ARTICLE 6.4 MECHANISM

A6.4-SB004-AA-A10

Draft Recommendation

Requirements for the development and assessment of mechanism methodologies

Version 03.0

United Nations
Framework Convention on
Climate Change

COVER NOTE

1. Procedural background

1. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), at its third session, adopted decision 3/CMA.3, containing in its annex the "Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4 of the Paris Agreement"[1] (RMP), setting out principles, key requirements and processes of the mechanism (hereinafter referred to as the Article 6.4 mechanism). The aforementioned decision and the RMP contain, inter alia, provisions for the Supervisory Body of the Article 6.4 mechanism (hereinafter referred to as the Supervisory Body) to advance work relating to methodologies. For example:

    (a) The CMA requested the Supervisory Body to:

        (i) In the context of developing and approving new methodologies for the Article 6.4 mechanism:

            a. Review the baseline and monitoring methodologies in use for the clean development mechanism (CDM) under Article 12 of the Kyoto Protocol with a view to applying them with revisions, as appropriate, pursuant to chapter V.B of the RMP for the activities under the Article 6.4 mechanism;

            b. Consider the baseline and monitoring methodologies used in other market-based mechanisms as a complementary input to the development of baselines and monitoring methodologies pursuant to chapter V.B of the RMP;[2]

        (ii) Elaborate and further develop, on the basis of the RMP, recommendations, for consideration and adoption by the CMA at its fourth session (November 2022), on the application of the requirements referred to in chapter V.B of the RMP;[3]

2. Based on the request of the CMA in decision 3/CMA.3, paragraph 6(d), the Supervisory Body worked intensively to finalize its work to develop recommendations on the application of the requirements referred to in chapter V.B (Methodologies) of the RMP for adoption by the CMA. However, due to the complexity of the work and the short time available, the Supervisory Body was unable to conclude its consideration of the work sufficiently to make recommendations in 2022. The work undertaken in the last three meetings during 2022 was reflected in Annex 4 of the report of the third meeting of the SB (SB03) in the document entitled, "Information Note: Status of current work on the application of the

[1] See decision 3/CMA.3 contained in document FCCC/PA/CMA/2021/10/Add.1 available at: https://unfccc.int/documents/460950. The annex to the decision begins on page 29 (English version).

[2] See decision 3/CMA.3, paragraph 5(b)(i) and (ii).

[3] See decision 3/CMA.3, paragraph 6(d).

requirements referred to in chapter V B (Methodologies) of the rules, modalities and procedure"[4] and forms the basis for further work.

3. The CMA, at its fourth session, requested the Supervisory Body to elaborate and further develop recommendations, on the basis of the RMP, for consideration and adoption by the CMA at its fifth session (December 2023), on the application of the requirements referred to in chapter V.B of the RMP. It further requested the Supervisory Body, while developing the recommendations, to consider broader inputs from stakeholders provided in a structured public consultation process.[5]

4. In order to facilitate the Supervisory Body's consideration of the work referred to above, the secretariat provided and performed the following:

   (a) Where the Supervisory Body had indicated that it will develop further guidance in Annex 4 to the SB03 meeting report, the secretariat has proposed draft text for consideration by the Supervisory Body, e.g. additional draft guidance on requirements for additionality, drawing elements from the CDM and other mechanisms;

   (b) Grouped some of the requirements in providing the inputs referred to in paragraph 4 (a) above, to streamline the provision of the draft guidance;

   (c) Pilot-tested the proposed requirements in the following highly-used CDM methodologies and an associated methodological tool:

      (i) "ACM0002: Grid-connected electricity generation from renewable sources" (hereinafter referred to as ACM0002) and associated methodological tool "TOOL07: Tool to calculate the emission factor for an electricity system" (hereinafter referred to as TOOL07);

      (ii) "AMS-I.L.: Electrification of rural communities using renewable energy (hereinafter referred to as AMS-I.L.)"; and

      (iii) "AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass" (hereinafter referred to as AMS-II.G.).

5. Appendices 1 to 4 of this document contain the proposed revised methodologies and tool. The revisions are for illustration purpose only and would need to be finalised in future based on guidance from the supervisory body and taking into account any inputs that will be received from the stakeholders.

2. Purpose

6. The purpose of this document is to advance the work to elaborate and further develop draft recommendations, on the basis of the RMP, on the application of the requirements referred to in chapter V.B. (methodologies) of the RMP.

[4] Information note: Status of current work on the application of the requirements referred to in chapter V B (Methodologies) of the rules, modalities and procedures (A6.4-SB003-A04) is available at: https://unfccc.int/sites/default/files/resource/a64-sb003-a04.pdf.

[5] See decision -/CMA.4, paragraph 21 and 22 in document entitled, "Guidance on the mechanism established by Article 6, paragraph 4, of the Paris Agreement" (Advance unedited version) available at: https://unfccc.int/sites/default/files/resource/cma4_auv_14_PA6.4.pdf.

3. Key issues and proposed solutions

7. Key proposed changes in the methodologies and tool are shown as yellow highlighted text.

8. In addition, the document contains two types of boxed text to provide background information to the proposed changes:

   (a) The draft requirements (latest version) as contained in Annex 4 to the SB03 meeting report in the document entitled, “Information Note: Status of current work on the application of the requirements referred to in chapter V B (Methodologies) of the rules, modalities and procedures,” considered at the third meeting of the Supervisory Body in November 2022 are shown in *italic*;

   (b) Rationale for the proposed changes to the methodology, including an approximate indication of potential impact of the proposed changes to parameters on the emission reductions that accrue to projects applying the methodologies. Where possible, projects from different geographic regions were selected for testing. The result of the analysis showed that the revised methodologies generally resulted in conservative estimates of emission reductions as compared to the prevailing approach under the CDM.

3.1. Proposed changes to ACM0002 and TOOL07

9. Changes proposed to the requirements in TOOL07 and ACM0002 that lead to reliable and more conservative estimations of emission reduction in line with the RMP requirements are summarized below. Further details are available in appendices 1 and 2.

   (a) **Excluding ex-ante approach** – The option to use historical data to calculate the grid emission factors (i.e. operating margin (OM) and build margin (BM) emission factors) that remained fixed through the crediting period, which is allowed under the CDM, has been excluded, i.e. a requirement to undertake ex-post calculation periodically is introduced;

   (b) **Renewable energy projects registered with a carbon market mechanism are no longer excluded from the BM calculation** – Renewable energy plants registered as a carbon market activity (including Article 6.4 mechanism activity in future), omitted in the estimation method of the CDM, are included in the cohort of recent plants used to calculate the BM emission factor;

   (c) **Changes to the weights of OM and BM** – Increase in the BM weight with a corresponding decrease in the OM weight is proposed, including at the renewal of the crediting periods. This approach corresponds to the ambitious benchmark approach of the RMP, where the baseline is set at least at the average emission level of the best performing comparable activities providing similar outputs and services in a defined scope in similar social, economic, environmental and technological circumstances. Further, the methodology requires actual and recent information about the electricity generating units to calculate the BM, which, in many cases due to the ongoing decarbonisation of the electricity grids, factors in the best available technologies that are economically feasible and environmentally sound, specified under the RMP. As can be seen from table 1 below for solar and wind plants for the first crediting period, these resulted in approximately 6 per cent to 28 per cent reduction in emission factor as compared to current approaches under the CDM.

Table 1. Comparison of combined margin (CM) emission factors for wind and solar projects for the first crediting period

Cases*	CM calculated using CDM weights (75:25) (tCO_2/MWh)	CM calculated using proposed weights (50:50) (tCO_2/MWh)	Percentage reduction in CM values
1	0.599	0.490	18.1
2	0.548	0.478	12.7
3	0.421	0.396	6.1
4	0.391	0.283	27.7
5	0.417	0.348	16.5

* For illustration purposes only. The data were obtained either from a clean development mechanism (CDM) project or CDM standardized baseline listed below, where the required data were available to a large extent (no other criteria were used for this selection):
Case 1 – "Project 10611: Expansion San Pedro Wind Farm", Chile
Case 2 – "Project 8960: Maibarara Geothermal Power Project", Philippines,
Case 3 – Standardized baseline submission for Armenia, available at https://cdm.unfccc.int/methodologies/standard_base/2015/sb169.html)
Case 4 – Standardized baseline submission for Kenya, available at https://cdm.unfccc.int/methodologies/standard_base/2015/sb145.html
Case 5 – Standardized baseline submission for Belize, available at https://cdm.unfccc.int/methodologies/standard_base/2015/sb158.html)

(d) **Calculation of BAU emissions**: The methods to calculate OM were indicated for the estimation of Business-As-Usual emissions.

(e) **More accurate estimation of reservoir emissions**: Based on the latest available science, the default emission factor for project emissions from reservoirs is increased to 100 $kgCO_2e$/MWh from the currently indicated 90 $kgCO_2e$/MWh in addition to the provision to use G-res Tool (https://g-res.hydropower.org/) for more accurate estimation of reservoir emissions, which is cited in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

3.2. Proposed changes to AMS-I.L.

10. The main changes proposed for AMS-I.L. are summarized below and were proposed based on extensive analysis of project documentation for CDM projects, as well as the review of other peer-reviewed publications and reports. The details are available in appendix 3.

11. **Tiers of electricity consumption**: In the registered CDM projects and related methodologies, the emission reductions were calculated based on default emission factors for three tiers of electricity supplied: 6.8 $kgCO_2$/kWh for the first tier (55 kWh/year/household) taking into account suppressed demand; 1.3 $kgCO_2$/kWh for the second tier (supply of electricity between 55 and 250 kWh/year/household); and 1.0 $kgCO_2$/kWh for the third tier (electricity supplied above 250 kWh/year/household).

12. In the revised approach, a default emission factor of 2.72 $kgCO_2$/kWh is proposed for the first tier (first 55 kWh/year/household of electricity supplied) and a default emission factor of 0.7 $kgCO_2$/kWh is proposed for the second tier (electricity supply above 55 kWh/year/household). This approach takes into account literature on levels of consumption of kerosene for lighting, the emissions from use of kerosene, minimum level of service specified for lighting, and emissions from use of diesel generators to power

household appliances. This approach leads to more conservative estimates as compared to prevailing approaches under the CDM, amounting to the reductions of 50.9 per cent and 60.3 per cent.

3.3. Proposed changes for AMS-II.G.

13. In the case of AMS-II.G., the main changes proposed relate to the parameters/requirements below, which are key determinants of the emission reduction estimates of the methodology. These changes were proposed based on extensive analysis of project documentation for CDM projects and Gold Standard projects, as well as the review of peer-reviewed publications and reports. The revised approaches result in reductions of between 38 per cent and 79 per cent as compared to prevailing approaches under the CDM. Details are available in appendix 4.

    (a) **Wood-to-charcoal conversion factor:** A default value of 4 is recommended because it is at the lower end of the range indicated in most literature reviewed, including FAO (2017);

    (b) **Average annual consumption of woody biomass per person:** It is proposed to cap the value at 0.9 tonnes/capita/year, in addition to the conservative default value of 0.4 tonnes/capita/year;

    (c) **Fraction of non-renewable biomass (fNRB):** It is proposed to cap the value of fNRB at 0.6, in addition to the conservative default value of 0.3;

    (d) **Efficiency of project device:** It is recommended that the methodology be applicable to project cookstoves with rated thermal efficiency of at least 30 per cent as compared to 20 per cent indicated in CDM methodologies;

    (e) **Efficiency of pre-project device:** The following new default values for the efficiency of the pre-project device used for cooking and/or water boiling applications are proposed:

        (i) 0.15 for a three-stone fire using firewood (not charcoal), or a cookstove with no improved combustion air supply or flue gas ventilation (i.e. without a grate or chimney), as opposed to 0.1 indicated in CDM methodologies;

        (ii) 0.25 for other type of devices, as opposed to 0.2 indicated in CDM methodologies.

    (f) **Requirements of sampling and surveys:** The following requirements are proposed for monitoring to increase the accuracy of results:

        (i) When biennial inspection is chosen, a 95 per cent confidence interval and a 10 per cent margin of error shall be achieved for the sampling parameter when using data sensors/loggers, otherwise a 95 per cent confidence interval and a [x] [5] per cent margin of error shall be achieved for user-reported surveys;

        (ii) When the activity participant chooses to inspect annually, a 90 per cent confidence interval and a 10 per cent margin of error shall be achieved for the sampled parameters when using data sensors/loggers, else a 95 per cent

confidence interval and a [x][6] [5] per cent margin of error shall be achieved for user-reported surveys.

4. Subsequent work and timelines

14. Subject to guidance by the Supervisory Body, a call for public consultation will be launched for the revised methodologies and the associated tool contained in the appendices. The consultation will be undertaken in a structured manner (e.g. specific questions on specific areas that the stakeholder may choose to respond will be included, standard template to provide inputs will be provided).

15. Taking into account the guidance received from the Supervisory Body at this meeting and any stakeholder input that will be received, further work will be undertaken to improve this draft recommendation, including related CDM methodologies. Besides the methodologies included in appendices 1 to 4, other methodologies listed below may be prioritised to undertake revision[7]:

    (i) "AMS-I.A.: Electricity generation by the user";

    (ii) "AMS-I.D.: Grid connected renewable electricity generation";

    (iii) "AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user";

    (iv) "AMS-I.F.: Renewable electricity generation for captive use and mini-grid";

    (v) "AMS-I.I.: Biogas/biomass thermal applications for households/small users";

    (vi) "AMS-II.J.: Demand-side activities for efficient lighting technologies";

    (vii) "AMS-III.C.: Emission reductions by electric and hybrid vehicles";

    (viii) "AMS-III.D.: Methane recovery in animal manure management systems";

    (ix) "AMS-III.R.: Methane recovery in agricultural activities at household/small farm level";

    (x) "AMS-III.AR: Substituting fossil fuel based lighting with LED/CFL lighting systems";

    (xi) "AMS-III.AV.: Low greenhouse gas emitting safe drinking water production systems";

    (xii) "AMS-III.BG.: Emission reduction through sustainable charcoal production and consumption";

    (xiii) ACM0001: Flaring or use of landfill gas.

[6] As illustrated in section 5.2 of revised AMS-II.G included in the appendices, reducing error margins will lead to large increases in sample sizes i.e. 370,453,567,728,965 and1333 samples for 10,9,8,7,6 and 05 per cent error margins when the population is 10000.

[7] This list includes methodologies that are more frequently applied in CDM project activities and programme of activities (PoAs) with issuance success.

5. Recommendations to the Supervisory Body

16. The Supervisory Body may wish to consider this document and provide guidance for further work.

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APPENDIX 3 – DRAFT METHODOLOGY: ELECTRIFICATION OF RURAL COMMUNITIES USING RENEWABLE ENERGY

APPENDIX 4 – DRAFT METHODOLOGY: ENERGY EFFICIENCY MEASURES IN THERMAL APPLICATIONS OF NON-RENEWABLE BIOMASS

The above-mentioned appendices are available at:
https://unfccc.int/sites/default/files/resource/a64-sb004-aa-a10-app.zip

1. Procedural background

1. Decision 3/CMA.3, paragraph 6(d), requested the Supervisory Body to elaborate and further develop recommendations, for consideration and adoption by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) at its fourth session (November 2022), on the application of the requirements referred to in chapter V.B (titled 'Methodologies') of the rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement (RMP) (see the annex to decision 3/CMA.3). [The relevant paragraphs in the RMP are as follows:

33. Mechanism methodologies shall encourage ambition over time; encourage broad participation; be real, transparent, conservative, credible, below 'business as usual'; avoid leakage, where applicable; recognize suppressed demand; align with the long-term temperature goal of the Paris Agreement, contribute to the equitable sharing of mitigation benefits between the participating Parties; and, in respect of each participating Party, contribute to reducing emission levels in the host Party, and align with its NDC, if applicable, its long-term low GHG emission development strategy if it has submitted one and the long-term goals of the Paris Agreement.

34. Mechanism methodologies shall include relevant assumptions, parameters, data sources and key factors and take into account uncertainty, leakage, policies and measures, and relevant circumstances, including national, regional or local, social, economic, environmental and technological circumstances, and address reversals, where applicable.

35. Mechanism methodologies may be developed by activity participants, host Parties, stakeholders or the Supervisory Body. Mechanism methodologies shall be approved by the Supervisory Body where they meet the requirements of these rules, modalities and procedures and the requirements established by the Supervisory Body.

36. Each mechanism methodology shall require the application of one of the approach(es) below to setting the baseline, while taking into account any guidance by the Supervisory Body, and with justification for the appropriateness of the choices, including information on how the proposed baseline approach is consistent with paragraphs 33 and 35 above and recognizing that a host Party may determine a more ambitious level at its discretion:

A performance-based approach, taking into account:

(i) Best available technologies that represent an economically feasible and environmentally sound course of action, where appropriate;

(ii) An ambitious benchmark approach where the baseline is set at least at the average emission level of the best performing comparable activities providing similar outputs and services in a defined scope in similar social, economic, environmental and technological circumstances;

(iii) An approach based on existing actual or historical emissions, adjusted downwards to ensure alignment with paragraph 33 above.

37. Standardized baselines may be developed by the Supervisory Body at the request of the host Party or may be developed by the host Party and approved by the Supervisory Body. Standardized baselines shall be established at the highest possible level of

aggregation in the relevant sector of the host Party and be consistent with paragraph 33 above.

38. Each mechanism methodology shall specify the approach to demonstrating the additionality of the activity. Additionality shall be demonstrated using a robust assessment that shows the activity would not have occurred in the absence of the incentives from the mechanism, taking into account all relevant national policies, including legislation, and representing mitigation that exceeds any mitigation that is required by law or regulation, and taking a conservative approach that avoids locking in levels of emissions, technologies or carbon-intensive practices incompatible with paragraph 33 above.

39. The Supervisory Body may apply simplified approaches for demonstration of additionality for any least developed country or small island developing State at the request of that Party, in accordance with requirements developed by the Supervisory Body.]

2. The Supervisory Body, at its first meeting, considered the concept note "Guidelines for the implementation of methodological principles, approaches and methods for the establishment of baseline and additionality" and discussed how the principles included in chapter V.B of the RMP can be further elaborated as guidance for the development of methodologies for the A6.4 mechanism.

3. The Supervisory Body agreed that an informal working group on methodologies comprising its members and alternate members as well as secretariat staff would work to prepare draft recommendations for the CMA, taking into account the input provided at the second meeting of the Supervisory Body, for consideration by the Supervisory Body at its third meeting, with a view to forwarding the recommendations to the CMA at its fourth session. The Supervisory Body noted that there are capacity-building needs for host Parties to participate in the mechanism, including those relating to methodologies, to deliver higher ambition of the Parties.

4. Further where activities occur within the boundaries of a large-scale (e.g., national, sub-national) sectoral strategy or program for reducing and removing greenhouse gas (GHG) emissions, further methods for coordinating and/or reconciling accounting, emissions leakage, monitoring, and safeguards will need to be developed by the Supervisory Body.

2. Elaboration of the requirements in paragraphs 33 to 39 of the rules, modalities and procedures

2.1. Normative reference

5. The “shall” requirements in this document are those that the user of this document (i.e. activity participants, host Parties, stakeholders or the Supervisory Body) is obliged to satisfy in order to claim conformance to this document. Other types of provisions in this document include (i.e. recommendations (“should”), permissions (“may”), possibilities and capabilities (“can”)).

6. Reducing emissions, increasing removals and mitigation co-benefits of adaptation actions and/or economic diversification plans are collectively referred to as ‘emission reductions’ in this document.

2.2. Process for methodology development

7. The draft requirements in this section from Annex 4 to the SB03 meeting report have been moved to the concept note “Process for the development of methodologies, methodological tools and standardized baselines”.

2.3. Encouraging ambition over time

8. Paragraph 33 of the RMP states that ‘Mechanism methodologies shall encourage ambition over time’.

9. This requirement shall be implemented through the application of approaches to be elaborated in accordance with further guidance and procedures to be developed by the Supervisory Body, which are relevant and applicable to the implementation of other elements of para 33 of the RMP.

[Approaches]

10. These approaches shall include approaches based on:

    (a) increasing the stringency of the baselines over time;

    (b) the implementation of replicable and scalable mitigation activities.

11. Developing Baseline Contraction Factors (BCFs) to periodically adjust the baseline downwards, is one way of implementing more stringent baselines over time. BCFs could be developed by the Supervisory Body at the request of the host Party or could be developed by host Party and approved by the Supervisory Body. A procedure [will][could] be established to guide the development of BCFs including the process for consultation with the host Parties.

12. Approaches to include progressively more efficient and less GHG intensive technologies in programmes, or activities which expand the user base of project technologies or greater penetration among potential end users, or expansion of geographical sectoral coverage, are potential ways of supporting replicability and scalability of mitigation activities.

13. The Supervisory Body shall develop further guidance on the applicability and/or procedures on the implementation of these approaches.

14. **Guidance required from SB for further work:** The Supervisory Body may wish to provide guidance on the overall direction of further work (e.g., approach on developing criteria for selecting replicable and scalable activities versus increasing the stringency of baselines over time). As illustrated in the examples of draft revised methodologies in appendices 1 to 4, RMP requirements relating to baselines will lead to more conservative estimation of emission reductions compared to prevailing approaches in carbon market mechanisms, as will increased stringency of baseline requirements applied at the renewal of the crediting period. Should the stringency over time be in the form of a net-to-gross adjustment to the emission reductions achieved applied in all methodologies, or should stringency be sought through a sector-specific or region-specific adjustment factor, or both? There is precedence in existing methodologies[8] for energy efficiency and transport to apply an annual net-to-gross adjustment factor to increase the stringency of baselines over time to account for any autonomous improvements in efficiency. If adoption of a sector-specific and region-specific adjustment factor is proposed, should it be based on projections of sectoral and regional decarbonization pathways provided in IPCC AR6[9] or relevant International Energy Agency publications?[10] Should there be a process to receive such factor(s) recommended by a Host Party for consideration by the Supervisory Body?

Further, requirements in the RMP that methodologies 'Encourage ambition over time' and 'Contribute to the equitable sharing of mitigation benefits between the participating Parties' and that 'Activity aligns with the long-term temperature goal of the Paris Agreement' have been grouped in this document to propose approaches and options to meet the requirements together. The Supervisory Body may wish to provide guidance on the appropriateness of groupings.

2.4. Encouraging broad participation

15. Paragraph 33 of the RMP states that the 'Mechanism methodologies shall encourage broad participation'.

16. Supervisory Body should encourage development of a broad range of methodologies covering wide set of mitigation technologies and measures. Mechanism methodologies should encourage broad participation by being simple, clear and applicable for broad sectoral and technology coverage. Mechanism methodologies should encourage participation of a broad range of stakeholders during the methodology development as

[8] For example:

(a) CDM methodology AM0120 specifies a default factor of 1.5 per cent for refrigerators and 2 per cent for air-conditioners based on literature from the International Energy Agency. AM0120 is available at <https://cdm.unfccc.int/methodologies/DB/3USXGBI5RRLI5FXVG90SIYCOD9W9P1>;

(b) AMS-III.C and TOOL18 specify a 1 per cent annual discount. AMS-III.C and TOOL18 are available at <https://cdm.unfccc.int/methodologies/DB/HLOH5R7J6M96A23TFECTQ1BVIE24CK> and <https://cdm.unfccc.int/Reference/tools/index.html>, respectively.

[9] Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change <https://www.ipcc.ch/assessment-report/ar6/>.

[10] For example, using target-setting approaches similar those used by the Science Based Targets initiative (SBTi) <https://sciencebasedtargets.org/>.

described in section 3.2.2 of the concept note “Process for the development of methodologies, methodological tools and standardized baselines”.

2.5. Being real, transparent, conservative, credible

17. Paragraph 33 of the RMP states that the ‘Mechanism methodologies shall be real, transparent, conservative, credible’.

18. Mechanism methodologies shall ensure that the results of Article 6.4 activities developed using them, represent actual tonnes of greenhouse gas emissions reduced or removed and shall provide credible methods for estimating emission reductions. Such estimation should be based on up-to-date scientific information and reliable data gathered through robust monitoring methods, excluding extraneous cofactors affecting emission reductions.

19. Mechanism methodologies shall require transparent descriptions of the source of the data used, and disclosure of data sources unless they are confidential, the assumptions made, the references used and the underlying steps deriving the estimates of the results of Article 6.4 activities, where necessary, including equations.

20. Mechanism methodologies shall result in conservative emission reduction estimates, from the measures applied or the options chosen, or assumptions made and shall not overestimate the emission reductions from Article 6.4 activities. Where relevant, the mechanism methodologies shall require the accounting of uncertainty associated with modelled and surveyed data.

2.6. Being below business as usual

21. Paragraph 33 of the RMP states that the ‘Mechanism methodologies shall be below ‘business as usual’’.

22. Mechanism methodologies shall require that the baseline selected following the approach described under section 2.15 shall be demonstrated as being below business-as-usual (BAU). For that purpose, the mechanism methodology shall require the identification of the BAU scenario(s) and provide an approach for the calculation of BAU emissions.

2.7. Avoid leakage where applicable

23. Paragraph 33 of the RMP states that the ‘Mechanism methodologies shall avoid leakage, where applicable’.

24. Leakage is the net change of anthropogenic emissions by sources of greenhouse gases (GHGs) which occurs outside the project boundary, and which is measurable and attributable to the Article 6.4 activity, as applicable.

25. Mechanism methodologies shall:

    (a) Ensure that the potential sources of leakage in a typical activity covered by the mechanism methodology are identified, including, but not limited to, used equipment transferred outside of the project boundary and diversion of resources from other activities, or diversion of production or service provision;

    (b) Include provisions to avoid or minimize all sources of leakage as far as possible;

(c) Quantify the leakage that cannot be avoided and deduct it from the emission reduction achieved by the Article 6.4 activities;

(d) Require the activity participant to follow any guidance from the designated national authority (DNA) of the host Party on leakage, where available.

26. For some classes of activities, monitoring at jurisdictional level may be necessary to quantify and account for leakage. In addition, further work will be required to assess the implications of activities implemented outside national borders and transboundary activities.

27. Supervisory Body will develop further guidance in this regard at a future meeting of the Supervisory Body.

28. **Guidance required from SB for further work:** Are the definitions below useful and appropriate in the context of the mechanism? Should the construction phase emissions be accounted for as leakage or project emissions? In which cases and by what methods should activity carbon leakages be addressed?

2.8. Definitions[11]

(a) **Activity carbon leakage[12] –** Leakage on account of moving of an emissions-producing enterprise to a jurisdiction with less stringent climate policies in response to establishment of a carbon pricing scheme in the original location, e.g., carbon costs faced by an industrial emitter incentivizing relocation to a jurisdiction without a carbon price. The average costs in large-emitting sectors could vary significantly within programmes and across jurisdictions, potentially creating inter-jurisdictional leakage. Such leakage can occur at several levels, be it project, state, province, nation or world region;

(b) **Nesting –** The inclusion of a climate policy introduced at a lower jurisdictional level in a cap-and-trade programme implemented at a higher jurisdictional level. When a climate policy introduced at a lower jurisdictional level is nested in a cap-and-trade programme implemented at a higher jurisdictional level, carbon leakage can occur due to double counting of emission reductions[13];

(c) **Jurisdictional approaches –** Approaches taken at a jurisdictional level to account for and reduce GHG emissions. Risk of carbon leakage can decrease as more jurisdictions introduce carbon pricing measures with equivalent stringency, thereby harmonizing carbon prices across jurisdictional boundaries. Jurisdictional approaches account for changes in ecosystem carbon over an entire jurisdiction, be it at the provincial or even country level, rather than at a single activity level.

[11] These definitions, except for leakage due to emissions during construction, are proposed in “Info note: Activities involving removals under the Article 6.4 mechanism”.

[12] Currently it is difficult to find decisive empirical evidence of carbon leakage in literature, though this may be partly because high carbon taxes have not been tried in any significant way for international trade-exposed sectors

[13] Since overall emissions at the higher level are determined by the given national-level cap, the effort by the sub-national jurisdiction may not succeed in reducing emissions nationwide as it may cause emissions leakage offsetting increases in emissions elsewhere in the nation

Such an approach can eliminate the risk of leakage being unaccounted for within a jurisdiction;

(i) Nesting of activities at different governance levels and by public and private actors can be part of a jurisdictional programme that provides governments the tools needed to account for leakage at the aggregate level, while driving corporate investment in forest mitigation at the local level, for example;

(ii) Leakage will only disappear entirely if the level of regulation, and the benefit and cost of climate action are the same across all jurisdictions. This is an outcome that can be achieved through harmonized policies or border adjustments. As long as such international harmonization is not in place, leakage may occur at the local, regional, national and international level;

(d) **Leakage due to emissions during construction –** Emissions from construction of infrastructure for an emission-reduction activity that are unaccounted in the reductions claimed by the activity, i.e. not included in the calculation of total life-cycle emissions. Lifecycle emissions (not including ongoing combustion) is reported to be in the range of 13 gCO_2e/kWh to 58 gCO_2e/kWh for solar and wind projects, whereas it is in the range of 25 gCO_2e/kWh to 80 gCO_2e/kWh for natural gas and coal projects (Öko-Institut, 2023). Another study reports that total life cycle GHG emissions from renewable energy technologies are in the range of 8 to 52 gCO_2e/kWh and generally less variable than those from fossil fuel-based technologies, for which the life cycle GHG emissions are in the range of 480 to 1,000 gCO_2e/kWh (NREL, 2021).

2.9. Recognizing suppressed demand

29. Paragraph 33 of the RMP states that the ‘Mechanism methodologies shall recognize suppressed demand’.

30. Supervisory Body will recognise suppressed demand, where applicable, by considering that the baseline scenario is not the historical condition, but rather a situation where the baseline equipment or measure cannot realistically provide the level of service required of the Article 6.4 activity and alternative technology that provides the level of service comparable to Article 6.4 activity is assumed/assessed.

31. In context where the baseline equipment or measure cannot realistically provide the level of service of the Article 6.4 activity, the Supervisory Body will recognize alternative technology that provides the level of service comparable to Article 6.4 activity to be the baseline scenario rather than a historical situation.

32. The Supervisory Body will assess if suppressed demand is a plausible situation for a given context on a case-by-case basis and, where relevant, it will recognize suppressed demand by including benchmarks and default factors in specific methodologies that may not be below BAU. Mechanism methodologies may include such factors where relevant for use by activity participant, however activity participants shall not directly estimate supressed demand while applying a methodology.

2.10. Contributing to the equitable share of mitigation benefits between participating Parties

33. Paragraph 33 of the RMP states that the 'Mechanism methodologies shall contribute to the equitable sharing of mitigation benefits between the participating Parties'.

34. Mechanism methodologies may specify application of [an approach based on increasing the stringency of the baselines over time under paragraph 14 (a) of Annex 4 of SB 03] [approaches identified under paragraphs 14 to 17 of Annex 4 of SB 03] so as to ensure that activity will contribute to equitable sharing of mitigation benefits.

35. Mechanism methodologies shall require the activity participants to describe the measures taken to contribute to the delivery of mitigation benefits to the participating Parties in the project design documents.

36. This requirement may also be operationalized through the DNAs, acknowledging that it is their full right to demand an equitable share of benefits as a pre-condition for the approval of activity(ies) and/or authorization of A6.4ERs to achieve their NDCs. Activity participants shall follow any guidance from the DNAs in this regard.

2.11. Aligning with NDC of each participating Party, if applicable and LT-LEDs, if it has submitted one [and the long-term goals of the Paris Agreement]

37. Paragraph 33 of the RMP states that 'mechanism methodologies shall, in respect of each participating Party, contribute to reducing emission levels in the host Party, and align with its NDC, if applicable, its long-term low GHG emission development strategy, if it has submitted one and the long-term goals of the Paris Agreement'

38. Mechanism methodologies shall require demonstration that the activity aligns with the latest NDC of the host Party (if applicable) or [encourages] [enables] increasing ambition in the NDCs, and aligns with the LT-LEDs (if it has submitted one) [and the long-term goals of the Paris Agreement].

39. The Supervisory Body will develop further guidance on how this requirement will be demonstrated.

2.12. Aligning with long-term temperature goals of the Paris Agreement

40. Paragraph 33 of the RMP states that 'Mechanism methodologies shall align with the long-term temperature goal of the Paris Agreement.'

41. Mechanism methodologies shall require demonstration that the activity is aligned with long-term temperature goals of the Paris Agreement.

42. Mechanism methodologies may require the application of 'approaches' identified under paragraph 14 to 17 so as to ensure that activity aligns with the long-term temperature goal of the Paris Agreement.

43. The Supervisory Body will develop further guidance on how this requirement will be demonstrated.

2.13. Including data sources and accounting for uncertainty

44. Paragraph 34 of the RMP states that 'Mechanism methodologies shall include relevant assumptions, parameters, data sources and key factors'.

45. The Supervisory Body should ensure that the mechanism methodologies are transparent, comprehensive and comprehensible and include relevant assumptions, parameters, data sources and key factors. Where relevant, requirements shall be expressed in terms of performance rather than specification of a product, and these requirements should be verifiable.

46. If it is necessary to invoke a requirement in a methodology that appears elsewhere in another methodology, this should be done by reference and not by repetition. If a test method or a procedure is, or is likely to be, applicable to two or more methodologies, a tool shall be prepared on the method itself, and each methodology shall refer to it to prevent potential deviations on account of repetitions.

2.14. Taking into account policies and measures and relevant circumstances

47. Paragraph 34 of the RMP states that 'Mechanism methodologies shall take into account policies and measures, and relevant circumstances, including national, regional or local, social, economic, environmental and technological circumstances.

48. [The Supervisory Body will develop [further] guidance how mechanism methodologies shall take into account policies and measures and relevant circumstances at a future meeting of the Supervisory Body.]

49. [The Supervisory Body will address take into account relevant circumstances when developing guidance at a future meeting of the Supervisory Body.]

2.15. Addressing Reversals

50. Paragraph 34 of the RMP states that 'Mechanism methodologies shall address reversals, where applicable'.

51. "Reversal" means the release into the atmosphere of the verified tonnes of removals.

52. Mechanism methodologies shall address reversals of removals using a consistent approach specified under the recommendations on removals.

2.16. Requirements on baselines

53. Paragraph 36 of the RMP states that

'Each mechanism methodology shall require the application of one of the approach(es) below to setting the baseline, while taking into account any guidance by the Supervisory Body, and with justification for the appropriateness of the choices, including information on how the proposed baseline approach is consistent with paragraphs 33 and 35 above and recognizing that a host Party may determine a more ambitious level at its discretion:

A performance-based approach, taking into account:

(i) Best available technologies that represent an economically feasible and environmentally sound course of action, where appropriate;

(ii) An ambitious benchmark approach where the baseline is set at least at the average emission level of the best performing comparable activities providing similar outputs and services in a defined scope in similar social, economic, environmental and technological circumstances;

(iii) An approach based on existing actual or historical emissions, adjusted downwards to ensure alignment with paragraph 33 above'.

54. Paragraph 27 of RMP states that 'A host Party may specify to the Supervisory Body, prior to participating in the mechanism: (a) Baseline approaches and other methodological requirements..'

55. Mechanism methodologies shall justify the appropriateness of the choice(s) made in the methodology for setting the baseline while taking into account guidance on the performance-based approach in the RMP. For the approach based on existing actual or historical emissions, the mechanism methodology may apply [approaches identified under paragraph 14 to 17 of Annex 4 of SB03 as an option] [BCF(s) identified under paragraph 15 Annex 4 of SB03 as one option] to adjust the existing actual or historical emissions downwards to ensure alignment with paragraph 33 of the RMP.

56. Mechanism methodology should include provisions to progressively increase the stringency of the baselines applied in the methodology, as applicable.

57. A host Party may determine a more ambitious baseline requirement at its discretion.

58. The Supervisory Body may undertake further assessment and develop further guidance relating to baselines.

59. **Guidance required from SB for further work:** Are the following definitions and guidance useful and appropriate in the context of the mechanism?

(a) **Best available technology (BAT) –** The best available, technically feasible and economically viable technologies, and practices in the context of emission reduction projects, that can be accessed or applied at scale in the relevant sector;

(b) **Economically feasible –** Affordable technologies or practices available to an activity participant. In the context of an emission reduction activity at the household level, for example, a technology or practice might be considered economically feasible if its cost of ownership is less than [10] per cent of the household's annual income;

(c) **Environmentally sound –** An environmentally sound technology or practice that, in the context of an emission reduction mechanism, is not prevented by law from being used or implemented on the grounds of some environmental unsuitability in the applicable geographic region.

60. **Selection of baseline approach –** If the sector in which an activity is proposed for implementation is characterized by homogeneous production, i.e. outputs, goods or services are comparable, then a BAT that is also economically feasible and environmentally sound may be suitable for application. If the region or the sector shows strongly varying circumstances for the technology or practice (e.g. significant differences in emissions intensity levels) then ambitious benchmarking approaches is the preferred option to meet the criteria of the RMP.

61. To set a baseline against an ambitious benchmark, compile information on the most up-to-date data (where feasible not more than 3 years old) of performance on all technologies providing similar outputs or services in a similar social, economic, environmental and technological setting as the proposed activity in the host country. If host-country-specific data are not available, data from countries in the region may be used with justification. Where necessary, determine an ambitious benchmark using statistical techniques.[14]

62. Where multiple parameters cumulatively determine baseline emissions, it is insufficient to apply a performance-based approach based on BAT or ambitious benchmark to some of the parameters but not on others. Performance-based approaches should cover all relevant parameters to arrive at a conservative estimate of baseline emissions.[15]

2.17. Additionality

63. Paragraph 38 of the RMP states that 'Each mechanism methodology shall specify the approach to demonstrating the additionality of the activity. Additionality shall be demonstrated using a robust assessment that shows the activity would not have occurred in the absence of the incentives from the mechanism, taking into account all relevant national policies, including legislation, and representing mitigation that exceeds any mitigation that is required by law or regulation, and taking a conservative approach that avoids locking in levels of emissions, technologies or carbon-intensive practices incompatible with paragraph 33 above'.

64. Paragraph 39 of the RMP states that 'The Supervisory Body may apply simplified approaches for demonstration of additionality for any least developed country or small island developing State at the request of that Party, in accordance with requirements developed by the Supervisory Body'.

65. Additionality assessment shall require that the activity participants take a conservative approach that avoids locking in levels of emissions, technologies or carbon-intensive practices incompatible with the requirements discussed under sections 2.3 to 2.11 above.

66. Mechanisms methodology shall require that additionality demonstration of the article 6.4 activity is established by showing that:

    (a) Without the incentive from the mechanism, the activity would not be feasible; and

    (b) The activity represents mitigation that exceeds any mitigation that is required by law or regulation.

67. The Supervisory Body may approve a list of technologies that are considered additional and termed as positive list of technologies. Mechanism methodologies should require that the activity participant demonstrate that that the proposed article 6.4 activity is part of the

[14] For example, lower bound/upper bound of confidence interval computed using standard deviation and average values of the parameter of interest, [x^{th}] percentile of the performance distribution curve if the characteristics of the distribution curve show that these percentiles are conservative for the emission reduction estimates.

[15] For example, if the baseline emissions of a cookstove comprise thermal efficiency and consumption of wood fuel or non-renewable biomass, it would not be feasible to apply BAT for thermal efficiency while taking historic values for wood fuel consumption. In such a case, it would be necessary to apply an ambitious benchmark to conservatively determine the wood fuel consumption.

positive list of technologies established by the Supervisory Body in order to use the positive list for the demonstration of additionality.

68. The Supervisory Body will consider the technologies for which necessary conditions exist with a high degree of certainty in accordance with the requirements in paragraph 66, where relevant on a regional basis, considering special circumstances of LDCs/SIDS, as the basis for developing the positive list.

69. The Supervisory Body will develop further guidance on the demonstration of additionality and the positive list of technologies at a future meeting of the Supervisory Body, including simplified approaches for demonstration of additionality for any LDCs/SIDS.

70. **Guidance required from SB for further work:** The definitions and guidance below were elaborated taking into account related CDM tools and literature, such as II-AMT (2022) and American Carbon Registry (2020). Are these definitions and guidance helpful and appropriate?

71. **Definitions:**

(a) **Applicable geographical area –** The entire host country by default. Activity participants shall provide justification on the choice of geographical area when choosing a specific subnational jurisdiction, such as a province (e.g., essential distinction between the identified specific geographical area and the rest of the host country);

(b) **Emissions intensive practice/technology[16] –** A practice/technology that has a GHG emissions intensity per unit of production/consumption or service that exceeds the intensity of the [lowest] [average] emitting, economically feasible and environmentally sound technology/practice for the product, service, or output delivered;

(c) **Locking in levels of emissions, technologies or carbon-intensive practices incompatible with paragraph 33 of RMP –** The proposed activity leads to prolongation of the lifetime and use of technologies, practices and infrastructure that indirectly or directly emit GHGs; [policies that affect production, consumption and services as well as behaviour, habits, and norms associated with the demand for products are also included];

(d) **Positive list of technologies/measures –** An activity on a positive list is deemed automatically additional when applicable conditions are satisfied;

(e) **Relevant Law / Regulation / Policy –** Regardless of the exact terminology used in the respective national or subnational context, any legally binding laws, rules, mandates, regulations, statutes, agreements or other legal requirements in force at the national, subnational or local levels applicable to the proposed activity, and that [trigger] [require] technological, performance, or management actions. These legal requirements may for example require the use of a specific technology, meeting a certain standard of performance, or managing operations according to a certain set of criteria or practices;

[16] The terms Practice, measure and technique are used in an interchanging way in this document.

(f) **Start date of the activity –** The date on which the activity participants commit to making expenditures for the undertaking of the activity, or for the construction or modification of the main equipment or facility associated with the activity, or for the provision or modification of a service associated with the activity. Where a contract is signed for such expenditures, it is the date on which the contract is signed. In other cases, it is the date on which such expenditures are made.

2.18. Guidance

72. Additionality demonstration is to ensure that only mitigation activities that would not be undertaken without the incentives from the carbon market are credited i.e. emission reductions that are surplus over what would have occurred under current laws and regulations, current industry practices, and without carbon market incentives.

73. In this regard, the obligation of Parties to implement their NDCs and to increase ambition in mitigation and adaptation action to contribute to achieving the long-term objectives of the Paris Agreement should be considered. The information communicated by the Parties (e.g., relevant Article 6 related reporting, national communications (NCs), biennial reports (BRs) and biennial update reports (BURs) or biennial transparency report (BTRs) may be utilized for this purpose.

74. The RMP requires that each mechanism methodology shall:

(a) Specify the approach to demonstrating the additionality of the activity; and

(b) Additionality shall be demonstrated using a robust assessment that shows the activity would not have occurred in the absence of the incentives from the mechanism:

(i) considering all relevant national policies, including legislation; and

(ii) representing mitigation that exceeds any mitigation that is required by law or regulation; and

(iii) taking a conservative approach that avoids locking in levels of emissions, technologies or carbon-intensive practices incompatible with paragraph 38 of the RMP.

75. Robust assessment of additionality requires that the means used to demonstrate additionality result in consistent and reliable results for the same set of conditions on the ground, and that the results can be validated. This would require clearly specified steps for the demonstration of additionality, including safeguards such as:

(a) Automatic additionality through positive lists shall only be applicable to activity types where there is high degree of certainty that activity would not occur without carbon market revenues;

(b) Procedures is in place to review the continued applicability of underlying conditions of the positive lists at regular intervals and to update the positive lists as necessary;

(c) [Possible use of shorter crediting period length under certain circumstances as well additional assessment at the crediting period renewal (e.g. shorter crediting periods for activities with low up-front investments, shorter technical lifetimes of technologies and high annual credit revenues relative to investments)].

76. To ensure consistent outcomes and results, the reliability and credibility of all assumptions, data and calculation methods of parameters, including any qualitative information and justifications of choices between different sources of data, must be independently validated and documentation must be transparent. Cross-checking the information with available independent sources would enhance reliability. Effectively addressing comments received during public consultations on an activity would enhance trust in the outcomes. Likewise, the following would help ensure robust outcomes, demonstrate integrity and build trust among stakeholder:

    (a) If more than one suitable value is found for a parameter in the literature, a conservative value among the appropriate values shall be used;

    (b) Activity participants shall transparently list and describe the sources of data considered (e.g., peer-reviewed literature, test results, official reports/statistics);

    (c) Original sources should be referenced using a standard method of referencing rather than quoting a secondary publication that refers to the sources;

    (d) When more than one source is used to aggregate the data to derive the value of the parameter, the sources used should be clearly indicated;

    (e) The activity participants shall provide justification as to why the values selected, and their sources, are appropriate, applicable and conservative.

77. Steps to demonstrate additionality should include;

    (a) Checking public notification of the intent to earn carbon credits prior to the start of the activity where applicable;

    (b) Checking to confirm that the activity is neither mandated by law, nor is the mitigation it achieves effectively required by regulation including any promulgated regulations that would mandate the activity at any point during the crediting period;

    (c) Checking whether the activity is financially attractive without carbon revenue or faces barriers.

78. The proposed approach for additionality demonstration shall ensure the activity is above and beyond “business as usual” and that the outcomes of the activity would exceed the outcomes that would necessarily result from existing laws and regulations in effect and enforced and would exceed common practice in the relevant industry sector and geographic region. Further, the activity shall demonstrate that it faces implementation barriers—financial, technological, or institutional.

79. Mechanism methodologies may require the application of an additionality tool to assist activity participants in demonstrating additionality.

80. In summary, activity participants shall demonstrate that the proposed activity:

    (a) Meets or exceeds an approved performance standard, as defined in the applicable methodology, and a regulatory additionality test; or

    (b) Passes an additionality test specified in a tool or a guidance document.

81. A series of tests is specified below, which require affirmative answers to proceed to subsequent steps and test questions:

(a) **Step 1: Regulatory surplus test**: Is there an existing law, regulation, statute, legal ruling or other regulatory framework in effect as of the activity Start Date that mandates the GHG emission reductions that that activity aims to achieve? In determining whether an action is surplus to regulations, the activity participants need not consider voluntary agreements without an enforcement mechanism, [proposed laws or regulations], optional guidelines, or general government policies. [If a regulatory requirement (or similar requirement such as a permit condition) comes into force during the crediting period and effectively mandates the activity, the activity will no longer be eligible for crediting from the date the regulatory requirement takes effect, unless otherwise specified in the applicable methodology];

(b) **Step 2: Locking in levels of emissions, technologies or carbon-intensive practices incompatible with paragraph 33 of RMP:** Does the activity lead to prolongation of the lifetime and use of technologies and infrastructure or practices that indirectly or directly emit GHGs?

(c) **Step 3: Prior consideration test**: Is there a public notification of intent to earn carbon market revenues prior to start date of the activity?

(i) Demonstrate that carbon market revenues were considered by the activity participants in the investment decision of the activity by undertaking a public notification of the intent to earn carbon revenue. This notification shall include the mitigation activity title, location, brief description, and identification of at least one activity participant. The notification may take the forms of:

a. A letter, fax or email with date stamp from the activity participant to the host country government, the UNFCCC Secretariat, and/or the participating Parties of a cooperative approach;

b. Publication in a medium with date stamp, including a newspaper, magazine, newsletter, or social media post;

(d) **Step 4: First of its kind test:** Is the activity the first in the applicable geographic area to apply a technology/measure that is different from technologies/measures that are implemented by any other mitigation activities that are able to deliver the same output as the activity. Only activities that have started commercial operation in the applicable geographic area before the documentation of the activity is published for global stakeholder consultation or before the start date of the proposed project activity, whichever is earlier, should be considered. Only activities that have chosen a fixed crediting period of 5 years with no possibility for extension are eligible;

(e) **Step 5: Common practice test**: In the industry/sector, is there a widespread deployment of the technology/measure or practice within the relevant geographic area? The common practice test requires the activity participant to evaluate the predominant technologies or practices in use in a particular industry, sector and/or geographic region as determined by the degree to which those technologies or practices have penetrated the market, and demonstrate that the proposed activity is not common practice and will reduce GHG emissions below levels produced by

common technologies or practices within a comparable environment (e.g., geographic area, regulatory framework, investment climate, access to technology/financing). The level of penetration that represents common practice may differ between sectors and geographic areas, depending on the diversity of baseline candidates. The common practice penetration rate or market share for a technology or practice may be quite low if there are many alternative technologies and practices. Conversely, the common practice penetration rate or market share may be quite high if there are few alternative technologies or practices;

[Activities that are deemed to perform better than the common practice are considered as such for the duration of their Crediting Period]. [If common practice adoption rates of a particular technology or practice change during the Crediting Period, this may make the project non-additional and thus ineligible for renewal of the crediting period however, this does not affect its additionality during the current Crediting Period]. Common Practice test is distinct from a performance standard. For some activities, the data used to define common practice in a particular industry, sector, or region may be functionally equivalent to the data required to establish an acceptable practice-based performance standard. In such cases, mechanism methodologies may include such an option for the activity participant to demonstrate additionality by defining a practice-based performance standard and demonstrating that the activity both meets/exceeds this standard and is surplus to regulations.

The following sub steps may be applied for the common practice test:

(i) **Sub Step A**: calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed activity;

(ii) **Sub Step B:** identify similar activities with comparable capacity and output range that are already in operation located in the applicable geographic area and apply the same technology/measure (i.e. use the same energy source/fuel and feedstock and produce goods or services with comparable quality, properties);

(iii) **Sub Step C:** Where at least three activities are identified under step B, calculate the proportion of similar activities where applied technology measures are the same as the proposed activity. If the proportion is more than [20%] the proposed activity is common practice;

(f) **Step 6: Barrier tests:** An implementation barrier represents any factor that would prevent the adoption of the proposed activity. [The activity participant shall choose at least one of three barrier assessments (financial, technological, or institutional); however, the participant may demonstrate that the activity faces more than one implementation barrier]:

(i) **Financial barrier test or investment analysis:** Does the activity face financial constraints that carbon funding is expected to resolve to enable implementation of the activity or to maintain ongoing economic viability after its implementation? Financial barriers include high costs, limited access to capital, or an internal rate of return in the absence of carbon revenues that is lower than the established and documentable minimum acceptable rate. Financial barriers can also include high risks, such as unproven technologies or business models, poor credit rating of project partners and activity failure

risk. If electing to use the financial implementation barrier test, the activity participant shall include reliable quantitative evidence, such as net present value and internal rate of return calculations.

Following sub steps may be applied for the investment analysis:

a. **Sub Step A:** Identify a financially viable and realistic alternative(s) to the mitigation activity in similar social, economic, and regional contexts. This will provide the point of comparison for the analysis to identify assessment parameters (e.g., internal rate of return, payback period) at which a mitigation activity would not be deemed economically / financially feasible, considering all revenues and savings generated by the mitigation activity;

b. **Sub Step B**: Include all revenues and savings generated by the activity, including any incentives related to policy instruments, such as subsidies (e.g., grants, reverse auctions), avoided carbon taxes and financial impacts of emissions trading;

c. **Sub Step C:** Identify any barriers in monetary terms, e.g., changes in cash flow due to slower activity implementation, lower load factors, risk-adjusted discount rate;

d. **Sub Step D:** If the activity is likely to be attractive without the revenues from carbon credit sales, then the activity is not considered additional. If the investment analysis concludes to a high degree of confidence that the activity would not be attractive without the revenues from credit sales, then the activity is financially additional;

(ii) **Technological barriers Test:** Does the activity face significant technological barriers, such as risk of technology failure or R&D deployment risk, uncorrected market failures, lack of trained personnel and supporting infrastructure for technology implementation, or lack of knowledge about the practice/activity, in comparison to other technologies providing similar outputs or services, and are carbon market incentives a key element in overcoming these barriers?

(iii) **Institutional barriers test:** Does the project face significant organizational, cultural or social barriers to implementation, and are carbon market incentives a key element in overcoming those barriers? Any institutional opposition to technology implementation, limited capacity for technology implementation, lack of management consensus, aversion to upfront costs, and lack of awareness of benefits may be included.

2.19. Performance standards in methodologies

82. The following approaches are only applicable for possible inclusion in mechanism methodologies or in the development of positive lists:

(a) **Performance standard:** Additionality is demonstrated by showing that a proposed activity is surplus to regulations and meets or exceeds a performance standard as defined in an approved methodology. Under this approach activities are required to achieve a level of performance that, with respect to emission reductions or

removals, or technologies or practices, is significantly better than the average compared with similar recently undertaken practices or activities in a relevant geographic area. A performance-based standard may be practice based, a technology standard, or an emission rate or benchmark;

(b) **Practice based method**: is developed by evaluating the adoption rates or penetration levels of a particular practice[17] in a relevant industry, sector or sub-sector. If the adoption rates or penetration levels are sufficiently low, and thus it is determined the proposed activity is not common practice, then the activity is considered additional. Specific thresholds may vary by industry, sector, geography and practice, and are specified in the relevant methodology;

(c) **Technology standard**: Installation of a particular GHG-reducing technology may be determined to be sufficiently uncommon that simply installing the technology is considered additional;

(d) **Emission rate or benchmark (e.g., in tonnes of CO_2e emissions per unit of output):** With examination of sufficient data to assign an emission rate that characterizes the industry, sector, subsector or typical land management regime, the net GHG emissions/removals associated with the activity, in excess of this benchmark emission rate, may be considered additional and credited.

83. **Specific guidance required from the Supervisory Body**:

(a) How to consider regulations that may be enforced during the crediting period under the regulatory surplus test? Should it be considered at the time of enforcement or during the renewal of the crediting period?

(b) What elements should be retested during the renewal of the crediting period?

(c) Should crediting periods less than 5 years [or at most 5 years as fixed crediting period] be eligible to be specified in methodologies (e.g., where the lifetime of the technology/measure is less than 5 years before needing replacement, during the crediting period, or where the payback period is shorter than 5 years)

(d) Should an additionality tool be developed?[18] In some instances, CDM tools and methodologies are applicable to activities that are mandated by regulations but which have low enforcement rates (e.g., in country X, treating solid waste in an engineered landfill is a regulatory requirement for the municipalities; however, poor financial conditions of municipalities means more than 95 per cent of the municipalities in the country resort to open dumping of waste). It appears there is no provision in the RMP to consider enforcement rates of regulations; however, the Supervisory Body may wish to clarify the matter.

[17] 'Practice' and 'measure' are used interchangeably in this document.

[18] Such a tool could potentially draw from the additionality related work cited in the reference section of this document and the CDM portfolio of tools and guidance, including: "TOOL01: Tool for the demonstration and assessment of additionality", "TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality", "TOOL23: Additionality of first-of-its-kind project activities", "TOOL24: Common practice", "TOOL27: Investment analysis", "TOOL32: Positive lists of technologies", and the "Guidelines for objective demonstration and assessment of barriers".

2.20. Standardized baselines

84. Paragraph 37 of the RMP states that 'Standardized baselines may be developed by the Supervisory Body at the request of the host Party or may be developed by the host Party and approved by the Supervisory Body. Standardized baselines shall be established at the highest possible level of aggregation in the relevant sector of the host Party and be consistent with paragraph 33 above'.

85. A standardized baseline is a baseline developed for a host Party or a group of host Parties on a sub-national, national or group-of-countries basis rather than on an activity basis, to facilitate the calculation of GHG emission reductions and/or the determination of additionality for Article 6.4 activities, while providing assistance for assuring environmental integrity.

86. The approaches for the baselines referred to above under section 2.15 shall also be applied for the development of the standardized baseline.

87. Standardized baselines may be developed by the host Party and approved by the Supervisory Body following an assessment against the procedures for the development of a standardized baseline that shall be developed and approved by the Supervisory Body.

88. [Standardized baselines shall be established at the highest possible level of aggregation in the relevant sector of the host Party. The Host Party and the Supervisory Body should determine the level of aggregation taking into account the following aspects:

    (a) A default level of aggregation shall comprise the facilities or equipment producing the similar type of output within the geographical boundaries of one Party. The level of aggregation may be expanded to a group of Parties with similar circumstances relating to the output;

    (b) A default group of facilities should be disaggregated when significant dissimilarities exist in the performance of facilities or groups of facilities in the country/region. In this case, the disaggregation shall be carried out according to relevant criteria, such as production scale, installed capacity or age of the facilities, and standardized baselines values should be determined for each group of similar facilities;

    (c) Disaggregation should not result in standardized baselines with overlapping applicability.]

89. Standardized baselines may include a [default] validity period of three years, starting from the date of approval by the Supervisory Body. A host Party may propose a shorter or longer validity period taking into account specificity of sectors in which activities are undertaken, and by providing justification for the consideration of the Supervisory Body.

90. After the validity of a standardized baseline has expired, the updated standardized baseline shall be considered by the Supervisory Body subject to host Party making a request for the update. The updated standardized baseline shall not impact already registered activities up to the end of their first crediting period.

91. The Supervisory Body may develop and approve separate guidance on standardized baselines at a future meeting of the Supervisory Body.

92. **Guidance required from SB for further work:** A group of Parties can develop a standardized baseline (see paragraphs 85 and 88 (a) above). Under the CDM, the standardized baselines for the South African Power Pool (SAPP) and West African Power Pool (WAPP) each covered a group of Parties, including up to nine host Parties, on the condition that it be mandatory to apply the factors in the respective host countries, i.e. it is not permitted for one of the host Parties to estimate a national grid emission factor when a valid standardized baseline emission factor is available. However, RMP does not explicitly mention 'group of Parties'. The SB may wish to clarify whether developing a standardized baseline for a group of Parties is an eligible activity.

3. References

(a) American Carbon Registry. 2020. *The American Carbon Registry Standard, version 7.0.*, Winrock International, Little Rock, Arkansas;

(b) CDM Methodological tool "TOOL01: Tool for the demonstration and assessment of additionality", version 7.0;

(c) CDM Methodological tool "TOOL21: Demonstration of additionality of small-scale project activities", version 13.1;

(d) CDM Methodological tool "TOOL23: Additionality of first-of-its-kind project activities", version 3.0;

(e) CDM Methodological tool "TOOL24: Common practice", version 3.1.

(f) II-AMT – International Initiative for Development of Article 6 Methodology Tools. 2022. *TOOL01: Tool for the demonstration and assessment of additionality: Draft Tool.* Version November 2022, Perspectives Climate Research, Freiburg. Available at https://perspectives.cc/private/download/12830/?tmstv=1674641423, accessed on 13 February 2023;

(g) NREL – National Renewable Energy Laboratory. 2021. *Life Cycle Greenhouse Gas Emissions from Electricity Generation: Update*. United States. Available at https://www.nrel.gov/docs/fy21osti/80580.pdf, accessed on 13 February 2023.

(h) Öko-Institut. 2023. *Application of the Oeko-Institut/WWF-US/EDF methodology for assessing the quality of carbon credits. Sub-criterion: 1.3.2 Robustness of the quantification methodologies applied to determine emission reductions or removals. Project types: Solar photovoltaic power Wind power (onshore). Quantification methodology: Clean Development Mechanism (CDM) ACM0002, Versions 20.0, and relevant tools*. Document prepared as part of the *Carbon Credit Quality Initiative (CCQI)*. Freiburg. Available at https://carboncreditquality.org/download/Assessments/1.3.2%20CDM%20ACM0002%20for%20Solar%20photovoltaic%20power%20and%20Wind%20power%20%28onshore%29%20%2831%20January%202023%29.pdf, accessed on 13 February 2023.

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Document information

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