ARTICLE 6.4 MECHANISM

A6.4-MEP005-A02

Draft Standard

Addressing leakage in mechanism methodologies

Version 02.0

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 for a leakage tool.

2. At its first meeting (MEP 001), the MEP initiated its work on the above topic and agreed to recommend to the Supervisory Body the development of a standard on leakage as mentioned in table 2 under paragraph 10 of the meeting report of MEP 001. At its eleventh meeting (SBM 011), the Supervisory Body approved this recommendation.

3. At its second meeting, the MEP considered the draft leakage standard and continued the work on this standard. In particular, the MEP worked on the identification procedure for leakage, the identification of types of leakages as well as approaches for addressing leakage.

4. At its third meeting, the MEP further elaborated on the definition of concepts pertaining to leakage, general principles as well as the procedure to address leakage.

5. At its fourteenth meeting (SBM 014), the Supervisory Body adopted the “Standard: Application of the requirements of Chapter V.B (Methodologies) for the development and assessment of Article 6.4 mechanism methodologies” (hereinafter referred to as “Methodologies 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 leakage on the basis of the adopted Methodologies Standard. Subsequently, the CMA took note of the standard adopted by the Supervisory Body.

6. At its fourth meeting, the MEP finalized a draft version of the “Standard: Addressing leakage in mechanism methodologies” and agreed to seek public inputs on the standard. Subsequently, a call for public inputs[1] was launched for the draft standard, which was taken into account in formulating this iteration of the draft standard.

2. Purpose

7. The purpose of the draft “Standard: Addressing leakage in mechanism methodologies” is to address the mandate provided by the SBM 011 to develop recommendations on the requirements on how to address leakage in mechanism methodologies.

3. Key issues and proposed solutions

8. This proposed draft standard sets out requirements for mechanism methodologies to first identify potential sources of leakage, then seek to avoid or, where this is not possible,

[1] https://unfccc.int/process-and-meetings/the-paris-agreement/paris-agreement-crediting-mechanism/a64-calls-for-input/call-for-input-2025-addressing-leakage-in-mechanism-methodologies.

minimize any negative leakage and subsequently calculate and subtract any remaining leakage of an Article 6.4 activity.

9. The draft standard applies to mechanism methodologies related to both emission reductions and net removals.

10. In elaborating the draft standard, the MEP agreed to initially focus on the requirements for methodologies developed for project-level activities. Paragraph 85 (c) through (e) and paragraph 87 of the Methodologies Standard require consideration of leakage in relation to higher-level activities, such as through standardized baselines; nesting of project-level activities within higher-level crediting programs; and sectoral, subnational, or national crediting programs. These provisions will be addressed in a future version of this draft standard. The same applies to paragraph 83 (f), which relates to consideration of relevant information from the host Party's designated national authorities on leakage. Moreover, some other elements of the Methodologies Standard are addressed in related standards or concept notes under development by the MEP (e.g. general quantification issues are addressed in the Appendix to the draft standard for setting the baseline in mechanism methodologies).

11. Furthermore, the draft standard includes the following:

(a) The leakage is defined as changes in anthropogenic emissions and/or removals of greenhouse gases that occur outside the activity boundary and that are attributable to the activity, including those resulting from changes in market demand or supply for associated outputs. Moreover, the standard defines the activity boundary and clarifies that the activity boundary may also include greenhouse gas sources, sinks or reservoirs that are otherwise affected by the activity, such as emissions from an electricity system. A key rationale for choosing this approach is that for several activity types, such as renewable electricity generation, the mitigation benefits primarily arise from changes in upstream emissions (e.g. the electricity grid). In such cases, the relevant electricity grid (located upstream of the activity) shall be included within the activity boundary and not treated as leakage;

(b) The leakage effects could lead to increases or decreases in emissions outside the activity boundary and/or to increases or decreases in removals. The MEP noted that the terms "positive" or "negative" leakage are used by several carbon crediting programs, such as the Clean Development Mechanism (CDM), though what is defined as "positive" and what is "negative" is not consistent among carbon crediting programmes. The MEP proposes to adopt these terms as they are commonly used and defines "positive" leakage as where the implementation of an Article 6.4 activity results in a decrease in emissions and/or an increase in removals and "negative" leakage as where the implementation of an Article 6.4 activity results in an increase in emissions and/or a decrease in removals;

(c) The MEP noted that the rules modalities and procedures and the Methodologies Standard require the avoidance and minimization of leakage. The MEP clarified in the standard that the avoidance or minimization of leakage should only apply to negative leakage, given that any positive leakage would not do any harm. The MEP further notes that avoidance of leakage is not possible in all instances and therefore clarified in the standard that mechanism methodologies shall seek to avoid any negative leakage, and where this is not possible, minimize, calculate and subtract any remaining negative leakage;

(d) Leakage effects are not necessarily limited to national boundaries. The MEP recommends that international leakage (i.e., leakage beyond national boundaries) shall be considered where this occurs. The main rationale is that limiting the consideration of leakage to certain boundaries could lead to the overestimation of emission reductions or net removals. This recommendation is consistent with the practice in the CDM where international leakage is accounted for in several methodologies. The MEP noted that the Supervisory Body also requested the MEP to conduct work on transboundary effects of Article 6.4 activities;

(e) In elaborating this standard, the MEP provided examples of leakage. The examples are purely for the purpose of illustration and do not prejudge the eligibility of such activities. The examples have been put in footnotes to clearly distinguish them from the methodological requirements.

4. Impacts

12. The proposed draft “Standard: Addressing leakage in mechanism methodologies” will provide clarity on the requirements that mechanism methodologies shall fulfil with respect to addressing leakage.

5. Subsequent work and timelines

13. The MEP will prepare a proposed draft revision to this standard in the future to operationalize paragraph 83 (f), paragraphs 85 (c) through (e), and paragraph 87 of the Methodologies Standard, as mentioned in paragraph 10 above.

6. Recommendations to the Supervisory Body

14. The MEP recommends the Supervisory Body to adopt the proposed draft “Standard: Addressing leakage in mechanism methodologies”.

TABLE OF CONTENTS **Page**

1. Introduction

1.1. Scope

1. This standard sets out requirements for mechanism methodologies to first identify potential sources of leakage, then seek to avoid or, where this is not possible, minimize any negative leakage, and subsequently calculate and subtract any remaining negative leakage of an Article 6.4 activity.

1.2. Entry into force

2. The date of entry into force is the date of the publication of the SBM # meeting report on DD Month YYYY.

2. Definitions

3. The following definitions shall apply:

(a) **Activity participant:** A public or private entity that participates in an Article 6.4 activity;

(b) **Activity boundary:** The boundary that encompasses the greenhouse gas (GHG) sources, sinks and reservoirs that are controlled or related. The activity boundary may also include GHG sources, sinks or reservoirs that are otherwise affected by the activity;[2]

(c) **Controlled sources, sinks and reservoirs:** GHG sources, sinks and reservoirs that are under the direction and influence of the activity participant through financial, policy, management or other instruments;

(d) **Leakage:** Changes in anthropogenic emissions and/or removals of GHGs that occur outside the activity boundary and that are attributable to the activity, including those resulting from changes in market demand or supply for associated outputs. Leakage may involve the following sub-forms:

(i) **Positive leakage:** Leakage where the implementation of an Article 6.4 activity results in a decrease in emissions and/or an increase in removals;

(ii) **Negative leakage:** Leakage where the implementation of an Article 6.4 activity results in an increase in emissions and/or a decrease in removals.

(e) **Level of service**: The quality, reliability and scale of an output provided by an Article 6.4 activity and/or in the baseline scenario;

(f) **Output**: Each good or service provided by the Article 6.4 activity and/or in the baseline scenario[3], as specified in the mechanism methodology;

---

[2] For example, for activities that provide renewable electricity to the grid and thereby affect electricity generation by power plants in the grid, the emissions from power plants in the grid may be treated as a baseline emission source within the activity boundary. Furthermore, note that in the case of activities implemented at project-scale, the activity boundary is equivalent to the project boundary.

[3] For example, electricity, energy for cooking, or municipal waste management.

(g) **Related sources, sinks and reservoirs**: GHG sources, sinks and reservoirs that have material or energy flows into, out of, or within the Article 6.4 activity.

3. Applicability

4. This standard applies to mechanism methodologies related to both emission reductions and net removals.

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

6. The standard applies to mechanism methodologies and methodological tools. For simplicity, only the term mechanism methodology is used in this standard.

4. General requirements

7. Mechanism methodologies shall include all leakage sources in the calculation of emission reductions or net removals, unless their exclusion is conservative (e.g., the exclusion of a source of positive leakage). Where the proponent of a mechanism methodology can demonstrate that, for the range of Article 6.4 activities that may apply the methodology, certain positive leakage sources are consistently larger than certain negative leakage sources, then these leakage sources may be omitted in the calculation of emission reductions and/or net removals.

8. The proponent of mechanism methodologies shall assess whether the implementation of Article 6.4 activities covered by the methodology could lead to any changes in the type(s) of output or level(s) of service provided as compared to the baseline scenario. When the type(s) of output or the level(s) of service provided in the Article 6.4 activity scenario change compared to the baseline scenario, this can result in leakage[4]. Such leakage shall either be:

   (a) Prevented by designing the Article 6.4 activity in such a way that the same type(s) of output or level(s) of service is provided in the Article 6.4 activity scenario as in the baseline scenario (e.g., by providing respective applicability conditions or expanding the geographical activity boundary); or

   (b) Addressed by quantifying and subtracting any negative leakage resulting from the change in the type(s) of output or level(s) of service.

9. The relevant geographical area for consideration of leakage may not be limited to national boundaries and shall include international leakage (i.e., leakage beyond national boundaries) where this occurs.

10. If the sum of all sources of leakage results in a net decrease in GHG emissions or increase in GHG removals, then the resulting leakage shall be set equal to zero in the quantification of the emission reductions or net removals.

[4] For example, a renewable power plant constructed on agricultural land could lead to a change in the type or level(s) of agricultural production.

5. Procedures to address leakage

11. Mechanism methodologies shall contain provisions to first identify potential sources of leakage, then seek to avoid or, where this is not possible, to minimize any negative leakage and subsequently calculate and subtract any remaining negative leakage as per the specifications below.

5.1. Identification of leakage

12. The proponent of a mechanism methodology shall identify all potential sources of leakage for the type of mitigation activities covered by the methodology. This shall include, but not be limited to, the following sources of leakage:

(a) Baseline equipment transfer: This source of leakage is relevant where:

(i) Equipment used within the activity boundary prior to the implementation of the Article 6.4 activity would continue to be used in the baseline scenario and is being replaced under the Article 6.4 activity scenario; and

(ii) The replaced equipment is functional, has a value for third parties and could continue to be used outside of the activity boundary where it may potentially displace less GHG intensive processes[5].

(b) Competition for resource use[6]: This source of leakage is relevant where:

(i) The Article 6.4 activity increases, relative to the baseline scenario, the consumption of resources that have competing uses;

(ii) The availability of the resources is limited within the relevant geographical area; and

(iii) The potential diversion of the resources from other uses to the Article 6.4 activity could lead to an increase in GHG gas emissions or decrease of removals outside the activity boundary.

(c) Diversion of existing production processes or outputs: This source of leakage is relevant where[7]:

(i) The type(s) of output or level(s) of services provided under the Article 6.4 activity changes compared to the baseline scenario; and

---

[5] For example, this may occur as a result of replacing a fossil-fuel boiler with a biomass boiler where the fossil-fuel boiler is re-used in another location.

[6] For example, this may happen where biomass is used to replace fossil fuel but the resulting scarcity in biomass leads current biomass users to switch to fossil-fuels. Another example is the use of agricultural by-products as fuels or feedstocks, where the diversion of biomass from application on fields to alternative uses may result in an increased use of synthetic fertilizer.

[7] For example, this may be applicable to activities that involve, shifting pre-project activities, such as grazing or agriculture, outside of the activity boundary, as a result of changes in management or use of land.

(ii) The change could lead to an increase in emissions and/or a decrease in removals outside the activity boundary[8].

(d) Increases in release of GHGs from the environment as a result of implementing the Article 6.4 activity.[9]

13. The requirement in paragraph 12(b) above may not apply to fossil fuels or mineral products considering that their availability can be expanded through increased extraction in case of increased demand.

5.2. Avoidance or minimisation of leakage

14. Mechanism methodologies shall include provisions to seek to avoid or, where this is not possible, to minimize all identified sources of negative leakage by applying, inter alia, the approaches below as appropriate for the given sector and the type of mitigation activities covered by the methodology. Avoiding or minimizing leakage may be done, for example, by limiting the scope of applicability conditions, as follows:

(a) If baseline equipment transfer is identified as a potential source of leakage, mechanism methodologies can include applicability conditions that require the destruction, decommission or disposal of the baseline equipment and the provision of relevant evidence[10];

(b) If competition for resource use is identified as a potential source of leakage, mechanism methodologies can include applicability conditions to demonstrate abundance of such resource and that such resource would not be used in the baseline scenario. Abundance demonstrations shall be based on requirements provided for in methodologies and shall account for the economic and environmental impacts of diverting resources from prior use cases, including with respect to the sustainable use of natural or human-managed ecosystems;[11]

(c) If changes in the type of output(s) or level(s) of service are identified as a potential source of leakage, mechanism methodologies can include applicability conditions requiring the demonstration of equivalence of output(s) and level(s) of service.[12]

5.3. Calculation and subtraction of leakage

15. If negative leakage cannot be avoided through measures such as those indicated in the preceding section, mechanism methodologies shall include procedures to calculate the remaining net leakage (i.e., the balance of any positive and negative leakage) and, should

---

8 For example, this may occur where agricultural production is reduced because of the activity and new production is established on land that was previously forested.

9 For example, this may consist in increased carbon dioxide emissions from soils in a wetland if the water level is lowered due to the implementation of an Article 6.4 activity due to an activity on a neighboring land.

10 For example, methodologies can establish applicability conditions to require baseline refrigeration equipment to undergo refrigerant recovery and destruction as well as scrapping of the equipment.

11 For example, methodologies can establish applicability conditions to prevent soil depletion by requiring that a minimum amount of biomass must be retained per unit of land.

12 For example, if reforestation Article 6.4 activities could result in diversion of pre-project activities such as agriculture, mechanism methodologies can include conditions which limit applicability to activities on degraded lands which do not result in such diversion.

the net leakage be negative, subtract it in the quantification of emission reductions or net removals.

16. Where baseline equipment transfer cannot be avoided by measures such as destruction, decommissioning or disposal of the baseline equipment, mechanism methodologies shall provide approaches to calculate any resulting negative leakage from continued use of the equipment. Such approaches may need to consider: the remaining lifetime of the equipment, the possible usage scenarios and the usage rate of the equipment (e.g., how many hours within a year the equipment is used), the GHG emissions intensity of the transferred equipment and the type and GHG intensity of the equipment that is being replaced by the transferred equipment.

17. Where the use of competing resources cannot be avoided through demonstration of abundance and non-use in the baseline scenario, mechanism methodologies shall include procedures to account for any resulting negative leakage. Such procedures may include consideration of the quantity of resources used under the Article 6.4 activity that are subject to competing uses, the likely alternatives to those resources, and the associated emissions or removals resulting from the use of those alternatives.

18. Where the type(s) of output and/or level(s) of service in the Article 6.4 activity scenario differ from those in the baseline scenario (e.g., due to diversion of production processes or outputs), mechanism methodologies shall specify the approach to quantify and subtract any resulting negative leakage in the calculation of emission reductions and/or net removals. The approach shall ensure that leakage arising from changes in the type(s) of output and/or level(s) of service is appropriately accounted for.[13]

19. Article 6.4 activities are ineligible to earn A6.4 emission reductions where the implementation of the Article 6.4 activity leads to a decrease in the type(s) of output and/or level(s) of service relative to the baseline scenario, unless the mechanism methodology fully accounts for any negative leakage effects resulting from the decrease in the type(s) of output and/or level(s) of service in the calculation of emission reductions and/or net removals and the proponent of the mechanism methodology provides appropriate justifications for the full consideration.

- - - - -

[13] For example, improved forest management activities, such as extending the rotation age of trees, may reduce the level of timber harvesting. This could result in different forms of leakage, such as increased harvesting in other locations or the substitution of forest products by other GHG intensive materials (e.g., replacing wood by steel and cement in the building sector). Another example is a reforestation activity that could result in diversion of pre-project activities, such as agriculture. This could result in indirect land-use change in other locations outside the activity boundary that are needed to provide an equivalent production of agricultural commodities.

Document information

Version	*Date*	*Description*
02.0	14 April 2025	MEP 005, Annex 2. To be considered by the A6.4 Supervisory Body at SBM 016. This version takes into account the inputs received in response to the call for public input on this draft document.
01.0	3 February 2025	MEP 004, Annex 3. A call for input on document A6.4-MEP004-A03 will be open from 4 to 24 February 2025. The feedback received during this period will be considered for further development of the draft standard at MEP 005.

Decision Class: Regulatory
Document Type: Standard
Business Function: Methodology
Keywords: A6.4 mechanism, leakage, methodologies