Annex 6

CONCEPT NOTE ON THE POSSIBLE IMPROVEMENTS IN THE DEMONSTRATION OF ADDITIONALITY

(Version 01.0)

I. Background and mandate

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), at its seventh session in Durban, South Africa, requested the CDM Executive Board (the Board) to "continue ensuring environmental integrity when developing and revising baseline and monitoring methodologies and methodological tools, in particular by considering possible ways of improving the current approach to the assessment of additionality, in order to provide clarity to encourage project activities in the private sector and the public sector".

2. In response to this request by the CMP, the Board included the project "Improvements in the demonstration of additionality" (project 164) in its 2012 CDM management plan (CDM-MAP). The CDM-MAP further specifies that the secretariat should prepare a "concept note on possible improvements in the demonstration of additionality". This concept note has been prepared in response to this request.

II. Objective, scope and structure of the information note

3. The objective of this concept note is to inform the Board on how the demonstration of additionality can be improved under the CDM. The note provides an evaluation of the strengths, weaknesses and limitations of the approaches currently used to demonstrate additionality and identifies specific options for possible improvements in the demonstration of additionality. The options are identified with the view to enable the Board to provide direction on how the existing standards (including methodologies and tools) and guidelines may be improved and which new approaches may be developed for consideration by the Board.

4. The note is based on a literature review, an evaluation of issues related to additionality that have arisen in the assessment of requests for registration, an expert meeting held on 14 May 2012 in Bonn, and consultations with the Meth Panel at its fifty-sixth meeting. It is noted that the inputs received from the experts and the Meth Panel were provided by individual members in his/her personal capacity as an expert.

5. The note is structured as follows: it first provides a brief introduction which highlights key definitions and policy issues related to additionality. Section IV provides an overview of the existing approaches used to demonstrate additionality. Section V describes issues that arise from the existing approaches for demonstrating additionality and presents recommendations for the consideration by the Board. Section VI identifies options to incorporate innovative approaches for the demonstration of additionality. Appendix 1 provides an overview of possible approaches to demonstrate additionality. Appendix 2 summarizes the feedback provided by the Meth Panel on draft options presented to the panel.

6. The scope of the note does not include issues related to the concepts of "first-of-its-kind" and "common practice" and the approaches adopted by the small scale methodologies for the demonstration of additionality. Based on the CDM-MAP for 2012, separate projects are undertaken on these issues to provide recommendations to the Board.

III. Introduction

7. The concept of additionality was initially introduced in Article 12.5(c) of the Kyoto Protocol and paragraph 43 of the modalities and procedures for the CDM. It refers to the question whether a proposed project activity would lead to a reduction of anthropogenic emissions of greenhouse gases by sources below those that would have occurred in the absence of the registered CDM project activity.

8. The demonstration of additionality is important for maintaining the integrity of the CDM: certified emission reductions (CERs) issued from CDM projects allow Annex I countries with a commitment inscribed in Annex B to the Kyoto Protocol to emit more greenhouse gases than allowed under their Kyoto target. This increase is "offset" by additional emission reductions that occur in non-Annex I countries, leaving net emissions unchanged. If these emission reductions would occur regardless of the CDM, then issuing credits for these reductions would allow global greenhouse gas (GHG) emissions to rise beyond the targets set for Annex I countries under the Kyoto Protocol.

9. The concept of additionality leads to the question whether the CDM is a decisive driver (but not necessarily the only) of the emission reductions occurring as a consequence of the implementation of the project activities. The key challenge is that this question is counter-factual and difficult to answer in practice. For third parties, such as designated operational entities (DOEs), it may be even more difficult to answer this question.

10. In practice, any test for demonstrating additionality can only approximate but not definitely answer this underlying question. For this reason, no test for additionality will be perfect and some false results will be part of any additionality testing. However, additionality tests can strive to demonstrate additionality in an objective, transparent and predictable manner with the view to reduce the number of "false positives" and "false negatives":

(a) "False positives" are projects that are not additional, i.e. projects that would be implemented regardless of the CDM, but would pass the additionality test. They result in a net increase of global GHG emissions;

(b) "False negatives" are projects that are additional, i.e. projects that would only be implemented due to the CDM, but do not pass the additionality test. They are also referred to as "lost opportunities". They leave global GHG emissions unchanged; however, they may increase the global costs of GHG abatement as they reduce the supply of CERs from the CDM.

11. Appendix 1 further describes the considerations for the selection of an appropriate additionality test and provides an overview of the approaches that are currently used to demonstrate additionality under the CDM or are discussed in the literature and may be introduced.

IV. Approaches used to demonstrate additionality in the CDM

12. To have a consistent approach for additionality demonstration, the Board approved the "Tool for the demonstration and assessment of additionality" (the "additionality tool") and the "Combined tool to identify the baseline scenario and demonstrate additionality" (the "combined tool"). These two tools use the same generic approaches, including an assessment of consistency with laws and regulations, an investment analysis, a barrier test, and a common practice test. The Board also adopted a general requirement that the CDM should have been seriously considered in the decision to proceed with the project ("prior consideration").

13. Although the additionality tool and the combined tool are not mandatory, most of the large scale CDM methodologies use these two tools or apply the tests compiled in the tools. Many

methodologies provide additional guidance on how these tests shall be applied in the context of the sector and project type. The methodologies often specify the baseline alternatives to be included in the assessment. Some methodologies also specify the types of barriers that may be applicable to the particular project type and how they may be objectively demonstrated. In many cases, the methodologies provide additional guidance to ensure that the investment analysis is performed correctly, by defining the types of costs and revenues to be included, by providing guidance which the type of investment analysis shall be applied (i.e. simple cost analysis, investment comparison analysis, or benchmark analysis), by specifying the type of financial indicator to be applied (e.g. IRR, NPV, LCOE), and/or by making the investment analysis mandatory (e.g. in the case of some Greenfield project types for which the barrier test may not be sufficiently robust).

14. To date, the Board has approved over 100 large scale CDM methodologies, and some methodologies have adopted innovative approaches for additionality demonstration, which are different from the approaches included in the additionality tool and generally include objective and simplified criteria, as described below.

15. Some methodologies deem the project activities automatically additional, if some objective conditions are fulfilled, such as:

(a) If the project activities are not required by the regulations and the project emissions are lower than the baseline emissions as monitored, as in the case of AM0001 (HFC-23);

(b) If the specific electricity assumption of the technology produced and sold by the project activity is lower than a benchmark for specific electricity assumption during each year of the crediting period, as in the case of AM0070 (production of efficient refrigerators);

(c) If the project emissions are lower than a benchmark for similar activities, as in the case of AM0091 (buildings) except for fuel switch measures;

(d) If the project activities are implemented in least developed countries (LDC), as in the case of AM0031 (bus rapid transit projects), AM0101 (rail projects) and ACM0016 (mass rapid transit projects); or

(e) If the project emissions per unit of output are lower than the default baseline emissions per unit of output, as in the case of ACM0019 (N_2O from nitric acid).

Most of these methodologies adopt a performance benchmark for the determination of baseline emissions. However, not all methodologies adopting a performance benchmark consider the project activity automatically additional if the project beats the benchmark: in the case of AM0046 (light bulbs) and AM0086 (water purifiers), the additionality tool has to be applied to demonstrate additionality; and in the case of AM0017 (steam traps), project participants have to demonstrate that the project activities face barriers and that the CDM helps to overcome the barriers.

16. Three transport methodologies, AM0031 (bus rapid transit projects), AM0101 (rail projects) and ACM0016 (mass rapid transit projects), implemented a procedure for additionality demonstration that combines a market penetration test and an assessment of costs. If less than 50% of the total capital cost is from commercial entities, a different test is used which compares revenues from CERs per year with the total annual operating & maintenance costs of the project. Only if the revenues of CERs are expected to constitute more than 10% of the operating & maintenance costs, it is assumed that the CDM played an important role in proceeding with the project and the project activity is deemed additional.

V. Improvement of existing approaches for additionality demonstration

17. This section evaluates the issues identified from the application of the approaches currently used in large-scale CDM methodologies and presents proposals for the improvement in the demonstration of additionality. The following sources of information were used to identify the issues:

(a) Relevant published literature;

(b) An expert meeting was held in Bonn on 14 May 2012. Written input form the experts was collected using a questionnaire and the discussions during the expert meeting were taken into account;

(c) Feedback from the Meth panel provided at its fifty-sixth meeting;

(d) Issues identified by the secretariat during the assessment of requests for registration of CDM projects.

18. The evaluation of the issues is used as the basis for providing recommendations for improvement in the demonstration of additionality. The first draft of the recommendations was prepared taking into account the inputs received from the experts and within the secretariat. The experts and the Meth Panel provided feedback on the draft recommendations, and the feedback was considered in preparing the final recommendations contained in this concept note.

19. The discussion on each issue below follows the same structure: (1) first the requirements in the existing standards and guidelines are described and the issues observed are highlighted, (2) then the proposals identified by the experts, the Meth Panel members and within the secretariat are described, and (3) lastly the recommendations to the Board are made.

1. Prior consideration

20. Prior consideration of the CDM is considered as a major element in assessing whether the CDM benefits were considered necessary in the decision to undertake the CDM project activity. The current guidelines require that project activities with a start data from 2 August 2008 inform the DNA and the secretariat in writing within six month of the start date of the project activity that they intend to seek CDM status. For project activities with a start date prior to 2 August 2008 ("pre-2008 projects"), evidence should be provided to demonstrate that the CDM was a decisive factor in the decision to proceed with the project. The start date is defined as the earliest date at which either the implementation or construction or real action of a CDM project activity or PoA begins.

21. In the process of evaluating requests for registration of some pre-2008 projects, it was observed that the project start date is much earlier than the date of request for registration, and that the date of the decision to proceed with the project activity may be even earlier. During this period of the time, some input parameters may have changed between the date of investment decision and the project start date (e.g. a decrease in the price of natural gas). In some cases, the evidence provided includes only internal documents, the date of which can not be objectively validated.

22. To address this issue, several proposals were identified by the experts, the Meth Panel members and within the secretariat:

(a) For pre-2008 projects, it could be required that the prior consideration of the CDM needs to be demonstrated by providing evidence from a third party that the CDM was considered by the project participants;

(b) For pre-2008 projects, the only evidence allowed could be a PDD published for global stakeholder consultation within three years from the start date of the project activity;

(c) It could be required that generally a CDM project activity shall not start before it is registered.

23. The recommendation to the Board is to consider the following two options:

(a) The current requirements for post-2008 projects are also applied to pre-2008 projects. Four years have passed since the initial adoption of the guidelines on prior consideration and the majority of the pre-2008 projects have likely been registered, using the relevantly simple requirements applicable to pre-2008 projects. In addition, the pre-2008 projects which are not yet registered have operated for more than half of the first crediting period without the benefits of the CDM, and given that they did not proceed with the validation or could not finalize the validation for several years, the likelihood that the projects are actually additional may be low.

(b) For pre-2008 projects, the only evidence allowed to demonstrate that the CDM was seriously considered in the decision to proceed with the project activity could be that a PDD was published for global stakeholder consultation within three years from the start date of the project activity. This proposal clearly defines the required evidence and takes into account the situation that the validation for some projects might have been ongoing for a few years.

2. Input values for investment analysis

24. The "Guidelines on the assessment of investment analysis" (the "investment guidelines") require that the input values used in an investment analysis should be valid and applicable at the time of the investment decision. In addition, the values of some costs and revenues have to be estimated or projected for the future operation of the project activities.

25. An important issue concerns the possibility to verify the quality of the input values required for the investment analysis. It is pointed out that project developers may choose values from a wide range of justifiable assumptions in order to make a proposed project appear additional, unless each input value for the expected costs and revenues is a unique and determinable value. The importance of this issue is also demonstrated by the majority of the project activities which underwent review by the Board, for which the DOEs were requested to further substantiate the values selected in the investment analysis for parameters such as operation and maintenance costs and their escalation rate, the plant load factor and auxiliary consumption, capital investment, the proposed tariff, the prices for fuels/feedstocks/products, tax exemptions, the investment benchmark (beta value, debt equity ratio), cost savings, the fair salvage value, the deterioration rate, and the inflation rate.

26. To address this issue, several proposals were identified by the experts, the Meth Panel members and within the secretariat:

(a) The investment analysis used to substantiate requests for loans is the most appropriate version. Data presented in the CDM-PDD should be consistent with the data presented to banks for receiving funding;

(b) Input values used in the investment analysis should be checked after the project is in operation for a period of time;

(c) It is proposed to use the actual values instead of those from feasibility studies if the project has been in commercial operation for a period of time at the time of request for registration;

(d) It is suggest that DOEs shall use their sectoral knowledge and built up criteria to validate and justify the approach applied to cross check input values. For projects under implementation, the input values could be cross-checked against similar projects implemented in the same country/area (at national level) during the same period of time. If information is not available then this should be justified and the cross-checking could be carried out at sectoral level (internationally).

27. The recommendations to the Board include the following proposals:

(a) The values used in the investment analysis presented in the CDM-PDD should be consistent with the data used to substantiate requests for loans (if applicable);

(b) Monitor the actual costs, revenues and key operational parameters of the project activity (e.g. capital costs, O&M costs, fuel/feedstock price or PLF) and compare these values with the ones used in the investment analysis in the CDM-PDD. If there is a significant deviation between the input values used in the CDM-PDD and the actual values, then the Board may require the DOE to request for approval of a change in the implementation of the project activity, following the applicable procedure, or the Board may adopt procedures in relevant methodologies to adjust the baseline emissions depending on the outcome. The input values determined according to the actual expenses already made at the time of validation or long term contracts could be exempt from this monitoring requirement. The relevant guidance could define thresholds for what constitutes a significant deviation. This proposal may be limited to certain cases: for example, this requirement may be implemented by the Board for cases where there might be significant uncertainties associated with the outcome of the investment analysis, as described in Sub-section 4 below;

(c) More guidance should be provided for DOEs to cross-check the input values during validation and verification.

3. Financial benchmarks for investment analysis

28. Another key parameter for the investment analysis is the financial benchmark. A variety of benchmarks are allowed in the relevant tools and investment guidelines:

(a) As benchmarks for the project internal rate of return (IRR) the relevant tools and guidelines allow to use local commercial lending rates, the weighted average costs of capital (WACC), internal company benchmarks, and benchmarks from national authorities,

(b) As benchmarks for the equity IRR, the relevant tools and guidelines allow the use of the default values, as contained in Appendix A of the investment guidelines, an internal company benchmark, or the use of a benchmark established based on best financial practice.

29. It is difficult to validate the financial benchmarks selected to demonstrate the additionality of the project activities in an objective manner. Project participants have an incentive to select a favourable (i.e. higher) benchmark to demonstrate the additionality, even if this value is not actually

used to make the investment decision. Moreover, the existing approaches have limitations under certain circumstances. For example:

(a) The default values for the WACC may not represent the real threshold used in practice to assess the economic attractiveness of projects. They may also not be appropriate for projects of all sizes;

(b) The benchmark based on a prime lending rate is not conservative for some large scale projects if (state-owned) financial institutions provide concessional finance;

(c) The local lending rates may not reflect the real hurdles (tangible and intangible) in nations where there is no financial market.

30. To address this issue, several proposals were identified by the experts, the Meth Panel members and within the secretariat:

(a) It was suggested that different benchmarks should be applied to different project sizes and technology types within the same sector and that further clarifications/guidance should be provided for some situations: (i) where a project involves different sectoral scopes, (ii) for the distinction of post-tax and pre-tax benchmarks, (iii) where no similar projects are available as a reference for internal benchmarks and (iv) for the time line to calculate the equity returns using the capital asset pricing model (CAPM);

(b) It could be required that the most conservative among the benchmarks should be used, as indicated in Para 30 of the "Validation and Verification Manual".

31. Regarding the financial benchmark, the following recommendations are presented to the Board:

(a) The guidance in the investment guidelines on the application of benchmarks should be improved to address the issues described in the previous paragraph. In addition, more guidance could be provided for the selection among different benchmarks to ensure that the outcome of the investment analysis is conservative. A process may be established to regularly update the default values in the investment guidelines for the expected return on equity;

(b) It may be clarified that a benchmark analysis should be allowed only when an investment comparison analysis is not possible. However, to be conservative, the application of the benchmark analysis may be required in addition to the application of the investment comparison analysis under specific circumstances of a methodology. The rationale is that the financial attractiveness of the project activity should be compared to that of the baseline scenario to evaluate whether the project activity results in emission reductions below the emissions of the baseline scenario, i.e. whether the project is additional. The benchmark analysis should only be used if the only alternative to the proposed project activity is that the project participants do not undertake an investment and, where applicable, the output or service is provided by a third party to the market. In this case, the financial benchmark represents the investment condition of the market.

4. Uncertainties associated with the investment analysis

32. As described earlier, there is an inevitable uncertainty associated with the demonstration of additionality through investment analysis, due to the selection of the input values and the financial benchmarks from a range of probable values. In addition, it is possible that a slightly costlier alternative

may be implemented due to non-financial considerations, which are not considered in the investment analysis.

33. These uncertainties are of particular concern in the following two cases:

(a) For some cases, the financial indicator of the project activity is very close to the benchmark or to the financial indicator of another alternative scenario (the potential baseline scenario);

(b) For some cases, the revenues generated by the CERs contribute only marginally to the profitability of the project, and the financial indicator with the CER revenues is still very close to the financial indicator without the CER revenues and/or is still well below the benchmark or the financial indicator of another alternative scenario (the potential baseline scenario).

34. In such cases, it may be unlikely that a large investment decision, with small differences in the financial indicators, is solely triggered by the incentives from the CDM. However, the current tools and guidelines under the CDM do not take these uncertainties into account. The current application of the investment analysis results in one conclusion which is derived from a comparison of financial indicators, regardless of how minor the differences between the indicators are. In addition, the additionality tool no longer requires evaluating the impact of CDM revenues (i.e. the former Step 5 of the tool).

35. To address this issue, the experts and the Meth Panel members proposed to include an assessment on whether the project is attractive with the CER revenues, similar to the previous Step 5 of the additionality tool which was removed in 2007. This assessment may be conducted in a quantitative or in a qualitative manner.

36. The recommendation to the Board is to implement approaches to address the uncertainty with regard to the outcome of the investment analysis for certain types of project activities. These project types may be identified using the following four criteria independently or in combination:

(a) The total capital investment of the project activity is above a defined threshold;

(b) The (relative) difference between the financial indicator of the project activity and the financial benchmark (in the case of a benchmark analysis) or between the financial indicators of the relevant alternative scenarios (in the case of an investment comparison analysis) is below a defined threshold;

(c) With the CER revenues, the financial indicator of the project activity is still well below the financial benchmark (in the case of a benchmark analysis) or the financial indicator of the potential baseline scenario (in the case of an investment comparison analysis).

(d) The CER revenues do not increase the financial indicator of the project activity to a significant degree.

5. Investment analysis for the public sector

37. For the projects implemented by the public sector, the use of investment analysis for demonstrating additionality may not always be appropriate. Investment decisions in the public sector are not necessarily driven by financial profits but made based on other considerations, such as the need to provide a public service. Therefore, project activities which are not economically attractive may nevertheless be implemented by the public sector in the absence of the CDM. For some public sector

projects, it may be unlikely that, without the CDM, they would never be implemented, but they might be implemented at a later time.

38. Although the additionality tool requires that the calculation of the financial indicator should consider the non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country, in practice, this requirement is not invoked. The investment guidelines do not distinguish whether the project participants are from the private sector or from the public sector, and therefore the same general requirements are applicable to the private sector and the public sector. However, in the three transport methodologies, AM0031 (bus rapid transit projects), AM0101 (rail projects) and ACM0016 (mass rapid transit projects), distinctions are made for commercial entities and other types of project participants.

39. To address this issue, several proposals were identified by the experts and the Meth Panel members:

(a) It was suggested to identify the project types and/or methodologies in which investments are made by the public sector and to include different procedures for additionality demonstration for the private sector and the public sector in such methodologies. Approaches for demonstrating additionality for the public sector may include, for example, the use of a social discount rate, the use of market penetration data, or the comparison of CER revenues to operating and maintenance costs;

(b) Additional guidance regarding the public/private sector shall be given to situations when the project participants use an internal benchmark;

(c) Different guidance may not be necessary, and this should be handled by the Boar because this involves political rather than technical considerations;

(d) In addition, it was suggested that the requirements should be country specific.

40. The proposal to the Board is to identify priority project types and/or methodologies in which investments are made by the public sector and to revise these methodologies, taking into account the above inputs received from the experts and Meth Panel members.

6. Investment barrier

41. The additionality tool and the combined tool allow project participants to demonstrate additionality through a barrier analysis. The project participants have to demonstrate that there are realistic and credible barriers that would prevent the implementation of the project activity from being carried out if the project activity was not registered as a CDM project activity. One possible barrier is the investment barrier. According to the "Guidance for objective demonstration and assessment of barriers", to demonstrate investment barriers, the project participants are required to show in the PDD that the financing of the project was assured only due to the benefit of the CDM. Therefore, it should be demonstrated that the loan approval (or other significant financing decision(s)) by the lender takes explicitly the CDM registration into account.

42. In practice, the investment barrier is in some cases demonstrated by the project participants by presenting two decisions by two different banks: a rejection of project financing without the consideration of the CDM revenues from one bank and an approval of project financing with the consideration of the CDM revenues from the other bank. This approach may not be appropriate because the decision by the banks may not solely be based on the impact of the consideration of the CDM registration but other considerations may have played a role for the rejection of project financing by the other bank. Therefore, this type of evidence for the investment barrier does not seem credible.

43. To address this issue, several proposals were identified by the experts and the Meth Panel members:

(a) An investment analysis could be required in addition to the barrier demonstration for this particular type of barrier. This option could be complemented by requiring demonstrating that the CDM revenues significantly contribute to eliminating this barrier;

(b) It could be required that the rejection and approval of a loan should come from the same bank;

(c) The DOE could be required to review the credit committee appraisal of the banks which substantiates that the CDM revenues are instrumental in the loan decision.

44. Regarding the investment barrier, the following recommendations are presented:

(a) As evidence to demonstrate the investment barrier, the rejection and approval of a loan should come from the same bank and the bank should clearly state that the approval is solely due to the consideration of the CDM revenue;

(b) The project participant shall conduct an investment analysis and prove that the revenues from the CDM make the project viable according to the loan criteria of the bank.

7. Consideration of policies and regulations

45. In 2005, the Board adopted "Clarifications on the consideration of national and/or sectoral policies and circumstances in baseline scenarios" (EB22, Annex 3). According to these clarifications, policies that give comparative advantages to less emissions-intensive technologies (referred to as E-policies) only need to be taken into account when developing the baseline scenario if they were implemented before 11 November 2001. At its fifty-fifth meeting, the Board agreed that possible impact of national and sectoral policies in the demonstration and assessment of additionality shall be assessed on a case-by-case basis.

46. The objective of these guidelines was to avoid perverse incentives for governments not to introduce policies which would lower GHG emissions or not to abandon policies which result in higher GHG emissions, because this could reduce the potential for CDM projects. However, a key concern with this approach is that some E- policies generate a significant revenue streams or other support that is not taken into account in the additionality assessment.

47. In practice, these guidelines are in many cases not applied. For example, many renewable power generation projects consider in their investment analysis the full feed-in tariff provided, even if it includes a subsidy element that was introduced after 2001.

48. More generally it can be questioned whether the investment analysis is sufficient to demonstrate additionality in regulated markets which implement and systematically support economic decisions according to national planning processes. In particular, feed-in tariffs and prices for fuels or feedstocks may be negotiated with a view to ensure the additionality of the project activities under the CDM. One study shows that all new wind power plants and about half to two thirds of the hydro and natural gas power plants in a region have applied for registration with the CDM. The study suggests that the favourable domestic political and economic policies were the key driver for these investments and not the CDM.

49. To address this issue, several proposals were identified by the experts and the Meth Panel members. One option could be a requirement to assess the national energy policy/ in the determination of baseline scenario and the assessment of additionality. With regard to the clarification on national and sectoral policies, options could include a change in reference years for consideration of policies (1997 and 2001), a withdrawal of the clarification, or that E- policies should be fully taken into account after a defined period after their introduction (e.g. five or 10 years).

50. Two options are presented for the consideration of the Board:

(a) To improve the existing clarification; or

(b) To withdraw the existing clarification and address the issue in methodologies where such policies are of particular concern.

VI. Innovative approaches for additionality demonstration

51. The section above discussed how the current approaches could be amended and improved with the view to enhance their robustness and the integrity of the CDM. In addition, innovative approaches to demonstrate additionality could be developed and adopted. The consultations with the experts and the Meth Panel members and within the secretariat all highlighted the need for objective and simplified approaches to demonstrate additionality, while acknowledging the difficulties in identifying appropriate innovative approaches.

52. In addition to the work programme on standardized baselines, the following objective approaches may be further evaluated to be applied to approved large scale methodologies:

(a) Introduction of performance benchmarks in methodologies. Approved methodologies could be evaluated whether they are suitable for introducing performance benchmarks (e.g. considering data availability, etc);

(b) Positive and negative lists of certain renewable energy technologies may be in implemented in ACM0002;

(c) Positive lists of certain project types for LDCs.

53. The development, testing and adoption of new approaches may require resources and time. This implies that the existing approaches would likely continue to be used in some sectors, or, at least, until new approaches have been developed and adopted. For this reason, it is recommended to prioritize work on both the improvement of the existing approaches and the development of new approaches in parallel.

Appendix 1

1. This appendix provides an overview of the approaches that are currently used to demonstrate additionality under the CDM or are discussed in the literature and may be introduced, as summarized in Table 1.

Additionality test	Ease of development	Ease of application	Potential integrity issues
Regulatory additionality (i.e. an assessment of whether the proposed project is required by laws and regulations)	Easy.	Easy; moderate complication arises from cases where non-compliance is prevalent.	Potential perverse incentives for authorities not to adopt laws and regulations, which could reduce the potential for CDM projects
Timing test (e.g. prior consideration of CDM)	Easy.	Easy, though clear guidance is needed on which point in time should be considered as the investment decision.	
Market penetration (including FoIK and common practice test)	Moderate difficulty lies with the definition of similar technologies	Low or moderate transaction costs for conducting the survey. Data availability and accessibility is an issue in some sectors and countries.	Values for market penetration rates may be difficult policy choices. Market penetration rates that minimize false positive and false negatives may differ between sectors and countries.
Investment analysis	Easy; moderate difficulty in developing guidance for financial benchmark.	Moderate	Easy to manipulate.
Barrier Test	Easy	Easy to moderate	Difficult to substantiate the claim of barriers objectively.
Performance benchmark	Easy to moderate. The development of default benchmark values could in some cases be difficult.	Difficult due to intensive data requirement. Easy if default values are provided.	Values for market benchmarks may be difficult policy choices. Levels of benchmarks that minimize false positive and false

			negatives may differ between sectors and countries.
Technology additionality test (positive list and negative list)	Moderate to difficult.	Easy.	
Discounting of emission reductions based on the probability of additionality	Moderate to define the probability of additionality	Easy.	

2. The type of additionality test applied and its stringency will impact the amount of false positives and false negatives. For a given test, more stringent assumptions tend to reduce the number of false positives but increase the number of false negatives, while less stringent additionality tests tend to increase the number of false positives and reduce the number of false negatives. For this given approach, balancing the false positives and negatives is a policy choice which may also be based on other considerations. However, improved tests for additionality may lead to the reduction of both false negative and false positive project activities whereas both can be quite high in case of inappropriate approaches.

3. However, balancing the “false positives” and the “false negatives” is not straight-forward. This is illustrated with the following example: assume that 100 projects of the same type would be implemented in the absence of the CDM (they are truly not additional). With the CDM, 20 more projects could become viable (they are truly additional), increasing the total number of projects that could be implemented to 120, all of which apply for the CDM. For this project type a relatively stringent additionality test is chosen which results in false positives in only 5 per cent of the cases but in false negatives in 50 per cent of the cases. If all 120 projects would apply for the CDM, the test would thus result in 5 false positives (5 per cent out of 100) and 10 false negatives (50 per cent out of 20). In total, 15 projects would be registered, out of which 10 projects would be additional and 5 projects or one third of the projects would be false positives.

4. The example illustrates that despite a relatively stringent additionality test the share of the false positives could be significant if the number of projects that would not need the CDM to be viable is large. A less stringent additionality test would reduce the false negatives but increase the false positives. For example, in the case of a test that results in 20 per cent of the cases in false negatives or false positives, 36 projects would be registered out of which 20 or 56 per cent would be false positives.

5. In contrast, in the case of project types for which the CDM is in most cases a decisive factor, the stringency of the additionality test does not impact significantly the rate of false positives and false negatives: Assume that only 20 projects of the same type would be implemented in the absence of the CDM. With the CDM, 100 more projects would become viable, increasing the total number of projects that could be implemented to 120. Using the two additionality test introduced above, the share of false positive (or non-additional projects) would only be 2 and 5 per cent respectively.

6. These examples show that the impact of using a certain additionality test does not only depend on the robustness of the test itself but also on the likelihood that the project type of a proposed project is additional. In other words: the overall result of additionality testing will depend on the share of truly additional projects applying for registration. This constitutes a particular challenge as this share may

vary considerably between different project types. However, several experts and authors proposed practical approaches to assess the likelihood that a certain project type is additional.

7. Next to the stringency of the test and the share of additional projects in the cohort of projects applying for registration, other factors may be important, such as the availability of data needed to conduct a test or the size of the projects and the magnitude of the associated CERs. For this reason, there may not be one “silver bullet” solution towards improving additionality testing but a set of approaches could be used to reflect the differences between project types.

Appendix 2

This appendix provides a summary of the inputs and feedback received from the Meth Panel members during its 56th meeting. The first part presents the issues related to the current approaches which could be amended and improved, and the second part includes innovative approaches to demonstrate additionality which could be implemented.

The recommendations presented below are an earlier draft considered by the Meth Panel and have been updated since then.

Improvements

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
Prior consideration							
For post-2/8/2008 projects, notification to DNA and the secretariat is required within six months of the project activity start date. For pre-2/8/2008 projects, demonstrate that CDM is considered in the	Project start date may be much earlier than the date of registration. The date of decision to proceed may be even earlier and input parameters may have changed between investment decision date and project start date (e.g. decrease of price of natural gas). The credibility of evidence may be low	(PEA) Consideration of CDM needs to be demonstrated by an independent source for pre-2/8/2008 projects. (Experts) The project activity shall not start before it is registered. (MP) For pre-2/8/2008 projects, the only evidence allowed is a PDD published for global stakeholder consultation within three years from the start date of the project activity	It has been almost four years since the first publication of the guidelines on the demonstration and assessment of prior consideration of the CDM. The special provision for project activities with a start date prior to 2 August 2008 may be removed.	Agree. Need grace period of 8 months. Unjustifiable - validation may take 4 years.	All	Guidelines on the demonstration and assessment of prior consideration of the CDM, PS, PCP	2012

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
decision to proceed							
Investment analysis							
Input values should be valid and applicable at the time of the investment decision, therefore, the values of some costs and revenues are estimated or projected for the future	Input values for the expected costs and revenues are not always unique and determinable and the PPs may choose values from a wide range of justifiable assumptions in order to make the projects appear additional. Feed-in tariffs and prices for fuels or feedstocks may be negotiated. Tax benefits may be ignored	(Experts) Investment analysis submitted for loan is the most appropriate version. (Experts, MP) Ex post check of input values of costs and revenues. (MP) Mandatory template for investment analysis should be prepared. (MP) If the project has been in commercial operation for over X months at the time of request for registration, use the actual values instead of FSR in the investment analysis.	The investment analysis submitted for loan (if applicable) is required to substantiate the values selected for relevant input parameters. If (1) the baseline scenario is doing nothing or investment benchmark analysis is used and if (2) the relative difference in financial indicator (in comparison with benchmark or the baseline) is below X% or the changes in fuel/feedstock price or PLF is greater than Y%, ex post check input values of costs and revenues during verification, redo investment analysis and	In the loan applications, the attractiveness may be overstated. If possible the DOE should ensure that the investment parameters used in investment analysis is consistently used in all other financial closures to banks or lending agencies. Ex post check is not needed for parameters determined by long term contract (e.g. tariff). Ex post check creates too much uncertainty to PPs. PPs do not have control over the value of PLF or fuel prices. Ex post check should be done at the renewal of	All	Guidelines for investment analysis, maybe methodologies	2012

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
			the baseline emissions may be updated depending on its outcome. More guidance for DOEs to cross check the input values at validation/verification. Guidance on how to account for country-specific taxes and surcharges may need to be provided	crediting period. The profitability of the project would be known only at the end of the life of the project. Study needed to avoid severe or arbitrary thresholds. Doesn't need guidance on tax. Internal Revenues Offices have public procedures and consolidated by auditing firms, a global table can be issued, some difficulties are accelerated depreciation contracts in large projects or exceptions for SME			

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
Local commercial lending rates or WACC are appropriate benchmarks for a project IRR.	The benchmarks from WACC assessment (including the default values) are unlikely to show the real threshold for project attractiveness. Sector benchmarks are not appropriate for projects of all sizes. Benchmark based on a prime lending rate is not conservative for some large scale projects rests if (state-owned) financial institutions provide concessional finance. Local lending rates do not reflect all the real hurdles (tangible and intangible) in nations where there is no financial market.	(PEA) The benchmark should be different for different sizes and technology types within the same sector. Guidance needs to be refined for situations where a project involves different sectoral scopes. (MP) Require the PP to choose the conservative among the benchmarks (Prime lending rate, commercial lending rate, WACC), as indirectly specified in tools	As proposed by PEA. The use of financial benchmark should be allowed only when a financial comparison analysis is not possible (In financial comparison analysis, IRR comparison should be used instead of assuming a discount rate)	Does not see how benchmarks could be defined differently depending on size and type. Some national benchmark values are size specific. IRR can't be used if the cash flow is always negative. The provision of concessional finance is based on the balance sheet financing and not on project financing. The project financing is a non recourse finance which is based on asset as collateral. Hence the concessional finance doesn't truly represent the benchmark for the project activity	All	Guidelines for investment analysis	2013

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
No analysis is required on the impact of CDM revenues	Projects applying investment analysis should be incentivized by the CDM revenue	(Experts) Include assessment on whether the project is attractive with the CDM revenues. (MP) Add back Step 5. (MP) Include quantitative and objective rules to assess impact of CDM revenues. (MP) Doesn't include quantitative judgment	More scrutiny and case-by-case assessment is conducted under one of these scenarios: (1) If the project is still not attractive with CDM revenues, (2) The relative difference in financial indicator (in comparison with benchmark or the baseline) is below Z%	Should differentiate between small and large projects. Difficult for small renewables. Thresholds should be based on studies and not set arbitrarily. Should not differentiate between new and retrofit. Greenfields go through enough scrutiny already in baseline emissions.	large Greenfield facilities	AT and CT	2012
For investment analysis, investment benchmark or comparison are applicable to energy efficiency projects	All demand side energy efficiency projects (except those for large industries) face much higher barriers for attractiveness than other project types. It is difficult to validate an internal benchmark and to identify a comparable project.	(Experts) Payback period of three years is more appropriate. (MP) Proposals from a WB report. (MP) Risk scoring reflects better the company's approach to risk. (MP) Need a more detailed breakdown of types of activities and the most appropriate indicator for each of them. (MP) Standardized baselines in the long term	As proposed by experts, but for Brownfield projects (3 years operational history) only.	Agree. Discounted payback period	demand side energy efficiency	ACM0007, ACM0012 etc.	2013

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
Barrier analysis							
The PPs should demonstrate in the PDD that the financing of the project was assured only due to the benefit of the CDM. Therefore, it should be demonstrated that the loan approval (or other significant financing decision(s)) by the lender takes explicitly the CDM registration into account.	Different decisions by two banks (rejection without the consideration of the CDM revenues from one bank and approval with the consideration of the CDM revenues from the other bank) may not result solely from the impact of the consideration of the CDM and the claim for the barrier in many cases does not seem credible. Considering the volatility of the carbon market it is difficult for the lenders to sanction the loan only on the basis of the CDM revenue	(PEA) An investment analysis shown to the bank should be required in addition to the barrier demonstration. (PEA) Rejection and approval of loan should come from the same bank. (Experts) Existing guidelines for barrier analysis seem well developed, but it should be used in combination with the investment analysis or at least the project developer should prove that the revenues from CDM significantly eliminate the barrier.	As evidence to demonstrate the barrier to access finance, rejection and approval of loan should come from the same bank, the bank should clearly state the approval is solely due to the consideration of the CDM revenue, and more scrutiny and case-by-case assessment is conducted if the project developer cannot prove that the revenues from CDM contribute in eliminating the barrier	Current method of showing approval from bank that has taken into account CDM is sufficient and appropriate. The DOE shall request the credit committee appraisal of the banks , which substantiates that the CDM revenues are instrumental in awarding the loan and it has been considered in the credit committee appraisal	All	Guidelines for barriers	2012
E+/E- policy							

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
For E- policies, only those policies implemented before 11 November 2001 need to be taken into account when developing the baseline scenario.	E- policies generate attractive revenue streams or other support that cannot be taken into account in additionality assessment. Investment analysis may be insufficient in regulated markets which implement and systematically support economic decisions according to national planning processes.	(PEA) National energy policy/plan should be assessed. (Experts) Redefine the reference year of E-policy. (Experts) No exemption of E+/E- policy in the baseline. (Experts) E- policies should be fully taken into account after their introduction (5 or 10 years)	As the concerns are mostly related to policies for the power sector (including renewable and nonrenewable), methodology specific improvements may be undertaken by, inter alia, including some CDM projects in the common practice analysis for renewable projects, including negative lists of renewable projects (different options for renewable is needed), adopting performance benchmark for fossil fuel based energy projects.		power	ACM0002, etc.	2013
Public sector							
The same requirements on investment analysis are applicable to the private sector and to the public	The public sector is not driven solely by profit and may also be driven by political motives and the need to provide public service. Therefore,	(Experts) Identify the project types and/or methodologies for which the public sector is relevant and include different procedures for additionality	As proposed by experts.	Segregating guidance on financial analysis based on sector may not be necessary and even be political than technical. This should be handled by board.	transport, waste and power	Guidelines for investment analysis and AMs	2012/2013

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
sector.	project activities not deemed attractive financially may be implemented by the public sector in the absence of CDM.	demonstration for the private sector and the public sector (e.g. use of social discount rate, market penetration for additionality and baseline adjustment, comparison of CER revenues to O&M costs). (MP) Additional guidance regarding the public/private sector and the project contextualization shall be given to situations when the PP decides to use an internal benchmark.		The requirements should be country specific.			
Common practice and FOIK guidelines							

Current requirements	Issues	Inputs from PEA, Experts and the Meth Panel	Recommendations	Feedback from the Meth Panel on the recommendations	Relevant sectors	Relevant documents	Time Frame
Registered projects and projects under validation are excluded from common practice.	Exclusion of projects under validation does not reflect the common practice, when most project activities are seeking CDM registration. Much freedom is taken in selecting "the geographical boundary" for common practice.	(PEA) Common practice should include projects under validation. (Experts) The registered projects should be included after they are registered # of years or they reach # of projects. (Experts) Baseline should be checked through common practice. (Experts) Move the common practice step to Step 1.	N/A (to be considered in a separate MAP item)		All	AT and CT	2012
Renewal of crediting period							
The validity of the baseline is assessed regarding mandatory policies and circumstances.	Baselines may stay the same for 21 years without accounting for technological progress in a sector with high technological progress.	(Experts) Limit the number of years that credits can be earned, or to adopt dynamic baselines for certain project activities, where the baseline is doing nothing, where FOIK is used the demonstrate additionality, for sectors with fast technology progress, and for retrofit projects.	N/A (to be considered in a separate MAP item)				

Innovative approaches

MP feedbacks on innovative approaches:

This work should move beyond improvement and towards standardized baselines with performance benchmarks.

Consideration of market penetration should play a much bigger role in additionality demonstration than it currently does. Even profitable technologies take time to be adopted. Nearly always a lot of inertia.

Approaches	Methodologies	Time Frame
Standardized baselines		2012
Performance benchmark	AM0020 water pumps All boiler methodologies	2013
Positive list	ACM0002, certain types of renewable technologies (e.g. solar)	2013
Positive list	Project types for LDCs	2013

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History of the document

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01.0	2 July 2012	Initial publication as an annex to the annotated agenda of EB68.
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