

CDM-EB78-AA-A12

Concept note

Thresholds for micro-scale CPAs

Version 01.1



United Nations
Framework Convention on
Climate Change

| TABLE OF CONTENTS | Page |
|--|-------------|
| 1. PROCEDURAL BACKGROUND..... | 3 |
| 2. PURPOSE | 3 |
| 3. KEY ISSUES AND PROPOSED SOLUTIONS | 3 |
| 4. IMPACTS..... | 6 |
| 5. PROPOSED WORK AND TIMELINES | 6 |
| 6. RECOMMENDATIONS TO THE BOARD | 6 |
| APPENDIX. ANALYSIS OF THRESHOLDS OF MICRO-SCALE AND SMALL- SCALE PROJECTS | 8 |

1. Procedural background

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocols (CMP), at its ninth session through decision 3/CMP.9, paragraph 12 requested the Executive Board of the clean development mechanism (CDM) to analyse the thresholds for component project activities (CPAs) to qualify as micro-scale activities in programme of activities (PoAs), taking into account regional circumstances while ensuring environmental integrity.

2. Purpose

2. The purpose of this document is to provide a preliminary analysis of issues related to the thresholds for CPAs to qualify as micro-scale activities. Taking into account any guidance provided by the Board at its seventy-eighth meeting (EB 78), the secretariat will work with the Small-Scale Working Group to conduct a detailed analysis and make a recommendation to the Board at a future meeting.

3. Key issues and proposed solutions

3.1.1. Description of the issue

3. The CMP request refers to micro-scale thresholds for a CPA in a PoA. Micro-scale thresholds are included in the “Guidelines on demonstrating additionality of micro-scale project activities” as 5MW installed capacity, 20 GWh/y energy savings, 20kt CO₂e/y emission reductions. CPAs applying small-scale as well as large-scale methodologies are eligible as long as the thresholds are met. However, micro-scale thresholds are applied at the aggregate level of the CPA, i.e., if the CPA is composed of a number of small units (e.g. solar home systems, household biogas systems) then the cumulative size of the units is considered.
4. Stakeholders at the 7th CDM Round Table indicated that this way of defining the micro-scale thresholds likely leads to the creation of numerous small-sized CPAs leading to high transaction costs and inefficiencies in the system. The round table recommended that CPAs should be defined by temporal, geographical, technological categories to avoid an artificial split of CPAs.

3.1.2. Analysis and proposed solutions

3.1.2.1. Analysis of the thresholds

5. Under the CDM modalities and procedures, project activities have been grouped into large-scale, small-scale (decision 1/CMP.2, paragraph 28) and micro-scale (decisions 2/CMP.5 paragraph 24 (c) and 3/CMP.6 paragraph 39). The classification of a project activity is significant as it determines which set of modalities and procedures apply, and thus whether or not the project activity may benefit from the more simplified approach in the small-scale modalities and procedures (decision 4/CMP.1).
6. Further a key simplification for a project that meets the micro-scale thresholds is in relation to the automatic additionality of the included technologies when some further conditions are met. The “Guidelines on demonstrating additionality of micro-scale project

activities”¹ covers CPAs up to 5MW (installed capacity of renewables), 20GWh/y (energy savings through energy efficiency improvement) and 20kt CO₂/y (emission reductions from other project types such as methane avoidance) that are deemed automatically additional provided criteria specified in the guideline are met (see paragraph 1 of appendix for details).

7. While micro-scale projects were defined in decision 2/CMP.5, the CMP has also encouraged the Board to expand the approach to wider scope of projects. In response, the Board has approved a positive list of technologies at EB 63 and EB 68 under the “Guidelines on the demonstration of additionality of small-scale project activities”². Positive lists are defined as automatically additional for projects and CPAs of sizes up to the small-scale (SSC) CDM thresholds i.e. up to 15 MW installed capacity of renewables, 60GWh/y of energy savings and 60kt CO₂/y emission reductions (see paragraph 2 of the appendix for the current positive list).
8. Given the wording of the CMP request noted in paragraph 1 above, the secretariat is of the opinion that the analysis may be limited to micro-scale projects.
9. However, as indicated in paragraph 7 above that simplification of additionality currently applies to micro-scale and small-scale projects, a key question that needs clarification is whether the analysis of the threshold should be limited to micro scale projects or should it also include small scale projects.
10. Further the possibility of analysing the thresholds may fall into two broad categories:
 - (a) Increasing or decreasing the project size thresholds at the aggregate or cumulative level of the CPA;
 - (b) Redefining the threshold so as to consider the size of individual units (e.g. solar home systems, household biogas systems) within the CPA.
11. While there may be a need to clarify the scope of the analysis of the thresholds, in general it can be noted that higher thresholds will facilitate the design of PoA when the CPAs included qualify as small scale or micro scale project activities as in that case the need for segmentation of the PoA will diminish. On the other hand increasing the thresholds may not necessarily result in equal treatment for all CPAs facing similar barriers. A CPA that meets the threshold because it comprises numerous small units that each produces a small amount of emission reductions and a CPA that comprises a single facility big enough to meet the threshold do not necessarily face similar barriers.
12. Informed by the Board’s recommendation at EB 6326, the CMP.2 at its second session through decision 1/CMP.2, paragraph 28, revised the threshold for small scale project activities. The thresholds for Type-II and Type-III projects were increased from 15 GWh/year and 15 ktCO₂ per year to 60 GWh/year and 60 ktCO₂ per year. One of the criteria the Board considered in recommending increasing the thresholds was that the limits for Type-II and Type-III projects might have been a barrier to the development of project activities (see details in paragraph 3 of the appendix). It seems that those criteria may be still be valid except in the case of project activities that aggregate small units each producing a small amount of emission reductions as discussed below

¹ Available at <<https://cdm.unfccc.int/Reference/Guidclarif/index.html>>.

² Available at <<https://cdm.unfccc.int/Reference/Guidclarif/index.html>>.

13. Stakeholders have indicated that programmes for deploying small units for household applications such as cook-stoves, water purification systems and biogas digesters in dispersed locations are designed such that efforts are made over a period of time to aggregate a sufficient number of units to balance the cost of implementing the programme. Aggregating a precise number of units to micro-scale CPA thresholds poses challenges. Similarly, the time needed to validate and include each and every CPA represents a significant portion of the lifetime of the technology/measure implemented under those CPAs with implications on the viability of the programme.

3.1.2.2. Micro-scale and positive list technologies in the registered PoAs

14. In the paragraphs below, key characteristics of the projects and PoAs that have applied micro-scale and positive list criteria for additionality are discussed.
15. The project design documents of a total of 109 registered PoAs that have applied the micro-scale additionality guidelines and positive list have been analysed. It appears that majority of these PoAs are for household applications involving biogas digesters, improved cook-stoves, solar water heaters, solar cookers, water purification and energy-efficient lighting, which are characterized by isolated units of very small size in distributed locations (herein after referred to as dispersed unit projects). The information is summarized in table 1 of the appendix.
16. It also appears that, after the adoption of the positive list of technologies³ under the small-scale additionality guideline by the Board, the types of CPAs that previously applied the provisions of micro-scale additionality guidelines are now applying the provisions of the positive lists (see table 2 in the appendix). One of the reasons could be that the CPAs applying the positive list now can use the higher thresholds corresponding to small-scale (15 MW, 60GWh/y and 60 ktCO₂/y) as compared to the micro-scale thresholds (5 MW, 20 GWh/y and 20 ktCO₂/y).
17. In the case of registered PoAs above involving dispersed units applying micro-scale guidelines, it is found that the size of each unit is well below 1% of the SSC threshold (the average is 0.022% of the SSC threshold with a standard deviation of 0.054%). Similarly with regard to PoAs applying positive lists, it is found that the size of each unit is well below 1% of the SSC threshold (the average value is 0.228 % of the SSC threshold with a standard deviation of 0.34%). As CPAs and projects that composed of units smaller than 1% of the SSC threshold are exempt from the de-bundling check, even if the positive list provisions allow for a 5% SSC threshold, those higher thresholds have not been used for dispersed units.
18. In this context it should also be noted that the Board at EB 73 discussed stakeholder suggestions to further streamline the registration procedures for dispersed unit PoAs and considered two options below:
 - (a) Eliminating the micro-scale thresholds for dispersed unit CPAs;
 - (b) Developing large-scale methodologies for dispersed unit activities including positive list of technologies and default values.

³ The adoption of the positive list under the small-scale additionality guideline came almost two years after the adoption of the micro-scale additionality guideline.

19. The Board chose option in paragraph 18 (b) above and under the 2013 CDM management plan mandated the development of two large-scale methodologies through a top down process. Subsequently, EB 76 approved the simplified large-scale methodology “AM0113: Distribution of compact fluorescent lamps (CFL) and light-emitting diode (LED) lamps to households” and “AM0086: Distribution of zero energy water purification systems for safe drinking water” that include provisions for automatic additionality and standardized methods to quantify emissions reductions.
20. Furthermore, although the micro-scale additionality guideline is applicable to CPAs applying small-scale methodologies as well as large-scale methodologies, it was evident from the registered PoAs that have applied provisions of the micro-scale additionality guidelines that no large-scale methodology has been used for projects that satisfy micro-scale thresholds.
21. The analysis also presents distribution of registered PoA applying micro-scale guidelines and positive list by regions (see table 3 of appendix).
22. The CMP request noted in paragraph 1 above also refers to taking into account regional circumstances while ensuring environmental integrity. The micro-scale additionality guidelines use both a bottom up and top down approach to take into account regional circumstances to define automatic additionality, i.e. automatic additionality is conferred based on geographical locations such as least developed countries (LDCs) and the guidelines include provisions for the designated national authorities (DNAs) to submit micro-scale technologies to confer automatic additionality. Therefore it needs to be clarified, whether in analysing the thresholds, a bottom up approach (e.g. DNA submissions propose changes to a threshold applicable in the host Party) or a top-down approach (e.g. changes to a threshold apply to LDCs) or both approaches needs to be undertaken.

4. Impacts

23. More guidance and simplification are likely to facilitate the implementation of PoAs, particularly in LDCs.

5. Proposed work and timelines

24. Based on the feedback from the Board on the above issues the secretariat will conduct further work in conjunction with the small scale working group and make recommendations on the revisions to the Micro-scale thresholds at a future meeting of the small scale working group.

6. Recommendations to the Board

25. The secretariat recommends that the Board provide guidance on the issues presented in the concept note including the following:

Table 1. List of issues for further guidance from the Board

| Issues | | Resource requirement |
|---------------|---|--|
| 1. | Whether the analysis of the thresholds should be limited to micro-scale projects? | Low |
| 2. | Given that simplification of additionality for some technologies particularly distributed units applies to micro scale and small-scale projects, whether the analysis of the threshold should be extended to include small-scale projects? | Medium |
| 3. | Should the analysis of the thresholds focus on increasing/decreasing the project size thresholds at the aggregate level of the CPA? or Should it focus on redefining the threshold so as to consider the size of individual units (e.g. solar home systems, household biogas systems) within the CPA? or Alternatively should temporal (time-dependent) or technological considerations (e.g. through specific provisions in the relevant methodologies) be used for analysing the thresholds? Or the combination of the above? | Low Medium |
| 4. | In order to take into account regional circumstances while ensuring environmental integrity in assessing the threshold should a bottom up approach (e.g. DNA submissions propose changes to the threshold applicable in the host Party) be adopted or Should a top down approach (e.g. changes to the threshold apply to LDCs) be adopted? Or both approaches be adopted? | Medium High |

Appendix. Analysis of thresholds of micro-scale and small-scale projects

1. Guidelines for demonstrating additionality of micro-scale project activities cover projects or component project activities (CPAs) up to 5MW (installed capacity of renewables), 20GWh/y (energy savings through energy efficiency improvement) and 20kt CO₂/y (emission reductions from other projects e.g. methane avoidance) that are deemed automatically additional provided the one of the following criteria are met:
 - (a) The geographical location is in a least developed country (LDC) , small island developing State (SIDS) or special underdeveloped zone (SUZ);
 - (b) The project is for off-grid renewable energy to supply households/communities;
 - (c) The project's users are households/communities/small and medium enterprises (SMEs) and comprised of units less than or equal to 1500 kW (off-grid renewable) or 600 MWh/y (energy savings) or 600t/y (emission reductions);
 - (d) The project uses technologies recommended by designated national authorities (DNA) and approved by the Board that comply with one of the two conditions below:
 - (i) Specific grid connected renewable energy technologies with share in total installed capacity less than or equal to 3% in grid-electricity mix;
 - (ii) A project is located in SUZ.
2. Guidelines for demonstrating additionality of small-scale project activities cover projects or component project activities (CPAs) up to 15MW (installed capacity of renewables), 60GWh/y (energy savings) and 60kt CO₂/y (emission reductions) comprises of the following positive list of technologies that are deemed automatically additional:
 - (a) Grid/off-grid solar, marine, off-shore electricity generation technologies;
 - (b) Off-grid electricity generation technologies:
 - (i) Micro/pico hydro (up to 100 kW);
 - (ii) Micro/pico wind turbine (up to 100 kW);
 - (iii) Photovoltaic-wind hybrid (up to 100 kW);
 - (iv) Biomass gasification/biomass (up to 100 kW);
 - (v) Geothermal (up to 200 kW);
 - (c) Grid/off-grid building-integrated wind turbines (up to 100 kW);
 - (d) Isolated units where users are households/communities/SMEs and each unit is no larger than 5% of the small-scale (SSC) thresholds (750 kW; 3000 MWh/y; 3000 tCO₂/y);
 - (e) Rural electrification projects with renewable generation in countries with rural electrification rates less than 20%.

3. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its second session (CMP 2), through its decision 1/CMP.2, paragraph 28, revised the threshold for small scale project activities based on the following recommendation by the Board:
 - (a) In response to the request by CMP 1 to review the simplified modalities, procedures and definitions of small-scale project activities, the Board at its twenty-sixth meeting considered a proposal by the small scale working group based on an analysis of projects in the CDM pipeline taking into account public inputs and expert opinions⁴. The Board agreed to recommend the following revisions to the definitions of small-scale project activities referred to in paragraph 6 (c) of decision 17/CP.7:
 - (i) Type I project activities: Renewable energy project activities with a maximum output capacity of 15 MW (or an appropriate equivalent);
 - (ii) Type II project activities: Energy efficiency improvement project activities, which reduce energy consumption, on the supply and/or demand side, by up to a maximum of 60 GWh per year (or an appropriate equivalent);
 - (iii) Type III project activities: Other project activities that result in emission reduction of less than or equal to 60 ktCO₂e annually.
 - (b) The Board noted that the threshold value of 15 GWh/year energy savings might have been a barrier to the development of type II project activities. Further the Board considered that it was more appropriate to use a threshold based on emission reductions than a threshold based on project direct emissions for defining small-scale project activities under type III.
 - (c) In recommending these revisions the Board took into account the need to make the definitions of the three types equivalent to each other, and doing so decided to maintain the current definition of type I (i.e 15 MW) project activities. Further the Board proposed a revised definition of type II project activities based on the electrical energy generation capacity of a 15 MW power generating unit operating for 4000 hours a year and a revised the definition of type III project activities based on the emission reductions of currently registered type-I project activities with the highest projected annual emission reduction
4. The following table shows total number of registered PoAs that have applied micro-scale and positive list criteria.

⁴ See paragraph 63 of the report of EB 26 available at <<http://cdm.unfccc.int/EB/026/eb26rep.pdf>>_and Annex 02 to the report of the 7th meeting of the Small-Scale Working Group available at <http://cdm.unfccc.int/Panels/ssc_wg/SSCWG7_repan2_Defn_SSC_Project_Activities.pdf>.

Table 2. Total number of registered PoAs that have applied micro-scale and positive list criteria

| Technology Types | Projects | % share |
|---|------------|------------|
| End use type: households | 71 | 65% |
| Household biogas digesters | 11 | |
| Energy efficiency - household | 2 | |
| Energy-efficient lighting in household (includes both LED and CFL) | 14 | |
| Improved cook stoves | 25 | |
| Solar water heaters | 7 | |
| Water purifiers | 3 | |
| Rural electrification | 1 | |
| Off-grid renewable energy technologies (e.g. wind, solar photovoltaic , mini hydro) | 8 | |
| End use type: Others | 38 | 35% |
| Energy efficiency - industrial | 1 | |
| Fuel switch | 3 | |
| Grid connected small-scale renewable energy technologies (e.g. wind, solar, geothermal) | 24 | |
| Waste treatment (e.g. waste water, animal waste) | 10 | |
| Total | 109 | |

Source: based on UNFCCC database

5. The following table shows number of registered PoAs that have applied the criteria of micro-scale and positive list.

Table 3. Application of micro-scale and positive list criteria in registered PoAs

| Technology Types | Number of registered PoAs applying additionality criteria | |
|---|---|---------------|
| | Micro-scale provision | Positive list |
| End use type: households | | |
| Household biogas digesters | 2 | 9 |
| Energy efficiency - household | 1 | 1 |
| Energy-efficient lighting in household (includes both LED and CFL) | 5 | 6 |
| Improved cook stoves | 5 | 21 |
| Solar water heaters | 4 | 3 |
| Water purifiers | 2 | 1 |
| Rural electrification | 1 | - |
| Off-grid renewable energy technologies (e.g. wind, solar photovoltaic , mini hydro) | 2 | 2 |
| End use type: Others | | |
| Energy efficiency - industrial | 1 | - |
| Fuel switch | 3 | - |
| Grid connected small-scale renewable energy technologies (e.g. wind, solar, geothermal) | 13 | 11 |
| Waste treatment (e.g. waste water, animal waste) | 10 | 3 |

Source: based on UNFCCC database

Table 4. Distribution of registered PoA applying micro-scale guidelines and positive list by regions

| Region | PoAs | Dispersed unit PoAs |
|---------------|------|---------------------|
| Africa | 41 | 32 |
| Asia | 52 | 24 |
| Latin America | 14 | 5 |
| Middle East | 2 | 0 |
| Total | 109 | 61 |

Source: based on UNFCCC database

- - - - -

Document information

| <i>Version</i> | <i>Date</i> | <i>Description</i> |
|----------------|---------------|--|
| 01.1 | 21 March 2014 | Editorial revision to correct the EB number in paragraph 12. |
| 01.0 | 17 March 2014 | Initial publication as an annex to the annotated agenda of EB78. |

Decision Class: Regulatory

Document Type: Information note

Business Function: Methodology

Keywords: additionality, component project activity, data collection and analysis, micro-scale project activities, positive lists, programme of activities, threshold criteria
