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.G. Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass

Technology/measure

1. This category comprises small appliances involving the efficiency improvements in the thermal applications of non-renewable biomass. These technologies and measures include high efficiency cook stoves and ovens using non-renewable biomass. Project activities, which also involve the switch to renewable biomass, shall apply category I.E.

2. If any similar registered small-scale CDM project activities exist in the same region as the proposed project activity then it must be ensured that the proposed project activity is not saving the non-renewable biomass accounted for by the other registered project activities.

3. Project participants shall show that there was no switch to non-renewable biomass during a period of time (e.g. 3 years) prior to the start of the proposed project activity.

Boundary

4. The project boundary is the physical, geographical area of the use of non-renewable biomass.

Baseline

5. It is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs.

6. Emission reductions would be calculated as:

$$ER_y = B_{y,savings} \cdot NCV_{biomass} \cdot EF_{projected\_fossilfuel}$$

where:

ER_y	Emission reductions during the year y in tCO_2e
$B_{y,savings}$	Quantity of non-renewable biomass that is saved in tonnes
$NCV_{biomass}$	Net calorific value of the non-renewable biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne)
$EF_{projected\_fossilfuel}$	Emission factor for the substitution of non-renewable biomass by similar consumers. The substitution fuel likely to be used by similar consumers is taken: 71.5 tCO_2/TJ for Kerosene, 63.0 tCO_2/TJ for Liquefied Petroleum Gas (LPG) or the IPCC default value of other relevant fuel

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

II.G. Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass (cont)

$$B_{y,savings} = B_y \cdot (1 - \frac{\eta_{old}}{\eta_{new}})$$

where:

B_y	Quantity of non-renewable biomass used in the absence of the project activity in tonnes
η_{old}	Efficiency of the system being replaced, use 0.10 (i.e. 10%) as default value or local data if available (fraction)
η_{new}	Efficiency of the system being deployed as part of the project activity (fraction)

B_y is determined by using one of the two following options.

a) Calculated as the product of the number of appliances multiplied by the estimate of average annual consumption of non-renewable biomass per appliance (tonnes/year). This can be derived from historical data or a survey of local usage, OR

b) Calculated from the thermal energy generated in the project activity as:

$$B_y = \frac{HG_{p,y}}{NCV_{biomass} \cdot \eta_{old}}$$

where:

$HG_{p,y}$ Amount of thermal energy generated by the new technology in the project in year y (TJ)

Differentiation between Non-renewable and Renewable biomass

7. Project proponents shall demonstrate that the biomass[1] used in the baseline is not renewable as detailed below[2]:

Step 1: Verify that the biomass is not "renewable".

Biomass is "renewable" if any one of the following five conditions is satisfied:

I. The biomass is originating from land areas that are forests[3] where:

[1] Biomass means non-fossilized and biodegradable organic material originating from plants, animals and micro-organisms. This shall also include products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes. Biomass also includes gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material. Biomass residues means biomass by-products, residues and waste streams from agriculture, forestry and related industries (annex 8, EB 20)

[2] 'Definition of Renewable biomass' in this document is based on annex 18 of EB 23

(a) The land area remains a forest; and

(b) Sustainable management practices are undertaken on these land areas to ensure, in particular, that the level of carbon stocks on these land areas does not systematically decrease over time (carbon stocks may temporarily decrease due to harvesting); and

(c) Any national or regional forestry and nature conservation regulations are complied with.

II. The biomass is woody biomass and originates from croplands and/or grasslands where:

(a) The land area remains cropland and/or grasslands or is reverted to forest; and

(b) Sustainable management practices are undertaken on these land areas to ensure in particular that the level of carbon stocks on these land areas does not systematically decrease over time (carbon stocks may temporarily decrease due to harvesting); and

(c) Any national or regional forestry, agriculture and nature conservation regulations are complied with.

III. The biomass is non-woody biomass and originates from croplands and/or grasslands where:

(a) The land area remains cropland and/or grasslands or is reverted to forest; and

(b) Sustainable management practices are undertaken on these land areas to ensure in particular that the level of carbon stocks on these land areas does not systematically decrease over time (carbon stocks may temporarily decrease due to harvesting); and

(c) Any national or regional forestry, agriculture and nature conservation regulations are complied with.

IV. The biomass is a biomass residue and the use of that biomass residue in the project activity does not involve a decrease of carbon pools, in particular dead wood, litter or soil organic carbon, on the land areas where the biomass residues are originating from.

V. The biomass is the non-fossil fraction of an industrial or municipal waste.

If the biomass used by the project activity in the baseline meets any of the above criteria then the biomass is renewable and this methodology is not applicable to the project activity. Otherwise proceed to step 2.

Step 2: If the biomass cannot be classified as renewable, the following guidance shall be used to confirm that it is non renewable.

National or local statistics, or other sources of information such as remote sensing data can be used for this purpose as applicable. Maps can be used to illustrate the biomass supply area, where necessary. Alternatively the following indicators from the local areas derived from historical data or estimated using survey methods may be used:

[3] The forest definitions as established by the country in accordance with the decisions 11/CP.7 and 19/CP.9 should apply.

- Increasing trend of time spent or distance travelled by users for gathering fuel wood;
- Increasing trends in fuel wood price indicating scarcity;
- Trends in the type of biomass collected by users, e.g. a switch from wood to small branches and twigs, or to non-woody biomass, suggesting scarcity of woody biomass.

A single indicator may not provide sufficient evidence that biomass in the region is non-renewable and therefore more than one indicator may be used.

Leakage

8. Leakage relating to the non-renewable biomass shall be assessed from ex post surveys of users and areas from where biomass is sourced. The following potential sources of leakage were identified:

a) Use/diversion of non-renewable biomass saved under the project activity by non-project households/users who previously used renewable energy sources. If this leakage assessment quantifies an increase in the use of non-renewable biomass used by the non-project households/users attributable to the project activity then B_y is adjusted to account for the quantified leakage.

b) Use of non-renewable biomass saved under the project activity to justify the baseline of other CDM project activities can also be potential source of leakage, however the applicability conditions of the methodology ensure that the possibility of this leakage is avoided.

c) Increase in the use of non-renewable biomass outside the project boundary to create non-renewable biomass baselines can also be potential source of leakage, however the applicability conditions of the methodology ensure that the possibility of this leakage is avoided.

9. If the equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered.

Monitoring

10. Monitoring shall consist of an annual check of efficiency of all appliances or a representative sample thereof to ensure that they are still operating at the specified efficiency (η_{new}) or replaced by an equivalent in service appliance. Where replacements are made, monitoring shall also ensure that the efficiency of the new appliances is similar to the appliances being replaced.

11. In order to assess the leakage specified under 8 (a), monitoring shall include data on the amount of biomass saved under the project activity that is used by non-project households/users who previously used renewable energy sources.

12. Monitoring shall ensure that the replaced low efficiency appliances are disposed off and not used within the boundary or within the region.

13. In case option (b) in paragraph 6 is chosen for baseline calculations, monitoring shall include the amount of thermal energy generated by the new renewable energy technology in the project in year y, where applicable.