ARTICLE 6.4 MECHANISM

A6.4-MEP003-A01

Draft Standard

Setting the baseline in mechanism methodologies

Version 01.0

United Nations
Framework Convention on
Climate Change

COVER NOTE

1. Procedural background

1. The Supervisory Body, at its tenth meeting (SB010), requested the Methodological Expert Panel (MEP) to prepare recommendations based on inputs, including drafts, questions, and proposals provided by the secretariat, taking into account any inputs received from stakeholders. In particular, the Supervisory Body requested the MEP to prepare recommendations for baseline tools and guidance on standardized baselines.

2. As per Paragraph 11 of the MEP 001 external report, the MEP recommended that a single standard be developed that contains requirements for both baseline determination and standardized baselines. The proposal to integrate the two into a single standard, was due to the interrelated nature of the two items. A single standard would also ensure consistency and coherence. At its eleventh meeting (SB011), the Supervisory Body approved this recommendation.

3. As per Paragraph 11 of the MEP 002 external report, the MEP considered the draft standard on setting the baseline in mechanism methodologies and discussed issues related to definitions, principles, general requirements for mechanism methodologies for baselines, approaches to setting the baseline, and downward adjustment. The MEP agreed to continue working on the document.

4. At MEP 003, the MEP further considered the draft standard on setting the baseline in mechanism methodologies in light of the Supervisory Body Recommendation: Requirements for the development and assessment of Article 6.4 mechanism methodologies (v.01.1), A6.4-SB009-A01, and the MEP came to a consensus on the draft standard based on the aforementioned SBM recommendation and agreed to launch a call for public input after the MEP 003 meeting.

2. Purpose

5. The purpose of this draft standard is to address the mandate provided by the Supervisory Body on the recommendations on setting the baseline in mechanism methodologies and standardized baselines.

3. Key issues and proposed solutions

6. This draft standard provides overarching requirements and guidance for approaches for determination of baselines in Article 6.4 mechanism methodologies. It further specifies requirements at different levels of aggregation, i.e., at activity level, at methodology level, or for standardized baselines at sectoral, national, or regional level.

7. This draft standard builds upon the recommendation by the Supervisory Body on the Requirements for the development and assessment of Article 6.4 mechanism methodologies (A6.4-SB009-A01) and further elaborates specific provisions for setting the baseline in mechanism methodologies.

8. In some places, the draft Standard presents options for further consideration, indicated with brackets or through alternative text options. The final recommendation on this standard by the MEP will take into account the final recommendation of the Supervisory Body in relation to the methodological requirements to be discussed at SBM014.

4. Impacts

9. This Standard will provide further clarity on the requirements that mechanism methodologies shall fulfil with regard to the approaches for setting the baseline.

5. Subsequent work and timelines

10. A call for public input will be launched immediately after the MEP003 meeting.

11. The MEP will take into account the inputs received and will continue working on the Standard at its next meeting.

12. The content related to mitigation activities involving removals is preliminary and indicative and will be developed in further detail at a future date, for example with respect to the ambitious benchmark approach.

13. Some indications in the draft standard pertain specifically to standardized baselines. More detailed requirements and guidance for standardized baselines applicable to one or several Parties will be developed at a future date.

14. The MEP may revise the standard in the future to cover methodologies addressing mitigation actions at other scales (e.g. large-scale crediting programmes).

6. Recommendations to the Supervisory Body

15. N/A (a call for public inputs will be launched).

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1. Introduction

1.1. Background

1. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), at its third session, requested the Supervisory Body of the mechanism established by Article 6, paragraph 4, of the Paris Agreement (Article 6.4 mechanism) to elaborate and further develop recommendations on the application of the requirements referred to in chapter V.B (titled Methodologies) of the rules, modalities and procedures for the Article 6.4 mechanism (RMP).

2. The Supervisory Body (SBM), at its tenth meeting, approved a number of documents including A6.4-SB010-A05 - Further work on the methodological products for the Article 6.4 Mechanism under which the SBM requested the Methodological Expert Panel (MEP) to develop, among other elements, a Guideline on Standardized Baselines and Baseline Tools. These should operationalise the principles enshrined in decision 2/CMA.3 adopted by the Paris Agreement including Paragraph 33 of the rules, modalities and procedures (RMP) for the mechanism; Paragraph 36 of the RMP with respect to the approach(es) to setting the baseline; and Paragraph 37 of the RMP.

3. As per the recommendation of MEP 001 that was approved by the SBM at its eleventh meeting, a single standard has been developed, bringing together the two main elements of baseline setting and standardized baselines due to their interrelated nature and to ensure consistency and coherence.

1.2. Objectives

4. The objective of this standard is to set out requirements on how mechanism methodologies shall define methods for setting the crediting baseline, including identifying the baseline scenario and determining baseline emissions, and for the determination of sector-specific standardized baselines at an appropriate level of aggregation.

2. Terms and definitions

5. The following definitions shall apply in the context of this standard:

   (a) **Applicability conditions** - Applicability conditions specify contexts, configurations and cases in which methodologies can be applied to mitigation activities while ensuring environmental integrity.

   (b) **Baseline geographical reference area** – The geographical area assessed for setting the baseline.

   (c) **Best available technology (BAT)** – the practice/technology/measure that provides a similar output and is most effective in reduction of emissions or enhancement of removals of greenhouse gases (GHG), and that is available, meaning accessible off the shelf, or via a tendering or direct contracting process, or by direct implementation by the end user, at the scale required for implementation, under viable conditions, taking into consideration costs and benefits;

(d) **Best performing comparable activities** – the activities that provide outputs within a top segment of performance in terms of GHG emissions or removals intensity, considering all activities that provide similar outputs in a baseline geographical reference area;

(e) **Business as usual (BAU)**- The scenario, or GHG emission or removal level or rate, that is likely to occur in the absence of the implementation of the proposed mitigation activity.

(f) **Crediting Baseline** – Reference emissions or removals level, against which the volume of emission reductions or net removals achieved by the mitigation activity is quantified.

(g) **Legal requirements** – Laws, statutes, regulations, court orders, decrees, consent agreements[1], executive orders, permitting conditions or any other legally binding mandates;

(h) **Level of aggregation** - The extent to which consolidation of information from any parts or units to form a collective whole is undertaken;

(i) **Level of Service**- The quality, reliability and scale of an output provided by an activity:

(j) **Output –** each good or service provided by the mitigation activity (for example, electricity, cooking energy, municipal waste management, and so forth), as specified in the mechanism methodology;

(k) **Policies**– all implemented national or sub-national policies that are applicable to the relevant mitigation activity and its alternatives, including subsidies and incentives, taxes and tax breaks, as well as fees; performance standards; or other specified instruments or means of implementation. It does not include general goals that are not specific to the sector or type of mitigation activity or that do not include means of implementation.

(l) **Pool of users –** For activities related to a good or a service, the pool of users consists of the user(s) supplied with the outputs by the mitigation activity.

(m) **Remaining lifetime –** the remaining lifetime during which an equipment would continue operating and/or a certain practice would remain in place, given limitations such as technical lifetime, economic lifetime, requirements of laws or regulations, or any other factor which would lead to the discontinuation of the use of the equipment and/or practice.

(n) **Sector -** a segment of a national economy that delivers defined output(s) (e.g. municipal waste management, household cooking energy, electricity).

(o) **Standardized baseline** - a standardization developed on a subnational, national, or multi-national basis rather than on project-specific basis to facilitate the

[1] For example, agreements between parties, such as between a private sector entity and a government, to take an action in exchange for avoiding court action.

determination of the baseline, calculation of GHG emissions or removals and/or the determination of additionality for Article 6.4 activities [2].

6. Moreover, the following terms apply in this standard:

(a) "Shall" indicates a requirement;

(b) "Should" indicates a recommendation;

(c) "May" is used to indicate that something is permitted;

(d) "Can" is used to indicate that something is possible, for example, that an organization or individual is able to do something.

3. Scope, applicability, and entry into force

3.1. Scope

7. This standard sets out requirements for mechanism methodologies for setting the crediting baseline, including identifying the baseline scenario and determining baseline emissions and removals, and provides the requirements for the determination of sector-specific standardized baselines at an appropriate level of aggregation for host Parties in developing standardized baselines. It may be used by activity participants or host Parties in developing methodologies. It also may be used by the UNFCCC Secretariat, the Methodological Expert Panel (MEP) and its members, and the Article 6.4 Supervisory Body in assessing and considering methodologies or standardized baselines for approval.

8. Besides requirements, this document also includes explanatory information, e.g. summarizing the basis for or reasoning behind a requirement.

9. Additional requirements and guidance for methodologies beyond setting the baseline are included in Appendix 1 to this document.

3.2. Applicability

10. The standard shall be applied for mechanism methodologies for baseline setting of all types of activities, including both emission reduction activities and activities involving removals. The standard further applies for the development of standardized baselines. The standard may be amended in the future to also cover methodologies addressing mitigation action at other scales (e.g., large-scale crediting programmes).

3.3. Entry into force

11. Not applicable as the draft standard is open for call for public input.

[2] Based on the definition provided in the Recommendation: Requirements for the development and assessment of Article 6.4 mechanism methodologies para. 69, version 01.1 (A6.4-SB009-A01).

4. Principles

12. The following principles shall guide the development and approval of mechanism methodologies for identifying the baseline scenario and determining baseline emissions and removals, and the development and approval of standardized baselines:

    (a) **Conservativeness**. In the context of baseline setting, conservativeness is the use of data, parameters, assumptions, and methods to ensure that baseline emissions are not overestimated, and baseline removals are not underestimated.

    (b) **Accuracy**. Bias and uncertainties in both quantitative and non-quantitative information shall be reduced as far as is practical.

    (c) **Real.** The results of mitigation activities represent actual tonnes of GHG emission reductions or net removals derived from credible methods for estimating mitigation outcomes.

    (d) **Below business as usual**. For emission reductions, the determined crediting baseline shall be below a conservatively determined BAU level. For removals, the determined crediting baseline shall be above a conservatively determined BAU level.

    (e) **Encourage ambition over time**. Crediting baselines for emission reductions shall decrease over time and crediting baselines for removals shall increase over time to encourage ambition.

5. General requirements

5.1. Methodology requirements

13. Mechanism methodologies shall specify the approach to setting the baseline scenario of the mitigation activity. Mechanism methodologies shall apply one of the three approaches specified in paragraph 36 of the RMPs for setting the baseline scenario for each of the components of the mitigation activity (e.g., for the capture of landfill gas and its use for energy generation, one baseline approach may be applied for the capture of landfill gas and a different baseline approach may be applied for energy generation). The mechanism methodology shall justify the appropriateness of the choice among approaches (i) to (iii) of paragraph 36 of the RMP.

14. Mechanism methodologies may either use separate approaches to demonstrate additionality and determine the baseline scenario or use a combined approach that both demonstrates additionality and determines the baseline scenario, depending on the approach selected. Specifically, it may be possible to use BAT or an ambitious benchmark to simultaneously determine the baseline scenario and apply the “performance analysis” in demonstrating additionality (refer to the Draft Standard on Demonstration of additionality in mechanism methodologies).

15. Mechanism methodologies shall specify the methods for quantification of the baseline emissions and removals. Mechanism methodologies shall specify to which potential baseline scenarios its quantification methods are applicable.

16. Mechanism methodologies shall specify whether any emission reductions or net removals result from a change in the level of service compared to the baseline scenario. When the level of services provided in the mitigation activity is lower than in the baseline scenario, which may occur for example in agriculture and forestry activities, any resulting leakage shall be considered and incorporated appropriately in the calculation of emission reductions and net removals.

17. Mechanism methodologies shall define or require the activity participant to define the baseline geographical reference area considering the main baseline sources or sinks. The baseline geographical reference area may be global, national, sub-national, site-specific, etc. For example, an activity that supplies a global pool of users in the case of highly internationally traded goods (for example, aluminium) may need to consider global conditions when setting the baseline. On the contrary, some activities may only affect baseline emissions in a very restricted geographic scope or even at a specific site; for example, in the case of switching to a low-emissions energy source or feedstock in a specific plant, only site-specific conditions may need to be considered when setting the baseline.

18. Mechanism methodologies shall require activity participants to describe the pre-activity scenario in the project design document (PDD). The pre-activity scenario is the circumstances prior to the implementation of the mitigation activity and may be the existing conditions at the site where the activity will be implemented or the existing conditions in the baseline geographical reference area.

19. Mechanism methodologies shall encourage ambition through decreasing the crediting baseline for emission reductions activities, or increasing the crediting baseline for activities involving removals, over time. This may be operationalised either as an annual change relying on an annual improvement, or as a larger step-change at the renewal of the crediting period, with justification and where applicable. For example, if an NDC aligned baseline, as determined in section 8 of this document, includes a downward trend, this would be fulfilled.

20. Under all the approaches in section 6 for setting the crediting baseline, mechanism methodologies shall determine whether any trends toward improved performance in the emissions intensity over time should be incorporated in the baseline quantification. This is necessary if such trends have a material impact on the emissions intensity in tCO_2-eq/unit of output, in which case the baseline emission intensity or other indicator shall be reduced over time by applying a quantification derived from historical trends in the emissions intensity. Where no material trends in the emissions intensity can be observed, or where such a trend is compensated by a particularly ambitious baseline indicator, then no further adjustment is required.

5.2. Application of the baseline approaches at different levels of aggregation

21. The baseline scenario or parameters to quantify crediting baseline for emissions and/or removals, such as baseline emission factors, may be determined at the following levels:

    (a) **Mechanism methodology:** The proponent of a mechanism methodology may determine the baseline scenario or parameters to quantify baseline emissions and/or removals, for all, or a subset of, the mitigation activities that are eligible under the methodology. For example, a mechanism methodology may determine the baseline scenario as the consumption of power from the electric grid and may

accordingly provide methods to determine the grid emission factor to quantify baseline emissions.

(b) **Mitigation activity:** The proponent of a mechanism methodology may specify in the methodology how the baseline scenario and/or baseline emissions and/or removals shall be quantified by each individual mitigation activity applying the methodology. For example, a methodology may provide a method for how each mitigation activity shall quantify existing actual or historical emissions and a downward adjustment factor for these.

(c) **Standardized baseline:** The proponents of a mechanism methodology shall specify in the methodology which approaches, parameters or conditions may or shall be demonstrated through the development of a standardized baseline. This may include standardization in relation to baseline setting, baseline quantification, or additionality demonstration. Standardization could also relate only to a specific parameter, such as the grid emission factor or the fraction of non-renewable biomass.

5.3. Data requirements

22. Mechanism methodologies and standardized baselines shall specify the assumptions, parameters, data sources and key factors used for determining the baseline scenario and quantifying the crediting baseline for emissions and/or removals and specify the related requirements with regard to data quality, vintage, availability and credibility.

23. Mechanism methodologies and standardized baselines shall require data to be sourced from the most appropriate data source. This may include internal data of the activity participants or publicly available information. Only credible sources shall be used that are appropriate to the context of the type of mitigation activity. Relevant data sources may include peer-reviewed scientific literature, test results following accepted standards performed by accredited entities, reports/statistics published by governments, multilateral entities such as the IPCC, or industry or sector organizations, as applicable.

24. Mechanism methodologies shall require activity participants and developers of standardized baselines to transparently list and describe the sources of data considered and justify the vintage, relevance, accuracy, and conservativeness of the choices made. The data used shall be referenced. In cases where values, approaches or data sources are only applicable to specific scopes (geographic, sectors, etc.), the mechanism methodologies or standardized baselines shall clearly describe the scope of applicability of the respective values, approaches or data sources.

25. Mechanism methodologies shall determine the baseline scenario and the crediting baseline for emissions and/or removals in a transparent manner. They shall also take into account the uncertainty associated with setting the baseline scenario and quantifying crediting baseline emissions and/or removals. The consideration of uncertainty shall include all causes of uncertainty, including assumptions, equations or models, parameters and measurements. The consideration of uncertainty may, however, focus or be limited to those causes of uncertainty that are most relevant in the context of the mitigation activity (e.g., the uncertainty of minor baseline emission sources may not need to be considered).

26. Different approaches may be pursued to address uncertainty. These may include approaches that address overall uncertainty or approaches that address uncertainty

separately for the baseline scenario and the quantification of baseline emissions and removals. For example, in the case of uncertainties in the selection of the baseline scenario, the most conservative scenario may be selected among different plausible scenarios; whereas, for determining the baseline emissions and removals the uncertainty may be quantified using approaches such as formulas for propagation of uncertainty.

27. In the context of general global trends toward better data availability and quality, at the regular review of approved mechanism methodologies at least once every five years[3], the review particularly shall seek to incorporate, or substitute, sources and types of data and information that enhance the application of the principles in section 4.

5.4. Standardization

28. Standardization of baseline scenarios and crediting baselines in mechanism methodologies or standardized baselines is encouraged where possible due to the benefits of avoiding undue flexibility and disaggregation in project-specific approaches, which could lead to uncertainties in setting such baselines.

29. The application of standardized baselines is not mandatory unless explicitly stated in an approved standardized baseline or in another standard approved by the Supervisory Body. When the application of a standardized baseline is not mandatory, activity participants may establish baseline emissions or removals for their activity using the approved approaches in the mechanism methodology or relevant tools.

6. Approaches to Setting the Baseline

30. This section sets out how the approaches for setting the baseline referred to in paragraph 36 of the RMP shall be implemented in mechanism methodologies.

6.1. Best available technology (BAT) approach

31. Mechanism methodologies may include provisions to identify the baseline scenario as the best available technology (BAT) that represents an economically viable and environmentally sound course of action. For this purpose, the following applies:

    (a) An economically viable course of action is one that will typically provide sufficient returns to cover investment, operations & maintenance costs. An economically viable course of action does not need to be viable for all companies under all circumstances.

    (b) An environmentally sound course of action is an activity that is in line with laws and regulations on environmental protection in the applicable geographical area and seeks to reasonably minimize environmental harm.

32. For technologies or practices applied in households, the mechanism methodology shall define “economically viable course of action” based on the type of activity. The definition may be based on the commonly experienced costs associated with the technology or practice, the capacity of households to obtain financing, and other relevant considerations.

[3] As specified in paragraph 97 of the Procedure: Development, revision and clarification of methodologies and methodological tools, version 01.0 (A6.4-PROC-METH-001).

33. Mechanism methodologies may determine the baseline scenario as the BAT where emissions or removals per output are determined primarily by the technology(ies) or practice(s) used in the activity. This approach may be suitable when an activity consists of a single technology or practice (e.g., substitution/installation of new equipment such as clean cooking activities). It may only be suitable when the mitigation activity and alternative technologies or practices provide reasonably homogeneous outputs (i.e., they produce similar outputs for the pool of users). The approach is also only suitable if BAT can be determined with the available data. The approach may be more easily applied if BAT has already been specified by the host Party.

34. Mechanism methodologies shall specify the appropriate baseline geographic reference area for establishing the BAT or provide for principles and requirements that activity participants shall apply to establish this area with proper justification.

35. When selecting this approach, mechanism methodologies shall define a procedure for determining BAT, applying one of the following options:

    (a) Option 1: Best available technologies may be recommended by host Parties for consideration by the Supervisory Body, following the "Procedure for development, revision, clarification and update of standardized baselines". The BAT approved through this process can be applied directly without following any other steps.

    (b) Option 2: Define BAT in the mechanism methodology as obtained from reliable data sources, consistent with the provisions in section 5.3 above. Confirm that the identified BAT is both economically viable and environmentally sound, in line with the definitions in section 2 above. If the geographic scope of the identified BAT is limited, then its geographic applicability shall be specified and justified in the mechanism methodology.

    (c) Option 3. Provide a procedure in the mechanism methodology that activity participants shall apply to identify the BAT in the context of their mitigation activity, including the following steps:

        (i) Identify the available technologies in line with paragraph 35 above and the definitions in this standard for supplying the pool of users in the baseline geographical reference area, at the scale required for implementation at a similar level to the mitigation activity.

        (ii) Identify which of these available technologies are environmentally sound in line with paragraph 35 above and the definitions in this standard.

        (iii) Identify which of the environmentally sound technologies are economically viable in line with paragraph 35 above and the definitions in this standard.

        (iv) Define the emissions or removals intensity of each of the remaining technologies identified in step (iii) above as tonnes of carbon dioxide equivalent (tCO_2-eq) per unit of output, based on the average conditions of the technology in the baseline geographical reference area.

        (v) Identify the remaining technology from step (iv) above with the best emissions or removals intensity. This technology constitutes the BAT and its emission or removals intensity forms the basis for the baseline.

36. When the baseline scenario is set using BAT, then the quantification of the crediting baseline of the technology shall also be derived using the emissions or removals intensity of the identified BAT. The mechanism methodology shall define the procedures to quantify the emissions or removals intensity of the BAT as tCO_2-eq per unit of output. However, other parameters related to the crediting baseline emissions or removals may be derived using other approaches.

37. The mechanism methodology shall define the methods for quantification of the emissions or removals intensity of BAT, considering the general principles in section 4 and the data requirements in section 5.

6.2. Ambitious benchmark approach

38. The baseline scenario based on an ambitious benchmark may be identified as the average emission level of the best performing comparable activities providing similar outputs in a defined scope in similar social, economic, environmental, and technological circumstances.

39. The mechanism methodology may determine the baseline scenario as an ambitious benchmark when the sector is characterised by homogeneous outputs, i.e., if there are similar outputs with a similar level of service for the pool of users. An ambitious benchmark further may be suitable in cases where the emissions or removals per output depend on multiple factors (inter alia, technology, operational practices, fuels, feedstocks, local circumstances such as climatic conditions). The approach is only suitable where reliable data on best performing comparable activities providing similar outputs are available.

40. Mechanism methodologies shall either directly set the ambitious benchmark, or define a procedure that activity participants shall apply for setting the crediting baseline based on an ambitious benchmark, including the following steps:

    (a) Define and justify the appropriate baseline geographical reference area for the type of technology or practice;

    (b) Identify all the technologies or practices (e.g., types of industrial plants, types of household units, as applicable to the activity type) that are providing similar output in the baseline geographical reference area in similar social, economic, environmental, and technological circumstances[4].

    (c) Specify which comparable activities (e.g., plants, households) in the baseline geographical reference area shall be included in the analysis, taking into account the type of the mitigation activity. For example, if the mitigation activity consists of the installation of greenfield plants, then only recently built installations shall be included in the analysis. For brownfield activities (e.g., energy efficiency improvements), all existing installations may be considered, depending on the circumstances. Similarly, only activities of a similar size (e.g., plants above a

[4] For example, for cement for building construction applications, the technologies are those being applied for building construction with similar structural capabilities, e.g., other cement production for concrete-based construction, wood-frame construction, steel-frame construction, masonry. For another example, metal-alloy production, the technologies are those being applied for the same metal-alloy production.

certain threshold) or within certain locations (e.g., only households in rural areas) may be considered, depending on the context of the mitigation activity.

(d) Determine the appropriate time period for which performance data for all identified technologies or practices shall be collected. In cases where the performance varies significantly between calendar years (e.g., due to differences in climatic conditions such as precipitation), an appropriate multi-year period shall be selected. The coverage may be of one or three years and when one year is selected, it shall be appropriately conservative. The choice shall be appropriately justified.

(e) Collect up-to-date performance data for all the identified technologies or practices in the baseline geographical reference area.

(f) Prepare a performance distribution curve of tCO_2-eq/unit output for the total amount of output provided by the identified activities in the baseline geographical reference area.

(g) Specify how to define the group of best performing comparable activities bounded at maximum by the 20^{th} percentile of the distribution curve or lower (e.g., 10^{th} percentile, 5^{th} percentile) and justify the choice and how it complies with the general principles in section 4. Calculate the weighted average (by output) of the emissions intensities of all the best performing comparable activities including and beyond the selected percentile as tCO_2-eq/unit of output.

41. The value determined in sub-bullet (g) constitutes the ambitious benchmark, and its emission intensity forms the basis for the crediting baseline.

42. When the baseline scenario is set using an ambitious benchmark, then the crediting baseline emissions or removals shall also be derived using the emissions intensity of the benchmark. However, other parameters related to the crediting baseline for emissions and/or removals may be derived using other approaches (for example, disaggregated data on the energy efficiency of operations of each comparable activity may be combined with a default value for the specific GHG intensity per unit of energy).

43. The mechanism methodology shall define the methods for quantification, considering the general principles in section 4 and the data requirements in section 5.

44. The data used should aim to be both of high quality and recent, preferably with a vintage of no more than 3 years older than the year the activity PDD is submitted for global stakeholder consultation.

6.3. Downward adjusted existing actual or historical emissions approach

6.3.1. Applicability and baseline scenario selection

45. The baseline scenario may be identified based on existing actual or historical emissions, adjusted downwards.

46. Mechanism methodologies may include this approach, for example, where there is limited data availability on the emissions or removals performance from similar activities in the sector, when emissions or removals per output are dependent on factors that are highly activity- or site-specific; or when sector data shows strongly heterogeneous circumstances.

47. The mechanism methodology may determine the baseline scenario as downward adjusted existing actual or historical emissions or removals from sources and sinks while following the general principles of conservativeness and others in section 4, as well as the data requirements in section 5 related to credibility and transparency, under considerations of data availability and quality.

48. The mechanism methodology shall define the procedures to determine the baseline scenario. Possible baseline scenarios may inter alia include:

    (a) the continuation of the pre-activity scenario up to a certain point in time (for example, up to the time at which a retrofit would have occurred);

    (b) an evolution of the baseline scenario over time (for example, if a gradual shift from the pre-activity scenario is observed);

    (c) the retrofit or replacement of the pre-activity scenario technologies;

    (d) the implementation of the mitigation activity at a later point in time.

6.3.2. Quantification of emissions or removals

49. The mechanism methodology shall further define the methods to quantify the emissions or removals, or emissions or removals intensity, of the baseline as tCO_2-eq per unit output. When the baseline scenario is set based on existing actual or historical emissions, adjusted downwards, then the quantification of the crediting baseline may be derived using the following general methods:

    (a) **Site-specific historical data**. The mechanism methodology may incorporate requirements related to the minimum quantity of historical years to consider, year-on-year variability, and data trends, as well as considerations on the use of improvement factors;

    (b) **Control group**. The mechanism methodology may incorporate requirements related to selection of the control group; shared characteristics between the activity and control groups such as location, pre-activity and project technologies, socio-economic circumstances, and existing practices; and statistical tests for similarity between the control and activity group;

    (c) **Model.** The mechanism methodology may incorporate requirements related to the selection, calibration, capabilities, and credibility of models; and

    (d) **Default factors.** The mechanism methodology may incorporate requirements for default factors such as their source, relevance and conservativeness.

6.3.3. Downward Adjustment

50. For the purpose of this document, in case of removals, “downward adjustment” shall be read as “upward adjustment” with respect to the crediting baseline removals levels.

51. For a crediting baseline based on the existing actual or historical emissions or removals, the mechanism methodology shall describe the downward adjustment methods to be applied by the activities using the methodology or through standardized baselines.

52. The same downward adjustment method shall be applied by all activities applying the mechanism methodology under similar circumstances.

53. The downward adjustment to the crediting baseline referred to above may be operationalized through:

(a) Calculation based on the lower bound of the relative error at 95% confidence level estimated for the total baseline emissions of the first crediting period in the ex-ante quantification. In case the relative error is below 10%, the 10% value should be used as minimum downward adjustment.

$$DA_{CP,i} = max\left(10\%, \eta(BE_{CP,i})\right)$$ Equation (1)

$$BE_y = BE_{U,y} * (100\% - DA_{CP,i})$$ Equation (2)

Where:

$DA_{CP,i}$	=	Downward adjustment factor for the crediting period *i*
$\eta(BE_{CP,i})$	=	Relative error of the total baseline emissions of the crediting period *i*
BE_y	=	Downward adjusted baseline emissions of year *y*
BEu, y	=	Unadjusted baseline emissions of year *y*

(b) Other factors or quantitative methods approved in mechanism methodologies or standardized baselines.

(c) Other factors or quantitative methods by the host Party that are specified to the Supervisory Body for approval.

54. For baseline removals, an upward adjustment shall be applied mutatis mutandis.

7. Definition and Quantification of BAU

55. Mechanism methodologies shall include provisions to demonstrate that the baseline emissions, determined in accordance with any of the approaches in section 6 above, are below 'business as usual' for reductions, and for removals, that they are above BAU removals.

56. For that purpose, mechanism methodologies shall require the identification of a conservative BAU scenario that would occur in the absence of the mitigation activity and provide a method for the estimation of the corresponding BAU emissions or removals.

57. The following alternatives shall be considered for the purposes of determining the BAU scenario:

(a) Continuation of the historical situation (pre-activity scenario);

(b) Establishment of an economically viable technology or practice;

(c) A scenario combining (a) for the remaining lifetime of the existing equipment and/or practice, followed afterwards by (b); and

(d) Any other relevant scenario in line with the applicable principles and requirements set out in this standard.

58. The following approaches may be considered for estimating the BAU emissions or removals:

(a) Where the mitigation activity is not a greenfield activity, the historical emissions or emissions intensity, including any trends toward improving performance, prior to the implementation of the mitigation activity, for the remaining lifetime of the existing equipment and/or practice.

(b) Where the mitigation activity is a greenfield activity, or where it operates beyond the end of the remaining lifetime of the existing equipment and/or practice, mechanism methodologies may consider the average emissions intensity of new capacity installed in the past three years, in the baseline geographical reference area, and/or in similar social, economic, environmental and technological circumstances and providing similar outputs as the mitigation activity.

59. In determining the BAU scenario and quantifying the BAU emissions or removals pursuant to paragraphs 55 to 58 above, the following shall be considered:

(a) Legal requirements related to the mitigation activity type or sector that are active or scheduled to take effect.

Option 1: All legal requirements shall be deemed to be enforced.

Option 2: For [high-income countries] [countries other than LDCs and SIDS], all legal requirements shall be deemed to be enforced. For other countries, legal requirements shall only be deemed to be unenforced if:

(i) Non-enforcement is widespread (i.e., more than 50%) and documented through credible, authoritative and up-to-date evidence; and

(ii) [Non-enforcement persists no longer than X years after the entry into force of the relevant legal requirements [, except for LDCs]]. *{End of Option 2}*

(b) Targets related to outputs provided by mitigation activity as defined by government authorities, including regional/supra-national, national, subnational, and local jurisdictions (e.g., efficiency targets for appliances, renewable capacity target for national grid, refrigerant substitution target for appliance manufacture).

(c) Targets related to products or services provided by the mitigation activity as defined by other entities relevant to the sector, such as national or international sector associations (e.g., fossil fuel substitution targets for cement manufacture, etc.).

60. The BAU scenario and quantification of the BAU emissions or removals shall be determined ex-ante at the start of the first crediting period for the same duration as the planned crediting periods of the mitigation activity. Where several scenarios are plausible, the scenario showing the lowest emissions (for reductions) or highest removals (for removals) shall be chosen as the BAU scenario. The BAU scenario and BAU emissions or removals shall be redetermined at each crediting period renewal and the same analysis shall be carried out.

8. Baseline Levels Aligned with NDCs, LEDS and the Temperature Goals of the Paris Agreement

61. To ensure alignment with RMP para. 33 with respect to aligning to the long-term temperature goal of the Paris Agreement, and with the host Party NDC, if applicable, and its LT-LEDS, if it has submitted one, mechanism methodologies shall include the definition of, or require the selection and quantification of, a baseline level adjusted for such alignment. When not included in the methodology itself, such selection and quantification may be implemented either by standardized baselines or at the level of a mitigation activity following the procedures in the mechanism methodology.

62. The adjusted baseline shall be based on an estimation of emission reductions and removals necessary to achieve NDCs if applicable, and LT-LEDS where they have been submitted; Based on an estimation of emission reductions and removals necessary to achieve the long-term temperature goal of the Paris Agreement differentiated by technology/sector or country/region, considering socio-economic conditions and accommodating different circumstances of the host Parties.

63. Further Baseline Tools for factors or quantitative methods for this adjustment will be developed for this purpose.

9. Comparison and selection of crediting baseline

64. Mechanism methodologies shall contain provisions to require activity participants, ex-ante, to undertake the following comparisons.

65. Compare for each individual year of the crediting period and as a total amount with respect to the crediting period:

    (a) the baseline emissions and/or removals adjusted for alignment to the long-term temperature goal of the Paris Agreement, and with the host Party NDC, if applicable, and its LT-LEDS, if it has submitted one that is determined following the mechanism methodology defined in line with section 8 of this standard, and

    (b) the baseline emissions and/or removals according to one of the approaches of para. 36 of the RMP estimated as per the applicable mechanism methodology defined in line with section 6 of this standard.

66. For baselines for reductions, the lower of these two shall be selected for further consideration. For baselines for removals, the greater removals shall be selected mutatis mutandis.

67. The baseline resulting from this comparison shall be compared to the BAU baseline emissions and/or removals determined following the mechanism methodology defined in line with section 7 of this standard.

68. For baselines for reductions, when the baseline is lower than the BAU, then the baseline shall be selected as the crediting baseline. For baselines for removals, when the baseline is of greater enhancement of removals than the BAU, then the baseline shall be selected as the crediting baseline.

69. When the comparison of baseline with BAU finds that that estimated baseline emissions are higher than estimated BAU emissions or that the estimated baseline removals are less than the BAU removals, then the baseline shall be further adjusted to a level of at least [10%] below BAU for emissions or at least [10%] above BAU for removals.

70. This comparison and selection of the crediting baseline shall be demonstrated in the PDD at registration, and undertaken and reported at each renewal of the crediting period.

Appendix 1. General requirements for mechanism methodologies

1. Applicability conditions

1. Mechanism methodologies shall specify the conditions under which mitigation activities may use the methodology. Applicability conditions shall clearly describe the mitigation technologies or practices which are eligible under a methodology as well as, if appropriate, those which are not. Applicability conditions shall also prevent the use of the methodologies in contexts, configurations and cases for which these are not intended and under which an overestimation of emission reductions or net removals, and/or perverse incentives could occur.

2. Definition of the project boundary

2. Mechanism methodologies shall identify all the emission sources, sinks or reservoirs altered directly or indirectly by the mitigation activity and indicate for each whether they are associated with the baseline scenario and/or the mitigation activity. Mechanism methodologies shall further indicate whether each source, sink and reservoir is controlled by the mitigation activity, related to the mitigation activity, or affected by the mitigation activity, in line with the following definitions and provide adequate justification. Note that some sources, sinks or reservoirs may be classified in different ways, depending on the configuration of the mitigation activity (for example, in some activities, a source of transport emissions may be controlled whereas in others, it may be related); in this case, this should be indicated in the methodology respectively:

   (a) Controlled: the source, sink or reservoir is under the direction and influence of the mitigation activity participant through financial, policy, management or other instruments.

   (b) Related: Sources, sinks or reservoirs that have material or energy flows into, out of, or within the mitigation activity.

   (c) Affected: Sources, sinks or reservoirs influenced by the mitigation activity through physical displacement or changes in market demand or supply for outputs.

3. Mechanism methodologies shall define the activity boundary of the applicable mitigation activities, including which emission sources, sinks or reservoirs and GHGs are included.

4. The activity boundary shall include emission sources, sinks or reservoirs that are identified as *controlled* and *related*. The activity boundary also may include sources, sinks or reservoirs that are identified as affected. This holds, for example, for project activities that provide renewable electricity to the grid and thereby affect power plants in the grid. In this case, the emission reductions from power plants in the grid shall be treated as baseline emission source. Affected sources, sinks or reservoirs that are not included in the activity boundary shall be included as leakage.

5. The mechanism methodology may omit sources or sinks from the activity boundary and the leakage quantification, provided that the omission leads to a more conservative quantification of emission reductions or net removals. For example, where it can be

demonstrated that upstream emissions associated with the mitigation activity are lower than upstream emissions associated with the baseline scenario, the relevant upstream emissions may be omitted under both the mitigation activity and in the baseline scenario. The mechanism methodology may also specify conditions under which the certain sources, sinks or reservoirs shall be considered or may be omitted. The proponents of the mechanisms methodology shall demonstrate and provide appropriate justifications for any such omissions, including that the omission is conservative for the range of mitigation activities that may apply the methodology.

6. Mechanism methodologies shall require activity participants to delineate the geographical boundary of the specific mitigation activity. Mechanism methodologies may require activity participants to specify the location of the activity in the form of Keyhole Markup Language (KML) files or similar formats as one or more polygon(s) or by specifying the coordinates of the geographic boundary using a known coordinate system. The geographical boundary may cover more than one host Party. Where practical, the mechanism methodology may request the location of leakage emission sources, and sinks to be described.

3. Comparison with NDC, LT LEDS and Paris Agreement Long Term Goals

7. Mechanism methodologies shall require demonstration that the activity does not constrain but aligns with the policies, options and implementation plans of the host Party with regard to the latest nationally determined contribution (NDC) of the host Party, if applicable, its long-term low greenhouse gas emission development strategies (LT-LEDS), if it has submitted one, and the long-term temperature goals and long-term goals of the Paris Agreement.

8. With respect to NDC alignment, mechanism methodologies shall require project proponents to demonstrate that the A6.4 activity as described in the PDD is not in contradiction with the host Party NDC that is valid at the time of submission to Global Stakeholder Consultation (GSC), or the policies, options and implementation plans as referred therein. This also holds for mitigation activities that affect sources, sinks or reservoirs, or GHGs not covered by the NDC.

9. With respect to alignment with LT-LEDS, mechanism methodologies shall require project proponents to demonstrate that the A6.4 activity as described in the PDD is not in contradiction with the long-term low greenhouse gas emission development strategies (LT-LEDS), if the host Party has submitted one, based on the LT-LEDS valid at the time of submission to GSC, or the policies, options and implementation plans of the host Party as referred therein. This also holds for mitigation activities that affect sources, sinks or reservoirs, or GHGs not covered by the LT-LEDS.

10. With respect to alignment with the long-term temperature goals and long-term goals of the Paris Agreement, mechanism methodologies shall require project proponents to demonstrate that the A6.4 activity as described in the PDD does not constrain, but aligns with the long-term temperature goals and long-term goals of the Paris Agreement, which may be demonstrated by showing that the main focus of the activity does not constrain, but aligns with the following global efforts identified by Decision 1/CMA.5 para. 28 and 33:

    (a) Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030;

    (b) Accelerating efforts towards the phase-down of unabated coal power;

(c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels, well before or by around mid-century;

(d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science;

(e) Accelerating zero- and low-emission technologies, including, inter alia, renewables, nuclear, abatement and removal technologies such as carbon capture and utilization and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production;

(f) Accelerating the substantial reduction of non-carbon-dioxide emissions globally, in particular methane emissions by 2030;

(g) Accelerating the reduction of emissions from road transport on a range of pathways, including through development of infrastructure and rapid deployment of zero- and low emission vehicles;

(h) Phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, as soon as possible; or

(i) Conserving, protecting and restoring nature and ecosystems towards achieving the Paris Agreement temperature goal, including through enhanced efforts towards halting and reversing deforestation and forest degradation by 2030, and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases and by conserving biodiversity, while ensuring social and environmental safeguards, in line with the Kunming-Montreal Global Biodiversity Framework.

4. Aggregation

11. The consolidation of information may be done within a geographical area and a sector, to provide detailed observations at a broader level than an individual mitigation activity. Units can be grouped or aggregated to provide a broader picture when this does not lead to misrepresentation. Units can also be split or disaggregated, when this does not lead to misrepresentation, for example when the sector shows great heterogeneity.

5. Conservativeness and uncertainty

12. Mechanism methodologies shall ensure that the emission reductions or net removals from a mitigation activity using the methodology are not overestimated, taking into account the overall uncertainty in quantifying the emission reductions or net removals. The degree of conservativeness shall be based on the level of uncertainty (i.e., applying a larger degree of conservativeness in case of higher uncertainties). All causes of uncertainty shall be considered, including uncertainty in data (e.g., measurements), parameters (e.g., representativeness of default values), assumptions (e.g., the baseline scenario), and methods (e.g., models to quantify emission reductions).

6. Attributability of emission reductions or removals to the mitigation activity

13. Mechanism methodologies shall ensure that the quantified emission reductions or net removals result from the implementation of the mitigation activity and not from changes in exogenous factors that are not related to the mitigation activity. Mechanism methodologies

shall therefore require approaches for taking into account and correct for exogenous factors affecting emission reductions or net removals.

7. Potential perverse incentives

14. Mechanism methodologies shall identify any potential perverse incentives for the activity participants to inflate emissions reductions or net removals and ensure that the perverse incentives are avoided.

8. Rebound effects

15. Mechanism methodologies shall ensure that rebound effects (i.e., an increase in product use or service level as a result of the implementation of a mitigation activity, e.g., when introducing energy-efficient appliances) are accounted for, except where applying the provisions with regard to suppressed demand.

9. Avoidance of double counting due to overlapping claims

16. Mechanism methodologies shall identify risks of potential double counting of the emission reductions or net removals due to overlapping claims between different crediting mechanism mitigation activities and contain provisions to avoid such double counting. This shall include but not be limited to:

    (a) The risk of different entities claiming the emission reductions or net removals associated with the production and use of goods or services (e.g., both the producer and the consumer of a biofuel claiming the same emission reductions);

    (b) The risk of overlap from emission sources or carbon pools that occur upstream and downstream of the mitigation activity (e.g., an efficient cookstove activity and an avoided deforestation activity claiming the same emission reductions).

10. Monitoring

17. Mechanism methodologies shall specify procedures for the monitoring of the type and level of outputs (products or services) from the mitigation activity.

18. Further requirement related to monitoring may be introduced in the future.

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