

# Small-scale and microscale thresholds for CPAs

## 1. Introduction

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. Analysis and proposed options

2. In response to the CMP requests referred to in paragraph 24 of decision 2/CMP.5 and paragraph 39 of decision 3/CMP.6, the Board approved simplified modalities for demonstrating additionality for microscale project activities as part of the measures to enhance the objectivity and transparency of the approaches for the demonstration and assessment of additionality.
3. Subsequently, the Board, at its sixty-third meeting, approved certain grid-connected renewable electricity generation technologies as automatically additional (positive list of technologies) for small-scale CDM project activities. Based on the experience gained the list has been progressively expanded to include additional technologies for electricity, heat and other residential services.
4. In “Table 1. Provisions under Micro-scale and Small-scale additionality guidelines for automatic additionality” of appendix 1 below, microscale and small-scale thresholds and related criteria to confer automatic additionality to a CPA are included in a summary form. In that regard:
  - (a) It should be noted that most of the criteria for microscale positive lists are based on aggregate level threshold pertaining to the total capacity of a CPA. For example, a CPA can include a maximum of 5,000 solar-home systems with 1kW capacity each, or a maximum of 5 solar PV systems with 1MW capacity each, so as not to exceed the aggregate microscale threshold of 5 MW capacity;
  - (b) On the other hand, many of the small-scale criteria such as the one for distributed systems for residential applications rely on unit level threshold (e.g. up to 5 per cent of small-scale threshold) together with the general aggregate level threshold applicable to all small-scale CPAs.

### 2.1. Threshold at the unit level of CPA

5. An analysis of over 110 registered PoAs that have applied the microscale or small-scale positive lists is included in Tables 2 and 3 of appendix 1. It is found that the majority of these PoAs (~70 per cent) are for household applications involving dispersed units (cook stoves, solar water heaters, solar cookers, water purification and energy-efficient lighting



besides biogas digesters), for which unit level thresholds apply. In this regard it should be noted that:

- (a) In the case of the registered PoAs applying the microscale positive list, 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) In regard to the registered PoAs applying the small-scale positive list, it is found that the size of each unit is also below 1 per cent of the small-scale threshold (the average value is 0.228 per cent of the threshold with a standard deviation of 0.34 per cent).
6. Although distributed units for residential/community applications up to 5 per cent of the small-scale thresholds are eligible for automatic additionality, it is not evident that the provision has been applied to units larger than 1 per cent of the small-scale thresholds, in PoAs. This may be because: (1) the threshold is adequate to cover the residential or community applications; or (2) the exemption from debundling check (allowed when the unit size is under 1 per cent of the small-scale threshold) proves to be a disincentive to include higher capacity units.
  7. The unit level thresholds referred to above (i.e. 1 per cent or 5 per cent of the SSC threshold) were introduced by the Board to distinguish the project activities and CPAs comprising distributed units for residential applications from those that comprise a single facility or a small number of facilities, because a CPA that comprises numerous small units each producing a small amount of emission reductions and a CPA that comprises a single relatively big facility do not necessarily face similar barriers.
  8. While the statistics referred to in paragraph 6 above indicate that 0.91 per cent of the small-scale threshold is the 97.5 percentile point of the normal distribution and hence a 1 per cent threshold may potentially cover most of the current types of project activities, an analysis of the adequacy of the threshold to account for the minimum service level specified in some approved methodologies is also undertaken here. Solar electricity generation system with a capacity equal to 1 per cent of the small-scale threshold is considered here for illustrating the extent of service such a system can provide. Such a photovoltaic system (i.e.150 kWp) would provide approximately 450 kWh of electricity per day and 164,250 kWh per year, thereby meeting the minimum service needs of approximately 200 to 650 households depending on whether 750 kWh or 250 kWh per year<sup>1</sup> electricity supply is considered. Similarly, when a 5 per cent threshold is considered, communities involving 1,000-3,250 households would be covered by the system.
  9. Small-scale project activities comprising units no larger than 1 per cent of the small-scale thresholds are exempted from the requirements of de-bundling check. Furthermore the provisions of de-bundling check have been reassessed recently by the Board for the size

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<sup>1</sup> The Board at its sixty-sixth meeting approved the methodology AMS.I.L for electrification of households and communities which assumed that a minimum service level for electricity supply to households would be 250 kWh per year per household. The report of the 35<sup>th</sup> meeting of the SSC WG (SSC WG 35) provided the rationale for this value in its annex 5, "Table 1: Literature compilation on minimum electricity consumption (global values)". As per this information from the SSC WG 35, globally, values ranging from 250 kWh to 750 kWh per year per household have been used for planning electrification activities.

threshold.<sup>2</sup> The Board agreed that there is no need to change the provisions of the de-bundling guidelines<sup>3</sup> and where higher thresholds are justified for a specific sector, such provisions may be included in a specific methodology. Thus, a higher threshold (i.e. 5 per cent of the small-scale threshold) is currently indicated in one methodology covering the brick sector i.e. “AMS-III.Z: Fuel Switch, process improvement and energy efficiency in brick manufacture”.

10. Given the above analysis, the SSC WG was of the opinion that the current thresholds for units in the small-scale positive list (i.e. 5 per cent of small-scale threshold) may be adequate at the unit level and hence recommends retaining the current thresholds.

## **2.2. Thresholds at the aggregate level of CPA**

11. The stakeholders, for example during 7<sup>th</sup> CDM Round Table, have indicated that currently applied aggregate level thresholds for microscale/small-scale CPAs lead to artificial creation of numerous small-sized CPAs, resulting in high transaction costs and inefficiencies in the system, particularly for distributed unit projects (e.g. cook stoves, solar home systems).
12. The stakeholders have indicated that programmes that deploy small units for household applications such as solar home 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 taking into account geographic factors to balance the cost of implementation of the programme. Aggregating a precise number of units to microscale/small-scale CPA thresholds poses logistical challenges besides adding to the CDM transaction costs. Stakeholders also contend that validation and inclusion of CPAs, when large number of CPAs is involved, pose risks related to DOE availability, costs and time required.
13. Consequently, the 7<sup>th</sup> CDM Round Table recommended that CPAs should be defined by temporal, geographical or technological categories to avoid an artificial split of CPAs.
14. In this regard it is noted that currently:
  - (a) No scale threshold applies to a PoA;
  - (b) Scale thresholds apply at the aggregate level of a CPA;
  - (c) Issuance of certified emission reductions (CERs) is to a PoA and not to individual CPAs.
15. Therefore any changes to the aggregate level thresholds for CPAs will not impact the overall size of a PoA or the total CER issuance to a PoA but will only impact the number of CPAs in a PoA.
16. Thus a pragmatic redefinition of the aggregate level threshold for CPAs may offer significant benefits for PoA implementation. It may enable optimized CPA structuring by the coordinating/managing entity resulting in lower transaction costs without negative impacts on the environmental integrity. Particularly the costs related to monitoring surveys, by far the biggest component of the transaction costs for a distributed-unit PoA, are likely to be reduced. In the case of a positive list of technologies, it would not be

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<sup>2</sup> Paragraph 65 of the EB 77 report.

<sup>3</sup> Guidelines on assessment of de-bundling for SSC project activities (EB 54, annex 13).

relevant to undertake an assessment of barriers and additionality at the CPA level; instead, an appropriate CPA structure may serve to implement an effective PoA management system by the coordinating/managing entity. For example, if the coordinating/managing entity structures CPAs according to the specific characteristics of the PoA in question, e.g. installation date, technology, source of funding, monitoring considerations, it may also facilitate applying a modular approach to realize CER revenue (e.g. in case different CPAs have different investors). Flexible CPA structuring may also facilitate local stakeholder consultation and addressing stakeholder issues. Specific details are further elaborated below.

17. Project developers indicated that a typical survey for a project activity/CPA costs around USD 25,000 per survey (based on the assumptions of a cook stove project activity/CPA with 400 sample households, with direct survey cost of about USD 10,000 plus a further USD 15,000 for coordination, data analysis and report writing). Furthermore, the following factors that impact the survey cost have also been communicated by the project developers:
  - (a) Sample size and location: A key factor is the distance travelled and the dispersed nature of the units; surveys that cover a wider geographical area are more costly;
  - (b) The number of parameters surveyed or the complexity of the survey design normally does not have a major impact on the cost;
  - (c) There is a shortage of local organizations in some regions (e.g. in least developed countries) that can conduct monitoring surveys in accordance with CDM requirements. There are also language barriers when English is not the spoken language.
18. Considering the practical needs of the PoA implementation, the Board has allowed grouping of CPAs or even surveying at the PoA level as long as the homogeneity of the group of CPAs or the PoA is established or the differences among CPAs are taken into account in the design of the survey. Although this provision has provided flexibility, the definition of homogeneity (or lack of it) when CPAs are grouped has not been understood and applied consistently by all players, so there is an opportunity for improvement. Redefining the scale thresholds, for example based on implementation timelines, may facilitate better survey designs (e.g. CPAs may be designed to be more homogeneous or more conducive for survey implementation due to the chosen geographic coverage). For example, if the CPA thresholds were to be redefined to count only the equipment of certain type (e.g. cook stoves) distributed in 36 months from the start date of the CPA irrespective of the eventual CPA size, then the coordinating/managing entity of the PoA will have greater flexibility to plan the logistics of equipment implementation together with planning the monitoring surveys.
19. Redefining the scale thresholds for CPAs could also reduce cost for validation. In general, the cost for validation of a PoA that applies a small-scale methodology is reportedly around Euro 50,000, while the cost for inclusion of a CPA varies between Euro 5,000 and Euro 10,000 with a reduction in the cost for inclusion of subsequent CPAs as compared to the first. Similarly, there will be reduced cost for verification if the number of CPAs decreases<sup>4</sup>. Although the costs for validation and verification may not decrease linearly as the number of CPAs in the PoA decreases, a reduced number of CPAs is very likely to result in reduced costs as the efforts of the designated operational

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<sup>4</sup>Source: Developing CDM Programme of Activities: A Guidebook retrieved from <[http://www.southpolecarbon.com/public/PoA\\_Guidebook\\_SouthPole.pdf](http://www.southpolecarbon.com/public/PoA_Guidebook_SouthPole.pdf)>.

entity (DOE) to validate the management system of the PoA and to conduct site visits and desk review would reduce.

20. On the other hand, redefining the scale thresholds for CPAs irrespective of whether they comprise distributed units may not necessarily result in equal treatment for all CPAs facing similar barriers. A CPA that comprises numerous small units with each producing a small amount of emission reductions and a CPA that comprises a relatively big facility do not necessarily face similar barriers. The recommendations in this document are for CPAs comprising small distributed units only.

### 2.3. Proposed options

21. The following options to revise the aggregate level thresholds for CPAs comprising distributed units providing services to households or communities or SMEs were considered:
- (a) Option 1: Elevating the microscale thresholds to small-scale thresholds;
  - (b) Option 2: Developing large-scale methodologies including a positive list of technologies and default values;
  - (c) Option 3: Replacing the microscale and small-scale size thresholds with thresholds based on technological criteria;
  - (d) Options 4: Applying the microscale thresholds to the unit level while removing the thresholds at the aggregated level;
  - (e) Option 5. Replacing the microscale and small-scale size thresholds with thresholds based on temporal criteria e.g. CPA may add units during 36 months from the start date of the CPA.
22. **Implications of option 1:** It appears that, after the adoption by the Board of the positive list of technologies under the small-scale additionality guidelines, the types of CPAs that previously applied the provisions of microscale additionality guidelines are now applying the provisions of the positive lists under the small-scale additionality guidelines, probably due to higher thresholds of the small-scale (15 MW, 60 GWh/year and 60 ktCO<sub>2</sub>/year as compared to the microscale thresholds of 5 MW, 20 GWh/year and 20 ktCO<sub>2</sub>/year), and therefore implementing Option 1 above will have negligible impact.
23. **Implications of option 2:** Option 2 will also have only a marginal impact in the near term as developing methodologies in a top-down approach and deploying them for project application will be a time-consuming process and can have uncertain outcomes in some areas. Moreover, for some of the popular areas for PoAs such as cook stoves and water purification, it will not be feasible to develop large-scale methodologies as the eligibility of such projects has been confined to small-scale by the CMP decisions on project activities related to reducing consumption of non-renewable biomass. Furthermore, the Board has already provided a mandate to the secretariat and the Methodologies Panel to work in the areas where such methodologies may be more easily developed (e.g. compact fluorescent lamps, renewable energy). A large-scale methodology has already been approved under that mandate, however it has not been applied to project activities and CPAs yet, and therefore the impact is unknown yet.
24. **Implications of option 3:** Option 3 will require a clear and unambiguous definition of what constitutes a technology that can then be utilised to define the scale of a CPA. Attempts at making a generic definition of technology/measure in the context of clarifying

documentation requirement for PoAs have had only limited success so far. The Board at its eightieth meeting concluded that such definitions are better addressed in individual methodologies rather than through a generic provision (see annex 4 of EB 80 report). Therefore this option, if implemented, is unlikely to have significant impact in the near or medium term.

25. **Implications of option 4:** Stakeholders have suggested applying microscale thresholds to the unit level with corresponding elimination of threshold at the aggregate level of the CPA as in Option 4. This would imply, for example, PoAs with units under 5 MW (33% of the small-scale threshold) of renewable energy generating capacity would be additional irrespective of the total size of the CPA:

- (a) If located in least developed countries (LDCs)/small island developing States (SIDS); or
- (b) If located in underdeveloped zones of other non-Annex I countries; or
- (c) If located in off-grid areas (< 12 hours grid availability is considered off-grid); or
- (d) When technologies are recommended by the designated national authorities (DNAs) and approved by the Board.

Although this option would provide significant flexibility to coordinating/managing entities to design CPAs, it may also be perceived as a departure from the rationale for the introduction of the concept of “microscale” project activities (i.e. the small aggregate size of the project in itself could be a barrier under certain conditions and hence there is no need for further documentation of barriers to prove that project is additional). Furthermore, provisions<sup>5</sup> related to DNA recommendations for positive list and the definition of off-grid areas may need further analysis to pursue this option (e.g. PoAs for wind energy irrespective of the size of individual CPAs and irrespective of where they are implemented would be additional. Wind turbines are almost always under 5 MW installed capacity and in most non-Annex I countries wind contributes less than 3 per cent to grid energy mix). On the other hand, if instead of the microscale thresholds, approved criteria in small-scale positive list (i.e. 5 per cent of the small-scale threshold) were to be used, this option may be more defensible.

26. **Implications of option 5:** Thresholds for CPAs defined through temporal considerations as per Option 5 is a feasible option. Table: “Provisions under microscale and small-scale additionality guidelines for automatic additionality” of appendix 2 provides an overview of inclusion of CPAs involving distributed units in the registered PoAs over a period of time. Although a clear trend is not evident, it appears that in some cases a large number of CPAs were added in a single year, perhaps due to the size threshold restrictions to CPAs. A threshold based on the time period during which units are added to a CPA would need to take into account the following:

- (a) Clear criteria to define the start and end dates for the creation of the CPA;
- (b) Clear, unambiguous and unique identification of units that would belong to a certain CPA. It should be noted that the requirements for the eligibility criteria for inclusion of CPAs already indicate that equipment should be uniquely identified. Therefore the identification of equipment is already being practiced in the

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<sup>5</sup> See Table 1 “Provisions under microscale and small-scale additionality guidelines for automatic additionality” of appendix 1 of this document.

- implementation of a PoA and therefore would not lead to new requirements incurring additional transaction costs;
- (c) The length of the time period to define a CPA which seems to vary between:
    - (i) Twelve months from the start date of the CPA (indicated in some approved methodologies, shorter time periods may not be practical to implement);
    - (ii) Thirty-six months from the start date of the CPA (the longest time period elapsed between two monitoring surveys allowed in methodologies is three years);
  - (d) Shorter time periods, although conducive for the survey design to check retention rate of equipment, would offer limited flexibility for designing CPAs. On the other hand, a very long time period could make a CPA heterogeneous i.e. the CPA may contain batches of equipment belonging to different vintages thereby making the survey design, implementation and verification more complex.
  - (e) Furthermore, the Board has agreed that the positive lists of technologies should be reviewed every three years and technologies with high penetration should be removed from the generic positive lists. In this regard, it should be noted that the Board has recently agreed to remove one of the technologies from the current positive list, i.e. CFLs are removed from the positive list and project activities for CFLs should use the conventional methods for additionality. Therefore, indicating a three-year time period for the formation of the CPA would allow the Board, where deemed necessary, to stipulate changes to the eligibility criteria of the PoA to ensure that the PoA will not add technologies with high penetration through provisions of automatic additionality.
27. Considering all of the options and their implications referred above, the SSC WG has recommended that the Board may consider redefining the aggregate level thresholds for distributed unit CPAs providing service to households or communities or SMEs. The SSC WG recommended that, besides meeting the requirements for small-scale project activities, such a CPA:
- (a) May aggregate units equal to or below 5 per cent of small-scale thresholds over a period of a maximum of 36 months from the start date of the CPA irrespective of the size of the CPA in MW or GWh/year or ktCO<sub>2</sub>e/year (option 5 in paragraph 22 above, preferred option of the SSC WG); or
  - (b) May aggregate units equal to or below 5 per cent of small-scale thresholds irrespective of the size of the CPA in MW or GWh/year or ktCO<sub>2</sub>e /year (option 4 in paragraph 22 above, an alternative option that Board may wish to consider in case option 5 in paragraph 22 is not preferred by the Board)
28. Considering that the changes proposed above may lead to higher sizes of CPAs than the small-scale thresholds under certain circumstances, there will be a need to reassess the minimum precision levels that are applicable to the small-scale CPAs for selecting samples for surveys. One option would be to apply the 95/10 precision applicable to large-scale CPAs in the cases where small-scale thresholds are exceeded.

## Appendix 1. Application of microscale and small-scale additionality guidelines for automatic additionality

**Table 1. Provisions under microscale and small-scale additionality guidelines<sup>6</sup> for automatic additionality**

Item	Microscale	Small-scale
1	Renewable Energy Technologies	
	Aggregate installed capacity up to 5 MW: -located in LDCs/SIDs or SUZ; <sup>7</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 RE technologies: <b>a.</b> Solar PV and Solar-thermal electricity generation; <b>b.</b> Off-shore wind; <b>c.</b> Marine technologies (e.g. wave and tidal); <b>d.</b> Building integrated wind turbines or household roof top wind turbines (unit size =< 100 kW) <b>e.</b> In the case of countries with <20% rural electrification rates all RE technologies are eligible
2	Renewable Energy Technologies ( Off-grid only)	
	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 following RE technologies: <b>a.</b> Micro/pico-hydro (unit size =< 100 kW); <b>b.</b> Micro/pico-wind turbine (unit size =< 100 kW ); <b>c.</b> PV-wind hybrid (unit size =< 100 kW); <b>d.</b> Geothermal (unit size =< 200 kW); <b>e.</b> Biomass gasification/biogas (unit size =<100 kW )
3.	Distributed technologies for households/communities/SMEs	
	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 SSC thresholds (=< 750 kW, =< 3 GWh/y or 3 ktCO <sub>2</sub> e /y)
4	Geographical Location is LDCs/SIDs or SUZ	
	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>6</sup> <<https://cdm.unfccc.int/Reference/Guidclarif/index.html>>.

<sup>7</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	PoAs	% share
<b>End use type: households</b>	<b>71</b>	<b>65%</b>
Household biogas digesters	11	
Energy efficiency - household	2	
Energy-efficient lighting in household (includes both LED and CFL)	16	
Improved cook stoves	28	
Solar water heaters	7	
Water purifiers	3	
Rural electrification	1	
Off-grid renewable energy technologies (e.g. wind, solar photovoltaic , mini hydro)	4	
<b>End use type: Others</b>	<b>38</b>	<b>35%</b>
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)	13	
<b>Total</b>	<b>113</b>	

(a) Source: based on UNFCCC database.

**Table 3. Application of microscale and small-scale positive list criteria in registered PoAs**

Technology Types	Number of registered PoAs	
	Microscale positive list	Small-scale positive list
<b>End use type: households</b>		
Household biogas digesters	2	9
Energy efficiency - household	1	1
Energy-efficient lighting in household (includes both LED and CFL)	2	14
Improved cook stoves	5	23
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
<b>End use type: Others</b>		
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.

## Appendix 2. CPAs in PoAs

Table 1. Inclusion of CPAs in dispersed unit PoAs

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
							1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2535	CUIDEMOS Mexico (Campana De Uso Inteligente De Energia Mexico) – Smart Use of Energy Mexico	Cool nrg Carbon Investments	EE households	AMS-II.C.	25	31-Jul-09	1	0	0	24
2765	Installation of Solar Home Systems in Bangladesh	Infrastructure Development Company Limited	Solar	AMS-I.A.	13	26-Jun-12	1	12	-	-
2896	SGCC In-advance Distribution Transformer Replacement CDM Programme	State Grid Corporation of China	Energy distribution	AMS-II.A.	4	12-Feb-11	1	3	-	-
2900	Solarwave water purification	Tricorona Carbon Asset	Solar	AMS-III.AV.	1	12-Jun-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
		Management Sweden								
3223	CFL lighting scheme – “Bachat Lamp Yojana”	Bureau of Energy Efficiency	EE households	AMS-II.J.	50	29-Apr-10	2	48	-	-
4302	SASSA Low Pressure Solar Water Heater Programme	Solar Academy of Sub Saharan Africa	Solar	AMS-I.C.	7	12-Mar-11	1	6	-	-
4659	Solar Water Heater Programme in Tunisia	Agence Nationale pour la Maîtrise de l'Energie (ANME)	Solar	AMS-I.C.	8	13-Apr-11	1	7	-	-
4791	Improved Cooking Stoves in Bangladesh	JPMorgan Ventures Energy Corporation	EE households	AMS-II.G.	1	19-Jul-11	1		-	-
4793	Efficient Lighting Initiative of Bangladesh (ELIB)	Infrastructure Development Company	EE households	AMS-II.J.	9	13-May-11	1	0	0	8
5019	The programme to promote efficient lightings in	KEMCO	EE service	AMS-II.C.	6	19-Oct-11	1	5	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	local areas									
5067	Improved Cooking Stoves for Nigeria Programme of Activities	Developmental Association for Renewable Energies	EE households	AMS-II.G.	5	10-Nov-11	3	2	-	-
5092	"Turbococinas", rural cooking stove substitution program in El Salvador	Tecnologías Ecológicas Centroamericanas (TECSA)	EE households	AMS-II.G.	1	25-Oct-11	1	-	-	-
5272	CFL Distribution Programme in Jiangsu Province	Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. (QL)	EE households	AMS-II.J.	1	15-Jun-12	1	-	-	-
5336	Efficient Cook Stove Programme: Kenya	co2balance UK	EE households	AMS-II.G.	2	21-Mar-12	2	-	-	-
5341	Improved Cooking Stoves Programme of Activities in Africa	Envirofit International	EE households	AMS-II.G.	4	06-Dec-12	3	1	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
5342	African Improved Cooking Stoves Programme of Activities	Envirofit International	EE households	AMS-II.G.	3	06-Dec-12	3	-	-	-
5588	First Solar PoA in India by SENES Consultants	SENES Consultants	Solar	AMS-I.D.	8	28-Mar-12	6	2	-	-
5787	Punjab State Electricity Board: High Voltage Distribution System for Agricultural Consumers in the Rural Areas of the Punjab	Punjab State Electricity Board (PSEB)	Energy distribution	AMS-II.A.	4	13-Jul-12	1	3	-	-
5927	Promotion of Energy-Efficient lighting using Compact Fluorescent Light Bulbs in rural areas in Senegal	Agence Senegalaise d'Electrification Rurale	EE households	AMS-II.C.	1	10-Oct-12	1	-	-	-
5962	International water purification programme	Swiss Federal Institute of Aquatic	EE service	AMS-III.AV.	1	16-Nov-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
		Science and Technology								
5997	Standard Bank Low Pressure Solar water heater Programme for South Africa	Standard Bank	Solar	AMS-I.C.	5	24-Apr-12	3	2	-	-
6110	Barefoot Power Lighting Programme	Barefoot Power Pty Limited	Solar	AMS-III.AR.	2	25-Jul-12	1	1	-	-
6119	CFL Distribution Programme in Anhui Province	Zhenjiang Qiangling Energy-saving Light Source Co.	EE households	AMS-II.J.	1	04-Sep-12	1	-	-	-
6159	ETA Solar Water Heater Programme in South Africa	ETA Energy	Solar	AMS-I.J.	1	25-Jul-12	1	-	-	-
6207	Improved Cook Stoves programme for Rwanda	atmosfair gmbH	EE households	AMS-II.G.	2	31-Aug-12	1	1	-	-
6283	Distribution of fuel-efficient improved	C-Quest Capital	EE households	AMS-II.G.	1	06-Jun-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	cooking stoves in Nigeria									
6328	National Solar Power Development Programme, India	Emergent Ventures	Solar	AMS-I.D.	7	06-Jun-12	4	3	-	-
6337	Installing Solar Water Heating Systems in the South of Viet Nam	Energy Conservation Center, Ho Chi Minh City	Solar	AMS-I.J.	1	08-Jun-12	1	-	-	-
6422	CFLs Distribution Programme in Guizhou Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
6424	CFL Distribution Programme in Jiangxi Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
6694	Manufacture and distribution of CFLs in India	Balaji Greentech Products	EE households	AMS-II.C.	1	15-Oct-12	1	-	-	-
6864	Fuel Efficient Stoves in Zambia	3 Rocks Ltd.	EE households	AMS-II.G.	3	28-Jan-13	3	-	-	-
6913	SH Corporation	SH Corporation	Solar	AMS-I.F.	1	18-Oct-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Solar photovoltaic housing complex programme in Republic of Korea	n								
7014	Improved Cook Stoves for East Africa (ICSEA)	Improved Cook Stoves for East Africa (ICSEA)	EE households	AMS-II.G.	1	17-Aug-12	1	-	-	-
7067	Sustainable Deployment of the LifeStraw® Family in rural Indonesia	Vestergaard Frandsen Group	EE service	AMS-III.AV.	1	30-Dec-12	1	-	-	-
7068	CFL Distribution Programme in Shaanxi Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
7078	LED's kick-off	Lemnis Lighting	EE service	AMS-II.C.	1	05-Dec-12	1	-	-	-
7191	Enlightened Solar PoA	Tricorona Carbon Assessment Management	Solar	AMS-I.D.	4	04-Sep-12	1	3	-	-
7247	Efficient Cook Stove Programme:	CO2Balance	EE households	AMS-II.G.	1	29-Jan-13	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Rwanda									
7359	PoA for the Reduction of emission from non-renewable fuel from cooking at household level	Green Development AS	EE households	AMS-I.E.	41	30-Nov-12	41	-	-	-
7398	Standard Bank Energy Efficient Commercial Lighting Programme of Activities	Standard Bank of South Africa	EE service	AMS-II.C.	1	05-Aug-13	1	-	-	-
7470	Nuru Lighting Programme	Nuru East Africa	EE households	AMS-III.AR.	1	03-Oct-12	1	-	-	-
7479	Sustainability CFL Replacement Programme of Activities in South Africa	Eskom	EE households	AMS-II.J.	1	19-Dec-12	1	-	-	-
7484	Small-scale solar electrical programme, South Africa	Blue World Carbon	Solar	AMS-I.D.+ AMS-I.F.	1	26-Nov-12	1	-	-	-
7489	Project to replace fossil fuel based	Tough Stuff Internation	EE households	AMS-III.AR.	1	03-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	lighting with Solar LED lamps in East Africa	al								
7636	Solar Power Programme of Activities	EDF South East Asia Limited	Solar	AMS-I.D.	1	09-Oct-12	1	-	-	-
7699	Hot Water Heating Programme for South Africa	International Carbon	Solar	AMS-I.C.+ AMS-II.C.	1	15-Oct-12	1	-	-	-
7730	CFL Distribution Programme in Hebei Province	Zhenjiang Qiangling Energy-saving Light Source Co.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
7767	Mexico Water, Energy, & Emissions Efficiency Residential Program	Camino Azul	EE households	AMS-II.M.	1	19-Dec-12	1	-	-	-
7811	The National CFL Project, Pakistan	Pakistan Electric Power Company	EE households	AMS-II.J.	1	23-Oct-12	1	-	-	-
7821	CarbonSoft Open Source PoA, LED Lighting	CarbonSoft Corporation	EE households	AMS-III.AR.	1	01-Oct-13	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Distribution: Pan Africa									
7885	Southern Africa Solar Thermal Energy (SASTE) Programme	EcoMetrix Solar Ventures	Solar	AMS-I.C.	1	15-May-13	1	-	-	-
7889	CarbonSoft Open Source PoA, LED Lighting Distribution: Emerging Markets	CarbonSoft	EE households	AMS-III.AR.	1	24-Dec-12	1	-	-	-
7897	LED's save energy	Mabanaft Carbon India	EE service	AMS-II.C.	1	30-Oct-12	1	-	-	-
7997	Improved Cook stoves Programme – India	General Carbon Advisory Services	EE households	AMS-II.G.	1	30-Dec-12	1	-	-	-
8029	CFL Distribution Programme in the Guangxi Zhuang Autonomous Region	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	27-Dec-12	1	-	-	-
8055	Thailand energy efficiency improvement for street	PEA ENCOM	EE service	AMS-II.L.	2	11-Jun-12	1	1	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	lightings									
8060	Improved Cookstoves Program for Zambia	C-Quest Capital Malaysia Global Stoves Limited	EE households	AMS-II.G.	1	07-Nov-12	1	-	-	-
8142	MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia	MicroEnergy Credits	EE households	AMS-II.E.	1	12-Nov-12	1	-	-	-
8188	Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA	Shinsung Solar Energy	Solar	AMS-I.D.	1	13-Nov-12	1	-	-	-
8232	Grid Connect SSC Solar PV Power Generation Plant Programme	Union Power Carbon Asset Management	Solar	AMS-I.D.	1	23-Nov-12	1	-	-	-
8384	CFL Distribution Programme in Inner Mongolia	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Autonomous Region									
8387	CFL Distribution Programme in Liaoning Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
8426	India Small Scale Solar PV Programme of Activities	Mabanaft Carbon India Private Limited	Solar	AMS-I.D.	1	29-Nov-12	1	-	-	-
8438	Clean Cook Stoves in Sub-Saharan Africa by ClimateCare Limited	ClimateCare Limited	EE households	AMS-II.G.	1	30-Nov-12	1	-	-	-
8457	GRT Energy Small Scale Solar PV (PoA)	GRT Energy Co	Solar	AMS-I.D.	1	29-Nov-12	1	-	-	-
8462	CFL Distribution Programme in Shanxi Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
8463	CFL Distribution Programme in Hunan Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
8480	Distribution of	Helps	EE households	AMS-II.G.	1	19-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	ONIL Stoves—Guatemala	International								
8497	CFL Distribution Programme in Heilongjiang Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
8498	CFLs Distribution Programme in Henan Province	Carbon Gold Beijing Technology Co., Ltd.	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-
8521	Distribution of ONIL Stoves—Mexico	Helps International	EE households	AMS-II.G.	1	07-Dec-12	1	-	-	-
8637	Green Light for Africa	Standard Bank	EE households	AMS-II.J.	1	12-Dec-12	1	-	-	-
8640	Energy Efficient Cook stoves in South Africa	Clean Air Renewable Energy	EE households	AMS-II.G.	1	12-Dec-12	1	-	-	-
8696	Côte d'Ivoire and Cameroon Efficient Cookstoves Program	Envirofit International	EE households	AMS-II.G.	3	19-Dec-12	1	2	-	-
8855	Solar Water Heater Program in India	Neutech Solar Systems	Solar	AMS-I.C.	1	31-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
8919	Development of Programmatic CDM Project for SWH installation under MNRE, UNDP/GEF Global Solar Water Heating Market Transformation and Strengthening Initiatives: India Country Programme	Energy Marketers	Solar	AMS-I.J.	1	20-Dec-12	1	-	-	-
8949	National Programme for Improved Cookstoves in India	Sardar Swaran Singh National Institute of Renewable Energy	EE households	AMS-II.G.	1	28-Dec-12	1	-	-	-
9007	Distribution of Improved Cook Stoves in Sub-Saharan Africa	C-Quest Capital Malaysia Global Stoves Limited	EE households	AMS-II.G.	1	25-Apr-13	1	-	-	-
9020	CFL Distribution Programme in	Zhenjiang Qiangling Energy-	EE households	AMS-II.J.	1	28-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Sichuan Province	saving Light Source Co.								
9071	TATS Solar Lantern Programme of Activities	Total Access to Solar (TATS)	Solar	AMS-III.AR.	1	31-Dec-12	1	-	-	-
9126	Small Scale Grid-connected Solar Power Programme	Camco Carbon Africa	Solar	AMS-I.D.	1	24-Dec-12	1	-	-	-
9146	Residential Hot Water Efficiency Programme in South Africa	eThekweni Municipality	Solar	AMS-I.J. + AMS-II.C.	1	31-Dec-12	1	-	-	-
9153	Advanced Energy Solutions for Buildings. Programme of Activities (PoA)	CES Carbon Services	EE service	AMS-II.K.	1	28-Mar-14	1	-	-	-
9160	Solar PV Power Development Programme in Shandong Province	SinoCarbon Innovation & Investment Co.	Solar	AMS-I.F.+ AMS-I.D.	1	27-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
9181	MicroEnergy Credits – Microfinance for Clean Energy Product Lines – India	MicroEnergy Credits	EE households	AMS-II.G.+ AMS-III.AV.+ AMS-I.A.	1	27-Dec-12	1	-	-	-
9191	Sichuan Province Rural Efficient Biomass Cooking Stoves Programme Project	Sichuan Wuhai Environmental Protection & Bioengineering	EE households	AMS-II.G.	1	25-Dec-12	1	-	-	-
9218	UpEnergy Open Access Improved Cookstoves Program in Latin America	UpEnergy	EE households	AMS-II.G.	1	27-Dec-12	1	-	-	-
9247	Programme of Activities to introduce renewable energy system into collective housing, Republic of Korea	LH Corporation	Solar	AMS-I.F.	1	27-Dec-12	1	-	-	-
9260	The programme to introduce	Seoul Metropolitan	Solar	AMS-I.F.	2	27-Dec-12	1	1	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	renewable energy system into Seoul	Government								
9265	Top Third Ventures Stove Programme	Top Third Ventures	EE households	AMS-II.G.	1	27-Dec-12	1	-	-	-
9276	Energy Efficiency Program in Rural Bangladesh	BRAC Impact Investment Limited (BIVL)	EE service	AMS-III.AV.	1	07-Jun-13	1	-	-	-
9384	Kenya Improved woodstoves project	Climate Pal	EE households	AMS-II.G.	1	31-Dec-12	1	-	-	-
9411	Chilean Small Scale Renewable Energy Programme of Activities (PoA)	Carbon Capital Inc. y Cia.	Solar	AMS-I.D.	1	31-Dec-12	1	-	-	-
9432	Water Purifiers Programme in India	General Carbon Advisory Services Pvt	EE households	AMS-III.AV.	1	30-Dec-12	1	-	-	-
9437	Cogeneration and/or trigeneration at commercial	Promethium Carbon	EE supply side	AMS-II.K.	1	31-Dec-12	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	sites.									
9441	Energy Efficiency of Nigeria's Residential Lighting Stock by Distributing up to 40 Million Compact Fluorescent Lamps (CFLs) to Residential Households Connected to the National Grid	Icimi	EE households	AMS-II.J.	1	31-Dec-12	1	-	-	-
9488	Greenlight Solar PV Lighting India	JPMVEC	Solar	AMS-III.AR.	1	31-Dec-12	1	-	-	-
9497	Southern African Solar LED Programme	ToughStuff International	EE households	AMS-III.AR.	1	31-Dec-12	1	-	-	-
9557	Yemen Electricity Distribution Loss Reduction Programme	Public Electricity Corporation of Yemen	Energy distribution	AMS-II.A.	1	31-Jan-13	1	-	-	-
9558	Improved Cookstoves Program for	C-Quest Capital	EE households	AMS-II.G.	1	13-Mar-14	1	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Malawi and cross-border regions of Mozambique									
9596	Heat Retention Cooking in Less Developed Countries	Natural Balance International	EE households	AMS-II.G.	1	18-Mar-13	1	-	-	-
9626	DelAgua Public Health Program in Eastern Africa	DelAgua Health and Development Programs	EE households	AMS-II.G. + AMS-III.AV.	1	21-Nov-13	1	-	-	-
9634	Renewable biomass fired improved cookstoves programme for households in Burundi by BQS	Burundi Quality Stoves	EE households	AMS-I.E.	1	02-Dec-13	1	-	-	-
9666	Promoting Efficient Stove Dissemination and Use in West Africa	E+Carbon	EE households	AMS-II.G.	1	24-Jun-13	1	-	-	-
9672	Paradigm Sub Saharan Africa Cook Stove	The Paradigm Project (TPP)	EE households	AMS-II.G.	2	01-Jul-13	2	-	-	-

Ref.	Title	Coordinating Entity	PoA-Type	Methodology	Number of CPAs	Date of registration	CPAs added in subsequent year			
	Programme									
9698	Replacement of traditional charcoal stoves with efficient EcoRecho stoves in Haiti	D&E Green Enterprises Inc.	EE households	AMS-II.G.	1	26-Jul-13	1	-	-	-
9706	Efficient Cook Stove Programme: Malawi	Alchemy Carbon	EE households	AMS-II.G.	1	01-Aug-13	1	-	-	-
9769	Energy Efficient Stoves Program (EESP)	Standard Bank Plc	EE households	AMS-II.G.	2	17-Oct-13	2	-	-	-
9811	Improved Cook Stove Programme with Carbon Finance (ICF), Nepal	SNV Netherlands Development Organisation	EE households	AMS-II.G.	1	19-Nov-13	1	-	-	-

Source: based on UNFCCC database.

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