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

I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User

Technology/ Measure

1. This category comprises of small appliances involving the switch from non-renewable biomass to renewable sources of energy. These technologies include biogas stoves, use of solar cookers and measures that involve the switch to renewable biomass.

Boundary

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

Baseline

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

4. Emission reductions would be calculated as:

$$ER_y = B_y \cdot NCV_{biomass} \cdot EF_{non-renewable\ biomass,CO2}$$

where:

ERy	Emission reductions during the year y in t CO_2
By	Quantity of non-renewable biomass that is substituted or displaced in tonnes, calculated as:

(i) 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

(ii) The quantity of renewable biomass used in the project activity corrected for differences in calorific values.

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.

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

where:

$\varepsilon_{stoves,biomass}$	Average efficiency of stoves fired with biomass, use 20% as default value or local data if available
$\varepsilon_{stoves,fossil}$	Average efficiency of stoves fired with fossil fuels, 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.

6. Leakage related to the use of renewable biomass shall be evaluated using the guidelines under the 'general guidance' to the indicative small-scale methodologies.

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.

7. Monitoring should confirm the complete displacement or substitution of the non-renewable biomass at each location. In the case of appliances switching to renewable biomass the quantity of renewable biomass used shall be monitored.

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