Philips Electronics Hong Kong Limited

Hong Kong, 12 April 2010

Chair
CDM Executive Board
UNFCCC

Subject: Call for public input on small scale energy efficient lighting methodologies, 6 pages

Dear members of the CDM Executive Board,

With reference to the Annotated Agenda for EB53, please find below the comments on behalf of Philips Lighting. Philips is a leading manufacturer of lighting products, including CFL and street lighting for usage in the IIC, IIJ and the new proposed methodology for street lighting.

Before answering the questions as stated in the public call, I want to reiterate some of the points made in my letter of 12 March 2010 with respect to the IIJ methodology:

- It is absolutely critical to get the IIJ methodology and related procedures for approval simplified and at lower fixed cost. Until recent, Philips has been dealing with a large pipeline of CDM projects with CFL. However, this pipeline is rapidly diminishing due to the issues in the IIJ methodology as raised in the request for revision SSC 379 by Anne Arquit, in combination with high unpredictability of approvals of related CDM projects. Philips fully supports the proposed revision and believes that it will give a new impulse to have this type of projects happen.

Although Philips supports the idea of having a specific methodology for street lighting, addressing the issues for residential lighting is of far higher importance given the potential for carbon dioxide savings. Our calculations using the latest of technologies in street lighting indicate that it is very difficult to aggregate savings of a viable project to 60 GWh. Also the current proposal is a mere “translation” of the IIJ methodology for residential lighting, copying the issues of that methodology and assuming that street lighting can be executed and monitored in the same way as residential lighting, which is not the case. As a result, the existing IIC methodology is a far better option to use for a street lighting project.

Philips offers to participate in a discussion, together with other stakeholders like municipalities, what the hampering factors are of the IIC methodology for the successful implementation of a carbon reduction project in street lighting. This should be the base, together with an estimate of the potential of carbon reduction in this segment, to develop new methodologies.

See below a summary of the answers on the questions raised in the public call.

	Question	Response
Exterior Lighting Methodology		
1.	Does the methodology represent appropriate emissions calculation and monitoring approaches for small scale-scale methodologies including compliance with CDM modalities and procedures and requirements for determining the amount of real, additional, measurable and verifiable reductions in greenhouse gas emissions associated with exterior lighting systems.	
A:	The methodology is not in line how street lighting projects are executed and monitored in reality, and therefore has little practical value.	
2.	Are the project definition and applicability conditions appropriate? Is it appropriate for the methodology to be applicable to be both street lighting and other exterior lighting applications, such as building outdoor security lighting?	
A:	The methodology should also be applicable to new sites and controls. It should apply to a system consisting of a luminaire, gear, lamp and controls e.g. reducing light levels in line with traffic density. Yes the methodology could be used for outdoor security lighting as these products are typically based on the same technology.	
3.	Will the methodology be applicable to and support the development of both projects and POAs?	
A:	Yes	
4.	What changes are suggested to the methodology to make it more accurate and/or more usable?	
A:	1) A better definition of "system" (see also my answer of Q2). In the wording now, always the word "luminaire" is used, often in relation to life time. The luminiaire is merely the lampholder. Limiting factor of the lifetime is the lamp, not the luminaire. 2) In para 2 it reads "*The total useful illumination provided by the project luminaires must be equal to or more than that of the baseline luminaires being replaced or equal to or greater than the illumination requirements from an applicable approved national standard*." It is important to establish a way of comparing the baseline system with the project system (illumination requirements). In the industry it is common practice to look at the light levels on the road. This is measured in Lux. This is measured on the surface beneath the luminaire: Lamp (lumen output) → Luminaire (reflector directs light to the road) → Road Surface (Lux) *3)* In para 4 it reads "*Project lamps, used in the project luminaires, must have been tested and rated by their manufacturer or an independent body according to a relevant national or international testing standard.".* It is not common practice to have lamps tested by an independent body. The best available data are manufacturer's reports. In the case of Philips, we continuously test production batches internally to check our quality. These reports are the best available	

	Question	Response
	data. We suggest to remove the term "independent body", since we also believe it is a self regulatory phenomena: it is in everybody's interest to ensure the highest quality lamps/systems (see also remarks in revision proposal of IIJ). 4) In para 9 it reads "*With this methodology, Certified Emission Reductions can only be earned for one crediting period of up to 10 years.*" The lifetime of the different components of the system differ and go well beyond 10 years. Philips therefore suggests to also include the 3 * 7 crediting period. 5) In para 14.c) it reads "*Subsequent ex post monitoring surveys are carried out (i) Once every 3 years; (ii)Once for every 30% of the elapsed rated lifetime of the luminaire*". For the ex post monitoring it is suggested to check how in practice the usage of outdoor and street lighting is measured. For safety reasons (use of roads) any failing lamp/system will be replaced with the same type of lamp, since all components of the system are one-to-one compatible i.e. can not be replaced with a different component. Typically a municipality keeps records of any replacement. To increase the usability of the methodology and decrease the monitoring costs it is recommended to align monitoring with actual practice and for example allow the usage of the maintenance records of a municipality for monitoring purposes. 6) In para 15 it reads "*If the ex post failure rates (LFRi,y) are higher or lower than the ex ante estimate, subsequent Emission Reduction claims shall be based on linear failure rate curve reconstructed for the remaining period of the crediting period*". It is important to determine what fails: lamp, luminaire (that does not consume power!), controls, gear? What is the impact on the system power? 7) There is an inconsistency in paragraph 15: it is mentioned that "lower than that indicated **per the independent tests** referenced in paragraph 4 of this methodology." However in paragraph it is mentioned that either the manufacture test or the independent test should be used. See also our comments under 4.3	
5.	Should there be a limit to the number of years allowed for crediting?	
A:	No, this might limit CER issuance. Furthermore the lifetime of the total system (lamp, luminaire and gear) is far over 10 years.	
6.	Can the methodology be used for new construction lighting projects and if so, what modifications are needed. How would baseline systems be determined?	
A:	The methodology should be applicable to new construction lighting projects. See IIC for baseline determination.	
7.	How often (every year, every three years, etc.) should the savings determination be updated with field verification of system operation and/or analyses of operating hours?	
A:	Philips suggests to design a monitoring system based on the way municipalities keep	

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	maintenance records. Usually, non-operating streetlights will be repaired immediately for safety reasons. So the system will always be 100% operating with exactly the same system since lamp, gear, luminaire are usually a unique one-to-one combination.	
8.	How should measure life be determined?	
	What is measure life?	
9.	What standards should the exterior lighting comply with, if any? Should a testing standard for how (and where, for example at ground level) illumination for exterior or street lamps are determined (for service level determination). Should such standards refer to photopic, scotopic, and mesopic requirements? Should the methodology reference certain standards for minimum lighting? Are such standards readily available in non annex I countries? Would the standards apply only at the time of installation or continuously? Lighting quality may also be an issue.	
A:	The methodology should focus on clear and simple procedures to measure/calculate emission reductions and not focus on the street lighting design itself. Street lighting is one of the most regulated applications, given the impact on safety. The most used global norm is EN13201. Final design of lighting scheme is matter of the project stakeholders.	
10.	Are the indicated ex-ante default lamp operating hours appropriate? Can a default ex-post operating hours value be defined? If so, what sources should be used to determine such a value and what specifications must the project comply with for the value to applicable?	
A:	All street lighting is switched on remotely by the municipality. Philips suggests to use their data, since it is all recorded and documented and therefore not use any default values (it is not randomly used home lighting, you know!)	
11.	Are there other suggestions and comments associated with the draft methodology	
A	Consult/set-up a taskforce containing main stakeholders like municipality and manufacturers before making a methodology.	
Modifications to AMS-II.C		
1.	Should AMS-II.C be modified so to eliminate residential CFLs as an applicable measure, and thus require the use of only AMS-II.J for this type of measure?	
A:	No, AMS II.C should not be modified to eliminate residential CFL. Philips strongly supports an all inclusive methodology like IIC i.e. both new installation and existing, both residential and non-residential, both lighting and heating. The only barrier is the metering. Hence we would like to express that Philips fully supports revision SSC_379 as submitted the 18 January 2010, that adds the option to have a 3.5 hours of usage per day as a default value.	
Modifications to AMS-II.J		

	Question	Response
1.	Should AMS-II.J be modified to eliminate the net to gross (NTG) ratio?	
A:	Yes, it is not clear why this factor is introduced, and why this factor is assigned a default value of 5%	
2.	What language should be added and/or modified so that AMS-II.J can be used for replacement of incandescent lamps with LEDs or other efficient lighting technologies?	
A:	The methodology should be changed as follows: CFL should be replaced with "energy efficient light (CFL/LED)", assuming the usage of retrofit LED bulbs i.e. with the same E27/B22 lamp holder as the ILS it replaces.	
3.	Are there recent credible documentation on the residential operating hours of lamps in non annex I country households?. Such information could be used to confirm the conservativeness of the default value used in AMS-II.J or be used to update the value.	
A:	Not known	
4.	Are there recent credible documentation on the validity of the table in paragraph 2 for use in establishing minimum service levels for both CFL and LED replacements?	
A:	Yes: IEC 60064 is the international standard for lumen output for an incandescent light bulb. Philips suggests to use any of the values as indicated in this IEC document.	
5.	Is there language that can be used in AMS-II.J to ensure CFLs are of a high quality when used in CDM projects? Should the methodology prescribe minimum level of power factor and rated lifetime for the CFLs	
A:	The market is self policing with respect to the quality of the CFL. It is in the interest of the project participants to use the highest quality CFL, as carbon is the sole income source of this kind of projects. Furthermore it becomes apparent from all ongoing projects that high quality lamps are used It is not necessary for the methodology to include a minimum level of power factor and rated lifetime for the CFLs. The methodology should focus on simple ways of measuring carbon reductions and not complicate execution of projects by adding restrictions and conditions to lighting devices that are non-relevant to emission reductions.	
6.	How can rated lifetime (50% failure) be reliably documented? Such language should be conservative, applicable to lamp operation and grid characteristics in non annex I countries, and able to be verified by a DOE. Such language should be based on credible documentation of current standards, practices, costs, etc. What procedures should be defined for constructing a mortality curve? Should more time built in for lifetime tests by manufactures or testing labs?	

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	Should such tests be done by independent labs? Such information could possibly be used for updating AMS-II.J paragraph 5.	
	See also answer 5. The use of independent labs is not practical. See my letter of 12 March titled "Comments Philips IIJ rated lifetime reports.docx"	
7.	Is there information on the costs and techniques for validating operation of household lamps with respect to their continued operation (monitoring)? Such information should be based on credible documentation. Such information could be used to update language in existing AMS-II.J paragraph 13.	
	Philips has no information available on the costs of monitoring. Hearing from partners (CoolNRG in the Mexico project), the cost of monitoring is very high using IIC. Hence the proposal in revision 379 to include the option of using a 3.5 hrs default value. Also IIJ until now did not accelerate the number of CFL projects (on the contrary!). Implementation and validation of these projects are simply too complex. IIJ is considered to be overly conservative to make it financially viable, hence the request for revision as mentioned earlier.	
8.	Are the existing criteria for debundling check1 adequate for the purpose for which it was developed in the context of distributed lighting energy efficiency activities or more in general distributed renewable energy generation or energy efficiency activities? If a modification is deemed necessary what would be criteria that may be revised or additionally applied?	
	Philips supports the comments made in SCC 391.	

In case of any further inquiries, feel free to contact me,

Kind regards,

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