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	IS-CMS-MUC/Ca Javier Castro	+49 89 5791-2686 Javier.Castro@tuev-sued.de	+49 89 5791-2756	2008-07-25	1 of 10

Request for review

Dear Sirs,

Please find below the response to the request for review formulated for the CDM project with the registration number 1754. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,

Javier Castro

Carbon Management Service

Industrie Service

Response to the CDM Executive Board

Question 1

PP/DOE is required to clarify how the baseline is selected without consideration of the CFL penetration rate in the Indian market.

PP Response:

When mentioning AMS II.C in the responses, it is always referred to Version 9.

1. The project has been developed by applying the approved methodology AMS II.C. As per requirements of AMS II.C it is not required for this project type to consider a baseline penetration rate for the baseline scenario.
2. However, for being able to do the ex-ante energy saving estimation for the project activity, OSRAM as the project developer required as many information as possible at an early stage and conducted a detailed representative pre-study in the project area (see PDD section B.2). This was also done voluntarily and is not required by AMS II.C. The main reason for conducting the pre-study was to find out the eligible number and the types of GLS that can be replaced in the project area.
3. Even though information about the CFL penetration is not required by AMS II.C, this issue was addressed during the validation (see Validation Report CR9) and PDD section B 4).

"CFL lamps have been introduced in India already in the early 90s. Even 15 years after introduction, the penetration rate is still very low especially for residential use. In the pre-study conducted in the project area, only less than 7 % of all lamps found were CFLs. The penetration rate has increased to this level as costs for CFLs have decreased over the years. Recently, the price for CFLs in India range between Rs 40 for no branded Chinese lamps to Rs 100 for branded quality lamps. The very low price level however is commonly combined with a very low quality level where the early failure rate of lamps is so high that disappointed customers are returning to purchase GLS bulbs. The prices for CFLs have reached such a low price level that no further major reduction of costs can be expected in the near future as costs for material (metals, etc.), energy and labour are recently increasing. As price and good reputation of the product is the key factor for the usage of CFLs in residential homes, therefore a significant increase in CFL penetration over the crediting period is not to expect."
Final response by audit team: Audit agrees that lowering of prices is prime mover for consumers to adopt CFL. The prices in India are already quite low and further reduction is not anticipated. Given this background, it unlikely that consumers participating in the project would have shifted to CFL during the crediting period without project activity.

4. The recently submitted request for revision of AMS II.C by the SSC Working Group, which includes a baseline penetration factor, stresses that this factor should only be applied for PoAs. Single project activities are not considered to apply this factor in the baseline scenario at all.

DOE Response:

We would request you to please refer to Clarification Request No.9 that was raised during the validation process where audit team requested the project proponent to clarify why autonomous replacement of inefficient bulbs with more efficient light bulbs over the crediting period has not been considered in the baseline scenario. Project proponent clarified that CFL lamps have been intro-

duced in India already in the early 90s. Even 15 years after introduction, the penetration rate is still very low especially for residential use. In the pre-study conducted in the project area, only less than 7 % of all lamps found were CFLs. The penetration rate has increased to this level as costs for CFLs have decreased over the years. Recently, the price for CFLs in India range between INR 40 for no branded Chinese lamps to Rs 100 for branded quality lamps. The very low price level however is commonly combined with a very low quality level where the early failure rate of lamps is so high that disappointed customers are returning to purchase GLS bulbs. The prices for CFLs have reached such a low price level that no further major reduction of costs can be expected in the near future as costs for material (metals, etc.), energy and labour are recently increasing. As price and good reputation of the product is the key factor for the usage of CFLs in residential homes, therefore a significant increase in CFL penetration over the crediting period is not to expect. Audit team agreed to the response and closed the issue because we agree that lowering of prices is prime mover for consumers to adopt CFL. The prices in India are already quite low and further reduction is not anticipated. Given this background, it unlikely that consumers participating in the project would have shifted to CFL during the crediting period without project activity.
Further, this issue of baseline penetration was not required to be considered as per applied methodology AMS II.C, version 9. It is now being introduced with revised version of this methodology which has been proposed for approval by SSC WG to CDM EB. The draft revision (version 10) proposes the baseline penetration factor as 1 for small CDM project like this project activity.

Question 2

PP/ DOE is requested to clarify how the modified version of the formula mentioned in AMS-II.C v9 has been applied without requesting for a deviation.

PP Response:

1. In the Validation Report in section 3 "Summary of findings (page 9 of 11) this issue has been addressed and the explanation has been provided why neither a request for deviation nor a request for revision of AMS II.C has been considered necessary.
2. The given formulae in AMS II.C is by far not sufficient to be solely used for calculating the emission reductions for this kind of project, taking into account all other requirements given in AMS II.C as prescribed in the guidance of Appendix B: Revision to general guidance for SSC methodologies.
3. AMS II.C requires in total 5 parameters that need to be considered for application.
n = number of replaced devices (GLS) for which the replacement (CFL) is operating during the year
p = power of the devices replaced (for retrofit activity, power is the weighted average of the devices replaced)
o = average annual operating hours of the devices replaced
Emission coefficient for the electricity displaced
Annual operation rate of CFL (AMS II.C paragraph 9).

The project developer applies the same parameters and only improved the required formula without changing it conceptually. By applying the equation No. 1 in the PDD the formula given in AMS II.C is only elaborated for achieving a higher accuracy level and to fulfil all requirements.

See also PDD (page 15).

$$E_{BL,v} = CF_v * \sum_{i=1}^{n} \left[p_i * \mu_{BL} * d_{k,v} \right] \quad (1)$$

Where:

$E_{BL,v}$	Energy baseline (electricity) in MWh per monitoring interval *v*
CF_v	Correction factor for distributed CFLs which are not functional during the cross-check. CF_v represents the share of CFLs that are still operating.
p_i	Power rating of the replaced GLS bulbs *i* used before replacement
μ_{BL}	Average baseline operating hours per day
$d_{k,v}$	Days of operation of each distributed CFL *k* in monitoring interval *v* derived from $Date_{START,v}$, $Date_{END,v}$ (and $Date_{i,k}$ in first monitoring interval)

For a higher accuracy level, the data of each single lamp is recorded during distribution on distribution forms. With this approach the application of the monitoring requirements given in the methodology (recording and monitoring of the wattage ("power") of devices displaced) is fulfilled. By multiplying the individual wattage with the average operating hours, the energy consumption of each single device can be calculated. The total baseline energy consumption is calculated by summing up the energy consumption of each single GLS replaced. The same approach is also applied for calculating the project energy consumption (CFL). Since this approach is in line with AMS II.C (Version 9), the project proponents would like the EB not to consider any deviation from the methodology.

The used correction factor (CF_v) in equation 1 in the PDD (page 15) is a result of the AMS II.C requirement given in paragraph 9 and hence the project proponent would like to request the EB to not consider this as a deviation. The project will apply a check (called cross-check in the PDD) of a randomly selected sample of non-metered project CFLs per monitoring period or at least annually. The check is being done to ensure that the project CFLs are still operating. The number of failed CFL will be transformed in a correction factor (see PDD page 15) and the energy consumption is being discounted accordingly.

The power rating per device i (GLS) is applied using p_i .

The parameter for project operating hours (in AMS II.C given as o_i) has been also applied, but needed to be elaborated for taking into account that the distribution period will last about 3 months and emission reductions should be claimed right from the start of distribution. This could only be achieved by taking into account each single GLS displaced /CFL installed and calculating it with the days of actual operation during the monitoring period. Only with this approach it is possible to consider that the lamps distributed have been operating for a different time period. Therefore o_i is derived from μ_{BL} which is the daily adjusted mean of operating hours and the days of actual operation for each monitored CFL ($d_{k,v}$).

The formulae for calculating the baseline operating hours (μ_{BL}) conforms with the concept of AMS II.C. Metering of the baseline operating hours is being done for a period of at least one month with adjusting the results by seasonal daylight adjustment factor. The methodology applied itself does not provide any guidance regarding the time period for deriving the average annual baseline operating hours. The project proponent would like to request the EB to not consider this as a deviation. The project proponent is aware of the currently proposed AMS II.J in which the baseline metering period is 90 days with a seasonal adjustment factor. Since the genera approach is conceptually the same, the project proponent is open to assure the 90 day metering period for the baseline operating hours, since project implementation has not started

yet. The given formulae for calculating the baseline operating hours in the PDD (see pages 15/16) were necessary to fulfil the requirements regarding confidence interval, statistical correctness and the metering period for the baseline operating hours.

Leakage has been applied as required by AMS II.C. Since the average lifetime of a GLS is considered to be 1.000 h, the leakage is accounted for the first 1.000 h of operation. For further information see PDD section B 6.1 (pages 18/19).

In PDD section B 6.1 "Step 4" the baseline and project energy compared and the emission factor and leakage is applied. This approach conforms with AMS II.C.

The elaboration of the formulae given in AMS II.C is in line with being most conservative and accurate in the approach to calculate the energy savings of the project activity.

DOE Response:

We would like to state that project completely adheres to the baseline and monitoring methodology AMS II.C, version 9. Although the main formula has been further elaborated, we considered it to provide more input for the required parameters and hence are not considered as deviation from the methodology.

To calculate the energy consumption in the baseline and project scenario, the project completely adheres to equation provided in paragraph 4 of the applied methodology. The parameters have been elaborated to make this equation applicable for this kind of project. We would request you to please refer to Corrective Action Request No. 8 and Corrective Action Request No. 13 which clarifies that for calculation of emission reductions during verification, wattage of each CFL distributed would be used directly whereas the monitoring methodology requires monitoring of only sample CFLs. Methodology requires monitoring of number of GLS bulbs replaced and their wattage. We would request you to please refer to Clarification Request No.15, which clarifies that power rating of replaced GLS bulbs will be recorded immediately while replacement is taking place on the distribution form that will be filled in for each household by the distribution teams. This method also ensures that number of GLS bulbs replaced will also be monitored.

The next important parameter required is the average annual operating hours of the devices replaced (GLS) and devises installed (CFL). The project proponent would like to go for verification of more frequent monitoring intervals than annual. Hence the project calculates the average operating hours per day. We would request the CDM EB to not consider this as deviation from the methodology because then 100% data would be captured. It is understandable that for this kind of project it is not possible to monitor all the units for operating hours of GLS and CFL hence 200 sample units are monitored and mean of this monitored data is adjusted at 95% confidence level. This adjustment is more conservative than 'one times standard deviation' required by *Revision to general guidance for SSC methodologies* [paragraph 12 (e)].

In the initial version of the PDD made available for 30 day global stakeholder process, the project envisaged to use data of operating hours as monitored in 'project sample groups' (PSG) for both baseline and project energy calculation. This approach was considered not to be in line with methodology by the audit team since methodology clearly required "average annual operating hours of the devices of the group of "i" **devices replaced**" and devices replaced are GLS bulbs. Hence audit team requested Corrective Action Request No. 11. It was requested that in absence of 'baseline sample groups' (BSG), the operating hours to be used for baseline energy consumption should be fixed ex-ante based on sampling conducted over statistically representative households. The project proponent responded that project activity plans to conduct a baseline study for a period of at least one month in sample households to monitor the utilisation hours for GLS lamps used in these households. This study would be conducted at later stage

after validation of the project activity. The data derived from this study would be checked during verification. This study would be conducted for at least one month to arrive at average daily utilisation hours per day. However, monthly daylight adjustment factor would be applied to monitored data to make it representative for the whole year. Monthly dawn and dusk time data has been obtained from http://www.gaisma.com/en/ . Based on this data daily hours of darkness have been arrived. Further, depending on mean number of rainy days in each month, additional darkness hours per day in a month have been derived. So daily potential lighting hours are derived as sum of above two factors. Monthly daylight adjustment factor ($\alpha_{daylight}$) is then derived as ratio of potential lighting hours in that month and annual average of potential lighting hours. This factor is higher in months where daily hours of darkness are less and is less in months where daily hours of darkness are more. Hence it helps to level out the monitored data for baseline operating hours for one particular month over the whole year. We would request the CDM EB to not consider this as deviation from the methodology because the methodology only requires that "average annual operating hours of the devices of the group of "i" **devices replaced**" should be used for calculation of baseline energy consumption without giving further details on method to capture this data. The project activity has adequately made provision to monitor the operating hours of the **devices replaced (GLS bulbs).**

This issue was clearly mentioned in section B.6.1.4 of the validation protocol on page A-14 however we would like to apologize that resolution of this issue, which was on page A-45 was missed out during conversion of word file of pdf and was not available in report submitted during registration. The discussion is now available on page A-45 of the revised validation report which is enclosed.

The last important parameter required for calculation of energy consumption of baseline and project scenario is **outcome** of annual checks of sample of non-metered systems as required by paragraph 9 of the applied methodology. We would again request the CDM EB to not consider this as deviation from the methodology because it is clear that methodology requires capturing this data but does not provide further guidance on how to use this data for calculation of emission reduction and the project activity has made adequate provision to account this data by calculating 'Correction factor for distributed CFLs which are not functional during the cross-check'. We would request you to please refer to Corrective Action Request No. 14 and Corrective Action Request No. 17 which clearly discuss that during verification, cross-checks will be carried out in sample households (not monitored) and based on CFLs that are found missing or not operating, adjustment (CF_v) would be made to emission reductions. Calculation for factor CF_v is clearly defined in section B.6.1 of the PDD. Since the cross-check would be conducted in sample households, the share of CFLs not found operating will be adjusted at 95% confidence level by conservatively considering the upper limit of the interval.

The project activity is making further conservative emission reduction calculations by considering leakage from potential usage of GLS that have been replaced but not scrapped in the project activity.

We would like to state that the project completely adheres to the baseline and monitoring methodology AMS II.C, version 9 and further uses several conservative approaches by developing the formula given in the methodology.

Question 3 (a)

DOE is requested to clarify how it has validated that the sample size of 200 households will be a representative sample for 700,000 households.

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PP Response:

This issue has been already addressed during validation and is described in the validation report (CR16).
The project sample groups will be selected randomly out of the whole database which consists of all households eligible to participate in the project. Eligible means households which are situated within the district of Visakhapatnam (project boundary) and have an electricity grid connection (see also PDD section A.2; page 3). The randomly selection of households from the database ensures that the whole project area is represented in a representative manner. Representativeness is ensured by the following:

- By choosing random sampling of households
- Using a minimum number of samples that is higher than the number of samples statistically required for representativeness
- adjusting the results with appropriate statistical correction methods in a conservative way

For further information about the statistical methods applied see Annex 1. Regarding the sample size refer also to AM0046 and the statistical certification document (sample size >60).

The conclusion of the validation team was as follows: Simple random sampling will be done from total database of households to arrive at project sample group, which is deemed appropriate. Stratified random sampling cannot be done for the total project area because the population in project area is heterogeneous and it is difficult to isolate homogeneous population from total population. There are different kind of households with different income and different energy consumption pattern. Multistage random sampling as defined in AM0046 is also not feasible for this total project area since urban and rural population is mixed and it is difficult to draw out smaller project areas.

DOE Response:

We understand that there are two issues on which CDM EB wants to seek clarification:

(i) **Valid numbers of samples** - as per AM0046 version 01, footnote 3: “According to Sachs (1992), a sample of n>60 is necessary to yield meaningful data for the mean and the standard deviation. As some households may leave the sample group during the crediting period, the **minimum size should be 100 households**. A large sample size involves higher transaction costs but will result in a low margin of error and thus more CERs, whereas a small sample size involves lower transaction costs for sampling but is likely to result in a higher margin of error and thus less CERs”.
Since the confidence interval calculation in the project is based on 200 samples, statistically valid numbers of samples are therefore considered.

(ii) **Representativeness of the sample selected** – we would request you to please refer to Clarification Request No.16 in the validation report that was raised during the validation process by the audit team to resolve this issue. Project proponent clarified that the project sample groups will be selected randomly out of the whole database of households eligible to participate in the project. By choosing randomly, using a certain number of samples, that is higher than the minimum number of samples to be statistically correct and by adjusting the results with appropriate statistical correction methods in a conservative way (95% confidence level), representativeness is assured. The response was accepted by the audit team since simple random sampling by choosing statistically valid number of samples and adjusting the results with 95% confidence level is deemed to be the most appropriate way to ensure representativeness for this kind of project.

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Stratified random sampling cannot be done for the total project area because the population in project area is heterogeneous and it is difficult to isolate homogeneous population from total population. There are different kind of people with different income and different energy consumption pattern. Multistage random sampling as defined in AM0046 is also not feasible for this total project area since urban and rural population is mixed and it is difficult to draw out smaller project areas.

Question 3 (b)

DOE is requested to clarify how it has validated that the monitoring plan shall meet the requirements of paragraph 7, 8 and 9 of AMS-II.C (version 9).

PP Response:

Regarding AMS II.C §7

This issue has been addressed in CR15 during validation.

The procedure applied for the project activity conforms with the requirement given in AMS II.C paragraph 7. During distribution, for each GLS that will be replaced the wattage ("power") from nameplate data will be immediately recorded in the distribution forms (one form per household)(see Annex 2). These data will later be entered into the project database. These information will be available during verification. A detailed description of this procedure is given in the PDD section B.7.2 under point 3 "Distribution.

Regarding AMS II.C §8

For this project activity option (a) under paragraph 8 was chosen. The procedure conforms with the requirement given in AMS II.C. This issue was also addressed in the validation report (CR13; CAR16). The procedure is transparently described in the PDD section B.7.2. For recording the "power" refer to point 3 "Distribution" and for metering a sample of units installed (CFL) for their operating hours see points 4 "Spot-Check" and 5 "Metering Equipment" as well as PDD Annex 4A for meter specification.

Regarding AMS II.C §9

The procedure described for the project activity conforms with the requirement of AMS II.C paragraph 9. This issue has been already addressed in the validation report (CAR17). A detailed description of the regular check whether the installed equipment (CFL) is still operating is done in the cross-check. The cross-check will be conducted per monitoring period or at least annually. The result of the cross-check is considered in the emission reduction calculation in a conservative manner by using a correction factor (CF). Since a sample of non-metered CFLs are being checked, a statistical correction of the result in a conservative manner, which conforms to the CDM EB requirements, has been applied (see PDD page 15 for detailed information). More information on the statistical correction is provided in Annex 1.

DOE Response:

(i) Requirements of paragraph 7 – number and power of devices replaced (GLS bulbs) has to be recorded. We would request you to please refer to Clarification Request No.15, which

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clarifies that power rating of replaced GLS bulbs will be recorded immediately while replacement is taking place on the distribution form that will be filled in for each household by the distribution teams. This method also ensures that number of GLS bulbs replaced will also be monitored. This parameter (p_i) is already included in the monitoring plan of the PDD in section B.7.1.

(ii) The project chooses paragraph 8 (a) - recording the "power" of the device installed using nameplate data or bench tests of a sample of the units installed is required. We would request you to please refer to Corrective Action Request No. 8 and Corrective Action Request No. 13 which clarifies that for calculation of emission reductions during verification, wattage of each CFL distributed would be used directly whereas the monitoring methodology requires monitoring of only sample CFLs. This parameter (p_k) is already included in the monitoring plan of the PDD in section B.7.1.

Methodology further requires metering a sample of the units installed for their operating hours using run time meters. 200 sample units are monitored and mean of this monitored data is adjusted at 95% confidence level. We would request you to please refer to Corrective Action Request No. 16 where the monitoring system is defined. The metering device to be used in the project activity starts to record data (operating time) every 15 seconds in its memory as soon as light bulb is switched on. Every time the light bulb is switched on or if light bulb is continuously switched on for 4 hours, the metering device relays the stored data wirelessly to central server where data from each meter is recorded and saved. This procedure would ensure that 100% data is measured. This parameter is already included in the monitoring plan of the PDD in section B.7.1 through monitoring of $Date_{start,y}$, $Date_{end,y}$, $Date_{i,k}$, $O_{r,d,q}$, $n_{r,d}$.

(iii) Requirements of paragraph 9 - it requires annual checks of a sample of non-metered systems to ensure they are working. We would request you to please refer to Corrective Action Request No. 14 and Corrective Action Request No. 17 which clearly discuss that during verification, cross-checks will be carried out in sample households (not monitored) and based on CFLs that are found missing or not operating, adjustment (CF_v) would be made to emission reductions. Calculation for factor CF_v is clearly defined in section B.6.1 of the PDD. This parameter is already included in the monitoring plan of the PDD in section B.7.1 through monitoring of $Date_{c,y}$, $n_{sampple,cc,y}$, $n_{ok,y}$.

Question 3 (c)

DOE is requested to clarify how it has validated that how the operating hours of CFLs not included in the sample will be monitored.

PP Response:

1. AMS II.C (paragraph 8a) requires to meter only a sample of the units (CFL) installed for their operating hours using run time meters. The procedure described in PDD section B.7.2 "Distribution" and in the monitoring concept provided in the PDD conforms with the requirements given by AMS II.C.

2. See also response to question 3b (AMS II.C; § 8) and Validation Protocol CAR 6 for further explanation of the concept applied.

DOE Response:

As per paragraph 8 (a) of the methodology only metering of operating hours of a **sample of units** (CFL) is required. Project would meter 200 sample units. Furthermore there is a conservative approach by applying correction factor (CF_v) based on non monitored CFLs to total emission reductions.

Question 3 (d)

DOE is requested to clarify how it has validated that the monitoring methodology would lead to the monitoring of the data to provide a reasonable confidence level in line with the guidance from the Appendix B: *Revision to general guidance for SSC methodologies* [paragraph 12 (e)].

PP Response:

1. This issue has already been addressed during validation (validation report CAR 9 and CAR 10). The answer for CAR 9 was: The average operating hours of the sample groups (baseline and spot-check) will be adjusted with a 95 % confidence interval and z = 1,96. All formula and statistical methods including mean and standard deviation are described in transparent manner in PDD sections B.6.1, B.6.3 and B.7.1. For the verification of the statistical methods, see also VP Annex 10. The conclusion of the validation team for CAR 9 was as follows: PDD in section B.6.1 now clearly defines the equation for baseline
and project emission calculations. Equations adjust statistically significant variables at 95% confidence level.
The answer to CAR 10 was as follows: Standard normal for a confidence level of 95% 'z' is used in the formula for calculating the project energy consumption. All information has been provided in transparent manner in the PDD section B.6.1. See also VP Annex 10 for further information regarding the statistical methods. The conclusion of the validation team regarding CAR 10 was as follows: Standard normal for confidence level of 95%, z=1.96 has been used in the revised calculations. This procedure is deemed correct.
"Guidance of Appendix B: Revision to general guidance for SSC methodologies" requires 1 times Sigma. Since the project activity uses sample sizes and for reasons of representativeness and conservativeness, the results of the sample groups (required by AMS II.C) need to be corrected with the standard deviation and a confidence interval of 95%.

2. For reasons of conservativeness, the parameter correction of operating hours will be used as follows: for baseline operating hours (GLS) the lower limit of the confidence interval is used, and for project operating hours (CFL) the upper limit of the confidence interval is used. This has been done to not overestimate the emission reductions. For further clarification see PDD page 16 (equation No.5), page 18 (equation No. 10) and page 22.

DOE Response:

We would request you to please refer to Corrective Action Request No. 9 in the validation report where it was concluded that PDD in section B.6.1 clearly defines the equation for baseline and project emission calculations. Please also refer Corrective Action Request No. 10 in the validation report where it was concluded that standard normal for confidence level of 95%, z=1.96 has been used in the revised calculations. 200 sample units are monitored and mean of significant variables is adjusted at 95% confidence level. This adjustment is more conservative than 'one times standard deviation' required by *Revision to general guidance for SSC methodologies* [paragraph 12 (e)].

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Question 4

The number of scrapped bulbs shall be included in the monitoring plan so as to give a transparent picture of the monitoring at the time of *ex-post* verification.

PP Response:

The concept for including the number of scrapped bulbs in the monitoring plan has been considered and applied in the PDD (see PDD section B 6.1 "Step 3 Leakage" and section B 7.2 "Table 8" and point 3 "Distribution". However, the parameter $n_{scrap,i}$ was not included in the PDD monitoring plan (PDD section 7.1; page 23 onwards). This has been corrected and the revised PDD has been submitted / attached.

DOE Response:

This parameter was clearly identified in equation number 13 on page 19 of the PDD but was missed out in the monitoring plan in section B.7.1 of the PDD. Same has been added now in the monitoring plan of the revised PDD, which is enclosed.

Question 5

The life and average operating hours of each CFL are 15000 hours (PDD, p4) and 5.06 hours/day (PDD, p22, p10), respectively, thus the life of each CFL appears to be about 8 years which is shorter than the 10-year crediting period chosen.
The DOE is required to clarify how it has validated the appropriateness of a full 10 year crediting period in the context of the operational life of the project equipment (CFL bulbs.

PP Response:

For this project activity, only high quality OSRAM DULUX EL LONGLIFE lamps with an average lifetime of 15.000h are being used. Average lifetime is defined as the value, where 50% of the samples under test are still in operation (B50-value).
As lamp life time is a key performance indicator for our products, OSRAM is continuously checking lamps in our quality departments. Our internal records indicate longer life times for lamps of the DULUX EL LONGLIFE family, e.g. the 15&20W types do reach more than 19.000 hours regarding the B50-value.
In this context, we would like to refer to the report of highly reputable independent magazine 'test', issue 2007/1 (http://www.test.de/themen/umwelt-energie/test/-Energiesparlampen/1327630/1327630/1334201/). Various CFL lamps from different manufacturers have been tested and the report confirms the above mentioned long life time for DULUX EL LONGLIFE lamps.
The average life time of OSRAM DULUX EL LONGLIFE lamps is reflected in the emission reduction calculation, including an expected decreasing trend in the last years of the project activity.
OSRAM has intentionally chosen the CFL with the longest lifetime available because OSRAM has an inherent interest that the CFL distributed are being used in the household for the whole project duration. If CFLs distributed are not used anymore/fail, OSRAM will face a considerable

reduction in CER generation which will be monitored during the cross-checks (see rules and procedures in PDD section B.7.2).

DOE Response:

We would like to clarify that average lifetime for CFLS is defined as the value, where 50% of the samples under test are still in operation (B50-value). This means that the 50% of the CFLs lamps are likely to operate after 15000 hours. This is also evident by significantly low amount of estimated emission reductions in the last two years.
Audit team has further checked reports of internal tests conducted by Osram on the CFL types to be used in the project activity. These reports reveal more than 19,000 hours of operation for B50-value.
Lastly the report of tests conducted by independent agency on CFL lamps from various manufacturers confirms the tests conducted by Osram.