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

## 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 for Full version of appendix B (http://cdm.unfccc.int/Projects/pac/ssclistmeth.pdf) to find General guidance / Abbreviations

### *I.A. Electricity generation by the user*

**Technology/measure**

1. This category comprises renewable technologies that supply individual households or users with a small amount of electricity. These technologies include solar power, hydropower, wind power, and other technologies that produce electricity all of which is used on-site by the user, such as solar home systems, and wind battery chargers. The renewable generating units may be new or replace existing fossil fuel fired generation. The capacity of these renewable energy generators shall not exceed 15 MW.

2. Combined heat and power (co-generation) systems are eligible under categories I.C and I.D.

**Boundary**

3. The physical, geographical site of the generating unit and the equipment that uses the electricity produced delineates the project boundary.

**Baseline**

4. The energy baseline is the fuel consumption of the technology in use or that would have been used in the absence of the project activity. The project participants may use one of the following energy baseline formulae:

(a) Option 1:

$$E_B = S_i(n_i \,.\, c_i)/(1 - l)$$

**Where**

$E_B$ = annual energy baseline in kWh per year.
$S_i$ = the sum over the group of "i" renewable energy technologies (e.g. residential, rural health center, rural school, mills, water pump for irrigation, etc.) implemented as part of the project.
$n_i$ = number of consumers supplied by installations of the renewable energy technology belonging to the roup of "i" renewable energy technologies during the year.
$c_i$ = estimate of average annual individual consumption (in kWh per year) observed in closest grid electricity systems among rural grid connected consumers belonging to the same group of "i" renewable

energy technologies. If energy consumption is metered, $c_i$ is the average energy consumed[2] by consumers belonging to the group of "i" renewable energy technologies.
***l*** = average technical distribution losses that would have been observed in diesel powered mini-grids installed by public programmes or distribution companies in isolated areas, expressed as a fraction.[3]

OR

(b) Option 2:

$$E_B = S_i O_i / (1 - l)$$

**Where**

$E_B$ = annual energy baseline in kWh per year
$S_i$ = the sum over the group of "i" renewable energy technologies (e.g. solar home systems, solar pumps) implemented as part of the project.
***Oi*** = the estimated annual output of the renewable energy technologies of the group of "i" renewable energy technologies installed (in kWh per year)
***l*** = average technical distribution losses that would have been observed in diesel powered mini-grids installed by public programmes or distribution companies in isolated areas, expressed as a fraction.

5. If the project participants wish to use a different formula to determine $E_B$, the proposal needs to be accepted in accordance with the modalities for new methodologies for small-scale project activities (see paragraph 2 of the general guidance (section A) above).

6. The emissions baseline is the energy baseline calculated in accordance with paragraph 4 above times the $CO_2$ emission coefficient for the fuel displaced. IPCC default values for emission coefficients may be used. A default value 0.9 kg $CO_2$equ/kWh, which is derived from diesel generation units, may be used. A small-scale project proponent may, with adequate justification use a higher emissions factor from Table I.D.1

**Leakage**

7. 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.

[2] Potential oversizing of the power capacity installed or energy generated by the CDM project activity shall not be reflected in the baseline and emissions reduction calculation. For this reason, the energy value taken into account shall be the energy consumed. It cannot be the electricity output, except if the project participant justifies that it represent a reasonable estimate of the energy that would have been generated by a diesel generator larger than 35 kW and operating with a load factor of at least 50% to provide similar electricity services.

[3] A reasonable default value for distribution losses on low voltage rural distribution grid could be 20%.

**Monitoring**

8. Monitoring shall consist of:

(a) An annual check of all systems or a sample thereof to ensure that they are still operating (other evidence of continuing operation, such as on-going rental/lease payments could be a substitute).

OR

(b) Metering the electricity generated by all systems of a sample thereof.