CDM: Recommendation Form for Small Scale Methodologies (version 01)

(To be used for presenting questions/proposals/amendments to the simplified methodologies for small-scale CDM project activity categories)

Date of SSC WG meeting:	01–03 September 2008, SSC WG 17
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Calculation of LFR when Li/Xi is not an integer value and good program design provisions
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-II.J "Demand-side activities for efficient lighting technologies"
Name of the authors of the query:	O Koo Institution: Joint US-China Cooperation on Clean Energy okoo@juccce.com

Summary of the query:

Please use the space below to summarize the query related to SSC methodologies/categories SSC Modalities and Procedures provide recommendation/analysis of the SSC WG.

[Original text from Project Participant:

Issue #1

According to Equation 3 of AMS II.J., the value of LFR depends on whether y*Xi is less than Li or not. In the case of CFLs with a 10000-hour rated lifetime (Li) and 1278 annual operating hours (Xi, which would be the case when daily hours of operation are the default value of 3.5 hours per day), y must be less than Li/Xi (10000/1278 = 7.825). We would like your confirmation that in the example given the LFR value for y = 8 can be calculated as follows, so as to credit emission reductions throughout the rated lifetime of the lamps:

LFRi, 8 = [(Li/Xi)-(y-1)] * [y * Xi * (100-Ri) / (100 * Li)]

= [(7.825) – (8-1)] * [8*1278*(100 – 50) / (100 * 10000)] = 0.825 * 0.5112 = 0.4217

Otherwise, Equation 3 would result in significant energy savings not being counted, just because y is defined as an integer value (in the cited example, if the proposed interpretation of Equation 3 is not adopted, all of the energy savings in the last 1054 hours of the rated lifetime (10000-(7*1278)) would not be counted, which amounts to over 10% of the total. Even more problematic, the resulting unintended deduction is arbitrary and would be different for different combinations of lamp rated lifetime and annual hours of operation: In the case of a 6000-hour bulb and 1278 annual hours of operation, energy savings for the last 888 hours (6000-(4*1278)) or 15% of the rated life would not be considered, unless the following proposed interpretation were adopted. We believe this is an unintended consequence from the fact that y is an integer value and we therefore request the SSC WG to clarify that LFR can be calculated as follows:

If y * Xi < Li, then LFRi,y = y * Xi * (100-Ri) / (100 * Li)
unchanged

If y * Xi > or = Li + [Li – (Xi *(y-1))], then LFRi,y = 1
modified

If y * Xi > Li but < Li + [Li – (Xi * (y-1))], then LFRi,y = [(Li/Xi)-(y-1)] * [y * Xi * (100-Ri) / (100 * Li)]
new

Incidentally, please note that the parameter Xi in Equation 3 is identical to the parameter Oi in Equation 2, so could be revised to Oi to simplify and avoid confusion.

Issue #2

Para. 8 (ii) lists some good program design practices. Can the SSC WG confirm that these are meant to be examples of good program design practices – which are (i) not exhaustive and (ii) may or may not all be implemented under a given project activity?

For example, CFL give-aways might effectively be conducted by means of direct installation, which would ensure their placement in high-use areas (concern of para 8 (iii)). Under our planned CFL project, we will work with school children to educate them about energy efficiency, compact fluorescent lamps and how to properly dispose of mercury-containing CFLs – and they will install the bulbs themselves, but the cost and logistics of charging a minimal fee for the bulbs would be prohibitive and culturally inappropriate in the school setting. We think the educational (not included in the existing list of good design practices in para. 8 (ii)) and direct-installation aspects of this program design can make for a very effective program, even without charging for bulbs. We also know of other successful project designs that have charged a fee for bulbs, but did not involve direct installation, so we think flexibility to design good programs to meet specific program delivery strategy needs would be in the best interest of the CDM, which is developing in "learning by doing" mode.

It should be kept in mind that – in the event a poor program design does fail to deliver the desired results – the ex post surveys required by this methodology will in any case correct for any CFLs that are no longer in service in the households participating in the project, so there is no need to be so restrictive with respect to program design, which unnecessarily limits the applicability of AMS II.J.

Issue #3

Para. 8 (iii) calls for programs to ensure that bulbs will not be installed in low-use areas. Can the SSC WG clarify how this provision would "limit undesired market effects and free riders", which is the purpose of the provisions in para 8?

Or is there some other reason to include this provision? It is our understanding that the default value for hours of operation of 3.5 hours per day is intended to be an average across all sockets, both high- and low-use (this will certainly by the case for the required ex ante survey determination of hours of operation). And even in low-operating hour applications, the energy savings will accrue over the rated lifetime of the lamps (in other words, it is the rated lifetime that defines energy savings, not the hours of operation). Of course, it is in the interest of both project proponents, often utilities (which can maximize demand reduction), and end-users (who can maximize savings in their energy bills) to install bulbs in higher use areas. As mentioned above, one of the best ways to encourage end-users to install bulbs in high use areas is to educate them – and (with reference to Issue #2 above) this is not listed as an element of good design practice in para. 8 (ii).

Given the above, can the SSC WG confirm that the intention of para. 8 (iii) is to educate CFL recipients on the benefits of installing efficient lamp in spots where the (daily) utilization hours can be expected to be highest? We see no way to ensure that they do this – and whether or not they do, the calculated emission reductions will not change.]

Recommendation by the SSC WG:

Please use the space below to provide amendments/change (in your expert view, if necessary).

Please refer to paragraph 36 of the meeting report of the SSC WG 17 (http://cdm.unfccc.int/Panels/ssc_wg).

Answer to authors of query by the SSC WG:

Please use the space below to provide answer to the authors of the above query

The small-scale working group (SSC WG) of the CDM Executive Board would like to thank the author for the submission.

Issue 1: The SSC WG agreed that submission is correct in pointing out that equation 3 may result in discounting of some reductions in the year in which the cumulative operating hours of the CFLs attain the value of rated lifetime if year counter is considered as an integer. However SSC WG noted the proposed amendments by the submission will result in lower CFL failure rate value in the last year of the crediting period as compared to penultimate year of the crediting period. For example if the rated lifetime is 10000 hrs and the utilisation rate is 3.5 hrs per day then lamp failure rates (LFR) will be 0.45 in year 7 and 0.42 in year 8.

Therefore, the SSC WG agreed to clarify with regard to equation 3 in AMS II.J that the value "y" does not have to be an integer as illustrated below for the above example of lamp rated lifetime.

Year counter	7.00	7.08	7.17	7.25	7.33	7.42	7.50	7.58	7.67	7.75
Lamp rated life	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
operating hours per year	1278	1278	1278	1278	1278	1278	1278	1278	1278	1278
y*X (aggregate operating hours)	8943	9049	9155	9262	9368	9475	9581	9688	9794	9901
LFR	0.45	0.45	0.46	0.46	0.47	0.47	0.48	0.48	0.49	0.50

Issue 2: The intent of the para. 8 (ii) direct installation requirement includes ensuring that the CFLs installed are tracked in a manner that allows for selection of a truly random and representative sample for *ex post* monitoring requirements as indicated in para. 15. Thus, if a verifiable tracking and database system of households and CFLs is in place, that could meet the direct install requirements of Para. 8 (ii).

In order for the sampling to be effective and statistically valid each of the households in the population (half a million in the example) should stand an equal chance to get selected for the sample. This entails that coordinates of each of the households participating the project should be known precisely and unambiguously. The methodology specifies direct installation as one of the means to achieve this requirement. The listed measures under 8 (ii) are not exhaustive but some examples of good project design. The SSC WG agreed to clarify that other means of meeting this requirements are eligible. However, please note that as currently written AMS II.J, does require "charging at least a minimal price for efficient lighting equipment and restricting the number of lamps per household distributed through the project activity".

Issue 3: As noted by the query author, the methodology assumes that the average hours of all the CFLs installed (and IBs replaced) is at least 3.5 hours per day but it also assumes that all of the lifetime hours of the CFLs are utilised during the crediting period. Thus, in Para 8 (iii), the methodology encourages the project proponents to undertake appropriate activities for ensuring that the CFLs are used in high utilisation points. To answer the query author's specific question, documented end user programs that educate CFL recipients on the benefits of installing efficient lamp in spots where the (daily) utilisation hours can be expected to be highest is an acceptable means of meeting the requirements of Para 8 (iii).

Signature of SSC WG Chair ……..

(Ulrika Raab)

Date: 03/09/2008

Signature of SSC WG Vice-Chair ……..

(Kamel Djemouai)

Date: 03/09/2008

Information to be completed by the secretariat	
SSC-Submission number	SSC_218
Date when the form was received at UNFCCC secretariat	03 September 2008
Date of transmission to the EB	03 September 2008
Date of posting in the UNFCCC CDM web site	03 September 2008