Monitoring report form (Version 03.2)

Monitoring report[1] – Batch 1

Title of the Programme of Activities	CFL lighting scheme – "Bachat Lamp Yojana"
Reference number of the Programme of Activities	PoA 3223
Version number of the delinked monitoring report (Batch 1 MR)	01
Completion date of the delinked monitoring report (Batch 1 MR)	30/06/2014
Registration date of the Programme of Activities	29/04/2010
Monitoring period number and duration of this monitoring period	Second Monitoring Period Duration: 01/01/2013 to 31/10/2013 (both days inclusive);
Coordinating / Managing Entity	Bureau of Energy Efficiency
Project participant(s)	1) Bureau of Energy Efficiency 2) C- Quest Capital Malaysia Limited
Host Party(ies)	India
Sectoral scope(s) and applied methodology(ies)	Sectoral Scope 3 : Energy demand; Applied Methodology: AMS-II.J. , Version 03
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PoA-DD	839,107 tCO_2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	604,393 tCO_2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	N/A
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	604,393 tCO_2e
Number of CPA(s) included as on last date of this monitoring period	50 (till 31/10/2013)
Number of CPA(s) covered under this monitoring report	30 (24 implemented and 6 unimplemented till 31/10/2013)

[1] This monitoring report comprises all the CPAs implemented by the two BLY implementers viz HPL Electric & Power Pvt. Limited (HPL) and C- Quest Capital Malaysia Limited (CQC) and is named "Monitoring Report – Batch 1". The monitoring report is prepared and submitted as per the "Amendment to version 04.0 of CDM project standard, Version 01.0"; EB 75 guideline.

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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The purpose of the Bachat Lamp Yojana (BLY) project activity is to replace the conventional incandescent lamps (ICLs) by compact fluorescent lamps (CFLs) in the residential grid connected households. Under the BLY scheme, up to four, long-life quality CFLs[2] were distributed to grid-connected residential households in exchange of one ICL and INR 15 for one CFL. The reduction in total power demand through the energy saving achieved has resulted a reduction of greenhouse gases (GHG) emissions that would otherwise being emitted during production of the equivalent amount of power in grid connected mostly fossil fuel based power plants.

In CFLs, the electrical current from the ballast flows through the gas, causing it to emit ultraviolet radiations. The phosphor coating converts the ultraviolet radiation emitted to visible light spectrum. CFLs are much more energy efficient than baseline ICLs. The efficiency of ballast-integrated CFL typically ranges from 51 to 56 lumen/ Watt, which is 4 to 5 times higher than an equivalent ICL. Consequently, CFLs consume only $1/4^{th}$ to $1/5^{th}$ of the energy used by baseline ICLs to provide the same level of light output.

The 11W, 14W, 18W and 20W CFLs were distributed to households in exchange of equal number of normal luminous flux 60W and 100W ICLs, respectively. These CFLs have the equivalent or higher lumen to the replaced ICL (620lm and 1240lm, respectively) and a rated lifetime of 10,000 hours. These are also high power factor CFLs and they can withstand wide voltage fluctuations. Table 3 below provides the rated normal lumen output for the ICL as per IS 418:2004, as used in this project.

Table 3: Technical Specifications of CFLs used in Project

Baseline ICL Replaced (Watt)	Rated Normal Lumen Output (IS418:2004)	CFL range (Watt)
60	620 or more	11/14
100	1240 or more	18/20

The distribution of CFLs and replacement of previously used ICLs in households in the CPA area was using one or more of the following methods:

- direct installation at each household; and/or
- ICL collection and CFL distribution through dedicated distribution points as advertised by the CPA owner in the local media e.g. local DISCOM offices, retail outlets, resident association offices, schools etc.

The implementation chronology is presented in section B.1 of this monitoring report.

The implementation of the CPAs (under this PoA) covering this monitoring period has resulted in achieving 604,393 tonnes of CO_2 equivalent of greenhouse gas emission reductions.

A.2. Location of project activity

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The political/geographical boundary of India is the PoA boundary.

The country latitude of 22º 00' N and longitude of 77º 00' E. (referred from http://www.mapsofworld.com/lat_long/india-lat-long.html).

The geographical location of the individual CPAs included under this PoA is listed in Annexure 1.

The unique geographic location of the applied measure (CFLs) in household is determined using the household consumer number provided by utility and/or the household physical address.

[2] In India IS 15111 standard specifies a minimum 6000 hours rated life time. Long life quality CFLs in BLY context thus meet IS 15111 requirements and have an average rated life of 6000 hours and above.

A.3. Parties and project participant(s)

Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India (host)	Bureau of Energy Efficiency (Public entity)	No
Netherlands	C- Quest Capital Malaysia Limited (Private Entity)	No

A.4. Reference of applied methodology

Applied Methodologies –
AMS-II.J. "Demand-side activities for efficient lighting technologies" (Version 3.0)

AMS-I.D. "Grid connected renewable electricity generation" (Applicable versions are listed in Annexure 11)

Applied Tool-
"Tool to calculate the emission factor for an electricity system" (Applicable versions are listed in Annexure 11)

A.5. Crediting period of project activity

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Type: Fixed Crediting Period for each CPA under the PoA.

PoA Life time: 20/11/2007 to 19/11/2035 (28 years)

Start Date: The CPA(s) specific crediting period start date is listed in Annexure 2.

Length: For every CPA the length of crediting period is 7.83 years, except CPA 3223-0046, 3223-0047 and 3223-0049 for which crediting period is 7 years.

PoA monitoring period duration: 01/01/2013 to 31/10/2013. The CPA(s) specific monitoring period is listed under Annexure 2.

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

Under this PoA, three different entities viz. C- Quest Capital Malaysia Limited (CQC), Energy Management Centre, Department of Power, Government of Kerala (EMC), and HPL Electric & Power Pvt. Limited (HPL) have included fifty (50) CPAs as of end date of the present monitoring period. Out of fifty CPAs, twenty (20) CPAs have been implemented by the implementer Energy Management Centre, Kerala and are not part of this monitoring report. This monitoring report comprises all the remaining thirty (30) CPAs implemented by the two BLY implementers viz HPL Electric & Power Pvt. Limited (HPL) and C- Quest Capital Malaysia Limited (CQC). The monitoring report is prepared and submitted as per the " version 05.0 of CDM project standard"; EB 75 guideline, which allows parties under a PoA to submit two separate monitoring reports. Any CPA included in this monitoring report will not be part of another monitoring report comprising twenty CPAs implemented by Energy Management Centre, Kerala. .

The various parties involved in these 30 CPAs are mentioned below in the table:

CPAs	State	CME	DISCOM	Implementer
3223-0001 3223-0043 3223-0044	Andhra Pradesh	Bureau of Energy Efficiency (BEE)	APCPDCL (Central Power Distribution	C- Quest Capital Malaysia Limited (CQC)

3223-0045 3223-0046 3223-0047 3223-0048 3223-0049 3223-0050			Company of Andhra Pradesh Limited)	
3223-0022 3223-0023 3223-0024 3223-0025 3223-0026 3223-0027 3223-0028	Karnataka		BESCOM (Bangalore Electricity Supply Company)	HPL Electric & Power Pvt. Limited (HPL)
3223-0034 3223-0035	Goa		Goa Electricity Department	HPL Electric & Power Pvt. Limited (HPL)
3223-0029 3223-0030 3223-0031 3223-0032 3223-0033	Delhi		NDPL (North Delhi Power Limited)	C- Quest Capital Malaysia Limited (CQC)
3223-0036 3223-0037 3223-0038 3223-0039 3223-0040 3223-0041 3223-0042	Punjab		PSPCL (Punjab State Power Corporation Limited)	C- Quest Capital Malaysia Limited (CQC)

Individual project activity involved installation of self-ballasted CFLs to replace existing ICLs used in the household. The electronic ballast integrated in the CFL is a non-removable part. The table below shows the lumen output and rated lifetime of the CFLs installed in the individual project activity against the replaced ICLs. The project CFLs meet or exceed the rated normal lumen output of the replaced ICL.

	ICL (baseline)	CFL (project)	ICL (baseline)	CFL (project)
Wattage (W)	60	11/14	100	18/20
Lumen output (lm)	620*	620**	1,240*	1,240**
Rated Lifetime (hours)	1,000	10,000	1,000	10,000

*Rated normal Lumen output for 60 W and 100 W of ICLs as per IS 418:2004.

** Rated normal Lumen output for 14 W and 20 W CFLs as per IS 15111:2002 (Part 2)

The project CFLs are in compliance with Indian Standard IS 15111:2002, which is the national standard for self-ballasted compact CFLs. The specifications of the project CFLs are as below:

a) Self-ballasted type

b) Rated lifetime of 10,000 hours

c) Embossed or laser printed with project logo for clear unique identification

d) BC/B22 base

e) Power factor of greater than 0.85

f) Lumen output of 620 or more for 11 and 14 W CFL and Lumen output of 1240 or more for 18 and 20 W CFL

The implementation of the project activity involves the distribution of up to four (4) long life quality CFLs per household to the grid connected residential households of the CPA area. One CFL is distributed in exchange of one ICL and INR 15. The CPA specific implementation chronology is presented in Annexure 3.

The DISCOM (Distribution company) maintains a database of domestic users identifiable on the basis of a unique connection number and/or address used for billing purposes. The distribution activities were carried out by first accessing this consumer database of the grid connected residential consumers from the CPA area.

The potential recipient households were educated to install the CFL in high-usage areas, such as outsides, common areas, living room area and kitchen to maximize the energy savings. The distribution of CFLs and replacement of previously used ICLs in households in the CPA area was done using one or more of the following methods:

- Direct installation at each household; and/or
- Dedicated distribution points as advertised by the CPA investor in the local media e.g. local DISCOM offices, retail outlets, resident association offices, schools etc.

After the completion of CFL installation stage, the collected ICLs were stored in separate boxes according to the wattage and clearly labeled as per their contents. These ICL boxes were transferred to centrally designated ICL storage facilities. Further arrangement was made with ICL destruction agency to collect ICLs from these centrally designated storage facilities (collection points) for the destruction of ICLs in safe manner.

CPA implementers have hired various destruction agencies like Indian Pollution Control Association (IPCA), Eco Birdd Recycling and Global E-waste Management & Services (GEMS) for destruction of ICLs collected. The copies of the agreements are shared with the verifying DOE for verification. The various dates of ICL destruction activities and the quantity of ICLs destructed can be referred from Annexure 12 of this monitoring report. The "Certificate of Destruction" released by these agencies mentioning the quantities of ICLs collected and destroyed on various dates are also shared with the verifying DOE.

B.2. Post registration changes

B.2.1. Temporary deviations from registered monitoring plan or applied methodology

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B.2.2. Corrections

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B.2.3. Permanent changes from registered monitoring plan or applied methodology

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B.2.4. Changes to project design of registered project activity

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B.2.5. Changes to start date of crediting period

>> The CME has requested the UNFCCC for change in the start of crediting period for some of the implemented CPAs through email dated 22/08/2013 and the UNFCCC has confirmed their request on 05/09/2013.Refer Annexure 2 for the crediting period start date of all the implemented CPAs as per individual CPA webpage.

B.2.6. Types of changes specific to afforestation or reforestation project activity

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SECTION C. Description of monitoring system

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The overall monitoring system under all the SSC-CPAs can be summarised in the figure 2 & 3. These two figures outline the key elements of the hierarchy and data monitoring plan for a SSC-CPA, highlighting responsible entities and their tasks, interaction channels among them, and key monitoring parameters.

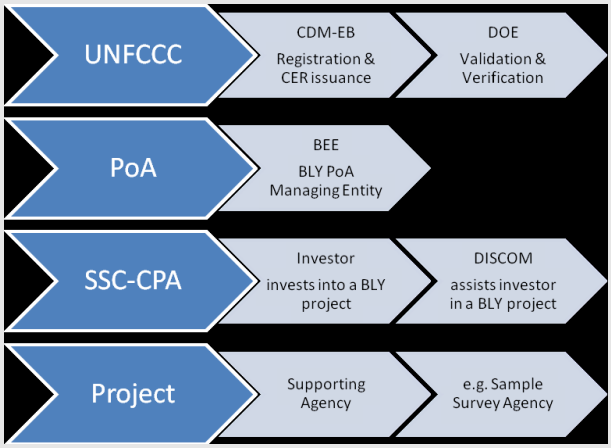

Figure 2: Institutional layers in developing and implementing the BLY scheme

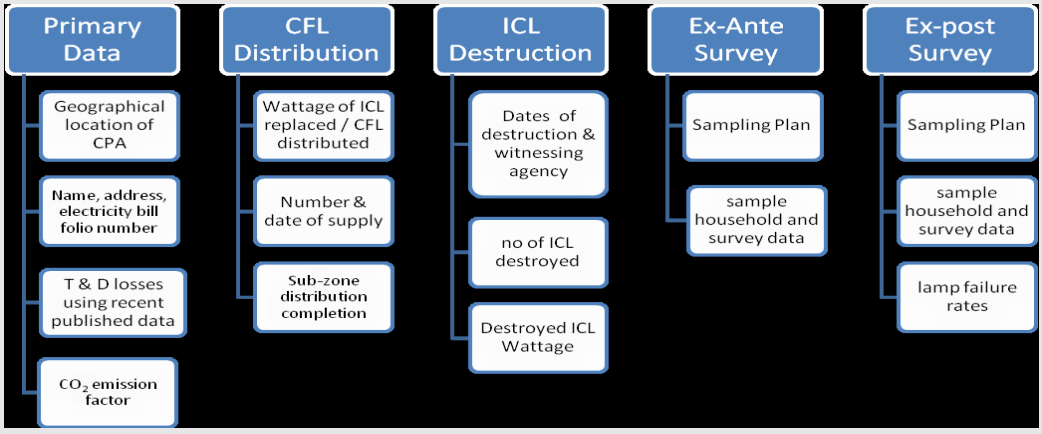

Figure 3: SSC-CPA Database components as per BLY scheme

As per applied methodology AMS–II.J., the monitoring for the SSC-CPA have been carried out at the following levels:

1. CFL distribution
2. Ex-post Monitoring Survey
3. Baseline ICL destruction
4. CFL Destruction

1. CFL Distribution

The CFLs were distributed by the SSC-CPA owner with support from DISCOM, using one or more of the following methods:

- Direct installation at each household; and/or
- Distribution through dedicated distribution points as advertised by the SSC-CPA owner in the local media e.g. local DISCOM offices, retail outlets, resident association offices, schools etc.

2. Ex-post Monitoring Survey

Random Selection of households

For any proposed SSC-CPA area, the database listing all residential households eligible under the SSC-CPA were randomly selected under the monitoring survey. The sampling is as per following criteria:

Sampling Criteria

1. The survey covered the SSC-CPA area, covering the residential sector only,
2. Random sample group were determined using statistical tools as representing the households falling under the SSC-CPA area. Survey sample size determined to have at-least 90% confidence level with 10 % maximum margin of error[3].

Ex-post Monitoring Survey

In addition to the survey requirements as stated in Annexure 4 of the individual SSC-CPA DD, the following steps were carried out by the third party monitoring survey agency

1. Visited identified households and assess the following for each household:
    a. whether the installed CFLs carry BLY logo or not
    b. whether the installed CFLs are operating or not

The data was collected and collated in the form of a monitoring survey report for each SSC CPA.

3. ICL Destruction

After the completion of CFL installation stage, the collected ICLs were stored in separate boxes according to the wattage and clearly labeled as per their contents. These ICL boxes were transferred to centrally designated ICL storage facilities. Further arrangement was made with ICL destruction agency to collect ICLs from these centrally designated storage facilities (collection points) for the destruction of ICLs in safe manner.

At the beginning of each monitoring interval y, each SSC-CPA verified whether the number of distributed CFLs was less than or equal to the number of returned and destroyed ICLs in the SSC-CPA area.

Following the Random ICL Inspection, all ICLs collected were transported from the collection point to a disposal facility which is qualified and authorized to destroy ICLs (ICL Destruction Facility). Upon arrival at the ICL Destruction Facility, the destruction agency has ensured that there has been no change in the total number of ICLs from that recorded at the Collection Point. After the completion of ICL destruction, waste management company issued a "Certificate of Destruction".

4. CFL Destruction

Fused CFLs was replaced as part of a warranty program for the project, and these replacement CFLs installed in households prior to the monitoring survey was counted as operating. There was no replacement as part of the survey process. The replaced and fused CFLs were recorded in the project database.

Fused CFLs from the households have been collected and the mercury will be handled according to the Central Pollution Control Board (CPCB) Guidelines. All collected CFLs are being stored at designated locations until they are transferred to the CFL treatment facilities operated by disposal agencies for proper disposal of mercury inside of the CFLs. In absence of any existing guideline from CPCB of mercury disposal, the CFLs are kept in store only and have not been disposed yet and the same will be disposed of as per the country's guideline of CFL disposal once the guideline comes into place.

The overall supervision is maintained by the BEE as PoA Coordinating and Managing Entity (CME), whereas on-ground implementation takes place by the CPA implementer(s) in association with DISCOM. This is as per the tri-partite agreement in-between BEE, CPA-implementer(s) and the DISCOM operating in the CPA area. The broad overview of monitoring responsibilities envisaged under the CPA is tabulated below.

		Responsibility		
Step	**Description**	**BEE***	**DISCOM**	**SSC-CPA Implementer**

[3] As per AMS-II.J.ver03 methodology

1	Determination of the SSC-CPA area		√	√
2	Establishment of the SSC-CPA implementation plan		√	√
3	Selection of households to be included in the monitoring survey		√	√
4	CFL distribution to the households		√	√
5	Establishment of the SSC-CPA database	√		√
6	Monitoring surveys		√	√
6	Verification of the number of 'destroyed ICLs' and 'distributed CFLs'	√	√	√
7	Reports for estimation of emission reductions	√		√

* Supervisory responsibility.

Household data/CFL distribution data base :

- Project database: A list of households participating in each CPA including name, address, electricity bill folio number, number and wattage of ICL exchanged and CFL distributed, date of distribution and completion of distribution.

- Double counting prevention: Double counting can occur if a registered CDM project activity or a CPA of another PoA is sought to be registered under the BLY PoA. To prevent such instances, the BEE had adopted a two-stage check:

- At time of implementer(s) empanelment, SSC-CPA implementer credentials are verified
- At time of CPA eligibility check, BEE seeks confirmation in SSC-CPA and also checks any-double counting using DISCOM, UNFCCC data.

To prevent double counting the CFLs utilized under the BLY scheme shall, in addition to the standard lamp specifications, was marked for clear unique identification for the BLY project. The logo used was

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ICL Destruction data base

The baseline ICLs collected at the time of the CFLs distribution in the CPA area were stored safely in appropriate boxes. The ICL is considered destroyed if it is rendered non-functional. The destruction method(s) followed were:

- Crushing
- Separating ICL shell and cap

The ICLs collected from the households were stored in separate boxes according to the bulb's wattage and labeled clearly of their content. The ICL boxes were then transferred to the waste management company for further destruction.. Certificate of destruction was issued upon the destruction of ICLs. The records of the ICL destruction duly verified by the responsible witness are submitted to the CME. These records are maintained by CME under the BLY database.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Data/Parameter:	$EF_{CO2,ELEC,y}$
Unit:	tCO_2/MWh
Description:	CO_2 emission factor for displacement of electricity in the respective Grid (viz. NEWNE and Southern) serving the household consumers that participate in the SSC-CPA project area during the monitoring interval y, calculated according to the latest approved version of AMS-I.D (tCO_2/MWh)
Source of data:	The User Guide of CDM Baseline CO_2 emission database by Central Electricity Authority (CEA), India (versions 4.0, 5.0 and 6.0), as stated in respective included CPA-DD.
Value(s) applied:	<table><tr><th>SSC-CPA UNFCCC Ref No</th><th>Value applied</th></tr><tr><td>3223-0001</td><td>0.856</td></tr><tr><td>3223-0022 3223-0023 3223-0024 3223-0025 3223-0026 3223-0027 3223-0028</td><td>0.9027</td></tr><tr><td>3223-0029 3223-0031 3223-0032 3223-0036 3223-0037 3223-0038 3223-0039 3223-0041</td><td>0.903</td></tr><tr><td>3223-0043 3223-0044 3223-0045 3223-0048 3223-0050</td><td>0.865</td></tr></table> Please refer Annexure 11 for different ex-ante values used for individual CPAs.
Purpose of data:	Emission reduction calculation (Only the emission reduction formula is provided in the methodology)
Additional comment:	--

Data/Parameter:	O_i
Unit:	Hours / day
Description:	Average daily operating hours of the baseline ICLs of the group of "*i*",
Source of data:	AMS IIJ default value
Value(s) applied:	3.5 hours per 24 hours period

Purpose of data:	Emission reduction calculation (Only the emission reduction formula is provided in the methodology)
Additional comment:	The SSC-CPA has used fixed 3.5 hours per 24 hrs period.

Data/Parameter:	X_i
Unit:	Hours / year
Description:	Operating hours per year for CFL type *i*
Source of data:	Calculated value
Value(s) applied:	1,277.5 hours per 365 day year; 1,281 hours for leap year
Purpose of data:	Emission reduction calculation
Additional comment:	The SSC-CPA has used fixed 3.5 hours per 24 hrs period. Hence for the yearly value, the estimate is fixed.

Data/Parameter:	NTG
Unit:	--
Description:	Net-to-gross adjustment factor
Source of data:	Default AMS-II.J. value
Value(s) applied:	0.95
Purpose of data:	Emission reduction calculation
Additional comment:	--

Data/Parameter:	L_i
Unit:	Hours
Description:	rated average operating hours for CFL type *i*
Source of data:	Life test reports of CFLs
Value(s) applied:	

SSC-CPA UNFCCC Ref No		**Value applied (hours)**
CQC	3223-0001 3223-0029 3223-0031 3223-0032 3223-0036 3223-0037 3223-0038 3223-0039 3223-0041 3223-0043 3223-0044 3223-0045 3223-0048 3223-0050	10,000
HPL	3223-0022 3223-0023 3223-0024 3223-0025 3223-0026 3223-0027 3223-0028	10,000

Purpose of data:	Emission reduction calculation
Additional comment:	Determined as per the independent life-tests of the CFLs as per national standard

Data/Parameter:	High PF CFL life test report and test curves
Unit:	--
Description:	Life test reports of CFLs
Source of data:	Obtained from accredited manufacturer or laboratory
Value(s) applied:	

SSC-CPA UNFCCC Ref No		**High PF CFL life test reports**
CQC	3223-0001 3223-0029 3223-0031 3223-0032 3223-0036 3223-0037 3223-0038 3223-0039 3223-0041 3223-0043 3223-0044 3223-0045 3223-0048 3223-0050	Yes
HPL	3223-0022 3223-0023 3223-0024 3223-0025 3223-0026 3223-0027 3223-0028	Yes

Purpose of data:	Emission reduction calculation (Only the emission reduction formula is provided in the methodology)
Additional comment:	-

D.2. Data and parameters monitored

Data/Parameter:	$Q_{PJ,i}$
Unit:	Number
Description:	Number of CFLs of the group of "*i*" CFLs (11W, 14W, 18W & 20W CFLs) in operation during the first 12 months of distribution
Measured/ Calculated/ Default:	Calculated from survey data
Source of data:	SSC-CPA database
Value(s) of monitored parameter:	

No of grid connected household consumers numbers in project area	Annexure 4
Actual number of CFLs distributed per household consumer number (max is four)	Annexure 4

	$Q_{PJ,i}$ Annexure 4
Monitoring equipment:	-
Measuring/Reading/ Recording frequency:	Once in the crediting period (within 1 year from end date of distribution of CFLs)
Calculation method (if applicable):	The Qpj value for each type of CFL is calculated from the results of Qpj survey, as follows: • Obtain the ratio of the number lamps of type i with BLY logo found installed & operating in the sample households and the number of lamps of type i claimed to be distributed in the sample households • Multiply the ratio obtained by the total number of lamps of type i claimed to be distributed in the CPA area • The claimed number of lamps is capped by the number of ICLs destroyed.
QA/QC procedures:	• Monitoring survey was conducted by qualified and experience third party agency • Monitoring survey conducted in accordance with the requirement of methodology so that the estimate of $Q_{PJ,i}$ obtained is unbiased and reliable.
Purpose of data:	Emission reduction calculation (Only the emission reduction formula is provided in the methodology)
Additional comment:	-

Data/Parameter:	$LFR_{i,y}$
Unit:	%
Description:	Lamp Failure Rate for CFL type *i* in year *y* (fraction)
Measured/ Calculated/ Default:	Calculated based on survey results
Source of data:	Ex-post monitoring survey
Value(s) of monitored parameter:	$LFR_{i,y}$ = Refer Annexure 5 LFR applied in the ER calculation is the *ex ante* LFR which is calculated using the formula provided in methodology.[4] For year 1, LFR applied is 6.39%, for year 2 it is 12.81% and for year 3 it is 19.18%. The *ex post* LFR observed from the monitoring survey is lower than calculated *ex ante* LFR. Therefore it is concluded that the project CFLs are operating in accordance with the *ex ante* linear failure rate. To obtain a conservative estimate of emission reductions achieved, *ex-ante* LFR is applied in the calculation.
Monitoring equipment:	-
Measuring/	*ex post* monitoring surveys conducted at least once in every 3

[4] According to the clarification number SSC 670, after the first *ex post* monitoring survey and for the period before the subsequent *ex post* monitoring surveys undertaken the LFR value estimated *ex ante* shall be used without having to consider any *ex post* adjustment for the monitoring period..

Reading/ Recording frequency:	years
Calculation method (if applicable):	Ex post $LFR_{i,y}$ is determined by dividing the number of fused CFLs found from the ex post monitoring survey by the number of CFLs distributed, which is the CFL sample size of the survey. The survey is done on random sampling approach. The detailed calculation is shown in CER spreadsheet and also the monitoring survey report prepared by third party for individual CPA. Copy of the same is submitted to verifying DOE.
QA/QC procedures:	Each SSC-CPA determined the representative sample size with minimum 90% confidence interval and 10% maximum error margin. The actual number of households to be surveyed was arrived at by dividing the number of sample CFL with the average number of CFLs distributed per household. To be conservative the minimum number of households surveyed was kept as hundred. The SSC-CPA implementer(s) has chosen a sample size higher than the one calculated in individual CPA-DD.
Purpose of data:	Emission reduction calculation
Additional comment:	CPA implementers have chosen the option 1, i.e. once in every 3 years to conduct the monitoring survey to calculate the LFR. The data of the survey was reported to the CME (BEE).

Data/Parameter:	*Lamp distribution data*
Unit:	--
Description:	The start and completion date of CFL distribution, Utility consumer number of CFL recipient households under the SSC-CPA entered into the SSC-CPA database.
Measured/ Calculated/ Default:	Measured (and recorded in CPA database)
Source of data:	SSC-CPA Database
Value(s) of monitored parameter:	Distribution of CFLs-Start date: Refer Annexure 3 Distribution of CFLs- Completion date: Refer Annexure 3
Monitoring equipment:	-
Measuring/ Reading/ Recording frequency:	Once in the crediting period
Calculation method (if applicable):	-
QA/QC procedures:	Standardized database form was used to maintain these data. Upon submission of the documented data, the same was verified independently by the CME (BEE) and has given approval to individual SSC – CPA. The approval letters for each CPAs are submitted to DOE. NA
Purpose of data:	Emission reduction calculation
Additional comment:	-

Data/Parameter:	N
Unit:	--
Description:	Sample size of Monitoring Survey
Measured/ Calculated/ Default:	Calculated
Source of data:	Calculated value as per statistical analysis provided in PoA-DD and CPA-DD Annexure 4
Value(s) of monitored parameter:	Number of households: Refer Annexure 5
Monitoring equipment:	-
Measuring/ Reading/ Recording frequency:	Once at the time of each survey.
Calculation method (if applicable):	Calculated as mentioned in the Annexure 4 of respective CPA-DDs.
QA/QC procedures:	Each SSC-CPA determined the representative sample size with minimum 90% confidence interval and 10% maximum error margin. The actual number of households to be surveyed was arrived at by dividing the number of sample CFL with the average number of CFLs distributed per household. To be conservative the minimum number of households surveyed was kept as hundred. The SSC-CPA implementer(s) has chosen a sample size higher than the one calculated in individual CPA-DD..
Purpose of data:	Emission reduction calculation (Only the emission reduction formula is provided in the methodology)
Additional comment:	Also refer "N" parameter table under section B.6.1 of respective CPA –DDs.

Data/Parameter:	$P_{i, BL}$
Unit:	W
Description	Rated power of the baseline ICLs of the group of "*i*"
Measured/ Calculated/ Default:	Measured / Calculated
Source of data:	Weighted average calculated using rated power of the baseline ICLs as recorded in SSC-CPA database
Value(s) of monitored parameter:	The SSC-CPA specific applicable values may be referred at Annexure 10
Monitoring equipment:	-
Measuring/ Reading/ Recording frequency:	Once in the crediting period
Calculation method (if applicable):	Weighted average

QA/QC procedures:	Number and type of ICLs collected in boxes is used to verify the numbers recorded in the ledger and database. This was also cross referred to the CFLs distributed as per project database
Purpose of data:	Emission reduction calculation
Additional comment:	Data was reported to BEE for record. The baseline ICL's rated power was also verified during ICL destruction.

Data/Parameter:	$P_{i,PJ}$
Unit:	W
Description:	Rated power of the CFLs of the group of "*i*" lighting devices (Watts)
Measured/Calculated /Default:	Calculated
Source of data:	Weighted average calculated using rated power of the CFLs as recorded in SSC-CPA database
Value(s) of monitored parameter:	Values may be referred at Annexure 10
Monitoring equipment :	--
Measuring/Reading/ Recording frequency:	Once in the crediting period
Calculation method (if applicable):	Weighted average
QA/QC procedures:	The record of CFLs purchased and delivered in respective CPAs were used to verify the number recorded in the ledger and database. This was also cross referred to the ICLs collected.
Purpose of data:	Emission reduction calculation
Additional comment:	-

Data/Parameter:	**$N_{Destroyed}$**
Unit:	Number
Description:	Number of ICLs collected and destroyed
Measured/ Calculated /Default:	Measured (recorded)
Source of data:	SSC-CPA database
Value(s) of monitored parameter:	Refer Annexure 6 for the CPAs in which destruction of ICLs have been carried out.
Monitoring equipment:	--
Measuring/Reading/ Recording frequency:	Once in the crediting period
Calculation method (if applicable):	--
QA/QC procedures:	During CFL distribution activity: • Only 60 W and 100 W of working ICLs were accepted for bulb exchange during the CFL distribution activity. • The marking of the wattage of ICLs were checked before data recording in the ledger book. After completion of CFL distribution activity:

	• ICLs collected were stored in separate boxes according to the wattage and clearly labeled of their contents. • Destruction of ICLs was organized by qualified independent service provider (ISP) and total number of ICLs destroyed to be verified by the ISP. • All the ICLs were destroyed within 24 hours after the handing over to ISP. This has effectively limited the undesired secondary market effects and free riders activity. The ISP has provided destruction certificates for the same which are submitted to verifying DOE.
Purpose of data:	Emission reduction calculation.
Additional comment:	--

Data/Parameter:	TD_y
Unit:	%
Description:	Average annual technical grid losses
Measured/Calculated /Default:	--
Source of data:	Published DISCOM data by an official governmental body.
Value(s) of monitored parameter:	Refer Annexure 7
Monitoring equipment:	-
Measuring/Reading/ Recording frequency:	Yearly
Calculation method (if applicable):	-
QA/QC procedures:	Project participant first collected T&D loss values specific to individual electricity distribution companies within the project area, using the T&D loss values confirmed by the electricity regulatory commission in recent tariff order documents published by electricity regulatory commissions that oversee these distribution companies.
Purpose of data:	Emission reduction calculation
Additional comment:	Same value as mentioned for year 2011-12 is used for year 2012-13, in the absence of official data for the year 2012-13.

D.3. Implementation of sampling plan

>>
Under this PoA sampling is required for determining the number of CFLs placed in service and operating (*ex-post $Q_{PJ,i}$ survey*) and CFL failure rate (*ex-post monitoring surveys for $LFR_{i,y}$*).

All the 24 CPAs under this monitoring period carried out first ex post monitoring survey integrating "$Q_{PJ,i}$" survey and the "$LFR_{i,y}$" survey.

Sampling Criteria adopted

3. Participating households under the CPA area

4. Random sample group determined using statistical tools as representing the households falling under the CPA area. Survey sample size was determined to have at-least 90% confidence interval and 10 % maximum margin of error[5].

The distributed CFLs in the CPA project area surveyed as per the applied methodology AMS-II.J. for the following two(2) monitoring parameters:

1) "$Q_{PJ,i}$" (number of CFLs with BLY logo, installed and operating), where the Q_{PJ} number is fixed for the entire crediting period;

Sampling Design –
The sampling is carried out as per the sampling plan design described in the Annexure 4 of the included SSC-CPA-DD. The survey records are maintained under the BLY database. The monitoring surveys were carried out by third parties. The survey procedures were established and implemented to ensure that the field data collection is performed properly and any potential intentional errors or unintentional errors are minimized and documented.

Considering that from a BLY scheme point of view, each of the households holds an equal probability of being identified from a DISCOMs active residential household customer base, hence simple random sampling was used.

To ensure random selection, random number generators were applied. Each household was allotted a unique CPA serial number starting at 1 and up to the total number of households in CPA area. Using random number generators, the serial number were randomly chosen. The random number thus obtained is correlated with the utility provided residential customer code.

Data Collection –
The following activities were done before collecting the data from households as per the section E.7.2 of registered PoA –DD

- Detailed instructions were given to the survey agency/surveyor(s) on data collection procedures and determination of household sample size.
- Standardized data forms were developed and were used for the data collection during Survey(s).

Accordingly, an appropriate statistically robust sample size for conducting the monitoring survey has been used (Refer Annexure 5 for summary of data collected during survey).

Data Analysis -
The data collected though the standard forms through the surveys was compiled and collated. CPA Baseline, Survey Baseline and Survey findings were determined after conducting survey as follows:

CPA Baseline: From the CPA household database for all the CPA households, the total number of CFLs distributed with BLY logo was taken for each wattage type 'i'.

Survey Baseline: From the CPA household database for the selected sample of households, the total number of CFLs distributed with BLY logo was taken for each wattage type 'i'.

Survey Findings: From the survey findings for the selected sample of households, the total number of BLY logo CFLs installed and operating was found for each wattage type 'i'.

The Q_{PJ} value for each type of CFL type 'i'is calculated as presented in $Q_{PJ,i}$ table of section D.2

= Ratio of (Survey Findings/Survey Baseline) x CPA Baseline, for each wattage type.

To be conservative, the calculated $Q_{pj,i}$ is compared with the number of ICLs destroyed and minimum of the two is taken as the final $Q_{pj,i}$ value. The claimed number of lamps is capped by the number of ICLs destroyed.

The calculated Q_{PJ} values are presented in Annexure 4.

[5] As per AMS II.J ver. 03 methodology

Confidence/ Precision -
The applied methodology AMS-II.J. ver. 03 requires a minimum 90% confidence interval and the 10% maximum error margin. Annexure 4 of respective CPA-DDs has been followed to achieve this level of precision.

2) "$LFR_{i,y}$" (lamp failure rate of type i) in the CPA area.

Sampling Design –
The CPA follows the sampling approach described in the Annexure 4 of the respective CPA -DDs.

The surveyor appointed by the CPA implementer have
- Randomly selected a sample of households from CPA household database. The number of households included in the sample was equal to or more than the calculated values mentioned in Annexure 4 of the included CPA-DDs.
- For the identified households the survey identified the number of CFLs for each type of wattage 'i' with BLY logo which are installed and not operating
- CFLs replaced as a part of regular maintenance or warranty program was counted as operating.

However during the survey no CFLs were replaced to count those as operating.

Data Collection –
The following activities were done before collecting the data from households as per the section E.7.2 of registered PoA -DD

- Detailed instructions were given to the survey agency/surveyor(s) on data collection procedures and determination of household sample size.
- Standardized data forms were developed and were used for the data collection during Survey(s).

Accordingly, an appropriate statistically robust sample size for conducting the monitoring survey has been used (Refer Annexure 5 for summary of data collected during survey).

Data Analysis –
The data collected though the standard forms through the surveys was compiled and collated centrally.

Survey Baseline and Survey findings were determined after conducting survey as follows:

Survey Baseline: From the CPA household database for the selected sample of households, the total number of CFLs distributed with BLY logo was taken for each wattage type.

Survey Findings: From the survey findings for the selected sample of households, the total number of BLY logo CFLs installed and operating was found for each wattage type.

The Lamp Failure Rate is calculated as

= 1- (Survey Findings/ Survey Baseline), for each wattage type i.

The value of the $LFR_{i,y}$ considered for the calculation of the emission reductions is higher of the value obtained from:

a) The life test curve submitted by CFL manufacturer/ accredited laboratory for the CFLs distributed in the CPA area
b) The ex-post monitoring survey results.

The calculated LFR values are presented in Annexure 5.

The subsequent linear failure rate curve reconstructed for the remaining crediting period based on the slope determined from step (a) and (b) above. This reconstructed curve shall be valid for credit issuance for either 3 years or 30% of the elapsed rated life of the lamp, selected as the minimum frequency of the ex-post monitoring survey in the section B.5.2 of the included CPA-DDs.

Confidence / Precision -
The applied methodology AMS-II.J. ver. 03 requires a minimum 90% confidence interval and the 10%

maximum error margin. Annexure 4 of respective CPA-DDs has been followed to achieve this level of precision.

SECTION E. Calculation of emission reductions or GHG removals by sinks

>>

All the CPA-DDs make use of equations listed under section E.6.2 of PoA-DD, where the emission reductions due to the project activity are calculated as under.

Emissions Reduction (ER_y)

Emission reduction (ER_y) is net electricity savings ($NES_{,y}$) times an emission factor ($EF_{CO2,ELEC,y}$)

$$ER_y = NES_{,y} \times EF_{CO2,ELEC,y} \quad \textbf{(1)}$$

Where:

ER_y	Emission reductions in year y (tCO_2e)
NES_y	Net electricity saved in year *y* (kWh)
$EF_{CO2,ELEC,y}$	Grid Emission factor (GEF) in year *y,*(t_{CO2e}/MWh); The calculated GEF value is fixed ex-ante in the SSC-CPA.

Net Energy Savings (NES_y)

The net energy saved is derived using the equation (2) below:

$$NES_{,y} = \sum_i Q_{PJ,i} * (1-LFR_{i,y}) * ES_i * [1 / (1 - TD_y)] * NTG \quad \textbf{(2)}$$

Where:

$$ES_i = (P_{i,BL} - P_{i,PJ}) * O_i * 365 / 1000 \quad \textbf{(3)}$$

Where:

NES_y	Net electricity saved in year *y* (kWh)
$Q_{PJ,i}$	Number (quantity) of CFLs of wattage "i" distributed or installed under the project activity. In total for all "i", this value shall be equal to or less than the documented number of all baseline ICLs destroyed. Once all of the project CFLs are distributed or installed, $Q_{PJ,i}$ is a constant value independent from *y*. Under the PoA, $Q_{PJ,i}$ obtained from the *ex post* $Q_{PJ,}$ survey, which is to take place within the first 12 months of CFL distribution.
i	Counter for lighting device type e.g. 40W incandescent bulb, 14 W CFL
n	Number of types of lighting devices
ESi	Estimated annual electricity savings for equipment of type *i,* for the relevant technology viz. ICL or CFL(kWh)
$LFR_{i,y}$	Lamp Failure Rate for CFL equipment type *i* in year *y* (fraction). Under the PoA, this is calculated ex-ante using the equation (4) below and adjusted ex-post based on monitoring survey results.
TD_y	Average annual technical grid losses (transmission and distribution) during year *y* for the grid serving the locations where CFLs are installed, expressed as a fraction. Under the PoA, each CPA determined the TD_y from the most recent average annual audited data published either by the DISCOM or an official governmental body e.g. by the Central Electricity Authority (CEA) of India, Electricity Regulatory Commission(s). A default value of 10% shall be used for average annual technical grid losses, if no recent data are available or the data cannot be regarded accurate and reliable.

NTG	Under the PoA, the default value of 0.95 is applied.
$P_{i,BL}$	Rated power of the baseline lighting devices (ICLs) of the group of type *i* lighting devices (Watts)
$P_{i,PJ}$	Rated power of the project lighting devices (CFLs) of the group of "i" lighting devices(Watts)
O_i	Under the PoA, the value of 3.5 hours per 24 hrs period is applied in all SSC-CPAs.

To calculate the emission reductions from a CPA area, the equations under the CPA-DD section B.5.2 are applied as per project values. This is illustrated below for the data values of the **SSC-CPA UNFCCC ref no 3223-0022**. For emission reduction values of individual CPAs, refer Annexure 8

$Q_{pj,i}$ Calculation

The $Q_{pj,i}$ value is obtained from the findings of the $Q_{pj,i}$ survey as follows:

Parameter Description	60W	100 W
Number of ICLs collected and destroyed; $Q_{BL,i}$	72,496	507,408

Parameter Description	11W	18 W
Number of CFLs distributed or installed as per database	72,496	507,408
Percentage of CFLs found in service and operating under 1st ex-post monitoring survey (%)	98.16%	94.52%
Number of CFLs in service and operating under 1st monitoring survey; $Q_{PJ,i}$	71,162	479,588

The values for all CPAs are presented in Annexure 4.

Lamp Failure Rate Calculation

The LFR value is calculated from the findings of the ex-post monitoring survey as follows:

Counter for year	1	2	3
Rated average life for CFLs; L_i	10000		
% of CFLs operating at the rated lifetime; R_i	50		
Number of operating hours of CFL; X_i	1,277.5	1,281.0	1,277.5

Now

For Y=1

1*1,277.5 < 10000

For Y=2

1,277.5 + 1,281.0 <10000

And

For Y=3

2*1,277.5 + 1,281.0 <10000

thus

$LFR_{i,1}$= 1*1,277.5 * (100 - 50) / (100 * 10000)
= 6.39 %

$LFR_{i,2}$= (1,277.5 + 1,281.0) * (100 - 50) / (100 * 10000)[6]
= 12.79%

and

$LFR_{i,3}$= (2*1,277.5 + 1,281.0) * (100 - 50) / (100 * 10000)
= 19.18%

The values for all CPAs are presented in Annexure 5.

Estimated Annual Energy Savings

$ES_i = (P_{i,BL} - P_{i,PJ}) * O_i * 365 / 1000$

Weighted average of rated power of the baseline lighting devices (ICLs); $P_{i,BL}$	***95.00***
Weighted average of rated power of the project lighting devices (CFLs); $P_{i,PJ}$	***17.12***
Average daily operating hours of ICLs replaced by CFLs; O_i	***3.5***

Thus estimated electricity savings,

for first 181 days in this monitoring period, i.e. y=2 (01/01/2013 to 30/06/2013)
ES_1 = (95.00 – 17.12) * 3.5 *181/1000

= 49.33

for next 123 days in this monitoring period, i.e. y=3 (01/07/2013 to 31/10/2013)
ES_2 = (95.00 – 17.12) * 3.5 *123/1000

= 33.52

The values for all CPAs are presented in Annexure 7.

Net Energy Savings

$NES_y = \sum_i Q_{PJ,i} * (1-LFR_{i,y}) * ES_i * [1 / (1 - TD_y)] * NTG$

Counter for year	1	2
Number of CFLs in service and operating under 1st ex-post monitoring survey; $Q_{PJ,i}$	550,750	550,750
Average annual technical grid losses during year y; TD_y (%)	18.64%	18.64%
Net-to-gross adjustment factor; NTG	0.95	0.95
LFRi	12.79%	19.18%

Thus net energy savings

NES_1= 550750*(1-12.79)*49.33*(1/(1-18.64))*0.95 = 27,667

[6] As per AMS II.J Ver. 03, If y*Xi < Li; LFRi,y = y * Xi * (100-Ri)/(100*Li), but as year 2 is coming as a leap year, hence for that year operating hours comes to 366*3.5= 1,281.

NES_2= 550750*(1-19.18)*33.53*(1/(1-18.64))*0.95 = 17,424

NES = 27,667 **+** 17,424 **= 45,091**

The values for all CPAs are presented in Annexure 7.

Emission Reductions

$ER_y = NES_{,y} \times EF_{CO2,ELEC,y}$

$EF_{CO2,ELEC,y}$ = 0.9027 tCO_2/MWh

ER_y = 45,091 * 0.9027
= 40,704 tCO_{2e}

The values for all CPAs are presented in Annexure 8.

The implementation of this PoA resulted in greenhouse gas emission reduction of 604,393 tonnes of CO_2 equivalent during the current monitoring interval.

E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

>>Not Applicable

E.2. Calculation of project emissions or actual net GHG removals by sinks

>> Not Applicable

E.3. Calculation of leakage

>> Not Applicable

E.4. Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks

For this monitoring period the values are tabulated as under for PoA:

Item	Baseline emissions or baseline net GHG removals by sinks (t CO_2e)	Project emissions or actual net GHG removals by sinks (t CO_2e)	Leakage (t CO_2e)	Emission reductions or net anthropogenic GHG removals by sinks (t CO_2e)
Total	-	-	-	604,393

The values for all SSC-CPAs are presented in Annexure 8.

E.5. Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex-ante calculation of registered PDD	Actual values achieved during this monitoring period

Emission reductions or GHG removals by sinks (t CO_2e)	839,107	604,393	

`>> Refer Annexure 8

E.6. Remarks on difference from estimated value in registered PDD

>> Actual Value is less than the estimated value. In Annexure 9 the same has been explained.

E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO_2e)	-	604,393

- - - - -

Annexure 1 - Geographical location of the SSC-CPAs included under the BLY-PoA (refer MR Section A.2)

(Note: Abbreviations used under State column KR – Karnataka; PB- Punjab; AP-Andhra Pradesh; DL-Delhi; GO-Goa)

CME -Unique Identification No.	UNFCCC Ref. No.	State	DISCOM	Circle	District	Division	latitude	Longitude
							in degree	in degree
001-CQC-AP	3223-0001	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Ranga Reddy North	Ranga Reddy	Habsiguda	21.125498	81.914063
022-HPL-KR	3223-0022	KR	BESCOM (Bangalore Electricity Supply Company)	Kolar	Kolar	KGF	13.9384	78.2613
024-HPL-KR	3223-0023	KR	BESCOM (Bangalore Electricity Supply Company)	Kolar	Chikkaballapura (CB Pura)	Chikkaballapura (CB Pura)	13.5228	77.8367
025-HPL-KR	3223-0024	KR	BESCOM (Bangalore Electricity Supply Company)	Bangalore Rural	Bangalore Rural	Chandapura	13.8023	77.0704
028-HPL-KR	3223-0025	KR	BESCOM (Bangalore Electricity Supply Company)	Kolar	Kolar	Kolar	13.1363	78.1363
023-HPL-KR	3223-0026	KR	BESCOM (Bangalore Electricity Supply Company)	Bangalore Rural	Bangalore Rural	NELAMANGALA	13.0992	77.3888
026-HPL-KR	3223-0027	KR	BESCOM (Bangalore Electricity Supply Company)	Bangalore Rural	Ramanagara	Ramanagara	12.7145	77.2767
027-HPL-KR	3223-0028	KR	BESCOM (Bangalore Electricity Supply Company)	Bangalore Rural	Bangalore Rural	Yelahanka	13.1075	77.6002
029-CQC-DL	3223-0029	DL	NDPL (North Delhi Power Limited)	North West, North	Shalimar Bagh, Model Town	Shalimar Bagh, Model Town	28.7127	77.1623
030-CQC-DL	3223-0030	DL	NDPL (North Delhi Power Limited)	North	KESHAV PURAM, CIVIL LINES AND SHAKTI NAGAR	-	-	-
041-CQC-DL	3223-0031	DL	NDPL (North Delhi Power Limited)	North, North West	Pitampura, Rohini	-	28.6896	77.1312
042-CQC-DL	3223-0032	DL	NDPL (North Delhi Power Limited)	North, Northwest	Mangol Puri, Moti Nagar	-	28.6602	77.1384

043-CQC-DL	3223-0033	DL	NDPL (North Delhi Power Limited)	North West	Bawana,Badli and Narela	-	-	-
034-HPL-GO	3223-0034	GO	Goa Electricity Department	North Goa Block II	North Goa Block II	Division - I (Panaji), Division - V (Bicholim), Division - VI (Mapusa), Division XVII (Mapusa)	-	-
035-HPL-GO	3223-0035	GO	Goa Electricity Department	South Goa - Block I	South Goa - Block I	Division -IV(Margao), Division XVI(Margao), Division VII(Curchorem), Division-X (Ponda), Division XI (Vasco), Division XIV(Verna)	-	-
036-CQC-PB	3223-0036	PB	PSPCL (Punjab State Power Corporation Limited)	Amritsar city, Amritsar Sub Urban	Amritsar	Industrial, City Center, Hakima Gate, Civil Line, East, West	31.634	74.8723
037-CQC-PB	3223-0037	PB	PSPCL (Punjab State Power Corporation Limited)	Kapurthala, Jalandhar	Kapurthala and Jalandhar	Kartapur, Model Town, East, West	31.3071	75.5782
038-CQC-PB	3223-0038	PB	PSPCL (Punjab State Power Corporation Limited)	Tarn Taran, Amritsar Sub Urban	Tarn Taran , Amritsar	Rayya, City Tarn Taran, Sub Urban, Jindal Guru,Ajnala	31.45	74.9253
039-CQC-PB	3223-0039	PB	PSPCL (Punjab State Power Corporation Limited)	Tarn Taran and Kapurthala	Tarn Taran and Kapurthala	Sub Tarn Taran, Patti, Bhikiwind,City Kapurthala, Sub Urban Kapurthala	31.2817	74.8574
040-CQC_PB	3223-0040	PB	PSPCL (Punjab State Power Corporation Limited)	Kapurthala and Jalandhar	Kapurthala and Jalandhar	City Nakodar, Sub Urban Nakodar , Phagwara Cantt.	-	-
044-CQC-PB	3223-0041	PB	PSPCL (Punjab State Power Corporation Limited)	Mohali and Ropar	Mohali & Ropar	Mohali, Zirakpur,Lalru, Kharar	30.7488	76.6413
045-CQC-PB	3223-0042	PB	PSPCL (Punjab State Power Corporation Limited)	Ferozpur, Mukhtsar	Ferozpur	City Ferozpur, Sub-urban Ferozpur, Jalalabaad, Zira and Fazilka	-	-
031-CQC-AP	3223-0043	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Ranga Reddy North	Ranga Reddy	Gachibowli	17.4359	78.3417

032-CQC-AP	3223-0044	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Ranga Reddy North	Ranga Reddy	Kukatpally	17.4833	78.4166
033-CQC-AP	3223-0045	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Ranga Reddy North	Ranga Reddy	Medchal	17.6283	78.5746
049-CQC-AP	3223-0046	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Hyderabad South Circle	Hyderabad	Asmangadh and Charminar	17.3614	78.4744
050-CQC-AP	3223-0047	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Hyderabad Central and Hyderabad North	Hyderabad	Azamabad and Green Lands	17.4342	78.4546
051-CQC-AP	3223-0048	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	Hyderabad North	Hyderabad	Bowenpally and Paradise	17.4654	78.478
052-CQC-AP	3223-0049	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	RangaReddy South and RangaReddy East	Ranga Reddy	Champapet and Saroornagar	17.3447	78.5183
053-CQC-AP	3223-0050	AP	APCPDCL (Central Power Distribution Company of Andhra Pradesh Limited)	RangaReddy South	Ranga Reddy	Vikarabad and Rajendra nagar	17.3325	77.9047

Annexure 2 – Crediting and Monitoring period of SSC-CPA(s) under BLY PoA (refer MR Section A.5, B.2.5)

UNFCCC Ref. No.	End date of CFL distribution	CPA wise Start date of Crediting Period	Length of Crediting Period of individual CPAs	Monitoring Period start date	Monitoring period end date	Monitoring Interval	Monitoring Period Length	End date for Y=1(/2)	Start date for Y2(/3)	Effective Days in each counter of year	
	dd/mm/yyyy	dd/mm/yyyy	years	**dd/mm/yyyy**	**dd/mm/yyyy**	**in days**	**in years**	in days	in days	y=1	y=2
3223-0001	09/10/2011	29/05/2011	7.83	01/01/2013	31/10/2013	304	0.83	08/10/2013	09/10/2013	281	23
3223-0022	01/07/2011	01/07/2011	7.83	01/01/2013	31/10/2013	304	0.83	30/06/2013	01/07/2013	181	123
3223-0023	31/08/2011	31/08/2011	7.83	01/01/2013	31/10/2013	304	0.83	30/08/2013	31/08/2013	242	62
3223-0024	31/08/2011	31/08/2011	7.83	01/01/2013	31/10/2013	304	0.83	30/08/2013	31/08/2013	242	62
3223-0025	01/07/2011	31/08/2011	7.83	01/01/2013	31/10/2013	304	0.83	30/06/2013	01/07/2013	181	123
3223-0026	31/08/2011	19/08/2011	7.83	01/01/2013	31/10/2013	304	0.83	30/08/2013	31/08/2013	242	62
3223-0027	19/08/2011	31/08/2011	7.83	01/01/2013	31/10/2013	304	0.83	18/08/2013	19/08/2013	230	74
3223-0028	31/08/2011	01/07/2011	7.83	01/01/2013	31/10/2013	304	0.83	30/08/2013	31/08/2013	242	62
3223-0029	10/04/2012	10/04/2012	7.83	01/01/2013	31/10/2013	304	0.83	09/04/2013	10/04/2013	99	205
3223-0030	*	*	*	*	*	0	*	*	*	*	*
3223-0031	03/07/2012	07/07/2012	7.83	01/01/2013	31/10/2013	304	0.83	02/07/2013	03/07/2013	183	121
3223-0032	06/01/2012	06/01/2012	7.83	01/01/2013	31/10/2013	304	0.83	05/01/2013	06/01/2013	5	299
3223-0033	*	*	*	*	*	*	*	*	*	*	*
3223-0034	*	*	*	*	*	*	*	*	*	*	*
3223-0035	*	*	*	*	*	*	*	*	*	*	*
3223-0036	03/03/2012	03/03/2012	7.83	01/01/2013	31/10/2013	304	0.83	02/03/2013	03/03/2013	61	243
3223-0037	04/05/2012	04/05/2012	7.83	01/01/2013	31/10/2013	304	0.83	03/05/2013	04/05/2013	123	181
3223-0038	27/10/2012	27/10/2012	7.83	01/01/2013	31/10/2013	304	0.83	26/10/2013	27/10/2013	299	5
3223-0039	22/11/2012	22/11/2012	7.83	01/01/2013	31/10/2013	304	0.83	31/10/2013	-	304	0
3223-0040	*	*	*	*	*	*	*	*	*	*	*
3223-0041	14/08/2012	14/08/2012	7.83	01/01/2013	31/10/2013	304	0.83	13/08/2013	14/08/2013	225	79
3223-0042	*	*	*	*	*	*	*	*	*	*	*
3223-0043	25/07/2012	25/07/2012	7.83	01/01/2013	31/10/2013	304	0.83	24/07/2013	25/07/2013	205	99

3223-0044	20/04/2012	20/04/2012	7.83	01/01/2013	31/10/2013	304	0.83	19/04/2013	20/04/2013	109	195
3223-0045	09/10/2012	09/10/2012	7.83	01/01/2013	31/10/2013	304	0.83	08/10/2013	09/10/2013	281	23
3223-0046	17/05/2013	29/03/2012	7.00	01/01/2013	31/10/2013	304	0.83	31/10/2013	-	168	0
3223-0047	09/03/2013	29/03/2012	7.00	01/01/2013	31/10/2013	304	0.83	31/10/2013	-	237	0
3223-0048	23/12/2012	23/12/2012	7.83	01/01/2013	31/10/2013	304	0.83	31/10/2013	-	304	0
3223-0049	18/05/2013	29/03/2012	7.00	01/01/2013	31/10/2013	304	0.83	31/10/2013	-	167	0
3223-0050	07/08/2012	08/08/2012	7.83	01/01/2013	31/10/2013	304	0.83	06/08/2013	07/08/2013	218	86

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 3: Chronology of SSC CPA implementation (refer MR section B.1)

CME -Unique Identification No.	UNFCCC Ref No	Start date of CFL distribution	End date of CFL distribution	Date of destruction of ICLs	Start Date of Monitoring survey	End Date of Monitoring Survey
		dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy
001-CQC-AP	3223-0001	11/05/2011	09/10/2011	21/10/2011	23/12/2011	06/01/2012
022-HPL-KR	3223-0022	02/04/2011	01/07/2011	17/02/2012	27/08/2011	08/09/2011
024-HPL-KR	3223-0023	08/07/2011	31/08/2011	27/02/2012	22/02/2012	05/03/2012
025-HPL-KR	3223-0024	01/08/2011	31/08/2011	12/03/2012	17/02/2012	27/02/2012
028-HPL-KR	3223-0025	01/04/2011	01/07/2011	22/02/2012	27/08/2011	05/09/2011
023-HPL-KR	3223-0026	04/08/2011	31/08/2011	02/03/2012	29/02/2012	05/03/2012
026-HPL-KR	3223-0027	20/05/2011	19/08/2011	07/03/2012	17/02/2012	28/02/2012
027-HPL-KR	3223-0028	06/07/2011	31/08/2011	16/03/2012	17/02/2012	28/02/2012
029-CQC-DL	3223-0029	16/01/2012	10/04/2012	03/06/2012	07/11/2012	05/12/2012
030-CQC-DL	3223-0030	*	*	*	*	*
041-CQC-DL	3223-0031	21/05/2012	03/07/2012	13/07/2012	20/11/2012	25/11/2012
042-CQC-DL	3223-0032	19/10/2011	06/01/2012	25/01/2012	26/11/2012	30/11/2012
043-CQC-DL	3223-0033	*	*	*	*	*
034-HPL-GO	3223-0034	*	*	*	*	*
035-HPL-GO	3223-0035	*	*	*	*	*
036-CQC-PB	3223-0036	05/12/2011	03/03/2012	19/03/2012	12/10/2012	16/10/2012
037-CQC-PB	3223-0037	20/02/2012	04/05/2012	23/05/2012	18/10/2012	22/10/2012
038-CQC-PB	3223-0038	25/08/2012	27/10/2012	27/11/2012	14/02/3013	23/0202013
039-CQC-PB	3223-0039	08/09/2012	22/11/2012	27/11/2012	25/02/2013	06/03/2013
040-CQC_PB	3223-0040	*	*	*	*	*
044-CQC-PB	3223-0041	25/06/2012	14/08/2012	22/10/2012	26/10/2012	30/10/2012

045-CQC-PB	3223-0042	*	*	*	*	*
031-CQC-AP	3223-0043	26/05/2012	25/07/2012	31/07/2012	08/12/2012	13/12/2012
032-CQC-AP	3223-0044	26/02/2012	20/04/2012	25/04/2012	21/09/2012	26/09/2012
033-CQC-AP	3223-0045	11/08/2012	09/10/2012	17/10/2012	24/12/2012	29/12/2012
049-CQC-AP	3223-0046	17/02/2013	17/05/2013	21/05/2013	21/10/2013	26/10/2013
050-CQC-AP	3223-0047	21/01/2013	09/03/2013	12/03/2013	29/10/2013	04/11/2013
051-CQC-AP	3223-0048	09/11/2012	23/12/2012	27/12/2012	13/06/2013	19/06/2013
052-CQC-AP	3223-0049	17/02/2013	18/05/2013	21/05/2013	28/10/2013	02/11/2013
053-CQC-AP	3223-0050	04/06/2012	07/08/2012	24/08/2012	16/12/2012	22/12/2012

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 4: $Q_{pj,i}$ Survey Sample size and calculations (refer MR section D.2)

CME - Unique Identification No.	UNFCCC Ref. No.	Number of grid connected Households participating under the CPA	Average number of CFLs distributed per household	Sample size of monitoirng survey (N)	No. of CFLs of type "i" claimed to be distributed in sample households		No. of CFLs with BLY logo of type "i" found installed and operating in the sample households		Number of CFLs in service and operating under 1st monitoring survey (QPJ,i)		
					11/14W	18/20W	11/14W	18/20W	11/14W	18/20W	Total
001-CQC-AP	3223-0001	162999	2.65	1800	1485	3038	1444	2935	136635	280875	417511
022-HPL-KR	3223-0022	152130	3.81	2200	978	7405	960	6999	71162	479588	550750
024-HPL-KR	3223-0023	134164	3.89	2200	886	7685	874	7303	54240	444269	498509
025-HPL-KR	3223-0024	133012	3.93	2200	886	7685	874	7303	52208	446456	498664
028-HPL-KR	3223-0025	144254	3.50	2200	1120	6579	1099	6200	74671	403812	478484
023-HPL-KR	3223-0026	134200	3.86	2200	545	7968	533	7494	32800	455092	487892
026-HPL-KR	3223-0027	135291	3.94	2200	1535	7126	1457	6727	95464	408187	503651
027-HPL-KR	3223-0028	125057	3.92	2200	601	8012	586	7553	33979	429255	463234
029-CQC-DL	3223-0029	87221	2.97	1246	1361	2102	1293	1989	62988	182406	245394
030-CQC-DL	3223-0030	*	*	*	*	*	*	*	*	*	*
041-CQC-DL	3223-0031	28791	3.89	1246	870	3909	840	3760	21959	85875	107834
042-CQC-DL	3223-0032	118889	3.50	1246	2055	2737	1982	2638	156168	244774	400942
043-CQC-DL	3223-0033	*	*	*	*	*	*	*	*	*	*
034-HPL-GO	3223-0034	*	*	*	*	*	*	*	*	*	*
035-HPL-GO	3223-0035	*	*	*	*	*	*	*	*	*	*
036-CQC-PB	3223-0036	99961	3.22	1404	1138	3552	1101	3434	79117	231969	311086
037-CQC-PB	3223-0037	84795	2.98	1404	922	2992	914	2972	54900	195661	250562
038-CQC-PB	3223-0038	105254	3.28	1404	817	4102	783	4022	60091	276678	336768
039-CQC-PB	3223-0039	113754	3.37	1404	1215	3224	1194	3190	78980	299926	378906
040-CQC-PB	3223-0040	*	*	*	*	*	*	*	*	*	*

044-CQC-PB	3223-0041	90231	3.72	1404	1852	3502	1821	3465	89526	241968	331494
045-CQC-PB	3223-0042	*	*	*	*	*	*	*	*	*	*
031-CQC-AP	3223-0043	55571	3.39	1741	1803	4064	1757	3908	51506	130191	181697
032-CQC-AP	3223-0044	76883	2.84	1741	1250	3526	1241	3508	64186	152594	216780
033-CQC-AP	3223-0045	101305	3.05	1741	1631	3648	1599	3572	78654	223634	302288
049-CQC-AP	3223-0046	109322	3.50	1741	833	5033	819	4982	40325	338279	378604
050-CQC-AP	3223-0047	81088	3.47	1741	1644	4170	1626	4137	67669	211661	279330
051-CQC-AP	3223-0048	103499	3.12	1741	1325	3924	1309	3876	79635	239604	319238
052-CQC-AP	3223-0049	118031	3.45	1741	2780	3658	2753	3604	113874	287420	401295
053-CQC-AP	3223-0050	79505	3.35	1741	1460	4692	1401	4536	54260	203131	257391

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 5: 1st Ex-post Monitoring Survey and Lamp Failure Rate (LFR) calculations (refer MR section D.2)

CME - Unique Identification No.	UNFCCC Ref. No.	Sample size of monitoirng survey (N)	No. of CFLs of type "i" claimed to be distributed in sample households		No. of CFLs with BLY logo of type "i" found installed and operating in the sample households		Ex-Post Lamp Failure Rate for CFL of type "i" in year 1 calculated from 1st survey findings (LFRi,1)		Ex-ante Lamp Failure Rate for CFL of type "i" in year 1 calculated from AMSIIJ (LFRi,1)		Maximum of Ex-ante or Ex-post Lamp Failure Rate for CFL of type "i" (LFRi)	
			11/14W	18/20W	11/14W	18/20W	$LFR_{11/14,1}$	$LFR_{18/20,1}$	$LFR_{11/14,1}$	$LFR_{18/20,1}$	$LFR_{i,1(/2)}$	$LFR_{i,2(/3)}$
001-CQC-AP	3223-0001	1800	1485	3038	1444	2935	2.76%	3.39%	6.39%	6.39%	12.79%	19.18%
022-HPL-KR	3223-0022	2200	978	7405	960	6999	1.84%	5.48%	6.39%	6.39%	12.79%	19.18%
024-HPL-KR	3223-0023	2200	886	7685	874	7303	1.35%	4.97%	6.39%	6.39%	12.79%	19.18%
025-HPL-KR	3223-0024	2200	886	7685	874	7303	1.35%	4.97%	6.39%	6.39%	12.79%	19.18%
028-HPL-KR	3223-0025	2200	1120	6579	1099	6200	1.88%	5.76%	6.39%	6.39%	12.79%	19.18%
023-HPL-KR	3223-0026	2200	545	7968	533	7494	2.20%	5.95%	6.39%	6.39%	12.79%	19.18%
026-HPL-KR	3223-0027	2200	1535	7126	1457	6727	5.08%	5.60%	6.39%	6.39%	12.79%	19.18%
027-HPL-KR	3223-0028	2200	601	8012	586	7553	2.50%	5.73%	6.39%	6.39%	12.79%	19.18%
029-CQC-DL	3223-0029	1246	1361	2102	1293	1989	5.00%	5.38%	6.39%	6.39%	6.39%	12.78%
030-CQC-DL	3223-0030	*	*	*	*	*	*	*	*	*	*	*
041-CQC-DL	3223-0031	1246	870	3909	840	3760	3.45%	3.81%	6.39%	6.39%	6.39%	12.78%
042-CQC-DL	3223-0032	1246	2055	2737	1982	2638	3.55%	3.62%	6.39%	6.39%	6.39%	12.78%
043-CQC-DL	3223-0033	*	*	*	*	*	*	*	*	*	*	*
034-HPL-GO	3223-0034	*	*	*	*	*	*	*	*	*	*	*
035-HPL-GO	3223-0035	*	*	*	*	*	*	*	*	*	*	*
036-CQC-PB	3223-0036	1404	1138	3552	1101	3434	3.25%	3.32%	6.39%	6.39%	6.39%	12.78%
037-CQC-PB	3223-0037	1404	922	2992	914	2972	0.87%	0.67%	6.39%	6.39%	6.39%	12.78%
038-CQC-PB	3223-0038	1404	817	4102	783	4022	4.16%	1.95%	6.39%	6.39%	6.39%	12.78%
039-CQC-PB	3223-0039	1404	1215	3224	1194	3190	1.73%	1.05%	6.39%	6.39%	6.39%	0.00%
040-CQC_PB	3223-0040	*	*	*	*	*	*	*	*	*	*	*

044-CQC-PB	3223-0041	1404	1852	3502	1821	3465	1.67%	1.06%	6.39%	6.39%	6.39%	12.78%
045-CQC-PB	3223-0042	*	*	*	*	*	*	*	*	*	*	*
031-CQC-AP	3223-0043	1741	1803	4064	1757	3908	2.55%	3.84%	6.39%	6.39%	6.39%	12.78%
032-CQC-AP	3223-0044	1741	1250	3526	1241	3508	0.72%	0.51%	6.39%	6.39%	6.39%	12.78%
033-CQC-AP	3223-0045	1741	1631	3648	1599	3572	1.96%	2.08%	6.39%	6.39%	6.39%	12.78%
049-CQC-AP	3223-0046	1741	833	5033	819	4982	1.68%	1.01%	6.39%	6.39%	6.39%	0.00%
050-CQC-AP	3223-0047	1741	1644	4170	1626	4137	1.09%	0.79%	6.39%	6.39%	6.39%	0.00%
051-CQC-AP	3223-0048	1741	1325	3924	1309	3876	1.21%	1.22%	6.39%	6.39%	6.39%	0.00%
052-CQC-AP	3223-0049	1741	2780	3658	2753	3604	0.97%	1.48%	6.39%	6.39%	6.39%	0.00%
053-CQC-AP	3223-0050	1741	1460	4692	1401	4536	4.04%	3.32%	6.39%	6.39%	6.39%	12.78%

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 6: ICL Destruction data (refer MR section D.2)

CME - Unique Identification No.	UNFCCC Ref. No.	No of ICLs collected & destroyed of each wattage type "i" ($N_{Destroyed}$)		Actual CFL distributed for each wattage type "i" (11W, 14W, 18W & 20W)		Percentage of CFLs found in service and operating under 1st ex post monitoring survey (%)		Number of CFLs in service and operating under 1st monitoring survey (QPJ,i)		
		$N_{Destroyed,60}$	$N_{Destroyed,100}$	11/14W	18/20W	11/14W	18/20W	11/14W	18/20W	Total
001-CQC-AP	3223-0001	140515	290732	140515	290732	97.24%	96.61%	136635	280875	417511
022-HPL-KR	3223-0022	72496	507408	72496	507408	98.16%	94.52%	71162	479588	550750
024-HPL-KR	3223-0023	54985	467507	54985	467507	98.65%	95.03%	54240	444269	498509
025-HPL-KR	3223-0024	52925	469809	52925	469809	98.65%	95.03%	52208	446456	498664
028-HPL-KR	3223-0025	76098	428497	76098	428497	98.13%	94.24%	74671	403812	478484
023-HPL-KR	3223-0026	33538	483877	33538	483877	97.80%	94.05%	32800	455092	487892
026-HPL-KR	3223-0027	100575	432398	100575	432398	94.92%	94.40%	95464	408187	503651
027-HPL-KR	3223-0028	34849	455341	34849	455341	97.50%	94.27%	33979	429255	463234
029-CQC-DL	3223-0029	67185	194306	66301	192769	95.00%	94.62%	62988	182406	245394
030-CQC-DL	3223-0030	*	*	*	*	*	*	*	*	
041-CQC-DL	3223-0031	22751	89256	22743	89278	96.55%	96.19%	21959	85875	107834
042-CQC-DL	3223-0032	161881	253945	161920	253960	96.45%	96.38%	156168	244774	400942
043-CQC-DL	3223-0033	*	*	*	*	*	*	*	*	
034-HPL-GO	3223-0034	*	*	*	*	*	*	*	*	
035-HPL-GO	3223-0035	*	*	*	*	*	*	*	*	
036-CQC-PB	3223-0036	81825	240487	81776	239940	96.75%	96.68%	79117	231969	311086
037-CQC-PB	3223-0037	55381	197000	55381	196978	99.13%	99.33%	54900	195661	250562
038-CQC-PB	3223-0038	62700	282181	62700	282181	95.84%	98.05%	60091	276678	336768
039-CQC-PB	3223-0039	80369	303123	80369	303123	98.27%	98.95%	78980	299926	378906
040-CQC_PB	3223-0040	*	*	*	*	*	*	*	*	
044-CQC-PB	3223-0041	91055	244558	91050	244552	98.33%	98.94%	89526	241968	331494
045-CQC-PB	3223-0042	*	*	*	*	*	*	*	*	

031-CQC-AP	3223-0043	52854	135388	52854	135388	97.45%	96.16%	51506	130191	181697
032-CQC-AP	3223-0044	64651	153377	64651	153377	99.28%	99.49%	64186	152594	216780
033-CQC-AP	3223-0045	80228	228392	80228	228392	98.04%	97.92%	78654	223634	302288
049-CQC-AP	3223-0046	41014	341742	41014	341742	98.32%	98.99%	40325	338279	378604
050-CQC-AP	3223-0047	68418	213349	68418	213349	98.91%	99.21%	67669	211661	279330
051-CQC-AP	3223-0048	80608	242571	80608	242571	98.79%	98.78%	79635	239604	319238
052-CQC-AP	3223-0049	114991	291727	114991	291727	99.03%	98.52%	113874	287420	401295
053-CQC-AP	3223-0050	56759	212064	56545	210117	95.96%	96.68%	54260	203131	257391

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 7: Net Energy Savings Calculations (refer MR section D.2)

CME - Unique Identification No.	UNFCCC Ref. No.	End date of CFL distribution	Monitoring Period start date	Monitoring period end date	Monitoring Interval	Monitoring Period Length	Effective Days for LFR	Effective Days in each counter of year		Transmission & Distribution losses (in %)		Energy Saving by project CFL in each year (in KWh)		Net Energy Saved by Project CFLi (in MWh)		
		dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy	in days	in years	in days	For Y=1(/2)	For Y=2(/3)	For 2011 - 12	For 2012 - 13	$ES_{1(/2)}$	$ES_{2(/3)}$	$NES_{1(/2)}$	$NES_{2(/3)}$	NES
001-CQC-AP	3223-0001	09/10/2011	01/01/2013	31/10/2013	304	0.83	41555	281	23	17.96 %	17.96 %	68.75	5.63	28984	2199	31183
022-HPL-KR	3223-0022	01/07/2011	01/01/2013	31/10/2013	304	0.83	41455	49	34	18.64 %	18.64 %	49.33	33.52	27667	17424	45091
024-HPL-KR	3223-0023	31/08/2011	01/01/2013	31/10/2013	304	0.83	41516	67	17	18.64 %	18.64 %	66.51	17.04	33763	8016	41780
025-HPL-KR	3223-0024	31/08/2011	01/01/2013	31/10/2013	304	0.83	41516	67	17	18.64 %	18.64 %	66.62	17.07	33830	8032	41863
028-HPL-KR	3223-0025	01/07/2011	01/01/2013	31/10/2013	304	0.83	41455	49	33	18.64 %	18.64 %	48.79	33.16	23774	14972	38746
023-HPL-KR	3223-0026	31/08/2011	01/01/2013	31/10/2013	304	0.83	41516	68	17	18.64 %	18.64 %	67.64	17.33	33605	7979	41584
026-HPL-KR	3223-0027	19/08/2011	01/01/2013	31/10/2013	304	0.83	41504	61	20	18.64 %	18.64 %	61.00	19.63	31283	9328	40610
027-HPL-KR	3223-0028	31/08/2011	01/01/2013	31/10/2013	304	0.83	41516	67	17	18.64 %	18.64 %	67.47	17.28	31824	7556	39380
029-CQC-DL	3223-0029	10/04/2012	01/01/2013	31/10/2013	304	0.83	41373	25	53	17.41 %	17.41 %	25.49	52.78	6735	12994	19728
030-CQC-DL	3223-0030	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
041-CQC-DL	3223-0031	03/07/2012	01/01/2013	31/10/2013	304	0.83	41457	48	32	17.41 %	17.41 %	48.23	31.89	5600	3450	9050
042-CQC-DL	3223-0032	06/01/2012	01/01/2013	31/10/2013	304	0.83	41279	1	70	17.41 %	17.41 %	1.17	69.87	504	28105	28610
043-CQC-DL	3223-0033	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
034-HPL-GO	3223-0034	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
035-HPL-GO	3223-0035	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
036-CQC-PB	3223-0036	03/03/2012	01/01/2013	31/10/2013	304	0.83	41335	16	63	19.00 %	19.00 %	15.72	62.61	5368	19924	25292

037-CQC-PB	3223-0037	04/05/2012	01/01/2013	31/10/2013	304	0.83	41397	32	47	19.00 %	19.00 %	32.18	47.36	8854	12139	20993
038-CQC-PB	3223-0038	27/10/2012	01/01/2013	31/10/2013	304	0.83	41573	80	1	19.00 %	18.40 %	79.53	1.33	29408	455	29862
039-CQC-PB	3223-0039	22/11/2012	01/01/2013	31/10/2013	304	0.83	41578	80	0	19.00 %	18.40 %	79.89	0.00	33235	0	33235
040-CQC_PB	3223-0040	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
044-CQC-PB	3223-0041	14/08/2012	01/01/2013	31/10/2013	304	0.83	41499	58	20	19.00 %	18.40 %	57.52	20.20	20936	6799	27735
045-CQC-PB	3223-0042	00/01/1900	00/01/1900	00/01/1900	0	0.00	0			0.00%	0.00%	0.00	0.00	0	0	0
031-CQC-AP	3223-0043	25/07/2012	01/01/2013	31/10/2013	304	0.83	41479	52	25	17.96 %	17.96 %	52.19	25.20	10279	4625	14904
032-CQC-AP	3223-0044	20/04/2012	01/01/2013	31/10/2013	304	0.83	41383	28	49	17.96 %	17.96 %	27.55	49.29	6474	10792	17266
033-CQC-AP	3223-0045	09/10/2012	01/01/2013	31/10/2013	304	0.83	41555	72	6	17.96 %	17.96 %	72.21	5.91	23662	1805	25466
049-CQC-AP	3223-0046	17/05/2013	01/01/2013	31/10/2013	304	0.83	41578	46	0	17.96 %	17.96 %	46.14	0.00	18935	0	18935
050-CQC-AP	3223-0047	09/03/2013	01/01/2013	31/10/2013	304	0.83	41578	61	0	17.96 %	17.96 %	61.37	0.00	18583	0	18583
051-CQC-AP	3223-0048	23/12/2012	01/01/2013	31/10/2013	304	0.83	41578	78	0	17.96 %	17.96 %	78.49	0.00	27162	0	27162
052-CQC-AP	3223-0049	18/05/2013	01/01/2013	31/10/2013	304	0.83	41578	42	0	17.96 %	17.96 %	42.48	0.00	18477	0	18477
053-CQC-AP	3223-0050	07/08/2012	01/01/2013	31/10/2013	304	0.83	41492	57	23	17.96 %	17.96 %	57.23	22.58	15967	5869	21836

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 8: Emission Reduction Calculations (refer MR section D.2)

CME - Unique Identification No.	UNFCCC Ref. No.	Emission Factor (tCO_2/MWh)	Energy Saving by project CFL in each year (in KWh)		Net Energy Saved by Project CFL (in MWh)			Actual Emission Reduction (tCO_2e)
		$EF_{CO2,ELEC,y}$	$ES_{1(/2)}$	$ES_{2(/3)}$	$NES_{1(/2)}$	$NES_{2(/3)}$	NES	ERy
001-CQC-AP	3223-0001	0.856	68.75	5.63	28984	2199	31183	26692
022-HPL-KR	3223-0022	0.9027	49.33	33.52	27667	17424	45091	40703
024-HPL-KR	3223-0023	0.9027	66.51	17.04	33763	8016	41780	37713
025-HPL-KR	3223-0024	0.9027	66.62	17.07	33830	8032	41863	37788
028-HPL-KR	3223-0025	0.9027	48.79	33.16	23774	14972	38746	34975
023-HPL-KR	3223-0026	0.9027	67.64	17.33	33605	7979	41584	37537
026-HPL-KR	3223-0027	0.9027	61.00	19.63	31283	9328	40610	36658
027-HPL-KR	3223-0028	0.9027	67.47	17.28	31824	7556	39380	35524
029-CQC-DL	3223-0029	0.903	25.49	52.78	6735	12994	19728	17806
030-CQC-DL	3223-0030	*	*	*	*	*	*	*
041-CQC-DL	3223-0031	0.903	48.23	31.89	5600	3450	9050	8171
042-CQC-DL	3223-0032	0.903	1.17	69.87	504	28105	28610	26286
043-CQC-DL	3223-0033	*	*	*	*	*	*	*
034-HPL-GO	3223-0034	*	*	*	*	*	*	*
035-HPL-GO	3223-0035	*	*	*	*	*	*	*
036-CQC-PB	3223-0036	0.903	15.72	62.61	5368	19924	25292	22841
037-CQC-PB	3223-0037	0.903	32.18	47.36	8854	12139	20993	18956
038-CQC-PB	3223-0038	0.903	79.53	1.33	29408	455	29862	26968
039-CQC-PB	3223-0039	0.903	79.89	0.00	33235	0	33235	30011
040-CQC_PB	3223-0040	*	*	*	*	*	*	*
044-CQC-PB	3223-0041	0.903	57.52	20.20	20936	6799	27735	25089
045-CQC-PB	3223-0042	*	*	*	*	*	*	*

031-CQC-AP	3223-0043	0.865	52.19	25.20	10279	4625	14904	12891
032-CQC-AP	3223-0044	0.865	27.55	49.29	6474	10792	17266	14933
033-CQC-AP	3223-0045	0.865	72.21	5.91	23662	1805	25466	22027
049-CQC-AP	3223-0046	0.865	46.14	0.00	18935	0	18935	16378
050-CQC-AP	3223-0047	0.865	61.37	0.00	18583	0	18583	16074
051-CQC-AP	3223-0048	0.865	78.49	0.00	27162	0	27162	23495
052-CQC-AP	3223-0049	0.865	42.48	0.00	18477	0	18477	15982
053-CQC-AP	3223-0050	0.865	57.23	22.58	15967	5869	21836	18895

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 9: Comparison Actual Emission reductions and estimated value in included SSC-CPA (refer MR section E)

CME -Unique Identification No.	UNFCCC Ref. No.	Actual Emission Reduction (tCO2e)	Projected Emission Reduction as per CPA-DD	Remarks on difference between estimated and actual emission reductions
		ERy	ER_{CPA}	
001-CQC-AP	3223-0001	26693	35076	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
022-HPL-KR	3223-0022	40704	39060	More number of lamps of higher wattage were distributed than anticipated before CPA validation stage
024-HPL-KR	3223-0023	37714	39715	The difference is conservative because the survey resulted in a larger discount factor than anticipated due to field conditions
025-HPL-KR	3223-0024	37789	37331	More number of lamps of higher wattage were distributed than anticipated before CPA validation stage
028-HPL-KR	3223-0025	34976	39122	The difference is conservative because the survey resulted in a larger discount factor than anticipated due to field conditions
023-HPL-KR	3223-0026	37538	39715	The difference is conservative because the survey resulted in a larger discount factor than anticipated due to field conditions
026-HPL-KR	3223-0027	36659	38912	The difference is conservative because the survey resulted in a larger discount factor than anticipated due to field conditions
027-HPL-KR	3223-0028	35549	39715	The difference is conservative because the survey resulted in a larger discount factor than anticipated due to field conditions
029-CQC-DL	3223-0029	17815	34480	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
030-CQC-DL	3223-0030			
041-CQC-DL	3223-0031	8172	32346	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
042-CQC-DL	3223-0032	25835	35885	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
043-CQC-DL	3223-0033	*	*	*
034-HPL-GO	3223-0034	*	*	*
035-HPL-GO	3223-0035	*	*	*
036-CQC-PB	3223-0036	22839	36744	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion

037-CQC-PB	3223-0037	18957	34272	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
038-CQC-PB	3223-0038	26966	41561	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
039-CQC-PB	3223-0039	30011	34270	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
040-CQC_PB	3223-0040	*	*	*
044-CQC-PB	3223-0041	25045	35778	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
045-CQC-PB	3223-0042	*	*	*
031-CQC-AP	3223-0043	12892	28396	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
032-CQC-AP	3223-0044	14935	32485	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
033-CQC-AP	3223-0045	22029	41722	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
049-CQC-AP	3223-0046	16379	20428	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
050-CQC-AP	3223-0047	16074	25780	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
051-CQC-AP	3223-0048	23495	39139	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
052-CQC-AP	3223-0049	15983	23474	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion
053-CQC-AP	3223-0050	18888	33704	The difference is due to the less number of CFLs distributed as compared to what was assumed during CPA inclusion

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 10: Rated power of the baseline ICLs of the group of "*i*" and Rated power of the CFLs of the group of "*i*" lighting devices

UNFCCC Ref. No.	Equivalent wattage of CFLs distributed against each type "i" (60W, 100W) of baseline ICLs				Actual CFL distributed for each wattage type "i" (11W, 14W, 18W & 20W)		Weighted average of rated power of the baseline lighting devices (ICLs); $P_{i,BL}$	Weighted average of rated power of the project lighting devices (CFLs); $P_{i,PJ}$
	ICL	**CFL**	**ICL**	**CFL**	**11W**	**18/20W**	$P_{i,BL}$	$P_{i,PJ}$
3223-0001	60	11	100	20	140515	290732	86.97	17.07
3223-0022	60	11	100	18	72496	507408	95.00	17.12
3223-0023	60	11	100	18	54985	467507	95.79	17.26
3223-0024	60	11	100	18	52925	469809	95.95	17.29
3223-0025	60	11	100	18	76098	428497	93.97	16.94
3223-0026	60	11	100	18	33538	483877	97.41	17.55
3223-0027	60	11	100	18	100575	432398	92.45	16.68
3223-0028	60	11	100	18	34849	455341	97.16	17.50
3223-0029	60	11	100	18	66301	192769	89.76	16.21
3223-0030	0	0	0	0	0	0	-	-
3223-0031	60	11	100	18	22743	89278	91.88	16.58
3223-0032	60	14	100	20	161920	253960	84.43	17.66
3223-0033	*	*	*	*	*	*	*	*
3223-0034	*	*	*	*	*	*	*	*
3223-0035	*	*	*	*	*	*	*	*

3223-0036	60	11	100	18	81776	239940	89.83	16.22
3223-0037	60	11	100	18	55381	196978	91.22	16.46
3223-0038	60	11	100	18	62700	282181	92.73	16.73
3223-0039	60	11	100	18	80369	303123	91.62	16.53
3223-0040	*	*	*	*	*	*	*	*
3223-0041	60	11	100	18	91050	244552	89.15	16.10
3223-0042	*	*	*	*	*	*	*	*
3223-0043	60	11	100	18	52854	135388	88.77	16.03
3223-0044	60	11	100	18	64651	153377	88.14	15.92
3223-0045	60	11	100	18	80228	228392	89.60	16.18
3223-0046	60	11	100	18	41014	341742	95.71	17.25
3223-0047	60	11	100	18	68418	213349	90.29	16.30
3223-0048	60	11	100	18	80608	242571	90.02	16.25
3223-0049	60	11	100	18	114991	291727	88.69	16.02
3223-0050	60	11	100	18	56545	210117	91.52	16.52

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 11: $EF_{CO2,ELEC,y}$ Values used for individual CPAs: Source CDM baseline CO_2 emission database by Central Electricity Authority (CEA)

CPA Implementer	CME -Unique Identification No.	UNFCCC Ref. No.	State	Applicable version Methodology AMS I.D	Applicable version of "Tool to calculate the emission factor for an electricity system"	Regional Grid applicable to CPA area (NEWNE / Southern)	Version of CO2 baseline database of CEA	Emission Factor (tCO2/MWH)
								$EF_{CO2,ELEC,y}$
CQC	001-CQC-AP	3223-0001	AP	14	1.1	Southern	Version 4	0.856
HPL	022-HPL-KR	3223-0022	KR	14	2	southern	Version 5	0.9027
HPL	024-HPL-KR	3223-0023	KR	14	2	southern	Version 5	0.9027
HPL	025-HPL-KR	3223-0024	KR	14	2	southern	Version 5	0.9027
HPL	028-HPL-KR	3223-0025	KR	14	2	southern	Version 5	0.9027
HPL	023-HPL-KR	3223-0026	KR	14	2	southern	Version 5	0.9027
HPL	026-HPL-KR	3223-0027	KR	14	2	southern	Version 5	0.9027
HPL	027-HPL-KR	3223-0028	KR	14	2	southern	Version 5	0.9027
CQC	029-CQC-DL	3223-0029	DL	16	2.1	NEWNE	Version 6	0.903
CQC	030-CQC-DL	3223-0030	*	16	2.1	*	*	*
CQC	041-CQC-DL	3223-0031	DL	16	2.1	NEWNE	Version 6	0.903
CQC	042-CQC-DL	3223-0032	DL	16	2.1	NEWNE	Version 6	0.903
CQC	043-CQC-DL	3223-0033	*	16	2.1	*	*	*
HPL	034-HPL-GO	3223-0034	*	17	2.2	*	*	*
HPL	035-HPL-GO	3223-0035	*	17	2.2	*	*	*
CQC	036-CQC-PB	3223-0036	PB	16	2.1	NEWNE	Version 6	0.903

CQC	037-CQC-PB	3223-0037	PB	16	2.1	NEWNE	Version 6	0.903
CQC	038-CQC-PB	3223-0038	PB	16	2.1	NEWNE	Version 6	0.903
CQC	039-CQC-PB	3223-0039	PB	16	2.1	NEWNE	Version 6	0.903
CQC	040-CQC_PB	3223-0040	*	16	2.1	*	*	*
CQC	044-CQC-PB	3223-0041	PB	16	2.1	NEWNE	Version 6	0.903
CQC	045-CQC-PB	3223-0042		16	2.1			
CQC	031-CQC-AP	3223-0043	AP	16	2.2.1	Southern	Version 6	0.865
CQC	032-CQC-AP	3223-0044	AP	16	2.2.1	Southern	Version 6	0.865
CQC	033-CQC-AP	3223-0045	AP	16	2.2.1	Southern	Version 6	0.865
CQC	049-CQC-AP	3223-0046	AP	17	2.2.1	Southern	Version 6	0.865
CQC	050-CQC-AP	3223-0047	AP	17	2.2.1	Southern	Version 6	0.865
CQC	051-CQC-AP	3223-0048	AP	17	2.2.1	Southern	Version 6	0.865
CQC	052-CQC-AP	3223-0049	AP	17	2.2.1	Southern	Version 6	0.865
CQC	053-CQC-AP	3223-0050	AP	17	2.2.1	Southern	Version 6	0.865

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Annexure 12: ICL destruction information

Implementer	CME -Unique Identification No.	UNFCCC Ref. No.	Date of destruction of ICLs	ICL Destruction Ageny	No of ICLs collected & destroyed of each wattage type "i" ($N_{Destroyed}$)	
					$N_{Destroyed,60}$	$N_{Destroyed,100}$
CQC	001-CQC-AP	3223-0001	21/10/2011	GEMS	140515	290732
HPL	022-HPL-KR	3223-0022	17/02/2012	Eco Birdd Recycling	72496	507408
HPL	024-HPL-KR	3223-0023	27/02/2012	Eco Birdd Recycling	54985	467507
HPL	025-HPL-KR	3223-0024	12/03/2012	Eco Birdd Recycling	52925	469809
HPL	028-HPL-KR	3223-0025	22/02/2012	Eco Birdd Recycling	76098	428497
HPL	023-HPL-KR	3223-0026	02/03/2012	Eco Birdd Recycling	33538	483877
HPL	026-HPL-KR	3223-0027	07/03/2012	Eco Birdd Recycling	100575	432398
HPL	027-HPL-KR	3223-0028	16/03/2012	Eco Birdd Recycling	34849	455341
CQC	029-CQC-DL	3223-0029	03/06/2012	IPCA	67185	194306
CQC	030-CQC-DL	3223-0030	*	*	*	*
CQC	041-CQC-DL	3223-0031	13/07/2012	IPCA	22751	89256
CQC	042-CQC-DL	3223-0032	25/01/2012	IPCA	161881	253945
CQC	043-CQC-DL	3223-0033	*	*	*	*
HPL	034-HPL-GO	3223-0034	*	*	*	*
HPL	035-HPL-GO	3223-0035	*	*	*	*
CQC	036-CQC-PB	3223-0036	19/03/2012	IPCA	81825	240487
CQC	037-CQC-PB	3223-0037	23/05/2012	IPCA	55381	197000
CQC	038-CQC-PB	3223-0038	27/11/2012	IPCA	62700	282181
CQC	039-CQC-PB	3223-0039	27/11/2012	IPCA	80369	303123
CQC	040-CQC_PB	3223-0040	*	*	*	*

CQC	044-CQC-PB	3223-0041	22/10/2012	IPCA	91055	244558
CQC	045-CQC-PB	3223-0042	*	*	*	*
CQC	031-CQC-AP	3223-0043	31/07/2012	GEMS	52854	135388
CQC	032-CQC-AP	3223-0044	25/04/2012	GEMS	64651	153377
CQC	033-CQC-AP	3223-0045	17/10/2012	GEMS	80228	228392
CQC	049-CQC-AP	3223-0046	21/05/2013	GEMS	41014	341742
CQC	050-CQC-AP	3223-0047	12/03/2013	GEMS	68418	213349
CQC	051-CQC-AP	3223-0048	27/12/2012	GEMS	80608	242571
CQC	052-CQC-AP	3223-0049	21/05/2013	GEMS	114991	291727
CQC	053-CQC-AP	3223-0050	24/08/2012	GEMS	56759	212064

* The cells are left blank as the respective CPAs are not implemented during this monitoring period.

Document information

Version	*Date*	*Description*
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net anthropogenic GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
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