ARTICLE 6.4 MECHANISM

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Information note

Requirements for the development and assessment of mechanism methodologies

Version 02.0

United Nations
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Climate Change

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1. Procedural background

1. Decision 3/CMA.3, paragraph 6(d) requests 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 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) 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 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.

2. Purpose

4. The purpose of this document is to develop options to elaborate and further develop recommendations for the consideration of the Supervisory Body, for recommending to CMA.4, based on the inputs received from Supervisory Body members during the first meeting of the Supervisory Body and subsequently. It aims to unpack overarching issues covered under paragraphs 33 to 39.

3. Key issues and proposed solutions

5. Options for elaborating the requirements in paragraphs 33 to 39 of the RMP are included below.

3.1. Normative reference

6. 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")).

7. 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.

3.2. Development of mechanism methodologies

8. Mechanisms methodologies may be developed by activity participants, host Parties or stakeholders or the Supervisory Body. Mechanism methodologies shall be approved by the Supervisory Body when they meet the requirements of the RMP and those established by the Supervisory Body.

9. A bottom-up process is when mechanism methodologies are developed by activity participants or host Parties or stakeholders. A top-own process is when the Supervisory Body and its support structure develop mechanism methodologies for use by activity participants or host Parties or stakeholders.

10. The Supervisory Body may wish to mandate the development and approval of the procedure for bottom-up and top-down processes for the development of new mechanism methodologies. This should:

    (a) Indicate timelines and deadlines for each milestone of the approval process;

    (b) Elaborate the requirements for the submission of an illustrative project design document accompanying the methodology submission;

    (c) Cover the process for the revision of mechanism methodologies and for seeking clarification on mechanism methodologies;

    (d) Contain the processes for consolidating mechanism methodologies and developing methodological tools to promote consistency and accessibility;

    (e) Contain the procedure to ensure that the approved mechanism methodologies and tools are reviewed at regular intervals to update methods and values based on latest scientific information and experience gained in implementation.

11. Development of a new methodology is a resource intensive process; studies and the experience from the Clean Development Mechanism (CDM) show that it cost up to one hundred thousand USD to develop new methodologies. While encouraging stakeholders with means to develop and submit mechanism methodologies to do so, the Supervisory Body should consider an inclusive approach for broader participation. A ‘Commenting’ process was introduced at the later phase of the CDM, to allow various participants through the activity cycle of the CDM, to provide signed or anonymous comments, at any time, based on the concrete methodological issue faced by them on the ground. The Supervisory Body may consider including such an option for collecting ideas for continuous improvements of mechanism methodologies based on the context on the ground.

12. Based on the seeds sown as above, i.e. inputs on mechanism methodologies received by the host Parties and other stakeholders, the Supervisory Body may wish to consider priorities for the top-down work to develop or revise mechanism methodologies subject to availability of resources to alleviate barriers due to capacity and financial constraints of host Parties or stakeholders. In this regard, once the mechanism has evolved and fully functional, the Supervisory Body may wish to prioritize (i) the requests of host Parties that

are least developed countries (LDCs)/small island developing States (SIDS); and (ii) methodologies suitable for programmatic approaches.

13. A large number of mechanism methodologies with narrow applicability conditions developed to cover the specific situations of activity participants may create barriers to access the mechanism methodologies by other potential users. The Supervisory Body may wish to consider using top down process to consolidate similar mechanism methodologies. The Supervisory Body should develop methodological tools to cover procedures and default values that are applied in multiple mechanism methodologies to avoid duplications and inconsistencies.

14. As part of the consideration and approval process of a new methodology or revision of a methodology, the Supervisory Body should consider integrating a public consultation process. There is considerable experience in the existing mechanisms to build on and improve, based on lessons learned. CDM requirements stipulate that, "If the submission is concluded as qualified for consideration, the secretariat shall issue a unique reference number to the proposed new methodology and make the submission publicly available on the UNFCCC CDM website for global stakeholder consultation. The duration of the period for submission of comments for the global stakeholder consultation shall be 15 days. After this period, the secretariat shall make the comments received publicly available on the UNFCCC CDM website'. Other mechanisms, such as the Gold Standard, also include mandatory and more elaborate procedures for public consultation for the development of new methodologies. Concept note prepared for CDM EB 111 on Improving clarity and consistency of methodological products provides more details on these aspects (see pages 14-17).[1]

15. In this regard, it is important to ensure that stakeholders have the information they need to determine whether and how to participate by making publicly available:

    (a) A summary of the mechanism methodology, including the proposed scope, objectives and technology measures covered;

    (b) Steps in the mechanism methodology approval process, including timelines and clearly identified opportunities for contributing; and

    (c) The decision-making process and how input will be taken into account.

3.3. Encouraging ambition over time

16. It is understood that 'ambition over time' refers to progressive actions of the user of the methodology i.e. activity participant, for mitigation, through the activities implemented in the geographic region covered, contributing to the ambition of the host Party directly or indirectly. In this context, it should be noted that paragraph 39 of Decision 1/CMA.3 'Recognizes that enhanced support for developing country Parties will allow for higher

[1] See annex 4 of annotations to the 111th meeting of the CDM EB, available at https://cdm.unfccc.int/Meetings/MeetingInfo/DB/TVYB82ZISXQ470R/view

ambition in their actions'.[2] Article 6.4 mechanism is one such support and means of implementation.

17. Requirements for the activity participants may be both qualitative and quantitative. It should build on experience gained from the existing carbon market mechanisms but should also aim to integrate more robust approaches.

18. To encourage ambition over time, activity participants are expected to implement scalable mitigation or removal activities that are impactful and support the sustainable development efforts of the host Party.

19. Activity participants should progressively increase the stringency of the baselines applied (e.g. at each of the renewal of the crediting period, through dynamic baselines that are adjusted downwards periodically). Activity participants shall avoid using data sources that are not the most recent or the best available to estimate baseline emissions that overestimate emission reductions or removals undermining the objectives of the host Parties to increase ambition over time.

20. Emission reduction achieved by an activity is a function of the volume of the activity and the difference in emission intensities of technologies/measures providing output or services during the baseline and the project situations. Emission reductions can be enhanced by increasing the volume of activity over a period of time. Making the baseline more stringent over time can also indirectly trigger greater emission reduction or ambition, as in that case, for achieving a given amount of emission reductions more efficient technologies have to be employed or the activity will have to be scaled up. [As emission reductions are based on relative emissions against a baseline, whereas host Party inventories capture the absolute emissions occurring within the boundaries in a given year, it may be argued that more stringent baselines will reduce the amount of credits to the activity but will provide greater benefits to the host Party to meet their domestic target].

21. Rationale for a quantitative approach for ambition over time include the below:

    (a) Discounting has been included in the RMP as a means of demonstrating overall mitigation in global emissions;

    (b) There is precedence in CDM and other methodologies (e.g. public submissions received point out that 'some CDM methodologies already have baseline contraction factor (Ex: AMS III-C)'[3]. Similarly, autonomous energy efficiency

[2] Paragraphs 5 and 27 of 1/CMA.3 refer to urgent scale up of mitigation ambition and implementation, in the context of the findings of the synthesis report on NDCs under the Paris Agreement (2021), according to which the aggregate GHG emission level, taking into account implementation of all submitted NDCs, is estimated to be 13.7 per cent above the 2010 level in 2030 as compared to 45 per cent by 2030 relative to the 2010 level required by global warming to 1.5 °C and net zero around mid-century.

[3] See inputs submitted by Ambachew Admassie, available at https://unfccc.int/sites/default/files/resource/SB002-call-for-input-AmbachewAdmassie-10102022.pdf. Extract from AMS-III-C states "IR_t = Technology improvement factor for baseline vehicle in year *t*. The improvement rate is applied to each calendar year. The default value of the technology improvement factor for all baseline vehicle categories is 0.99"

improvement factors have been included in some methodologies[4] as are requirements to take more stringent approach for the baseline at each of the renewal of the crediting period (e.g. in the case of grid connected electricity generation, the weightage of build margin is increased with corresponding decrease in operating margin usually resulting in the lower value of grid emission factor).

(c) Public submissions have illustrated how a baseline contraction factor may be implemented taking the example of a waste sector activity; [5]

(d) Experience from corporate climate action such as those under Science Based Target Initiative seems to suggest a positive correlation.[6]

22. [Thus, activity participants are expected to apply at least one of the following approaches]:

3.3.1. [Quantitative approach]

23. [Increasing the stringency of the baselines over time can support greater ambition. A sample approach for determining the baseline contraction factor (BCF) is illustrated in appendix 1 of this document. BCF is a multiplication factor to discount the baseline emissions of the activity to bend the emissions curve to more closely align with the trajectory of emissions that host Parties aim to achieve as communicated under the nationally determined contributions (NDCs), if applicable, or long-term low-emission development strategies (LT-LEDs) if they have submitted one.

[4] Autonomous efficiency improvement factor has been included in AM0070: Manufacturing of energy efficient domestic refrigerators (https://cdm.unfccc.int/methodologies/DB/R66P8LFQUC30O9F2GX9Z9CTMN9B8W5) and AM0120: Energy-efficient refrigerators and air-conditioners (https://cdm.unfccc.int/methodologies/DB/3USXGBI5RRLI5FXVG90SIYCOD9W9P1)

[5] See input submitted by the International Initiative for Development of Article 6 Methodology Tools (II-AMT), available at https://unfccc.int/sites/default/files/resource/SB002-call-for-input-5.0.II-AMT-Input.pdf.

[6] Target-setting methods used by the Science Based Targets initiative (SBTi) (https://sciencebasedtargets.org/), designed to assess corporate emission reduction targets, includes 'the Absolute Contraction Approach (ACA)' and 'the Sectoral Decarbonization Approach (SDA)'. These are based on (i) *Convergence*, where all companies within a given sector reduce their emissions intensity to a common value by some future year as dictated by a global emissions pathway (e.g., the emissions intensity of all electric power companies converges to a maximum of 29 g CO2e per kWh of electricity in 2050) or (ii) *Contraction,* where all companies reduce their absolute emissions or economic emissions intensity (e.g., tonnes GHG per unit value-added) at the same rate, irrespective of initial emissions performance, and do not have to converge upon a common emissions value.

The SDA method that allows carbon-intensity metrics and targets to be derived from global mitigation pathways are used for road transportation, aviation, the generation of electricity or the production of basic materials. These activity-specific metrics are meant to help reflect the different pace at which different sectors and economic activities decarbonize in Paris-aligned mitigation pathways, including those activities that decarbonise faster than the global average (e.g. power generation) or others that decarbonize at a slower pace (e.g. aviation, cement production, etc.). As per SBTi, an analysis of 338 companies showed that companies with science-based targets have reduced their combined emissions by 25% in 5 years since 2015, contrasting with an increase of 3.4% in global emissions from energy and industrial processes over the same period.

24. BCFs may be optionally developed by the host Parties at their discretion and made publicly available, including the methods used. It may include multiple factors for different sectors, or one factor covering multiple sectors and may be updated at periodic intervals. The Supervisory Body may also develop and publish sector-specific BCFs. Where country-specific and sector-specific factors are developed by the Supervisory Body that are applicable to certain host Parties or group of host Parties, it shall be done in consultation with the relevant national authorities.

25. The Supervisory Body may develop and approve a procedure to guide the development of BCFs at a future meeting of the Supervisory Body.

26. Activity participants shall apply the BCF(s) to adjust the activity baseline emissions downwards where the BCF(s) has been made available by the host Party or the Supervisory Body.

27. For the prompt start, however, the Supervisory Body may provide globally applicable interim default values for the baseline contraction factor as an alternative to the sector specific factors described in the above paragraph with a possibility to update in the near future with more elaborate methods.

28. In that regard, most recent information from the IPCC about modelled trajectory of global emissions for the net zero may be pertinent to consider. IPCC AR6 WGIII in its recent report notes that 'Global energy intensity (total primary energy per unit GDP) decreased by 2% per year between 2010 and 2019. In the same period carbon intensity (CO2 from fossil fuel combustion and industrial processes per unit primary energy) decreased by 0.3% per year, with large regional variations. For comparison, the carbon intensity of primary energy is projected to decrease globally by about 3.5% per year between 2020 and 2050 in modelled scenarios that limit warming to 2°C (>67%), and by about 7.7% per year globally in scenarios that limit warming to 1.5°C (>50%) with no or limited overshoot'[7].

29. Although IPCC made the above observation mainly in relation to energy sector, considering that energy sector accounts for over three quarter of global emissions, a simplification can be made regarding the carbon intensity thresholds specified i.e. it is assumed that 0.3% per year historic decrease in carbon intensity and projected decrease of 3.5%/7.7% per year are applicable to all of global emissions. As the rate of change of carbon intensity may be gradual and not a step change, a combined margin approach analogous to grid emission factor under the CDM may be considered assigning weights for historic performance and future performance. On that basis, the following default values for the baseline contraction factor may be considered:

    (a) Based on a 50% weightage for historic emissions and 50% weightage for prospective emissions, 1.9% per year i.e. (0.3% x 0.5 + 3.5% x 0.5 = 1.9%).

    (b) Based on a 75% weightage for historic emissions and 25% weightage for prospective emissions, 1.1% per year i.e. (0.3% x 0.75 + 3.5% x 0.25 = 1.1%).

[7] Paragraph B.2.4. on Page 12 of IPCC, 2022: Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001.

30. Where BCFs have not been made available by the host Party or the Supervisory Body, two options as below may be considered:

    (a) Option 1 for the Supervisory Body: Activity participants shall apply an interim default contraction factor, to adjust the activity baseline emissions downwards, irrespective of the sector(s) in which activity is taking place. The interim default contraction factor will be developed and approved by the Supervisory Body at a future meeting of the Supervisory Body;

    (b) Option 2 for the Supervisory Body: Activity participants shall apply an interim default contraction factor, to adjust the activity baseline emissions downwards, irrespective of the sector(s) in which the activity is taking place, at a uniform rate of [1.1 per cent] [1.9 per cent] per year.]

3.3.2. Qualitative Approach

31. It may be useful to leverage tools and methods developed and tested by other entities/programmes in this regard to guide the activity participant. For example, transformative climate action in a value chain including the quantification of the carbon footprint of a product is described in the International Organization for Standardization (ISO) standard ISO 14067:2018. Similarly, the investment framework of the Green Climate Fund (GCF) aims 'to inform the design, assessment, and approval of funding decisions'. One of the criteria that GCF uses under the investment framework is the 'paradigm shift' potential of the funding application which requires 'the elaboration of a vision for longer-term change or paradigm shift outlining how the activity can catalyse impact over time beyond a one-off measure accompanied by a robust and convincing theory of change for replication and/or scaling up of the project results, including the long-term sustainability of the results, or by a description of the most binding constraint(s) to change and how it/they will be addressed through the project'. Similarly, 'ISO 14097:2021 Greenhouse gas management and related activities — Framework including principles and requirements for assessing and reporting investments and financing activities related to climate change' includes guidance and tools to demonstrate the wider and long-term impact of climate action through the application of theory of change.

32. There are also elements that have been tested in the existing carbon market mechanisms that will be useful to adopt as possible measures in the context of increasing ambition. They are listed below:

    (a) When using a programmatic approach, progressively including more efficient and less greenhouse gas-intensive project technologies/measures in the distribution plan, considering experience gained in host Parties. This may include, for example, new and efficient zero and low-emission technologies.;

    (b) Expanding the user base of the project technology and/or installation of more project equipment/measures among the existing users over a period (i.e. wider geographic coverage or greater penetration among the potential end users or more comprehensive mitigation measures among the existing users), demonstrated using empirical data;

    (c) Additional coverage of sectors over a period demonstrated using empirical data; [i.e. Contribution to increasing ambition in the NDCs by expanding the sectoral coverage (e.g. more coverage of sectors covered or coverage of more sectors).]

3.4. Encouraging broad participation

33. Mechanism methodologies shall encourage broad participation by:

    (a) Being simple, clear, predictable and easy to apply (e.g. simplified and standardized additionality demonstration) and applicable in combinations for broad sectoral and technology coverage;

    (b) Including a robust and inclusive stakeholder consultation process as described in paragraph 15 above;

    (c) Incentivizing actions from a range of stakeholders such as consumers, technology providers, financiers and policy makers, local communities, indigenous people and youth;

    (d) Encouraging the establishment of continuous communication channels with the stakeholders throughout the implementation of the Article 6.4 activities.

3.5. Being be real, transparent, conservative, and credible

34. Mechanism methodologies shall ensure that the results of Article 6.4 activities represent actual tonnes of greenhouse gas emissions reduced or removed and shall provide credible methods for estimating results of Article 6.4 activities arising from the technologies/measures implemented. Such estimation should be based on up-to-date scientific information such as that from Intergovernmental Panel on Climate Change (IPCC) sources and reliable data gathered through robust monitoring methods, excluding extraneous cofactors affecting emission reductions or removals (e.g. reduction of level of service, impact of weather).

35. Mechanism methodologies shall require transparent descriptions of the source of the data used, 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.

36. The application of mechanism methodologies shall result in conservative outcomes from the measures applied or the options chosen (e.g. due to the paucity of data, assumptions applied or multiple alternatives available) and shall not overestimate the results of Article 6.4 activities. Where relevant, the mechanism methodologies shall require the accounting of uncertainty associated with modelled and surveyed data parameters and provide methods to quantify, manage and account for the impact of uncertainty (e.g. accounting of the uncertainty range of IPCC default values as per annex III of document FCCC/SBSTA/2003/10/Add.2 (titled ‘Table of conservativeness factors’).

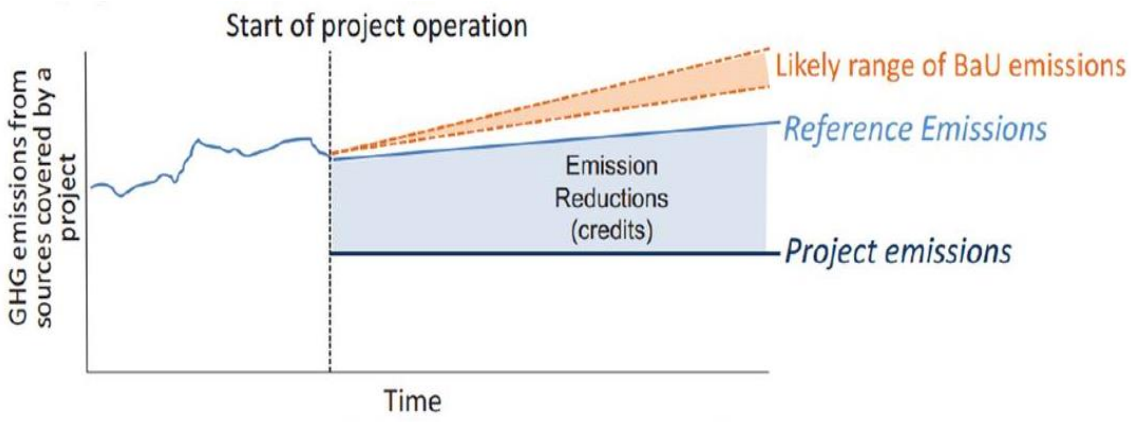
37. The application of mechanism methodologies shall result in credible outcomes. The methodology shall require the Article 6.4 activity to have a robust monitoring and data capture system as well as a reporting system. Where secondary data is used, the mechanism methodology shall require that the activity developer demonstrate that it is from a best available source.

3.6. Being below business as usual

38. Some mechanisms (e.g. Joint Crediting Mechanism) estimate the difference between reference emissions and project emissions as emission reductions. The reference emissions are calculated below business as usual (BAU) emissions as indicated in Figure 1, where BAU emissions represent plausible emissions in providing the same outputs or

service level of the proposed activity in the host Party. Typically reference emissions are estimated by considering, for example, the equipment efficiency higher than that required by law and regulation or efficiency higher than equipment/facility that has the highest market share locally in the last 3 years. Examples of such approaches are included in the Annex 6 to the annotations to the agenda[8] of the 1st meeting of the Supervisory Body.

Figure 1. Illustration of reference emissions determine below BAU emissions



39. The baseline selected following the approach described under section 3.14 shall be clearly demonstrated as being below 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.

40. The selection of the baseline approach(es) described in paragraph 69 coupled with the application of the BCF(s) as described in section 3.3.1, can demonstrate that the baseline emissions determined are below BAU emissions.

3.7. Avoid leakage where applicable

41. Many CDM methodologies require that leakage is avoided by preventing the transfer of old equipment in the baseline to outside of the project boundary. Destruction of the baseline equipment is one measure that was prescribed to achieve that. The provision was successfully implemented in the case of lighting equipment (e.g. verified destruction of the baseline incandescent lamp substituted with a light-emitting diode – LED or compact fluorescent lamp – CFL), however in other areas such as the baseline refrigerator, boiler or vehicles (such as buses), there was limited success and issues related to practical implementation were faced.

42. In the case of use of renewable energy sources such as renewable biomass, CDM tools require the activity participants to establish that the renewable energy source is available in abundance in a pre-defined region (>150% of the need is available within a radius of 250 km from the project site) to ensure that there is no leakage because of the user of biomass residue now shifting to a more carbon intensive source.

43. Another form of leakage is the activity leakage which may result in production shifting to a different country due to a difference in price of carbon currently existing across different

[8] Available at https://unfccc.int/sites/default/files/resource/a64-sb001-aa-a06.pdf, accessed on 18 October 2022.

jurisdictions and countries. This has resulted in some emission trading systems to issue free allowances to certain industries to retain the competitiveness. More recently, border carbon adjustments (BCA) based on carbon footprints of products imported and exported are being discussed to reduce the reliance on free allowances. However, there is no practical implementation experience as yet with BCAs and it may require a robust and harmonised system to estimate the carbon foot print of products traded, possibly agreed through processes under World Trade Organization (WTO) and UNFCCC. BCAs are considered to be outside the scope of this document.

44. Thus, it is prescribed that activity participants will:

    (a) Identify the potential sources of leakage in a typical activity covered by the mechanism methodology, including, but not limited to, used equipment transferred outside of the project boundary and diversion of resources (e.g. renewable sources as biomass residues currently being used to generate thermal or electrical energy) from other activities;

    (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 achieved results of the Article 6.4 activities;

    (d) Follow any guidance from the designated national authority (DNA) of the host Party on leakage, where available.

45. While the above leakage elements do not envisage continuous monitoring during crediting period, there may be a need to further explore, if for some classes of activities, jurisdictional monitoring may be necessary.

3.8. Recognizing suppressed demand

46. Suppressed demand in the context of an Article 6.4 activity is a situation where services provided to a population are insufficient to meet the basic human needs of this population due to poverty or lack of access to modern infrastructure and where the growth of emissions resulting from meeting such needs requires special consideration in the assessment of Article 6.4 baseline scenarios.

47. There is considerable experience under the CDM to implement the provisions on supressed demand in CDM methodologies. The concept was introduced from the very beginning, since early 2000, when CDM modalities and procedures for small scale CDM included a provision for the baseline under the methodology for off grid renewable electricity generation that read ‘a trend-adjusted projection of historical fuel consumption’. However, this provision remained largely unutilised due to lack of clarity on how to estimate such a trend. Almost a decade later, the CDM Executive Board as part of its efforts to improve the regional distribution of CDM and to respond to requests from the CMP in this regard, introduced default values recognising suppressed demand in about 6 methodologies in the area of energy access based on literature review and public consultation. These defaults have been reviewed recently and updated based on up to date information from the field studies.

48. Under the CDM, there are limited number of projects and PoAs that apply these methodologies that integrated suppressed demand consideration. Currently, after the recent updates, the suppressed demand consideration remains prominently in only one

area under the CDM, i.e. the use of solid fuels and kerosene in the baseline for lighting, whereas project is introducing LEDs lights. While a conservative estimate for the kerosene usage per household per year is 30 litres per year, the methodology uses a value of 60 litres per year per household based on the studies of Lighting Africa in several countries in Africa. This then translates to baseline emissions of 2.72 kgCO_2e/kWh for the first 55 kWh supplied to a household, for the quantity above that a value of 0.8 to 1 kgCO_2e/kWh is assigned with no suppressed demand component.

49. Multi-Tier Framework (MTF) for measuring energy access developed by the Sustainable Energy for All (SE4ALL) initiative[9] which is an international framework developed with participation of the World Bank, World Health Organization (WHO), United Nations Industrial Development Organization (UNIDO), United Nations Development Program (UNDP) and others, has a standardised framework to measure the level and quality of energy services in underdeveloped regions. It is proposed that only in situations where service levels being met are for example below tier 1 level specified under MTF for assessing household access to energy, access to energy for productive engagement and access to energy for community facilities, the Supervisory Body may consider addressing supressed demand. Other areas could be considered if there are requests from stakeholders or host Parties.

50. Thus, mechanism methodologies shall recognize suppressed demand only in situations where a minimum service level to meet basic human needs, such as lighting, cooking, safe drinking water and shelter, is unavailable to the end user of the service prior to the implementation of the activity.

51. Suppressed demand may be addressed by considering that the baseline scenario is not the historical condition, but an alternative technology that provides a level of service comparable to the proposed Article 6.4 activity, where the baseline equipment or measure cannot realistically provide the level of service of the Article 6.4 activity.

52. The Supervisory Body should 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 default factors in specific methodologies. Activity participants may use such factors while applying the methodology, however activity participants shall not directly estimate supressed demand while applying a mechanism methodology.

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

53. The following guidance is proposed in this regard, recognising that some of these issues may contractual matter in relation to project implementation:

54. Activity participants shall describe the measures taken to bring certainty to prompt delivery of mitigation benefits to the participating Parties.

55. This requirement will be operationalized through the DNAs, acknowledging that it is their full right to demand an equitable share of benefits as a pre-condition for authorization of Article 6.4 activities to achieve their NDCs. Therefore, activity participant shall follow any guidance from the DNAs in this regard.

[9] https://energypedia.info/wiki/Global_Tracking_Framework_for_Measuring_Energy_Access.

56. [The implementation of BCF described under section 3.3.1 may contribute to equitable sharing of mitigation benefits. The Supervisory Body may specify a minimum share of mitigation benefits that the activity participants shall ensure are made available to the host Party for domestic purposes at a future meeting of the Supervisory Body, taking into account any stakeholder inputs.]

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

57. Paragraph 26(e) of the RMP indicates:

26. Each host Party of Article 6, paragraph 4, activities shall, prior to participating in the mechanism, ensure that: (…)

(e) It has indicated publicly to the Supervisory Body the types of Article 6, paragraph 4, activity that it would consider approving pursuant to chapter V.C below (Approval and authorization), and how such types of activity and any associated emission reductions would contribute to the achievement of its NDC, if applicable, to its long-term low greenhouse gas (GHG) emissions development strategy, if it has submitted one, and to the long term goals of the Paris Agreement.

58. Mechanism methodologies shall require that the activity participant demonstrates that the proposed Article 6.4 activity does not hinder, and on the contrary:

(a) Contributes to the achievement of mitigation measures in the host Party while aligning with its latest NDC (if applicable) or LT-LEDs (if it has submitted one) (e.g. by making reference to positive lists that are potentially published by the host Party if available or showing that there is no lock-in of emission-intensive technologies); [and/or]

(b) [Contributes to increasing ambition in the NDCs by expanding the sectoral coverage (e.g. more coverage of sectors covered or coverage of more sectors).]

59. Activity participants shall follow one or more of the qualitative [and/or] quantitative approaches described in section 3.3 (e.g. BCF and paradigm shift) to further ensure alignment with the long-term goals of the Paris Agreement.

3.11. Including data sources and uncertainty

60. 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.

61. Mechanism methodologies should be transparent, comprehensive and comprehensible. Where relevant, requirements shall be expressed in terms of performance rather than specification of a product (e.g. requirements for an efficient lamp are described in terms of lighting services specified in lumens per watt rather than the specification of a LED lamp from a specific manufacturer), and these requirements should be verifiable.

62. 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 deviations[10]

63. Mechanism methodologies shall include relevant assumptions, parameters, data sources and key factors and take into account uncertainty for the calculation of a conservative GHG emission reduction.

64. Under the CDM, uncertainty is applied to specific parameters especially when they are sourced from an IPCC model or an expert judgement. For example, under the methodology 'AMS-III.D.: Methane recovery in animal manure management systems Version 21.0', baseline emissions are calculated using the amount of the waste or raw material that would decay anaerobically in the absence of the project activity, with the most recent IPCC Tier 2 approach. The method involves using the annual methane conversion factor (MCF) for the baseline animal manure management system and maximum methane producing potential of the volatile solids. An IPCC model and default values based on expert judgement of IPCC authors are used for this purpose. IPCC specifies an uncertainty range of 20% for the default factors. Annex III 'Table of conservativeness factors' of the document FCCC/SBSTA/2003/10/Add.2 on page 25 provides conservativeness factor for the identified uncertainty band. Based on that 0.94 is applied to parameter UFb (Model correction factor to account for model uncertainties in equation (1) of AMS-III D. The uncertainty values in the SBSTA document have been grouped into five sets of uncertainty bands, with corresponding conservativeness factors, by assigning a given uncertainty values to a given band.

Figure 2. Table of conservativeness factors for the identified uncertainty band

Estimated uncertainty range (%)	Assigned uncertainty band (%)	Conservative factor for the base year	Conservative factor for a year of the commitment period
Less than or equal to 10	7	0.98	1.02
Greater than 10 and less than or equal to 30	20	0.94	1.06
Greater than 30 and less than or equal to 50	40	0.89	1.12
Greater than 50 and less than or equal to 100	75	0.82	1.21
Greater than 100	150	0.73	1.37

3.12. Taking into account policies and measures and relevant circumstances

65. Mechanism methodologies shall take into account policies and measures, and relevant circumstances, including national, regional or local, social, economic, environmental and technological circumstances, including for the demonstration of additionality and determining the best available technology for the purposes of baseline as described in section 3.14.

[10] There is considerable guidance on this matter at ISO (https://www.iso.org/developing-standards.html) and ISEAL (https://www.isealalliance.org/sites/default/files/resource/2017-11/ISEAL_Standard_Setting_Code_v6_Dec_2014.pdf) accessed on 12 July 2022

66. In this regard, the Supervisory Body may develop and approve further guidance at a future meeting of the Supervisory Body.

3.13. Addressing Reversals

67. Mechanism methodologies shall address reversals of emission reductions that are reliant on continued storage of carbon or removals using a consistent approach specified under the guidance on removals.

68. In this regard, the Supervisory Body may develop and approve further guidance at a future meeting of the Supervisory Body.

3.14. Requirements for baselines

69. Each mechanism methodology shall require the application of one of the approach(es) below to estimate the baseline emissions. Activity participants may apply more than one approach (i.e. a combination of approaches), provided that the components of each of the approaches is clearly and separately described. Activity participants shall justify the appropriateness of the choices made (e.g. it results in baselines emissions that are below BAU, contributes to equitable sharing of mitigation benefits among the participating Parties).

    A performance-based approach, taking into account:

    (a) Best available technologies that represent an economically feasible and environmentally sound course of action, where appropriate[, further adjusted through the application of the BCF];

    (b) 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[, further adjusted through the application of the BCF];

    (c) An approach based on existing actual or historical emissions, adjusted downwards to meet the requirements in this document [through the application of the BCF].

70. A host Party may determine a more ambitious baseline requirement at its discretion. Where such a requirement has been specified, activity participants shall apply those requirements.

71. The Supervisory Body may undertake further assessment of the relevance of an approach or a combination of multiple approaches chosen for a particular context, including the methods to ensure the baseline emissions are below BAU, and develop and approve separate guidance on baselines at a future meeting.

3.15. Requirements for additionality

72. Article 6.4 activities shall result in reductions of emissions by sources or removals of greenhouse gases from the atmosphere that are additional to any that would otherwise occur and shall not lead to an increase in global emissions.

73. Additionality shall be demonstrated using a robust assessment that shows the Article 6.4 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 the requirements discussed under sections above.

74. The additionality demonstration shall be done by establishing that:

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

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

    (c) The activity's carbon intensity is aligned with an emission trajectory that contributes to achieving the long-term goals of the Paris Agreement.

75. The Supervisory Body may approve list of technologies that are considered automatically additional. In that case, the activity participant may confirm that the activity is part of a positive list of activities established by the Supervisory Body. The Supervisory Body may consider the following criteria for establishing a positive list including, but not limited to:

    (a) The ability to predetermine the technologies and measures and specify the necessary conditions with a high degree of certainty (e.g. emission intensity, efficiency, cost and penetration of technologies), where relevant on a regional basis (e.g. global average penetration rates of some technologies may be high, yet the same technologies may have low penetration rates in LDCs/SIDS);

    (b) Procedures are developed to review and update the positive list of technologies at regular intervals based on up-to-date science and data.

76. The Supervisory Body may develop and approve separate guidance on the demonstration of additionality and the positive list of technologies at a future meeting, including simplified approaches for demonstration of additionality.

3.16. Requirements for Standardized baselines

77. 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 removals and/or the determination of additionality for Article 6.4 activities, while providing assistance for assuring environmental integrity. standardized baseline may standardize additionality and/or baseline scenario, and/or baseline emissions.

78. The approaches for the baselines referred to above under section 3.14 shall also be applied for the development of the standardized baseline.

79. The default validity period of a standardized baseline is three years, starting from its approval by the Supervisory Body. A host Party may propose a longer validity period by providing justification. After the standardized baseline is expired, the updated standardized baseline shall be developed and approved by the Supervisory Body subject to the request being received from the host Party. The updated standardized baseline shall not impact already registered activities up to the end of their first crediting period.

80. 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.

81. Standardized baselines may be developed by the Supervisory Body in consultation with the host Party when a host Party has made such request for assistance. The Supervisory Body shall prioritize the requests received from the host Parties that are LDCs/SIDS.

82. Standardized baselines shall be established at the highest possible level of aggregation in the relevant sector of the host Party.

83. The level of aggregation shall be determined and proposed by the host Party, taking into account the following:

    (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 (e.g. overlap would occur in cases where there is a standardized baseline for energy efficiency in commercial buildings, and another standardized baseline for energy-efficient lighting in commercial and residential buildings).

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

4. Subsequent work and timelines

Further work will be taken up as agreed by the Supervisory Body.

5. Recommendations to the Supervisory Body

85. It is recommended that the Supervisory Body considers the information note while developing recommendations requested by the CMA.

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Appendix. [Baseline contraction factor]

1. The following definitions apply for determining a baseline contraction factor:

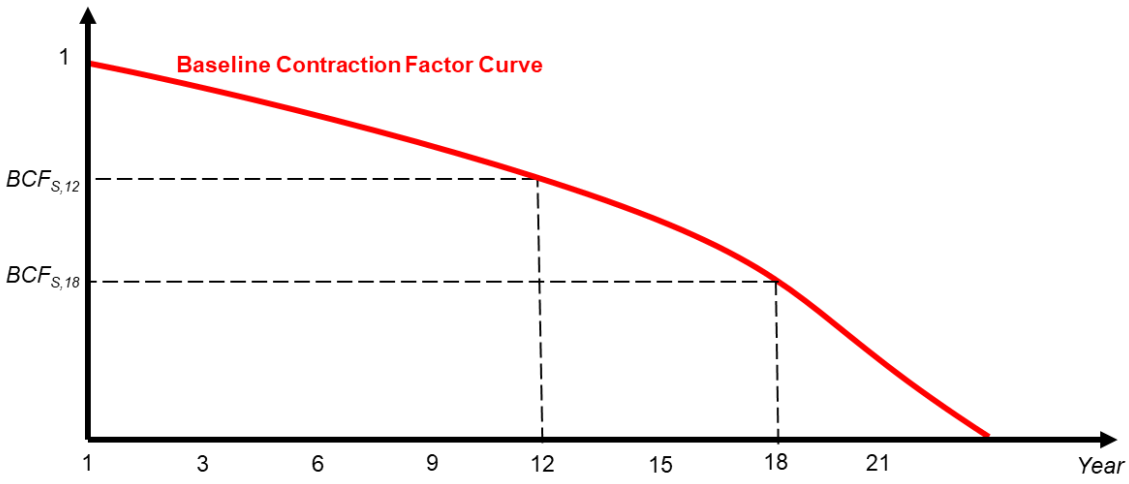
   (a) **Baseline contraction factor in year y ($BCF_{S,y}$):** value between 1 and 0 decreasing with time used to discount and cap the baseline values for activities undertaken in a [sector] [sub-sector] [activity type] *S*. This factor is updated at pre-determined intervals e.g. yearly. For simplification purposes, the contribution of removals is not explicitly reflected;

   (b) **Baseline contraction factor trajectory for** [sector] [sub-sector] [activity type] **S ($BCFC_S$):** the curve representing the variation of the baseline contraction factor with time for a given [sector] [sub-sector] [activity type]. It is an emission trajectory (descending curve) and should be aligned with the host Party's nationally determined contributions, long-term low emission development strategies or with the long-term goals of the Paris Agreement;

   (c) **Baseline emissions in year 0 in a** [sector] [sub-sector] [activity type] ***S* ($BE_{S,1}$):** baseline emissions or emission intensity benchmarked for [sector] [sub-sector] [activity type] *S* in year *0* i.e. point in time when benchmarking efforts are concluded and emissions or emission intensity are determined. It is the starting point of the baseline contraction factor trajectory when **$BCF_{S,0}$** is 1.

2. The diagram below illustrates the BCF_S.

Figure 1. Illustration of Baseline Contraction Factor Curve



3. The baseline contraction factor for a specific year y can be inferred from the diagram. In the example, two baseline contraction factors were identified for year 12 ($BCF_{S,12}$) and for year 18 ($BCF_{S,18}$).

4. The baseline emissions or the baseline emissions intensity for year 0 should be identified for the [sector] [sub-sector] [activity type] S ($BCF_{S,0}$).

5. Finally, the discount or the cap for the baseline emissions for [sector] [sub-sector] [activity type] S in the specific year y is determined as the product between the baseline contraction factor for the [sector] [sub-sector] [activity type] S in year y and the baseline emissions for the [sector] [sub-sector] [activity type] S in year 0, as follows:

$$BE_{cap,S,y} = BCF_{S,y} \times BE_{S,0} \qquad \text{Equation (1)}$$

Where:

$BE_{cap,S,y}$	=	Cap in the baseline emissions for the [sector] [sub-sector] [activity type] S in year *y*
$BCF_{S,y}$	=	Baseline contraction factor for the [sector] [sub-sector] [activity type] S in year y
$BE_{S,1}$	=	Baseline emissions for the [sector] [sub-sector] [activity type] S in year 1 of the contraction curve

6. For the example above, the cap in the baseline for years 12 and 18 are calculated as

$$BE_{cap,S,12} = BCF_{S,12} \times BE_{S,1}$$

$$BE_{cap,S,18} = BCF_{S,18} \times BE_{S,1}$$

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