Responses to the call for public inputs at EB 63 on SSC-II.N "Demand-side energy efficiency activities for installation of energy efficient lighting and/or controls in buildings"

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#	Comment author	Comment (including justification for change)	Proposed change (including proposed text)	SSC WG Responses
1	PDF	The documentation and measurement requirements are very strict compared with the few CERs per unit area or building that can be achieved. Transaction costs may simply be too high to make such a CDM project worthwhile.	PDF recommends an option within the meth methodology offering an alternative that replaces some documentation and measurements with simple but conservative assumptions, similar to AMS II.J (for residential applications).	Commercial lighting is much more varied and complex as compared to residential lighting. Most residences have incandescent or CFL lamps that are easier to quantify. Not only do non–residential buildings have many types of light sources with varying wattages, there are many possible lighting configurations within one fixture, which makes it difficult to apply simple assumptions. For example, the most typical office fixture is a 2'x4' recessed fluorescent lamp troffer. This troffer may have 2, 3 or 4 four foot fluorescent lamps, the lamps might be T12 or T8 and the ballasts might be magnetic or electronic and have varying ballast factors. The difference in wattage can be significant. The difference between a fixture with 2 lamps and a low ballast factor (48 watts), which is a common retrofit and 4 lamp fixture with a magnetic ballast (112 watts) is a 57% difference. Either of these combinations or anything in between could exist at a facility, so making a simple assumption could result in inaccurate determination of CER levels. The methodology does have some allowances for illuminance to be equivalent to existing lighting, a host countries'

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				national standard or ISO 8995 (International Standard for Lighting for Indoor Work Spaces) The methodology in Annex 3 also allows measuring lighting consumption through the lighting circuits with a data logger, which takes little time compared to documenting the total number, type and wattage of fixtures, lamps and ballasts and controls in a building. In the future, project proponents or others would be more than welcome to propose any possible default values, taking into account the above observations about the variations in commercial building lighting.
2	PDF	Extension of applicability to Greenfield projects would be very relevant as leaving it out would excludes significant share of the potential from the scope of the methodology. For example the largest market for LED application is in Greenfield installations (60-70% of estimated market). The main problem with switching to LED is that the whole luminaire (light fitting) needs to be changed. This can be very costly. Energy efficient lighting technologies can be considered already at the design stage of the building with the financial encouragement from CDM. The absence of the electricity consumption baseline could be tackled by setting the baseline on a level of a relevant (and conservative) standard (e.g. an energy efficient lighting standard set by a host country). For example in the case of China a conservative baseline		Existing non-residential building stock is the largest potential area for this type of CDM project. Efficient lighting in new construction is also usually quite cost-effective and can be expected to occur in many situations without the benefits of the CDM. The price of LED fixtures has been decreasing and is becoming or is expected to be comparable with installing new fluorescent fixtures in the near future. There are a growing number of LED lamp replacement options, which should provide cost effective and reliable options. There are also many different types of LED PAR and MR lamp replacement options in non-

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		could be the Chinese Green Building Labelling System (GBT 50378-2006), issued by The Ministry of Housing and Urban-Rural Development and The General Administration of Quality Supervision, Inspection and Quarantine at 2006. Additionality concerns could be tackled by an additionality test as in the cases of many other small scale CDM project types.		residential buildings. If host countries have standards or can easily adopt a standard based on similar metrics such lighting density (watts per square meter) then it does seem reasonable to allow Greenfield projects that exceed those standards. Absent an adopted standard, the numerous types of non-residential buildings creates an unacceptably high level of hurdles to address in determining baselines for each building type. The IESNA handbook and ISO international standards counterpart has over 250 recommended lighting levels for non-residential indoor activities and about 300 for specific industrial applications and are potential baselines for adoption. Thus, at this point in time, the SSC WG agreed to limit to retrofit only and would look into this issue at a later stage if specific recommendations are made by PPs or others.

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3	PDF	The methodology is applicable to non-residential and multi-family residential buildings. We assume that other important lighting users in the category street lighting and outdoor lighting are to be covered by AMS II-L: Demand-side activities for outdoor and street efficient lighting technologies. However from the commercial perspective these two types of lighting should be combined. Else the scope of projects and PoAs will be limited. The combination of two methodologies under one project or PoA increases transaction costs and leads to monitoring complexities.		AMS II-L is only applicable to "public- or utility-owned street lighting systems". Commercial lighting in non-residential space would not typically be utility-owned and would not be eligible under II.L. However, if comment refers to combining interior and exterior building lighting in a commercial project under the proposed methodology, that probably can be covered with the proposed methodology.
4	PDF	In practice for example LED suppliers provide a warranty on the lamps, as these solutions (specifically outdoor) are very expensive. This is a commercial perspective; the SSC-WG should not dictate the conditions of the commercial deal.		The required warranties are commensurate with the minimum equipment requirements for lamps and would require higher quality ballasts and fixtures to ensure energy savings are persistent over time.
5	PDF	How is the service level to be compared? There is still a debate on how to compare LED lighting with existing lighting.		Firstly, service level requirements in the methodology are referring to lighting quality/level to avoid the potential for building occupants to add additional (e.g. task) lighting. LED lifetime is defined or rated at L70: when light lumens decrease to 70% of the original lumens and degrade beyond useful light levels. Fluorescent lifetime is rated at L50: the time when 50% of the lights are expected to fail. Although they are rated differently, we know when both should reach the end of their useful life. However, light levels will depreciate differently over

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				the life of the light: LEDs-30%, T8s-5% and T12s-10%. In order to have equal light levels at the end of life we could say LEDs must provide 25% more lumens than the existing T8 fluorescent lighting levels and 20% more lumens than T12s. However, a 25% increase in lighting levels the first year may be extreme. Therefore, we proposet LEDs provide 15% more lumens than T8s and 10% more lumens than T12s as a 10% difference in lighting is unnoticeable by most people. Industry is moving towards variable level lighting and thus having minimum design light level through the life of the product is more feasible with sources than in the past.
6	PDF	According to the Draft, project lighting system should meet international or national standards for lighting levels and quality. In many cases these standards are not available for a host country. It is recommended to have clear guidance for the cases where such standards are not available, or remove the requirement from the methodology.		If the host country does not have standards there are two alternatives: either meet the existing baseline levels or use the requirements of ISO 8995 (International Standard for Lighting for Indoor Work Spaces).
7	PDF	This is a commercial condition: how can this be validated? Should all the installed lamps be checked by an independent entity?		The project proponent needs to make sure that the retrofit lamps have been installed and are functional which can be confirmed by the PP with review by the DOE.

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8	PDF	Clear description of what is required would be needed. It should be taken account that in many countries, there is no possibility to scrap the baseline lighting equipment in an environmental friendly manner, or only at very high costs, making it impossible to implement the project.		The requirement is that baseline equipment be destroyed so that it doesn't lead to undesired market effects, e.g., leakage.
9	PDF	Consideration of space heating seems as an academic exercise. The impact is hard if not impossible to establish due to annual/daily variations. This is a signal to noise discussion.		Depending on the system, the impact actually can be more significant than just 'noise' in the signal. Sometimes 20% or greater energy savings or losses depending on annual heating and cooling loads (and in theory up to 100%). Annex 4 provided is envisaged to simplify the estimation largely. The project proponent is welcome to propose other options.
10	PDF	Typing error	6e to be replaced by 16e	Corrected
11	PDF	A regular maintenance or warranty program is suggested to be included in the applicability of AMS-II.N. This would be relevant for the cases where the project equipment and systems retiring within the program are replaced by more expensive and higher-efficient equipment and systems.		This just seems to be a comment. The idea is that changing out the lights as part of maintenance should not be done at the same time as the survey process. If 'broken' lights are fixed as part of the survey, then the survey is pointless as every survey would should 100% working fixtures versus an indication of what is in practice happening at the project site(s) as intended.