

A6.4-MEP012-A01

Draft Methodological tool

Analysis of lock-in risk

Version 02.0

DRAFT



COVER NOTE

1. Procedural background

1. Paragraph 38 of the “Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement” (RMPs) states that each mechanism methodology shall take a conservative approach that avoids locking in levels of emissions.
2. Paragraph 76 of the “Standard: Application of the requirements of Chapter V.B. (Methodologies) for the development and assessment of Article 6.4 mechanism methodologies” (A6.4-STAN-METH-001) (hereinafter the “Methodologies Standard”) states that avoidance of lock-in shall require demonstration that the proposed activity avoids locking in levels of emissions, technologies or carbon-intensive practices incompatible with paragraph 33 of the RMPs, including through an assessment of the scale, lifetime, and emissions intensity of the activity.¹
3. Section 6.2 of the “Standard: Demonstration of additionality in mechanism methodologies” (A6.4-STAN-METH-003) (hereinafter the “Additionality Standard”) approved at the fifteenth meeting of the Supervisory Body of the Article 6.4 mechanism, further describes the essential requirements for the analysis of lock-in risk.²
4. Subsequently, the Methodological Expert Panel (MEP) was tasked with developing a methodological tool for lock-in risk analysis to be used in conjunction with mechanism methodologies for Article 6.4 activities. Discussions on the development of this methodological tool began at the sixth meeting of the MEP.
5. At its eighteenth meeting, the Supervisory Body mandated the MEP to revise, as necessary, the Additionality Standard, noting that some elements identified in the work of the draft methodological tool “Analysis of lock-in risk” may better fit into the standard, and to submit the revised standard for the consideration of the Supervisory Body at a future meeting.
6. At its eleventh meeting, the MEP launched a call for public inputs on the draft methodological tool “Analysis of lock-in risk” and considered the Additionality Standard. The MEP agreed to revisit this agenda item based on the public input received on the draft “Methodological tool: Analysis of lock-in risk”. Section 3.1. of this Cover Note describes the consideration of these public comments.
7. Furthermore, at its twentieth meeting, the Supervisory Body requested the MEP to ensure the methodological tool’s alignment with the Additionality Standard, including consideration of relevant national circumstances of Parties.

2. Purpose

8. The purpose of this methodological tool is to provide guidance and specific requirements for the assessment of lock-in risk in demonstrating the additionality of activities under the Article 6.4 mechanism.

¹ See <https://unfccc.int/sites/default/files/resource/A6.4-STAN-METH-001.pdf>

² See <https://unfccc.int/sites/default/files/resource/A6.4-STAN-METH-003.pdf>

3. Key issues and proposed solutions

9. The methodological tool provides three steps to assess lock-in risk as well as definitions that are applied to the tool and applicability conditions. The definition of lock-in risk included in the tool includes taking into account different national circumstances, approaches and pathways, in line with paragraph 29(a) of the Additionality Standard.
10. The first step in the three-step process is the assessment of the technical or operational lifetime; the second step is the assessment of greenhouse gas intensity; and the third step is the assessment of resource use efficiency.
11. **Step 1 (technical or operational lifetime assessment)** of the methodological tool implements the provisions in paragraphs 31(a) and 32 of the Additionality Standard. The draft methodological tool includes an approach to determine the technical or operational lifetime of the main technologies, measures, or practices of the proposed Article 6.4 activity. In line with the Additionality Standard, if it is determined that the technical or operational lifetime of the proposed Article 6.4 activity is less than or equal to 10 years, such activities are deemed not to involve lock-in risk.
12. **Step 2 (greenhouse gas intensity assessment)** of the methodological tool implements the provisions in paragraphs 29(a) and (c), and 31(a), (b), and (d) of the Additionality Standard. The draft methodological tool provides an approach to determine whether activities are considered to cause lock-in based on analysis of the greenhouse gas (GHG) intensity and the technical or operational lifetime. The tool provides an approach where the threshold of greenhouse gas intensity *below* which activities are deemed *not* to cause lock-in risk becomes progressively lower as the lifetime of activities becomes longer, as illustrated in figure 1 of the draft methodological tool. The threshold is defined as a percentage between the GHG intensity of the business as usual (BAU) scenario and the GHG intensity of the identified alternative with the lowest GHG intensity. The MEP recommends that, for activities whose technical or operational lifetime exceeds 25 years, the threshold be set equal to or below 20 per cent. The tool integrates taking into account different national circumstances, approaches and pathways, in line with paragraph 29(a) of the Additionality Standard, as part of the emissions intensity and resource use efficiency assessment during the selection of the alternatives (see paragraph 19 of the this tool).
13. The MEP also notes that the blanket application of the 20 per cent threshold for activities with a long lifetime above 25 years may lead to exclusion of certain technologies whose implementation does not cause lock-in as per its definition. For this reason, mechanism methodology proponents may propose a different threshold (leading to different values for the parameter $F_{lock-in}$) if it is deemed that the default parameter would exclude technologies, measures or practices that would not cause lock-in risk. As an example, for landfill gas (LFG) capture methodology (if the lifetime is higher than 25 years), if LFG capture and flaring emissions intensity is higher than the emissions intensity corresponding to 20 per cent, the mechanism methodology may propose a higher threshold in order not to exclude such technology, if it is deemed that it will not cause lock-in risk.
14. **Step 3 (Resource use efficiency assessment)** of the methodological tool implements the provisions in paragraphs 29(d), 31(b) and (d) of the Additionality Standard. The draft methodological tool provides an approach to assess lock-in risk in the form of inefficient use of resources that are substantial for mitigating climate change or achieving other policy objectives. This is conducted by determining whether the proposed Article 6.4 activity consumes resources less efficiently than its most efficient alternatives. The resource in question, its indicator, and the threshold to determine lock-in risk are to be provided in the relevant methodology. The tool integrates taking into account different national

circumstances, approaches and pathways, in line with paragraph 29(a) of the Additionality Standard, as part of the resource use efficiency assessment in the selection of the alternatives (see paragraph 27(a) of this tool).

15. If the results as per Para# determines that the Article 6.4 activity consumes resources more than the identified threshold limit compared to the most efficient alternative, then the tool requires activity participants to carry out further analysis including the most efficient alternative as an alternative within an investment comparison analysis or a barrier analysis, in accordance with the requirements of the additionality demonstration approach specified in the mechanism methodology, to economically determine whether the proposed Article 6.4 is deemed to cause an inefficient use of resources.
16. The methodological tool addresses paragraph 31(c) and (d) of the Additionality Standard, assessment of scale, by including guidance and requiring mechanism methodologies to define the approaches for this assessment, if applicable. The MEP is of the view that scale assessment is only applicable if the proposed Article 6.4 activity can be implemented by third parties, and that scale assessment may only be relevant in other limited circumstances.
17. The proposed methodological tool does not address paragraph 29(b) of the Additionality Standard, which requires that mechanism methodologies ensure that an Article 6.4 activity is consistent with the host Party's long-term low greenhouse gas emission development strategy (LT-LEDS). This requirement is addressed through paragraph 10 of the Appendix to the Baseline standard, which stipulates that alignment with the objectives of the Paris Agreement is examined through an assessment undertaken by the DNA of the host Party.

3.1. Consideration of public comments

18. At its twelfth meeting, the MEP continued to work on the draft methodological tool and considered all stakeholder inputs received during the public consultation. This section summarizes how substantive comments were addressed. Editorial comments or minor issues are not summarized here. A compilation of all public comments received is provided in the "Information note: Summary of the comments received from stakeholders on the draft methodological tool "Analysis of lock-in risk" from the call for public inputs to annexes of MEP011 meeting documents" (A6.4-INFO-MISC-007).³
19. The call for public inputs was open for a three-week period from 4 to 25 February 2026. The MEP received 58 inputs from nine different stakeholders. After removing duplicate submissions from two stakeholders, the number of unique inputs was reduced to 50. These inputs are publicly available on the UNFCCC website.⁴
20. Some comments were not incorporated in the methodological tool because they did not pertain to the content of the methodological tool. Certain comments requested that the methodological tool exempt sector-specific activities from the lock-in analysis altogether, which is inconsistent with paragraph 30 of the Additionality Standard.
21. Several comments questioned the justification of the 10-year threshold, under which activities are deemed not to have lock-in risks (see paragraph 16 of this methodological tool). These comments were not addressed, as the MEP notes that the threshold was previously determined in paragraph 32 of the Additionality Standard.

³ See <https://unfccc.int/sites/default/files/resource/A6.4-INFO-MISC-007.pdf>.

⁴ See <https://unfccc.int/process-and-meetings/the-paris-agreement/article-6/article-64-pacm/stakeholder-engagement/calls-for-input/MEP011>.

22. Comments considered technical are summarized in the sub-sections below and include the MEP's assessment and any proposed action.

3.1.1. General

23. One comment on the cover note section stated that the section correctly summarizes the intent and structure of the proposed methodological tool, but noted that it does not sufficiently acknowledge sectoral diversity or the role of transitional mitigation activities, particularly in hard-to-abate sectors such as maritime transport and port infrastructure, and advocated an explicit reference to proportionality and risk-based application. The MEP did not directly address the comment since incorporating the comment could affect the sector-neutral nature of the tool. The tool however allows flexibility in providing further specifications such as in the use of threshold values for emissions intensity and resource use intensity for its application in the context of the type of mitigation activities.
24. One comment stated that the tool's scope and purpose section could further guide consistent interpretation by recognizing that lock-in risk must be assessed in the context of realistic technology transition pathways. The MEP notes that the proposed methodological tool incorporates flexibility, including the use of alternative parameters in the GHG intensity assessment, and therefore reflects related concerns. The MEP further notes that realistic technology transition pathways are reflected through the flexibility provided in determining the key parameter $F_{lock-in}$.

3.1.2. Definitions

25. One comment on the definition of "Operational lifetime" suggested that the definition could be improved by reflecting sectors where operational lifetimes are strongly influenced by regulatory changes, international standards, and retrofit practices. The MEP considers that the current definition provides sufficient flexibility and applicability across sectors.

3.1.3. Applicability

26. One comment requested clarification of the scope and applicability of the methodological tool, suggesting that it should specify that it applies to Article 6.4 activities that generate measurable outputs and for which greenhouse gas (GHG) emissions intensity and resource use intensity can be determined, and listed HFC recovery and destruction, or CCS, as example activities where no measurable output is observed. The MEP notes that the methodological tool is currently not applicable to such cases, but could be expanded to address them in future revisions.

3.1.4. Normative References

27. One comment stated that, in addition to the current references, additional contextual recognition of relevant international standards and strategies could support consistent interpretation without creating new normative obligations. The MEP noted that the tool is sufficiently flexible to accommodate these considerations, and that further detailed references would increase complexity and, conversely, may restrict its flexibility.

3.1.5. Methodological approaches

28. One comment suggested that the methodological tool should include a positive list of eligible activities. The MEP notes that such an approach would be incompatible with the methodological standards and tools, which are designed to remain activity-neutral.

3.1.5.1. Step 1: Technical or operational lifetime assessment

29. Another comment recommended not to incentivise reduced durability and that the lock-in risk should relate to crediting duration, not product lifetime. The MEP is of the view that the current draft tool does not discourage durability, but rather encourages increasingly lower-emission technologies, measures, and practices as the operational and technical lifetime becomes longer. Further, the analysis in the tool is therefore based on the technical and operational lifetime and therefore the crediting period is irrelevant.

3.1.5.2. Step 2: GHG intensity assessment

30. One comment suggested that if the baseline approach used is “Best Available Technology” (BAT) or “ambitious benchmark”, then the activity should not be required to undertake a GHG intensity assessment. The MEP notes that the GHG intensity of alternatives could be lower than what can be determined through BAT or benchmarks, and that forward-looking elements are in principle desirable for assessing lock-in risk. The MEP incorporated consideration of national circumstances to address this comment (see paragraph 19 of this tool).
31. Several comments suggested removing the requirement to consider technologies that can reasonably be expected to become financially feasible within the next five years (see paragraph 19(b) of this tool). The MEP clarified the conditions under which this provision applies, including the requirements to consider the national circumstances and adequate infrastructure and notes that mechanism methodologies may propose other approaches.
32. One comment suggested defining the $F_{lock-in}$ factor as a continuous function of the lifetime of the technologies, measures, and practices to avoid “cliff-edge” effects of the previous stepwise approach. The MEP incorporated this suggestion by introducing a linearly progressive threshold of lock-in risk (see paragraph 22).

3.1.5.3. Step 3: Resource use efficiency assessment

33. One comment stated that the application of this step itself may not be relevant for several activity types. The MEP notes that, following the provisions of the Methodologies Standard and Additionality Standard paragraph 29(d), this step is necessary.
34. One comment proposed removing the demonstration of resource abundance. The MEP agreed to remove this procedure because it is already addressed in the “Standard: Addressing leakage in mechanism methodologies” (the “Leakage Standard”) (A6.4-STAN-METH-005),⁵ and the demonstration of abundance for a resource does not correspond to the requirement of the Additionality Standard to not involve a technology or practice that constitutes an inefficient use of a resource.
35. One comment suggested removing the consideration of revenues related to A6.4ERs from the resource use efficiency assessment. The MEP addressed this suggestion by clarifying the steps as to when and how the Article 6.4 activity’s additionality assessment applying investment or barrier analysis, with and without the A6.4ERs, could be used to assess lock-in risk.
36. Several comments questioned the role of the resource use efficiency assessment, including its relationship to other assessments. The MEP streamlined this step to focus on efficiency by removing the requirement related to resource abundance (which is

⁵ See <https://unfccc.int/sites/default/files/resource/A6.4-STAN-METH-005.pdf>.

addressed, where relevant, under the Leakage Standard) and avoiding duplication with both the GHG intensity assessment (step 2) and with other phases of the additionality assessment (i.e., those that are separate from the analysis of lock-in risk).

37. Several comments stated that scale assessment is not equally relevant across all sectors. Another comment stated that the procedure is not sufficiently detailed to address sector-specific considerations. The MEP recommends relying on mechanism methodologies to provide justification and approaches on if, and how, to apply scale assessment to individual activity types according to the particulars of those sectors and removes previous Step 4 from the tool. The MEP also has included information on the relevance of scale assessment in section 5.4 of this methodological tool.

3.2. Revisions to the Additionality standard

38. In response to the mandate from the SBM 018⁶, the MEP reviewed the provisions of the Additionality Standard related to the analysis of lock-in risk and concluded that the main text of the standard does require revisions as a result of the development of the draft methodological tool “Analysis of lock-in risk”. However, based on the experience during the development of this tool, and informed by the review and recommendation of “Flaring or use of landfill gas” (A6.4-AMM-001)⁷ and the review of “N₂O abatement from nitric acid production” (A6.4-PMM002)⁸, the MEP noted that the requirements of the Additionality Standard would be strengthened by adding a footnote to paragraph 29(c) to clarify that mechanism methodologies may facilitate analysis of lock-in risk by specifying the lowest GHG emitting technologies or practices at the mechanism methodology level.

4. Impacts

39. The methodological tool provides guidance and requirements that activity participants shall fulfil when undertaking the analysis of lock-in risk where a mechanism methodology includes a reference to this methodological tool. The methodological tool complements the demonstration of additionality for activities under the Article 6.4 mechanism.

5. Subsequent work and timelines

40. This version of the methodological tool does not apply to Article 6.4 activities involving retrofit, and refurbishment, or the addition of new components to existing facilities. A future version of the methodological tool will extend its applicability to these circumstances.

6. Recommendations to the Supervisory Body

41. The MEP recommends that the Supervisory Body adopt the draft methodological tool.
42. The MEP seeks a mandate from the Supervisory Body to further work on a revision of the methodological tool to include Article 6.4 activities involving retrofit, refurbishment, and the addition of new components to existing facilities.

⁶ See <https://unfccc.int/sites/default/files/resource/A6.4-SBM018.pdf>.

⁷ See <https://unfccc.int/sites/default/files/resource/A6.4-AMM-001-v01.0.pdf>.

⁸ See <https://unfccc.int/process-and-meetings/the-paris-agreement/article-6/article-64-pacm/mechanism-process/methodologies/A6.4-PMM002>.

1. INTRODUCTION 9

 1.1. Scope 9

 1.2. Entry into force and validity 9

2. DEFINITIONS 9

 2.1. General terms 9

 2.2. Methodological terms and definitions 9

3. NORMATIVE AND INFORMATIVE REFERENCES 10

4. APPLICABILITY 10

5. METHODOLOGICAL APPROACHES 11

 5.1. Step 1: Technical or operational lifetime assessment 12

 5.2. Step 2: Greenhouse gas intensity assessment 12

 5.3. Step 3: Resource use efficiency assessment 14

 5.4. Relevance of scale assessment 17

DRAFT

1. Introduction

1.1. Scope

1. This methodological tool provides a stepwise approach for conducting a lock-in risk analysis for activities under the Article 6.4 mechanism.

1.2. Entry into force and validity

2. This methodological tool enters into force on **DD Month YYYY**.
3. This methodological tool remains valid for five years, until **DD Month YYYY**, unless an earlier date applies if the methodological tool is revised or withdrawn in accordance with the “Procedure: Development, revision and clarification of methodologies and methodological tools” (A6.4-PROC-METH-001).¹

2. Definitions

2.1. General terms

4. The following general terms are applied to the methodological tool:
 - (a) “Shall” is used to indicate requirements that must be followed;
 - (b) “Should” is used to indicate that, among several options, one course of action is recommended as particularly suitable; and
 - (c) “May” is used to indicate what is permitted.

2.2. Methodological terms and definitions

5. The following methodological terms and definitions are applied to the methodological tool:
 - (a) **Comparable activity:** an activity that delivers the same or similar type(s) of output and provides the same or similar level(s) of service as the proposed Article 6.4 activity and has a capacity or output that is within the applicable range (if considered relevant);
 - (b) **Level of service:** the quality, reliability, and scale of an output provided by an Article 6.4 activity and/or in the baseline scenario;
 - (c) **Lock-in risk:** the risk that the implementation of an Article 6.4 activity results in the adoption, or prolongation of the lifetime, of technologies, measures, or practices² that are incompatible with the long-term goals of the Paris Agreement, taking into account different national circumstances, approaches and pathways;
 - (d) **Operational lifetime:** the period during which a technology, measure, or practice is expected to remain in operation from the date of its first commissioning, considering not only its technical lifetime, where applicable, but also its economic

¹ See <https://unfccc.int/sites/default/files/resource/A6.4-PROC-METH-001.pdf>.

² Example of practices may include agricultural practices such as rice cultivation.

viability, the regulatory environment, user preferences, and market or policy conditions;³

- (e) **Output:** each good or service provided by the Article 6.4 activity and/or in the baseline scenario, as specified in the mechanism methodology; and
 - (f) **Technical lifetime:** the total period during which an equipment can be expected to remain functional and deliver its intended service if maintained according to the manufacturer's specifications or standard industrial practices, as measured from the date of commissioning.
6. Furthermore, the terms in the "Glossary: Article 6.4 mechanism terms" (A6.4-GLOS-GOV-001) and the definitions and terms in the methodological tool(s) referred to in section 3 shall apply.⁴

3. Normative and informative references

7. The following document is indispensable for the application of this methodological tool. When applying this methodological tool, a valid version of the document listed below shall be used:
- (a) "Methodological tool: Determination of the technical lifetime of equipment" (A6.4-AMT-006), where applicable.⁵
8. The following documents provide supporting information that may assist in the application of this methodological tool:
- (a) "Standard: Demonstration of additionality in mechanism methodologies" (A6.4-STAN-METH-003);⁶ and
 - (b) "Standard: Setting the baseline in mechanism methodologies" (A6.4-STAN-METH-004).⁷

4. Applicability

9. This methodological tool is applicable to Article 6.4 activities:
- (a) That introduce greenfield technologies, measures, and/or practices where none existed previously;
 - (b) That generate at least one measurable output; and
 - (c) Whose greenhouse gas (GHG) intensity and resource use intensity, if required, can be reasonably determined.
10. This methodological tool is only applicable where the referring mechanism methodology specifies:
- (a) The main technology, practice, or measure for which lock-in risk shall be assessed;

³ The operational lifetime may be shorter (e.g., due to changes in the regulatory environment) or longer (e.g., due to retrofits, or economic incentives for prolonged operation) than the technical lifetime.

⁴ See <https://unfccc.int/sites/default/files/resource/A6.4-Glossary.pdf>.

⁵ See <https://unfccc.int/sites/default/files/resource/A6.4-AMT-006-v01.0.pdf>.

⁶ See <https://unfccc.int/sites/default/files/resource/A6.4-STAN-METH-003.pdf>.

⁷ See <https://unfccc.int/sites/default/files/resource/A6.4-STAN-METH-004.pdf>.

- (b) The type of lifetime that shall be determined for the applicable activities, either technical lifetime or operational lifetime;
 - (c) How to identify the relevant region (e.g., global, multi-national, national, or sub-national jurisdiction) that shall be considered when identifying comparable activities in steps 2 and 3;
 - (d) How to calculate the GHG emissions intensity of (i) the Article 6.4 activity, (ii) the business as usual (BAU) scenario, and (iii) the lowest emissions intensity alternative;
 - (e) Whether the list of comparable alternatives identified in steps 2 and 3 shall: (i) only include alternatives that can be implemented by the activity participants; or (ii) also include alternatives that could be implemented by third parties;⁸
 - (f) The type of resource(s)⁹ subject to resource use efficiency assessment or the approach used to identify them, as well as the appropriate resource use intensity indicator, and the approach used to calculate its value;
 - (g) For each relevant resource, the threshold for resource use intensity above which the resource shall be deemed inefficiently used in step 3; and
 - (h) Whether a scale assessment is required, with justification, and if so, the approach for such an assessment.¹⁰
11. Mechanism methodologies may provide further specifications and requirements for how this methodological tool shall be applied by activity participants in the context of the type of mitigation activities covered by the mechanism methodology, and in the context of programmes of activities, and, inter alia, for different values for $F_{lock-in}$ if the approach in equation 2 would exclude technologies, measures or practices that would not cause lock-in risk.
12. Where the mechanism methodology referring to this tool specifies approaches that differ from those described in this methodological tool, the requirements contained in the mechanism methodology shall take precedence.

5. Methodological approaches

13. Activity participants shall apply the following steps to assess whether a proposed Article 6.4 activity involves a lock-in risk:
- (a) **Step 1:** Technical or operational lifetime assessment (section 5.1);
 - (b) **Step 2:** Greenhouse gas intensity assessment (section 5.2);
 - (c) **Step 3:** Resource use efficiency assessment (section 5.3);

⁸ For example, in the case of an activity participant that is specialized in a specific greenfield power plant technology, it is reasonable to assume that third parties may build less greenhouse gas intensive power plants if the activity participants would not proceed with their Article 6.4 activity. By contrast, in the case of a project implementing a new landfill with gas capture and flaring, it is reasonable to consider only alternatives that the activity participants could implement, due to the site-specific circumstances.

⁹ Relevant resources may, for example, include fuels and feedstocks, as well as land and water resources. Where applicable, the assessment of which resources are relevant, may also be guided by resources identified in accordance with the provisions in section 6.3 of the “Tool: Article 6.4 sustainable development tool” (A6.4-TOOL-AC-001).

¹⁰ For further information on the relevance of the scale assessment see section 5.4.

- (d) Scale assessment (as per the mechanism methodology, if applicable).

5.1. Step 1: Technical or operational lifetime assessment

14. Activity participants shall determine the technical or operational lifetime of the main technology, measure, or practice implemented by the proposed Article 6.4 activity and assess whether the technical or operational lifetime exceeds 10 years.¹¹
15. Activity participants shall apply one of the following approaches to determine the technical or operational lifetime:
- (a) To determine the technical lifetime, activity participants shall use the “Methodological Tool: Determination of the technical lifetime of equipment” (A6.4-AMT-006), if the tool is applicable to the Article 6.4 activity;
 - (b) In cases where the “Methodological Tool: Determination the technical lifetime of equipment” is not applicable to the Article 6.4 activity, activity participants shall use procedures and specifications established in recognized standards (e.g., ISO);¹² or
 - (c) In cases where sub-paragraphs (a) and (b) are not applicable, and where the activity does not involve equipment but instead introduces new measures or practices, a third-party assessment by certified or suitably qualified experts shall be used to determine the operational lifetime of the measure or practice. In such cases, the activity participants shall provide justification and credible evidence in the PDD for the determination of the operational lifetime and explain why options (a) and (b) are not applicable.
16. Based on this assessment, activity participants shall proceed as follows:
- (a) If the applicable lifetime is no more than 10 years, then the Article 6.4 activity shall be deemed not to involve a lock-in risk; or
 - (b) If the applicable lifetime is more than 10 years, activity participants shall proceed to step 2.

5.2. Step 2: Greenhouse gas intensity assessment

17. Activity participants shall assess the greenhouse gas intensity of the proposed Article 6.4 activity ($G_{A6.4}$) and compare it with a greenhouse gas intensity threshold ($G_{threshold}$).
18. Activity participants shall specify the relevant region for the assessment in accordance with the applied mechanism methodology.
19. Activity participants shall compile a list of all credible alternatives comparable to the proposed Article 6.4 activity that can deliver the same or similar level of service, taking into account relevant national circumstances. This shall follow any requirements and guidance in the applicable mechanism methodology, in particular the provisions referred to in paragraph 10(e). Where applicable, the list of alternatives shall be consistent with the

¹¹ The main technology, measures, or practices refers to the key component (for example, the PV module for a solar mini grid). In some cases, there may be more than one main technology, measure or practice relevant for lock-in risk analysis (for example a reservoir and a turbine in the case of a hydro power plant), in which case the lock-in risk analysis shall be carried out separately for each one in accordance with the relevant guidance provided in the mechanism methodology.

¹² An example of such standards is ISO/TS 24094:2022 aimed at predicting lifetime and reliability of PV modules.

alternatives considered in the additionality assessment under the applicable mechanism methodology. The list of alternatives to be compiled by activity participants shall include:

- (a) Technologies, measures, or practices that are commercially available and financially feasible;
 - (b) Technologies, measures, or practices reasonably expected to become commercially available and financially feasible and supported by adequate infrastructure, within 5 years of the start date of the Article 6.4 activity;¹³ and
 - (c) Where the conditions specified under paragraph 10(e) apply, technologies, measures or practices that are not implemented solely due to commercial viability (e.g., through public works programmes).
20. Activity participants shall calculate the greenhouse gas intensity, following the requirements and guidance in the applicable mechanism methodology, of:
- (a) The alternative with the lowest greenhouse gas intensity (GI_{lowest});
 - (b) The BAU scenario (GI_{BAU}), using the BAU scenario and the quantified BAU emissions determined in accordance with the applicable mechanism methodology; and
 - (c) The proposed Article 6.4 activity ($GI_{A6.4}$).
21. Activity participants shall calculate the greenhouse gas intensity threshold for assessing lock-in risk ($GI_{threshold}$), which depends on the technical or operational lifetime of the proposed Article 6.4 activity, as follows:

$$GI_{threshold} = GI_{lowest} + F_{lock-in} \times (GI_{BAU} - GI_{lowest}) \quad \text{Equation (1)}$$

Where:

- $GI_{threshold}$ = Greenhouse gas intensity threshold for assessing lock-in risk (t CO₂eq/output)
- GI_{lowest} = Greenhouse gas intensity of the alternative with the lowest GHG emissions intensity (t CO₂eq/output)
- $F_{lock-in}$ = Factor used to calculate the greenhouse gas intensity threshold for assessing lock-in risk (dimensionless)
- GI_{BAU} = Greenhouse gas intensity of the BAU scenario (t CO₂eq/output)

22. Unless the mechanism methodology referring to this tool specifies other values or methods, the value for $F_{lock-in}$ shall be calculated based on the technical or operational lifetime of the Article 6.4 activity (L), as follows:

$$F_{lock-in} = \max \left[0.2, \left\{ 1 - \frac{0.8}{15} \times (L - 10) \right\} \right] \quad \text{Equation (2)}^{14}$$

Where:

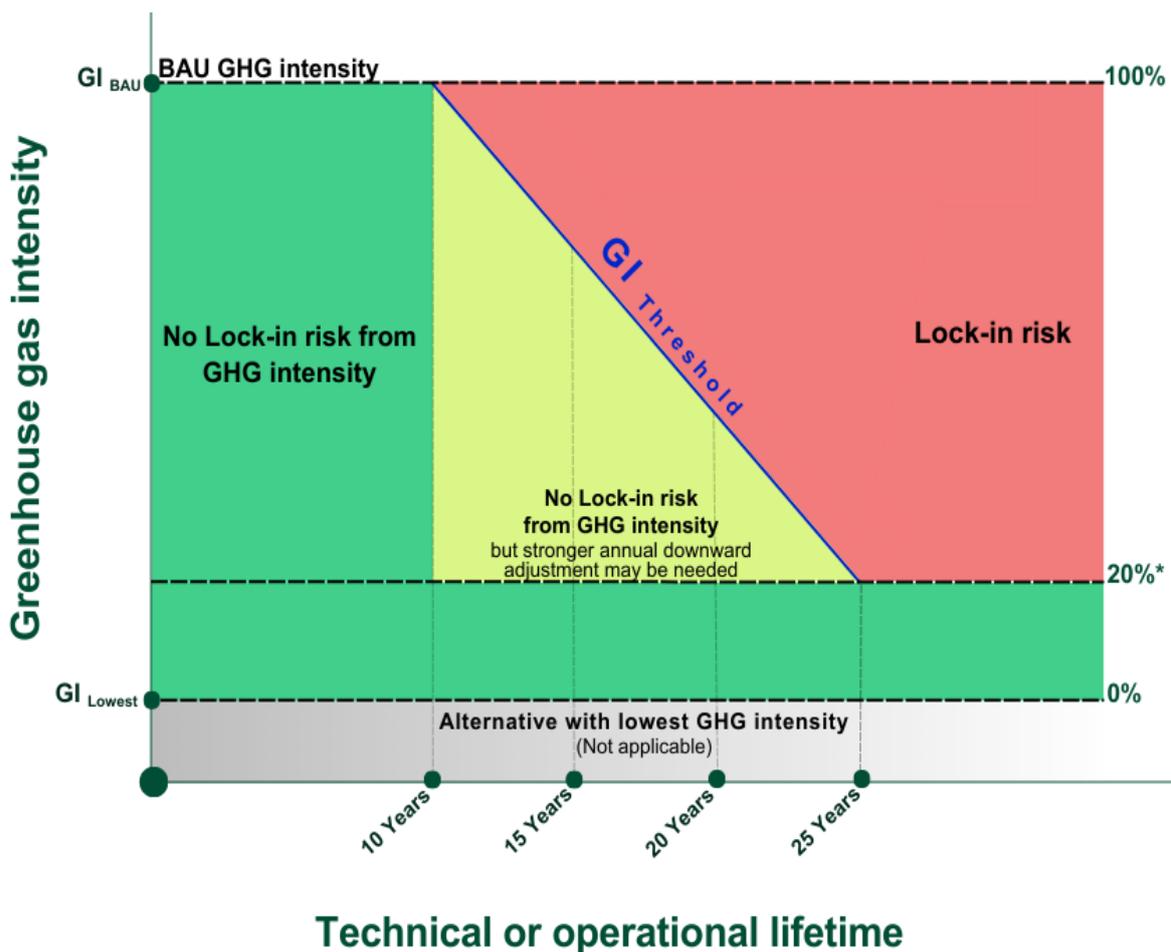
- L = Technical or operational lifetime of the Article 6.4 activity

¹³ Identification of such alternatives may consider for inclusion, technologies, measures or practices already implemented as pilot or demonstration projects, and technologies, measures or practices that are implemented in countries other than where the Article 6.4 activity is located.

¹⁴ The ratio in the equation divides the proportion that is outside the no lock-in risk area ($1 - 0.2 = 0.8$) by the difference in lifetime thresholds ($25 - 10 = 15$).

23. Where the greenhouse gas intensity of the proposed Article 6.4 activity ($GI_{A6.4}$) is equal to or lower than the greenhouse gas intensity threshold ($GI_{threshold}$), activity participants shall proceed to step 3.¹⁵ Otherwise, the proposed Article 6.4 activity shall be deemed to involve a lock-in risk and therefore shall not be considered additional.
24. The above approach is also illustrated in Figure 1.

Figure 1. Illustration of the thresholds for assessing lock-in risk from GHG intensity



*or alternative value specified in the mechanism methodology

5.3. Step 3: Resource use efficiency assessment

25. Activity participants shall assess the use of resources by the proposed Article 6.4 activity to determine whether the activity involves a technology, measure, or practice that constitutes an inefficient use of resources that are important for mitigating climate change or achieving other policy objectives.

¹⁵ In instances where the technical or operational lifetime of the Article 6.4 activity is between 11 and 25 years and the greenhouse gas intensity of the Article 6.4 activity is larger than the 20 percent threshold (or other threshold specified in the mechanism methodology) and below the greenhouse gas intensity threshold ($GI_{threshold}$), a larger annual downward adjustment may be warranted to set incentives for the adoption of less GHG intensive technologies and/or practices, pursuant to paragraph 70 of the “Standard: Setting the baseline in mechanism methodologies” (A6.4-STAN-METH-004).

26. The type of resource(s) to be analysed shall be those specified in the mechanism methodology or identified in accordance with the relevant approach specified in the mechanism methodology. Relevant resources may include, for example, land, freshwater, biomass residues, or other relevant resources.
27. Activity participants shall undertake, for each identified resource, an assessment of the resource use efficiency as per the following provisions:
- (a) Select, from the list of comparable activities compiled in step 2, all activities that use the identified resource and that are financially feasible for the Article 6.4 activity participant,¹⁶ including revenues from Article 6, paragraph 4, emission reductions (A6.4ERs) where applicable;
 - (b) Calculate the resource use intensity of the comparable activities and of the proposed Article 6.4 activity, using the indicator (e.g., m³ of water/unit output, TJ/unit output, ha/unit output, etc.) and the approach specified in the mechanism methodology;
 - (c) Identify the best resource use intensity value (i.e., the lowest resource use per unit output according to the indicator among the comparable activities);
 - (d) Calculate the resource use intensity limit by applying the threshold defined in the mechanism methodology to the best resource use intensity value; and
 - (e) Compare the resource use intensity indicator of the proposed Article 6.4 activity with the resource use intensity limit.
28. If the resource use intensity of the proposed Article 6.4 activity is not greater than the resource use intensity limit, then the proposed Article 6.4 activity shall be deemed to avoid the inefficient use of the resource and activity participants shall proceed to the scale assessment, as defined in the mechanism methodology, if applicable.
29. Otherwise, the alternative with the best resource use intensity value shall be included in the remaining additionality demonstration of the proposed Article 6.4 activity alongside the other identified alternatives to the Article 6.4 activity. This demonstration shall proceed in accordance with the applicable requirements of the mechanism methodology, including the use of any methodological tools.
30. Where an investment analysis is conducted to demonstrate additionality, and if alternatives to the proposed Article 6.4 activity exist with more efficient resource use, the results of the resource use efficiency assessment shall be considered as follows:
- (a) If the proposed Article 6.4 activity is *less* financially attractive than the alternatives without the incentives from the mechanism, then it is deemed that there is a risk that the proposed Article 6.4 activity locks in a resource-inefficient activity (see case A in Table 1).
 - (b) If the proposed Article 6.4 activity is *more* financially attractive than the alternatives without the incentives from the mechanism, then it is inconclusive whether the proposed Article 6.4 activity locks in a resource-inefficient activity (see case B in Table 1).
 - (c) If the alternative becomes *equally or more* financially attractive than the proposed Article 6.4 activity when analysed with the incentives from the mechanism, then

¹⁶ This applies to the cases specified under both (i) and (ii) in paragraph 9 (e).

the proposed Article 6.4 activity locks in a resource-inefficient activity (see case C in Table 1).

- (d) Otherwise, the proposed Article 6.4 activity shall be deemed not to constitute an inefficient use of resources and activity participants shall proceed to the scale assessment, as defined in the mechanism methodology, if applicable.

Table 1. Interpreting results of the resource use efficiency assessment where an investment analysis is conducted to demonstrate additionality

Consideration of incentives	Investment analysis			
	First analysis		Second analysis (if needed)	
	Both without incentives		Both with incentives	
	A	B	C	D
A6.4 Activity (less efficient resource use)	Less attractive	More attractive	Less or equally attractive	More attractive
Alternative (more efficient resource use)	More attractive	Less attractive	More or equally attractive	Less attractive
Results	Conclusion: Lock-in-risk exists	Inconclusive: Continue to second analysis	Conclusion: Lock-in-risk exists	Conclusion: No Lock-in-risk from inefficient resource use

31. Where a barrier analysis is conducted to demonstrate additionality, and if alternatives to the proposed Article 6.4 activity exist with more efficient resource use, the results of the resource use efficiency use assessment shall be considered as follows:

- (a) If the proposed Article 6.4 activity *faces barriers* compared with the alternative without incentives from the mechanism, then there is a risk that the proposed Article 6.4 activity locks in resource-inefficient activity (see case A in Table 2);
- (b) If the proposed Article 6.4 activity *faces fewer barriers* than the alternative without incentives from the mechanism, then it is inconclusive whether the proposed Article 6.4 activity locks in resource-inefficient activity (see case B in Table 2);
- (c) If the alternative *faces fewer barriers* or if the *barriers are alleviated* when analysed with incentives from the mechanism, the proposed Article 6.4 activity locks in a resource-inefficient activity (see case C in Table 2);
- (d) Otherwise, the proposed Article 6.4 activity shall be deemed not to constitute an inefficient use of resources and activity participants shall proceed to the scale assessment, as defined in the mechanism methodology, if applicable.

Table 2. Interpreting results of the resource use efficiency assessment where a barrier analysis is conducted to demonstrate additionality

Consideration of incentives	Barrier analysis			
	First analysis		Second analysis (if needed)	
	Both without incentives		Both with incentives	
	A	B	C	D
A6.4 Activity (less efficient resource use)	Faces barriers	Faces barriers	Barriers remain	Fewer barriers relative to the alternative or barriers alleviated
Alternative (more efficient resource use)	Does not face barriers	Faces equal or more barriers	Fewer barriers relative to the activity or barriers alleviated	Barriers remain
Results	Conclusion: Lock-in-risk exists	Inconclusive: Continue to second analysis	Conclusion: Lock-in-risk exists	Conclusion: No Lock-in-risk from inefficient resource use

5.4. Relevance of scale assessment

32. Scale assessment is only applicable if the output of the proposed Article 6.4 activity can be delivered by entities other than the Article 6.4 activity participant(s), e.g., grid-connected power plants. If the output of the proposed Article 6.4 activity can only be delivered by the Article 6.4 activity participants (e.g., captive facilities), then scale assessment is not applicable.
33. Scale assessment may be relevant when the output provided by the Article 6.4 activity occupies such a large market share that it limits or prevents the supply of the same or similar outputs by others, e.g., under monopoly conditions.
34. Scale assessment may also be relevant when an Article 6.4 activity, if replicated widely, may generate impacts on a dominant emission-intensive sector thereby further consolidating that sector.
35. In other circumstances, scale assessment is unlikely to be relevant for analysing lock-in risk.

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	18 March 2026	MEP012, Annex 1. To be considered by the A6.4 Supervisory Body at SBM 021.
01.0	4 February 2026	MEP011, Annex 1. A call for input on this document will be issued following the conclusion of MEP 011 meeting. The input received will be considered by the MEP for the further development of this document at a future meeting.

Decision Class: Regulatory

Document Type: Tool

Business Function: Methodology

Keywords: A6.4 mechanism, additionality, lock-in risk analysis, methodologies, project activities

DRAFT