CLEAN DEVELOPMENT MECHANISM

CDM-MP68-A01

Draft Standard

Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities

Version 04.0

United Nations
Framework Convention on
Climate Change

COVER NOTE

1. Procedural background

1. The Executive Board of the clean development mechanism (CDM) (hereinafter referred to as the Board), at its eighty-first meeting, requested the Methodologies Panel (Meth Panel), as a matter of priority, to continue working on the issue of combinations of methodologies with a view to identifying and recommending combinations of methodologies that do not require prior approval and combinations for which interactions occur and to consider how such interactions could be addressed.

2. Purpose

2. The purpose of the proposed revision is to provide flexibility for allowing combination of large scale methodologies that do not require prior approval for programme of activities (PoAs), and to improve the clarity and consistency of the requirement pertaining to the consideration of interactive effect.

3. Key issues and proposed solutions

3. The Meth Panel noted that the key issue that prevented unrestricted combining of large scale methodologies until now was the potential interactive effect between measures, which may impact the baseline emission calculations and additionality demonstration. After analysing the existing approved large scale methodologies for potential combinations of measures, the Meth Panel identified the list of combinations of large scale methodologies that can be applied without requiring prior approval.

4. Impacts

4. The revision will provide more flexibility and streamlined procedure for combining large scale methodologies for application in PoAs.

5. Subsequent work and timelines

5. No further work is envisaged.

6. Recommendations to the Board

6. The Meth Panel recommends that the Board adopt the standard, to be made effective at the time of the Board's approval.

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1. Background

1. In decision 3/CMP.6 paragraph 4, Parties requested the clean development mechanism (CDM) Executive Board (hereinafter referred to as the Board) to reassess its existing regulations related to programmes of activities (PoAs) in order to:

   (a) Further clarify the application of existing rules regarding the demonstration of additionality to programmes of activities and the definition of eligibility criteria for the inclusion of component project activities in a programme of activity;

   (b) Simplify the application of programmes of activities to activities applying multiple methods and technologies, including for possible city-wide programmes, while ensuring environmental integrity to the extent required by the Kyoto Protocol and decisions of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol.

2. The Board, at its sixty-third meeting, adopted three PoA-related standards as contained in annexes 2, 3 and 4 to the report of the sixty-third meeting of the Board and requested the secretariat to consolidate these three standards into one PoA standard as indicated in paragraph 72 of the report of the sixty-third meeting of the Board. This standard is prepared in response to the request made by the Board at its sixty-third meeting.

3. This standard replaces the requirements in “Procedures for approval of the application of multiple methodologies to a Programme of Activities” (EB 47 report, annex 31). This document consolidates and thus supersedes the following 3 annexes.

   (a) Standard for demonstration of additionality of GHG emission reductions achieved by a programme of activities (version 01.0) (Annex 02, EB 63 meeting report);

   (b) Standard for the development of eligibility criteria for the inclusion of a project activity as a CPA under the PoA (version 01.0) (Annex 03, EB 63 meeting report);

   (c) Standard for application of multiple CDM methodologies for a programme of activities (version 01.0) (Annex 04, EB 63 meeting report).

2. ~~Definitions, s~~Scope~~, and~~ applicability and entry into force

2.1. Scope and Applicability

4. This standard is applicable to coordinating/managing entities (CMEs):

   (a) To demonstrate the additionality of emissions reductions achieved under a PoA;

   (b) To develop/update eligibility criteria for inclusion of a project activity as a component project activity (CPA) under the PoA; and

   (c) When applying multiple technologies/measures and/or multiple methodologies in one PoA.

5. This standard is also applicable to designated operational entities (DOEs) for validating and/or verifying activities referred to in paragraph 4 above.

~~**2.2. Definitions**~~

2.3. Entry into force

6. The date of entry into force is the date of the publication of the EB 87 meeting report on 27 November 2015.

3. Definitions

7. In addition to the definitions contained in the "Glossary of CDM terms", the following terms apply in this standard:

(a) **Measure** is a broad class of greenhouse gas emission reduction activities possessing common features, for example fuel and feedstock switch, switch of technology with or without change of energy source (including energy efficiency improvement), methane destruction, and methane formation avoidance;

Note: Two different activities can be considered to be using the same measure if they constitute the same course of action and result in the same kind of effect.

Note: Two different activities can be considered to be applying the same technology if they provide the same kind of output and use the same kind of equipment and conversion process.

(b) **Cross effects** refer to the interactive effects, which impact estimation of emission reductions and assessment of additionality on account of exchanges and interaction between the technology(ies)/measures of a CPA;

Note:

(i) Estimating emission reductions from each single technology/measure in an isolated manner ignoring cross effects may potentially result in over-estimation of the emission reductions from the PoA (see more information in Annex 1 regarding cross effects).[1]

(ii) Interactive effects are equivalent to double counting occurring between two measures, whereas leakage refers to effects ~~upstream/downstream/outside of the project boundary associated with a single measure.~~ outside of the project boundary including those occurring upstream or downstream of a technology/measure implemented.

[1] ~~For example, consider a CPA for implementing energy efficiency measures in a building. Lighting energy efficiency is achieved under one component by replacing the inefficient bulb with an efficient one applying a relevant methodology. Lighting control efficiency is also implemented as a separate component applying a different methodology in the same building. If historic energy consumption for lighting is used by both components then it is likely that the emission reductions are overestimated due to cross effects. Reduced energy consumption of the lights should be taken into account when determining savings from the lighting controls project.~~

4. Requirements

4.1. Demonstration of additionality

8. Additionality shall be demonstrated by establishing that in the absence of CDM PoA, none of the implemented CPAs would occur.

9. PoAs that consist of one or more microscale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of the methodological tool "Demonstrating additionality of microscale project activities" ~~"Guidelines for demonstrating additionality of microscale project activities"~~.

10. PoAs that consist of one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of the methodological tool "Demonstration of additionality of small-scale project activities" ~~"Guidelines for demonstrating additionality of small-scale project activities"~~.

11. Notwithstanding the provisions in paragraphs 8−10 above, the methodological tool "Demonstration of additionality of microscale project activities" may be applied to a CPA that applies one or more large-scale CDM methodologies or small-scale CDM methodologies, or a combination of large-scale and small-scale CDM methodologies, if the aggregate size of all units in the CPA is below the microscale thresholds. However, if a CPA solely consists of 'microscale CDM units' as defined in this tool, this tool may be applied irrespective of the aggregate size of all units in the CPA.

12. PoAs that consist of one or more large-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements contained in the additionality section of the large-scale methodologies applied to the CPAs. In addition, for CPAs combining large-scale methodologies or large-scale and small-scale methodologies, if the combination results in changed cash flow for the individual measures in comparison to the situation when the measures are implemented separately[2], additionality shall be demonstrated for the measures both individually (i.e., each of the measures) and collectively (i.e., combination of measures). In such a case, relevant eligibility criteria shall be developed accordingly.

13. Large-scale CPAs (i.e. CPAs that apply one or more large-scale CDM methodologies or combination of large scale and small-scale CDM methodologies), small-scale CPAs (i.e. CPAs that apply only small-scale CDM methodologies) and microscale CPAs (i.e. CPAs comprised of only units that are below the thresholds that define microscale project activities) may be included in the same PoA. ~~The methodological tool "Demonstrating additionality of microscale project activities" "Guidelines for demonstrating additionality of microscale project activities" may be applied to a large-scale or small-scale CPA if all of the units in the CPA in aggregate are below the microscale thresholds. The methodological tool "Demonstration of additionality of small-scale project activities" "Guidelines for demonstrating additionality of small-scale project activities" may be used for small-scale CPAs only.~~

[2] It can occur when multiple measures that will be combined have the possibility to share the same equipment/facility. For example, two methodologies for treatment of two different types of wastes may be combined in a single CPA. In doing so, the underlying project activities may share some of the facilities or infrastructures (e.g., the weighbridge, land/site). In such a case, the cash-flows for the two component project activities are likely to change as a result of combining of the two methodologies.

14. The large-scale PoA design document (PoA-DD) form and the large-scale CPA design document (CPA-DD) form shall be used for PoAs applying ~~both~~ combinations of large-scale and small-scale methodologies.

15. The CME shall demonstrate that compliance with the additionality-related eligibility criteria set in the PoA-DD will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met.

    (a) When investment analysis is used for the demonstration of additionality, there are two options to meet the above requirements:

        (i) One option is to conduct an investment analysis to each CPA. In this case, the CME ~~coordinating/managing entity~~ shall define the input parameters that will be used in the investment analysis in the PoA-DD, together with a description of how the values for these parameters will be obtained for each CPA. The additionality of each CPA shall then be assessed by using the actual values, applicable to the CPA at the time of inclusion, in the investment analysis conducted for the purpose of demonstrating the additionality of the CPA.

        (ii) Another option is not to conduct an investment analysis to each CPA but to define technical and economic criteria for the inclusion of the CPA in the PoA-DD. In this case, the CME ~~coordinating/managing~~ entity shall determine, through the application of an investment analysis, a range of values for each input parameter which qualify a CPA for inclusion in the PoA.[3] At the time of inclusion of a CPA, the CME ~~coordinating/managing~~ shall assess whether the actual values, applicable to the CPA at the time of inclusion, fall within the range that was specified in the PoA-DD. For this option, any requirements with regard to the update of eligibility criteria specified in the applied methodologies shall be followed.[4] The procedures for post-registration changes (see section 6.2 of the "CDM ~~Clean development mechanism~~ project cycle procedure") shall be followed for updating the eligibility criteria when this option is chosen.

16. For PoAs involving combinations of technologies/measures and/or methodologies, the eligibility criteria relative to each of them shall be proposed to demonstrate additionality. Types of combinations as indicated in paragraph ~~29~~ 32 below shall be taken into account.

[3] For example see the guidance in ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version 13.0.0, under the section 'Project activity under a programme of activities' to apply this option.

[4] For example version 13.0.0 of ACM0002 requires that the eligibility criteria related to costs, revenues and investment climate shall be updated every two years in order to correctly reflect the technical and market circumstances of a CPA implementation.

4.2. Development and update of eligibility criteria

4.2.1. Development of eligibility criteria

17. The CME shall develop eligibility criteria for inclusion of CPAs in the PoA and shall include these criteria in the PoA-DD and demonstrate their usability to assess the inclusion of CPAs in the generic CPA-DD.

18. The eligibility criteria shall cover as a minimum the following:[5]

    (a) The geographical boundary of the CPA including any time-induced boundary[6] consistent with the geographical boundary set in the PoA;

    (b) Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo);

    (c) The specifications of technology/measure[7] including the level[8] and type of service, performance specifications including compliance with testing/certifications;

    (d) Conditions to check the start date of the CPA through documentary evidence;

    (e) Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;

    (f) The conditions that ensure that the CPA meets the requirements pertaining to the demonstration of additionality as specified in section ~~3~~4.1 above;

    (g) The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;[9]

    (h) Conditions to provide an affirmation that funding from Annex I Parties, if any, does not result in a diversion of official development assistance;

    (i) Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation);[10]

[5] Validating DOE and/or the Board may specify additional criteria depending on the specific characteristics of a PoA.

[6] For example, an emission factor for electricity generation is dependent on the boundaries of regional or state or sub-regional grids.

[7] Specifications of the technology/measure shall include the type, capacity and other key features of the design of the systems. For example, indicating the installed ~~kW~~ capacity (in kW), size or dimensions, fixed/portable operation, and other key design features that makes the project cook stoves efficient, would be appropriate; however, only indicating that all cook stoves will have an efficiency X% would not be sufficient.

[8] The level of service shall be defined in comparison with the baseline system being replaced.

[9] See also relevant paragraphs of "CDM ~~Clean Development Mechanism~~ ~~P~~project ~~C~~cycle ~~P~~procedure".

(j) Where applicable, the conditions related to sampling requirements for the PoA in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities";

(k) Where applicable, the conditions that ensure that every CPA ~~(in aggregate if it comprises of independent sub-units)~~ meets the small-scale or microscale threshold[11] and remains within those thresholds throughout the crediting period of the CPA. However, for a CPA that consists of only units that qualify as 'microscale CDM units' as defined in the methodological tool "Demonstration of additionality of microscale project activities", this condition is not required;

(l) Where applicable, the requirements for the debundling check, in case the CPA~~s~~ belongs to small-scale or microscale project categories.[12] However, if a CPA solely consists of 'microscale CDM units', the requirement regarding debundling is not applicable.

19. The eligibility criteria shall be verifiable.

20. The validating DOE shall determine whether the eligibility criteria are sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA.

21. The CME shall have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. The CME shall develop and implement a management system that includes the following made available to the DOE at the time of validation of the PoA:

(a) A clear definition of roles and responsibilities of personnel[13] involved in the process of inclusion of CPAs, including a review of their competencies;

(b) Records of arrangements for training and capacity development for personnel;

(c) A procedure for technical review of inclusion of CPAs;

(d) A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);

(e) Records and documentation control process for each CPA under the PoA;

(f) Measures for continuous improvements of the PoA management system;[14]

[10] This is to re-test the validity of assumptions made at the PoA level. For example, in a lighting efficiency application, lighting usage hours of 3.5 hours per day would be valid if the target group is residences/households. Usage hours would be different in commercial applications and vice versa.

[11] Please refer to the latest approved version of the methodological tool "Demonstrating additionality of microscale project activities" ~~"Guidelines for demonstrating additionality of microscale project activities"~~ and the latest approved version of the "General Guidelines to SSC CDM methodologies".

[12] Please refer to the latest approved version of the methodological tool "Assessment of debundling for small-scale project activities" ~~"Guidelines on assessment of debundling for SSC project activities"~~.

[13] It is not necessary to specify the names of personnel, but the descriptions of functions are required.

(g) Any other relevant elements.

22. The DOE shall assess the elements of the management system referred to in paragraph 2~~0~~1 above as part of the validation of the PoA or as part of the validation of a CPA inclusion.

23. CPAs may be included in the PoA on the basis that the DOE has confirmed the eligibility of the CPAs where applicable undertaking sample-based checks in accordance with the guidelines/standard approved by the Board.

24. For PoAs that include combinations of technologies/measures and/or methodologies, distinct eligibility criteria shall be developed per combination as specified in paragraph ~~29~~30 below.

4.2.2. Updating eligibility criteria

25. The CME shall revise the eligibility criteria and submit a request for post-registration changes, if:

(a) The version of methodology applied by the PoA is revised or replaced subsequent to being placed on hold;

(b) The boundary of the PoA is amended post-registration to expand the geographic coverage or to include one or more additional host Parties;

(c) The revision of the eligibility criteria of a registered PoA is initiated by the Board at any time during the lifetime of the PoA if an issue related to environment integrity is identified;

(d) There is an addition or change of technologies/measures with or without addition or change of applied methodologies in the registered PoA-DD as specified in the "CDM ~~Clean development mechanism~~ project cycle procedure";

(e) The eligibility criteria pertaining to the demonstration of additionality is revised.

26. For any other changes that are not explicitly covered by the "CDM project cycle procedure", the CME shall submit a request in accordance with the latest applicable procedure for "Modalities and procedures for direct communication with stakeholders" to check the eligibility of the proposed changes.

27. No action is required if the version of the methodologies applied by the PoA is revised without being placed on hold or is withdrawn for the purpose of inclusion in consolidated methodologies, unless otherwise indicated in the respective report of the meeting of the Board that has approved the new methodologies.

28. At the renewal of a PoA, the CME shall ~~update~~ revise the eligibility criteria as per the latest revised applicable methodologies. A new version of the PoA-DD (e.g. version 1.4) and the generic CPA-DDs validated[15] by a DOE shall be submitted to the secretariat for

[14] Improvements may include addition or restructuring of functions/posts for which prior approval by the Board is not required as long as the CME is able to demonstrate to the DOE that the deliverables of the management system specified in the registered PoA-DD are fully met.

[15] In this case, the stakeholder consultation is not required.

approval by the Board in accordance with the renewal of PoA process as defined in the "CDM ~~Clean development mechanism~~ project cycle procedure".

(a) Once the changes have been approved by the Board, the inclusion of all new CPAs shall be based on the ~~updated~~ revised eligibility criteria applying the corresponding new generic CPA-DDs;

(b) The subsequent CPAs requesting the renewal of the crediting period shall apply the new version of the corresponding generic CPA-DDs.

4.3. Application of multiple methodologies

4.3.1. General requirements

29. The CME shall list in the PoA-DD and the generic CPA-DDs various combinations of technologies/measures and/or approved methodologies that will be implemented in the PoA.

30. The CME shall define the eligibility criteria for CPA inclusion and, where applicable, sampling plans for each of the combinations separately in accordance with the requirements in section ~~3~~ 4.2 above as well as any guidelines/standard approved by the Board pertaining to sampling and surveys. If a CPA uses technologies/measures from several methodologies, it shall be in compliance with all the eligibility criteria derived from the requirements of all the methodologies. These eligibility criteria shall be identified in the validated PoA-DD.

4.3.2. Application of multiple small-scale CDM methodologies

31. Combinations of technologies/measures and/or methodologies for a PoA are eligible where it is demonstrated that there are no cross effects between the technologies/measures applied. The CME shall apply the Annex 1 "Guidelines for the consideration of interactive effects for the application of multiple CDM methodologies for a programme of activities" and where necessary seek clarifications/revision/deviation on account of cross effects in the proposed combinations in accordance with the latest applicable procedure in the "CDM project cycle procedure". In doing so, a CPA-DD with completed sections of detailed technical descriptions shall also be submitted. ~~Where such cross effects do exist, the CME shall propose methods to account for such cross effects using the "Requests for deviation from approved methodology" of "Clean development mechanism project cycle procedure" so as to ensure that the calculation of emission reductions is accurate.~~

32. In particular, the following situations for applying combinations of technologies/measures and/or methodologies are eligible under the conditions indicated[16]:

(a) The same combination of technologies/measures under the same combination of methodologies applied consistently in each and every CPA of a PoA. For example, methane recovered from an anaerobic digester to treat animal manure under AMS-III.D is used for heat generation applying AMS-I.C;

[16] Combinations of approved methodologies contained in the "General guidelines to SSC CDM methodologies" may be applied without further assessment of cross effects or other conditions, while other combinations can be applied with the analysis of cross effects.

(b) A single methodology is consistently applied in each CPA of a PoA but using multiple technologies/measures. For example, different waste water treatment technologies can be applied across CPAs within the same PoA, using AMS-III.H;

(c) A principle technology/measure is applied consistently in each CPA using multiple combinations of methodologies. For example, wastewater treatment projects[17] with different ways of utilizing recovered methane (AMS-I.C for heat, AMS-I.D and AMS-I.F for electricity, or both), biomass/biogas projects with different fuel displacement (AMS-I.C and AMS-I.I for fossil fuel, AMS-I.E for non-renewable biomass, or both);

(d) Combinations of technologies/measures and methodologies vary across CPAs within a PoA and/or multiple and disparate methodologies are used in CPAs to realize the policy or the goal of the PoA. To apply such combinations[18], the CME shall demonstrate that the implementation of the activities is integrated through the design of the programme, for example:

(i) A CME initiates and coordinates different emission reduction activities as part of a city-wide effort to reduce GHG emissions, implementing policy goals adopted by the city or the government. This may include different measures, such as energy production, transport, energy efficiency and waste management;

(ii) A CME initiates and coordinates the installation of renewable electricity systems, which may include grid-connected and off-grid systems by providing financial incentives for the installation of these systems.

33. The compliance of a CPA with the small-scale threshold shall be met by following the "General guidelines to SSC CDM methodologies".

4.3.3. Application of multiple large-scale CDM methodologies

34. For PoAs applying large-scale CDM methodologies, it shall be firstly demonstrated that the multiple methodologies are used in CPAs to realize the policy or goal of the PoA, and the implementation of the activities through CPAs is integrated through the design of the PoA as illustrated in paragraph 32 (d) above. Furthermore, only combinations explicitly permitted in the methodologies or combinations that satisfy one ~~all~~ of the two conditions below (i.e. conditions in sub-paragraphs (a) or (b) below) may ~~can~~ be applied without prior approval by the Board:

~~(a)The multiple methodologies are used in CPAs to realize the policy or goal of the PoA, and the implementation of the activities through CPAs is integrated through the design of the PoA as illustrated in paragraph 32 (d);~~

[17] Biogas/methane recovery from an anaerobic digester is the principle technology/measure in this example.

[18] Choosing this option may influence the choices for the sampling plan.

(a) If each CPA applies only one methodology, and there is no interaction between the different CPAs. An interaction shall be deemed to occur in the following cases, but is not limited to:

(i) One CPA is dependent on the implementation of another CPA or that one CPA impacts the profitability or emission reductions or removal enhancements achieved by another CPA;

(ii) One CPA is interlinked with another CPA by the technologies applied or economic decisions taken.

(b) If multiple methodologies are combined within a CPA, or multiple CPAs using different methodologies are implemented such that geographic boundaries overlap, the combination falls into one of the following types:

(i) Recovery of waste gas/energy under one measure and its use in another measure for one or more applications (i.e., power, heat, natural gas distribution grid, feedstock). For example, biogas may be firstly recovered (ACM0010), and then used as a feedstock and fuel for town gas production (AM0069) or for the purpose of injection to a natural gas distribution grid (AM0053);

(ii) Waste gas destruction (i.e., N_2O) under one measure and energy efficiency/fuel switch as another measure in the same industrial plant where the waste gas is generated. For example, while implementing N2O abatement from nitric acid production (ACM0019), fossil fuel trigeneration systems may also be implemented in the facilities (AM0076).

(iii) Renewable energy production for different uses. For example, renewable energy power plant supplies power to the grid (ACM0002) under one measure, and the same plant replaces part of the electricity production of a stand-alone fossil fuel fired power plant under another measure (AM0019);

(iv) Interconnection of electricity grid systems and at the same time, the introduction of renewable or natural gas or clean coal based power plants. For example, while interconnecting different electricity systems for energy exchange (AM0108), new renewable based power plant may be built to supply power to the exporting grid (ACM0002);

(v) Aeration of landfills and collection of the residual landfill gas or residual waste after aeration for further utilization. For example, the solid waste in the landfill after aeration (AM0083) may be further incinerated for gainful use (ACM0022).

35. In all other cases[19], the CME shall apply the guidance provided in the Annex 1 for consideration of interactive effect and submit a request for clarification ~~to the secretariat by following~~ on potential cross effects in the proposed combinations in accordance with the latest applicable procedure ~~for the eligibility of the proposed combination~~. In doing so, a CPA-DD with completed sections of detailed technical descriptions shall also be submitted. ~~To apply combinations of methodologies not explicitly permitted, justifications to demonstrate the integration through the design of the programme as indicated in paragraph 31(d), should be included in the request for clarification.~~

[19] This includes new methodologies approved after the adoption of this standard by the Board.

4.3.4. Application of combination of multiple large-scale and small-scale CDM methodologies

36. In case of a combination of multiple large-scale and small-scale CDM methodologies in a PoA, the same requirement ~~procedures~~ detailed in section 4.~~3.~~3.3 above shall be applied.

Appendix 1. Further guidance ~~Guidelines~~ for the consideration of interactive effects for the application of multiple CDM methodologies for a Programme of Activities ~~(version 01.0)~~

~~1. Background~~

~~1. In decision 3/CMP.6 paragraph 4, Parties requested the Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM) to reassess its existing regulations related to programmes of activities (PoAs) in order to "simplify the application of programmes of activities to activities applying multiple methods and technologies, including for possible city-wide programmes, while ensuring environmental integrity to the extent required by the Kyoto Protocol and decisions of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol".~~

~~2. The Board at its sixty-third meeting requested the secretariat, in collaboration with a task force composed of members from the Methodologies Panel (Meth Panel) and Small-Scale Working Group (SSC WG), to develop further guidance regarding cross effects[1] in the context of the application of combinations of technologies/measures and methodologies for the consideration of the Board at a future meeting.~~

~~3. At its sixty-seventh meeting, taking into account a concept note prepared by the secretariat in consultation with the Meth Panel, the Board requested the secretariat to develop guidelines on cross effects for its future consideration, taking into account the following inputs provided by the Board:~~

~~(a) Confine to potential cross effects impacting baselines when combinations of small-scale methodologies are applied in the context of a PoA;~~

~~(b) Any potential cross effects owing to a combination of technologies under a single methodology shall be addressed during the methodology approval process. It is appropriate that project proponents seek clarification from the Meth Panel with regard to any identified cross effects in the context of application of combination of large-scale methodologies or combination of large- and small-scale methodologies. The Board also noted that cross effects on account of a price effect of a CDM measure (e.g. modal shift in public transportation) may have to be addressed during the methodology approval process when considering a combination of technologies that are eligible under a single methodology;~~

~~(c) A sequential determination of a baseline for the methodologies applied may be appropriate for some cases but will not be a solution for all cases; other measures would be required;~~

~~(d) Consider addressing both the negative and positive impacts of cross effects;~~

~~[1] Cross effects and interactive measures are, in this context, synonymous. The term "interactive measures" was chosen for clarity.~~

(e) Explore an alternative terminology for cross effects, e.g. cross measure double counting.

2. Scope and applicability

4. This document provides guidance on consideration of interactive effects when applying different technologies/measures pertaining to the same methodology and/or combinations of approved CDM methodologies within the component project activities (CPAs) of a PoA.

5. These guidance are applicable to the component project activities (CPAs) of a PoA seeking to apply multiple technologies/measures and/or approved methodologies.

3. Definitions

6. For the purpose of this document, all definitions contained in the "Standard for application of multiple CDM methodologies for a programme of activities" apply:

(a) Interactive effects refers to the changes impacting estimation of emission reductions on account of exchanges between the technology(ies)/measures of a CPA. Estimating emission reductions from each single technology/measure in an isolated manner ignoring interactive effects may potentially result in over-estimation of the emission reductions from the PoA;[2]

(b) Interactive effects are equivalent to double counting occurring between two measures, whereas leakage refers to effects upstream/downstream/outside of the project boundary associated with a single measure.

4. Examples of interactive effects

7. Interactive effects may occur when multiple technologies/measures are implemented under one CPA, applying either one methodology or multiple methodologies. See the attachment to the appendix below for some examples of interactive effects.

5. Guidelines

8. The following situations for applying combinations of technologies/measures and/or methodologies are conceivable:

(a) The same combination of technologies/measures under the same combination of methodologies applied consistently in each and every CPA of a PoA. For example, methane recovered from an anaerobic digester to treat animal manure under AMS-III.D "Methane recovery in animal manure management systems" is used for heat generation applying AMS-I.C "Thermal energy production with or without electricity";

(b) A single methodology is consistently applied in each CPA of a PoA, but using multiple technologies/measures. For example, different waste water treatment

[2] Interactive effects may also potentially result in under-estimation of the emission reductions under certain situations leading to errors on the conservative side of estimation of emission reductions. Submissions may be made including examples and methods to estimate emission reductions more accurately under such situations.

~~technologies can be applied across CPAs of one PoA, using AMS-III.H "Methane recovery in wastewater treatment";~~

~~(c) A technology/measure is applied consistently in each CPA using multiple combinations of baseline scenarios and/or different methodologies. For example, waste water treatment projects with different ways of utilizing recovered methane (AMS-I.C for heat, AMS-I.D "Grid connected renewable electricity generation" and AMS-I.F "Renewable electricity generation for captive use and mini-grid" for electricity, or both), biomass/biogas projects with different fuel displacement (AMS-I.C and AMS-I.I "Biogas/biomass thermal applications for households/small users" for fossil fuel, AMS-I.E "Switch from Non-Renewable Biomass for Thermal Applications by the User" for non-renewable biomass, or both);~~

~~(d) Combinations of technologies/measures and methodologies vary across CPAs of a PoA, i.e. the goal can only be realized using multiple methodologies. Therefore, in such situations the CME should demonstrate that the implementation of the activities is integrated through the design of the programme. This may include, for example, a range of activities within different sectors such as energy generation (e.g. wind electricity using AMS-I.D), solar water heaters using AMS-I.J "Solar water heating systems (SWH)", energy efficiency (e.g. efficient lighting using AMS-II.J "Demand-side activities for efficient lighting technologies"), building energy efficiency using AMS-III.AE "Energy efficiency and renewable energy measures in new residential buildings", efficient street lighting using AMS-II.L "Demand-side activities for efficient outdoor and street lighting technologies", water management (e.g. efficient irrigation), waste management (e.g. landfill gas recovery using AMS-III.G "Landfill methane recovery"), composting using AMS-III.F "Avoidance of methane emissions through composting", recycling using AMS-III.AJ "Recovery and recycling of materials from solid wastes", transport (e.g. using AMS-III.C "Emission reductions by electric and hybrid vehicles"), and agriculture (using AMS-III.D "Methane recovery in animal manure management systems" for manure management).~~

9. If a single methodology is consistently applied in each CPA of a PoA, but using multiple technologies/measures, it ~~The situation described in paragraph 9(b) above~~ may potentially lead to overestimation of emission reductions ~~in the case of application of methodologies that may potentially~~ ~~involve~~ when several technologies/measures interact~~ing~~ with each other (e.g. ACM0012). The interactive effects in such situations shall be addressed through additional guidance related to the application of the methodology in a PoA in the pertinent ~~large-scale~~ methodologies.

~~10. The application of large-scale CDM methodology combinations and the application of combinations of large and small-scale CDM methodologies are eligible without pre-approval, as per the above-cited PoA standard, only when the combinations are explicitly permitted in the methodologies. In other cases, the CME is required to seek a clarification by following the "Procedure for the submission and consideration of queries regarding the application of approved methodologies and methodological tools by designated operational entities to the Meth Panel" (EB 42, annex 9) for the eligibility of the proposed combination. Therefore, interactive effects in the context of a combination of a large-scale methodology with other large-scale and/or small-scale methodologies~~

~~shall be addressed on a case-by-case basis by the Meth Panel when assessing those requests for a recommendation to the Board.~~

~~11. Analysis of the interactive effects and accounting for them by the CME is limited to cases where only small-scale methodology(ies) are applied in a CPA. Further, only the types of situations described in paragraph 9(a), (c) and (d) above, involving the application of a combination of methodologies, are considered and it is assumed in all other cases that the issue is addressed in the respective methodologies.~~

12. The CME should consider the following situations ~~general principles~~ to identify interactive effects. These situations are neither exhaustive nor mutually exclusive and are intended to serve as examples:

(a) Type I: interactive effects could occur when there is an exchange of energy (thermal, mechanical or electrical) or mass transfer between different measures of the CPA, the transfer occurring from a primary, independent measure to a dependent measure;

(b) Type II: interactive effects could also occur when several measures rely on the same information when estimating emission reductions. For example, several measures refer to historical fuel/electricity/heat consumption, or a default value. ~~They may also occur when combining methodologies relying solely on default factors for setting the baseline.~~

13. The CME should consider that ~~the following when accounting for interactive effects:~~

(a) ~~W~~when combining measures of different types, e.g., energy efficiency and fuel switch, the baselines for different measures should be determined sequentially and not simultaneously. The baseline of the second technology/measure is set after considering the effects of the implementation of the first technology/measure. ~~For instance, the effect of a fuel switch project is considered before the energy efficiency project or vice versa~~. For Type II interactive effects, once a baseline is estimated/determined for one of the measures, the secondary (tertiary, etc.) measure should not use the same historical/default values, but an adjusted value taking into account a scenario in which the primary measure is implemented.

(i) For Type I interactive effects, the energy/mass stream of the dependent measure should be determined conservatively, taking into account the output of the primary measure;

(ii) For Type II interactive effects, once a baseline is estimated/determined, the secondary (tertiary, etc.) measure should not use the historical/default values, but an adjusted value taking into account a scenario in which the primary measure is implemented;

~~(b) When deciding the sequence of baseline determination, both realistic restrictions (i.e. practical considerations) and a conservative approach have to be considered;~~

~~(c) The boundary of the CPA should be set to include in it all energy/mass streams affected by the implementation of project measures.~~

Attachment to Appendix. Examples of interactive effects

1. **Example 1**: AMS-II.N "Demand-side energy efficiency activities for installation of energy efficient lighting and/or controls in buildings" (version 01.0) includes consideration of interactive effects due to lighting and heating. It is stated: "Lighting efficiency projects may have the added advantage of saving energy by reducing loads associated with space-conditioning (cooling) systems. However, the reduction in lighting load may also increase space-heating requirements." The methodology further details considerations for determining energy savings or losses associated with the interactive effects of lighting efficiency projects.

2. **Example 1 (Type I)**: In a biogas recovery and utilization project, the primary measure is to recover the biogas and the other measure is to utilize the biogas for power generation. In this case, the emission reductions are determined on the basis of the amount of methane emission avoided and the fossil fuel displaced for power generation, and the additionality should be evaluated together for both components.

3. **Example 2 (Type II):** Considering a CPA for implementing energy efficiency measures in a building including two measures:

   (a) Measure A: lighting energy efficiency is achieved under one component by replacing the inefficient bulb with an efficient technology applying a relevant methodology;

   (b) Measure B: lighting control efficiency is also implemented as a separate component applying a different methodology in the same building.

   If historic energy consumption for lighting is used by both components then it is likely that the emission reductions are overestimated due to interactive effects. Similarly if measure B precedes measure A in terms of timelines for implementation and measure B uses historic information for the baseline and measure A uses default factors (e.g., 3.5 hours of usage per day and a difference in wattages of the incandescent lamps and compact fluorescent lamps as in AMS-II.J), potentially there can be overestimation due to interactive effects.

   Reduced energy consumption of the lights should be taken into account when determining savings from the light controls project and vice versa.

4. **Example 3:** In the pulp and paper industry, an energy efficiency measure is implemented, reducing the steam consumption in the pulping process by changing from a single-stage evaporator to a multiple effect evaporator. As a result of this energy efficiency measure, the solids content in the strong black liquor (SBL) increases, resulting in an increased steam production in the evaporator and thus higher electricity output, which is a second measure. Furthermore, higher recovery of caustic soda is expected, which is a third measure. The installation of a multiple effect evaporator influences the potential emission reductions of the other two measures.

5. **Example 3 (Type II):** In a fossil fuel based power plant, an energy efficiency measure is implemented by introducing more advanced technology (e.g. improved blades in an existing steam turbine). As a result of this energy efficiency measure, the required steam for generating the same amount of electricity is reduced. A second measure may be

implemented to switch from fossil fuel to biomass in the boiler. In this example, the saved energy consumption due to the energy efficiency measure should be taken into account when determining the quantity of fossil fuel displaced in the fuel switch measure.

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Document information

Version	*Date*	*Description*
04.0	23 October 2015	MP 68, Annex 01. To be considered by the Board at EB87. Revision to: • Incorporate approved text in the two amendments of CDM-EB80-A08-AMEN and CDM-EB81-A05-AMEN; • Allow more flexibility for combination of large scale methodologies; • Consolidate the "Guidelines for the consideration of interactive effects for the application of multiple CDM methodologies for a programme of activities" (EB68, Annex 3).
03.0	26 July 2013	EB 74 Annex 5. Revision to include changes in section 3.1 in paragraphs 7, 11, and to add new paragraphs 14(a) and (b), and to section 3.2 in paragraphs 16(c), 19(a), 19(f), 25, 30, 31, 31(d) and 34.
02.1	3 December 2012	Editorial improvements and to correct references to sections and document titles within the document.
02.0	23 November 2012	EB 70, Annex 5. Revision to clarify the applicability of relevant additionality guidelines to CPAs and the applicability of the PoA-DD and CPA-DD forms.
01.0	25 November 2011	EB 65, Annex 3. Initial adoption. This document consolidates and thus supersedes the following 3 annexes: • Standard for demonstration of additionality of GHG emission reductions achieved by a Programme of Activities (version 01.0) (Annex 02, EB 63 meeting report); • Standard for the development of eligibility criteria for the inclusion of a project activity as a CPA under the POA (version 01.0) (Annex 03, EB 63 meeting report); • Standard for application of multiple CDM methodologies for a Programme of Activities (version 01.0) (Annex 04, EB 63 meeting report). This document also supersedes the requirements in the Procedures for approval of the application of multiple methodologies to a Programme of Activities (version 01.0) (Annex

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