

A6.4-SBM014-A06

Standard

Requirements for activities involving removals under the Article 6.4 mechanism

Version 01.0



United Nations
Framework Convention on
Climate Change

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1. Introduction

1.1. Background

1. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), by its decision 3/CMA.3 “Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement”, paragraph 6(c), requested the Supervisory Body of the mechanism established by Article 6, paragraph 4, of the Paris Agreement (Article 6.4 mechanism) to elaborate and further develop, on the basis of the rules, modalities and procedures of the Article 6.4 mechanism (RMP), recommendations on activities involving removals, including appropriate monitoring, reporting, accounting for removals and crediting periods, addressing reversals, avoidance of leakage, and avoidance of other negative environmental and social impacts, in addition to the activities referred to in chapter V of the RMP (Article 6, paragraph 4, activity cycle), to be considered at its fourth session (November 2022).¹
2. In response to this request, the Supervisory Body agreed on the recommendations on activities involving removals under the Article 6.4 mechanism contained in the annex to the addendum of its annual report to the CMA at its fourth session².
3. The CMA, by its decision 7/CMA.4, paragraphs 19 and 20, invited Parties and admitted observer organizations to submit, via the submission portal, by 15 March 2023, their views on activities involving removals and requested the Supervisory Body to consider the views of Parties and observers in elaborating and further developing recommendations on activities involving removals, while taking into account the mandate provided to the Supervisory Body contained in paragraph 24(a)(ix) of the RMP, and considering broader inputs from stakeholders provided in a structured public consultation process.
4. Based on the request of the CMA in its decisions 3/CMA.3 and 7/CMA.4 and considering views of Parties and observers as well as inputs from stakeholders, the Supervisory Body agreed on the updated recommendation to the CMA as contained in the addendum of its annual report to the CMA at its fifth session.³
5. The CMA, at its fifth session, requested the Supervisory Body to continue the relevant work to operationalize the mechanism with a view to elaborating and further developing recommendations for consideration and adoption at CMA 6.

¹ Document FCCC/PA/CMA/2021/10/Add.1 available at <https://unfccc.int/documents/460950>.

² Document FCCC/PA/CMA/2022/6/Add.1 available at <https://unfccc.int/documents/621980>.

³ Document FCCC/PA/CMA/2023/15/Add.1 available at <https://unfccc.int/documents/632332>.

1.2. Objectives

6. The objective of the standard is to set out the requirements for activities involving removals under the Article 6.4 mechanism.

2. Entry into force

7. This version of this standard enters into force on 9 October 2024.

3. Context of removals under this standard

3.1. Context

8. Relevant extracts from the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) Working Group III (WGIII) definitions of activities involving removals include the following:

- (a) Anthropogenic removals as the withdrawal of greenhouse gases (GHGs) from the atmosphere as a result of deliberate human activities. (IPCC AR6 WGIII report, glossary);
- (b) Carbon dioxide removal (CO₂, CDR) as anthropogenic activities removing CO₂ from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products. It includes existing and potential anthropogenic enhancement of biological, geochemical or chemical CO₂ sinks, but excludes natural CO₂ uptake not directly caused by human activities. (IPCC AR-6 WG III report, technical summary).

3.2. Definitions

9. For this document,

- (a) **Removals** are the outcomes of processes by which greenhouse gases are removed from the atmosphere as a result of deliberate human activities and are either destroyed or durably stored through anthropogenic activities;
- (b) **Activities involving removals** meet the requirements referred to in paragraph 10. Any examples in this standard relating to specific activity types or categories are for illustrative purposes only and do not have the force of decisions by the Supervisory Body regarding their use under the Article 6.4 mechanism, unless explicitly so stated;
- (c) **Removals eligible for crediting** are as defined in section *4.4 Accounting for removals*;
- (d) **Reversals** are as defined in section *4.4 Accounting for removals*;
- (e) **Avoidable reversals** are reversals caused by factors over which the activity participants have influence or control;
- (f) **Unavoidable reversals** are reversals caused by factors over which the activity participants have no influence or control.

4. Requirements

10. 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.

4.1. Monitoring

11. Activity participants shall⁴ ensure that monitoring of removals is carried out based on data derived from **measurements, sampling, remote sensing, third party sources and published literature** that are robust and statistically representative, conservative and take appropriate account of the associated uncertainties.
12. Mechanism methodologies shall include provisions that specify the monitoring approaches for all parameters necessary to calculate removals according to the types of removal activities.
13. Mechanism methodologies shall ensure that the net removals are calculated in a conservative manner, taking due account of the associated uncertainties.
14. To allow for flexibility in monitoring, default values may be used in the calculation of removals provided that the use of the default values results in a conservative estimate of net removals, taking due account of the associated uncertainties.
15. Mechanism methodologies shall include provisions for appropriate quality assurance and quality control measures, such as cross-checking of monitoring results with other data sources and published literature, or calibration of measuring equipment at regular intervals.
16. Mechanism methodologies shall include provisions for monitoring and mitigating any risks identified in section 4.6.1 *Reversal risk assessment*, and any risks identified in the Sustainable development tool of the Article 6.4 mechanism, including through the free, prior and informed consent of Indigenous Peoples directly or indirectly affected by the activity.
17. Mechanism methodologies shall include provisions requiring the activity participants to submit a monitoring plan as part of the project design document submitted with the request for registration. The 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 Supervisory Body identifies the need to revise the monitoring plan based on any concerns identified with the monitoring plan and the risk assessment plan;
 - (b) Additional risk factors are identified following a reversal that are not included or are not adequately addressed in the monitoring plan and the risk assessment plan;

⁴ For normative references, refer to section *Normative reference* of the Standard: Application of the requirements of Chapter V.B (Methodologies) for the development and assessment of Article 6.4 mechanism methodologies.

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

4.2. Reporting

- 18. Activity participants shall prepare a monitoring report after implementing the monitoring activities specified in the monitoring plan.
- 19. Monitoring reports shall be based on the monitoring plan contained in the registered activity design document and shall include:
 - (a) A description of the monitoring activities and methods used;
 - (b) The estimated net removals occurring during the monitoring period, together with the associated uncertainty;
 - (c) Data collected, including the remote sensing data, or if the data set is too large, a summary of the data and an indication of how the full data set can be accessed;
 - (d) Records and logs of the observed events of GHG release that potentially could have led to the reversal of removals along with a summary of the GHG release notifications referred to in paragraph 43 that were submitted during the period covered by the monitoring report;
 - (e) Information on how the risks of reversal were assessed and addressed, consistent with the risk mitigation measures described in the registered project design document;
 - (f) Information on how any negative environmental and social impacts have been assessed, mitigated, and managed, consistent with the measures described in the registered project design document.
- 20. Monitoring reports shall be prepared without a gap between the two consecutive monitoring periods, which may be of equal or different duration.
- 21. Mechanism methodologies shall specify the frequency of submission of the monitoring reports, based on the nature, the type and the risk of reversals associated with the activity involving removals identified through the application of necessary standards and tools. The specified frequency shall include the following elements:
 - (a) The maximum permissible interval between the start date of the first crediting period and the submission of the first monitoring report shall be between one and five years;
 - (b) The maximum permissible interval between the submission of two consecutive monitoring reports after the first monitoring report shall be between one and five years.
- 22. The activity participants may choose a shorter time period than the time period specified in paragraph 21.
- 23. In addition to the monitoring reports referred to in paragraph 21, a monitoring report shall also be submitted following the observation of an event of GHG release that could potentially lead to a reversal, as specified in paragraph 47.

24. The 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 accordance with paragraphs 21 to 23. The Supervisory Body shall consider the request for the extension of the due date and shall either grant or refuse such an extension.
25. If the activity participants fail to submit a monitoring report by the due date determined in accordance with paragraphs 21 to 24, the operations of issuance, transfer, and cancellation of A6.4ERs resulting from the activity for which the monitoring report was due shall be suspended, and there may be other consequences as determined by the Supervisory Body in its guidance on and procedures for addressing late, incomplete, or missing monitoring report submissions.

4.3. Post-crediting period monitoring and reporting

26. Monitoring shall continue after the end of the last active crediting period of the activity to assess whether any reversals have occurred, quantify the amount of reversals and confirm the continued storage of the GHGs.
27. No A6.4ERs shall be issued for the net removals occurring during the post-crediting monitoring period.
28. 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 4.6.3 *Remediation of reversals*.

4.4. Accounting for removals

29. Accounting for removals shall be undertaken in a consistent unit of measurement.
30. Removals eligible for crediting shall be determined as follows:
 - (a) The net change in greenhouse gas storage shall be calculated by subtracting the sum of the change in greenhouse gas stored in each applicable greenhouse gas reservoir in the baseline scenario from the sum of the change in greenhouse gas stored in each applicable greenhouse gas reservoir in the activity scenario, calculated from the start date of the period covered by a monitoring report to the end date of the same period;
 - (b) The net change in emissions, not including any greenhouse gas storage losses from the greenhouse gas reservoirs referred to in paragraph (a), shall be calculated by subtracting the total emissions in the baseline scenario from the total emissions in the activity scenario, calculated from the start date of the period covered by a monitoring report to the end date of the same period;
 - (c) If the net change in greenhouse gas storage is positive, then the number of A6.4ERs issued to the activity is calculated by combining the following terms (herein referred to as net removals):
 - (i) The net change in greenhouse gas storage, specified in paragraph (a);

- (ii) Minus (-) the net change in emissions, specified in paragraph (b);
- (iii) Minus (-) any applicable leakage effects;
- (iv) Minus (-) any crediting deficit, specified in paragraph (d);
- (d) If the calculation in paragraph (c) is negative, then no A6.4ERs shall be issued for the period covered by that monitoring report and the negative number shall be recorded as a crediting deficit and included in future A6.4ER issuance calculations;
- (e) If the net change in greenhouse gas storage is negative, then there is a reversal of an equivalent quantity (herein referred to as reversals).

31. Only the positive net changes in GHG storage referred to in paragraph 30 that are directly anthropogenic shall be eligible for crediting.

32. A carbon pool, a GHG reservoir or a greenhouse gas may be optionally excluded from accounting if it is demonstrated, through transparent and verifiable information, that such exclusion results in a more conservative calculation of the net removals.

33. **The calculation referred to in paragraph 30 shall be carried out for each year of the post-crediting monitoring period.**

34. Where an activity involving removals also results in emission reductions, the accounting of removals and emission reductions shall be separated in the monitoring report in accordance with the methodology applicable to the activity.

4.5. Methodologies applicable for a renewed crediting period

35. At the renewal of the crediting period, the activity participants shall apply the latest version of the applicable methodology.

4.6. Addressing reversals

36. The activity participants shall prevent and minimize the risk of reversals. The reversal of removals in respect of which A6.4ERs have been issued shall be fully remediated in accordance with the provisions of section 4.6.3 *Remediation of reversals*.

4.6.1. Reversal risk assessment

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 droughts, hurricanes, floods, and landslides, earthquakes, volcanic eruptions, geological faults, and fractures;
- (d) Climate change impacts exacerbating any of the above risks.

38. Activity participants shall conduct a risk assessment, which shall include a risk mitigation plan, for an activity involving removals, using the reversal risk assessment tool to identify, assess and mitigate reversal risks, and calculate an overall percentage-based risk rating

(hereinafter referred to as risk rating) that accounts for both avoidable and unavoidable reversals, taking into account, *inter alia*, the nature, magnitude, likelihood, and duration of the risks.

39. The percentage-based risk rating calculated in paragraph 38 above 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.
40. The risk assessment and the related information referred to in paragraphs 37 and 38 above shall form part of the project design document submitted with the request for registration.
41. Activity participants shall review and revise the risk assessment every five years from the start of the first crediting period and in any of the circumstances referred to in paragraph 17.
42. The risk assessment and related reporting shall in addition to the above follow any further guidance to be developed on risk rating and any upper limits to the risk rating.

4.6.2. Reversal-related notifications and actions

43. The activity participants shall notify the Supervisory Body 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.
44. Upon the receipt of the notification referred to in paragraph 43, the Supervisory Body shall instruct the mechanism registry administrator to suspend the operations of issuance, transfer, and cancellation of A6.4ERs resulting from the activity involving removals.
45. The activity participants shall prepare a preliminary assessment report, containing information referred to in paragraphs 19(a)-(c) in order to determine whether the observed event has resulted in an actual reversal. If the observed event is an ongoing event, the preliminary assessment report shall be prepared after the event has ended or has been fully contained.
46. If the preliminary assessment report referred to in paragraph 45 concludes, on the basis of transparent and verifiable evidence, that the observed event did not result in an actual reversal, the report shall be verified by the DOE and submitted to the Supervisory Body within 90 days of the end of the observed event. If the Supervisory Body approves the preliminary assessment report, it shall notify the activity participants of such approval and shall instruct the mechanism registry administrator to resume the suspended registry operations referred to in paragraph 44.
47. If the Supervisory Body does not approve the preliminary assessment report, or if the preliminary assessment report concludes that the observed event has resulted in an actual reversal, the activity participants shall prepare a monitoring report in accordance with

paragraph 19 and, after its verification by the DOE, shall submit the monitoring report to the Supervisory Body within 365 days of the end of the observed event.

48. Upon receipt of the monitoring report referred to in paragraph 47, the Supervisory Body shall assess the monitoring report and determine whether the report accurately estimates the magnitude of the reversal and correctly characterizes it as avoidable or unavoidable, and, based on that determination, proceed to take the actions described in section 4.6.3 *Remediation of reversals*.
49. Following the submission of the monitoring report referred to in paragraph 47, 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 the development of plans to prevent further releases of GHGs.
50. The activity participants shall also review the 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 developing plans to prevent the recurrence of such negative environmental and social impacts.
51. The activity participants shall remain responsible for the implementation of the activity, including carrying out the processes, actions and measures required by this section.

4.6.3. Remediation of reversals

52. Reversals of removals 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 reversals and maintain incentives for activity participants to proactively mitigate reversal risks and avoid reversals.

4.6.3.1. Reversal Risk Buffer Pool Account operations and contributions

53. The Supervisory Body shall establish a Reversal Risk Buffer Pool Account in the mechanism registry which serves to remediate avoidable and unavoidable reversals in full 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.
54. 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.
55. Upon issuance of all A6.4ERs, an amount of A6.4ERs proportionate to the issuing activity's risk rating for both avoidable and unavoidable reversals 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.
56. Following a reversal event and the Supervisory Body's review of a full monitoring report that reflects reversals, the Supervisory Body 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.

57. 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.
58. For avoidable 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.
59. Activity participants should obtain and maintain sufficient coverage under an insurance policy or comparable guarantee products to cover the risk that avoidable reversals occur.
60. 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.
61. 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.
62. 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 permanence reserve enabling remediation of reversals through the direct or potentially centralized purchase and cancellation of A6.4ERs with negligible or no reversal risk.

4.6.3.2. Avoidable versus unavoidable reversals

63. Mechanism methodologies shall, in addition to the above, follow further guidance developed by the Supervisory Body on avoidable and unavoidable reversals.

4.7. Avoidance of leakage

64. The activity participants shall address the risk of leakage and account for any residual leakage in calculation of net removals in accordance with the requirements set out in "Standard: Application of the requirements of Chapter V.B (Methodologies) for the development and assessment of Article 6.4 mechanism methodologies". The methodologies and associated tools may include additional requirements for specific types of removal activities.

4.8. Avoidance of other negative environmental and social impacts and respecting human rights and the rights of Indigenous Peoples

65. The activity participants shall apply robust social and environmental safeguards to minimize and, where possible, avoid negative environmental and social impacts of the activity in accordance with the requirements contained in:

- (a) Article 6.4 sustainable development tool⁵;
- (b) Article 6.4 mechanism activity standard⁶;
- (c) Article 6.4 mechanism activity cycle procedure for projects⁷, including the provisions for local and global stakeholder consultation contained therein;
- (d) Appeal and grievance processes under the Article 6.4 mechanism⁸;
- (e) Any other relevant provisions developed by the Supervisory Body in this regard.

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Document information

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⁵ A6.4-SB008-A10 Draft Tool: Article 6.4 sustainable development tool.

⁶ A6.4-STAN-AC-002 Standard: Article 6.4 activity standard for projects.

⁷ A6.4-PROC-AC-002 Procedure: Article 6.4 activity cycle procedure for projects

⁸ A6.4-SB008-A09 Procedure: Appeal and grievance processes under the Article 6.4. mechanism.