

Energy Efficiency CDM Projects (small-scale) - Bundling & PoA

EE CDM Projects – Issues

Energy Efficiency is one of the key areas of action for climate change mitigation. Energy Efficiency solutions & projects are dispersed in different sectors (residential & commercial buildings, transport, industry) and end-use technologies (boilers, air conditioners, lighting etc). End-use energy efficiency one of the most promising sectors for energy security in developing countries. Energy efficiency sector contributes to a meagre 13% of projects under CDM- dispersed nature. Bundling and Programme of Activities in particular are benefiting uptake of EE SSC projects.

Small scale CDM (SSC) projects

- Type I: Renewable energy project activities with a maximum output capacity of 15 MW (or an appropriate equivalent)
- ***Type II: Energy efficiency improvement project activities which reduce energy consumption, on the supply and/or demand side, limited to those with a maximum output of 60 GWh per year***
- Type III: Other project activities limited to those that result in emission reductions of less than or equal to 60 kt CO₂ equivalent annually

Bundling of SSC EE Projects

Bundling is defined in EB 21, Annex 21 as follows:

Bringing together of several small-scale CDM project activities, to form a single CDM project activity or portfolio without the loss of distinctive characteristics of each project activity (EB 21, Annex 21, paragraph 3).

Bundling of small-scale projects is permitted by the modalities and procedures for small-scale projects:

Several small-scale CDM project activities may be bundled for the purpose of validation. An overall monitoring plan that monitors performance of the constituent project activities on a sample basis may be proposed for bundled project activities. If bundled project activities are registered with an overall monitoring plan, this monitoring plan shall be implemented and each verification/certification of the emission reductions achieved shall cover all of the bundled project activities (4/CMP.1, Annex II, paragraph 19).

The advantage of bundling is that bundled projects can obtain a single validation report and a single certification report for the entire bundle, which streamlines these processes for project participants.

Project activities in a bundle can be divided into a series of sub-bundles:

Project activities within a bundle can be arranged in one or more sub-bundles, with each project activity retaining its distinctive characteristics. Such characteristics include its: technology/measure; location; application of simplified baseline methodology. Project activities within a sub-bundle belong to the same type. The sum of the output capacity of project activities within a sub-bundle shall not exceed the maximum output capacity limit for its type (EB 21, Annex 21, paragraph 3).

A sub-bundle is defined as:

An aggregation of project activities within a bundle having the characteristics that all project activities within a sub-bundle belong to the same type (EB 21, Annex 21, paragraph 4).

The principles relating to bundling were incorporated into the simplified project design document for small-scale CDM project activities (CDM SSC-PDD) (EB 21, Annex 21, paragraph 1).

General requirements for bundling

Project activities wishing to be bundled must indicate this at the registration stage:

Project activities wishing to be bundled shall indicate this when making the request for registration (EB 21, Annex 21, paragraph 5(a)).

All project activities to be included in a bundle must be submitted at the same time, and project activities cannot be withdrawn or added:

The composition of bundles shall not change over time (i.e. the submission of project activities to be used in a bundle shall be made at the same time. A project activity shall not be taken out of a bundle nor shall a project activity be added to the bundle after registration) (EB 21, Annex 21, paragraph 5(c)).

Furthermore, once projects are bundled, they cannot be debundled except in exceptional circumstances:

Once a project activity becomes part of a bundle for a project cycle stage, it shall not be de-bundled for this stage. The Board may consider debundling in exceptional situations (EB 21, Annex 21, paragraph 5(b)).

Project activities within a single bundle must have the same crediting period (length and start date):

All project activities in the bundle shall have the same crediting period (i.e. the same length and same starting date of the crediting period) (EB 21, Annex 21, paragraph 5(d)).

A request for registration must contain a form with information related to the bundle:

The form should cover issues such as title of the bundle, general description, project participants, locations, types and categories, estimated amount of emission reduction, crediting period and monitoring plans (EB 21, Annex 21, paragraph (f)).

The contents of this form for bundled small-scale projects (F-CDM-SSC-BUNDLE) are set out below.

Requirements for bundling of small-scale projects

Separate guidance on the bundling of small-scale projects was adopted by the Executive Board at EB 34, Annex 10 (*Guidelines for completing the form for submission of bundled small-scale CDM project activities (F-CDM-SSC-BUNDLE)*). These guidelines contain an *Information note on bundling of small-scale CDM project activities*, which sets out detailed guidance on bundling requirements. This guidance replaces earlier, more limited guidance at EB 20 (*Clarifications relating to bundling of small-scale project activities*).

The general requirements listed above for bundled projects are repeated in the information note as they apply equally to small-scale and large-scale bundles. In addition to the above, the following requirements apply.

All projects within the bundle must comply with the simplified modalities and procedures for small-scale projects and use an approved small-scale methodology:

Each small-scale CDM project in the bundle should comply with the simplified modalities and procedures for small-scale CDM project activities and use an approved simplified baseline and monitoring methodology included in Appendix B of the simplified modalities and procedures for small-scale CDM project activities (EB 34, Annex 10, paragraph 4).

Form

A form covering the entire bundle must be submitted with the PDD(s):

A form with information related to the bundle (F-CDM-BUNDLE) must be included in the submission; Form is available at UNFCCC CDM website: <http://cdm.unfccc.int> and go to CDM:

Guidance - clarifications - tools. The form should cover issues such as title of the bundle, general description, project participants, locations, types and categories, estimated amount of emission reduction, crediting period and monitoring plans (EB 34, Annex 10, paragraph 8).

In spite of the above, the form is called F-CDM-SSC-BUNDLE. This form provides an overview of the bundle of projects, or set of sub-bundles. It must be completed in addition to the project design documents (PDDs) for each sub-bundle, and must cross-reference each PDD.

If the bundle contains only one sub-bundle (because all projects are of the same type, category and measure), F-CDM-SSC-BUNDLE will cross-reference that single PDD.

Small-scale limits

The entire bundle (or where the bundle is divided into sub-bundles, the entire sub-bundle) must remain under the limit for the type of project every year during the crediting period:

The sum of the size (capacity for type I, energy saving for type II and emission reductions of project activity for type III) of the technology or measure utilized in the bundle should not exceed the limits for small-scale CDM project activities as set in paragraph 28 of -/CMP.2 (EB 34, Annex 10, paragraph 9).

Project participants must demonstrate that these limits will not be exceeded:

It should be demonstrated that the bundle will remain under the limit for the type every year during the crediting period. The total emission reduction estimated for the crediting period must be included in the draft CDM-PDD and further monitored (EB 34, Annex 10, paragraph 10).

If the bundle does exceed these limits, the amount of CERs that can be received will be capped at the maximum estimated emission level in the bundle form (in the PDD):

If a bundle goes beyond the limits for the selected small-scale CDM project activities type, the emission reduction that can be claimed for this particular year will be capped at the maximum emission reduction level estimated for the bundle by the project participants in the "Bundle" form for that year during the crediting period (EB 34, Annex 10, paragraph 11).

Project design document(s)

If all projects in a bundle are of the same type, technology and measure, a single PDD may be submitted covering all projects:

If all project activities in the bundle belong to the same type, same category and technology/measure, Project participants may submit a single CDM-SSC-PDD covering all activities in the bundle (EB 34, Annex 10, paragraph 17).

The same baseline may be used, but only where this can be justified in the circumstances. If the same baseline is used, a common monitoring plan and report can be used. If different baselines are used, monitoring should be conducted by sampling:

If project participants use the same baseline for all the project activities in the bundle, it should be justified by considering the particular situation of each project activity in the bundle. As an example two project activities using the same technology to produce electricity but connected to different grids must use different baselines. A common monitoring plan can be utilized for the bundle with the submission of one monitoring

report, under conditions to be specified. If different baselines are used, the proposed procedure for sampling must consider this situation, including the proportionate representative samples of each baseline used. In this case (a single PDD is used) a single verification and certification report shall be submitted by the DOE (EB 34, Annex 10, paragraph 17).

In addition, the following guidance is available on bundles containing small-scale project activities that are all of the same type, category and technology/measure:

- 1. Project activities may use the same baseline under some conditions (details on these conditions will be further elaborated);*
- 2. One DOE can validate this bundle;*
- 3. A common monitoring plan can be utilized for the bundle with the submission of one monitoring report, under conditions to be specified (e.g. conditions for sampling);*
- 4. All CDM project activities within the bundle should have same crediting period, i.e. the same length and same starting date of the crediting period;*
- 5. One verification report is adequate, one issuance will be made at the same time for the same period, and a single serial number will be issued for all the project;*
- 6. The sum of the size (capacity for type I, energy saving for type II and direct emissions of project activity for type III) of the technology or measure utilized in the bundle should not exceed the limits for small-scale CDM project activities as set in paragraph 6 (c) of the decision 17/CP.7; and*
- 7. Each small-scale CDM project in the bundle should comply with the simplified modalities and procedures for small-scale CDM project activities and use an approved simplified baseline and monitoring methodology included in Appendix B of the simplified modalities and procedures for small-scale CDM project activities (EB 21, Annex 21, paragraph 6).*

If a bundle contains small-scale project activities of:

- the same type, same category and different technologies/measures; or
- the same type, different categories and different technologies/measures; or
- different types,

separate PDDs are required:

In all other cases (if the bundle includes project activities with (a) the same type, same category and different technology/measure; (b) same type, different categories and technologies/measures and; and (c) different types), Project participants would have to make the submission of the bundle using a CDM-SSC-PDD for each of the project activities contained in the bundle. Different monitoring plans will be required for project activities in the bundle and separate monitoring reports must be prepared. In these cases a single verification and certification report can be submitted for the bundle provided that it appraises each of the project activities of the bundle separately and covers the same verification period (EB 34, Annex 10, paragraph 18).

Presumably, however, each sub-bundle of projects of the same type, category and technology/measure can use a single PDD.

For bundled projects with different types, categories or technology/measures, the following principles apply:

1. *Project activities may use the same baseline under some conditions (details on these conditions will be further elaborated);*
2. *One DOE can validate this bundle;*
3. *Different monitoring plans will be required for the bundle and separate monitoring reports must be prepared;*
4. *All small-scale CDM project activities within the bundle should have same crediting period, i.e. the same length and same starting date of the crediting period;*
5. *One verification report will be adequate, one issuance will be made at the same time for the same period, and a single serial number will be issued for all the project;*
6. *The sum of the size (capacity for type I, energy saving for type II and direct emissions of project activity for type III) of the technology or measure utilized in the bundle should not exceed the limits for small-scale CDM project activities as set in paragraph 6 (c) of the decision 17/CP.7; and*
7. *Each small-scale CDM project in the bundle should comply with the simplified modalities and procedures for small-scale CDM project activities and use an approved simplified baseline and monitoring methodology included in Appendix B of the simplified modalities and procedures for small-scale CDM project activities (EB 21, Annex 21, paragraph 7).*

Validation

The host Party letter of approval (required for validation) must indicate acceptance of the fact that the projects will be bundled:

The letter of approval by the host Party(ies) has to indicate that the Party is aware that the project activity(ies) taking place in its territory is part of the bundle (EB 34, Annex 10, paragraph 15).

The entire bundle can be validated by a single DOE:

One DOE can validate this bundle (EB 34, Annex 10, paragraph 12).

Registration

At the time of registration, project participants must submit a written statement agreeing to bundle the project activities and identifying a focal point for communications with the Executive Board and the UNFCCC Secretariat:

- *The agreement of all project participants to bundle their individual project activities;*
- *One project participant who shall represent all project participants in order to communicate with the Board in accordance with approved Modalities and Procedures for Communication (EB 34, Annex 10, paragraph 5).*

Bundled projects are only required to pay one registration fee:

Bundled project activities shall be submitted in a single submission to the Board and pay only one fee proportional to the amount of expected average annual emission reductions of the total bundle (EB 34, Annex 10, paragraph 6).

Registration of the bundle may be reviewed according to the process for reviews of registration:

If three Board members or a Party involved in a project activity requests the review of the project activity, the total bundle remains under review and the implications and recommendations on the review of project activity shall lead to a decision by the Board to register or not register the bundle (EB 34, Annex 10, paragraph 7).

Verification and issuance

A single verification report can cover the entire bundle, and CERs will be issued together:

One verification report is adequate, one issuance will be made at the same time for the same period, and a single serial number will be issued for all the project (EB 34, Annex 10, paragraph 13).

A bundle of projects will have a single identifier for issuance purposes:

If a bundle of project activities is submitted with a single or different CDM-SSC-PDDs it shall have only one identifier for purposes of issuance of CERs (EB 34, Annex, 10, paragraph 16).

CDM Programme of Activities

The concept of a Programme of Activities (PoA) (often called Programmatic CDM) is described in EB 47, Annex 29, paragraph 3 as follows:

A programme of activities (PoA) is a voluntary coordinated action by a private or public entity which coordinates and implements any policy/measure or stated goal (i.e. incentive schemes and voluntary programmes), which leads to anthropogenic GHG emission reductions or net anthropogenic greenhouse gas removals by sinks that are additional to any that would occur in the absence of the PoA, via an unlimited number of CDM programme activities (CPAs) (EB 47, Annex 29, paragraph 3).

In other words, a PoA is:

- A voluntary action,
- Implementing a policy, measure or stated goal,
- Coordinated by a public or private entity,
- Resulting in emission reductions or removals that are additional.

The PoA has its origins in a decision of the COP/MOP that local/regional/national policies or standards cannot be considered as CDM project activities, but project activities under a PoA can be registered as a single CDM project activity:

The Conference of the Parties serving as the meeting of the Parties, ...

20. *Decides* that a local/regional/national policy or standard cannot be considered as a clean development mechanism project activity, but that project activities under a programme of activities can be registered as a single clean development mechanism project activity provided that approved baseline and monitoring methodologies are used that, inter alia, define the appropriate boundary, avoid double-counting and account for leakage, ensuring that the emission reductions are real, measurable and verifiable, and additional to any that would occur in the absence of the project activity (7/CMP.1, paragraph 20).

A PoA is made up of CDM Programme Activities (CPAs). Multiple CPAs can be included under a PoA at the time of registration and additional CPAs can be added at any point in the life of the PoA.

A CPA is not currently defined in the current procedures found within EB 47, Annex 29 but was defined in the previous guidance (EB 32, Annex 38) which, despite being replaced by EB 47, Annex 29, continues to provide a helpful source of information:

A CPA is a single, or a set of interrelated measure(s), to reduce GHG emissions or result in net anthropogenic greenhouse gas removals by sinks, applied within a designated area defined in the baseline methodology (EB 32, Annex 38, page 1).

EB 32, Annex 38 also provided that a PoA can involve CPAs being run in multiple countries, in which case a separate letter of approval would be required from each Party involved:

The physical boundary of a PoA may extend to more than one country provided that each participating non-annex I host Party provides confirmation that the PoA, and thereby all CPAs, assists it in achieving sustainable development (EB 32, Annex 38, paragraph 2).

This was reiterated in EB 47, Annex 29, which contemplates the possibility of a PoA being located within "several countries":

The coordinating/managing entity shall obtain letters of approval for the implementation of the PoA from each Host Party and Annex I Party involved in the PoA. (EB 47, Annex 29, paragraph 7)

The coordinating/managing entity is the private or public entity that coordinates the PoA.

Bundling vs CDM PoA

| | Bundle | Programme |
|-----------------------------|---|---|
| Sites | Ex ante identification of exact sites | Exact sites may not be known, but type and maximum potential volume is known |
| Project participants | Each single activity is represented by a CDM project participant | Only the entity implementing the programme represents the project activity as a CDM project participant |
| | Project participants are identical to entities achieving reductions | The project participant does not necessarily achieve the greenhouse gas emission reducing activities, but rather promotes others to do so |
| Project activities | Each activity in the bundle is an individual CDM project activity | The sum of all individual activities under the programme is the CDM project activity |
| | Composition of the bundle does not change over time | No pre-fixed composition (because, for example, uptake of an incentive could be unknown) |
| | All projects in a bundle must be submitted and start at the same time | Activities can be added to the programme on an ongoing basis |
| | Verification is performed as for a stand-alone CDM project | Verification can be done by sampling |

Approved SSC Methodologies- Energy Efficiency CDM

| Sr. No | | |
|--------|-------------------|---|
| 1 | AMS-II.A | Supply side energy efficiency improvements – transmission and distribution — Version 10.0 |
| 2 | AMS-II.B. | Supply side energy efficiency improvements – generation — Version 9.0 |
| 3 | AMS-II.C. | Demand-side energy efficiency activities for specific technologies — Version 13.0 |
| 4 | AMS-II.D. | Energy efficiency and fuel switching measures for industrial facilities — Version 12.0 |
| 5 | AMS-II.E. | Energy efficiency and fuel switching measures for buildings — Version 10.0 |
| 6 | AMS-II.F. | Energy efficiency and fuel switching measures for agricultural facilities and activities — Version 9.0 |
| 7 | AMS-II.G. | Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass — Version 2.0 |
| 8 | AMS-II.H. | Energy efficiency measures through centralization of utility provisions of an industrial facility — Version 2.0 |
| 9 | AMS-III.X. | Energy Efficiency and HFC-134a Recovery in Residential Refrigerators — Version 2.0 |
| 10 | AMS-III.Z. | Fuel Switch, process improvement and energy efficiency in brick manufacture — Version 3.0 |
| 11 | AMS- | Transportation Energy Efficiency Activities using Retrofit |

| | | |
|----|--------------------|--|
| | III.AA. | Technologies — Version 1.0 |
| 12 | AMS-III.AE. | Energy efficiency and renewable energy measures in new residential buildings — Version 1.0 |
| 13 | AMS-III.AP. | Transport energy efficiency activities using post – fit Idling Stop device — Version 1.0 |

Registered EE PoA Example

Compact Fluorescent Lamps (CFL) produce significant energy savings, reducing both greenhouse gas emissions around the globe and energy bills at home. The “Luz Verde” campaign in Mexico will distribute approximately 30-50 million CFLs, with Mexican households able to receive, free of charge, up to four free energy efficient lamps in exchange for four standard light bulbs currently in use. At full capacity, it is estimated that the program will save \$US 165-275 million per year off Mexican households’ energy bills.

The Luz Verde campaign is a Certified Emissions Reduction (CER) project structured as a Programme of Activities (PoA) under the Kyoto Protocol’s Clean Development Mechanism (CDM) and has been certified by the Gold Standard. Luz Verde was the first PoA to be successfully registered for CDM and the Gold Standard.

- CDM sectoral scope
 - Energy Demand - 3
- Source of emission reductions
 - Abatement of GHG emissions through avoided electricity usage by distribution of 30 million energy efficient light bulbs to households across Mexico
- Baseline scenario
 - Usage of inefficient incandescent bulbs for lighting
- Approved baseline methodology
 - Type II.C – Demand side energy efficiency activities for specific technologies (II.C./Version 9)
- Preliminary estimate of emission reductions
 - 27,000 tCO₂e

Potential EE CDM Project Examples for Bundling &PoA

Residential Energy Efficiency

- Changing building practices, efficiency improvement in household appliances, building construction & design, heating & cooling, ventilation, cooking etc

EE in Commercial & Service Sector

- Similar to EE improvements in residential sector except commercial improvements maybe larger with greater capacity

EE in Industries

- Heating & Cooling Processes that do not require electricity – Updating boiler design, fuel switching, better insulation, heat exchange etc
- Electricity driven equipment and electricity delivery – variable speed motors instead of stoking, reducing friction & suction heads, transmission & conversion losses

Potential EE CDM Project Examples for Bundling &PoA

The potential project examples includes but are not limited to:

- Improving EE in Buildings – Building design & orientation, material, insulation etc
- Space heating & cooling – heat pump, passive solar heating
- Efficient electric room air conditioning (heating & cooling)
- Solar thermal water heating
- High efficiency lighting, PV lighting
- Improving efficiency of electrical appliances
- Energy efficient stoves including solar & biomass stoves
- Combined household/commercial & service sector EE improvement
- Waste heat recovery and fuel switching in industries
- Optimisation of process equipment and heat exchangers

Barriers for EE Projects in Pacific

- Relevant cost-benefit information for energy efficiency measures is oftenunavailable to decision makers.

- Policies and programmes that only provide information may have some positive effect but do not address or overcome behavioural barriers and inertia.
- Energy is often a small proportion of expenditure so potential savings aren't believed to justify the investment in time and effort necessary to determine and implement energy efficiency improvements.
- Organisations do not have easy access to the expertise or tools to identify or take advantage of available energy efficiency opportunities.
- Studies in several countries suggest that organisations often appear to require a higher return for energy efficiency investments than other investments.

- Often the incentives are split: the organisation that invests in energy efficiency improvement is not the one that gains the most from resulting reductions in energy use.
- Governments tend to begin programmes (such as DSM support) but are seldom consistent in terms of policies and resources over the long-term.
- Architects and builders in the region seldom receive training in energy efficiency/or designs appropriate to the climate and often construct buildings that are energy intensive.
- There is a lack of clear evidence of achievements within the region from energy efficient applications and government measures because of poor measuring, monitoring and reporting of past efforts.
- There is very limited information about quantities and patterns of current energy use within government and commercial buildings within the PICs so planners often don't realize how much is being spent on energy services.
- There are very few local companies or individuals with the skills to carry out good energy audits and recommend cost-effective investments to reduce energy use.
- Finance institutions are not familiar with energy efficiency investments and may consider them as risky.

Barrier Mitigation Measures for EE Projects in Pacific

- Providing access to cost-benefit information for project developers on energy efficiency projects
- Training the stakeholders to overcome behavioural barriers and inertia for developing energy efficiency projects
- Capacity building of stakeholders & project developers on advantages & benefits of implementing energy efficiency projects
- Development of ready to use toolkits & models for energy efficiency assessments.

- Development of long term energy efficiency programmes, policies & regulations
- Initiating targeted capacity building activities in the energy efficient building sector.
- Compilation of past experiences and lessons learnt in implementing energy efficiency projects in the PIC's.
- Carrying out energy use assessment for government, private and commercial buildings/utilities within the PICs in order to ascertain the energy savings potential.
- Capacity building of local stakeholders to carry out energy audits and project implementation & monitoring.