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:	10–12 November 2008, SSC WG 18
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Revision of AMS-II.J - project design requirements, T&D losses, *ex post* surveys, application of baseline penetration factor and estimation of cross-effects for CPA of PoA
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-II.J
Name of the authors of the query:	Philip Cohn / Anne Arquit Niederberger Institution: Cool nrg International / Policy Solutions JUCCCE phil.cohn@coolnrg.com, 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:

The first proposed revision to the methodology seeks to remove certain limitations on project design, in particular that relating to the stated requirement in section 8 for project developers to charge "a least a minimal price for efficient lighting equipment". This is an issue that was raised in queries SSC_218 and SSC_220, and the meeting report off SSC WG 17 states that the WG:

> "…agreed to continue to consider the revision of project design requirements under AMS-II.J as defined in paragraph 8 of the methodology, to clarify the intention of the design requirements4 and provide further examples versus what is currently indicated. This may involve eliminating certain indicated project design elements such as requiring "charging at least a minimal price for efficient lighting equipment".

Proposed Amendment

8. The project activity must be designed to limit undesired secondary market effects (e.g., leakage) and free riders:

(i) By ensuring that replaced lamps are exchanged and destroyed;

(ii) By direct installation, charging at least a minimal price[1] for efficient lighting equipment and/or restricting the number of lamps per household distributed through the project activity; and

(iii) By ensuring incandescent bulbs will not be replaced by an efficient lamp in spots where the (daily) utilization hours can be expected to be very low.[2]

Justification

The proposed amendment to the methodology allows greater flexibility in project implementation, without sacrificing design quality and emissions abatement outcomes.

[1] For example cost equivalent of an incandescent lamp being replaced

[2] For example lamps in toilets, bathrooms or storage rooms

Requiring payment for CFLs is often promoted as an effective means to control uptake, and limit undesired behaviour by households such as non-installation, stock-piling and on-selling. It is argued in this submission that well designed CFL distribution programs can overcome many undesired secondary effects without requiring payment for CFLs.

We make the following specific arguments in relation to the revisions proposed to section 8 of AMS.II.J which are aimed at reassuring the SSC WG and EB members that the revision does not present an unnecessary risk to the conservativeness and robustness of the CDM.

1. *Inappropriate to charge fee in some cultural settings*: Under the China Lighting Conversion (Shanghai) – School Partnership (CLC-SP Shanghai), for example, the CDM activities will be implemented in partnership with schools. High-efficiency compact fluorescent lamps will be distributed on the school premises to students.
2. *Value is exchanged:* Households participating in CFL projects must exchange their incandescent light bulbs (ILBs) for CFLs. Whilst not money, ILBs can be considered to be something of value to participating households, thereby creating a barrier to undesirable behaviour such as stockpiling.
3. *Stockpiling prevented:* As per recent SSC WG clarifications, activity implementers must capture name and address details of participating households to enable unequivocal identification of the site of CFL installation. This database of participating households also serves as a check to ensure that individual households do not receive more than the maximum allowed number of bulbs under the distribution program. This household duplicate check acts as an effective preventive measure to stockpiling of free CFLs.
4. *High installation rates:* High rates of installation can be achieved without requiring payment for CFLs. In JUCCCE's China Lighting Conversion (Shanghai) – School Partnership (CLC-SP Shanghai), school children will directly install bulbs in their families' homes and even record where the bulbs are installed. Cool nrg's experience as an energy efficiency project developer in the Australian state of New South Wales operating under the Greenhouse Gas Abatement Scheme (GGAS), indicates that even with no payment, and no exchange of old bulbs, even relatively affluent households do install CFLs at rates exceeding 80%. Cool nrg has provided a case study of CFL installation rates experienced in GGAS as an attachment to this submission. It should be noted that under CDM requirements where households are required to exchange their old light bulbs, and where the benefit of cost savings are proportionally greater for low income households, installation rates can be expected to be far greater.
5. *Distribution speed:* Charging a nominal price for CFLs significantly slows distribution. Again the case study provided shows the acceleration in the uptake of CFLs by households when the nominal price was removed. This effect can be expected to be even more pronounced in developing country households with much lower disposable incomes. Achieving speed of distribution is a key issue when trying to manage costs of project implementation – the longer a program runs, the more expensive its becomes. Preventing rapid distribution of CFLs, will therefore reduce the financial

[3] See http://carbonfinance.org/Router.cfm?Page=DocLib&CatalogID=42842.

[5] The Manilla Compact was concluded in June 2008 to address this problem by developing a quality identification system for CFLs.

[6] For example, Cool nrg estimates that approximately 20% of CFLs currently in operation in Mexico are the result of government or utility backed distribution schemes. These programs are ad hoc, and are not guaranteed to continue during the period of operation of a PoA. CFL penetration statistics for Mexico have been obtained from the following sources:

"Mexico's Energy Efficiency Financing: Assessment Report", May 2007, APEC Efficiency Valuation Organisation in collaboration with Mexico's National Commission for Energy Conservation (CONAE).
World Bank, Report No. 22074, PERFORMANCE AUDIT REPORT MEXICO, page 4, April 12, 2001.
www.fide.org.mx/english08/09-is.html
www.fide.org.mx/el_fide/avances-dic-07/23-pr.html
Further information can be provided on request.

[7] Consideration of interactive effects may be proposed through the request for revision process.

viability of projects and scaling-up of energy efficiency under CDM.

6. *Access for low-income households:* Past CFL programs (including Mexico's World Bank/GEF sponsored Ilumex) experienced lower participation rates by low-income households when compared to medium and high-income households (World Bank, Report No. 22074, Performance Audit Report MEXICO, page 4, April 12, 2001), when bulb payments were required. Low-income households can be the primary beneficiaries of free CFLs thereby driving the anti-poverty benefits of CDM further into communities in developing countries.

7. *No risk of over-crediting:* Finally, project proponents take all the risk of negative secondary effects. If the distribution of free CFLs results in low rates of installation, or fraudulent behaviour, this will be captured and quantified through the *ex post* monitoring surveys required by the methodology. Low rates of installation amongst households in the project database will result in less CERs being issued thereby maintaining the integrity of the CDM.

Issue 2: Transmission & Distribution Losses

The changes proposed to paragraph 11 of the methodology are requested, because the current version caps transmission and distribution losses to 10%, which we believe is unduly conservative.

Proposed Amendment

TD_y The factor for Transmission & distribution loss in year *y* (fraction); Td*y* = 1/[1 - (T&D losses) *y*], The T&D losses should not contain non-technical losses such as commercial losses (e.g., theft/pilferage). The T&D losses should be estimated using recent, accurate and reliable data available within the Host country. It can be estimated either by a national utility or an official governmental body. Reliability of the data used e.g. appropriateness, accuracy/uncertainty, and exclusion of non-technical T&D losses shall be established and documented by the project participant. A default value of 0.1 shall ~~may~~ be used for technical T&D losses, if no recent data is available or the data cannot be regarded as accurate and reliable. ~~The maximum value for T& D losses in any given year *y* shall not exceed 0.1~~

Justification

T&D losses are significant (approximately 7-8% on average in the EU, USA and China, increasing to well above 20% in India, with a typical range of 8 – 20%) and are reduced by the project proportional to electricity savings. We therefore believe a value of 10 to 15% would be justified for application in the context of SSC CDM, but propose a conservative default T&D loss value of 10% (which is exceeded in many EU countries). For reference, a 20% default value for distribution losses on low voltage rural distribution grids has been included in AMS-I.A.

We also request to delete the upper limit on T&D losses, because rejecting higher T&D loss data (which we know are the norm in many country settings) is arbitrary. A recent World Bank report on African CDM potential[3] cited a 2005 study on average technical distribution losses in five African countries (Benin, Burkina Faso, Ghana, Nigeria, Senegal) of 26%. The methodology already specifies that the T&D data must come from national utilities or an official government body (such as the Indian Planning Commission, which has published figures above 20%) and we suggest specifying that the default value shall be used, if the T&D loss data are not accurate and reliable.

Issue 3: Frequency of *ex post* Monitoring

The proposed change to Paragraph 13(ii) is requested, because the same result (*ex post* adjustment of net electricity savings) can be achieved with fewer *ex post* monitoring surveys and the proposed changes will lower transaction costs and make it easier to implement complex programs that use CFLs with different rated lifetimes.

Proposed Amendment

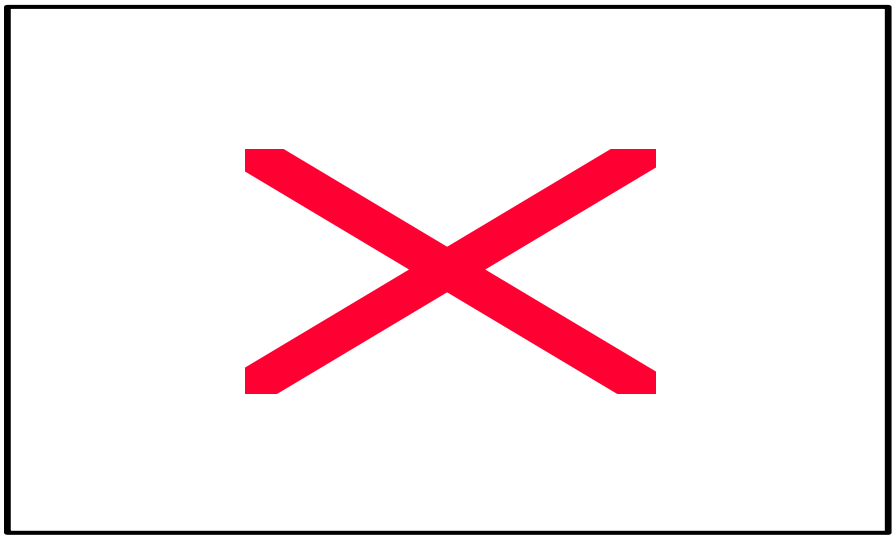
Ex post monitoring and adjustment of net electricity savings:

(i) First *ex post* monitoring survey, carried out within the first year after installation of all efficient

light bulbs will provide a figure for the number of lamps placed in service and operating under the project activity. The results of this survey are used to determine the quantity of lamps ($Q_{PJ,i}$) in the emission reduction calculation;

~~(ii)~~ A second ~~subsequent~~ *ex post* monitoring surveys ~~are~~ is carried out between 30-60% of the time elapsed in the lamps' rated life. ~~at the following intervals until such time as CERs are being requested, (choose shorter of the two):~~

~~1. Once every 3 years;~~



~~2. Once for every 30% of the elapsed rated lifetime;~~[4]

(iii) Additional ex-post surveys may be conducted throughout the crediting period at the discretion of project proponents.

Justification

First of all, we believe there is a technical justification that two *ex post* surveys are sufficient to correct the net electricity savings data for lamp failure rate. This is because of the way that lamp rated lifetimes are specified. The typical shape of a lamp mortality curve is the following:

This example is for a 15000-hour rated lamp (15000 hours is the point at which 50% of lamps are still in service). Since the methodology only allows to generate CERs up to the rated lifetime of the lamp, assuming the mortality curve is also accurate under in situ conditions, 50% of the lamps will still be in service and continue to reduce emissions after the rated lifetime, even though these energy savings and emission reductions cannot be counted.

The methodology assumes that no bulbs are operating after the rated lifetime of the bulbs. This means that there are already two end points set for correcting $Q_{PJ,i}$: 100% at zero hours and 0% at the rated lifetime. In addition, a commissioning survey must take place within the first year of installation. These three data points alone do not give sufficient information to estimate the actual *in situ* mortality curve. However, we believe that requiring just one additional *ex post* monitoring survey at 30 to 60% of elapsed bulb rated lifetime does make it possible to estimate the curve to a sufficient degree of accuracy for a small scale methodology. The reason for the 30 to 60% time range is to accommodate use of lamps with different rated lifetimes within one project activity. For example, a project might use both 6000-hour and 10000-hour lamps, so this range would allow for the second *ex post* monitoring survey to be conducted at 3500 hours (which would be 58% of the rated lifetime of the 6000-hour lamps and 35% of the rated lifetime of the 10000-hour lamps). Otherwise, there would need to be multiple series of *ex post* surveys for bulbs with different rated lifetimes under a single SSC project or CPA, rather than just two *ex post* surveys for each. The cost implications for an SSC activity can be significant.

Secondly, this is an SSC methodology that requires site visits. It is very difficult in practice to gain access

to people's private residences to perform surveys – and five surveys are required in the current version of the methodology (or even more, if bulbs with different rated lifetimes are used under a single SSC project). That means a household must agree to at least five site visits over a multi-year period, just to obtain a couple of CFLs. Given our experience with such programs around the world, this is an unacceptable proposition in most cultural settings and creates an unnecessary implementation barrier. Our proposal would reduce the total number of surveys to two instead of five, while still providing sufficient control on the lamps' effective lifetimes.

Issue 4: Application of the Baseline Penetration Factor (BP)

The proposed revision to section 17a) relates to the application of BP to CPA of PoA. We request that BP be deleted entirely from AMS-II.J. This request for revision follows a response to query SSC_220 by SSC WG 17, which stated:

> "…it is not appropriate for CPAs involving retrofits/replacements to apply the value of BP = 1. This is because the remaining useful lifetime of the replaced IBs cannot be reliably determined and the lifetime of the IBs are probably significantly less than the crediting period and lifetime of the new CFLs. Furthermore, the BP can also take into account baseline standard practice retrofits of the CFLs that occur without the benefit of the CPA of PoA."

This issue has since been raised again in SSC_231, which called for use of the baseline penetration factor to be withdrawn as a requirement under AMS-II.J.

If our request to delete BP from AMS-II.J is not approved, then we also suggest an alternative, which would introduce a list of conditions that would allow BP to be set = 1. The criteria and the justification for their application are provided below.

Proposed Amendment

For the reasons given in the justification below, we believe the BP should be deleted entirely from AMS-II.J.

Alternatively, we suggest the following revisions to Paragraph 17a:

17. If the methodology is applied to a project activity (CPA) under a programme of activities (PoA):

    a. An assessment of Baseline Penetration Factor (BP) shall be done for each of the CPA of PoA separately through *ex ante* baseline survey for use in emission reduction calculation as per Equation 1, unless any one of the following conditions are met (in which case, BP = 1):

        1. CFLs distributed by the CPA meet internationally recognised quality benchmarks:
            - Minimum 8,000 hour rated lifetime
            - Certified to international testing and quality standards (eg. IEC 968 & 969, ELI quality standard, EnergyStar approved, Energy Savings Trust approved)
            - Minimum power factor of 0.55
        2. CPA of PoA targets low income households
        3. PoA occurs in sub-Saharan Africa, a Least Developed Country (LDC) or Small Island Developing State (SIDS)

Justification

1. CFL Quality

The methodology currently assumes that in the baseline situation ILBs will be autonomously replaced with CFLs of a quality standard equal to those under the CPA. These baseline CFLs will then generate energy savings equal to CFLs distributed under the project, and should not therefore be attributed to the project.

This assumption is erroneous as in developing countries the quality of CFLs available to consumers are often substantially lower than international manufacturing standards require[5]. There are significant issues

with the quality, longevity and output of CFLs available to consumers in developing countries. Because of the price premium CFLs attract, lower quality and cheaper CFLs often dominate CFL retail sales.

A review conducted by USAID Asia confirms CFL quality issues across the region:

> "The findings in this regional analysis suggest that the total market share of low-quality CFLs produced in Asia – those for which there is no evidence of product testing and registration, and/or which have a rated lifetime of less than 6,000 hours – averages close to 50 percent of the market. This means that Asian consumers have a 50-50 chance of selecting a sub-standard CFL." (USAID, 2007: "CONFIDENCE IN QUALITY: Harmonization of CFLs to Help Asia Address Climate Change", p.2)

This research would suggest that if CPA of PoA involve the distribution of high quality CFLs they will be delivering greater energy savings than the average CFL found in the baseline scenario, which will be poorer quality and fail sooner – and result in greater mercury waste. Therefore, if a CPA results in the installation of high quality CFLs, it should not discount its energy savings against a baseline penetration of non-comparable light bulbs.

By stipulating such standards, CDM will be responsible for delivering high quality CFLs into developing countries, avoiding the potential for low quality product entering the market and turning developing country consumers away from this important technology. In addition, better quality CFLs (such as those with higher power factor) prevent grid harmonic distortions that may occur with the mass deployment of poor quality CFLs. High quality CFLs therefore bring additional benefits to local utilities and energy infrastructure managers, and should be considered additional to the baseline scenario.

2. CPA of PoA target low-income households

Residential energy efficiency presents an unparalleled opportunity for CDM to deliver the benefits of emissions mitigation, energy security and poverty alleviation. The recent World Bank report "*Low-carbon Energy Projects for Development in Sub-Saharan Africa – Unveiling the Potential, Addressing the Barrier*" estimates that the potential reduction in GHG emissions from introducing more efficient CFLs into residential lighting would total about 13 million tCO2 per year in Sub-Saharan African countries and that power demand could be reduced by about 15,200 MW (32-MW reduction per 1 million CFLs), representing 22.7 percent of these countries' total installed capacity. Simple interventions such as the installation of energy efficient light bulbs can have a significant impact on the economic situation in low-income households. Such households are least able to purchase CFLs, which in some developing countries can attract a price premium of 10 times the price of ILBs.

Compounding this problem, when a low-income household choses to autonomously replace ILBs with CFLs they are more likely to be attracted to cheaper, poorer quality products. As discussed above, such CFLs are not directly comparable to high quality bulbs distributed under CPA of PoA.

Measurements of BP through ex-ante surveying can potentially be skewed by medium and high-income households that have greater financial capacity to purchase CFLs. Therefore, if a CPA specifically targets low-income households as recipients of CFLs it may be unfairly penalised through the application of a population wide measure of BP. If the DOE is satisfied that the target demographic and project design characteristics of the CPA mean that it will deliver CFLs primarily to low income households, then BP should not be applied as a discount to energy savings.

3. PoA occurs in sub-Saharan Africa, a Least Developed Country (LDC) or Small Island Developing State (SIDS)

The EB, Secretariat and broader CDM community have identified the need to improve the representation of sub-Saharan Africa, LDCs and SIDS in the CDM project pipeline. In the report "Regional Distribution of CDM Project Activities: Addressing the Barriers" presented to the EB in June 2007 (EB 32, Annex 6) several proposals were made regarding scaling up CDM activities in these countries. Importantly PoA was nominated as one of the primary mechanisms by which CDM could be scaled-up. Similarly, the need for CDM to contribute to poverty alleviation and energy security was highlighted.

AMS-II.J applied under a PoA clearly has the potential to deliver on all of these objectives. The ability of PoA to bring scale to these often fragmented markets, as well as lower CDM transaction costs makes it a

clearly attractive option for facilitating investment in CDM in these countries. Residential energy efficiency will also deliver both poverty reduction and energy security. However, the application of a BP discount to CPA of PoA will reduce project revenues creating a major barrier to investment.

There is a contradiction in the EB's desire to see CDM through PoA scaled up in these countries, while at the same time putting in place significant disincentives to programmatic CDM. It is therefore logical to suggest that CPA of PoA occurring in sub-Saharan Africa, LDCs or SIDS apply BP = 1.

Justification – Removing BP

The BP (baseline penetration factor) is the current market penetration rate of CFLs on the market. It appears that the intent of the SSC WG is to use BP as a proxy for free-ridership. However, we would argue that this is methodologically incorrect, for several reasons:

- Free-ridership is already accounted for in the Net-to-Gross adjustment factor in Equation 1. I think this is the best reason they list – of course it is set at 95% (arbitrarily?)
- The methodology is restricted to retrofits and the only lamps that can be exchanged under the methodology are incandescent lamps, so there is zero penetration of CFLs in the baseline defined in the methodology.
- There is no demonstrated universal correlation between current market penetration and investment decisions of households. In fact, in cases where penetration rates are already high, there might be reasons why the remaining bulbs have persisted. The methodology uses this penetration rate as a proxy for the investment decisions of the households. It assumes that when incandescent lamps fail under a CPA, they will be replaced not by another incancescent lamp, but by a mix of incandescent and compact fluorescent lamps equal to the market penetration rate. BP assumes that current CFL penetration represents future purchasing patterns by consumers, without taking into consideration habitual behaviour, lack of access to specialty CFL types in many markets and dynamics such as changes to local economic conditions, alterations in electricity prices, and the continuation of government subsidised schemes delivering CFLs to households (often a major source of CFLs currently installed in homes[6]).
- Furthermore, BP is only applied to CPAs under a PoA, but not to individual SSC projects, putting the former at a disadvantage that has not been justified. This is inconsistent with the need to scale up energy efficiency under CDM (including increased investment in Africa, SIDS and LDCs). AMS-II.J can also address access to energy, since in many poor countries, lighting contributes significantly to peak demand. In countries where it is difficult to meet consumer energy demand, shaving of the peak via the introduction of more efficient, end-use devices such as CFLs can assist in better management of limited supplies (World Bank, 2008).

For all of these reasons, we believe BP should be deleted entirely, or Paragraph 17a should be modified as proposed.

Issue 5: Leakage on account of cross effects

The changes proposed to section 17(c) of the methodology seek to incorporate cooling as well as heating interactive effects resulting from the introduction of CFLs. Increased use of air conditioning in households in developing countries is a major source of increased energy demand from the residential sector.

Proposed Amendment

For the reasons given in the justification below, we believe treatment of cross-effects should be deleted entirely from AMS-II.J.

Only as a last resort, we recommend the following amendments to paragraph 17(c):

(c) Leakage on account of cross effects (interactive effects, for example increased heating load due to introduction of efficient lighting technologies) shall be considered[7] unless it is demonstrated that any one of the following conditions are met:

(i) The amount of CFLs distributed per household is six or less;

(ii) Net Heating Degree Days (HDDs) to base 18^0C in the geographic location of the project are equal to or less than 1000 in a year;

(iii) The *ex ante* survey determines that space heating in the project location is not done for more than two months in a year;

(iv) There is less than 10% penetration of space heating equipment in the location of the project activity.

Note that this "fix" would not resolve the challenges raised below in quantifying cross effects in situations that do not meet any of these conditions. Therefore, if this alternative is selected, the SSC WG must specify the methodology to quantify cross effects. DOEs are not experts on the complex cross-effects and there is no "common practice" methodology for quantification of cross-effects for DOEs to fall back on. Without methodological guidance in the methodology, DOEs will have no basis for validation.

Justification – Removing Cross-Effects

- Materiality: We question the materiality of cross effects under AMS-II.J. First of all, it is much more efficient to heat a dwelling with a heating system than with an incandescent lamp that is only 10 to 20% efficient (and powered by inefficient fossil power generation). Secondly, AMS-II.J limits the number of CFLs that can be distributed per household. Thirdly, we believe that ignoring cross-effects for CFL project activities will not result in overestimation of emission reductions for the CDM as a whole; on the contrary, in most developing countries, more efficient lighting and appliances have little effect on heating load, whereas the reduced cooling load, which can be significant, is not included in the emission reduction calculation. The population centers of most developing countries are located in the tropics (zero to 20 degrees latitude North and South) and sub-tropics (generally between 20 and 35 degrees latitude), where there is little heating load (the yellow areas of the map below show the subtropical zone, with the tropical zone in between, along the equator).

Country	Share of Global Population (%)
Bangladesh	2.4
Brazil	2.8
China	19.8
India	16.9
Indonesia	3.5
Nigeria	2.2
Pakistan	2.4

Among the 7 developing countries with populations that account for more than 2% of total population (see table), China is the significant exception, which encompasses a full range of climate zones, from tropical in South to subarctic in North.

- Feasibility: Particularly in the SSC context, which is designed to offer simplified methodologies that can be applied with low transaction costs, we believe it is not feasible to require project proponents to quantify cross effects. Cross-effects are difficult to estimate and are not required to be treated in

other approved methodologies, including large-scale methodologies for replacement of incandescent lamps with CFLs (AM0046) or for high-efficiency refrigerators (AM0070), which could be anticipated to have much greater cross-effects than a CFL project using AMS-II.J.

Despite a query requesting further guidance on how to estimate cross effects (SSC_220), the SSC WG only offered the following methodological guidance:

"…there are several standard practice approaches available in the literature; for example, those utilizing simple models that include consideration of the efficiency of the existing heating equipment and a factor for how much the lighting heat generation displaces space heating requirements."

This response from the SSC WG does not give sufficient guidance to the DOE and project participants on how to quantify cross-effects (and AMS-II.J neglects cooling effects entirely). Therefore this provision is a barrier to scaling up efficient lighting activities under PoA – one of the most important CDM opportunities in poor countries – as it introduces additional financial and human capacity requirements and huge uncertainty in the validation process. The response also plays down the complexity of determining cross effects in developing country settings. The analytical approaches to correct for such effects would require detailed data collection and modeling efforts that are beyond the core business and abilities of CDM project developers, especially SSC project developers. There is insufficient data in most countries to quantify such effects, because they depend on the nature of the individual dwellings, the fuel / heating system used, efficiency of the heating system, local climate, etc., and therefore require extensive building stock databases and simulation modeling. We therefore believe that this requirement cannot be met by SSC project developers – and likely not even by governments in the vast majority of CDM host countries, without extensive training, database development, simulation modeling and analysis.

- Cost-Benefit Considerations: We do not believe that the magnitude of potential cross-effects on a net global basis warrants investment of scarce resources to estimate and correct for cross effects. In fact, we believe this requirement would block PoA development using AMS-II.J in cold climates. Such cross-effects are seldom accounted for, even in large utility DSM programs (UK is an exception).

Justification – Alternative Revision

If our request to delete consideration of cross-effects entirely is not accepted (see discussion above), then consideration of cross-effects should be limited to cases where large numbers of bulbs are replaced and should at least consider net heating load – taking into account changes in both cooling and heating load. There is no methodological basis to ignore cooling load, which is a significant concern in most CDM host countries. As the World Bank pointed out in its report "*Low-carbon Energy Projects for Development in Sub-Saharan Africa – Unveiling the Potential, Addressing the Barrier*", because CFLs generate less heat than incandescent lamps, they can relieve user discomfort, especially in hotter climates. The proposed revised wording of this section presents a far more balanced view of lighting and HVAC interactive effects.

The tables below provide an example of how heating and cooling degree days could be considered under the hypothetical scenario of a CPAs of PoA in Shanghai and Beijing. In this example the CPA in Shanghai would meet the conditions stipulated in 17c)(i), whereas in Beijing heating degree days still exceed 1000, which means that unless other conditions in (ii) and (iii) are met, leakage on account of cross effect should be considered.

SHANGHAI INTERACTIVE EFFECTS

Cooling Degree Days (CDD)

Description: Celsius-based cooling degree days for a base temperature of 18.0C
Source: www.degreedays.net (using temperature data from www.wunderground.com)
Accuracy: No problems detected
Station: Airport - Shanghai Hongqiao
Station ID: ZSSS

Month starting	CDD
1/9/07	206
1/10/07	93
1/11/07	6
1/12/07	0
1/1/08	0
1/2/08	0
1/3/08	4
1/4/08	23
1/5/08	132
1/6/08	186
1/7/08	380
1/8/08	329
1/9/08	244
TOTAL CDD	**1603**

Heating Degree Days (HDD)

Description: Celsius-based heating degree days for a base temperature of 18.0C
Source: www.degreedays.net (using temperature data from www.wunderground.com)
Accuracy: No problems detected
Station: Airport - Shanghai Hongqiao
Station ID: ZSSS

Month starting	HDD
1/9/07	0
1/10/07	28
1/11/07	147
1/12/07	293
1/1/08	439
1/2/08	413
1/3/08	209
1/4/08	84
1/5/08	12
1/6/08	0
1/7/08	0
1/8/08	0
1/9/08	0
TOTAL HDD	**1625**

NET HDD	**22**

BEIJING INTERACTIVE EFFECTS

Cooling Degree Days (CDD)

Description: Celsius-based cooling degree days for a base temperatu
Source: www.degreedays.net (using temperature data from wwv
Accuracy: No problems detected
Station: Airport - Beijing
Station ID: ZBAA

Month starting	CDD
1/9/07	143
1/10/07	15
1/11/07	0
1/12/07	0
1/1/08	0
1/2/08	0
1/3/08	1
1/4/08	35
1/5/08	102
1/6/08	157
1/7/08	260
1/8/08	228
1/9/08	106
TOTAL CDD	**1047**

Heating Degree Days (HDD)

Description: Celsius-based heating degree days for a base temperatu
Source: www.degreedays.net (using temperature data from wwv
Accuracy: No problems detected
Station: Airport - Beijing
Station ID: ZBAA

Month starting	HDD
1/9/07	11
1/10/07	157
1/11/07	412
1/12/07	580
1/1/08	684
1/2/08	543
1/3/08	322
1/4/08	123
1/5/08	52
1/6/08	5
1/7/08	0
1/8/08	1
1/9/08	31
TOTAL HDD	**2921**

NET HDD	1874

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 18 (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.

In response to the submission, the SSC WG agreed to recommend a revision to AMS-II.J as contained in annex 5 of the SSC WG 18 report. The proposed revisions clarify the project design requirements, consideration of electricity T&D losses in the baseline, frequency of *ex post* surveys, and estimation of cross-effects of lighting and heating.

Signature of SSC WG Chair ……..

(Ulrika Raab)

Date: 12/11/2008

Signature of SSC WG Vice-Chair ……..

(Kamel Djemouai)

Date: 12/11/2008

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