ARTICLE 6.4 MECHANISM

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Standard

Addressing leakage in mechanism methodologies

Version 01.0

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Framework Convention on
Climate Change

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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. This document enters into force on 16 May 2025.

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;[1]

   (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[2], as specified in the mechanism methodology;

[1] 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.

[2] 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[3]. 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.

[3] 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[4];

    (b) Competition for resource use[5]: 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[6]:

        (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

[4] 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.

[5] 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.

[6] 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[7];

(d) Increases in release of GHGs from the environment as a result of implementing the Article 6.4 activity.[8]

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[9];

(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;[10]

(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.[11]

15. As per paragraph 87 of the Methodologies Standard[12], if the proposed activity falls under the scope of Article 5, paragraph 2, of the Paris Agreement (i.e., REDD+ activities), mechanism methodologies shall further require demonstration that the activity is included

[7] 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.

[8] 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.

[9] 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.

[10] 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.

[11] 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.

[12] See https://unfccc.int/sites/default/files/resource/A6.4-STAN-METH-001.pdf.

in all the elements required of the host Party as per decision 1/CP.16, paragraph 71. This demonstration shall be done using official documentation from the host country communicated to the UNFCCC secretariat pursuant to relevant guidance and decisions, as follows:

(a) The proposed A6.4 activity is included in the host country's national strategy or action plan referred to in decision 1/CP.16, para 71(a);

(b) Inclusion of the geographical activity boundary in the host country's national forest reference emission level and/or forest reference level referred to in decision 1/CP.16, para 71(b);

(c) Inclusion of the geographical activity boundary in the national forest monitoring system referred to in decision 1/CP.16, para 71(c);

(d) The proposed A6.4 activity is included in and reports to the system for providing information on safeguards referred to in 1/CP.16, para 71(d) (without prejudice to the use of the SD Tool).

16. If the proposed A6.4 activity is not yet included in all the elements required of the host Party as per decision 1/CP.16, paragraph 71, mechanism methodologies may require, on an interim basis, a letter from the host country's national entity or focal point referred to in decision 2/CP.10 (i.e., the REDD+ focal point) indicating when the proposed A6.4 activity will be included in all the elements above. The inclusion shall occur no later than Verification and be verified by the DOE.

5.3. Calculation and subtraction of leakage

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

18. 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.

19. 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.

20. 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]

21. 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.

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[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.