

A6.4-SB005-A02

Information note

Guidance and questions for further work on removals

Version 02.0



United Nations
Framework Convention on
Climate Change

Guidance and questions for further work on a structured consultation and to prepare an information note on recommendations for activities involving removals

1. Introduction and mode of work

1.1. Mandate

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”, requested the Supervisory Body of the mechanism established by Article 6, paragraph 4, of the Paris Agreement (the Supervisory Body) to elaborate and further develop, on the basis of the rules, modalities and procedures of the mechanism (RMPs, contained in the annex to the decision) 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 RMPs (Article 6, paragraph 4, activity cycle).
2. The CMA, by decision 7/CMA.4, paragraph 22, requested the Supervisory Body to consider broader inputs from stakeholders provided in a structured public consultation process while developing the recommendations referred to in the paragraph above.

1.2. Mode of work

3. This document contains refined guidance and questions that will support multiple purposes. First, it is for consideration by stakeholders, seeking their inputs on the general and specific issues related to activities involving removals. Second, it provides instruction and direction to the secretariat for compiling the stakeholder inputs on these elements and in this format, which is foreseen to reflect the outline and substantive scope of the draft recommendations on activities involving removals.
4. Specifically, the secretariat will administer a structured consultation on the elements in this document, including the questions and contents referred to therein. The secretariat, under the guidance of the relevant small group, will produce an information note that elaborates approaches to address the rules, modalities, and procedures (RMP) elements identified in this document and do so on the basis of SB005 discussions, prior recommendations¹ and outlines² produced by the SB, and taking into account public input in all submissions provided through SB005 (to the extent possible, through SB006) that are responsive to these elements.
5. The information note outline and contents will align with the contents herein and those footnoted above, to provide clear, objective, and balanced background information and initial proposals for each of the elements.

¹ Activities involving removals under the Article 6.4 mechanism (A6.4-SB003-A03; November 2022)

² Guidance and questions for further work on removals (A6.4-SB004-A02; March 2023)

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6. Through SB006, small group members will give timely guidance to the secretariat and engage in intersessional work as needed to ensure quality assurance, quality control (QA/QC), and progress, anticipating substantive consideration of draft recommendations during and after SB006. The full SB membership will be informally updated and consulted as needed.
 7. *Approach to these contents and to the structured consultation.* Stakeholders providing input to the structured consultation should note the following:
 - (a) In producing this document, the SB has taken account of the interlinkages in these contents and those of other mandated items, which are being developed in parallel. This document focuses on elements that may be particularly relevant to activities involving removals and reversal risks, with the understanding that general requirements³ apply to all mechanism activities, including these, unless otherwise specified. This is consistent with the approach reflected in the SB's prior recommendations and outlines referred to above and does not prejudice the eventual placement of these elements and their relevance to all 6.4 mechanism activities, or to all removals activities, or to a subset of removal activities;
 - (b) Where submitting technical proposals responding to these elements, wherever possible, stakeholders are encouraged to explain how they could be implemented (*inter alia*, relevant elements, procedures, timeframes, functional inter-relationships), as well as to cite sources of information provided and substantiate views expressed.

2. Elements for structured consultation and further work

Cross-cutting questions:

1. Discuss the role of removals activities and this guidance in supporting the aim of balancing emissions with removals through mid-century.

Removals traded under Article 6.4 should not be allowed to impact NDC ambitions for emissions reductions. Thus, removals – land-based or technical – should only be applied towards dedicated removal trajectories which aim to neutralize the hard-to-abate emissions of the total volume of unabated emissions.

A pre-requisite to acquire removals should be first to estimate the amount of hard-to-abate emissions a nation or a company has and in what sectors. Land-based removals should only be applied towards hard-to-abate emissions in the AFOLU sector. For other sectors, permanent technical removals, such as BECCS and DACCS, should be applied as a condition to claim net-zero.

2. What are the roles and functions of the following entities in implementing the operations referred to in this guidance: Activity proponent(s), Article 6.4 mechanism Supervisory Body (6.4SB), 6.4 mechanism registry administrator, Host Party, stakeholders?

No comment.

3. How are these elements understood, in particular, any interrelationships in their functions, timeframes, and implementation?
 - (a) Monitoring period
 - (b) Crediting period

(c) Timeframe for addressing reversals

The meaning and approach has to be differentiated depending on what type of removal is considered. A land-based removal credit represents a non-permanent mitigation activity. The non-permanence of such removals is inherent in the fact that the carbon stays above the geological layer and that the ownership of the land can change hands over short time-frames. For land-based credits, the end of the Monitoring period represents the opening of an entirely new chapter for the concerned land area. No third party takes responsibility for continued monitoring and anything can happen. A nature-based removal must therefore always be considered reversed at the end of the Monitoring period. The Monitoring period for land-based approaches should thus correspond to the time-frame the project is committed to keep the land as a removal. In effect, non-permanent removals are postponed emissions.

The implication of this is that at the end of the Monitoring period, the acquirer of land-based credits must prolong the credits or acquire new credits if it wishes to maintain the climate position achieved due to the original purchase of the land-based credit. Again, it follows that for land-based credits, the time-frame for addressing reversals is during the Monitoring period (as they should be considered released after that period).

For permanent removals (BECCS/DACCS) as well as generically for CCS, the permanence is confirmed by the scientific consensus and the fact that the CO₂ is sent permanently from the biosphere/atmosphere to the geosphere. During the Monitoring period, reversals should be monitored and addressed according the applicable jurisdiction as well as counted as an emission by the storage company.

At the end of the Monitoring period, there should be a transfer of responsibility to the host nation. If there is a reversal after the transfer of responsibility, the host nation should count the reversal as an emission and take measures according the applicable jurisdiction.

Applying this approach within the EU, as an example, would rely on the ETS and CCS directives which prescribe that any CO₂ emitted from a storage site should be compensated by the purchase of an EU ETS EUA (Annex I activity). This is a logical approach for CO₂ stored in the geosphere, which represents a potential point source. Since the scientific consensus is that geologically stored CO₂, including removals based on BECCS or DACCS, are in effect permanent, and since they upon insertion into the bedrock, as it were, exit the system boundary of the biosphere/atmosphere and enter the geosphere, it follows that any reversal of CO₂ from the geological storage should be addressed within the already established ETS framework.

Even under pessimistic assumptions, a recent study showed that more than 99.9% of the CO₂ injected for geological storage will remain after a total of 125 years including well closure after 25 years of injection
(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1134212/ukcs-co2-containment-certainty-report.pdf).

Tying up removal certificates *ex ante* in a buffer pool is simply not a rational reflection of the risk of reversal and would only be an additional financial burden for the climate to carry.

From a methodology approach, the focus should rather be on securing that credits for geological storage are only issued in jurisdictions with state-of-the-art legislation for licensing, monitoring and liabilities, such as the EU set-up with the ETS and CCS directives.

Why transfer of responsibility does not work for land-based credits

With permanent removals, the intention is to put the physical dimension of the project to rest, to permanently lock away the CO₂. For land-based projects, the end of a project does not represent an end to the physical usage of the biomass sink. To the contrary, its existing or future owners could be expected to capitalize on the forest's continued economic value.

The difference in permanence is in itself another reason why the transfer of responsibility to the host nation of land-based projects does not make sense on a principal level. Since land-based project removals are destined to sooner or later become emissions sources, it would be unreasonable for the state to carry that expected cost, compared with the unexpected cost in the unlikely event of a reversal in case of permanent removals.

Transfer of responsibility to the host nation of land-based projects would also be to give up the idea of monitoring and blur the line between the system and project view, since the state cannot at reasonable cost monitor all the land-based project areas. This is not the case with permanent removals, where the state can continue to monitor the individual storage complexes.

Finally, it would in practice constitute a way to introduce a version of Ton-Years, but financed by the tax payer rather than credit buyers.

³ Including Article 6.4 mechanism activity cycle procedure for projects (A6.4-SB005-AA-A03); Requirements for the development and assessment of mechanism methodologies (A6.4-SB005-AA- A07); Development, revision and clarification of baseline and monitoring methodologies and methodological tools (A6.4-SB005-AA-A05); Development, revision, clarification and update of standardized baseline development (A6.4-SB005-AA-A06); and Developing a sustainable development tool for the mechanism (A6.4-SB004-AA-A06).

Questions on specific elements

A. Definitions:

Discuss the role and potential elements of definitions for this guidance, including “Removals”.

Removals are best understood as a measure to lower the concentration of CO₂ in the atmosphere. A permanent removal is a measure where, based on scientific consensus, the likelihood of reversal is very close to zero if industry best-practices are applied.

A non-permanent removal is a postponed emission.

B. Monitoring and Reporting:

1. What timeframes and related procedures should be specified for these elements referred to in A6.4-SB003-A03?
 - a. For initial monitoring and submission of monitoring reports (paragraph 3.2.14);
 - (a) For subsequent monitoring and submission of monitoring reports (paragraph 3.2.14);
 - (b) For monitoring and submission of monitoring reports following an observed event that could potentially lead to a reversal (paragraph 3.2.14);
 - (c) For monitoring and reporting, including any simplified reporting, conducted after the end of the last crediting period of activities involving removals (paragraphs 3.1.10 and 3.2.13).
2. Discuss any further considerations to be given to the core elements for monitoring and reporting in A6.4-SB003-A03; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

As a generic answer, monitoring must be continuous during the monitoring period. Some form of monitoring mechanism is required which is able to identify removals on short notice. All monitoring data for reversals should be made public in near real-time by all projects.

C. Accounting for removals:

1. Discuss any further considerations to be given to the core elements for accounting for removals in A6.4-SB003-A03; where possible, identifying their applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

Please refer to the answer to cross-cutting question 2.1 for the role of different forms of removals for target setting and for NDC.

Furthermore, the CMA should clarify that for Art 6 projects that are in line with NDCs, nations should welcome VCM purchases by corporations and their positive impact on the achievement of their NDCs, keeping reduction trajectories and reduction projects separate from removal trajectories and removal projects. In other words, in those cases, where co-funding has taken place, both the host nation and the co-funding corporations can legitimately and with maintained integrity co-claim a mitigation outcome towards their respective climate objectives which are kept track of in two separate accounting systems. Of course, no two nations or no two corporations must ever account the same outcome. This is how emission reductions already are treated by nations, irrespective of

whether they are based on compliance measures, voluntary measures or supported by government aid schemes.

Of course, for cross-border corporate compliance purchases, a Corresponding Adjustment between nations must always take place to avoid double counting between nations.

2. For activities involving removals that also result in emissions reductions, what are the relevant considerations, elements, and interactions between this guidance and the requirements for the development and assessment of mechanism methodologies, including.

An outcome is either a removal or a reduction. Removals are always physical; any possible counterfactual emission reduction associated with a removal shall not result in any type of credit or certificate.

D. Crediting period:

Discuss any further considerations to be given to the core elements for crediting periods in A6.4-SB003-A03; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

Ideally, credit periods depend on the pay-back period of a project (a credit period is here understood to mean for how long a project can issue credits based on the certification of the project). When the FID is taken, the whole project life-cycle is assessed in the NPV calculation. A technical project typically has an NPV assessment of 25 years, and the credit period for technical projects should be extended to 25 years.

E. Addressing Reversals:

In order to minimize the risk of non-permanence of removals over multiple NDC implementation periods, and, where reversals occur, ensure that these are addressed in full.

1. Discuss the applicability and implementation aspects of these approaches, including as stand-alone measures or in combination, and any interactions with other elements of this guidance:
 - a. Non-permanence risk buffer (pooled or activity-specific);
 - b. Insurance / guarantees for replacement of ERs where reversals occur (commercial, sovereign, other);
 - c. Other measures for addressing reversals in full.

Please refer to the answer to cross-cutting question 3. A pool or insurance could be an appropriate instrument for the Monitoring period for non-permanent removals. What happens after the Monitoring period will be different for land-based and technology-based removal credits.

2. Discuss the appropriate timeframe(s) for applying the approaches, including any interactions with other elements of this guidance and the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

Unsure of the meaning of the question.

3. What risks of non-permanence need to be minimized, and how can these risks identified, assessed, and minimized?

Within the context of trade in project based mitigation outcomes, land-based removals are non-permanent by default. The SB should apply different conceptual frameworks to land-based and geological storage.

4. In respect of risk assessment, how should the following elements be considered in the implementation of the approaches in (a) and any other relevant elements in this guidance?
 - a. Level of non-permanence risk assessment, e.g., activity- or mechanism-level
 - b. Timing for risk assessment(s)
 - c. Entity(ies) responsible for risk assessment(s), e.g., activity proponent, 6.4SB, actuary

Please refer to the answer to cross-cutting question 3.

5. How should the following elements be considered in the implementation of the approaches in (1) above and any other relevant elements in this guidance?
 - a. Methods for determining the level of buffer pool contributions
 - b. Composition of buffer pool, including in relation to ER vintages and contributing activity types or categories
 - c. Intentional and unintentional reversals
 - d. Treatment of uncanceled buffer ERs, including after the end of the last crediting period of the contributing activity
 - e. Specifications for ERs that cancelled for compensate for reversals, including in relation to ER vintages and contributing activity types or categories
 - f. Replenishment in case buffer cancellations exceed contributions; slide language

on re-raising baseline level of storage before new crediting

Buffer pool allocations should be based on scientific assessment and empirical evidence of reversals for different forms of sinks. Buffer pool allocations should not be introduced into the regulatory framework surrounding permanent negative emissions and geological storages.

For geological storage, if there are obligations under law to address reversal emissions, then there should be no need for further measures. After the Monitoring period, only host nation obligations and reporting and accounting should apply.

The notion of intentional reversals is immaterial for geological storage. Significant intentional reversal would result in loss of license to operate under credible jurisdictions and methodologies, which is a strong enough incentive not to make a distinction.

6. In the event of a reversal, what interactions and implementation aspects should be considered in respect of other elements of the activity cycle?

Unsure of the meaning of the question.

F. Avoidance of Leakage:

Discuss any further considerations to be given to the core elements for leakage avoidance in A6.4-SB003-A03; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

Here leakage is interpreted as indirect emissions outside the project boundary. The notion of Leakage is counter-factual and very uncertain and difficult to ascertain. Modern methodologies should as far as possible avoid counterfactual assessments and instead base themselves on factual outcomes.

Since all Leakage will be appearing in nations' emissions reporting, it is suggested that a new approach to Leakage is applied.

The approach is to:

1. Account for Land Use Change and Indirect Land Use Change Leakage beyond the baseline of the project,
2. Not to account for other leakage if it can be established that the territory(-ies) where the leakage is likely to occur has/have a reduction trajectory for the emissions, for instance in relation to possible leakage due to electrical usage. Strictly speaking, a binding reduction trajectory sets the net total amount of CO₂ emissions allowed with or without the project, and it could in this case be argued that the notion of Leakage loses its meaning.

G. Avoidance of other negative environmental, social impacts

Discuss considerations to be given to core elements for avoidance of other negative environmental, social impacts; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

All projects should be under an obligation of “Do no significant harm.” Biomass projects such as BECCS should be under an obligation to be based on sustainable biomass supply. The EU Renewable Energy Directive Article 29 as revised by RED III can be applied as a general guidance.

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Document information

Version	Date	Description
02.0	3 June 2023	SB005 Annex 2 This version includes additional guidance and questions for further work on a structured consultation.
01.0	10 March 2023	SB004 Annex 2 Initial publication.

Decision Class: Regulatory

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Related documents:

17 May 2023	A6.4-SB005-AA-A09 - Information note: Removal activities under the Article 6.4 mechanism (version 01.0) A6.4-SB005-AA-A10 - Information note: Summary of the views submitted by Parties and observers on activities involving removals (version 01.0)
10 March 2023	A6.4-SB004-A02 - Information note: Guidance and questions for further work on removals (v.01.0)
28 February 2023	A6.4-SB004-AA-A04 - <i>Information note</i> : Removal activities under the Article 6.4 mechanism (version 3.0)
07 November 2022	A6.4-SB003-A03 - <i>Recommendation</i> : Activities involving removals under the Article 6.4 mechanism (version 1.0)
25 October 2022	A6.4-SB003-AA-A03 - <i>Draft recommendation</i> : Removal activities under the Article 6.4 mechanism (version 2.0) A6.4-SB003-AA-A04 - <i>Information note</i> : Removal activities under the Article 6.4 mechanism (version 2.0)

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15 September 2022	A6.4-SB002-AA-A05 - <i>Draft recommendation</i> : Requirements for the development and assessment of mechanism methodologies pertaining to activities involving removals (version 1.0)
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	A6.4-SB002-AA-A06 - <i>Information note</i> : Removal activities under the Article 6.4 mechanism (version 1.0)
08 July 2022	A6.4-SB001-AA-A05 - <i>Concept note</i> : Removal activities under the Article 6.4 Mechanism (version 1.0)