

**CDM-EB85-AA-A09**

## Concept note

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# Thresholds for microscale activities under programmes of activities

Version 01.0



**United Nations**  
Framework Convention on  
Climate Change

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## 1. Procedural background

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), at its ninth session, through decision 3/CMP.9, paragraph 12, requested the Executive Board of the clean development mechanism (CDM) (hereinafter referred to as the Board) to analyse the thresholds for component project activities (CPAs) to qualify as microscale activities in programme of activities (PoAs), taking into account regional circumstances while ensuring environmental integrity.
2. In response to the above CMP request, the Board, at its eighty-first meeting (EB 81), considered an analysis of the thresholds for CPAs to qualify as microscale activities in PoAs<sup>1</sup>. Based on the analysis, the Board agreed that there is a need for more flexibility with regard to the thresholds for CPAs providing services to households, communities or small and medium enterprises. As a result, the Board agreed to continue to explore options to facilitate the implementation of microscale and small-scale project activities providing services to households, communities or small and medium enterprises by, for example, developing PoA-specific methodologies with flexibility for the thresholds for CPAs. The Board requested the secretariat to continue to work on this issue in consultation with the Small-Scale Working Group (SSC WG), taking into account the guidance from the Board and to make a recommendation at a future meeting of the Board.
3. CMP 10, through decision 4/CMP.10, paragraph 18, requested the Board to consider adjusting, and if appropriate implement, the rules governing PoAs to reflect the special features of PoAs in order to facilitate effective implementation and reduce associated transaction costs while ensuring environmental integrity, taking into account the implications for liability with regard to the issuance of certified emission reductions (CERs) resulting from significant deficiencies in validation, verification and certification reports, including rules that:
  - (a) Apply microscale thresholds at the unit level rather than at the CPA level;
  - (b) Allow, as an option, a simplified validation and registration process for activities that satisfy microscale thresholds and are considered automatically additional; this option shall allow for:
    - (i) Validation of a PoA without the submission of a specific-case CPA;
    - (ii) Inclusion on the basis of a pre-approved standardized inclusion template of CPAs carried out directly by the coordinating/managing entity (CME) without prior validation through a designated operational entity (DOE).
4. This work relates to the activity 'Simplification of methodologies, including the development/revision of 14 tools, the elaboration of monitoring guidelines/standard to reduce transaction costs, including digitization and the development of a systematic

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<sup>1</sup> This analysis was preceded by the concept note "Thresholds for micro-scale CPAs" (CDM-EB78-AA-A12).

approach for the consistent consideration of uncertainties<sup>2</sup> under objective 1(c): “Develop simplified and user-friendly standards and procedures that increase efficiency and ensure environmental integrity” with a resource allocation as referred to in table 4 of the “Management plan 2015” (EB 81, annex 1).

5. As per the approved “Workplan of panels and working groups for 2015”, the SSC WG provided inputs to the secretariat on the preparation of the concept note at its forty-eighth meeting which have been taken into account.

## **2. Purpose**

6. The purpose of this concept note is to analyse the feasibility and options, to apply the microscale thresholds at unit level rather than at the CPA level, taking into account special features of PoAs. Reducing transaction costs of implementing PoAs while ensuring environmental integrity is a key objective. Technology/measures for providing services to households, communities or small and medium enterprises are also key focus issues to respond to the request by EB 81.

## **3. Key issues and proposed solutions**

### **3.1. Description of the issue**

#### **3.1.1. Description of microscale and small-scale positive lists**

7. The microscale thresholds are defined in the “Tool for demonstrating additionality of micro-scale project activities”<sup>3</sup> (the microscale additionality tool) as 5 MW installed capacity or 20 GWh/y energy savings, or 20kt CO<sub>2</sub>e/y emission reductions. As per the current rules, a CPA qualifies as automatically additional when the thresholds are met at the aggregate level of the CPA irrespective of whether the applied methodology is a small-scale or large-scale, 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. Although the threshold applies to each microscale CPA, there is no limit however on the number of such CPAs that can be included in a PoA, i.e. thresholds are applied at the intermediary aggregate level of CPAs and not at the PoA level.
8. The microscale additionality tool was developed by the Board in response to paragraph 24 of decision 2/CMP.5 and paragraph 39 of decision 3/CMP.6 as part of the measures to reduce transaction costs and uncertainties in microscale activities as well as to enhance the objectivity and transparency of the approaches for the demonstration and assessment of additionality.
9. Encouraged by the CMP, the Board subsequently also introduced automatic additionality in the “Tool for demonstrating additionality of small-scale project activities” (the small-scale additionality tool) by way of including a list of technologies deemed automatically additional (positive list). Although the focus of this concept note is the microscale

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<sup>2</sup> The title of this activity changed to ‘Development and promotion of voluntary cancellation as per CDM EB workplan 2015, adopted at EB82.

<sup>3</sup> Available at <<https://cdm.unfccc.int/Reference/Guidclarif/index.html>>.

thresholds, the criteria for microscale and small-scale thresholds are included in table 1 of the appendix in summary form for comparison purposes. It should be noted that, as opposed to the microscale criteria, which are based on aggregate level thresholds, many of the small-scale criteria rely on unit level thresholds (e.g. the one for distributed systems for residential applications is 5 per cent of the small-scale threshold).

### 3.1.2. Status of application of microscale and small-scale positive lists

10. A summary of the status of application of the microscale and small-scale thresholds in PoAs in the CDM pipeline is also included in table 2 and table 3 of the appendix. Over 140 registered PoAs have applied the microscale and/or small-scale positive lists. It is found that the majority of these PoAs (around 70 per cent) are for household applications involving dispersed units (e.g. cookstoves, solar water heaters, solar cookers, water purification, energy-efficient lighting, biogas digesters). Table 1 below summarizes the information. It should be noted that:

- (a) In the case of PoAs applying the microscale threshold criteria, it is found that the size of each unit is well below 1 per cent of the small-scale threshold (the average is 0.022 per cent of the threshold with a standard deviation of 0.054 per cent);
- (b) With regard to PoAs applying the small-scale threshold criteria, it is also found that the size of each unit is also below 1 per cent of the small-scale (SSC) threshold (the average value is 0.228 per cent of the threshold with a standard deviation of 0.34 per cent).

**Table 1. Size of individual units in microscale and small-scale PoAs using positive lists**

Unit size as % of SSC threshold	Type I (kW)	Type II (MWh)	Type III (tCO <sub>2</sub> )
1%	150	600	600
<b>PoAs applying microscale criteria</b>			
Average - 0.022%	3.3	13.2	13.2
Std. deviation - 0.054%	8.1	32.4	32.4
<b>PoAs applying small-scale criteria</b>			
Average - 0.23%	34.2	136.8	136.8
Std. deviation - 0.34%	51	204	204

### 3.1.3. Stakeholder inputs on microscale thresholds

11. Stakeholders have indicated that the current definition of microscale thresholds, under many circumstances, leads to artificial separation into a number of small-sized CPAs leading to higher transaction costs for the PoA participants. They have asserted that current definitions can be considered arbitrary in that the application of thresholds at CPA level does not introduce additional safeguards for environmental integrity (since an unlimited number of units can be added via an unlimited number of CPAs to the PoA and more over CERs are issued to the PoA). Thus the current definition constitutes a barrier to scaling up microscale activities by introducing additional transaction costs and risks

under many circumstances. Further, transaction costs increase because the standard on “Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities” (PoA standard) requires that each CPA proposed for inclusion in the PoA is checked against predefined eligibility criteria (e.g. boundary, unique marking of equipment to avoid double counting, additionality conditions, stakeholder consultations, debundling check). The PoA standard also requires the CME to develop and implement a management system including a records and documentation control process for each CPA and records of arrangements for training and capacity development of personnel involved in the inclusion of CPAs. In accordance with the “CDM project standard”, monitoring including survey and sampling will also have to be undertaken at the CPA level for many cases if not for all cases. Thus the higher the number of CPAs, the higher the associated transaction costs, with potential impacts on effective implementation of the PoA without apparent benefits for environmental integrity.

12. Furthermore, at the time of inclusion into a PoA, the scale of a CPA is an estimate. If, during any year in the monitoring period, the CPA achieves emission reductions that surpass the microscale thresholds, then the emission reductions are capped to the microscale thresholds to the disadvantage of the project participants and/or the CME.
13. Further, stakeholders indicate that the programmes for deploying technologies for residential applications such as solar home systems, cookstoves, water purification systems and biogas digesters in dispersed locations are designed to aggregate a sufficient number of units over time to balance the cost of implementing the programme. Experience gained with pioneering programmes for energy access in developing countries highlights the need to work through local institutions such as rural cooperatives and microfinance institutions to be successful. Therefore, effective coordination among different stakeholders becomes a key prerequisite for success. Also, products need to cater to various and increasing needs of consumers in rural areas (e.g. mobile charging besides clean cooking, refrigerators, televisions, radios together with solar lighting, due to growing income). Furthermore, ‘reaching the last mile’ for these groups of consumers is most challenging due to the low and seasonal disposable incomes of the population and the lack of permanent/well established addresses making it difficult to trace and mobilize the end users. Therefore aggregating a precise number of units to current microscale CPA thresholds poses additional logistical challenges on top of the existing ones for the PoAs.
14. In response to the call for input on the simplification and streamlining of the CDM (open from 26 February to 26 March 2015),<sup>4</sup> some stakeholders called for expeditious measures to enable applying the small-scale and microscale thresholds at the unit level in the case of CPAs. Public inputs to the Board in the past have also noted that the Board has exempted the debundling check for the case of CPAs composed of units of size equal to or less than 1 per cent of the small-scale thresholds (e.g.  $\leq 150$  kW units) and applying similar logic, microscale thresholds may be applied at the unit level with no size threshold indicated for CPAs. It has been argued that application of thresholds at unit level would allow CMEs to structure CPAs according to key design considerations for efficient implementation, that is, instead of serving as size thresholds, CPAs can be

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<sup>4</sup> Submissions from the PoA Working Group, the World Bank Group and Carbon Africa can be found at [http://cdm.unfccc.int/public\\_inputs/2015/cfi\\_simp/index.html](http://cdm.unfccc.int/public_inputs/2015/cfi_simp/index.html).

the level at which to undertake many PoA-related activities (e.g. local stakeholder consultation, monitoring activities such as surveys, grouping of units for a specific buyer).

15. Moreover, EB 83 discussed the potential use of the CDM infrastructure in other fields such as results-based finance (RBF). In this regard the Board requested the secretariat to seek feedback from stakeholders on any barriers or gaps that may hinder the use of the CDM infrastructure in other fields and how they may be overcome. The Carbon Initiative for Development (Ci-Dev) is a pioneering World Bank initiative that aims to apply RBF through the CDM. Early implementation experience of Ci-Dev indicates that flexibility with the thresholds for CPAs will be a key requirement together with other CDM project cycle reforms for the effective use of CDM infrastructure for RBF. Section 5 of the concept note to EB 83 on use of the CDM infrastructure in other fields provides further details.

#### **3.1.4. Literature review of barriers to CDM projects in household sector**

16. Barriers and opportunities for distributed unit projects reported in the literature are also included in the paragraphs below to provide a better context in which to discuss the potential solutions. A study conducted by Ecofys in 2013 notes that “household energy projects are also often located at remote and scattered locations that would result in the validation/verification related transaction cost substantially higher. The monitoring, verification and issuance costs for typical renewable electricity generation project are estimated at around € 0.30 to 0.41/tCO<sub>2e</sub> in case of an annual verification. For an average household energy project, these costs can amount up to € 1.68/tCO<sub>2e</sub> in case of an annual verification. Furthermore, CDM performance of projects (i.e. the ratio of the number of actually issued CERs to the number of CERs expected in the PDDs) in the case of household energy projects is around 57% resulting in CER revenues lower than expected inflating transaction cost”.<sup>5</sup>
17. Another study conducted by Nexus in 2013<sup>6</sup> that assessed the validation and verification of household CDM project activities noted that “efficiency in the development of carbon projects is a major concern for small-scale project developers; this is especially true when development practitioners act as both project developer and project participant for a given activity. High transaction costs (Fees of Standard Bodies, DOE fees, surveys and equipment) and long lead times to complete the projects’ validation and verification often represent a major barrier to the development of household energy projects in Least Developed Countries (LDCs)”.
18. A study conducted by Ecofys in 2015<sup>7</sup> surveyed 1,045 project participants and CMEs and noted that “PoAs also report uncertainty around CDM procedures and requirement,

<sup>5</sup> Ecofys (2013), CDM Market Support study (available at <<http://www.ecofys.com/en/publication/cdm-market-support-study/>>).

<sup>6</sup> Nexus (2013), Performance of Designated Operational Entities in Household Energy Projects Benchmarking Survey (available at <<http://www.nexus-c4d.org/images/nexus/news/nexus%20benchmarking%20survey%20report%20final.pdf>>).

<sup>7</sup> Ecofys (2015), Analysing the status quo of CDM projects- status and prospects (available at <<http://www.ecofys.com/files/files/ecofys-new-climate-2015-analysing-the-status-quo-of-cdm-projects.pdf>>).

costs related to CDM procedures and requirements and access to up front finance as relevant barriers significantly more than normal CDM projects” while also noting the opportunities as “there is a great potential impact from targeting international support to the continuation and expansion of activities under the umbrellas of existing PoAs. The PoA modality has successfully played a role in the development of projects in underrepresented regions”.

19. The Board has been continuously reforming the standards and procedures related to PoAs in recent years based on the experience gained while taking into account stakeholder needs. Allowing requesting issuance for PoAs in up to 10 batches of CPAs is one example. The introduction of flexibility to define CPA thresholds can potentially result in further simplifications for PoA implementation without compromising environmental integrity.

### 3.2. Recommendations and analysis of implications

20. Three options for applying microscale thresholds at unit level are discussed below.
21. **Option 1:** One option for the Board would be to approve the application of the existing microscale thresholds at the unit level instead of the aggregate CPA level. PoAs already registered, PoAs undergoing validation as well as new PoAs that will be submitted in the future will be covered irrespective of whether a small-scale or large-scale methodology is applied. This would imply:
  - (a) When large-scale methodologies are applied, the intermediary microscale threshold at the CPA level (e.g. 5 MW aggregate installed capacity) is not applied; and
  - (b) When small-scale methodologies are applied, the intermediary microscale and small-scale threshold at the CPA level (e.g. 5 MW or 15 MW aggregate installed capacity) is not applied.
22. For the case under paragraph 21(a) there is little change compared to the current situation as the (large-scale) modalities and procedures for the CDM are applied in this case including the rigorous requirements on monitoring, validation and verification required by the large-scale methodology applied. It is also reasonable to apply the simplification indicated in paragraph 21(b) for the following reasons:
  - (a) The small-scale CDM modalities and procedures aim to reduce transaction costs mainly by simplifying requirements for additionality demonstration, monitoring, validation and verification as compared to the large-scale modalities and procedures (i.e. the same DOE is allowed to validate and verify). The criteria related to additionality are not relevant here as the scope of the guidance in question includes only technologies that are automatically additional. Criteria related to validation and verification is also not relevant as in the specific context of PoAs, irrespective of the scale, validation and verification are to be undertaken by different DOEs. Monitoring in the case of microscale units would boil down to undertaking sampling surveys at regular intervals to the confidence/precision level required by the methodology. The sampling standard approved by the Board specifies a higher (i.e. 95/10) precision requirement for large-scale methodologies as compared to small-scale methodologies (i.e. 90/10 precision). For all options proposed in this concept note, the application of 95/10 precision



for the surveys is recommended to bridge this gap, i.e. whenever microscale thresholds are applied at the unit level 95/10 precision is applied for surveys.

- (b) The Board ruled in the past that small-scale thresholds need not to be applied to PoAs even when they apply small-scale methodologies. This rule was subsequently endorsed by the CMP. In this case, given also that there is an explicit mandate from the CMP to adjust the rules and where necessary implement them, the Board will be in a position to agree on the simplification if it wishes to do so;
  - (c) As detailed in paragraph 16, transaction costs of microscale/household projects are up to four times higher than other project types and usually yield a 40 per cent lower number of CERs than that projected in project design documents (PDDs). Therefore there is a need and opportunity to implement measures to reduce costs.
23. Meeting the scale/size threshold at the unit level alone would not qualify a CPA to apply the above simplification. This is because unlike small-scale CDM thresholds, microscale thresholds are not entirely based on project size, i.e. project size together with other criteria is applied to define microscale units (e.g. location in underdeveloped regions, off-grid areas). Thus, under this option, CPAs with units ( $\leq 5$  MW capacity,  $\leq 20$  GWh annual energy savings,  $\leq 20$  kt of annual emission reductions) would be additional irrespective of total size of the CPAs<sup>8</sup> only:
- (a) If located in LDCs/small island developing States (SIDS) or special underdeveloped zones (SUZ) of other non-Annex I countries; or
  - (b) If composed of off-grid renewable energy technologies (limited to  $\leq 5$  MW capacity); or
  - (c) If grid-connected renewable energy technologies that are recommended by the designated national authorities (DNAs) and approved by the Board are applied (limited to  $\leq 5$  MW capacity); or
  - (d) If distributed technologies for households/communities/SMEs of unit sizes 1 per cent or below of SSC threshold are applied (i.e.  $\leq 1500$  kW or  $\leq 600$  MWh/y or  $\leq 600$  t/y).
24. **Option 2:** A second option would be to introduce further conditions/restrictions to filter out some of the technologies/measures eligible under option 1 to result in a smaller set of technologies/methodologies that are eligible. Under this option, only technologies/methodologies that have been already applied in the registered PoAs utilising small-scale or microscale positive lists are eligible. These are listed below (also indicated in table 2 of the appendix):

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<sup>8</sup> See table 1 in the appendix for more details on the criteria.

**Table 2. Technologies/measures and methodologies applied in registered PoAs that applied microscale and/or small-scale positive lists**

<b>Technology Types</b>	<b>Applicable methodologies (small- and large-scale)</b>
<b>Application for households/communities</b>	
Household Biogas Digesters	AMS-III.R, AMS-I.I, AMS-I.E, AMS-I.C
Energy Efficiency Measures - Household	AMS-II.C, AMS-II.E
Energy Efficient Lighting (LED and CFL)	AMS-II.J, AMS-II.C, AMS-III.AR, AMS-II.F, AMS-I.F
Improved Cook Stoves	AMS-II.G
Solar Water Heaters	AMS-I.J, AMS-I.C, AMS-II.C
Water Purifiers	AMS-III.AV
Off-grid renewable electricity generation technologies (e.g. solar, wind, micro hydro, biomass)	AMS-I.L, AMS-I.A
<b>Application for Other end-user types</b>	
Grid connected renewable energy technologies (e.g. wind, solar PV, geothermal)	AMS-I.D, AMS-I.F, ACM0002, AMS-I.A
Waste Treatment (e.g. Bio-digesters, Lagoons)	AMS-III.H, AMS-III.D, AM0025
Loss reduction technologies/measures in transmission and distribution (e.g. efficient transformer and cables)	AMS-II.A
Fuel switch in small and medium enterprises (e.g., biomass based technologies for thermal energy (i.e. boiler, oven) and application of LPG /NG burner	AMS-I.C, AMS-III.B
Energy efficient dyeing process in SMEs (textile and garment industries )	AMS-II.D

25. A key disadvantage of option 2 is that it excludes many methodologies as listed in table 3 below, because they are currently not applied to a PoA, which may be otherwise suitable to use the simplified definition of thresholds without any adverse impacts on environmental integrity. Thus option 2 would merely represent a more cautious approach than option 1 as there is an accumulated experience within the DOE community, secretariat and other bodies under the Board with regard to validation and verification for PoAs in this area. Another disadvantage is the need for a process to continuously update the technologies/methodologies in table 2 to include newly approved methodologies applied to PoAs.

**Table 3. Technologies/measures and methodologies as “lost opportunities” to use simplified options for thresholds under option 2**

Technology Types	Applicable methodologies (small- and large-scale)
<b>Application for households/communities</b>	
Energy Efficient Lighting (LED and CFL)	AM0113
Renewable energy technologies in thermal applications to avoid the use of non-renewable biomass	AMS-III.BG
Water Purifiers	AM0086
Grid or mini-grid based electrification	AMS-III.AW, AMS-III.BB
Solar cookers for households	AMS-I.K
<b>Application for Other end-use types</b>	
Waste Treatment (e.g. Bio-digesters, Lagoons)	ACM0014, AMS-III.I, AMS-III.L, AMS-III.Y, AMS-III.AO, AMS-III.AX
Energy efficient outdoor and street lighting technologies	AMS-II.L
Energy efficient water savings devices	AMS-II.M
Energy efficient lighting control	AMS-II.N
Dissemination of residential energy efficient refrigerators	AMS-II.O, AMS-III.X, AMS-III.AB
Energy efficient pump-set for agriculture use	AMS-II.P
Energy efficient buildings	AMS-II.Q, AMS-III.AE
Energy efficient space heating in residential buildings	AMS-II.R
Energy efficient electric motors	AMS-II.S
Energy efficient kilns in Brick manufacturing	AMS-III.Z
Recovery and recycling of materials from solid waste	AMS-III.AJ
Use of Nitrogen Use Efficient (NUE) seeds	AMS-III.BF
Electric vehicles	AMS-III.C
Low emission vehicles	AMS-III.S, AMS-III.U, AMS-III.AQ, AMS-III.AY
Energy efficiency in transport	AMS-III.AA, AMS-III.AP, AMS-III.AT, AMS-III.BC
Methane avoidance in rice cultivation	AMS-III.AU
Feed supplementation to increase productivity	AMS-III.BK

26. **Option 3:** Another option would be to develop new PoA-specific methodologies where the application of microscale thresholds to the unit level would be introduced. This option would represent a cautious approach but would also be time-consuming, resource-intensive and unlikely to benefit existing registered PoAs in the near term if implemented as the only means to simplify the application of microscale thresholds. However, this option will allow, with due justifications in the context of the technology/measure, indicating unit thresholds in a more flexible way in the new methodology (e.g. only

size/scale thresholds are specified without other conditions such as the location requirement that entail the definition of microscale activities). It is recommended that, rather than as a stand-alone option, this option may be chosen as a complementary option to go with either option 1 or option 2 that the Board may wish to choose. If implemented in that manner, this option may allow customizing provisions for different technologies, thereby increasing their accuracy ex ante and reducing the need for additional safeguards that add barriers/costs without benefits for integrity or efficiency. Updating could also be done on a methodology-by-methodology basis, which could be simpler and more accurate than generic updates of positive lists.

27. Considering that the changes proposed above may lead to CPAs with emission reduction estimates higher than the small-scale thresholds under many circumstances, there will be a need to reassess the minimum precision levels that are applicable. As discussed above it is recommended that the more stringent 95/10 precision applicable to large-scale PoAs is also applied to small-scale CPAs when applying the microscale thresholds at CPA level. Experience shows that, with regard to microscale PoAs, the key factor that may lead to significant deficiencies in validation, verification and certification is related to the monitoring surveys conducted. In accordance with the sampling standard approved by the Board “the parameter estimates that are calculated from the sample data should be **unbiased** (i.e. selected randomly without systematic underestimate or overestimate the parameter value) and **reliable estimates** of the population parameters it is representing”. The proposed changes may have positive impact on both of these key factors (i.e. reliability and random selection of samples). The proposed changes under all of the options above include a higher precision (i.e. 95/10) that will lead to larger sample size for the survey undertaken by project proponents and DOEs, thereby leading to more reliable estimates. Further, the flexibility for the thresholds will also allow the CME to design the CPAs so as to facilitate the conduct of surveys (e.g. CPAs can be designed to be more homogeneous allowing application of simple random sampling).
28. Furthermore, ensuring positive lists are regularly updated/revised would be critical for the environmental integrity of all of the options above.

## 4. Impacts

29. The proposed changes to the definition of scale thresholds for activities under PoAs provide more flexibility resulting in reduced costs for the implementation of PoAs for distributed small activities (e.g. cookstoves, solar home systems, efficient lighting, and distributed energy generation), which account for over half of the PoAs in the existing CDM pipeline.
30. The proposed work does not foresee any cost implications for third-parties/stakeholders.

## 5. Proposed work and timelines

31. Based on the guidance from the Board, the secretariat, in consultation with the SSC WG, will propose revisions to the relevant regulatory documents.

## **6. Recommendations to the Board**

32. The secretariat recommends that the Board approve the application of microscale thresholds at the unit level per the options indicated and request the secretariat to propose changes to the relevant regulatory documents.

## Appendix. Provisions and application of microscale and small-scale positive lists

**Table 1. Provisions under microscale and small-scale additionality tools<sup>1</sup> for automatic additionality**

Item	Microscale	Small-scale
<b>1</b>	<b>Renewable energy technologies</b>	
	Aggregate installed capacity up to 5 MW: - located in LDCs/SIDS or SUZ; <sup>2</sup> or - recommended by DNA of the country and approved by the Board (grid connected technologies contributing to =<3% of national energy mix).	Aggregate installed capacity up to 15 MW, limited to following renewable energy (RE) technologies: (a) Solar photovoltaic (PV) and solar-thermal electricity generation; (b) Off-shore wind; (c) Marine technologies (e.g. wave and tidal); (d) Building-integrated wind turbines or household rooftop wind turbines (unit size =< 100 kW); (e) In the case of countries with <20% rural electrification rates all RE technologies are eligible.
<b>2</b>	<b>Renewable energy technologies (off-grid only)</b>	
	Aggregate installed capacity up to 5 MW (applicable to all RE technologies for electricity as well as thermal energy).	Aggregate installed capacity up to 15 MW, limited to the following RE technologies: (a) Micro/pico-hydro (unit size =< 100 kW); (b) Micro/pico-wind turbine (unit size =< 100 kW); (c) PV-wind hybrid (unit size =< 100 kW); (d) Geothermal (unit size =< 200 kW); (e) Biomass gasification/biogas (unit size =<100 kW).
<b>3.</b>	<b>Distributed technologies for households/communities/SMEs</b>	
	Aggregate installed capacity up to 5 MW or annual energy savings of 20 GWh or annual emission reduction of 20 kt (unit size =<1500 kW or =< 600 MWh/y or =<600 t/y).	Aggregate installed capacity up to 15 MW or annual energy savings of 60 GWh or annual emission reduction of 60 kt and unit size =< 5% of small-scale (SSC) thresholds (=< 750 kW, =< 3000 MWh/y or 3000 tCO <sub>2</sub> e/y).
<b>4</b>	<b>Geographical location is LDCs/SIDS or SUZ</b>	
	Aggregate installed capacity up to 5 MW or energy savings 20 GWh/y or emission reductions of 20 kt/y.	No provisions related to geographical location.

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

<sup>2</sup> Least develop countries (LDC); small island developing States (SIDS); special underdeveloped zone (SUZ) as defined under the guidelines for demonstrating additionality of microscale activities.

**Table 2. Technology and end-user types in registered PoAs that applied microscale and/or small-scale positive list criteria**

Technology types	Projects	% Share
End use type: Households	92	65%
Household biogas digesters	13	
Energy efficiency - household	2	
Energy-efficient lighting (LED and CFL)	28	
Improved cookstoves	36	
Solar water heaters	7	
Water purifiers	5	
Renewable-based rural electrification	1	
End use type: Others	50	35%
Energy efficiency - industrial	2	
Fuel switch	3	
Grid/off-grid connected renewable energy technologies (e.g. wind, solar PV, geothermal)	35	
Waste treatment (e.g. Wastewater, animal waste)	10	
Total	142	

Source: based on UNFCCC and IGES<sup>3</sup> database.

**Table 3. Application of microscale and small-scale positive list criteria in registered PoAs<sup>4</sup>**

Technology types	Number of projects applying additionality criteria	
	Microscale provision	SSC provisions
End use type: Households		
Household biogas digesters	3	10
Energy efficiency - household	1	1
Energy-efficient lighting (LED and CFL)	5	23
Improved cookstoves	6	31
Solar water heaters	6	2
Water purifiers	2	3
Renewable-based rural electrification	1	0
End use type: Others		
Energy efficiency - industrial	2	0

<sup>3</sup> Institute for global environmental strategies (Accessed on May 2015 at: <<http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=2656>>).

<sup>4</sup> Some PoAs use several provisions available under microscale or small-scale additionality tools.

Technology types	Number of projects applying additionality criteria	
	Microscale provision	SSC provisions
Fuel switch	3	0
Grid connected renewable energy technologies (e.g. wind, solar, PV, geothermal)	24	18
Waste treatment (e.g. wastewater, animal waste)	10	3

Source: based on UNFCCC and IGES database.

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### Document information

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