TYPE I - RENEWABLE ENERGY PROJECTS

Note: Categories I.A, I.B and I.C involve renewable energy technologies that supply electricity, mechanical and thermal energy, respectively, to the user directly. Renewable energy technologies that supply electricity to a grid fall into category I.D.

Follow the link to find General guidance / Abbreviations

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

Technology/ Measure

1. This category comprises of 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 using category I-E.

Boundary

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

Baseline

3. It is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuels commonly observed with local consumers, for meeting similar thermal energy needs.

4. Emission reductions would be calculated as:

$$ER_y = B_{y,savings} \cdot NCV_{biomass} \cdot EF_{non-renewable\ biomass,CO2}$$

where:

ERy	Emission reductions during the year y in t CO_2e
By,savings	Quantity of non-renewable biomass that is saved in tonnes
NCVbiomass	Net calorific value of the non-renewable biomass that is substituted (IPCC default for wood fuel, 15 MJ/Kg)
EFnon-renewable biomass, CO_2	Emission factor for the substitution of non-renewable biomass by similar consumers locally in t CO_2 / TJ biomass.

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

where:

By	Quantity of non-renewable biomass used in the absence of the project activity
η_{old}	Efficiency of the system being replaced, use 20% as default value or local data if available
η_{new}	Efficiency of the system being deployed as part of the project activity.

$$EF_{non\text{-}renewable\ biomass,CO2} = \frac{\varepsilon_{stoves,\ biomass}}{\varepsilon_{stoves,\ fossil}} \cdot EF_{CO2,\ fossil}$$

where:

εstoves, biomass	Average efficiency of stoves fired with biomass, use 20% as default value or local data if available
εstoves, fossil	Average efficiency of stoves fired with fossil fuel, use 50% as default value or local data if available
$EFCO_2$, fossil	CO_2 emission factor for the fossil fuel; 71.5 tCO_2/TJ for Kerosene, 63.0 tCO_2/TJ for LPG or the IPCC default value of the fossil fuel commonly observed with local consumers

Leakage

5. ~~No Leakage calculation is required~~. The following sources of leakage related to non-renewable biomass shall be considered:

- The use of non-renewable biomass, saved due to the project activity, by project participants or others;
- Use of non-renewable biomass, saved due to the project activity, to justify other CDM projects.

It shall be justified why this leakage can be disregarded and/or alternatively it shall be explained how the area from which the non-renewable biomass is extracted in the baseline scenario would be protected from further exploitation. Otherwise leakages shall be estimated and deducted from emission reductions.

Monitoring

6. Monitoring shall consist of an annual check of all appliances or a representative sample thereof to ensure that they are still operating or replaced by an equivalent in service appliance. Monitoring shall include the efficiency of the appliances.

7. Monitoring shall ensure that the replaced low efficiency appliances are not used within the boundary.

8. Monitoring shall include the compliance with the conditions demonstrating the non-existence of leakage.