

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

TYPE III - OTHER PROJECT ACTIVITIES

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III.E. Methane avoidance

Technology/measure

91. This project category comprises measures that avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay as a result of anthropogenic activity. Due to the project activity, decay is prevented through controlled combustion and less methane is produced and emitted to the atmosphere. The project activity does not recover or combust methane (unlike III D). Measures shall both reduce anthropogenic emissions by sources, and directly emit less than 15 kilotonnes of carbon dioxide equivalent annually.

Boundary

92. The project boundary is the physical, geographical site where the treatment of biomass takes place.

Baseline

93. The baseline scenario is the situation where, in the absence of the project activity, biomass and other organic matter is left to decay within the project boundary and methane is emitted to the atmosphere. The baseline emissions are the amount of methane from the decay of the biomass or organic waste treated in the project activity. IPCC default emissions factors are used.

$$\text{CH}_4\text{-IPCC}_{\text{decay}} = (\text{MCF} * \text{DOC} * \text{DOC}_F * F * 16/12)$$

where,

$\text{CH}_4\text{-IPCC}_{\text{decay}}$ IPCC CH_4 emission factor for decaying biomass in the region of the project activity (tonnes of CH_4 /tonne of biomass or organic waste)

MCF methane correction factor (fraction) (default is 0.4)¹⁴

DOC degradable organic carbon (fraction, see equation below or default is 0.3)

DOC_F fraction DOC dissimilated to landfill gas (default is 0.77)

F fraction of CH_4 in landfill gas (default is 0.5)

For DOC, the following equation may be used instead of the default:

$$\text{DOC} = 0.4 (A) + 0.17 (B) + 0.15 (C) + 0.30 (D)$$

where,

A per cent waste that is paper and textiles

B per cent waste that is garden waste, park waste or other non-food organic putrescibles

C per cent waste that is food waste

D per cent waste that is wood or straw

¹⁴ IPCC default for unmanaged shallow waste sites under 5 meters.

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III. B. Switching fossil fuels (cont.)

$$BE_y = Q_{\text{biomass}} * CH_4_IPCC_{\text{decay}} * GWP_CH_4$$

where,

| | |
|----------------------|------------------------------------------------------------------------------------------|
| BE_y | Baseline methane emissions from biomass decay (tonnes of CO ₂ equivalent) |
| Q_{biomass} | Quantity of biomass treated under the project activity (tonnes) |
| CH_4_GWP | GWP for CH ₄ (tonnes of CO ₂ equivalent/tonne of CH ₄) |

Baseline emissions shall exclude methane emissions that would have to be removed to comply with national or local safety requirement or legal regulations.

Leakage

94. No leakage calculation is required.

Monitoring

95. The amount of biomass and / or other organic matter combusted (Q_{biomass}) by the project activity in a year shall be monitored. Emissions of CH₄ and N₂O will be determined using the most recent IPCC default values.

$$PE_y = Q_{\text{biomass}} * E_{\text{biomass}} (CH_4\text{bio_comb} * CH_4_GWP + N_2O\text{bio_comb} * N_2O_GWP)/10^6$$

where,

| | |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PE_y | Project activity emissions (kilotonnes of CO ₂ equivalent) |
| Q_{biomass} | Quantity of biomass treated under the project activity (tonnes) |
| E_{biomass} | Energy content of biomass (TJ/tonne) |
| $CH_4\text{bio_comb}$ | CH ₄ emission factor for biomass and waste (which includes dung and agricultural, municipal and industrial wastes) combustion (kg of CH ₄ /TJ, default value is 300) |
| CH_4_GWP | GWP for CH ₄ (tonnes of CO ₂ equivalent/tonne of CH ₄) |
| $N_2O\text{bio_comb}$ | N ₂ O emission factor for biomass and waste (which includes dung and agricultural, municipal and industrial wastes) combustion (kg/TJ, default value is 4) |
| N_2O_GWP | GWP for N ₂ O (tonnes of CO ₂ equivalent/tonne of NO ₂) |

96. Total annual project activity related emissions will be monitored and should be less than or equal to 15 kt of CO₂ equivalent. If at the renewal of the crediting period the project emissions are higher than the 15 Kt of CO₂ equivalent the project ceases to be a small-scale CDM project and has to use an approved methodology.

**Appendix B¹ of the simplified modalities and procedures for small-scale CDM project activities****INDICATIVE SIMPLIFIED BASELINE AND MONITORING METHODOLOGIES FOR
SELECTED SMALL-SCALE CDM PROJECT ACTIVITY CATEGORIES****A. General guidance**

1. This appendix contains indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories, including recommendations for determining the project boundary, leakage, baseline and monitoring.
2. In accordance with paragraphs 15 and 16 of the simplified modalities and procedures for small-scale CDM project activities (annex II to decision 21/CP.8 contained in document FCCC/CP/2002/7/Add.3), project participants involved in small-scale CDM project activities may propose changes to the simplified baseline and monitoring methodologies specified in this appendix or propose additional project categories for consideration by the Executive Board. Project participants willing to submit a new small-scale project activity category or revisions to a methodology shall make a request in writing to the Board providing information about the technology/activity and proposals on how a simplified baseline and monitoring methodology would be applied to this category. The Board may draw on expertise, as appropriate, in considering new project activity categories and/or revisions of and amendments to simplified methodologies. The Executive Board shall expeditiously, if possible at its next meeting, review the proposed methodology. Once approved, the Executive Board shall amend appendix B.
3. In accordance with paragraph 28 of the simplified modalities and procedures for small-scale CDM project activities, a simplified baseline and monitoring methodology listed in this appendix may be used for a small-scale CDM project activity if project participants are able to demonstrate to a designated operational entity that the project activity would otherwise not be implemented due to the existence of one or more barrier(s) listed in attachment A of this appendix.
4. The appendix reflects the following guidance regarding equipment performance, project boundary, biomass projects, leakage and use of Intergovernmental Panel on Climate Change (IPCC) default values for emission coefficients.
5. Equipment performance: To determine equipment performance, project participants shall use:
 - (a) The appropriate value specified in appendix B;
 - (b) If the value specified in sub-paragraph (a) is not available, the national standard for the performance of the equipment type (project participants shall identify the standard used);
 - (c) If the value specified in sub-paragraph (b) is not available, an international standard for the performance of the equipment type, such as International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) standards (project participants shall identify the standard used);

¹ This appendix has been developed in accordance with the simplified modalities and procedures for small-scale CDM project activities (contained in annex II to decision 21/CP.8, see document FCCC/CP/2002/7/Add.3) and it constitutes appendix B to that document. For the full text of the annex II to decision 21/CP.8 please see reference/documents section on UNFCCC CDM web site <http://unfccc.int/cdm>).

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(d) If a value specified in sub-paragraph (c) is not available, the manufacturer's specifications provided that they are tested and certified by national or international certifiers.

6. Project participants have the option of using performance data from test results conducted by an independent entity for equipment installed under the project activity.

7. Project boundary: The project boundary shall be limited to the physical project activity. Project activities that displace energy supplied by external sources shall earn certified emission reductions (CERs) for the emission reductions associated with the reduced supply of energy by those external sources.

8. Biomass projects: In the case of project activities using biomass, leakage shall be considered.

9. In the cases where leakage is to be considered, it shall be considered only within the boundaries of non-Annex I Parties.

10. In the case of project participants using IPCC default values for emission coefficients, these shall be the most up-to-date values available in the "IPCC Good Practice and Guidance and Uncertainty Management in National Greenhouse Gas Inventories" and the "Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories". A link providing more updated information on IPCC default values for emission coefficients is available on the page for small-scale CDM project activities on the UNFCCC CDM web site: <http://unfccc.int/cdm/ssc.htm>.

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Revision History of this document

This appendix has been developed in accordance with the simplified modalities and procedures for small-scale CDM project activities (contained in annex II to decision 21/CP.8, see document FCCC/CP/2002/7/Add.3) and it constitutes appendix B to that document. For the full text of the annex II to decision 21/CP.8 please see <http://unfccc.int/cdm.htm>. The first version was adopted by the Executive Board (EB) at its seventh meeting. This revision history was introduced with the second version of this document.

| Version Number | Date | Description and reason of revision |
|----------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 02 | 2 December 2003 | <i>- Incorporate amendments agreed by EB at its twelfth meeting - Layout changes in order to facilitate web publication and distribution: Each category of project types is presented in way that it may stand on its own with references to general guidance etc..</i> |
| 03 | 30 June 2004 | <i>- Incorporate amendments agreed by EB at its fourteenth meeting. Please see annex 2 of the report of EB14.</i> |