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

TYPE II - ENERGY EFFICIENCY IMPROVEMENT PROJECTS

Project participants shall take into account the general guidance to the methodologies, information on additionality, abbreviations and general guidance on leakage provided at: <http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>.

II.A. Supply-side energy efficiency improvements – transmission and distribution

Technology/measure

1. This category comprises technologies or measures ~~to improve~~ which reduce technical energy losses through improving the energy efficiency of either

(a) an electricity ~~or district heating~~ transmission ~~and~~ /distribution system ~~by up to the equivalent~~ resulting in electricity savings of up to 60 GWh_{e} per year~~. Examples include upgrading the voltage on a transmission line, replacing or~~ or

(b) a ~~transformer, and increased insulation of the pipes in a district heating system. The technologies or measures may be applied to existing transmission or distribution systems or be part of an expansion of a transmission or distribution system. A total saving of 60 GWh_{e} per year is equivalent to a maximal saving of 180 GWh_{th} per year in fuel input.~~ thermal energy (e.g., steam or hot water) distribution system resulting in fossil fuel savings of up to 180 GWh per year.

Examples include up-grading the voltage on a transmission/distribution system, replacing existing transformers with more efficient transformers (e.g., replacement of a silicon steel core transformer with an amorphous metal transformer) and increasing the amount of pipe insulation in a district heating system. The technologies or measures may be applied to an existing transmission or distribution systems or be part of an expansion of a transmission/distribution system.

2. This category does not include:

(i) Measures that reduce technical losses solely by improving operations and/or maintenance practices. For example low-voltage conditions in the network, uneven distribution of loads, loose connections, etc.

(ii) The introduction of capacitor banks and tap changing transformers for reducing losses in an electricity distribution; this is because technical loss reductions due to such measure can not be determined using the simplified approaches defined in this methodology.

Boundary

3. ~~2.~~ The project boundary is the physical, geographical boundary of the segment of the transmission/distribution system where the energy efficiency measures are implemented.

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II.A. Supply side energy efficiency improvements – transmission and distribution (cont)

Baseline

4. ~~3.~~ For retrofit projects, the energy baseline is the technical energy loss within the project boundary calculated using one of the following options: ~~as either~~

Option 1:

~~The measured performance of the existing equipment~~ The average of measured technical losses of the existing equipment or existing transmission/distribution system as determined using data from all of the immediately prior three years. For existing facilities that are less than 3 years old, a minimum of one year's worth of data are required.

~~OR~~

Option 2: ~~The performance of the existing equipment as determined using a standard selected in accordance with paragraphs of the 'general guidance'~~.

(i) The technical energy losses of the existing equipment or transmission/distribution system as determined using a standard selected in accordance with the procedures described in the General Guidance for SSC methodologies[1] under the section "Equipment Performance".

(ii) For existing radial electricity distribution system (e.g., rural distribution network), for which no national or international standards are available to measure the performance (e.g., technical loss) of the existing system, the technical losses are determined using a well established peer reviewed method[2] included in the guidelines of a relevant national level Government agency (e.g. Rural electrification corporation/agency in the public sector or standards bureau/organizations in the region/country[3]).

5. ~~4.~~ ~~In the case of new facilities the energy baseline is the technical losses of energy within the project boundary calculated using a performance standard for the equipment that would otherwise have been installed selected in accordance with paragraphs of the 'general guidance'~~ In the case of new facilities, the energy baseline is the technical losses associated with the equipment or the transmission/distribution system that would otherwise be built within the project boundary, calculated using Option 2 (i) or Option 2 (ii) of paragraph 4.

[1] Refer to: "General guidance to Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories". http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid06_v12.pdf.

[2] For example reviewed in IEEE literature (IEEE is the acronym of International Institute of Electrical and Electronics Engineers, Inc.)

[3] Any such standard or method used shall be directly applicable to the project activity (e.g., upgrading of low voltage rural electricity distribution systems to high voltage rural electricity distribution systems). The relevance of and justification for using such guidelines should be detailed in the PDD.

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II.A. Supply side energy efficiency improvements – transmission and distribution (cont)

6. ~~5.~~ ~~The emissions baseline is the energy baseline multiplied by an emission coefficient. If the energy displaced is electricity, the emissions coefficient (in kg CO2e/kWh) shall be calculated as described in category I.D. For measures implemented to improve the efficiency of a district heating system, the emissions coefficient is that of the fossil fuel used by the system. IPCC default values for emission coefficients can be used~~.The emissions baseline is the energy baseline multiplied by an emission factor. If the energy saved by the project is electricity, the factor (in kg CO_2-e/kWh) shall be calculated as per the procedures described in AMS-I.D. If the energy saved by the project activity is a fossil fuel, the emission factor of the fossil fuel is determined using reliable local or national data; IPCC default values should be used only when country or project specific data are not available or difficult to obtain.

7. New facilities (Greenfield projects) and project activities involving capacity additions compared to the baseline scenario are only eligible if they comply with the related and relevant requirements in the General Guidance for SSC methodologies. The requirements concerning demonstration of the remaining lifetime of the replaced equipment shall be met as described in the General Guidance for SSC methodologies.

8. In the absence of the CDM project activity, the existing facility would continue to incur technical energy losses (EL_{BL}, in GWh/y) at historical average levels (EL_{HY}, in GWh/y), until the time at which the existing facility would be likely to be replaced, modified or retrofitted in the absence of the CDM project activity ($DATE_{BL\ Retrofit}$). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity and no further emission reductions can be claimed.

$EL_{BL} = EL_{HY}$ until $DATE_{Bl\ Retrofit}$

$EL_{BL} = EL_{PJ}$ on/after $DATE_{BL\ Retrofit}$

Project Emissions

9. Project emissions shall be accounted for and equal the technical losses during the crediting period. If project activity introduces equipment containing GHG such as SF_6, fugitive emissions shall be taken into account.

Leakage

10. ~~6.~~ If the energy efficiency technology is equipment transferred from another activity ~~or if the existing equipment is transferred to another activity~~, leakage is to be considered.

Emission Reductions

11. The emission reduction achieved by the project activity shall be calculated as the difference between the baseline emissions and the project emissions.

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II.A. Supply side energy efficiency improvements – transmission and distribution (cont)

Monitoring

12. ~~7.~~ The Technical energy ~~performance~~ losses of the project ~~activity~~ equipment shall be ~~the~~ measured ~~technical energy losses of the equipment installed~~ at least hourly to establish an annual average value, unless such losses cannot be metered[4]. If the technical energy losses cannot be determined from metered data, they shall be calculated using the test results when the installed equipment is commissioned, and if these are not available use the ~~value determined in~~ procedures described under paragraphs ~~3~~ 4 or ~~4~~ 5 to estimate project technical energy losses as appropriate.

13. For radial electricity distribution system (e.g., rural distribution network) described under paragraph 4 option 2 (ii) above, parameters for monitoring shall be as per the selected guidelines. However, the frequency of monitoring of parameters required to determine the energy losses in the distribution system shall be on hourly basis.

The project technical energy loss determined based on monitored parameters shall be cross checked with the calculation based on estimation approach mentioned in paragraph 4 option 2 (ii) above; more conservative of the two values shall be considered for estimating emission reductions.

Project activity under a programme of activities

The following conditions apply for use of this methodology in a project activity under a programme of activities:

14. ~~8.~~ In case the project activity involves the replacement of equipment, and the leakage effect of the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.

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[4] When non-technical energy losses are small relative to technical energy losses, technical energy losses after implementation of the efficiency measures can be determined from metered data if available. The electricity or thermal energy ~~steam~~ delivered to the portion of the system affected by the efficiency improvements as well as the electricity or thermal energy ~~steam~~ received at the end of the portion of the system affected by the improvements ~~are~~ is metered. If the portion of the transmission/distribution system affected by the energy efficiency improvements is not already separately metered, the reduced technical energy losses could be expressed as a percentage of the losses on a portion of the system that is already metered.

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II.A. Supply side energy efficiency improvements – transmission and distribution (cont)

History of the document *

Version	Date	Nature of revision
10	EB 48, Annex # 17 July 2009	To include an option to use the guidelines adopted by a national government agency to estimate/measure the energy loss in rural electricity distribution network.
09	EB 33, Annex 24 27 July 2007	Revision of the approved small-scale methodology AMS-II.A to allow for its application under a programme of activities (PoA)
08	EB 28, Annex 29 23 December 2006	The threshold of small-scale Type II methodologies was increased from 15 GWh to 60 GWh. The consideration of transmission and distribution losses in the baseline estimation was removed.

* This document, together with the 'General Guidance' and all other approved SSC methodologies, was part of a single document entitled: Appendix B of the Simplified Modalities and Procedures for Small-Scale CDM project activities until version 07.

History of the document: Appendix B of the Simplified Modalities and Procedures for Small-Scale CDM project activities

Appendix B of the Simplified Modalities and Procedures for Small-Scale CDM project activities contained both the General Guidance and Approved Methodologies until version 07. After version 07 the document was divided into separate documents: 'General Guidance' and separate approved small-scale methodologies (AMS).		
Version	**Date**	**Nature of revision**
07	EB 22, Para. 59 25 November 2005	References to "non-renewable biomass" in Appendix B deleted.
06	EB 21, Annex 22 20 September 2005	Guidance on consideration of non-renewable biomass in Type I methodologies, thermal equivalence of Type II GWhe limits included.
05	EB 18, Annex 6 25 February 2005	Guidance on 'capacity addition' and 'cofiring' in Type I methodologies and monitoring of methane in AMS-III.D included.
04	EB 16, Annex 2 22 October 2004	AMS-II.F was adopted; leakage due to equipment transfer was included in all Type I and Type II methodologies.
03	EB 14, Annex 2 30 June 2004	New methodology AMS-III.E was adopted.
02	EB 12, Annex 2 28 November 2003	Definition of build margin included in AMS-I.D, minor revisions to AMS-I.A, AMS-III.D, AMS-II.E.
01	EB 7, Annex 6 21 January 2003	Initial adoption. The Board at its seventh meeting noted the adoption by the Conference of the Parties (COP), by its decision 21/CP.8, of simplified modalities and procedures for small-scale CDM project activities (SSC M&P).