legal requirements:** Laws, statutes, regulations, court orders, decrees, consent agreements, executive orders, permitting conditions or any other legally binding mandates, noting that regulatory environments may vary;

   (g) **Negligible risk of reversal:** A risk of reversal that would result in a loss of no more than [five][two][one][one tenth] percent of all the A6.4 emission reductions (A6.4ERs) issued with respect to the total emission reductions and/or net removals achieved by the activity during its active crediting period, calculated over a 100-year timeframe starting from no earlier than the end of the last active crediting period;

   (h) **Post-crediting period**: The period that follows the last active crediting period, during which time activity participants monitor greenhouse gas reservoirs for reversals;

(i) **Reversal:** A net loss in the storage of a greenhouse gas or a precursor of a greenhouse gas for which A6.4ERs have been issued, calculated across all applicable greenhouse gas reservoir(s) over a period of time covered by a monitoring report;

(j) **Reversal risk assessment tool:** A methodological tool that is used to determine the fraction of the total number of A6.4ERs to be contributed to the Reversal Risk Buffer Pool Account and whether an activity faces a negligible risk of reversal;

(k) **Reversal Risk Buffer Pool Account:** A registry account administered by the Supervisory Body, from which A6.4ERs are cancelled to remediate reversals;

(l) **Unavoidable reversals:** Reversals caused by factors over which the activity participants have no influence or control.

3. Applicability

4. This version of the standard is applicable to proposed mechanism methodologies for activities undertaken at the project level. The standard may be amended in the future to also cover methodologies addressing mitigation actions at other scales (e.g., programmes of activities, policies, sectoral approaches).

5. The standard applies to mechanism methodologies for activities involving emission reductions and/or net removals that are subject to reversal risks. This applies, inter alia, to the following types of activities:

(a) Activities increasing carbon stocks or avoiding the loss of carbon stocks, relative to the baseline, in any of the greenhouse gas reservoirs of the biosphere;[1]

(b) Activities increasing the storage of greenhouse gases or precursors of greenhouse gases, relative to the baseline, in products or materials;[2]

(c) Activities increasing the storage of greenhouse gases or precursors of greenhouse gases, relative to the baseline, in geological reservoirs;[3]

(d) Activities accelerating, relative to the baseline, natural processes by which minerals react with carbon dioxide in the atmosphere and lock it away as carbonates;[4]

(e) Activities increasing, relative to the baseline, the capacity of the hydrosphere to store greenhouse gases or precursors of greenhouse gases;[5]

[1] This includes, for example, afforestation, avoided deforestation, peatland rewetting, agricultural practices to enhance soil organic carbon, activities reducing the consumption of non-renewable biomass.

[2] This includes, for example, capture of carbon dioxide from the atmosphere and its storage in construction materials, such as concrete, or the storage of carbon in biochar.

[3] This includes, for example, capturing carbon dioxide from the atmosphere and storing it in a geological reservoir or capturing greenhouse gases from point sources (e.g. cement production plants, biomass combustion) and storing them in a geological reservoir.

[4] This includes, for example, enhanced weathering.

[5] This includes, for example, storing carbon dioxide in the water column of oceans or enhancing the alkalinity of oceans.

(f) Activities preventing the unintentional release of greenhouse gases from fossil fuels that in their natural deposits or during storage after extraction would, in the baseline scenario, interact with the atmosphere.[6]

6. The following types of activities are deemed not to be subject to reversal risks:

(a) Activities reducing the combustion of fossil fuels that, in their natural deposits or during storage after extraction, do not interact with the atmosphere;[7]

(b) Activities reducing greenhouse gases other than carbon dioxide through processes not related to storage in a greenhouse gas reservoir.[8]

7. This standard does not apply where an Article 6.4 activity enhances the storage of a greenhouse gas or precursor to a greenhouse gas in a greenhouse gas reservoir that is not eligible for the issuance of A6.4ERs under the applicable methodology.

4. General principles and requirements

4.1. Principles

8. The following principles shall be applied in addressing reversals to ensure that information provided is a true and fair account. These principles shall be the basis for and guide the development of mechanism methodologies:

(a) **Relevance**: Data, parameters, assumptions, and methods used for addressing reversals shall not be misleading and only verifiable data and parameters that may have an impact on how reversals are addressed shall be included;

(b) **Completeness**: All relevant information to address reversals shall be provided;

(c) **Consistency**: The application of methods ensures consistent results across similar circumstances;

(d) **Accuracy**: Bias and uncertainties in both quantitative and non-quantitative information shall be reduced as far as is practical;

(e) **Transparency**: Sufficient and appropriate information shall be disclosed to allow intended users to make decisions with reasonable confidence. Transparency relates to clearly stating all data, parameters, assumptions and methods applied; referencing background material; stating documentation changes; and stating and justifying all data, parameters, methods and assumptions made such that the outcomes can be reproduced;

(f) **Conservativeness**: In the context of addressing reversals, a methodological approach is conservative if the data, parameters, assumptions and methods chosen are more likely to lead to a higher probability or confidence that reversals are addressed.

---

[6] This includes, for example, closing abandoned oil wells, extinguishing coal mine fires, or preventing fires from gas and oil wells.

[7] This includes, for example, renewable energy generation, energy efficiency improvements and fossil fuel switching.

[8] This includes, for example, landfill gas capture and utilisation, abatement of nitrous oxide emissions from nitric acid production, reduction of N_2O emissions from fertilizer application, or reduction of methane emissions from rice cultivation or enteric fermentation.

4.2. General requirements

9. Mechanism methodologies shall ensure conservativeness in addressing reversals. This shall apply to all data, parameters, assumptions, and methods used in the analysis (e.g., assumptions made in the risk assessment). The degree of conservativeness shall be based on the level of uncertainty. All sources of uncertainty shall be considered, including uncertainty in data, parameters, assumptions, and methods.

10. Mechanism methodologies shall ensure that the provisions to address reversals consider all national or sub-national policies that are applicable to the relevant Article 6.4 activity and its alternatives. This shall include legal requirements.

5. Identification of applicable greenhouse gas reservoirs

11. Mechanism methodologies shall identify all applicable greenhouse gas reservoirs:

    (a) That may be affected by Article 6.4 activities covered by that methodology; and

    (b) For which changes in the storage of a greenhouse gas or a precursor of a greenhouse gas are eligible for the issuance of A6.4ERs.

12. For each greenhouse gas reservoir identified as per paragraph 11 above, mechanism methodologies shall require activity participants to determine a reversal risk rating in accordance with the provisions of the reversal risk assessment tool that apply to those reservoirs.

13. For any greenhouse gas reservoir identified as per paragraph 11 above, the proponent of a mechanism methodology may identify the following conditions and justify that each is satisfied:

    (a) That activity participants using the mechanism methodology have no control over the greenhouse gas reservoir;

    (b) That the greenhouse gas reservoir is not in the same location as where the mitigation activity is implemented; and

    (c) That changes observed in the greenhouse gas reservoir cannot be attributed to the mitigation activity.

14. When a proponent of a mechanism methodology appropriately justifies that all of the requirements of paragraph 13 above have been satisfied, then activity participants following the mechanism methodology shall be exempted from the following requirements with respect to that greenhouse gas reservoir:

    (a) Note: Exemptions to be listed here will match those listed in paragraph 10 of the concept note on the applicability of removal guidance to emission reduction activities and vice versa. Activities with reservoirs that qualify for these exemptions will still be required to conduct a reversal risk analysis with respect to those reservoirs and make contributions to the Reversal Risk Buffer Pool Account as described in section 6.5 below.

6. Quantification of emission reductions and/or net removals and reversals

15. Mechanism methodologies shall quantify emission reductions and/or net removals, and any reversals, consistent with the equations set out below.

6.1. Net change in storage of a greenhouse gas or a precursor of a greenhouse gas

16. Mechanism methodologies shall include equations that determine, for use during the activity's crediting period, the net change in storage resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*, consistent with the following equation:[9]

$$\Delta S_t = \sum_i \left[\left(S_{i,activity,end} - S_{i,activity,start} \right) - \left(S_{i,baseline,end} - S_{i,baseline,start} \right) \right] \text{ (Equation 1)}$$

Where:

ΔS_t = The net change in storage of a greenhouse gas, or a precursor of a greenhouse gas, resulting from the Article 6.4 activity across all applicable reservoirs *i* over the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$S_{i,activity,end}$ = The quantity of a greenhouse gas, or a precursor of a greenhouse gas, stored in the greenhouse gas reservoir *i* in the Article 6.4 activity scenario at the end of the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$S_{i,activity,start}$ = The quantity of a greenhouse gas, or a precursor of a greenhouse gas, stored in the greenhouse gas reservoir *i* in the Article 6.4 activity scenario at the start of the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$S_{i,baseline,end}$ = The quantity of a greenhouse gas, or a precursor of a greenhouse gas, stored in the greenhouse gas reservoir *i* in the baseline scenario at the end of the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$S_{i,baseline,start}$ The quantity of a greenhouse gas, or a precursor of a greenhouse gas, stored in the greenhouse gas reservoir *i* in the baseline scenario at the start of the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

i = The greenhouse gas reservoir(s) identified in paragraph 11 above and included in the activity boundary of an Article 6.4 activity.

t = The number of the Article 6.4 activity monitoring report, with $t = 1$ for the first monitoring report.

17. A reversal occurs during an activity's active crediting period when $\Delta S_t < 0$ for any $t \geq 2$, with the quantity of the reversal specified by ΔS_t. Although the net change in greenhouse gas storage could be negative for $t = 1$ ($\Delta S_1 < 0$), this would not constitute a reversal because no A6.4ERs would have been issued at that point in time.

18. Mechanism methodologies shall include equations that determine, for use during the activity's post-crediting period, the net change in storage resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*, consistent with the

[9] Note that ΔS_t may be determined by monitoring different parameters than those in this equation as long as this delivers an equivalent outcome. For example, in the case of carbon capture and storage in geological reservoirs, the flux of carbon injected in the reservoir may be a key parameter to estimate the stock, rather than directly measuring the stock within the reservoir. Similarly, in the land-use sector, the increment in stocks rather than the total stocks may be measured.

following equation and, where applicable, subject to any amendments or revisions referred to in paragraph 20 below apply:

$$\Delta S_t = \sum_i \left[\left(S_{i,activity,end} - S_{i,activity,crediting} \right) \right] \quad \text{(Equation 2)}$$

Where:

ΔS_t = The net change in storage of a greenhouse gas, or a precursor of a greenhouse gas, resulting from the Article 6.4 activity across all applicable reservoirs *i* over the period of time covered by a post-crediting period monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$S_{i,activity,end}$ = The quantity of a greenhouse gas, or a precursor of a greenhouse gas, stored in the greenhouse gas reservoir *i* in the Article 6.4 activity scenario at the end of the period of time covered by a post-crediting period monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$S_{i,activity,crediting}$ = The quantity of a greenhouse gas, or a precursor of a greenhouse gas, stored in the greenhouse gas reservoir *i* in the Article 6.4 activity scenario at the end of the activity's last active crediting period, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

i = The greenhouse gas reservoir(s) identified in paragraph 11 above and included in the activity boundary of an Article 6.4 activity.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

19. A reversal occurs during an activity's post-crediting period when $\Delta S_t < 0$.

20. The approach set out in paragraphs 16 to 19 will in most instances result in a conservative quantification of reversals. In few instances, the approach may need to be amended or revised to ensure conservativeness.[10] In such instances, the mechanism methodology shall include provisions for amending or revising the approach accordingly.

6.2. Net change in emissions of greenhouse gases

21. Mechanism methodologies shall include equations that determine the net change in emissions resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*. This shall not include any emissions from losses of storage from the

[10] For example, a single geological reservoir could be used by different activities, including activities registered under other carbon crediting programmes or covered by emissions trading schemes. In these instances, the methodology may need to include additional provisions to allocate any losses to the different activities. Another example could be an afforestation activity where reversal could occur if no further carbon is accumulated in the Article 6.4 scenario whereas further carbon would be accumulated over time in the baseline, i.e. in the absence of the Article 6.4 activity.

greenhouse gas reservoir(s) included in Equation 1 above.[11] The net change in emissions shall be determined consistent with the following equation:

$$\Delta E_t = \sum_i AE_{i,t} + max\left(0, \sum_j LE_{j,t}\right) - \sum_i BE_{i,t} \quad \text{(Equation 3)}$$

Where:

ΔE_t = The net change in greenhouse gas emissions, from sources other than any losses in storage from the greenhouse gas reservoir(s) included in Equation 1, resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$AE_{i,t}$ = Greenhouse gas emissions from source *i* included in the activity boundary, occurring in the Article 6.4 activity scenario over the period of time covered by a monitoring report *t* and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$LE_{j,t}$ = Greenhouse gas emissions from leakage source *j* resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

$BE_{i,t}$ = Greenhouse gas emissions from source *i* in the baseline scenario over the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

i = Emission sources included in the activity boundary in the Article 6.4 activity scenario and baseline scenario, other than emissions from losses in carbon storage from the greenhouse gas reservoir(s) included in Equation 1.

j = Leakage sources considered in the mechanism methodology in the Article 6.4 activity scenario and, where applicable, the baseline scenario.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

22. Mechanism methodologies may specify how to calculate the terms used in Equation 3 in the post-crediting monitoring period, including, where appropriate, by setting them to zero.

6.3. Total A6.4ER issuance

23. Mechanism methodologies shall include equations that determine the total number of A6.4ERs to be issued for an Article 6.4 activity over the period of time covered by a monitoring report *t*, consistent with the following equation:

$$A6.4ER_{total,t} = \Delta S_t - \Delta E_t - CD_{t-1} \quad \text{(Equation 4)}$$

Where:

[11] For example, in the case of an afforestation activity, such emissions may include emissions from road transportation or fertilizer application but do not include any carbon dioxide emissions from loss of above-ground biomass, as the latter is included in the term ΔS_t in Equation 1. In the case of a direct air carbon capture and storage activity, such emissions could include emissions from consumption of electricity required for the operation of the capture plant.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

ΔS_t = The net change in storage of a greenhouse gas, or a precursor of a greenhouse gas, resulting from the Article 6.4 activity across all applicable reservoirs over the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

ΔE_t = The net change in greenhouse gas emissions, from sources other than any losses in storage from the greenhouse gas reservoir(s) included in Equation 1, resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

CD_{t-1} = A net increase in greenhouse gas emissions resulting from an Article 6.4 activity caused by factors other than reversals, during the period of time covered by the monitoring report *t-1* used to calculate the activity participant's most recent previous A6.4ER issuance request and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e). For $t = 1$, $CD_{t-1} = 0$.

t = The number of the Article 6.4 activity monitoring report, with $t = 1$ for the first monitoring report.

6.4. Crediting deficit

24. Mechanism methodologies shall include equations that determine any crediting deficit resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* (CD_t), consistent with the following equations:

If $A6.4ER_{total,t} \geq 0$, then $CD_t = 0$ (Equation 5)

If $A6.4ER_{total,t} < 0$ and $\Delta S_t \geq 0$, then $CD_t = -1 \times A6.4ER_{total,t}$ (Equation 6)

If $A6.4ER_{total,t} < 0$ and $\Delta S_t < 0$, then $CD_t = CD_{t-1} + \Delta E_t$ (Equation 7)

Where:

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

ΔS_t = The net change in storage of a greenhouse gas, or a precursor of a greenhouse gas, resulting from the Article 6.4 activity across all applicable reservoirs over the period of time covered by a monitoring report *t*, expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

ΔE_t = The net change in greenhouse gas emissions, from sources other than any losses in storage from the greenhouse gas reservoir(s) included in Equation 1, resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

CD_t = A net increase in greenhouse gas emissions resulting from an Article 6.4 activity, caused by factors other than reversals, during the period of time covered by a monitoring report *t* and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

CD_{t-1} = A net increase in greenhouse gas emissions resulting from an Article 6.4 activity caused by factors other than reversals, during the period of time covered by the monitoring report *t-1* used to calculate the activity participant's most recent previous A6.4ER issuance request and expressed in metric tonnes of carbon dioxide equivalent (tCO_2e).

t = The number of the Article 6.4 activity monitoring report, with $t = 1$ for the first monitoring report.

25. When the crediting deficit is greater than zero, it reflects a net increase in greenhouse gas emissions resulting from an Article 6.4 activity due to factors other than reversals. A crediting deficit can occur when the net change in storage (ΔS_t) over the period of time covered by a monitoring report *t* is positive, but smaller than a net increase in emissions over the same time period (i.e., $\Delta E_t \geq \Delta S_t$).[12] A crediting deficit can persist from one period of time to the next, so long as A6.4ER issuance is too small to compensate for the crediting deficit.

26. Crediting deficits affect future A6.4ER issuance requests and are adjusted, as applicable, at each A6.4ER issuance request. When there is a crediting deficit from the period of time covered by a monitoring report *t-1*, A6.4ER issuance for the period of time covered by the monitoring report *t* will be reduced, if possible, and the crediting deficit updated accordingly. This can happen in three ways:

(a) If total A6.4ER issuance ($A6.4ER_{total,t}$) is greater than or equal to zero, this indicates that the quantity of emission reductions and/or net removals in period of time covered by the monitoring report *t* was sufficient to eliminate the crediting deficit, if any, from the period of time covered by the monitoring report *t-1*. If the crediting deficit from the period of time covered by the monitoring report *t-1* is positive, then the A6.ER issuance for the period of time covered by the monitoring report *t* is reduced by the same quantity; and if the crediting deficit from the period of time covered by the monitoring report *t-1* is zero, then the A6.ER issuance for the period of time covered by the monitoring report *t* is unchanged. In either case, the crediting deficit for the period of time covered by the monitoring report *t* is zero;

(b) If total A6.4ER issuance ($A6.4ER_{total,t}$) is less than zero and the net change in storage is greater than or equal to zero ($\Delta S_t \geq 0$), then there is a crediting deficit for the period of time covered by the monitoring report *t* equal to the total A6.4ER issuance ($A6.4ER_{total,t}$) multiplied by negative 1. This situation occurs when there is no reversal ($\Delta S_t \geq 0$), but the combination of any net change in emissions and previous crediting deficit is greater than the net change in carbon storage (i.e., $\Delta E_t + CD_{t-1} \geq \Delta S_t$);

[12] For example, this could occur where an afforestation activity maintains previously achieved carbon stocks but does not further enhance carbon stocks, while still causing emissions from road transportation. This could also occur if a bioenergy project with carbon capture and storage or a direct air capture project stores carbon dioxide in a subsurface geologic reservoir while emitting a greater quantity of carbon dioxide to the atmosphere from its operations.

(c) If total A6.4ER issuance ($A6.4ER_{total,t}$) is less than zero and the net change in storage is less than zero ($\Delta S_t < 0$), then there is a crediting deficit for the period of time covered by the monitoring report *t* equal to the net change in emissions (ΔE_t). This situation occurs where there is a reversal ($\Delta S_t < 0$) and results in a different formula for the calculation of the crediting deficit because reversal mitigation is addressed by operations of the Reversal Risk Buffer Pool Account, rather than through reductions in subsequent A6.4ER issuance.

27. The initial crediting deficit at the start of the first monitoring period $t = 1$ of an Article 6.4 activity (CD_0) is set to zero by definition.

6.5. A6.4ER contributions to the Reversal Risk Buffer Pool Account

28. Mechanism methodologies shall include an equation that determines the number of A6.4ERs to be forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account, as follows:

$$A6.4ER_{buffer,t} = A6.4ER_{total,t} \times F_{buffer,t} \quad \text{(Equation 8)}$$

Where:

$A6.4ER_{buffer,t}$ = The number of A6.4ERs that are issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

$F_{buffer,t}$ = Fraction of total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report t that are forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account, [corresponding to the reversal risk rating] as determined by applying the reversal risk assessment tool.

t = The number of the Article 6.4 activity monitoring report, with $t = 1$ for the first monitoring report.

6.6. A6.4ER contributions to the Adaptation Fund

[Two alternatives, OPTION 1 and OPTION 2, are described below]

OPTION 1 – HIGHER CONTRIBUTION TO ADAPTATION

29. Mechanism methodologies shall include an equation that determines the total number of A6.4ERs to be forwarded or first transferred, as applicable, to an account held by the Adaptation Fund in the mechanism registry for assisting developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation, as follows:

$$A6.4ER_{SOP,t} = A6.4ER_{total,t} \times SOP \quad \text{(Equation 9)}$$

Where:

$A6.4ER_{SOP,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to an account of the Adaptation Fund in the mechanism registry.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

SOP = The share of proceeds designated to support the Adaptation Fund, which is set at 5 percent pursuant to decision 3/CMA.3, Annex, paragraph 58.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

OPTION 2 – LOWER CONTRIBUTION TO ADAPTATION

30. Mechanism methodologies shall include an equation that determines the total number of A6.4ERs to be forwarded or first transferred, as applicable, to an account held by the Adaptation Fund in the mechanism registry for assisting developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation, as follows:

$$A6.4ER_{SOP,t} = \left(A6.4ER_{total,t} - A6.4ER_{buffer,t}\right) \times SOP \quad \text{(Equation 9)}$$

Where:

$A6.4ER_{SOP,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to an account of the Adaptation Fund in the mechanism registry.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

$A6.4ER_{buffer,t}$ = The number of A6.4ERs that are issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account.

SOP = The share of proceeds designated to support the Adaptation Fund, which is set at 5 percent pursuant to decision 3/CMA.3, Annex, paragraph 58.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

6.7. A6.4ER contributions to overall mitigation in global emissions

OPTION 1 – HIGHER CONTRIBUTION TO OMGE

31. Mechanism methodologies shall include an equation that determines the number of A6.4ERs to be forwarded or first transferred, as applicable, to the account for cancellation towards delivering overall mitigation in global emissions, as follows:

$$A6.4ER_{OMGE,t} = A6.4ER_{total,t} \times OMGE \quad \text{(Equation 10)}$$

Where:

$A6.4ER_{OMGE,t}$ = The number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to the account for cancellation towards delivering overall mitigation in global emissions.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

OMGE = The contribution to deliver overall mitigation in global emissions, which shall be set at a minimum of 2 percent pursuant to decision 3/CMA.3, Annex, paragraph 59.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

OPTION 2 – LOWER CONTRIBUTION TO OMGE

32. Mechanism methodologies shall include an equation that determines the number of A6.4ERs to be forwarded or first transferred, as applicable, to the account for cancellation towards delivering overall mitigation in global emissions, as follows:

$$A6.4ER_{OMGE,t} = \left(A6.4ER_{total,t} - A6.4ER_{buffer,t}\right) \times OMGE \quad \text{(Equation 10)}$$

Where:

$A6.4ER_{OMGE,t}$ = The number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to the account for cancellation towards delivering overall mitigation in global emissions.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

$A6.4ER_{buffer,t}$ = The number of A6.4ERs that are issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account.

OMGE = The contribution to deliver overall mitigation in global emissions, which shall be set at a minimum of 2 percent pursuant to decision 3/CMA.3, Annex, paragraph 59.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

6.8. A6.4ER issuance to activity participants

OPTION 1 — HIGHER CONTRIBUTION TO ADAPTATION, OMGE

33. Mechanism methodologies shall include an equation that determines the number of A6.4ERs to be forwarded or first transferred, as applicable, to accounts of the activity participants of the Article 6.4 activity, as follows:

$$A6.4ER_{activity,t} = A6.4ER_{total,t} \times \left(1 - F_{buffer,t} - SOP - OMGE\right) \quad \text{(Equation 11)}$$

Where:

$A6.4ER_{activity,t}$ = The number of Article 6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to accounts of the activity participants of the Article 6.4 activity.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

$F_{buffer,t}$ = Fraction of total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report t that are forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account, [corresponding to the reversal risk rating] as determined by applying the reversal risk assessment tool.

SOP = The share of proceeds designated to support the Adaptation Fund, which is set at 5 percent pursuant to decision 3/CMA.3, Annex, paragraph 58.

OMGE = The contribution to deliver overall mitigation in global emissions, which shall be set at a minimum of 2 percent pursuant to decision 3/CMA.3, Annex, paragraph 59.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

ALTERNATIVE OPTION 2 — LOWER CONTRIBUTION TO ADAPTATION, OMGE

34. Mechanism methodologies shall include an equation that determines the number of A6.4ERs to be forwarded or first transferred, as applicable, to accounts of the activity participants of the Article 6.4 activity, as follows:

$$A6.4ER_{activity,t} = \left(A6.4ER_{total,t} - A6.4ER_{buffer,t}\right) \times (1 - SOP - OMGE) \quad \text{(Equation 11)}$$

Where:

$A6.4ER_{activity,t}$ = The number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to accounts of the activity participants of the Article 6.4 activity.

$A6.4ER_{total,t}$ = The total number of A6.4ERs to be issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t*.

$A6.4ER_{buffer,t}$ = The number of A6.4ERs that are issued with respect to emission reductions and/or net removals resulting from the Article 6.4 activity over the period of time covered by a monitoring report *t* and to be forwarded or first transferred, as applicable, to the Reversal Risk Buffer Pool Account.

SOP = The share of proceeds designated to support the Adaptation Fund, which is set at 5 percent pursuant to decision 3/CMA.3, Annex, paragraph 58.

OMGE = The contribution to deliver overall mitigation in global emissions, which shall be set at a minimum of 2 percent pursuant to decision 3/CMA.3, Annex, paragraph 59.

t = The number of the Article 6.4 activity monitoring report, with *t = 1* for the first monitoring report.

7. Identification and quantification of reversals

7.1. General requirements

35. Mechanism methodologies shall specify the data and methods required to:

    (a) Detect changes in the quantity of greenhouse gases or their precursors stored in all applicable greenhouse gas reservoirs, consistent with section 6.1;

    (b) Quantify changes in the quantity of greenhouse gases or their precursors stored in all applicable greenhouse gas reservoirs in the Article 6.4 activity scenario and the baseline scenario, consistent with section 6.1;

    (c) Determine whether a reversal has occurred, consistent with section 6.1; and

    (d) Classify any reversal as being avoidable, unavoidable, or partly avoidable and partly unavoidable, consistent with section 7.3.

36. The elements in paragraph 38 may be relevant for the preparation of project design documents (PDDs), monitoring reports, annual reversal reports, notifications of observed events, and preliminary assessment reports.

37. For the purposes of preparing preliminary assessment reports, mechanism methodologies shall require activity participants to submit a monitoring report, in cases where it is ambiguous as to whether an observed event of greenhouse gas release constitutes a reversal.

38. For the purposes of preparing monitoring reports only for the post-crediting period, mechanism methodologies may establish provisions for activity participants to demonstrate that no reversal has occurred, i.e. that the net change in storage of

greenhouse gases or their precursors is greater than zero ($\Delta S_t \geq 0$), rather than quantifying the net change in storage (ΔS_t).

7.2. Frequency of submitting monitoring reports

39. Mechanism methodologies shall specify the frequency at which monitoring reports must be submitted during the crediting periods and during the post-crediting period for the types of mitigation activities covered by the methodology. The frequency shall be between one and five years. A lower frequency from within this range is appropriate where the quantification of emission reductions or net removals is associated with considerable costs[13] and/or where emission reductions or net removals can only be observed over longer time periods.[14] The frequency may also change over time, while being within the above specified range.

7.3. Determination of whether reversals are avoidable or unavoidable

40. Reversals shall be classified as either being avoidable or unavoidable. Mechanism methodologies shall provide, where necessary, a procedure to apportion an amount of reversals into a fraction of avoidable reversals and a fraction of unavoidable reversals.

41. The following type of reversals, inter alia, shall be classified as avoidable:

    (a) Reversals resulting from the management of the Article 6.4 activity and any other intentional actions by the activity participants;[15]

    (b) Reversals resulting from mismanagement, neglect, illegal action by the activity participants, including as a consequence of bankruptcy, insolvency, or default;

    (c) Reversals resulting from the intentional use of a product or material, in which a greenhouse gas or a precursor of a greenhouse gas was stored under an Article 6.4 activity, such that a greenhouse gas is released to the atmosphere;[16]

    (d) Reversals that have occurred following a failure to implement the risk mitigation plan that is attributable to the activity participants, including as a consequence of bankruptcy, insolvency, or default.

42. The following type of reversals, inter alia, shall be classified as unavoidable:

    (a) Reversals resulting from natural disturbances and extreme events;[17]

    (b) Reversals resulting from declared war, undeclared war, or acts of terrorism;

    (c) Reversals resulting from policy or regulatory changes that prevent the activity participants from implementing risk mitigation plans;

[13] For example, costs for sampling the carbon content at plots in the land-use sector.

[14] For example, changes in soil organic carbon following changes in land-use practices may only be observable over longer time periods.

[15] For example, harvesting of trees, slash burns, land conversion, changes in land management practices that were not described in the PDD, induced seismicity or fractures in geological reservoirs due to injection practices.

[16] For example, combustion of biomass previously stored in buildings.

[17] For example, wildfires, accidental fires in the built environment, pests and disease infestation, droughts, hurricanes, floods, and landslides, earthquakes, volcanic eruptions.

(d) Reversals resulting from illegal action by third parties that cannot be controlled, influenced or managed by the activity participants.

43. Reversals that have been caused by any factors that were not identified in the first and any updated reversal risk assessments should, as a default, be classified as avoidable reversals and may only be classified as unavoidable with due justification (e.g., in cases of clear "force majeure").

44. Mechanism methodologies may provide further specifications on how to classify reversals, as avoidable or unavoidable, consistent with paragraphs 40 through 43.

7.4. Post-crediting period monitoring and reporting

45. Mechanism methodologies may identify conditions under which activity participants may or shall update their post-crediting period monitoring plan, e.g., updates to monitoring techniques or approaches.

46. Mechanism methodologies shall define a minimum period for post-crediting period monitoring, after which activity participants may submit a request for termination of post-crediting period monitoring through demonstration of a negligible risk of reversal. The minimum period shall be informed by, inter alia, a consideration of the mitigation activity type and the reversal risks associated with its applicable greenhouse gas reservoirs.

47. Mechanism methodologies shall define a set of conditions or criteria,[18] considering the mitigation activity type and applicable greenhouse gas reservoirs, that demonstrate that the greenhouse gases or their precursors that are accumulated by the Article 6.4 activity within the applicable greenhouse gas reservoir(s) have reached and will remain in a steady state or, where relevant, are stabilized for at least 100 years from the year of demonstration of negligible risk of reversal.

[18] For example, in the case of sub-surface CO_2 storage, such conditions and criteria may pertain to the behaviour of the stored CO_2 in the geological reservoir. For biochar, conditions and criteria may pertain, inter alia, to restrictions on applications that could result in the release of the carbon stored in biochar (such as through combustion) and criteria on the characteristics of the biochar.

Appendix 2. Elements for inclusion in the activity standards and activity cycle procedures

1. This Appendix sets out requirements that are directed to activity participants. The elements in this section may be included in the activity standards for projects and programmes of activities and the activity cycle procedures for projects and programmes of activities.

1. Reversal-related notifications and reports

1.1. Observed events that could lead to a reversal

2. Activity participants shall notify the Supervisory Body of any observed event involving the release of stored greenhouse gases or stored precursors to greenhouse gases for which any A6.4 emission reductions (A6.4ERs) have been issued within 30 days of becoming aware of the observed event. This notification shall include:

   (a) A description of the observed event;

   (b) The date(s) of the occurrence of the observed event, including a statement indicating whether the event is ongoing at the time of notification;

   (c) The location of the event;

   (d) Any additional information as provided in the mechanism methodology; and

   (e) Any additional information activity participants elect to share.

3. If the secretariat becomes aware of a potential reversal event affecting an Article 6.4 activity, but has not received a notification from the activity participant pursuant to paragraph 2, the secretariat shall notify the activity participants of its understanding and request that the activity participants either provide a notification pursuant to paragraph 2 or an explanation of why no such notification is required. All notifications and explanations provided under this paragraph shall be made publicly available.

4. When the secretariat receives a notification pursuant to paragraph 2, the secretariat shall suspend the activity-specific registry operations of issuance, transfer, cancellation, and retirement of A6.4ERs, except for transfers of A6.4ERs to the Reversal Risk Buffer Pool Account. The same registry operations shall be reinstated as provided below, as applicable, in paragraphs 7 or 9.

5. Activity participants shall prepare a preliminary assessment report to determine whether the observed event has resulted in a reversal and transmit the preliminary assessment report to the Supervisory Body. The preliminary assessment report shall include:

   (a) A description of the monitoring activities and methods used;

   (b) A determination of whether a reversal has occurred; and

   (c) The data collected to inform the preliminary assessment report's conclusions, including remote sensing data where applicable. Activity participants may elect to summarize the applicable data in the preliminary assessment report, provided that

the complete data are made available to the Supervisory Body as part of the preliminary assessment report's submission.

6. Activity participants shall submit preliminary assessment reports to the Supervisory Body within 90 days of the end of the observed event.

7. If the preliminary assessment report concludes that a reversal has not occurred, it shall be verified by a Designated Operational Entity. Upon receipt of a complete and verified preliminary assessment report that confirms a reversal has not occurred, the secretariat shall reinstate all registry operations that were previously suspended by operation of paragraph 3.

8. If the preliminary assessment report concludes that a reversal has occurred, the activity participant shall submit a verified monitoring report to the Supervisory Body within 365 calendar days of the end of the observed event and may elect not to verify the preliminary assessment report. The verified monitoring report shall:

   (a) Assess and quantify the amount of the reversal by using the higher bound of the uncertainty interval at a 95% confidence level, with an explanation as to how that estimate was quantified;

   (b) Identify the location of the event in the form of Keyhole Markup Language files or similar formats as one or more polygon(s) or by specifying the coordinates of the geographic boundary using a known coordinate system;

   (c) Characterize the reversal as being avoidable, unavoidable, or partially avoidable and partially unavoidable. In cases where the reversal is partially avoidable and partially unavoidable, the monitoring report shall quantify the amount of the avoidable reversal and the amount of the unavoidable reversal, with the sum equal to the amount of the total reversal;

   (d) Review the activity's reversal risk assessment and, if necessary, revise the percentage contribution the activity makes to the Reversal Risk Buffer Pool Account; and

   (e) Review the Article 6.4 activity's compliance with the requirements of the Sustainable development tool, including by taking into account any negative environmental or social impacts caused by the reversal and developing or updating plans to prevent the recurrence of reversal-related negative environmental and social impacts.

9. Upon the Supervisory Body's receipt of a verified monitoring report required pursuant to paragraph 8, the following actions shall be taken:

   (a) The secretariat shall take the actions described in Section 4 of this appendix to address the avoidable and/or unavoidable reversals identified in the verified monitoring report;

   (b) The activity participant shall take the actions described in Section 4 of this appendix to address the avoidable reversal(s) identified, if any, in the verified monitoring report; and

   (c) Following the satisfactory completion of the actions described in subparagraphs (a) and (b), the secretariat shall reinstate all registry operations that were previously suspended by operation of paragraph 3.

1.2. Annual reversal report

10. Activity participants shall submit to the Supervisory Body, by March 31 each year, an annual reversal report that indicates whether, at any point in the previous calendar year, any observed events occurred involving the release of stored greenhouse gases or stored precursors to greenhouse gases for which any A6.4ERs have been issued.

11. Annual reversal reports shall follow any guidance provided in the applicable mechanism methodology as to the data and methods that are appropriate for determining whether any such observed event has occurred.

12. If an annual reversal report indicates the presence of any such observed events, it shall identify and list them along with the corresponding notification(s) provided to the Supervisory Body pursuant to paragraph 2.

13. If the annual reversal report indicates the absence of any such observed event, it shall state the basis for this conclusion.

14. Annual reversal reports shall be verified either:

    (a) Prior to their submission to the Supervisory Body; or

    (b) Retroactively as part of the verification process for monitoring reports, such that a verified monitoring report also verifies all previously unverified annual reversal reports that pertain to the time period covered by the verified monitoring report.

2. Late, incomplete or missing report submissions

15. Monitoring reports, preliminary assessment reports, and annual reversal reports shall be submitted to the Supervisory Body on or before their respective deadlines.

16. Activity participants may make a request to the Supervisory Body to grant an extension of submission deadlines only in cases of force majeure or demonstrated unavailability of designated operational entities. The secretariat shall review any such request and recommend that the Supervisory Body grant any request that is justified with appropriate evidence and shall recommend that the Supervisory Body deny all other requests. All requests and grants or denials of requests shall be made publicly available.

17. The Supervisory Body may develop additional guidance and consequences to address matters not elaborated here, including to address any patterns of late, incomplete or missing submissions that may arise in practice.

Table. Summary of deadlines and consequences

	Late Report		Missing Report	
Report	**Consequence**	**Timing**	**Consequence**	**Timing**
Preliminary assessment report	None	N/A	Require monitoring report	30 days after notice
Monitoring report	Registry functionality suspended	Immediate	Avoidable reversal (deemed)	180 days after notice
Annual reversal report	Registry functionality suspended	30 days after notice	Avoidable reversal (deemed)	90 days after notice

2.1. Late report submissions

18. A monitoring report, preliminary assessment report, or annual reversal report that is not submitted on or before its deadline shall be designated as late.

19. Whenever a monitoring report, preliminary assessment report, or annual reversal report has been designated as late, the secretariat shall provide an automated electronic notice to activity participants that the monitoring report, preliminary assessment report, or annual reversal report has not been received on time and has therefore been designated as late.

20. Whenever a monitoring report has been designated as late, the secretariat shall suspend the activity-specific registry operations of issuance, transfer, cancellation and retirement of A6.4ERs, except for transfers of A6.4ERs to the Reversal Risk Buffer Pool Account. If an activity participant submits a late monitoring report before it is designated as missing pursuant to paragraph 29, the secretariat shall reinstate all registry operations that were previously suspended by operation of this paragraph.

21. Whenever an annual reversal report has been designated as late and it has not been submitted within 30 calendar days since the notification referenced in paragraph 19, the secretariat shall suspend the activity-specific registry operations of issuance, transfer, cancellation and retirement, except for transfers of A6.4ERs to the Reversal Risk Buffer Pool Account. If an activity participant submits a late annual reversal report before it is designated as missing pursuant to paragraph 31, the secretariat shall reinstate all registry operations that were previously suspended by operation of this paragraph.

2.2. Incomplete report submissions

22. The secretariat shall, subject to the guidance of the Supervisory Body, conduct within seven days a completeness check for all monitoring report submissions, preliminary assessment report submissions, and annual reversal report submissions to determine whether each such submission is complete in accordance with the completeness check checklist for the submission of monitoring reports, preliminary assessment reports, and annual reversal reports. A preliminary assessment report that concludes that a reversal has occurred shall automatically be deemed to be complete.

23. If the secretariat, during the completeness check, identifies issues of an editorial nature or consistency in the submission, it shall request the DOE by e-mail, copying the activity participants, to submit revised documents and/or information. In this case, the DOE shall submit the requested documents and/or information within seven days of receipt of the request. If the DOE does not submit the requested documents and/or information by this deadline, the secretariat shall conclude that the request submission is incomplete unless the DOE provides a justification by this deadline, consistent with the requirements of paragraph 16, for not submitting the requested documents and/or information on time. In this case, the deadline shall be extended accordingly.

24. Upon conclusion of the completeness check stage, the secretariat shall notify the activity participants and the DOE of the conclusion of the completeness check stage. If the submission does not meet the requirements of the completeness check, the secretariat shall also communicate the underlying reasons to the activity participants and the DOE and make them publicly available on the UNFCCC website. In this case, the DOE may resubmit the monitoring report, preliminary assessment report, or annual reversal report with revised documentation. The deadline for any such resubmission shall be 28 days from the date of notification.

25. Upon positive conclusion of the completeness check stage, the secretariat shall, subject to the guidance of the Supervisory Body, conduct within 21 days a substantive check in accordance with the substantive check checklist for submissions of monitoring reports, preliminary assessment reports, and annual reversal reports. A preliminary assessment report that concludes that a reversal has occurred shall automatically be deemed to satisfy the substantive check.

26. If the secretariat, during the substantive check, identifies issues of a substantive nature or missing basic information, it shall request the DOE by e-mail, copying the activity participants, to submit revised documents and/or information. In this case, the DOE shall submit the requested documents and/or information within 28 calendar days of receipt of the request. If the DOE does not submit the requested documents and/or information by this deadline, the secretariat shall conclude that the request submission is incomplete unless the DOE provides a justification by this deadline, consistent with the requirements of paragraph 16, for not submitting the requested documents and/or information on time. In this case, the deadline shall be extended accordingly.

27. Upon conclusion of the substantive check stage, the secretariat shall notify the activity participants and the DOE of the conclusion of the substantive check stage. If the submission does not meet the requirements of the substantive check, the secretariat shall conclude that the submission is incomplete and communicate the underlying reasons to the activity participants and the DOE, and make them publicly available on the UNFCCC website. In this case, the DOE may resubmit the monitoring report, preliminary assessment report, or annual reversal report with revised documentation. The deadline for any such resubmission shall be 60 days from the date of notification.

28. Any submission deadline established pursuant to paragraph 24 or 27 shall be subject to the provisions for late, incomplete and missing report submissions.

2.3. Missing report submissions

29. A monitoring report shall be considered missing if it has not been received within 180 calendar days of the date of the notification referenced in paragraph 19.

30. A preliminary assessment report shall be considered missing if it has not been received within 30 calendar days of the date of the notification referenced in paragraph 19.

31. An annual reversal report shall be considered missing if it has not been received within 90 calendar days of the date of the notification referenced in paragraph 19.

32. Whenever a monitoring report or annual reversal report is designated as missing, the Article 6.4 activity shall be deemed to have experienced an avoidable reversal. The secretariat shall provide electronic notice to the activity participant and inform the activity participant that it shall mitigate the avoidable reversals following the provisions of section 4 of this document.

33. The quantity of the avoidable reversal designated in paragraph 32 shall be deemed to be equal to the total number of A6.4ERs issued with respect to the activity's net removals and/or emission reductions as of the date that the monitoring report or annual reversal report is designated as missing, inclusive of the number of A6.4ERs forwarded or first transferred, as applicable, to:

    (a) The activity participants;

    (b) The Reversal Risk Buffer Pool Account;

(c) The mechanism registry account held by the Adaptation Fund; and

(d) The mechanism registry account for cancellation towards delivering overall mitigation in global emissions.

34. Whenever a preliminary assessment report is designated as missing, the observed event in question will be deemed to have resulted in a reversal and a monitoring report submission shall be required pursuant to the terms of paragraph 8.

3. Post-crediting period monitoring and reporting

3.1. General obligations and duration of post-crediting period monitoring

35. For Article 6.4 activities that are subject to reversal risks, activity participants shall continue to monitor applicable greenhouse gas reservoirs in the post-crediting period to:

(a) Assess and determine whether any reversals have occurred;

(b) Quantify the amount of any such reversals; and

(c) Ensure remediation of reversals subject to the provisions of section 4.

36. The post-crediting period shall start on the first day after the end of the last active crediting period. The post-crediting period shall continue indefinitely or until one of the conditions in section 3.2 below is satisfied.

37. Activity participants may use a third party to perform post-crediting period monitoring for the Article 6.4 activity.

38. Activity participants may at any time update their post-crediting period monitoring plan as part of a request for a post-registration change.

39. Activity participants shall submit a post-crediting period monitoring report no later than the date it is due, with the due date determined according to the frequency specified in the mechanism methodology. If a monitoring report is submitted before its due date, the due date for the subsequent monitoring report submission shall be determined counting from the date that the current monitoring report was submitted.

3.2. Termination of post-crediting period monitoring and reporting

3.2.1. Remediation of potential future reversals

40. Activity participants may submit, at any time during the post-crediting period, a request to the Supervisory Body to terminate post-crediting period monitoring and reporting, if they have mitigated all potential reversals for all A6.4ERs issued to the Article 6.4 activity (i.e., the sum of $A6.4ER_{total,t}$ issued for all monitoring reports, as referred to section 6.3 of Appendix 1) directly through the cancellation of a corresponding number of A6.4ER units from any Article 6.4 activity to a dedicated cancellation account in the mechanism registry for the purpose of remediation of future reversals. For any authorised A6.4ERs issued to the Article 6.4 activity, the cancellation shall be made using authorised A6.4ERs.

41. Once an activity participant has cancelled A6.4ERs pursuant to paragraph 40, it may request the Supervisory Body to terminate its post-crediting period monitoring obligations. Within 28 days of receiving such a request, the secretariat shall determine whether it complies with paragraph 40. If the secretariat determines that the requirements of paragraph 40 have been satisfied, it shall notify the DOE and activity participant that the

activity is relieved of all obligations under section 3.1 and make this information available on the UNFCCC website.

3.2.2. Negligible risk of reversal

42. Activity participants may submit, at any time in the post-crediting period after the minimum post-crediting period defined in an activity's mechanism methodology has elapsed, a request to the Supervisory Body to terminate post-crediting period monitoring and reporting, demonstrating that:

    (a) The stored greenhouse gases, or precursors of greenhouse gases, are at a negligible risk of reversal that is calculated over at least a 100-year timeframe starting from the year of submission of request; and

    (b) All conditions or criteria set in the mechanism methodology for termination of post-crediting period monitoring have been fulfilled.

43. To demonstrate negligible risk of reversal, activity participants shall provide evidence in the form of modelling or other methods, where relevant, about the durability

44. [1] of accumulated greenhouse gases, or precursors of greenhouse gases, within the applicable greenhouse gas reservoirs in the presence of all reversal risks that exist or may emerge after termination of the post-crediting period monitoring for the mitigation activity. Activity participants shall apply a conservative approach to ensure that the reversal risks are very unlikely to be underestimated, taking into account the overall uncertainty in their quantification. The implementation of conservativeness (e.g., through conservative assumptions, parameters, discounts) in determining the reversal risks shall be based on the level of uncertainty (e.g., assuming higher risk values in case of higher uncertainties). All causes of uncertainty shall be considered, including uncertainty in data (e.g., measurements), parameters (e.g., representativeness of default values), assumptions (e.g., projection of the future sequence of events within the project boundary or space affected by the mitigation activity), and methods (e.g., models used in quantifying the reversal risk factors and the reversal risk rating). The higher or lower, as appropriate bound of the uncertainty interval at a 95% confidence level shall be used to ensure conservativeness. The outcome of the negligible risk demonstration shall be confirmed by sensitivity analysis. A negative outcome of the sensitivity analysis indicates that the risk of reversal cannot be classified as negligible.

45. Upon submission of a request for termination of post-crediting period monitoring through demonstration of negligible risk of reversal as per paragraphs 42 to 43, the secretariat shall, subject to the guidance of the Supervisory Body, perform a completeness check.

46. Complete requests for termination of post-crediting period monitoring submitted to the secretariat shall be posted on the UNFCCC website for public comments for a period of 30 days.

47. Within 60 days of the completion of the public review process, the secretariat shall make a draft recommendation to the Supervisory Body to approve or reject the activity's request for termination of post-crediting period monitoring.

48. The Supervisory Body may request additional information from the activity participant, including based on inputs received during the public comments period, which the participant shall communicate within 30 days of receiving the request. If the activity

[1] As defined in the methodology.

participant fails to respond within this timeframe, the request for termination of post-crediting period monitoring shall be considered to be withdrawn.

49. If the request for termination of post-crediting period monitoring is approved by the Supervisory Body, activity participants shall be relieved of all obligations under section 3.1. The secretariat shall inform the DOE and the activity participant of the approval and make the decision by the Supervisory Body together with documentation for demonstration of negligible risk of reversal assessment for the activity available on the UNFCCC website.

50. When a request for termination of post-crediting period monitoring and reporting through demonstration of negligible risk of reversal is rejected by the Supervisory Body, the activity participant shall not submit a further request for termination of post-crediting period monitoring and reporting through demonstration of negligible risk of reversal for at least three years.

4. Post-reversal actions

4.1. Remediating unavoidable reversals

51. When the Supervisory Body has received a complete and verified monitoring report indicating that unavoidable reversals have occurred, the secretariat shall instruct the registry mechanism administrator to cancel A6.4ERs held in the Reversal Risk Buffer Pool Account as follows:

    (a) The number of A6.4ERs cancelled shall be equal to the amount of the unavoidable reversals, as expressed in tonnes of carbon dioxide equivalent;

    (b) The number of each type of A6.4ERs cancelled (whether Mitigation Contribution Units or authorized A6.4ERs) shall be based on the proportion of Mitigation Contribution Units or authorized A6.4ERs issued for the activity's emission reductions and/or net removals at the time of the reversal;

    (c) The vintage of the A6.4ERs cancelled shall be, in order of priority:

        (i) The same as the year(s) in which the reversal occurred, where possible;

        (ii) From a year that is earlier than the year(s) in which the reversal occurred, when no A6.4ERs with a vintage of the same year(s) are available or an inadequate number is available; or

        (iii) From a year that is later than the year(s) in which the reversal occurred, to the extent that neither alternative is feasible;

    (d) The mechanism registry shall indicate that the A6.4ERs were cancelled for the purpose of remediating unavoidable reversals and publish the serial numbers of A6.4ERs cancelled.

4.2. Remediating avoidable reversals

52. When the Supervisory Body has received a complete and verified monitoring report indicating that avoidable reversals have occurred, or when an activity is deemed to have experienced avoidable reversals subject to section 2.3, the secretariat shall instruct the

registry mechanism administrator to cancel A6.4ERs held in the Reversal Risk Buffer Pool Account as follows:

(a) The number of A6.4ERs cancelled shall be equal to the amount of the avoidable reversals, as expressed in tonnes of carbon dioxide equivalent;

(b) The number of each type of A6.4ERs cancelled (whether Mitigation Contribution Units or authorized A6.4ERs) shall be based on the proportion of Mitigation Contribution Units or authorized A6.4ERs issued for the activity's emission reductions and/or net removals at the time of the reversal;

(c) The vintage of the A6.4ERs cancelled shall be, in order of priority:

(i) The same as the year(s) in which the reversal occurred, where possible;

(ii) From a year that is earlier than the year(s) in which the reversal occurred, when no A6.4ERs with a vintage of the same year(s) are available or an inadequate number is available; or

(iii) From a year that is later than the year(s) in which the reversal occurred, to the extent that neither alternative is feasible;

(d) The mechanism registry shall indicate that the A6.4ERs were cancelled for the purpose of remediating avoidable reversals and publish the serial numbers of A6.4ERs cancelled.

53. When avoidable reversals occur, activity participants shall forward or first transfer, as applicable, A6.4ERs to the Reversal Risk Buffer Pool Account as follows:

(a) The number of A6.4ERs forwarded or first transferred shall be equal to the amount of the avoidable reversals, as expressed in tonnes of carbon dioxide equivalent; and

(b) The number of each type of A6.4ERs cancelled (whether Mitigation Contribution Units or authorized A6.4ERs) shall be based on the proportion of Mitigation Contribution Units or authorized A6.4ERs issued for the activity's emission reductions and/or net removals at the time of the reversal.

54. If activity participants complete their obligations under paragraph 53 within 5 days after the Supervisory Body considered the complete and verified monitoring report indicating avoidable reversals, then activity participants will not experience any change to their mechanism registry account functionality.

55. If activity participants have not completed their obligations under paragraph 53 within 5 days after the Supervisory Body considered the complete and verified monitoring report indicating avoidable reversals, or if the activity has been deemed to experience an avoidable reversal subject to the provisions of section 2.3, then the secretariat shall instruct the registry mechanism administrator to immediately suspend the activity participants' registry operations of transfer, cancellation, and retirement of A6.4ERs, except for transfers of A6.4ERs to the Reversal Risk Buffer Pool Account.

56. When activity participants have completed their obligations under paragraph 53, the secretariat shall reinstate the general registry operation suspended in paragraph 55 within seven days.

Appendix 3. Addressing non-permanence in A6.4 activities

1. Introduction

1.1. Background

1. The Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement (RMPs), adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) by decision 3/CMA.3, provide that:

   (a) An Article 6.4 activity shall minimize the risk of non-permanence of emission reductions over multiple NDC implementation periods and, where reversals occur, ensure that these are addressed in full;[1]

   (b) Mechanism methodologies shall address reversals, where applicable;[2]

   (c) Activity participants shall monitor potential reversals over a period to be decided by the Supervisory Body.[3]

2. In addition, by the same decision cited under paragraph 1 above, the CMA requested the Supervisory Body of the mechanism established by Article 6, paragraph 4 (SB) to elaborate, and further develop, on the basis of the RMPs, recommendations on activities involving removals, including, inter alia, addressing reversals in activities involving removals.[4]

3. Also, the Article 6.4 "Activity standard for projects" requires activity participants to assess the risk of reversal of GHG emission reductions or net GHG removals that will be achieved by the proposed A6.4 mitigation activity over multiple NDC implementation periods and, where such risk exists, develop and implement planned monitoring and measures to address reversals in full.[5]

4. Recognizing that addressing non-permanence is an essential requirement for both emission reduction activities with reversal risks and activities involving removals that involve GHG reservoirs that accumulate and can also emit GHGs, this standard provides the relevant methods for managing, monitoring, reporting, and compensating or remediating reversals occurring in such Article 6.4 mitigation activities.

2. Scope, applicability, and entry into force

2.1. Scope

5. This standard establishes the requirements for activity participants to address non-permanence in applicable Article 6.4 activities.

[1] Decision 3/CMA3, annex, paragraph 31d(ii).

[2] Decision 3/CMA3, annex, paragraph 34.

[3] Decision 3/CMA3, annex, paragraph 50.

[4] Decision 3/CMA3, paragraph 6(c).

[5] See: https://unfccc.int/sites/default/files/resource/A6.4-STAN-AC-002.pdf.

2.2. Applicability

6. This standard applies to all Article 6.4 activities that include a risk of reversal of emission reductions or net removals, including from activities involving removals and emission reduction activities with reversal risks, which involve the accumulation and storage of GHGs within GHG reservoirs. This standard does not apply to activities that avoid the use of fossil fuel reserves.

2.3. Entry into force

7. This standard shall enter into force on the date of its approval by the Supervisory Body.

3. Definitions

8. The following definitions shall apply:

   (a) **Activities involving removals**: Anthropogenic activities that remove CO_2 from the atmosphere and durably store it in geological, terrestrial, or ocean reservoirs, or in products. They include existing and potential anthropogenic enhancement of biological, geochemical or chemical CO_2 sinks and direct air capture and storage, but exclude natural CO_2 uptake not directly caused by human activities;

   (b) **Carbon stock**: The quantity of carbon in a carbon pool measured in tonnes of carbon (tC);

   (c) **GHG reservoir:** A component of the climate system, other than the atmosphere, which has the capacity to accumulate, store or release GHGs:

      (i) Note 1: Components of the climate system other than the atmosphere include the biosphere, geosphere and hydrosphere;

      (ii) Note 2: The biosphere includes ecosystems and living organisms, including derived dead organic matter;

   (d) **GHG emission:** Total mass of greenhouse gases released to the atmosphere over a specified period;

   (e) **GHG removal:** Total mass of greenhouse gases absorbed from the atmosphere over a specified period:

      (i) Note: In the final stages of reporting, GHG emissions are denoted positive (+), and GHG removals are denoted negative (-);

   (f) **Intentional reversal**: A reversal over which the activity participant has influence or control;

   (g) **Net removal**: Calculated as the net emissions or removals occurring in the baseline scenario minus the net emissions or removals occurring in the mitigation activity, minus any net emissions from leakage:

      (i) Note 1: GHG emissions are denoted as positive (+) and GHG removals are denoted as negative (-);

      (ii) Note 2: Where the calculation above results in a positive (+) number the outcome is a net removal, where the calculation above results in a negative (-) number from the greenhouse gas reservoirs, the outcome is a reversal;

(h) **Post-crediting monitoring period**: The phase following the last crediting period of an Article 6.4 activity during which no A6.4 emission reductions (A6.4ERs) can be generated, but the activity participant monitors and reports whether a reversal has occurred;

(i) **Reversal monitoring plan:** The plan for regular monitoring of the occurrence and magnitude of reversals contained within the PDD for activities subject to reversals;

(j) **Reversal event notification:** An immediate interim notification submitted by the activity participant outlining the occurrence of an observed event that could potentially lead to a reversal:

(i) Note: The reversal event notification is also used to declare that no potential reversal event has occurred when the activity participant is notified of a potential reversal event;

(k) **Reversal risk**: The likelihood that a reversal will occur for a mitigation activity within a defined time frame. The reversal risk can depend on various factors, including the type of GHG reservoir, geographical location and risk management practices;

(l) **Reversal risk buffer pool account**: A reserve of A6.4ERs set aside to compensate for unintentional reversals that can occur in Article 6.4 activities:

(i) Note: The buffer pool is also used to backstop in situations where intentional reversals have not been remediated by activity participants;

(m) **Unintentional reversa**l: A reversal over which the activity participant has no influence or control. It results from external factors beyond the control of the activity participant.

4. General requirements

9. Activities involving removals and emission reduction activities with reversal risks under the Article 6.4 mechanism shall meet the requirements contained in the following sections, all the applicable standards and procedures of the Article 6.4 mechanism and any further requirements approved by the Supervisory Body in this regard.

10. Activity participants shall prevent and minimize the risk of reversals. The reversal of net removals or emission reductions in respect of which A6.4ERs have been issued shall be fully remediated in accordance with section 7.

5. Reversal management, monitoring and reporting

5.1. Reversal management and monitoring plan

11. Activity participants shall submit a reversal management and monitoring plan as part of the project design document submitted with the request for registration.

12. The reversal management and monitoring plan shall be reviewed and updated at the beginning of each renewed crediting period and in any of the following circumstances:

(a) The designated operational entity (DOE) or the secretariat identifies the need to revise the reversal management and monitoring plan based on any concerns identified with the plan;

(b) Additional risk factors are identified following a reversal that are not included or are not adequately addressed in the reversal management and monitoring plan;

(c) The applicable national or regional regulations require the consideration of risk factors that are not included or are not adequately addressed in the reversal management and monitoring plan.

13. The reversal monitoring plan[6] can be different to the emission reduction or net removal monitoring approaches provided that any such method is capable of detecting reversals that could arise from the identified risk factors listed within the reversal management plan.

14. During the crediting period(s) activity participants shall communicate updates to the reversal management and monitoring plan at each verification.

15. During the post-crediting monitoring period activity participants shall communicate updates to the reversal management and monitoring plan within their annual reversal report.

5.2. Reversal monitoring duration

16. Monitoring for reversals shall continue after the last verification event by the activity to assess whether any reversals have occurred, quantify the reversals and confirm the continued storage of the GHGs.

17. Activity participants shall continue to monitor and report on the activity for a period of at least [45] years from the date of the final verification.

18. The activity participants may request the Supervisory Body to allow termination of the post-crediting monitoring if they can demonstrate, by providing transparent and verifiable information, that:

(a) The stored GHGs are at a negligible risk of reversal; or

(b) The potential future reversals are remediated in accordance with the provisions of section *7 Remediation of reversals*.

19. Negligible risk is defined as an expected risk of reversal of no more than 0.5 percent (1 in 200 chance) over a 100-year timeframe.

20. In order to demonstrate negligible risk, activity participants shall provide evidence in the form of modelling or other methods demonstrating the long-term fate of accumulated GHGs within their GHG reservoirs in the presence of all risk factors for the mitigation activity.

21. When a request for termination of post-crediting period monitoring and reporting is rejected by the Supervisory Body, the activity participant shall not submit a further request for a period of at least five years.

5.3. Reversal reporting

22. Monitoring reports shall be submitted for verification at least every five years from the date of first verification.

[6] The monitoring for reversals can be carried out by parties other than the activity participant, however the approach to monitoring, including who the outsourced party is, must be clearly described and justified for the activity. The obligations for reporting and remediation remain with the activity participant.

23. Activity participants may request the Supervisory Body, providing a transparent and verifiable justification, to extend the due date for submission of a monitoring report beyond the due date determined in according with paragraph 22. The Supervisory Body shall consider the request for the extension of the due date and shall either grant or refuse such an extension.

24. Activity participants shall submit annual reversal reports in both the pre- and post-crediting monitoring periods starting from the date of the first verification. Annual reversal reports will be subject to verification along with the monitoring report during the crediting period(s) and be subject to random spot verification during the post-crediting monitoring period, the frequency of which will be based on the activity participants conformance record.

25. Annual reversal reports shall cover a calendar year and be submitted to the secretariat each year no later than 31 March for the preceding calendar year.

26. Annual reversal reports shall include:

    (a) Records and logs of the observed events of GHG release that potentially could have led to the reversal along with a summary of the GHG release notifications that were submitted during the period covered by the annual reversal report;

    (b) Information on how the risks of reversal were assessed and addressed, consistent with the risk mitigation measures described in the reversal management plan contained within the registered project design document.

27. The annual reversal report shall state whether any reversals have occurred within the activity boundary in the preceding year and, if any reversals occurred, specify for each reversal event:

    (a) When the reversal event started and whether and when it ended;

    (b) The location of the event in the form of Keyhole Markup Language files or similar formats as one or more polygon(s) or by specifying the coordinates of the geographic boundary using a known coordinate system;

    (c) An estimate of the reversal amount using the upper bound of a 95% confidence interval, including a description of how that estimate was derived;

    (d) A description of measures undertaken to stop the reversals and prevent or minimize similar events occurring in the future.

28. In addition to the annual reversal reports, a reversal event notification shall also be submitted following the observation of an event of GHG release that could potentially lead to a reversal.

29. The activity participants shall notify the secretariat of any observed event involving the release of stored GHGs that could potentially lead to a reversal (hereinafter referred to as “the observed event”) within 30 days of becoming aware of the event. The notification, which may be in digital form, shall include a brief description of the event, including the date or the dates of its occurrence and its location.

30. The activity participants shall submit a subsequent reversal event notification in order to confirm whether the observed event has resulted in an actual reversal. If the observed event is an ongoing event, a further reversal event notification shall be prepared after the event has ended or has been fully contained. Details of all reversal events will be contained within the annual reversal report.

31. Where the secretariat becomes aware of a potential reversal event occurring in an Article 6.4 activity, but where no reversal event notification has been received by the activity participants for the identified event, the secretariat shall send a notice to the activity participants requesting the activity participants to provide a reversal event notification within 30 days.

32. The activity participants may request the secretariat, providing transparent and verifiable justification, to extend the due date for submission of a reversal event notification or annual reversal report, the secretariat shall consider the request for extension and either grant or refuse such an extension.

33. Upon receipt of the annual reversal report that includes a confirmed reversal event, the secretariat shall assess the report and determine whether the report accurately estimates the magnitude of the reversal and correctly characterizes it as intentional or unintentional, and, based on that determination, proceed to take the actions described in section 7 *Remediation of reversals*.

34. Following a confirmed reversal event, the activity participants shall review and update the risk assessment of the activity and revise the risk rating of the activity as necessary. This shall result in increased contribution to the Reversal Risk Buffer Pool Account if there is an increase in the risk rating and require a review of the reversal management plan to reduce the chance of further releases of GHGs.

35. The activity participants shall also review compliance with the requirements and safeguards contained in the Sustainable development tool, taking into account any negative environmental and social impacts caused by the reversal and develop plans to prevent the recurrence of such negative environmental and social impacts.

36. The activity participants shall remain responsible for the implementation of the activity, including carrying out the processes, actions and measures required by this section.

6. Reversal mitigation mechanisms

6.1. Distinguishing between unintentional and intention reversals

37. The risks of reversals may be related to, inter alia:

    (a) Activity finance and management, asset ownership, rising opportunity costs;

    (b) Regulatory uncertainty and social instability, political, governance and legal risks, acts of terrorism, crime, and war;

    (c) Natural disturbances and extreme events such as fires, pests and diseases, and droughts, hurricanes, floods, and landslides, earthquakes, volcanic eruptions, geological faults, and fractures;

    (d) Climate change impacts exacerbating any of the above risks.

38. The distinguishing factor between unintentional or intentional reversals is whether the reversal occurred at the direction or influence of the activity participant, or could have reasonably been considered to be controlled by the activity participant.

39. Using the following sections as a guide, activity participants shall list the types of reversals relevant to their activity within their reversal management and monitoring plan, including categorising them as unintentional or intentional and assigning each listed type a risk rating of low, medium or high.

6.1.1. Unintentional reversals

40. Unintentional reversals are those reversals that are not under the influence or control of the activity participants.

41. Unintentional reversals include natural events such as arising from severe weather, wildfire, drought, pests and diseases or seismic activity.

42. Unintentional reversals also include anthropogenic reversals by actors other than the activity participant such as the illegal harvesting of timber, the conversion of forest to non-forest land by other parties, or the disturbance of GHG reservoirs through terrorism or war.

43. Unintentional reversals will include personal or business insolvency leading to the defaulting of an activity participant on their obligations for remediation actions.

6.1.2. Intentional reversals

44. Intentional reversals are those reversals that are under the influence or control of the activity participant.

45. Intentional reversals include, but are not limited to, management practices such as timber harvesting, agricultural land-use practices or conversion of forest to non-forest land.

46. Intentional reversals refer to a deliberate anthropogenic intervention undertaken at the direction of or through the influence of the activity participant.

6.2. Mitigating unintentional reversals

47. The potential for unintentional reversals can be mitigated by activity participants through either:

    (a) The holding of an approved insurance or comparable guarantee product; or

    (b) Undertaking a risk of reversal assessment and contribution to a centralised risk buffer established by the Supervisory Body.

48. The Supervisory Body shall establish a Reversal Risk Buffer Pool Account in the mechanism registry which serves to remediate unintentional reversals through cancellation of an equivalent amount and authorization status (authorized A6.4ER or Mitigation Contribution Unit) of Buffer A6.4ERs. The Reversal Risk Buffer Pool Account shall aggregate all contributions of Buffer A6.4ERs.

49. The Supervisory Body will consider and implement any potential remedial actions necessary to manage risks to the robustness of the Reversal Risk Buffer Pool Account, including ongoing consideration of measures to remediate reversals and ensure the resilience, sufficiency, and solvency of the Reversal Risk Buffer Pool Account, and other appropriate measures and procedures that may provide suitable alternative means to remediate reversals, including the following:

    (a) Requirements and approval procedures for the use of insurance policies, or comparable guarantee products, or third-party guarantee approved by the Supervisory Body to cover the risk that reversals occur;

    (b) Procedures for establishing, managing, and using a monetary non-permanence reserve enabling remediation of reversals through the direct or potentially centralized purchase and cancellation of A6.4ERs with negligible or no reversal risk.

6.2.1. Reversal risk assessment

50. Activity participants shall conduct a risk assessment, which shall include the reversal management plan, using the reversal risk assessment procedures to identify, assess and mitigate reversal risks, and calculate an overall percentage-based risk rating (hereinafter referred to as risk rating) that accounts for unintentional reversals, taking into account, inter alia, the nature, magnitude, likelihood, and duration of the risks.

51. The percentage-based risk rating calculated in paragraph 50 shall inform:

    (a) The proportion of A6.4ERs to be transferred to the Reversal Risk Buffer Pool Account;

    (b) Identification of A6.4ERs with a negligible risk of reversal which shall be tagged in the mechanism registry.

52. The risk assessment and the related information referred to in paragraphs 50 and 51 shall form part of the project design document submitted with the request for registration.

53. Activity participants shall review and revise the risk assessment at least every five years from the start of the first crediting period and in any of the circumstances referred to in paragraph 12.

54. All activity participants are required to undertake a fit and proper person assessment that will be included within the project design document, to reduce the likelihood of insolvency and defaulting on long-term monitoring, reporting and remediation requirements. This assessment shall be undertaken at each renewal of the crediting period.

55. The fit and proper person assessment will require each activity participant to declare and be assessed as to whether they have ever been subject to fraudulent activities, bankruptcy, legal misconduct, allowing an insolvent company to continue trading, failure to maintain accounting records, failure to settle tax obligations or misusing company funds. Failure to meet any of these criteria will disqualify the mitigation activity from being registered.

56. The reversal risk rating for an A6.4 mitigation activity is calculated as the sum of the risk factors from each of:

    (a) An insolvency risk factor;

    (b) A mitigation activity type risk factor;

    (c) A primary risk factor; and

    (d) A risk factor for the reversal management plan.

57. Each of these factors or factor ranges will be determined by the Supervisory Body and listed within tables[7] as appendices to this standard and may be reviewed and revised as needed.

58. All risk factors shall be calculated as the expected reversal risk due to the relevant reversal factor over a 100-year period. All risk factors shall be based on evidence or labelled as explicit assumptions.

[7] Risk factor tables will include values that are activity-type specific and by sector or sub-sector including for i) forest-based activities, ii) agricultural soil carbon activities, iv) activities that utilise biochar, iv) carbon capture utilisation and storage activities, and v) other activities.

59. The risk factor for the reversal management plan will be determined by the designated operational entity (DOE) as part of validation of the project design document.

60. The assigned risk factor for the reversal management plan will consist of a minimum and maximum range, where a minimum value can be achieved for a superior reversal management plan that will be determined with weighting given to each of:

    (a) The degree to which the activity participant has comprehensively assessed all relevant risk factors;

    (b) The degree to which the activity participant has established resources and processes to minimise the identified risks; and

    (c) Whether the activity is deemed to occur in a high-risk area.

61. The risk factor for reversal management plans shall be re-assessed at each verification.

62. Risk factors assigned at validation, other than those related to the activity participants reversal management plan, will apply for the duration of each crediting period.

63. A guide for DOEs in assessing and quantifying the risk factor for reversal management plans will be developed by the Supervisory Body.

6.2.2. Risk buffer pool operation

64. The Reversal Risk Buffer Pool Account shall be administered and shall only be accessed by the Article 6.4 mechanism registry administrator. The composition of the Reversal Risk Buffer Pool Account, including the share of A6.4ERs by vintage, region and country, type of activity, authorization status, risk rating, and methodology, shall be published annually.

65. Upon issuance of all A6.4ERs, an amount of A6.4ERs proportionate to the issuing activity's risk rating shall be forwarded to the Reversal Risk Buffer Pool Account. A6.4ERs forwarded to the Reversal Risk Buffer Pool Account shall become Buffer A6.4ERs. Buffer A6.4ERs shall only be cancelled and shall not be further transferred.

66. The Supervisory Body shall oversee a regular stress-test of the Reversal Risk Buffer Pool Account to assess the resilience of the pool to a range of reversal risk scenarios and to consider and implement any potential remedial actions necessary to manage risks to the robustness of the Reversal Risk Buffer Pool Account.

67. The stress-test shall assess the resilience of the Reversal Risk Buffer Pool Account to a range of reversal risk scenarios based on, inter alia, the range of risk ratings as well as significant loss event(s), affecting the activities linked to the Reversal Risk Buffer Pool Account. The stress-test shall occur at least every three years and in an event of a significant loss event.

6.3. Mitigating intentional reversals

68. Activity participants should obtain and maintain sufficient coverage under an insurance policy or comparable guarantee products to cover the risk that intentional reversals occur.

69. Intentional reversals other than those allowed for in section 6.3.1 shall be fully remediated by the activity participant.

6.3.1. Long-term contribution crediting limit

70. Forest-based activities that include the recurrent harvesting of timber shall be limited in the total amount of A6.4ERs they can be issued for a mitigation activity based on their calculated long-term accumulation contribution.[8]

71. This quotient is calculated as the sum of the cumulative annual GHG emissions or removals from the baseline scenario minus the sum of the cumulative annual GHG emissions or removals of the mitigation activity divided by the rotational harvesting period for each scenario.

72. The rotational harvesting period is from either the year of forest establishment in the case of reforestation activities or the end of the last harvest event for existing forest activities until the end of the planned rotation or cyclical harvest event.

73. The sum of the cumulative annual emissions or removals is calculated using a single rotation or cutting cycle and includes all annual GHG emissions and removals up to the point that each carbon pool has reached zero carbon stocks.

74. Reversals from harvesting are not considered intentional reversals within this approach as long as replanting occurs. Failure to replant or regenerate the forest following the rotational harvest will be treated as an intentional reversal.

7. Remediation of reversals

75. Reversals of net removals or emissions reductions for which A6.4ERs have been issued shall be fully remediated by taking measures described in this section and any other further relevant guidance from the Supervisory Body. The measures are intended to effectively address non-permanence and maintain incentives for activity participants to proactively mitigate reversal risks and avoid reversals.

7.1. Post reversal actions

76. Upon the receipt of a reversal notification, the secretariat may instruct the mechanism registry administrator to suspend the operations of issuance, transfer, and cancellation of A6.4ERs from the activity participants account resulting from the activity.

77. Following a reversal event and the secretariat's review of an annual reversal report that reflects reversals, the secretariat will immediately notify the mechanism registry administrator of the results of its review and the amount and type of Buffer A6.4ERs required for remediation.

78. The mechanism registry administrator shall immediately notify the activity participants, effect the cancellation of Buffer A6.4ERs equal to the amount of reversals, and shall indicate the purpose of cancellation for remediation of reversals in the mechanism registry.

79. For intentional reversals, for which A6.4ERs have been cancelled from the Reversal Risk Buffer Pool Account, activity participants shall be fully liable for replenishing the Reversal Risk Buffer Pool Account by forwarding the equivalent amount and type (authorized A6.4ER or Mitigation Contribution Unit) of A6.4ERs to the Reversal Risk Buffer Pool Account within a timeframe to be specified by the Supervisory Body.

[8] This calculated limit represents the relative contribution that a forest stand makes to the stable or constant amount of carbon stocks present in the terrestrial biosphere in the long-term due to the mitigation activity assuming the activity is cyclical.

80. The timeframe for remediation of intentional reversals referred to in paragraph 79 shall be 90 days.

81. In the event of a potentially recoverable reversal event, activity participants shall notify the secretariat of whether they intend to either:

    (a) Terminate the mitigation activity and return an equivalent amount of A6.4ERs that have been verified for the activity; or

    (b) Continue the mitigation activity, undertaking any recovery actions required, to return the activity to the previously recognised levels of emission reductions or net removals.

82. Under the circumstances specified in paragraph 81 (b) an activity cannot be issued further A6.4ERs until they have completed a verification showing that the amount of emission reductions or net removals have exceeded the amount verified prior to the event.

83. At the verification of activities specified in paragraph 82, activity participants shall be eligible to receive an amount of A6.4ERs that exceeds the amount previously verified. The amount of A6.4ERs now recovered shall be forwarded to the Reversal Risk Buffer Pool Account.

7.2. Late, incomplete or missing reversal reports

84. If the activity participants fail to submit a monitoring report, annual reversal report or a reversal event notification by the due date determined in accordance with paragraphs 22, 25, 29 and 31, the operations of issuance, transfer, and cancellation of A6.4ERs resulting from the activity for which the monitoring report was due may be suspended, and there may be other consequences.

85. A monitoring report shall be considered late, where it has not been received by the required submission date, as per paragraph 22.

86. An annual reversal report shall be considered late, where it has not been received by the required submission date, as per paragraph 25.

87. A reversal event notification shall be considered late if it has not been received within 30 days of:

    (a) The observed event that could potentially lead to reversals having been detected by the activity participants; or

    (b) The date the secretariat gave notice of a potential reversal event to the activity participants as per paragraph 31.

88. Where any of a reversal event notification requested by the secretariat in accordance with paragraph 31, annual reversal report or monitoring report have not been submitted by the established due date, the secretariat shall give notice to the activity participants of failure to submit the required notification or report and shall request the activity participants to submit the late notification or report within 60 days.

89. Upon receipt of an annual reversal report or reversal event notification, the secretariat shall determine within 30 days whether the report or notification is complete.

90. Where either a reversal event notification or annual reversal report have been submitted but are not complete, the secretariat shall give notice to the activity participants of failure to submit a complete notification or report and shall request the activity participants to

submit a completed notification or report within 60 days of the date of notice from the secretariat.

91. Where a notification, annual reversal report or monitoring report is not received within 60 days of the secretariat's late notice, or where the secretariat has determined that the latest report received is not complete and a complete report was not received within 60 days of the date of notification from the secretariat, the following shall apply:

    (a) The notification or report shall be considered missing;

    (b) The mechanism registry administrator shall suspend the operations of:

        (i) Issuance of A6.4ERs resulting from the Article 6.4 activity to the activity participants;

        (ii) Transfer of A6.4ERs resulting from the Article 6.4 activity from the holding accounts of the activity participants to the accounts of other parties, except for transfers to the reversal risk buffer pool account;

        (iii) Cancellation of A6.4ERs resulting from the Article 6.4 activity from the holding account of the activity participants, other than cancellations for the purpose of remediation of reversals of A6.4ERs from the Article 6.4 activity.

92. Where the activity participant provides the required notifications and/or reports to the satisfaction of the secretariat, the suspensions on the activity participant in relation to issuance, transfer and cancellation of A6.4ERs will be withdrawn.

93. Where there is no resolution to the satisfaction of the secretariat by the activity participant for missing reports, the mechanism registry administrator shall be instructed to cancel the A6.4ERs held by activity participant for the Article 6.4 activity to date.

94. Punitive measures for consistently late or incomplete notifications or reports or for false and misleading information found at verification of notifications and annual reversal reports may be considered by the secretariat, including but not limited to:

    (a) The requirement for more frequent monitoring reports and verification; and/or

    (b) An increased risk rating to apply to future issued A6.4ERs; and/or

    (c) During the post-crediting monitoring period, the surrender A6.4ERs.

7.3. Reversals that fall below baseline

95. This section largely applies to terrestrial carbon pool activities. Where other activity types have undergone an event where the reversal amount is greater than combined verified A6.4ERs plus the emissions associated with the storage and maintenance of GHGs within the GHG reservoir, the activity participant will remediate the difference between the two.

96. Where a reversal event results in an Article 6.4 activity's GHG reservoir storing less carbon than that represented in the determined baseline scenario, the activity participant shall not have the option to voluntarily deregister the Article 6.4 activity but shall undertake site remediation actions to restore the activity to the amount of carbon stock represented by the baseline scenario.

97. The activity participant will provide evidence to the satisfaction of the secretariat that the site remediation action has been completed within 24 months of the end of the reversal event occurring.

98. An activity participant may request the secretariat, providing justification, to extend the site remediation completion date beyond the 24 months period. The secretariat shall consider the request and either grant or refuse such an extension.

99. If an activity participant fails to provide evidence of site remediation by the required date, the operations of issuance and transfer of A6.4ERs to and by the activity participant shall be suspended until such a time as site remediation has been made to the satisfaction of the secretariat.

100. Once site remediation has been confirmed by the secretariate the activity participant will have the option to either terminate the activity or maintain its registration. The activity participant will be eligible to continue to have A6.4ERs issued once the carbon stocks have exceeded the level to which they had previously been recognised from the last verification.

7.4. Termination of activities

101. Where an activity participant makes the request to terminate a registered activity, they shall be required to cancel the amount of A6.4ERs that have been verified from that activity to date.

102. The activity participant may cancel any A6.4ERs remaining within their holding account for this purpose.

103. The amount of A6.4ERs to be cancelled shall be calculated on the basis of diminishing liability.

\- - - - -

Document information

Version	*Date*	*Description*
01.0	15 July 2025	MEP 007, Annex 4. A call for input on this document will be issued following the conclusion of MEP 007 meeting. The input received will be considered by the MEP for the further development of this document at MEP 008. If no input is received, this document will be considered by the SBM at its next meeting.

Decision Class: Regulatory
Document Type: Standard
Business Function: Methodology, Activity Participants
Keywords: A6.4 mechanism, reversals, non-permanence, methodologies, activity participants