

**CDM-EB106-A04-GUID**

# Guideline

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## Development of a PoA applicable to buildings

Version 01.0



**United Nations**  
Framework Convention on  
Climate Change

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## **1. Introduction**

1. This document provides general guidelines to facilitate the development of clean development mechanism (CDM) project activities and programmes of activities (PoAs) in the urban context, providing best practice examples in a programme of activities design document (PoA-DD) and a component project activity design document (CPA-DD) template.

## **2. Scope and applicability**

2. This guideline is applicable to the development of CDM PoAs that implement different types of climate change mitigation measures in buildings. The document provides guidance on the design of CDM PoAs when combining multiple-component activities for emission reductions undertaken in the context of urban sectors.

### **2.1. Entry into force**

3. This document enters into force on 12 June 2020.

## **3. Definitions**

4. The definitions contained in the “Glossary: CDM terms” shall apply.

## **4. Methodological aspects**

### **4.1. CDM methodologies applicable to city-based mitigation programmes**

5. A non-exhaustive list of methodologies applicable to urban mitigation projects implemented in different sectors and short descriptions of the individual methodologies can be found in the CDM Methodologies Booklet, available at:  
<<https://cdm.unfccc.int/methodologies/documentation/index.html>>.

### **4.2. Standardization of parameters**

6. A wide range of parameters in CDM methodologies identified in Section 4.1 could be standardized by taking a region/country-specific approach for a sector. Examples of parameters that could potentially be standardized, in accordance with the “Procedure for the development, revision, clarification and update of standardized baselines” can be found in the CDM Methodologies Booklet, available at:  
<<https://cdm.unfccc.int/methodologies/documentation/index.html>>.

### **4.3. Consideration of cross effects**

7. The application of multiple methodologies to a PoA may result in an overestimation of emission reductions if the coordinating/managing entity (CME) does not ensure that any overlaps in baselines or emission reduction estimates are considered and accounted for. To avoid any such overlaps, the CME should refer to “Appendix 1. Instructions for the consideration of cross effects for the application of multiple methodologies for programmes of activities” of the “CDM project standard for programmes of activities”.

#### 4.4. Specific guidance to develop a PoA for mitigation measures applicable to buildings

8. The Appendix of this document illustrates specific guidance to develop a PoA for PoAs that implement mitigation measures in buildings with individual and cross-cutting interventions in energy generation and use.
9. Table 1 below lists the technologies/measures that are considered in this guideline.

**Table 1. Technologies/measures considered in the PoA**

<b>Technology/Measure</b>	<b>Methodology reference</b>
<b>Roof-top solar photovoltaics (PV), wind electric generator</b>	AMS-I.F.: Renewable electricity generation for captive use and mini-grid
<b>Solar water heating system</b>	AMS-I.J.: Solar water heating systems
<b>Energy efficient equipment/appliances</b>	AMS-II.E.: Energy efficiency and fuel switching measures for buildings
	AMS-II.C.: Demand-side energy efficiency activities for specific technologies
	AMS-II.Q.: Energy efficiency and/or energy supply projects in commercial buildings
<b>Energy efficient lighting</b>	AMS-II.J.: Demand-side activities for efficient lighting technologies
	AMS-II.N.: Demand side EE activities for installation of EE lighting and/or controls in buildings
<b>Energy efficient space heating</b>	AMS-II.R.: Energy efficiency space heating measures for residential buildings

## Appendix. Specific guidance to develop a PoA for mitigation measures applicable to buildings

### Note:

Specific guidance<sup>1</sup>, if any, for mitigation measures in buildings, are provided in the white boxes.

The specific guidance in this document is provided for PoAs that implement renewable energy technologies and energy efficiency improvement technologies/measures in buildings. In no way, it should be construed to limit the application of PoAs to technologies/measures described as possible range of mitigation measures in the urban context is broad (e.g. measures related to transport, waste management may also be implemented in cities). Coordinating/managing entities shall follow the requirements in the “CDM project standard for programmes of activities”. Specific guidance provided in this document is for illustration purposes only and should not supersede nor replace the requirements provided in the above standard.

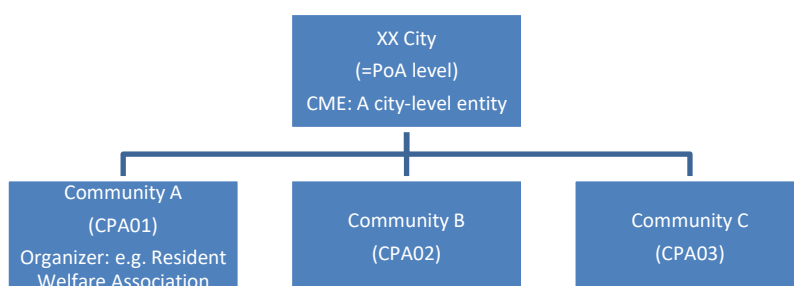
This document describes various steps of formulating a CPA, including: inclusion in the PoA; application of methodologies; confirmation of eligibility criteria; estimation of emission reductions; identifying cross effects between the applied methodologies; and conditions for inclusion of individual buildings in a CPA and in the PoA.

## PART I. Programmes of activities (PoA)

### • Purpose and general description of PoA

#### Specific guidance for PoAs on buildings:

For a PoA that will be implemented at the city level covering a large number of participating buildings and their owners/occupants, the CME may conduct a survey of the coverage area, organize an awareness programme for the building occupants about the requirements for participating in the PoA, and present the included measures and procedures prior to the starting date of the programme. The CME may develop a recording system of enrolment of individual buildings, their occupants and the measures they propose for individual units and common use. For example, the measures could be rooftop solar system for common electricity consumption in a building. The organization of the PoA can be on a hierarchical basis. For example, the overall CME could be at the whole city level, and each CPA may be at the community-level groups managed by community associations.



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<sup>1</sup> Instructions for completing the Programme of activities design document form (CDM-PoA-DD-FORM) should be followed.

- **Physical/geographical boundary of PoA**

**Specific guidance for PoAs on buildings:**  
 The physical/geographical boundary of the PoA may align with the administrative boundary of the city or province. Buildings/residences in any community within that city boundary may be eligible to participate in this PoA. The CME may design a system where proceeds from the sale of certified emission reductions are shared with participating building owners so that they are incentivized to participate in the CPAs under the PoA.

The individual owners may be registered into the system managed by the CME or its local representative. For better administration, each CPA may cover a distinguishable area, such as a community.

If the PoA includes different types of buildings (e.g. residential, commercial, institutional), they may be grouped into different CPAs.

- **Coordinating/managing entity**

**Specific guidance for PoAs on buildings:**  
 The CME may be an organization with administrative responsibilities at the city, sub-city or province level. Examples of appropriate CMEs include a municipality, special-purpose company for managing infrastructure, and provincial development authorities usually with a mandate for regulating/administering various sectors covered under this PoA (e.g. building permits, power distribution, town planning). The organization may have sub-offices at the CPA level – for example, a municipality or city development organization could act as the CME of the PoA and their branch offices as the CPA implementers. This would be based on laws and practices prevalent in the host country or its provinces.

- **Parties and project participants**

**Specific guidance for PoAs on buildings:**  
 Project participants may be community associations, or owners of the buildings, or individual homeowners who join the CPA. They may authorize the respective community associations, resident welfare association or their representatives to act as project participants. The CME should maintain a database system to keep records and be able to demonstrate these to the designated operational entity in validation and verification.

- **Management system**

**Specific guidance for PoAs on buildings:**  
 The CME may develop a system to admit the participants into the CPAs and record the details of measures they propose to adopt from among the technologies/measures listed in section A.3 above (e.g. number of devices, their capacities in Watts, hours of operation, capacity of the renewable energy technology (RET) systems).

CPA No.	Building	Technologies/Measures
CPA01	Building01	Technology A: xx units Technology B: yy units Technology C: zz units
	Building02	
CPA02		

CPAs may be added at any time in the lifetime of the PoA. The participating buildings may join at the start of the CPA and will be indicated in the CPA-DD.

The CME may, on its own or through agencies appointed, conduct an energy use survey of equipment/appliances in the buildings to be included in CPAs under the PoA, and monitor the performance of the equipment/appliances periodically in order to quantify for emission reductions.

The CME or CPA implementers may survey a pre-decided number of dwellings selected possibly through a cluster sampling method. They may also consider applying other sampling methods illustrated in the “Guideline: Sampling and surveys for CDM project activities and programmes of activities”. The CME may invite energy-efficient appliance and equipment manufacturers to submit technical specifications and other details. The CME and CPA implementers may also verify the performance of equipment and type-testing reports. They may rely on reports published by host country government-approved laboratories and institutions regarding performance. Similarly, the CME and CPA implementers may shortlist suppliers of the equipment/appliances based on their quality reports.

For a description of the monitoring plan, the CME should provide details in Section I.7 “Monitoring Plan”.

- **Demonstration of additionality of PoA**

**Specific guidance for PoAs on buildings:**

Individual technologies/measures will generally result in very small amounts of emission reductions. The guidance provided in the latest version of “TOOL19: Demonstration of additionality of microscale project activities” or “TOOL21: Demonstration of additionality of small-scale project activities” may be applied for demonstrating additionality of CPAs.

- **Level at which environmental impacts analysis is undertaken**

**Specific guidance for PoAs on buildings:**

Approval and authorization from local government as well as state/federal government should be obtained in accordance with host country regulations.

Environmental impacts analysis may be undertaken at the PoA level or at the CPA level. However, the impacts due to the disposal of the replaced equipment/appliances should be assessed at the CPA level (e.g. compact fluorescent lamps containing mercury or appliances containing refrigerants may require specific measures at their disposal).

- **Analysis of environmental impacts**

**Specific guidance for PoAs on buildings:**

For brownfield projects, the environmental impacts of the programme should include estimation of number of old appliances or equipment that will be discarded. The CME may also elaborate the mechanism of collection of the discarded equipment and how the equipment will be disposed of and not sold as used equipment outside the PoA boundary. The CME should maintain the records of environmentally safe disposal of the replaced devices.

- **Environmental impact assessment**

**Specific guidance for PoAs on buildings:**

Where applicable the environmental impact assessment (EIA) would record the conditions prevailing prior to the implementation of the PoA and help determine the effectiveness of the PoA. The EIA acts and rules prevailing in many countries may not categorize the activities covered under the PoA, as they are individually very small. However, since the activities under this PoA reduce environmental impacts, the EIA study prior to the programme start will help assess emission reductions after the programme activities start.

- **Modalities for local stakeholder consultation**

**Specific guidance for PoAs on buildings:**

The CME should follow the requirements specified in the section on “Local stakeholder consultation” of the “CDM project standard for programmes of activities”.

The CME may conduct local stakeholder consultations jointly with participants from city buildings, representatives of community associations, local authorities, pollution control agencies, electricity distribution companies, equipment suppliers, architects/contractors, host country agencies which control labelling of efficient appliances (if established), etc.

The CME may inform the city residents about the PoA through advertisements/announcements and invite residents from all the wards or counties of the city for their inputs. The consultation may be held at a convenient time and place in the city, after an appropriate notice period. Besides raising queries during consultation, citizens may be given a questionnaire or sheets for comments.

Information about the proposed PoA/CPAs and implementation procedures may be provided, questions can be answered, and proceedings may be recorded and shared with all stakeholders. The consultation may provide information about the programme directly to the prospective participants, clarify questions and obtain suggestions on improving the PoA design.

## **PART II. Generic component project activity (CPA)**

- **Reference to methodologies and standardized baselines**

**Specific guidance for PoAs on buildings:**

All the methodologies that are expected to be applied should be listed. The CME may choose the format (i.e. tabular or descriptive) for describing the methodologies. If a methodology is relevant to multiple devices (e.g. AMS-II.C.), a list of such devices should be provided.

- **Applicability of methodologies and standardized baselines**

**Specific guidance for PoAs on buildings:**

The CPA proponents may conduct the project in phases, i.e. first implement one or some of the energy-efficiency (EE) measures and then install renewable energy technologies (RETs). If a standardized baseline is available to determine parameters (e.g. the emission factor of the electricity grid of the host country) it should be used by the CPA.

The CME should evaluate possible cross effects while applying the methodologies, in accordance with Appendix 1 to the “CDM project standard for programmes of activities”. A key cross effect to consider is the order in which the baseline is determined. If the baseline for RETs is considered as the equipment/appliances prior to their replacement, it may lead to overestimation of emission reductions. Therefore, the baseline for determination of the energy efficiency improvement measures should be set before the baseline for RETs.

- **Application of multiple methodologies**

**Specific guidance for PoAs on buildings:**

Any expected cross effects due to application of several methodologies should be described. For example, focus should include impact on identification of baseline scenario, errors/overestimation of baseline emissions from one or more measures, or any sequential approach to be employed.

If the technologies/measures included in PoAs address different sources of emission reductions, the CME may need to apply different methodologies to the respective measures. In order to ensure accurate emission estimation, cross effects need to be analysed and suitable conditions made for inclusion in the PoA. The guidance provided in “Appendix 1. Instructions for consideration of cross effects for the application of multiple methodologies for programmes of activities” of the “CDM project standard for programmes of activities” should be followed. A PoA involving RET and EE may apply at



least two methodologies. In this case, the baseline should be defined sequentially, i.e. first for the EE measures (primary measure), after which the reduced energy consumption should be considered for baseline determination for RET measures (secondary measure). This is in accordance with the guidance on Types I and II cross effects in “Appendix 1. Instructions for consideration of cross effects for the application of multiple methodologies for programmes of activities” of the “CDM project standard for programmes of activities”.

- **Establishment and description of baseline scenario**

**Specific guidance for PoAs on buildings:**

The baseline scenarios should be described with necessary evidence as per the requirements of all applied methodologies.

Several methodologies may be included in the CPA. This may be done to give flexibility to apply different technologies/measures to different units/buildings. The CME/CPA implementers should keep record of the units/buildings’ choice among these methodologies and the corresponding baseline for these units/buildings. The database system of the CME needs to be designed to make this possible.

If a CPA applies AMS-II.E. in conjunction with “TOOL31: Determination of standardized baselines for energy efficiency measures in residential, commercial and institutional buildings”, specific baseline CO<sub>2</sub> emission per gross floor area of buildings in the geographical locality of the CPA should be defined.

The CPA should highlight if there are any cross effects while determining the baseline scenarios under these methodologies, and detail how they have been addressed, demonstrating how the baseline emission estimation is conservative.

- **Explanation of methodological choices**

**Specific guidance for PoAs on buildings:**

In case of grid electricity, the emission factor may be determined using the latest version of the “TOOL07: Tool to calculate the emission factor for an electricity system”.

The energy consumption of the baseline devices may be measured or it may be determined using “TOOL31: Determination of standardized baselines for energy efficiency measures in residential, commercial and institutional buildings”.

- **Modalities for ex ante calculation of emission reductions**

**Specific guidance for PoAs on buildings:**

The CME should provide detailed calculations of ex ante estimates of the baseline emissions in the PoA-DD.

In case of RET activities, baseline emissions is determined as the product of the amount of electricity displaced by the renewable generating unit and an emission factor.

In case of EE activities, the emission reduction calculation involves estimation of energy savings from the EE devices and the emission factor of the electricity grid supplying the locality of the CPA. Multiplying these two parameters provides an estimation for the emission reductions.

The CME should also provide detailed calculations of ex ante estimates of the project emissions and leakage emissions in the PoA-DD.

- **Sampling plan**

**Specific guidance for PoAs on buildings:**

Sampling may be necessary in order to determine the average consumption of devices in the buildings. Buildings near to each other are expected to be uniform and would generally exhibit similar types of households and similar types of appliances/equipment. Therefore, the area of the CPA may be divided into sub-groups or clusters, which exhibit uniform characteristics. Hence, cluster sampling may be more cost-effective.

The sample size should be determined in accordance with “Standard: Sampling and surveys for CDM project activities and programmes of activities” and “Guideline: Sampling and surveys for CDM project activities and programmes of activities”.

• **Eligibility criteria for inclusion of CPAs**

**Specific guidance for PoAs on buildings:**

A table similar to the one below may be used to describe each eligibility criterion, required condition, and supporting evidence. The information included in the table is just an example, for illustration purposes.

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
1	Geographical boundary	All buildings in each CPA are located within the geographical boundary of the PoA.	Global Positioning System (GPS) coordinates or street address.
2	Double counting	The CPAs of PoA shall not result in double counting of emission reductions.	For each CPA, the following are fulfilled: <ul style="list-style-type: none"> <li>- Contractual agreements between CME and CPA implementer on the transfer of certified emission reductions;</li> <li>- Precise location of buildings recorded in the database (GPS coordinates).</li> </ul>
3	Other PoAs or projects	There is no other registered CDM project activity included in another registered PoA, or deregistered project activities with the same identification data.	GPS coordinates, analysis of projects in the CDM pipeline.
4	Technology/Measure	CPA implementers will provide manufacturer’s specifications of applied RE and EE technology/measure.  CME will verify the claims of the project component through physical site visit and documents submitted before admitting participant to the CPA.	Description of the technologies (e.g. expected lifetime, capacity, plant load factor, any manufacturer specifications).  Documents such as energy audit report of the building and report on implementation of energy audit recommendations, quotations received for equipment from pre-approved vendors.
5	Start date	The start date of any proposed CPA will be on or after the start date of the proposed CDM PoA.	
6	Compliance with the applicability conditions of applied methodologies	Each CPA will satisfy the applicability conditions of applied methodologies.	Supporting documents to demonstrate compliance with applicability conditions of applied methodologies, which will be provided in Section B.1 of CPA-DD.

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
7	Additionality	Each CPA will follow the process in Section C of PoA-DD to demonstrate additionality of the project activity.	Data sheets of equipment to prove the capacity of the RE PV or the consumption of the equipment for EE measures.
8	Local stakeholder consultation and environmental impact analysis	Local stakeholder consultation will be conducted at PoA level.	Minutes, stakeholder consultation reports, etc. will be provided; Initial Environmental Examination report, Environmental Approval from the government authority.
9	Public funding	Each CPA will provide an affirmation that funding from Annex I party, if any, does not result in a diversion of official development assistance.	Confirmation of no public funding from Annex 1 party.
10	Target group	The target group will be a group of buildings included in the CPA.	List of participating buildings.
11	Sampling	Each CPA will follow the requirements of the sampling standard.	Sampling protocol applied.
12	Small-scale thresholds	The capacity of RE equipment and energy savings of EE equipment will not exceed 15 MW and 60 GWh, respectively, over the entire crediting period as small-scale CDM project activities.  In case of microscale CPA, the installed capacity of RE equipment and energy savings of EE equipment will not exceed 5 MW and 20 GWh, respectively, over the entire crediting period.	Data sheets of equipment to prove the capacity of the RE PV or the consumption of the equipment for EE measures.
13	Debundling check	Each CPA is not a debundled component of a large-scale project activity.	Data sheets of equipment to demonstrate the capacity of the RE PV or the consumption of the equipment for EE measures.

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### Document information

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