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:	16–19 February 2010, SSC WG 24
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Revision to AMS-II.C and/or AMS-II.J to facilitate CFL projects/programs
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-II.C / AMS-II.J
Name of the authors of the query:	Anne Arquit Niederberger Institution: Policy Solutions policy.solutions@comcast.net

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.

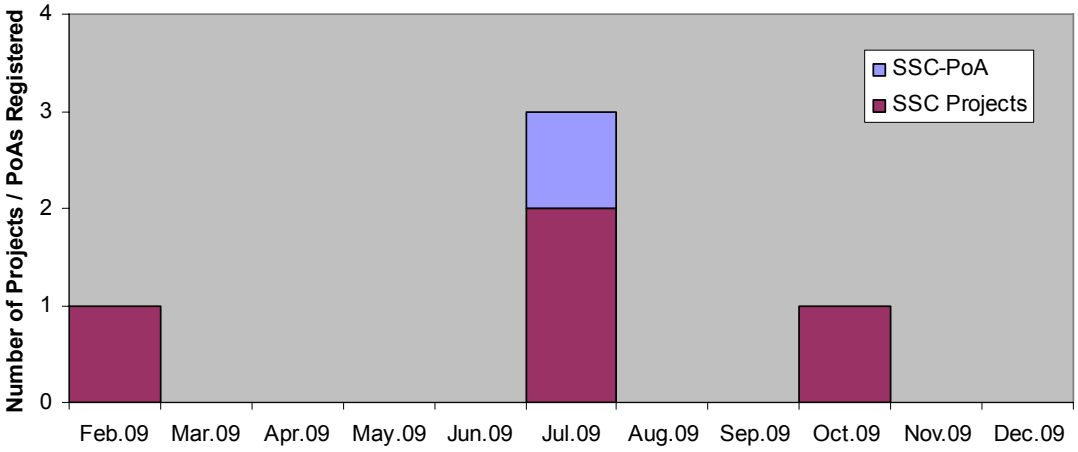
Original text from PP:

Background and Justification for a Revision

Replacing incandescent lamps (ICLs) with compact-fluorescent lamps (CFLs) for residential use is a prime candidate for CDM, because:

- The additionality of CFL give-away programs is unequivocal, given that the only source of income for the project owner is CER revenue, and CFL technology has a significantly higher up-front cost than ICLs, creating a clear financial barrier;
- CFLs are roughly 75% more efficient than ICLs;
- The aggregate energy savings and carbon dioxide emissions reduction potential is enormous;
- Households in developing countries benefit from lower energy bills;
- The CDM Executive Board has defined "energy for households" as a priority sector for its methodological work (http://cdm.unfccc.int/EB/051/eb51_repan11.pdf), domestic CFL programs clearly fit under this heading;
- Such projects can be implemented in under-represented countries, thereby supporting the CDM priorities set by Parties at COP15.

Yet only four small-scale CDM projects and one PoA have been registered to date – and there is no sign of an accelerating trend.



These five registered projects have all used the methodology AMS II.C. In contrast, all of the projects that have begun the validation process since July 2009 have chosen to use AMS II.J., which applies specifically to CFL programs (II.C. is generic and covers all end-use technologies). Project developers are encountering challenges with AMS II.J., however, and the vast majority of the pipeline has been stuck in validation for over a half a year. As one successful project developer recently put it:

> *"As AMS II.J. stands right now, I would still tend to use AMS II.C. despite its complexities. It is such a shame, however, that the economics of AMS II.J. still make it unattractive."*

The bottom line is that although AMS II.J. was written specifically for CFLs and was intended as a simplified approach with reduced monitoring requirements that would facilitate rapid development of CFL programs worldwide, it has not proven viable in practice. Only since Version 3 of the methodology was released in June 2009 did project developers even attempt to begin using it. Unfortunately, even this version – including the related clarification SSC_354 – is not proving suitable, for two main reasons:

- Too few CERs can be claimed to ensure a sufficient return on investment, because:
  - The methodology is overly conservative[1];
  - Many safeguard provisions unique to AMS II.J. (including related clarifications by the SSC WG, such as the requirement for rated life claims to be independently certified by a third-party laboratory), increase transaction costs.
- Some provisions cannot be implemented in practice. In particular, there is no agreed standard to construct a lamp mortality curve.

The main simplification that AMS II.J. enjoys with respect to AMS II.C. is the option to use a default value for CFL hours of operation. When this option is exercised, the *ex post* monitoring effort is substantially reduced, and there is greater certainty with respect to the likely amount of CER generation for project developers. Yet this simplification comes with prohibitive strings attached in AMS II.J. relative to the provisions of AMS II.C. (see Table), meaning that the simplification of adopting a default value is not having the intended effect of facilitating a greater number of projects.

[1] Michaelowa et al. (2009) conclude that AMS II.J. represents a 30% penalty relative to AMS II.C.

Parameter or Requirement	AMS II.C.	AMS II.J.	Penalty AMS II.J.
Crediting Period	No restrictions	• May not exceed 10 years • Limited to rated life to 50% failures of the CFLs	Energy savings from lamps still in service after the rated life cannot generate CERs. Assuming a linear lamp failure curve per AMS II.J., the penalty is 25% of total CERs
Net-to-Gross Effects	N/A	• Default NTG factor = 0.95	Automatic 5% deduction in CERs
Hours of Operation – Metered	Max. 24 hours	Max. 5 hours	Directly proportional to any difference between actual hours and AMS II.J. limit
Hours of Operation – Default	N/A	3.5 hours	Directly proportional to any difference between actual hours and default value
Lamp Failure Rate	N/A	• Linear LFR to be applied • *Ex post* monitoring of actual LFR required • LFR must be adjusted upwards if *ex post* data show higher rates than assumed	Although *ex post* surveys of actual lamp persistence *in situ* are required, the additional energy savings that would accrue if failure rates are lower than assumed *ex ante* cannot be credited
Additional Safeguard Requirements	N/A	• Minimum lumen equivalence for CFLs • Independent verification of manufacturer rated life claims for CFLs • Prescriptive project design features to limit market effects • Actions to encourage CFLs installed in high-use areas (education of recipients is required in some cases)	Safeguards do not significantly reduce CERs, but lead to delays and/or additional transaction costs
Commissioning Survey	Continuous metering of hours of operation should account for failed lamps, but these can be replaced	Required within first year. Number of bulbs distributed is adjusted by the fraction of any failed bulbs discovered	Lamps replaced during survey may not generate CERs

Proposed Revisions

There are two primary options to address the challenges faced by CFL projects/ programs under the CDM (in addition to overcoming the liability issues that are a barrier to implementing SSC activities under PoA): Allow use of default hours of operation under AMS II.C. or revise AMS II.J. to improve its viability. We therefore request revision of AMS II.C. and/or AMS II.J.

AMS II.C.

Were 3.5 hours per day to be added to AMS II.C. as a default option for CFL hours of operation, there would be no issues and the market could advance. This is one way forward, and we have therefore provided a draft revised version of AMS II.C. that merely adds a default value for CFL hours of operation.

Within the realm of small-scale methodologies (as well as large-scale energy efficiency methodologies), default values have typically been included in methodologies on the merit that they are inherently conservative enough to substitute for data derived from direct measurement – without adding any further safeguards to the methodology that would apply only when project participants opt to use the default value (otherwise, the advantage of having a conservative default value in the first place is negated). In the process of approving AMS II.J., the default value of 3.5 hours was set by the SSC WG, based on in depth scrutiny of all of the available evidence, and this is the value that we request to use in AMS II.C., as well.

AMS II.J.

Alternatively, the most prohibitive provisions in AMS II.J., which were summarized above in Table 1, would need to be removed. Following lengthy consultations with project developers, CFL experts and CFL manufacturers, we have prepared a revised version of AMS II.J. This version maintains the most effective safeguards (going beyond the requirements of AMS II.C.), while limiting substantive changes to the following:

[2] Assuming that lamp failure rates follow the *ex ante* prediction per Equation 3 of the methodology.

[3] All four approved SSC projects use high-quality Osram CFLs with a rated lifetime of 15000 hours. Philips is supplying the only registered PoA.

- Removes restriction (only until rated lifetime) on the period during which CERs can be generated
  Unlike AMS II.C., the methodology specifies a single, fixed crediting period (CP) of 10 years. This is acceptable for now, given the state of CFL technology currently on the market. However, the methodology also stipulates that CERs can only be earned until the rated lifetime of the CERs has been reached, even if this is less than the stipulated 10-year crediting period. The purpose of this restriction is unknown to us, appears to be completely arbitrary and represents a potential 25% reduction in CERs[2]. This point has been repeatedly raised by experts as an unjustified and excessively conservative limitation. To implement this change, we have added the requirement that annual surveys to determine the *ex post* Lamp Failure Rate are required, if CERs are to be claimed for the period beyond the CFL rated lifetime.

- Removes requirement for third-party independent certification of the manufacturer-declared rated average life value and instead relies on the manufacturer-declared values, consistent with AMS II.C. and AM46
  The insurmountable problems with the independent testing requirement that we have encountered include the following: projects at the validation stage and under development would not be able to deliver the third-party certifications which CLA_354 has indicated are required; full life testing takes a long time (roughly 2 years for 10 – 15 k hour lamps) and comes with additional transaction costs; testing standards are often specific to a certain jurisdiction, so a lamp tested according to a Chinese standard, for example, would not qualify in another jurisdiction; the vast majority of CFL models have not been independently tested, new products are coming online continuously and lab capacity is limited (this would create a new bottleneck).
  Fortunately, the reality on the ground is that the market is policing itself, without recourse to independent testing: Project participants are demanding high-quality lamps from reputable manufacturers with generous warranty provisions, even though this is not required by AMS II.C., because the only source of funding for CFL giveaway programs is CER revenues, and non-performing CFLs adversely and severely affect project profitability. As a result, only reputable manufacturers that are known not to make exaggerated rated life claims have been successful in supplying CDM projects[3].

- Allows project participants to credit energy savings from CFLs that experienced early failure and were replaced as part of a regular maintenance or warranty program, including when undertaken as part of the initial survey process (carried out within the first year after installation).
  The current version only allows bulbs that fail and are replaced with bulbs marked for the program to generate CERs, as long as they are not replaced as part of the *ex post* monitoring survey. This distinction seems arbitrary (a CFL replaced on day X under a manufacturer warranty program could generate CERs, but a CFL replaced under warranty on day X+1 during the survey process could not) and might lead to adverse outcomes.
  The intended purpose of this initial survey is to detect and replace any CFLs that might experience early failure, the number one cause of which is the lamp cathode and related connections. Early failure rates are typically very low, but it can be that a bad batch of bulbs reaches the market, so we want to detect any such issues at the start of the project, while the lamps are still under warranty. Given that most CDM projects will procure bulbs in bulk and distribute them over a geographic region with similar grid conditions, the failure rate distribution at the time of the initial survey is likely to be essentially binary: either close zero or very high. In the former case, any effects of how many days the CFL was not in service before being replaced will be immaterial in the overall CER calculation, so can safely be ignored. In the latter case, the objective is to get the CFLs replaced so that the project can continue. If reductions from the replacement CFLs cannot be credited in this case, the project will fail.

- Removes the reference to a lamp mortality curve
  The SSC WG has confirmed that there is no standard method to construct a lamp mortality curve (and, to our knowledge, there is no such standard in preparation), so the provision to have such a curve certified by an independent third-party lab is impossible to comply with. Furthermore, as pointed out above, any third-party testing related to average lifetime is prohibitive. It is important to maintain the principle that the *ex ante* LFR, which is only a very rough proxy for how the lamps will perform *in*

situ, is corrected *ex post*, either upwards or downwards, based on field surveys conducted as specified by the methodology. And since the survey only determines whether the lamps have failed or not, there is little room for error, other than sampling error, which is already adequately addressed by the monitoring provisions.

In addition, we have revised the definition of "rated average life" to be fully consistent with the definition provided in the widely recognized lamp performance standard IEC 60969.

We are happy to elaborate on any of these points and would welcome an exchange with the SSC WG, if this would be helpful. We believe we now have the experience to make a final set of revisions to the available methodologies for CFL programs.

Recommendation by the SSC WG:

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

Please refer to paragraph 8 of the meeting report of the SSC WG 24 (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 of the CDM Executive Board would like to thank the author for the submission.

The SSC WG is planning to propose a revision of AMS-II.J, in order to expand its applicability. The suggestions provided in this submission will be considered during the revision process.

Signature of SSC WG Chair ……..

(Peer Stiansen)

Date: 19/02/2010

Signature of SSC WG Vice-Chair ……..

(Hugh Sealy)

Date: 19/02/2010

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