



VALIDATION REPORT

Zhenjiang Qiangling Energy-saving Light Source Co., Ltd.

CFL Distribution Programme in Hebei Province

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PoA-DD for GSP	Final PoA-DD		
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<p>Summary:</p> <p>China Environmental United Certification Center Co., Ltd (CEC) has performed the validation of the "CFL Distribution Programme in Hebei Province" on the basis of all applicable CDM requirements. The CDM requirements include the CDM modalities and procedures and subsequent decisions by the CMP and documents released by the CDM Executive Board and available on the UNFCCC CDM website. The validation scope is defined as an independent and objective review of PoA-DD(hereafter referred to as "the proposed PoA), generic DD and specific CPA-DD (the CPA-001, hereafter referred to as "the proposed CPA"), the baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the PoA design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from contract review to validation report & opinion, was conducted using CEC's internal procedures.</p> <p>The first output of the validation process is a list of Clarification and Corrective Actions Requests (CLs and CARs), presented in Appendix A. Taking into account this output, the project participant took corrections and revised the PoA-DD, generic DD and specific CPA-DD.</p> <p>In summary, it is CEC's opinion that the "CFL Distribution Programme in Hebei Province" meets all relevant UNFCCC requirements for the CDM and all relevant Host Parties criteria, correctly applies the baseline and monitoring methodology AMS II.J version 04, and also meets the stated validation criteria. CEC thus requests the registration of the project as a CDM Programme of activities.</p>			
Work Carried out by:	Date of this version	Version	Pages:
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Work Reviewed by:	<input type="checkbox"/> Draft Validation Report <input checked="" type="checkbox"/> Final Validation Report <input checked="" type="checkbox"/> No Distribution (without permission from the client responsible organizational unit) <input type="checkbox"/> Limited Distribution <input type="checkbox"/> Unrestricted Distribution		
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Abbreviations

ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CER	Certified Emission Reduction
CFL	Compact Fluorescent Lamps
CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GSP	Global Stakeholders Process
ICL	Incandescent Lamps
IPCC	Intergovernmental Panel on Climate Change
kW	Kilo Watt
kWh	Kilo Watt Hours
LoA	Letter of Approval
MoV	Means of Verification
MW	Mega Watt
MWh	Mega Watt Hours
N/A	Not Applicable
NCPG	North China Power Grid
NGO	Non Government Organization
PoA-DD	Project Design Document for Programme of Activities
PoA Standard	Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
W	Watt



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1. INTRODUCTION

Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. (short for QL) has commissioned CEC to perform the validation of the “CFL Distribution Programme in Hebei Province” (hereafter called “the PoA”) with regard to the relevant requirements for CDM project activities. This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The purpose of validation is to ensure a thorough, independent assessment of proposed CDM project activities submitted for registration as proposed CDM PoA against the applicable CDM requirements. Validation is part of the CDM project cycle and will finally result in a conclusion by CEC whether the PoA is valid and should be submitted for registration of a proposed programme of activities rests at the CDM Executive Board and the Parties involved.

The programme of activities discussed by this validation report has been submitted under the project title: CFL Distribution Programme in Hebei Province.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against all applicable CDM requirements.

The validation is not meant to provide any consultation towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

2. VALIDATION METHODS

The overall validation, from contract review to validation report and opinion, was conducted using CEC's internal procedures.

In order to ensure transparency, a validation protocol was customized for the project in accordance with Validation and Verification Manual (VVM) version 01.2 /11/. The latest requirements by the CDM-EB were also considered, such as Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (hereafter short for “PoA Standard”) /8/ and Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities /34/. The protocol shows in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements that a CDM project is expected to meet.
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the results of the validation.



The validation protocol consists of 2 tables. The columns in these tables are described below. The findings are the essential part of this validation report and the completed validation protocol is enclosed in Appendix A to this report.

Table 1: Requirements checklist

Checklist Question	Reference	Means of Validation (MoV)	Comment	Draft and/or Final Conclusion
The various requirements in Table 1 are linked to checklist questions that the project should meet. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Give reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples of means of verification are document review (DR), interview (I) or observation (O), N/A means not applicable.	The section is used to elaborate and discuss the checklist question and /or the conformance to the question. It is further used to explain the conclusions reached. N/A means not applicable.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question. (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification. A request for forward action request (FAR) is used for a need for review during the first verification.

To guarantee the transparency of the validation process, the CARs, CLs and FARs raised and responses that have been given are documented in more detail in table 2 of Appendix A.

Table 2: Resolution of Corrective Action and Clarification Requests

CARs/CLs/FARs	Ref. to Table 1	Summary of PP's Response	Validation Conclusion
If the conclusions from the draft conclusion are CARs, CLs or FARs, these requests should be listed in this section.	Reference to the checklist question number in Table 1 where the CARs, CLs or FARs are explained.	The responses given by the project participants during the communications with the validation team should be summarized in this section.	This section summarizes validation conclusion. The conclusion should also be reflected in "Final conclusion" section of Table 1.

2.1 Validation Personnel

According to the designation requirements on the validation team in the CDM accreditation standards of Executive Board, and following requirements from the technical scopes and professional characters in the sectoral scopes, CEC designated a project assessment team.



It is required that the assessment team collectively has the required competencies in the technical, methodological and sectoral aspects of specific CDM project activities.

The assessment team consists of the following members, the detailed personal information see Appendix B.

Table 3: List of Assessment Team

Validation Team	Role	Qualification	Specific scope	Participated in the on-site visit
LIU Qingzhi	Team Leader	Auditor	--	√
QIN Boya	Team Member	Auditor	--	√
ZHANG Xiaosong	Team Member	Technical Expert	√	√

Technical Review	Role	Specific Scope	Participated in the on-site visit
YIN Yun	Technical reviewer	√	--
ZHANG Xiaohong	Technical reviewer	--	--

Brief background information of assessment team:

Liu Qingzhi is a lead Greenhouse Gas(GHG) assessor. She is a qualified EMS Auditor and environmental Labeling auditor, who has also completed various CEC CDM training courses and GHG accounting related courses. She has participated in over 40 validation/verification CDM project activities and programme of activities(PoAs) in the areas of hydropower, wind power, coal mine methane recovery and utilization as well as animal waste recovery PoA, CFL distribution PoA etc. Most of the projects are in sectoral scope 1 and 8/10, which gives her rich experience in renewable energy and mining sector. Besides CDM auditing, Ms.LIU has participated in the assessment of hydroelectric projects against the criteria set by the World Commission on Dams and energy saving auditing.

Qin Boya is a Greenhouse Gas(GHG) assessor. She has attended various internal and external training courses on EMS, CDM related knowledge and low carbon development training since 2008. She has participated in and finished over 20 validation/verification CDM/VCS/GS project activities and programme of activities(PoAs) both in China and abroad in the areas of hydropower, wind power, biomass power generation as well as CFL distribution PoAs. Most of the projects are in sectoral scope 1 (energy industries), which gives her abundant experience in renewable energy sector. Besides CDM auditing, Ms.QIN has participated in the assessment of hydroelectric projects against the criteria set by the World Commission on Dams.

Zhang Xiaosong is a technical expert in technical areas 1.1, 2.2 and 3.1. He is an experienced Senior Engineer and Chartered Public Services/Consultancy/Supervision Engineer, who has worked in gas heat engineering design institute for 15 years. He has involved in various CDM training courses since 2010 and participated in several CDM validation/verification projects in the area of demand-side activities for efficient lighting technologies as validation team member and technical expert.

Yin Yun is a lead Greenhouse Gas (GHG) assessor. She worked in Metallurgical Industry for 17 years as technician and electric engineer, and later in technical management position for over 10 years. Since 2007, Ms. Yin has been involved in various CEC CDM training courses, and she is also a qualified senior EMS auditor, and has participated in over 30 validation/verification CDM projects in the areas of hydropower, wind power, waste heat recovery and biomass power generation, she has extensive experience in renewable energy sector in sectoral scope 1 (energy industries).

Zhang Xiaohong is a Lead Greenhouse Gas (GHG) assessor. She has completed various CEC CDM training courses as well as ISO14000 training courses. She has participated in and finished over 20 validation/verification CDM/VCS projects in the areas of hydropower and wind power. Most of the projects are in sectoral scope 1 (energy industries), which gives her abundant experience in renewable energy sector. Besides CDM auditing, she has participated in the assessment of hydroelectric projects against the criteria set by the World Commission on Dams.



2.2 Document Review

The PoA-DD, generic CPA-DD (hereafter referred to as “the PoA”) and specific CPA-DD (the CPA-001, hereafter referred to as “the CPA”) version 01 dated 22/09/2011 were submitted by the PP, they were made publicly available on the internet on the UNFCCC CDM web pages for a 30 days global stakeholder consultation process (GSP) from 11/11/2011 to 10/12/2011.

To address the validation team’s corrective action and clarification requests, the PP revised the project design documents. The PDDs of the PoA and the CPA version 04 dated 27/12/2012 /1/ forms the basis for the final evaluation as presented by this report. The information on the PoA-DD version is presented in the project design documents.

To address the validation team’s corrective action and clarification requests, the PP revised the PoA-DD and resubmitted it to the validation team and the validation findings presented in this report related to the project are described in the PoA-DD version 04 dated 27/12/2012/1/.

2.3 Follow-up Interviews

The validation team performed on-site interviews with representatives of the PP and local stakeholders on 17/12/2011-19/12/2011 (See Section 6: People Interviewed). Main topics of the interview are summarized in Table 4.

Table 4 Interview Topics and Organizations

Interview topics	Interview Organization
<ul style="list-style-type: none"> ✓ Project background information and CDM consideration. ✓ PoA technology, operation, maintenance and monitoring capability. ✓ Project implementation, monitoring and management plan. ✓ Stakeholder consultation process and sustainable development. ✓ Applicability of selected methodology. ✓ Baseline determination. ✓ Eligibility criteria for CPA inclusion ✓ Emission reductions calculation. ✓ Emission reduction monitoring plan. 	<p>Zhenjiang Qiangling Energy-saving Light Source Co.,Ltd. (the PP and also coordinating/management entity)</p> <p>Sino Carbon Innovation & Investment Co.,Ltd (the consultant)</p>
<ul style="list-style-type: none"> ✓ Government policies related to CFL projects ✓ Realistic and credible baseline scenario alternatives ✓ CFLs and ICLs application situation in the area ✓ Environmental and social impacts ✓ Stakeholder comments 	<p>Local Stakeholders (local officials and households)</p>

2.4 Resolution of CARs, CLs and FARs

During the validation of the proposed programme of activities, issues that need to be further elaborated upon, researched or added are identified in order to confirm that the programme of activities meets the CDM requirements and can achieve credible emission reductions, the



issues are correctly identified, discussed and concluded in the validation report.

Corrective Action Requests (CARs) are raised, where:

- The project participants have made mistakes that will influence the ability of the programme of activities to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met;
- There is a risk that emission reductions cannot be monitored or calculated.

Clarification Requests (CLs) are raised, where information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward action requests (FARs) are raised to highlight issues related to project implementation that require review during the first verification of the programme of activities. FARs shall not be related to the CDM requirements for registration.

To guarantee the transparency of the validation process, the concerns raised and responses that have been given are documented in more detail in the validation protocol in Appendix A.

2.5 Internal Quality Control

This final validation report including the initial findings underwent a technical review before being submitted to PP and requesting registration of the project activity according to CEC internal procedure. The technical reviewers were not part of the validation team, and the technical review was independently of the validation team. The complete QA/QC procedure applied to this validation report was as follows:

The initial draft validation report (DVR) after on-site visit was issued by CEC on 09/01/2012. After all CARs and CLs were closed, a draft final validation report (draft FVR) was issued. Then draft FVR was sent to technical review performed by two (2) technical reviewers according to CEC internal procedure. After reviewing and confirming by TRers, the draft FVR was then finalized and sent for completeness check carried out by Quality Assurance Management Division (QAD). After correction and confirmed by QAD, the report was verified by the Director, and finally the report approved by the Chair of Board.

After confirmation of the PP, the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.



3. VALIDATION SUMMARY

The findings from the desk review of the original project design documents and the findings from interviews during the on-site visit are described in the Validation Protocol Appendix A.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 10 Corrective Action Requests and 6 Clarification Requests.

3.1 Approval and Participation

The project participant is Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. The Letter of Approval (LoA) of the host Party was issued by the DNA of China on 20/01/2012 /3/, confirming the project is a unilateral CDM project, with Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. recognized as the project participant. The LoA also confirmed that the PoA is in compliance with permission requirements and assisting China in achieving sustainable development. The LoA of the DNA of China was provided by the project participant. The validation team confirmed its authenticity by checking List of Approved projects by China DNA (NDRC) on its website/4/. The LoA does not refer to any specific version of the PoA-DD or validation report. The information in the LoA is consistent with the PoA-DD/1/, Business License /7/, and MoC/10/.

The host party China meets the requirement to participate in the CDM. China is a non Annex I party to the Kyoto Protocol and has established a DNA as per the participating requirements for CDM under the Kyoto Protocol: <http://maindb.unfccc.int/public/country.pl?country=CN>.

CAR02 was raised for LoA from DNA of China has not been provided. If the project is a unilateral project, then the Host Party shall be recognized as a project participant in section A.3. The LoA was provided later and checked to be valid by the DOE. Detailed validation process is elaborated in the above paragraphs. The Host Party has been recognized as a project participant in section A.3. **CAR02 was closed.**

All key players under the programme including coordinating/managing entity, participating implementer(s) and households are voluntarily taking part in the programme. The LoA confirms that the voluntary participation of this PoA by the coordinating/managing entity (Zhenjiang Qiangling Energy-saving Light Source Co., Ltd.) is a voluntary action, in this case, the company is also the Project Participant. For the participating households, contracts will be signed with QL, in which the terms of voluntary participation will be mentioned, so that the voluntary participation will be guaranteed. The template of the agreement is checked /30/. Also, as required in the CDM Quality Management Manual /41/, the QL will make agreement with the CPA implementer(s), so as to make sure that only QL is qualified to claim CERs for this PoA.

There are no mandatory requirements in Hebei Province or in China requiring the use of energy efficient CFL at the household level. The most related official documentation was the notification of "The Provisional Measures of Financial Subsidy for Promoting Efficient Lighting Equipment" published by NDRC and Ministry of Finance in 2007/6/. According to this notification, a certain amount of subsidy will be given to manufactures that produce and sale the efficient lighting equipment, but the sale method is restricted to wholesale purchase by public lighting places such as school, hospital and airport, etc, or the community procurement



as a whole. Retail sale is not covered in this notification. Also, according to the implementation situation, the promotion was limited in city areas, this was confirmed by interviewing local government officials.

Complying with Para. 45-54 of VVM, the validation team concludes that the participation and approval are in fully complying with the requirements of the CDM.

Complying with Para. 127 of VVM, the validation team confirms that the host Party's DNA formally confirms the contribution of the project to the sustainable development of China in the issued LoA.

3.2 Project Design Document

The PoA-DD is in compliant with relevant form and guidance as provided by UNFCCC. The most recent version of the PoA-DD form under VVM track was used: Small-Scale Programme of Activities Design Document Form (CDM SSC-PoA-DD) version 01 /9/ and Small-scale CDM Programme Activity Design Document Form (CDM-SSC-CPA-DD) version 01 /24/.

All the information in the generic CPA-DD is consistent with the final version of the PoA-DD /1/. Complying with Para. 57 of VVM, the validation team considers that the guidelines for the completion of the PoA-DD in their most recent version under VVM track have been followed. Relevant information has been provided by the participants in the corresponding sections. By employing the validation protocol checklist included in Appendix A of the validation report, the project description of this PoA is assessed to be accurate and complete.

3.3 Project Description

The PoA involves the distribution approximately 100 million high quality long-life self-ballasted compact fluorescent lamps (CFLs) to residential households replacing low efficient incandescent lamps (ICLs) in Hebei Province, P.R. China, with the geographical coordinates of north latitude 36°05'~42°40' and east longitude 113°27'~119°50'. The coordinates was confirmed by checking publication information from official website of Government of Hebei Province/5/. CPAs under the PoA will be implemented in different areas of Hebei Province, P. R. China. The PoA is a voluntary action by Zhenjiang Qiangling Energy-saving Light Source Co., Ltd., which is also the coordinating/managing entity.

The use of CFLs instead of ICLs will reduce carbon dioxide emissions associated with the combustion of fossil fuel from grid connected power plants in the North China Power Grid (NCPG). The length of the PoA is 28 years. There are no mandatory policies/regulations for the distribution of CFLs in households in China or Hebei Province at present.

Specially marked CFLs would be distributed to residential households in exchange of an incandescent lamp (ICL) for free. Each household can exchange no more than six CFLs. The distributed CFLs have an average life of 6000 hours or above, which conforms with national technical standard GB/T 17263. A fixed value of the daily operating hours of 3.5 hours per day will be used to estimate the carbon dioxide emission reductions. The total lumen output of the CFL should be equal to or more than that of the ICL being replaced, while the power of CFL is lower than that of the substituted ICL.

The distribution could be performed through direct installation at each household or through dedicated distribution points e.g. retail outlets, resident association offices, schools etc. For the second method, the CPA implementer(s) shall educate the recipient to install the CFL in



high-usage areas. The replaced ICLs are collected directly from households or from the dedicated distribution/ collection points and stored at a centralized or multiple storage sites. The CPA implementer(s) shall ensure that the returned ICLs are recorded and destroyed in a manner which allows for verification.

The ICLs will be collected and destroyed in China, the CFLs are made and distributed in China. No technology transfer is involved.

Detailed information of the proposed project and the description in the PoA-DD was verified through document review, on-site visit and interview with the project participants, the reference list and interviewee list are available in Section 6 and 7 of the validation report. The validation team confirmed that the description of the proposed programme of activities as contained in the PoA-DD is accurate and complete that outlines the nature and technical aspects of the programme of activities.

CPAs under the PoA will be implemented in different areas of Hebei Province, P. R. China by contracted CPA implementers, following the management system established by QL.

The latest version of CDM small scale methodology AMS-II.J (version 04) is applied. A certain amount of CFLs will be distributed within a single CPA, which should meet the requirement of the limitation of 60 GWh.

CAR01 was raised requesting to further state the goal of the PoA, and also state the rationale of how the PoA will achieve GHG emission reduction. The information further provided in the revised PoA-DD is confirmed by the validation team. CAR01 was closed.

CAR04 was raised requesting to determine the geographical boundary of the PoA using a reliable source. The geographical coordinates of Hebei Province was corrected in updated PoA-DD, which is geographical coordinates of north latitude 36°05' ~42°40' and east longitude 113°27' ~119°50'. The coordinates was confirmed by checking publication information from official website of Government of Hebei Province/5/. This issue of CAR04 was closed.

CL01 was raised: Please add the estimated distribution plan of CFLs in section A.2, including the power, Lumen and rough number of ICLs and CFLs. The distribution plan has been included in the updated PDD and checked to be correct. CL01 was closed.

CL02 was raised: The documentation in footnote 4 of the PoA-DD can not be downloaded, please modify and check all the footnotes. The 4 have been corrected. All the footnotes are checked to be workable now. The information in the footnotes are consistent with the information of the project. CL02 was closed.

Complying with Para. 64 of VVM, through above mentioned validation methods, it has been validated that the information provided in the updated PoA-DD and generic CPA -DD is consistent with the actual situation and planning. The description in the updated PoA-DD and generic CPA-DD is complete, sufficiently accurate and therefore complies with CDM requirements.

3.4 Operational and Management Arrangement

Transparent operational and management arrangements have been established by the management/coordinating entity of the PoA, i.e., Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. (QL). For each CPA, CPA implementers or subsidiary CDM working groups of QL will be established, and contracts will be signed to make sure that the management system



could be implemented. Thus the validation team can conclude that the management system will be carried out, and the CPA implementers are aware of and have agreed that their activity is being subscribed to the PoA.

The definition of roles and responsibilities of participating organizations and personnel is stated in the PoA-DD and validated as follows.

**Table 5: Roles and Responsibilities of Organizations**

Organization	Role	Personnel	Responsibilities	Validation Conclusion
Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. (QL)	CME	Managing team	<ul style="list-style-type: none"> • Apply the registration of the PoA with UNFCCC CDM Executive Board as a focal point • Develop a PoA management system and making continuous improvements of the system. Improve the PoA management system according to the latest methodology and standards. If there are new problems during the random check, the PoA management system should be continuous improved. • Carry out management and coordination of PoA in accordance with the management system • Select and contract CPA implementers • Make decision on whether to implement a specific CPA based on the proposal submitted by the CPA implementer • Develop and update eligibility criteria for inclusion of CPAs • Provide qualified CFLs • Pay the implementation fee. 	This is in accordance with the requirement of para. 17 (a) and (f) of PoA Standard.
		Technical advisory team	<ul style="list-style-type: none"> • Provide training and capacity development for personnel in the whole process of CPA implementers • Carry out the technical review and control of inclusion of 	This is in accordance with the requirement of para. 17 (c) of PoA Standard.



			<p>CPAs according to the Quality Control & Manage Manual(QCMM) /41/</p> <ul style="list-style-type: none"> Review of the competencies of personnel involved in the process of inclusion of CPAs. 	
CPA implementer	Implement CPA	CPA implementer	<ul style="list-style-type: none"> Submit a proposal about CPA implementation to QL for making decision Collect the initial information using standardized formats and transfer them into an electronic data base Maintain all the records, documents and database in the process of CPA implementing, and make them available to QL for checking randomly and DOE for validation or verification Carry out monitoring action in accordance with monitoring plan 	This is in accordance with the requirement of para. 17 (e) and (g) of PoA Standard.

In accordance with the requirement of para. 17 (b) of PoA Standard, QL will arrange training and capacity development for personnel, who take part in the whole process of implementing the PoA as follows:

- Determine the necessary competence for these personnel
- Provide training or take other actions achieve the necessary competence
- Evaluate the effectiveness of the actions taken
- Maintain appropriate records of training and capacity development

In accordance with the requirement of para. 17 (c) of PoA Standard, QL will carry out technical review of inclusion of CPAs. The procedures are as follow:

- Determine the CPAs inclusion criteria according to the PoA-DD and related standards
- Conduct technical review to determine whether the CPAs conform to these criteria
- If the CPA is a nonconformity, the CPA implementer should make the CPA conform to the all criteria and submit proposal to QL again

In accordance with the requirement of para. 17 (e) of PoA Standard, QL will control the process of each CPA under PoA:

- Make sure that each CPA conforms to the requirements of PoA-DD, CPA-DD and related standards
- Maintain appropriate records and documents of the control process

In accordance with the requirement of para. 17 (e) of PoA Standard, the CPA would maintain appropriate records with standardized formats documenting the following variables:

- The geographical location of each CPA.
- The name, address and record of specifications of ICLs exchanged and distributed CFLs in households participating in the CPA.
- The names, addresses and monitoring data of each household involved in sample households for lamp failure rates and monitoring surveys.
- Destruction of ICLs. To facilitate random verification, dates of ICL destruction would be communicated to QL in advance by CPA implementer(s). To enhance process credibility, CPA shall carry out the destruction in the presence of responsible witnesses e.g. local environmental officials, or documented by time stamped video records.

To avoid double counting, CFL manufacturer and project households will sign agreements with QL, the CFL manufacturer and project households will give up the CERs generated from the project CFL use, only QL is qualified to claim for the emission reduction of the proposed project. Where a CPA of another PoA or CDM project activity is already registered in the same geographic area as a proposed CPA, the CPA will not be included in the PoA. To confirm that no CPA or CDM project activity developed in the proposed project area, the relevant information, about the projects using the same methodology AMS-II.J or the same measure/technology, on websites of UNFCCC and Chinese DNA will be checked before applying for CDM and implementation of the CPA in Hebei Province. This is in accordance with para. 17 (d) of PoA Standard.

The procedure to check for de-bundling has been included in the PoA-DD. The maximum annual saved electricity from distribution of a CFL will be used for the de-bundling check at CPA level. If the maximum annual saved electricity from distribution of a CFL is lower than 1%

of the small-scale thresholds (60GWh per year) defined by the applied methodology AMS-II.J(version 04), the CPA can be demonstrated not to be a de-bundled component of another CPA or CDM project activity according to Para. 10 of EB54 Annex13 "Guidance on assessment of de-bundling for SSC project activities" version 03.0 /19/.

CAR04 was raised requiring more information on:

- The relationship between Zhenjiang Qiangling Energy-saving Light Source Co., Ltd., (QL) and the project implementer(s) implementing CPAs, and the respective responsibilities of each party, especially the ex-post monitoring and maintenance of database;
- How will QL have control of related data, records and implementation process to ensure that each CPA is implemented in accordance with the requirements of the PoA;
- Training content for distribution team;
- More detailed process of the collection and destroy process of the replaced ICLs shall be provided, as it is only mentioned in C.2 of PoA-DD that they will be handled: "in an appropriate and environmental friendly way with due care and safety without causing any hazard as specified by local authority";
- How will the record and database of the PoA and CPAs be maintained

Required detailed information is further elaborated in the updated project design documents. The validation method of roles and responsibilities of each company and management procedure please refer to the above description. The destruction method and procedure of data maintenance have been included in revised PDD. The revised PoA-DD and generic CPA-DD are checked, related information is also checked via interviewing the manager of QL.

CAR04 was closed.

CAR05 was raised: Please revise the project design documents according to Annex 3 of EB65, especially para 17. The requirements of para 17 (management system) of Annex 3 of EB65 (PoA Standard) are identified and covered in revised documents and evidences. For detailed validation process please refer to above descriptions. **CAR05 was closed.**

CL03 was raised: Please provide the below evidences: Signed MoC; CFL procurement contract and CFL specification; CDM development agreement; The most updated CFLs allocation plan of PoA; Qualification certification of the lab doing the test of sample CFLs; Training plan and content for distribution team. The evidences are provided. All documents are checked to be authentic and consistent. **CL03 was closed.**

Complying with Para.166 of VVM, the validation team confirms that the operational and management arrangements have been established by the coordinating/managing entity and are suitable for the proposed PoA. The validation team considers that the arrangements are sufficient to ensure that the coordinating/managing entity will have control of all records and information related to the implementation of individual CPAs, and will ensure each CPA is being operated in accordance with the specific requirements of the programme.

Complying with para. 17 and 18 of PoA Standard, the the validation team confirms that The CME has the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. The elements of the management system have been validated.

3.5 Eligibility criteria for CPA inclusion

The eligibility criteria has been defined and stated in the PoA-DD. The validation team has assessed the defined eligibility criteria as below:



Table 6 Eligibility Criteria Assessment

No.	Eligibility Criteria	Assessment
1	The geographical boundary of the SSC-CPA area is uniquely defined and located in Hebei Province.	This is consistent with para 14 (a) of PoA Standard. This criterion ensures that the geographical boundary of the CPAs is within the geographical boundary set in the PoA.
2	CFLs utilized under the SSC-CPA are marked for clear unique identification for the PoA and the SSC-CPA.	This is consistent with para 14 (b) of PoA Standard. This criterion ensures that the CFLs utilized under the SSC-CPA may be uniquely identified. This criterion also ensures that Para.5 of AMS-II.J. version 04 is applied, i.e. CFLs utilized under the programme of activities shall, in addition to the standard lamp specifications, be marked for clear unique identification for the project
3	CFL manufacturer and project households will sign agreements with Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. to relinquish their rights over the CERs generated from the project CFL use.	This is consistent with para 14 (b) of PoA Standard. This criterion ensures that the emission reductions credits (CERs) generated from the project will be solely owned by QL, which may avoid double counting. It is also consistent with Para.6 of AMS-II.J. version 04.
4	Confirmation that this SSC-CPA is not registered or being registered, as a stand-alone CDM or as a CPA of another PoA.	This is consistent with para 14 (b) of PoA Standard. This criterion ensures that the emission reductions credits (CERs) generated from the project will not be counted twice by being claimed in different project, which may avoid double counting. It is also consistent with Para.6 of AMS-II.J. version 04.
5	The baseline technology is Incandescent Lamp being used by SSC-CPA residents. The CFLs distributed in the SSC-CPA are new equipments, and have ballasts integrated to the lamp as a non-removable part.	This is consistent with para 14 (c) of PoA Standard, which gives the specifications of technology/measure in terms of type of the service. This criterion also ensures that Para.1 of AMS-II.J. version 04 is applied, i.e. this category comprises activities that lead to efficient use of electricity through the adoption of self-ballasted compact fluorescent lamps (CFLs) to replace incandescent lamps (ICLs) in residential applications. Eligible self-ballasted CFLs have integrated ballasts as a non-removable part. The distributed CFLs must be new equipment and not transferred from another activity.
6	The lumen output of project CFL	This is consistent with para 14 (c) of PoA Standard,

	are greater than or equal to that of the ICL exchanged and the eligible wattage of project CFL is lower than that of the ICLs. This shall be tested and confirmed according to relevant national or international standards.	<p>which gives the specifications of technology/measure in terms of level of the service.</p> <p>This criterion also ensures that Para.2 of AMS-II.J. version 04 is applied, i.e. the total lumen output of the CFL should be equal to or more than that of the ICL being replaced; lumen output of ICL & CFL shall be determined in accordance with relevant national or international standards.</p>
7	The average life or the rated average life of the CFLs is determined in accordance with IEC 60969 or an equivalent national standard, which shall be longer than 6000 hours. If the average life value is not available ex ante, it shall be made available for verification before or at the same time that the results of the second ex post monitoring survey.	<p>This is consistent with para 14 (c) of PoA Standard, which gives the specifications of technology/measure in terms of compliance with testing/certifications. This criterion also ensures that Para.4 of AMS-II.J. version 04 is applied, i.e. the average life or the rated average life of the CFLs shall be known ex ante. IEC 60969 (Self Ballasted Lamps For General Lighting Services - Performance Requirements)/23/ or an equivalent national standard shall be used to determine the average life. For the proposed PoA, Chinese national technical specifications GB/T 17263 is adopted, which specifies a minimum 6000 hours rated life time.</p>
8	The start date of the SSC-CPA is not, or will not be, prior to the commencement of validation of the programme of activities (11/11/2011). The start date of the SSC-CPA shall be check through documentary evidence, e.g. CFL procurement contract.	<p>This is consistent with para 14 (d) of PoA Standard, which ensures the start date of the SSC-CPA may be checked through documentary evidence.</p> <p>This criterion also ensures the prior consideration of each CPA. It is consistent with Para.7(d) of EB55 Annex 38, i.e. confirmation that the start date of any CPA is not, or will not be, prior to the commencement of validation of the programme of activities, i.e. the date on which the PoA- DD is published for global stakeholder consultation (11/11/2011).</p>
9	The baseline and monitoring methodology AMS-II.J is applied. All the CPAs should meet applicability and other requirements of AMS-II.J.	<p>This is consistent with para 14 (e) of PoA Standard, which specified the adaption of single baseline and monitiong methodology AMS-II.J (version 04). Approved methodology AMS-II.J(version 04) is justified to be applicable. This criterion ensures that the applied methodology in each CPA is correct and consistent with the PoA.</p>
10	The maximum annual saved electricity of each project household, due to using the distributed project CFLs, is less than 3000 MWh per year.	<p>This is consistent with para 14 (f) of PoA Standard, which ensures the CPA may demonstrate the additionality through paragraph 2(c) of "Guidelines on the demonstration of additionality of small-scale project activities" (Version 09.0), reported as Annex 27 to EB 68. The component project activities, under</p>



		this PoA, solely composed of isolated units where the users of the CFL are households and where the size of each household should be much less than 3000 MWh of energy savings per year. This criterion ensures the CPAs under the PoA are additional automatically.
11	Stakeholders' consultation meeting is conducted prior to the publication of SSC-CPA-DD on the UNFCCC website and CPA inclusion. Environment impact analysis should be included in stakeholder consultation process.	This is consistent with para 14 (g) of PoA Standard as well as Para.128 of VVM, which ensures the local stakeholder consultations and environmental impact analysis should be finished prior to the publication of SSC-CPA-DD. Although the environment impact analysis is designed to be considered at PoA level, it is also reflected in CPA level during the local stakeholder consultation stage for the sake of environment.
12	Confirmation that no funding from Annex I parties; if any, does not result in a diversion of official development assistance	This is consistent with para 14 (h) of PoA Standard, which provide an affirmation of whether there is any funding from Annex I parties, if there is any, whether the funding will result in a diversion of ODA. This criterion ensures the confirmation of funding of each CPA.
13	The target group should be the residents who will participate in the PoA voluntarily and are using ICLs in their houses.	This is consistent with para 14 (i) of PoA Standard, which defines the target group to be the residents who participate in the PoA voluntarily and are using ICLs in their houses. This criterion ensures the target group of the PoA meets the requirement of CDM-EB.
14	The proposed method of distribution of efficient lighting equipment and how ICL collection (e.g., exchanged for project CFLs) and destruction should be indicated in the CPA DD.	<p>This is consistent with para 14 (i) of PoA Standard, which ensures the information on distribution mechanisms be stated in the CPA DD.</p> <p>This criterion also ensures that Para.6 of AMS-II.J. version 04 is applied, i.e. the project design document shall explain the proposed method of distribution of efficient lighting equipment and how ICL collection (e.g., exchanged for project CFLs) and destruction will be conducted and documented.</p>
15	The total amount of CFLs distributed for each household is no more than six. Actions are defined in the SSC-CPA-DD to be taken to encourage CFLs being installed in locations within the residences where the utilization hours are relatively high, for	<p>This is consistent with para 14 (i) of PoA Standard, which ensures the information on distribution mechanisms be stated in the CPA DD.</p> <p>This criterion also ensures that Para.8 of AMS-II.J. version 04 is applied, i.e. whether the CFLs are directly installed or not directly installed, the project design document shall define actions to be taken to encourage CFLs being installed in locations within</p>

	example common areas.	the residences where the utilization hours are relatively high, for example common areas. For CFLs not directly installed, these actions can include educating the CFL recipients of the best uses for CFLs.
16	Simple random sampling should be used by each CPA to conduct the monitoring survey. Parameter value to be monitored shall be estimated by sampling in accordance with the requirements in the applied methodology (applying 90/10 confidence/precision for the sample size calculation) separately and independently for each of the CPAs included in this PoA.	This is consistent with para 14 (j) of PoA Standard, which requires the sampling plan should be filed in each CPA based on the latest standard or guideline for sampling survey. This criterion ensures the sampling plan of the PoA meets the requirement of CDM-EB.
17	The aggregate electricity savings by a single SSC-CPA do not exceed the equivalent of 60 GWh per year.	This is consistent with para 14 (k) of PoA Standard, which ensure each CPA in aggregate meets the small-scale or microscale threshold criteria and remains within those thresholds throughout the crediting period of the CPA. This criterion also ensures that Para.3 of AMS-II.J. Version 04 is applied, i.e. the aggregate electricity savings by a single programme of activities may not exceed the equivalent of 60 GWh per year.
18	The maximum annual saved electricity of the subsystem of under the CPA is less than 1% of the small-scale thresholds (60GWh per year) defined by the applied methodology AMS-II.J.	This is consistent with para 14 (l) of PoA Standard, which ensures that each SSC-CPA is not a de-bundled component. It is also consistent with EB33 Annex43 (Small-Scale CDM Programme of Activities Design Document Form) that "The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity".
19	The crediting period of SSC-CPA should be within the 28years of the crediting period of PoA	This criterion ensures the validity of the crediting period of each CPA. It is consistent with para 14 (k) of PoA Standard.

CAR03 was raised: Please revise the project design documents according to Annex 3 of EB65, especially para 14. The requirements of Annex 3 of EB65 (PoA Standard), especially para 14 (eligibility criteria) are identified and covered in revised documents. For detailed validation process please refer to table 6 above. **CAR03 was closed.**

CL04 was raised: Please further clarify how to avoid the double counting, especially the



avoidance of double counting under each CPA. Related revision shall also be reflected in other sections such as A.4.2.2, E.2, etc. Measures to avoid the double counting are confirmed by the validation team, the revised information is checked to be correct and complete. **CL04 was closed.**

Complying with Para.167 of VVM, the validation team confirms that the specified eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirement applicable to the PoA, which includes the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.

Complying with Para.11 of PoA Standard, the validation team is able to confirm that: compliance with the additionality-related eligibility criteria set in the PoA design document will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met.

Complying with para.13-16 of PoA Standard, the validation team confirms that the CME has developed eligibility criteria for inclusion of CPAs under the PoA and these criteria is clearly demonstrated in the PoA design documents for their suitability, all requirements have been covered and validated, the eligibility criteria are sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA.

3.6 Baseline and Monitoring Methodology

3.6.1 Applicability of the Selected Methodology

The project applies approved methodology AMS-II.J Version04: "Demand-side activities for efficient lighting technologies" dated 28/05/2010./12/ The assessment of the relevant information contained in the project design documents against each applicability condition of the methodology is conducted:



Table 7: Applicability of methodology

AMS-II.J Requirement	SSC-CPA Qualification	Validation Method
Adoption of new self-ballasted compact fluorescent lamps (CFLs) to replace incandescent lamps (ICLs) in residential applications	<p>The QL promotes this programme under which long-life CFL lamps would be distributed in exchange of an incandescent lamp (ICL) to residential households on a voluntary basis.</p> <p>The CFL distribution is taken up by SSC-CPA implementer(s), who enter into agreement with QL and distribute CFLs (i.e. energy efficient lamps) to households in the CPA area.</p>	Document review, interviews with the PP and local stakeholders.
The CFLs adopted to replace existing equipment must be new equipment and not transferred from another activity	The CFLs provided by QL shall be new and have ballasts integrated to the lamp as a non-removable part. The project lamps also carry on the unique logos which identify these CFLs belonging to this PoA and thus are distinguishable.	Document review, interviews with the PP and local stakeholders.
The total lumen output of the CFL should be equal to or more than that of the ICL being replaced; lumen output of ICL & CFL shall be determined in accordance with relevant national or international standard(s).	The lumen output of project CFL are greater than or equal to that of the ICL exchanged and the eligible wattage of project CFL is much lower than that of the ICLs. These will be tested and confirmed based on the national or international standard e.g. CIE84:1989.	Document review, test report of CFLs, CIE84:1989 are checked.
The aggregate electricity savings by a single project activity may not exceed the equivalent of 60 GWh per year.	The aggregate energy savings from a CPA shall not exceed 60 GWh. This shall be demonstrated in SSC-CPA-DD.	Document review, interviews with the PP and local stakeholders.



<p>The average life or the rated average life of the CFLs shall be known ex-ante. IEC 60969 (Self Ballasted Lamps For General Lighting Services – Performance Requirements) or an equivalent national standard shall be used to determine the average life. The project design document shall cite the standard-used. If the average life value is not available ex ante, it shall be made available for verification before or at the same time that the results of the second ex-post monitoring survey, as required per paragraph 18 (b), are available for verification. The laboratory conducting and certifying the tests to determine CFL average life shall comply with the requirements of a relevant national or international standard, e.g., ISO/IEC 17025.</p>	<p>CFLs distributed in the proposed projects have extra long average life of 10,000 hours or longer. This shall be tested by an independent third party, which shall comply with the requirements of a relevant national or international standard, e.g., ISO/IEC 17025. To ensure the credibility, the international standard of IEC 60969 was applied.</p> <p>If the average life value is not available ex ante, it will be made available for verification before or at the same time that the results of the second ex-post monitoring survey are available for verification.</p>	<p>Document review, test report of CFLs, IEC 60969 /23/ are checked.</p>
<p>CFLs utilized under the project activity shall, in addition to the standard lamp specifications, be marked for clear unique identification for the project.</p>	<p>The distributed CFL lamps under the CPA shall carry on the unique logos which identify these CFLs belonging to this PoA.</p>	<p>Document review, interviews with the PP</p>
<p>The project activity shall be designed to limit undesired secondary market effects (e.g., leakage) and free riders by ensuring that replaced lamps are exchanged and destroyed</p> <p>Project participants are required to undertake at least one of the following actions:</p> <ul style="list-style-type: none"> (i) Directly installing the CFLs; (ii) Charging at least a minimal price for efficient lighting equipment; (iii) Restricting the number of lamps per household distributed through the project activity to six. 	<p>The replaced ICLs will be destroyed, thus the project activity will limit undesired secondary market effects.</p> <p>At least Option (iii) is met as per PoA design. The programme requires the amount of CFLs per household distributed through the project activity cannot be more than 6.</p>	<p>Document review, interviews with the PP.</p>



<p>Proposed procedures eliminate double counting of Emission Reductions, for example due to CFL manufacturers, wholesale providers or others possibly claiming credit for Emission Reductions for the project CFLs.</p>	<p>To eliminate double counting, the C/M Entity shall sign agreements with the manufacturer and project residents during implementation. According to the agreements, the emission reduction is only employed by the Coordinating/Managing Entity (Zhenjiang Qiangling Energy-saving Light Source Co., Ltd.) and all rights about emission reductions are given up by the manufacturer and project residents.</p>	<p>Document review, interviews with the PP and local stakeholders.</p>
<p>Ensure that the replaced ICLs are collected, destroyed and documented; the proposed method of CFL distribution is explained in the project document.</p>	<p>The replaced ICLs are collected directly from households or from the dedicated distribution / collection points and stored at a centralized or multiple storage sites. The SSC-CPA implementer(s) ensures that the returned ICLs are recorded and destroyed in a manner which allows for verification.</p> <p>In addition, the distribution method will be defined in the CPA-DD.</p>	<p>Document review, interviews with the PP.</p>
<p>Whether the CFLs are directly installed or not directly installed, the project design document shall define actions to be taken to encourage CFLs being installed in locations within the residences where the utilization hours are relatively high, for example common areas. For CFLs not directly installed these actions can include educating the CFL recipients of the best uses for CFLs.</p>	<p>The distribution of CFLs and replacement of previously used ICLs in households in the SSC-CPA area can take place using one or more of the following methods:</p> <ul style="list-style-type: none"> ● direct installation at each household; and/or ● ICL collection and CFL distribution through dedicated distribution points e.g. resident association offices, schools etc. <p>Where direct installation is not done, the recipient shall be educated to install the CFL in relatively high-usage areas. The methods of this education could include posters, printed hand-outs, verbal explanation by SSC-CPA representatives etc.</p>	<p>Document review, interviews with the PP and local stakeholders.</p>



<p>The Project design document shall also explain how the proposed procedures eliminate double counting of Emission Reductions.</p>	<p>QL seeks confirmation in SSC-CPA when conducting CPA eligibility check. In particular, each SSC-CPA has unique geographical boundary as defined by the project area. To confirm that no CPA or CDM project activity developed in the proposed project area, the relevant information, about the projects using the same methodology AMS-II.J or the same measure/technology, on websites of UNFCCC and Chinese DNA will be checked before applying for CDM and implementation of the CPA in Hebei Province.</p> <p>During CPA implementation, CFL manufacturer and project households will sign agreements with Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. to relinquish their rights over the CERs generated from the project CFL use.</p> <p>In an instance where a CPA of another PoA or CDM project activity is already registered in the same geographic area as a proposed SSC-CPA, the QL will not proceed with the submission for inclusion of the SSC-CPA in the PoA.</p>	<p>Document review, interviews with the PP.</p>
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<p>The Project design document shall also explain how the proposed procedures eliminate double counting of Emission Reductions.</p>	<p>QL seeks confirmation in SSC-CPA when conducting CPA eligibility check. In particular, each SSC-CPA has unique geographical boundary as defined by the project area. To confirm that no CPA or CDM project activity developed in the proposed project area, the relevant information, about the projects using the same methodology AMS-II.J or the same measure/technology, on websites of UNFCCC and Chinese DNA will be checked before applying for CDM and implementation of the CPA in Hebei Province.</p> <p>During CPA implementation, CFL manufacturer and project households will sign agreements with Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. to relinquish their rights over the CERs generated from the project CFL use.</p> <p>In an instance where a CPA of another PoA or CDM project activity is already registered in the same geographic area as a proposed SSC-CPA, the QL will not proceed with the submission for inclusion of the SSC-CPA in the PoA.</p>	<p>Document review, interviews with the PP and local stakeholders.</p>
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The test reports of Eco Design Requirements for Non-Directional Household lamps issued by Aurora International Testing Laboratory for 12W and 22W lamps dated 25/04/2011/20/ and 05/05/2011/21/ were checked. The qualification of Aurora International Testing Laboratory was also checked, its certificate is valid until 08/04/2012, which was valid at the time of testing/22/. It is validated that the lumen output of the CFLs is determined in accordance with the international standard IEC60969/23/. The lumen output of a 12W CFL is 760, more than the lumen output (715) of a 60W ICL, the lumen output of a 22W CFL is 1450, more than the lumen output (1350) of a 100W ICL. So the PoA use 12W CFL to replace 40 and 60W ICL and use 22W CFL to replace 100W ICL, this is suitable and conservative.

The PoA-DD for global stakeholder publication started on 11/11/2011, at which time the AMS-II.J version 04 was the most updated version. The project meets all the applicability conditions and is in line with the requirements and stipulations mentioned in all sections in the approved methodology.

CAR06 was raised: The version of the applied methodology shall be indicated, and the most updated tools referred by the methodology shall be used. The version of the applied methodology and the most updated tools referred by the methodology have been included in the CPA-DD. The revised PDD is checked to be correct. **CAR06 was closed.**

Complying with Para. 76 of VVM, the validation team confirms that by checking the requirements of applied methodology and the above mentioned documents and also the on-site visit, it could be confirmed that the selected methodology is applicable to the programme of activities, and has been correctly quoted and applied.

Complying with Para.6. of the PoA Standard, there is no “cross effects” exist for the proposed project, as only one methodology is applied.

The validation team confirms that no other sources not addressed by the applied methodology contribute more than 1% of the emission reductions is found.

3.6.2 Project Boundary

As per the methodology AMS-II.J (version 04), the proposed project physical boundary is the location of each CFL installed for which an ICL has been collected and destroyed, and the geographical boundary is the area defined by the CPA.

As the electricity consumed by the project residents is imported from the local power grid, the project boundary also includes all power plants connected physically to the electricity system that each CFL distributed in the project activity will be connected to. According to the delineation which is published by the Chinese DNA, Hebei Province belongs to North China Power Grid (NCPG). Therefore the project boundary is the physical, geographical location of each project CFL installed and all power plants connected physically to North China Power Grid. The electricity is supplied by the NCPG which is pre-dominantly fossil fuel based. Therefore, in-directly GHG emission from grid-connected power plants are reduced.

CO₂ emission by Power plants serving the electricity grid is correctly identified as the only gases included in the project boundary.

Complying with Para. 80 of VVM, the validation team confirms that the identification of project boundary and the selected sources and gases is in compliance with the applied methodology. There are no other emission sources that will be affected by the programme of activities and are not addressed by the applied methodology.

3.6.3 Baseline Identification

Three alternative scenarios of the proposed PoA were identified:

1. Mandatory replacement of ICL with new lighting devices with same or greater efficiency without being registered as a CDM project activity

This alternative is not applicable as there is no mandated legal requirement for replacing ICLs with CFLs in Hebei Province, China. No any national policy or regulation that requires using CFLs in rural households, although a notification of “The Provisional Measures of Financial Subsidy for Promoting Efficient Lighting Equipment” /6/ was published by NDRC and Ministry of Finance in 2007 to provide government subsidy for the sales of CFLs, however, the promotion was limited in major cities of China and small proportion was promoted in rural areas. This was checked by interviewing local government officials, local residence and reviewing relevant documents.

2. Autonomously replacing ICL with new lighting devices with same or greater efficiency without being registered as CDM project activity. There are material barriers:

- (1) Price factor- the unit market price of the high quality CFLs is over 20 RMB, much higher than that of widely used ICLs (1 to 2 RMB). This was checked by asking local retail sellers;

- (2) Local consumer awareness in rural area - domestic consumers in a developing country like China, have insufficient information about the costs and benefits of CFLs. They are often cash-conscious and since the investment in CFL is nearly 10 times that of an ICL, domestic consumers are not willing to purchase. Building consumer awareness on this aspect is difficult.

- (3) Doubts that promised savings will accrue there are low quality CFLs in China market. The poor performance of that low quality CFLs created consumers distrust in the CFL technology.

3. Continued use of ICLs. The scenario of “continued use of ICL” represents the lighting option choice in the business as usual scenario in China households.

In conclusion, the baseline scenario can be defined as “the proposed project would not be invested by the Project Proponent and the incandescent lamps (ICLs) of households in Hebei Province would be used and purchased as a continuation of current practice”.

The above information was confirmed during the on-site visit and interviews with local government officials and stakeholders. No other alternatives which supply comparable outputs and / or services are to be taken into consideration. The exclusion of alternatives is reasonable and well evidenced. No plausible scenario is omitted.

Complying with Para 87 and 88 of VVM, by validating the assumptions, calculations and rationales used, as described in the PoA-DD, and cross checking with official approvals, the validation team is able to confirm that the baseline scenario identified is reasonable, and that:

- All documents and sources referred to in the PoA-DD are correctly quoted and interpreted;
- All the assumptions and data used by the project participants are listed in the PoA-DD, including their references and sources;
- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PoA-DD;
- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;

- Relevant national and/or sectoral policies and circumstances are considered and listed in the PoA-DD.
- The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM programme of activities.

3.7 Additionality demonstration

The validation team assessed the additionality of the PoA with the following steps as below, and confirmed that the “Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0)/27/ has been applied.

According to paragraph 2(c) of the above guideline, the CPA is additional if the maximum annual saved electricity of each project household is less than 3000 MWh per year. The CPAs, under this PoA, solely composed of isolated units where the users of the CFL are households and where the size of each household should be much less than 3000 MWh of energy savings per year. Hence the maximum annual saved electricity of each distribution of a CFL is used for additionality demonstration at CPA level. If the maximum annual saved electricity of each project household, due to using the distributed project CFLs, is less than 3000 MWh per year, the SSC-CPA is automatically additional. This has been defined as an eligibility criterion to include CPA.

CAR07 was raised: The additionality of the proposed project should be further clarified. The additionality demonstration of the proposed programme has been clarified accordingly and checked to be correct. **CAR07 was closed.**

3.7.1 Barrier Analysis

The additionality analysis was chosen to be performed in CPA level. Basic analysis method was also provided in PoA level. The additionality will be demonstrated by adapting the positive list of technologies and project activity types are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds. The barrier analysis is not applicable.

3.7.2 Project Starting Date

The starting date of the proposed PoA is defined as 11/11/2011, which is the date of publication of the PoA-DD for global stakeholder consultation. According to the requirements of Glossary of CDM terms version v07.0/18/, in the context of a CDM PoA, the date on which the coordinating/managing entity officially notifies the secretariat and the DNA of their intention to seek the CDM status or the date of publication of the PoA-DD for global stakeholder consultation in accordance with the relevant CDM rules and requirements, thus it is judged the start date of the proposed PoA is appropriate.

The start date of the crediting period of PoA is defined to be 31/01/2013, or the date of registration, the former is the completion date of installation of CFLs of the CPA-001. The start date of the crediting period of each CPA is defined to be the completion date of CFLs distribution for the SSC-CPA area. This is in accordance with the requirement of the methodology and the CPA inclusion eligibility criteria.

CL06 was raised: Please clarify the definition of starting date of the PoA, also the starting date of the crediting period of PoA. The justification is indicated in the final PoA-DD, and it is verified to be appropriate. Hence CL09 was closed. CL06 was closed.

3.7.3 Prior and continuing real action taken to secure CDM

As the starting date is after 02/08/2008, the project is defined as a “new programme of activity” according to Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM/16/. The starting date of the proposed PoA is defined as 11/11/2011, which is the date of publication of the PoA-DD for global stakeholder consultation. According to the requirements of Glossary of CDM terms version v07.0/18/, in the context of a CDM PoA, the date on which the coordinating/managing entity officially notifies the secretariat and the DNA of their intention to seek the CDM status or the date of publication of the PoA-DD for global stakeholder consultation in accordance with the relevant CDM rules and requirements, thus it is judged the start date of the proposed PoA is appropriate. And as the PoA-DD had been published for global stakeholder consultation before the starting date of the real CPAs, it is confirmed that the prior consideration of CDM was sufficient. Besides, the General Manager Meeting Minutes on 13/06/2011 /31/ was also checked, the decision to apply CDM was before the starting date.

Therefore, the additionality was justified in accordance with the requirements derived from latest Guidelines on the demonstration of additionality of small-scale project activities v09.0, thus based on the above assessment; the PoA is assessed to be additional.

Complying with Para. 104 of VVM, the validation team is able to confirm that:

- The definition of starting date is in accordance with the Glossary of CDM terms and VVM;
- The project complies with the requirements of Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM version 04, which is the latest version;
- The information listed in the PoA-DD is checked to be correct;
- The continuing and real actions taken to secure CDM status is sufficient and properly demonstrated.

3.8 Emission Reductions

The calculations of emission reductions have been checked by the validation team. The parameters and equations presented in the PoA-DD and generic CPA-DD and further documentation have been compared with the information and requirements presented in applied methodology and respective tools. According to the methodology, emission reduction is net electricity savings (NES) times the emission factor calculated in accordance with provisions under AMS-I.D v17.

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

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 , (tCO_{2e}/MWh); Under the PoA, the GEF is calculated as per the methodology AMS-I.D using a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM). The calculated GEF value is fixed ex-ante in each SSC-CPA.

The net energy saved is derived using the equation:

$$NES_y = \sum_{i=1}^n Q_{PJ,i} \times (1 - LFR_{i,y}) \times ES_i \times \frac{1}{(1 - TD_y)} \times NTG$$

Where:

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

Where:

NES_y Net electricity saved in year y (kWh)

$Q_{PJ,i}$ Number (quantity) of pieces of equipment of type i distributed or installed under the project activity (units)

i Counter for equipment type

n Number of types of equipment

ES_i Estimated annual electricity savings for equipment of type i, for the relevant technology (kWh)

$LFR_{i,y}$ Lamp Failure Rate for equipment type i in year y (fraction)

TD_y Average annual technical grid losses (transmission and distribution) during year y for the grid serving the locations where the devices are installed, expressed as a fraction. Use default value of 10%

NTG Net-to-gross adjustment factor, a default value of 0.95 to be used

$P_{i,BL}$ Rated power of the baseline lighting devices of the group of "i" lighting devices (Watts)

$P_{i,PJ}$ Rated power of the project lighting devices of the group of "i" lighting devices (Watts)

O_i Average daily operating hours of the lighting devices replaced by the group of "i" lighting devices, use 3.5 hours per 24 hrs period as default value, as required by the methodology

The Lamp Failure Rate ($LFR_{i,y}$) is the % of lamps that have failed during a year. The average life or rated average life is used to calculate the ex ante Lamp Failure Rate as follows:

$$\text{If } y * X_i < L_i, LFR_{i,y} = y * X_i * (100 - R_i) / (100 * L_i)$$

$$\text{If } y * X_i \geq L_i, LFR_{i,y} = 1$$

Where:

$LFR_{i,y}$ Lamp Failure Rate for equipment type i in year y (fraction)

L_i Average life (or Rated Average Life until average life value is available) for equipment type i (hours)

R_i % of lamps of type i operating at the end of average life or the rated average life (use a value of 50)

X_i Number of operating hours per year for equipment type i (hours), 1277.5 is used

y Counter for year

The EF is calculated and fixed ex-ante as per the latest approved version methodology AMS-I.D/17/, which refers to the Tool to calculate the emission factor for an electricity system/13/. The detailed EF calculation will be determined in specific CPAs based on the most recent information available.

The calculation process of emission reductions have been checked by the validation team. The calculations were carried in accordance with the requirement of the applied methodology, correct equations and parameters have been used accordingly. No mistakes have been observed after the validation team has recalculated the baseline emission input provided. The result of EF is also cross-checked with the 2011 Baseline Emission Factors of Regional Grids in China issued by national DNA/33/. The parameters and equations presented in the PoA-DD have been checked with the information and requirements presented in applied methodology and respective tools to be correct. Therefore, the GHG emission reduction calculation is assessed to be appropriate.

Complying with Para 92 and 93 of VVM, by validating the assumptions, calculations and rationales used, as described in the PoA-DD, and cross checking with official approvals, the validation team is able to confirm that the baseline scenario identified is reasonable, and that:

- (a) All assumptions and data used by the project participants are listed in the PoA-DD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PoA-DD;
- (c) All values used in the PoA-DD are considered reasonable in the context of the proposed CDM programme of activities;
- (d) The baseline methodology has been applied correctly to calculate emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PoA-DD.

3.9 Monitoring plan

3.9.1 Compliance of the monitoring plan with the approved methodology

Monitoring will be carried out during the process of CFL distribution, Ex-post Monitoring Survey and ICL destruction. The following monitored parameters will be monitored with regard to the requirement of the applied methodology.

n: Sample size of Monitoring Survey. Calculated value as per statistical analysis provided in PoA-DD and SSC-CPA-DD. The SSC-CPA shall determine the representative sample size with minimum 90% confidence interval and 10% maximum error margin. To be conservative, the minimum number of households surveyed should be 100. Simple random sampling will be used by the CPA-001 to determine this parameter.

- 1) Ex-post Q_{PJ} Survey to determine the quantity of CFLs.

To estimate the proportion, p , of CFLs placed in service and operating under the project activity in household population with a 10% margin of error at desired confidence level of 90%, the optimal sample size n of CFLs is calculated by:

$$n \geq \frac{1.645^2 NV}{(N-1) \times 0.1^2 + 1.645^2 V}$$

Where:

$$V = \frac{p(1-p)}{p^2}$$

n	Sample size
N	Total number of households
p	The proportion of CFLs placed in service and operating
1.645	Represent the 90% confidence required
0.1	Represent the 10% relative precision (0.1*0.5=0.05=5% points either side of p)

The N represent total number of households other than total CFLs is validated to be appropriate. Considering multy CFLs will be installed in one household, and the CFL installed in any household is considered homogeneous, besides, each household will be allotted a unique serial number.

Depending on the value of p i.e. proportion of CFLs installed and working is varied then the sample size also changes. This survey takes place within the first year after installation of all efficient lighting equipment will provide a value for the number of CFLs placed in service and operating under the project activity. For conservative, it is assume that 50% CFLs either were installed and not working or were not installed.

2) Subsequent Ex-post monitoring Survey to determine the lamp failure rate (LFR)

To estimate the proportion, p, of CFLs failure rate under the project activity in household population with a 10% margin of error at desired confidence level of 90%, the optimal sample size n of CFLs is calculated by:

$$n \geq \frac{1.645^2 NV}{(N-1) \times 0.1^2 + 1.645^2 V}$$

Where:

$$V = \frac{p(1-p)}{p^2}$$

n	Sample size
N	Total number of households
p	The proportion of CFLs failure rate
1.645	Represent the 90% confidence required
0.1	Represent the 10% relative precision (0.1*0.5=0.05=5% points either side of p)

Depending on the value of p i.e. proportion of CFLs installed and not working is varied then the sample size also changes.

The subsequent ex-post monitoring survey will be carried out once every 3 years.

Considering designed 20% non-response rate during Ex-post monitoring survey, the final sample size of CFLs (parameter n) is finalized to be: the above calculated n/0.8.

LFR_{i,y}: Determined as per subsequent ex post monitoring surveys of the installed CFLs.

The number of CFLs that failed over time would be determined by subtracting the number of CFLs in operation determined at the previous ex post monitoring survey by the number of CFLs in operation determined at the ex post monitoring survey. Then this number would be divided by the number of CFLs in operation determined at the previous ex post monitoring survey, which would suggest ex post LFR. The survey will consist of identifying CFLs, with unique SSC-CPA markings that are installed and operating. Under the survey, only CFLs with an original marking can be counted as installed. If Rated Average Life values were used initially for calculating LFR_y , as soon as Average Life values are available they shall be used for calculation of subsequent year $LFR_{i,y}$ values. If the ex-post monitoring surveys indicate that the failure rate is equal to or less than the $LFR_{i,y}$ value indicated ex-ante or prior year, ex-post monitoring values, for subsequent years $LFR_{i,y}$ shall continue to be determined using Equation (4) in section E.6.2 and the established Average Life values for L_i . However, for subsequent years, L_i values in $LFR_{i,y}$ equation (4) in section E.6.2 shall be adjusted if the ex-post monitoring surveys indicate that the failure rate ($LFR_{i,y}$) is greater than the value indicated using equation (4) in section E.6.2 with Average Life or prior year, ex-post monitoring values. In this situation, a new value for L_i shall be determined using equation (4) in section E.6.2 and new values of $LFR_{i,y}$ shall be used beginning from the first calculation year after completion of the ex-post survey.

$DATE_{start}$ and $DATE_{end}$: The data should be documented by implementer, entered into the CPA database.

$Q_{BL,i}$: The number of each type of the replaced ICLs collected and destroyed will be entered into the CPA database. Replaced ICLs would be collected from the household or from dedicated CFL distribution points e.g. resident association offices, schools, community centers etc. The destruction of ICLs should be documented via witnessing by local environmental officials or time stamped video records. With recorded documentation of ICL destruction, the destruction can precede verification.

$Q_{PJ,i}$: The status of each checked CFL will be recorded on the survey questionnaire in the first ex post monitoring survey, carried out within the first year after installation of all CFLs. One questionnaire is filled in per each sampled household. The information from the questionnaire is afterwards entered into CPA database, which is related to the first ex-post monitoring survey.

$P_{i,BL}$: Rated power of each type of the replaced ICLs will be identified by the distribution team from the lamp while replacement is taking place and recorded on the distribution form.

$P_{i,PJ}$: The parameter will be monitored during the CFL distribution. The data will be entered into the CPA database.

Ex post monitoring and adjustment of corresponding Net Electricity Savings (NESy):

- First ex post monitoring survey, carried out within the first year after installation of all efficient lighting equipment will provide a value for the number of CFLs placed in service and operating under the project activity. The results of this survey are used to determine the quantity of CFLs ($Q_{PJ,i}$) in the Emission Reduction calculation to determine the ex post Lamp Failure Rate ($LFR_{i,y}$) for use in ex post Emission Reduction calculations.
- Subsequent ex post monitoring surveys are carried out at the following intervals: once every 3 years.



- The surveys will consist of identifying CFLs, marked with specific special logos that are installed and operating. Only CFLs with an original marking can be counted as installed. While CFLs replaced as part of a regular maintenance or warranty program can be counted as operating, cannot be replaced as part of this monitoring survey process and counted as operating for the purposes of determining $Q_{PJ,i}$.

The information will be entered into each CPA's database which is managed by each CPA implementer. While a database for all the CPAs shall be maintained by QL. The CPA database shall also contain the following information:

1. Project record: A list of households participating in each CPA including name, address, number and wattage of ICL exchanged and CFL distributed, date of distribution and installation;
2. Lamp Failure rate(LFR): Where ex-post monitoring survey is proposed by CPA sample household and survey data. If the result of ex post monitoring survey is different with the ex ante or prior year failure rate value, Lamp Failure Rate will be changed;
3. Leakage: ICL destruction records; and
4. Monitoring Survey Records.

The compiled information should be electronically submitted to the QL at the end of the CFL distribution / monitoring survey in the CPA area. After the completion of distribution, QL as managing entity would build a check team to verify the process and determine whether the record and result is acceptable.

Parameter value to be monitored shall be estimated by sampling in accordance with the requirements in the applied methodology (applying 90/10 confidence/precision for the sample size calculation) separately and independently for each of the CPAs included in this PoA. To be conservative the minimum number of households surveyed should be 100. Each participating household is allotted a unique serial number and the random number generators will be applied for ex-post monitoring survey. This is checked to be consistent with Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities /34/.

The information regarding monitoring is attached in Annex 4 of the generic CPA-DD, assuming that the population is homogenous with respect to the continued use of CFLs. Then simple random sampling would be an appropriate method to estimate the proportion of CFLs still in operation. Ex-post monitoring Survey to determine the quantity of CFLs (Q_{PJ}) and lamp failure rate (LFR). To estimate the proportion, p , of CFLs placed in service and operating under the project activity in household population with a 10% margin of error at desired confidence level of 90%, the optimal sample size n of CFLs is given by according to the Guidelines for sampling and surveys for CDM project activities and programme of activities version 02.0/29/.

Depending on the value of p i.e. proportion of CFLs installed and working is varied then the sample size also changes. The sample size in each monitoring year will be calculated by allowing some non-response rate (eg. about 20%)). However, to be conservative and to comply with the requirement as given in the applied methodology, the minimum number of households surveyed should be 100. The SSC-CPA implementer(s) may choose a sample size higher than the calculated value. To achieve good quality data, a standard form shall be designed ex-ant and assessed by the CME. All field personnel will be trained to decrease the non-response error. The determination is in accordance with the methodology and Guidelines for sampling and surveys for CDM project activities and programme of activities version 02.0 /29/. The calculation is in accordance with Guidelines for sampling and surveys for CDM project activities and programme of activities version 02.0 /29/.

CAR08 was raised: The monitoring plan described in section A.4.4.2 and E.7.2 shall include detailed information of sampling. The information about sampling has been included in the revised PoA-DD, and checked to be consistent with Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities. **CAR08 was closed.**

CL05 was raised: Please clarify the description of QA/QC procedures of DATE_{start} and DATE_{end}, in section B.6.1, as it was described in PoA-DD as “documented and verifiable by Managing Entity and DOE at random”. It was clarified that the data should be documented by implementer. And it is verifiable by Managing Entity and DOE at random. The clarification is acceptable. **CL05 was closed.**

During document review and on-site visit, the validation team is able to verify that necessary procedures related to data handling, quality assurance, and monitoring personnel have been appropriately implemented.

According to the described validation method, the estimations in the PoA-DD for the parameters monitored ex-post are considered to be reasonable. Complying with Para. 124 of VVM, the validation team confirms that monitoring plan complies with the requirements of the methodology; the monitoring arrangements described in the monitoring plan are feasible; the project participants are able to implement the monitoring plan.

3.9.2 Implementation of the Monitoring Plan

After the review of evidence provided by the PPs, the interview and communications with PPs, CEC confirms that monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for the implementation, including data management, quality and assurance control procedures, are sufficient to ensure that the emission achieved resulting from the proposed PoA can be reported ex post and verified.

Finally, CEC considers that the project participant is able to implement the monitoring plan stated in the PoA - DD taking into account all the reasons explained above.

3.10 Environmental Impacts

Environmental Analysis is chosen to be done at PoA level, because the CFLs distributed in this programme meet the requirements of GB/T 17263: Self-ballasted lamps for general lighting service-Performance requirement /35/ and there are no statutory environmental impact assessment requirements on lighting facilities distribution and disposal. The proposed project type is not included in the Classified Management List of Environmental Impact Assessment of Infrastructure Projects, issued by Ministry of Environmental Protection in 2008 /36/. This is crosschecked via checking the Statement of Environmental Impact Assessment of CFL Distribution Programme in Hebei Province issued by Environment Protection Bureau of Wei County /32/ and interviewing local government officials.

For the proposed PoA, QL will make sure that itself and CPA implementer will handle the waste of the collected and destroyed ICLs in an appropriate and environmental friendly way with due care and safety without causing any hazard as specified by local authority. The destruction methods will be documented via witnessing by local government officials or time stamped video records. As the collection and destruction is carried out within China, there is no trans-boundary impact.

CAR09 was raised: The justification of the choice of level at which the environmental analysis shall be added in section C.1. The justification was added in the updated and checked to be correct. **CAR09 was closed.**



3.11 Local Stakeholder Consultation

Local stakeholder consultation is chosen to be done at CPA level, because it is difficult to sufficiently reflect the stakeholders' comments on the CPAs in PoA level. The consultation meeting will be carried out in each CPA district and the comments by local stakeholders will be recorded. This method is more suitable to receive feedback of local stakeholders and react.

CAR10 were raised: The justification of the choice of level at which the stakeholder comments are invited shall be added in section D.1. The justification was added in the updated and checked to be correct. CAR10 was closed.

3.12 Comments by Parties, Stakeholders and NGOs

The PoA-DD was made publicly available from 11/11/2011 in accordance with paragraph 40(b) of the modalities and procedures for the CDM and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. No comments were received during this process.



4. VALIDATION OPINION

China Environmental United Certification Center Co., Ltd. (CEC) has performed a validation of SSC proposed PoA “CFL Distribution Programme in Hebei Province” based on UNFCCC criteria for the Clean Development Mechanism and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation, the subsequent on-site interviews and the further cross-check of references have provided CEC with sufficient evidences to determine the fulfillment of stated criteria in the protocol. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence, CEC will recommend the project for registration by the CDM EB.

An analysis as provided by the applied methodology demonstrates that the proposed programme of activities is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the programme of activities. Given that the project is implemented as designed, the project is likely to achieve the estimated emission reductions as demonstrated in the final version of the PoA-DD.

The crediting period is 28 years. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

It is CEC's opinion that “CFL Distribution Programme in Hebei Province” project, as described in the PoA-DD version 04 dated 27/12/2012, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria, correctly applies the baseline and monitoring methodology AMS-II.J(version 04), and also meets the stated validation criteria. CEC thus requests the registration of the project as a CDM programme of activities.

Beijing, 28/12/2012

A handwritten signature in black ink, appearing to read '刘清志' (Liu Qingzhi), is positioned above the name.

LIU Qingzhi

Validation Team Leader

Beijing, 28/12/2012

A handwritten signature in black ink, appearing to read '宋铁东' (Song Tiedong), is positioned above the name.

SONG Tiedong

Chairman of Board



5. REFERENCES

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11. Validation and Verification Manual, version 1.2;
12. AMS-II.J: "Demand-side activities for efficient lighting technologies", version 04, 28/05/2010;
13. Tool to calculate the emission factor for an electricity system, version 02.2.0;
14. Tool for the demonstration and assessment of additionality, version 05.2;
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16. Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, version 04;
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19. Guidance on assessment of de-bundling for SSC project activities" version 03.0;
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22. The qualification of Aurora International Testing Laboratory, valid until 08/04/2012;
23. International Standard IEC60969-2001: Self Ballasted Lamps For General Lighting Services - Performance Requirements;
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25. Notice regarding the Geographical Coordinates of Wei County from Development and Reform Committee of Wei County. 22/07/2011
26. CFLs procurement agreement signed with the manufacturer, 20/04/2012;
27. "Guidelines on the demonstration of additionality of small-scale project activities"



(Version 09.0), reported as Annex 27 to EB 68;

28. Non-binding best practice examples to demonstrate additionality for SSC project activities;
29. Guidelines for sampling and surveys for CDM project activities and programme of activities version 02.0, 13/09/2012
30. Template of the Agreement between participating households and QL;
31. General Manager Meeting Minutes, QL and local government, 13/06/2011;
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33. Baseline Emission Factors of Regional Grids in China, DNA NDRC, 20/12/2010;
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38. CFL Distribution Plan for Wei County of Handan City (CPA-001), QL;
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40. Stakeholder Consultation Questionnaires of CPA-001, 13/06/2011-30/06/2011;
41. Quality Control & Manage Manual for the PoA project, QL, 13/11/2011.
42. Training Manual of CFL Distribution Personnel of CPA-001, QL;
43. Baseline sampling survey record and result of CPA-001;
44. ER calculation spreadsheet of CPA-001;



6. PEOPLE INTERVIEWED

Name	Organization / Function
SUI Naiqing	Zhenjiang Qiangling Energy-saving Light Source Co., Ltd., General Officer
SHEN Ran	Zhenjiang Qiangling Energy-saving Light Source Co., Ltd.
MA Yongming	Zhenjiang Qiangling Energy-saving Light Source Co., Ltd.
WANG Wenqiang	Sino Carbon Innovation & Investment Co.,Ltd.
SHI Xiaochen	Sino Carbon Innovation & Investment Co.,Ltd.
LIU Jing	Agriculture and Animal Husbandry Bureau of Wei County, Director
LI Hongtao	New Energy Office of Handan City, Director
ZHU Limei	New Energy Office of Hebei Province, Section Manager
CHEN Laicheng	Agriculture and Animal Husbandry Bureau of Wei County, Deputy Director
YANG Shumin	New Energy Office of Agriculture and Animal Husbandry Bureau of Wei County
NIU Ruiying	New Energy Office of Agriculture and Animal Husbandry Bureau of Wei County
GAO Ligang	Government Office of Wei County, Deputy Director
CAI Xinmin	Jixi Country of Shakouji Town
CAI Qingyu	Jixi Country of Shakouji Town
CAI Ximing	Jixi Country of Shakouji Town
CAI Yunshui	Jixi Country of Shakouji Town
CAI Guitang	Jixi Country of Shakouji Town
ZHAI Tinghua	Mudong Country of Shuangjing Town
ZHAI Shuangyuan	Mudong Country of Shuangjing Town
ZHAI Guangji	Mudong Country of Shuangjing Town
ZHAI Quan	Mudong Country of Shuangjing Town
ZHAI Sijun	Mudong Country of Shuangjing Town



ZHAI Zhangqun	Mudong Country of Shuangjing Town
ZHANG Gaosheng	Yongxi Country of Shuangjing Town
ZHANG Qingsheng	Yongxi Country of Shuangjing Town
HAN Fushan	Yongxi Country of Shuangjing Town
HAN Zhaoxin	Yongxi Country of Shuangjing Town
HAN Tangshan	Yongxi Country of Shuangjing Town
LI Xueyu	Yongxi Country of Shuangjing Town
BIAN Chunying	Chexi Country of Chezhu Town
BIAN Haojin	Chexi Country of Chezhu Town
YAN Fengyuan	Chezhu Town, Town major
CHEN Yuncun	Chezhu Town
CHEN Shuting	Haonan Country of Chezhu Town
LI Jiyong	Yali Town, Town mayor



APPENDIX A VALIDATION PROTOCOL

Table 1 PoA-DD and Generic CPA-DD Requirement Checklist

Checklist Question	MoV	Comments MoV=Means of Validation, DR=Document Review, I=Interview, O=Observation	Draft Conclusion	Final Conclusion
A. General Description of Programme of activities				
A.1. Title of the Programme of activities				
A.1.1 Does the project title clearly identify the unique CDM activity?	DR	Yes. The project title is “CFL Distribution Programme in Hebei Province”, which identifies the unique CDM activity clearly. The project title is consistent with the LoA/3/ and MoC/10/. The title of the project and version number of the document and data is complete and correct.	OK	OK
A.1.2 Are there any indication concerning the history of the versions?	DR	Yes. The version 01 was compiled for the GSP in UNFCCC website on 11/11/2011. The final revised PoA-DD version 04 is dated 27/12/2012.	OK	OK
A.1.3 Does the PoA-DD apply the latest UNFCCC template?	DR	Yes. The PoA-DD and template CPA-DD applied the latest UNFCCC template under VVM track (Small-Scale CDM Programme of Activities Design Document form, version 01.0 /9/ and Small-Scale CDM Programme Activity Design Document form, version 01.0/24/) completely and accurately.	OK	OK
A.2. Description of the Programme of activities				



<p>A.2.1 Is the description delivering a transparent overview of the project activities?</p>	<p>DR O</p>	<p>Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. (QL) will coordinate the Small-Scale Programme of Activities (SSC-PoA) and will support the project implementer(s) in implementing the CDM Programme Activities (CPAs) in Hebei Province. The proposed programme after implementation will result in CO₂ emission reduction by saving electricity consumption generated by fossil fuel fired-based power plants in the North China Power Grid (NCPG), due to the electricity consumed by the project residents is imported from NCPG.</p> <p>Under the programme, high quality long-life CFLs would be distributed by QL and other project implementer(s) to residential households in exchange of an incandescent lamp (ICL) for free. Each household can install no more than six CFLs through the CPAs by replacing used ICLs. To avoid re-sale of the CFL, the label on the CFL will be clearly marked accordingly.</p> <p><u>CAR01</u></p> <p>Please further state the goal of the PoA, and also state the rationale of how the PoA will achieve GHG emission reduction.</p> <p><u>CL01</u></p> <p>Please add the estimated distribution plan of CFLs in section A.2, including the power, Lumen and rough number of ICLs and CFLs.</p>	<p>CAR01 CL01</p>	<p>OK</p>
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A.2.2 What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	DR	<p>The following documents are major evidence documents available and checked against the information in PoA-DD by the validation team:</p> <ul style="list-style-type: none"> • Business licence/7/ • Registration at local Development and Reform Committee/37/ • Statement of Environmental Impact Assessment/32/ • Baseline Survey/43/ • Test report of CFLs/20&.21/ 	OK	OK
A.2.3 Is the information provided by the PoA-DD consistent with the information provided by proofs?	DR	<p><u>CL02</u></p> <p>The documentation in footnote 4 of the PoA-DD can not be downloaded, please modify and check all the footnotes.</p> <p><u>CL03</u></p> <p>Please provide the below evidences:</p> <ul style="list-style-type: none"> Signed MoC CFL procurement contract and CFL specification CDM development agreement The most updated CFLs allocation plan of PoA Qualification certification of the lab doing the test of sample CFLs Training plan and content for distribution team 	<p>CL02</p> <p>CL03</p>	OK



A.2.4 Is the project a large scale project, a small scale project with average annual emission reductions above 15,000 t or a bundled small scale project? Has on-site visit been carried out?	DR I	<p>The programme of activities is a small scale programme of activities, because the CFLs to be distributed within a single CPA will below the requirement of the limitation of 60 GWh.</p> <p>From 17/12/2011 to 19/12/2011, the validation team performed an on-site visit and interviews with project participants, local officials and stakeholders to confirm the provided information.</p>	OK	OK
A.2.5 Does the programme of activities involve alternation of existing installation? If so, have the differences between pre-project and post-project activity been clearly described in the PoA-DD?	DR I O	The proposed PoA does not involve alteration of existing installations.	OK	OK
A.3. Project Participation				
A.3.1 Is the form required for the indication of project participants correctly applied?	DR	<p>Yes.</p> <p>The form is correctly applied.</p>	OK	OK
A.3.2 Does it clearly specify all the Parties and project participants?	DR	<p>Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. is the participating private entity.</p> <p><u>CAR02</u></p> <p>LoA from DNA of China has not been provided. If the project is a unilateral project, then the Host Party shall be recognized as a project participant in section A.3.</p>	CAR02	OK



A.3.3	Has the project provided written approvals of all parties involved including coordinating/managing entity?	DR	Please refer to CAR02	CAR02	OK
A.3.4	Does the written approval from the host country confirm that the project contributes to the sustainable development in the country?	DR	Please refer to CAR02.	CAR02	OK
A.3.5	Will the project create other environmental or social benefits than GHG emission reductions?	DR O	Yes. Currently the fluorescent lamps used are not being recycled but disposed with the regular waste in landfills. Every CFL contains small quantities of mercury and therefore may eventually add to contamination of soils and groundwater resources in China. Although Chinese Government does not mandate an EIA or any precautionary measures for CFL use, QL will require itself and CPA implementer(s) to contribute to the prevention of mercury pollution from the CPA project activity, with mitigation plans. So the pollution could be controlled and minimized.	OK	OK
A.4. Information and Technology of the Programme of activities					
A.4.1	Does the information provided on the location of the programme of activities allow for a clear identification of the site(s)?	DR I O	Yes. The geographical boundary of the SSC-CPA area is uniquely defined and located in Hebei Province. The proposed project physical boundary is the location of each CFL installed for which an ICL has been collected and destroyed, and the geographical boundary is the area defined by the CPA.	OK	OK
A.4.2	To which category(ies) does the programme of activities belonging to? Is the category correctly identified and indicated?	DR	The project falls under Sectoral scope 3, Technical area 3.1: Energy demand. The category and methodology is correctly identified in Section A 4.2 of the PoA-DD.	OK	OK



A.4.3 Does the technical design of the programme of activities reflect current good practices?	DR I	Yes. After document review and on-site visit, it is confirmed the project uses energy saving CFLs instead of ICLs, which reflects the advanced technology and current good practices.	OK	OK
A.4.4 Does the description of the technology to be applied provide sufficient and transparent input/information to evaluate its impact on the greenhouse gas balance?	DR	Yes. The description of the technology is complete, relative document evidences have been provided and checked. The programme of activities will replace approximately 100 million household incandescent lamps with equal number of energy efficient, self-ballasted, compact fluorescent lamps, of same or higher lumen output. The use of CFLs instead of incandescent lamps (ICLs) will reduce carbon dioxide emissions associated with the combustion of fossil fuel from grid connected power plants in the North China Power Grid. The CFLs will comply national standard GB/T 17263 which specifies a minimum 6000 hours rated life time.	OK	OK
A.4.5 Does the implementation of the programme of activities require any technology transfer from Annex I countries to the host country(ies)?	DR I	No. The ICLs will be collected and destroyed in China, the CFLs are made and distributed in China. No technology transfer is involved.	OK	OK
A.4.6 Is the technology implemented by the programme of activities environmentally safe?	DR I	Yes. As the project is lamp change and distribution project, the substituted ICLs will be destroyed and distributed CFLs will be manufactured in accordance with the national standard. The technology implemented by the programme of activities is environmentally safe.	OK	OK
A.4.7 Is the information provided in compliance with actual situation or planning?	DR I/O	Yes. By document review, on-site visit and interviews, it is confirmed that the information is in compliance with actual planning.	OK	OK



A.4.8	Is estimation of the emission reductions in first crediting period correct?	DR	Yes. The formulas and calculation process is checked to be correct and in accordance with the applied methodology.	OK	OK
A.4.9	Is any public funding from Annex I countries available to the proposed project?	DR	No. According to the document review and on-site auditing, there is no public funding for the programme of activities.	OK	OK
A.4.10	If multiple methodologies are applied, are there any “cross effects” exist?	DR	N/A	OK	OK
A.5. Eligibility criteria for CPAs					
A.5.1	Are the eligibility criteria for CPAs sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA?		<p><u>CAR03</u></p> <p>Please further identify the CPA eligibility criteria according to para.14 of Annex 3 of EB65 (PoA Standard).</p> <p><u>CL04</u></p> <p>Please further clarify how to avoid the double counting, especially the avoidance of double counting under each CPA. Related revision shall also be reflected in other sections such as A.4.2.2, E.2, etc.</p>	<p>CAR03</p> <p>CL04</p>	OK
A.6. The operational and management arrangements					
A.6.1	Does the PoA-DD and generic CPA-DD clearly state the coordinating/managing entity?	DR	Yes.Zhenjiang Qiangling Energy-saving Light Source Co., Ltd. (QL) is identified to be the coordinating/managing entity of the PoA.	OK	OK



<p>A.6.2 Are the operational and management arrangements established by the coordinating/managing entity suitable for the PoA being validated?</p>	<p>DR O</p>	<p><u>CAR04</u></p> <p>Detailed plan of the following content shall be mentioned appropriately in the PoA-DD, and related evidences shall be submitted to the DOE:</p> <ul style="list-style-type: none"> • The relationship between Zhenjiang Qiangling Energy-saving Light Source Co., Ltd., (QL), the project implementer(s) implementing CPAs and the local governments, and the respective responsibilities of each party, especially the ex-post monitoring and maintenance of database; • How will QL have control of related data, records and implementation process to ensure that each CPA is implemented in accordance with the requirements of the PoA; • Training content for distribution team; • More detailed process of the collection and destroy process of the replaced ICLs shall be provided, as it is only mentioned in C.2 of PoA-DD that they will be handled in an appropriate and environmental friendly way with due care and safety without causing any hazard as specified by local authority.” • How will the record and database of the PoA and CPAs be maintained • The geographical coordinates are cited from a website based on public input, please determine the geographical boundary of the PoA using a reliable source. <p><u>CAR05</u></p> <p>Please revise the project design documents according to 17 (management system) of Annex 3 of EB65 (PoA Standard).</p>	<p><u>CAR04</u> <u>CAR05</u></p>	<p>OK</p>
<p>B. Application of a Baseline and Monitoring Methodology</p>				



B.1. Does the project correctly apply the latest approved methodology and its tools?	DR	<p>The project applies approved methodology AMS-II.J (version 04). The application is justified in table 7.</p> <p>The PoA-DD for global stakeholder publication started on 11/11/2011, at which time the AMS-II.J version 04 was the most updated version. The project meets all the applicability conditions and is in line with the requirements and stipulations mentioned in all sections in the approved methodology.</p> <p>There is no tool referred in the methodology. But when calculating emission factor, AMS-I.D and its referring tool: Tool to calculate the emission factor for an electricity system was referenced, the latest versions are applied.</p>	OK	OK
B.2. Does the information regarding GHG emissions occurring within the proposed project boundary as a result of the implementation of the proposed project which are expected to contribute more than 1% of the overall expected average annual emissions reductions, including those not addressed by the applied methodology?	DR O	<p>According to the methodology, the project emission and leakage do not need to be considered. No other sources not addressed by the applied methodology contribute more than 1% of the emission reductions is found.</p>	OK	OK
B.3. Are the project's spatial boundaries (geographical) clearly defined?	DR	<p>Yes. The political boundary of Hebei Province in China is chosen as the geographical boundary of the PoA.</p> <p>The CPAs that will be included under the PoA will be within the defined geographical location of the CPA area and follow applicable national and / or sectoral policies and regulations.</p>	OK	OK



B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario(Baseline Scenario Determination)

The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.

B.4.1 What is the baseline scenario?	DR	The baseline scenario is the proposed project would not be invested by the Project Proponent and the incandescent lamps (ICLs) of households in Hebei Province would be used and purchased as a continuation of current practice.	OK	OK
B.4.2 What other alternative scenarios have been considered and why is the selected scenario the most likely one?	DR	<p>1. Mandatory replacement of ICL with new lighting devices with same or greater efficiency without being registered as a CDM project activity. This alternative is not applicable as there is no mandated legal requirement for replacing ICLs with CFLs in Hebei Province, China.</p> <p>2. Autonomously replacing ICL with new lighting devices with same or greater efficiency without being registered as CDM project activity. This alternative is not applicable due to price factor, local consumer awareness in rural area, and doubts about promised savings.</p> <p>3. Continued use of ICLs. The scenario of “continued use of ICL” represents the lighting option choice in the business as usual scenario in China households.</p> <p>The baseline scenario could be defined as “the proposed project would not be invested by the Project Proponent and the incandescent lamps (ICLs) of households in Hebei Province would be used and purchased as a continuation of current practice”.</p>	OK	OK
B.5. Demonstration and Assessment of Additionality				



B.5.1 Does the additionality justification follow the requirements of the applied methodology and/or methodological tools?	DR	<u>CAR06</u> The version of the applied methodology shall be indicated, and the most updated tools referred by the methodology shall be used.	CAR06	OK
B.5.2 Prior consideration of CDM				
B.5.2.1. Is the prior consideration of CDM correctly demonstrated in the PoA-DD?	DR I	Yes. As the starting date of 11/11/2011 was after 02/08/2008, which is the date of publication of the PoA-DD for global stakeholder consultation. The determination of starting date of the proposed PoA is in line with the Glossary of CDM terms, in the context of a CDM PoA, the date on which the coordinating/managing entity officially notifies the secretariat and the DNA of their intention to seek the CDM status or the date of publication of the PoA-DD for global stakeholder consultation in accordance with the relevant CDM rules and requirements, thus it is judged the start date of the proposed PoA is appropriate.	OK	OK
B.5.3 Demonstration of Additionality				
B.5.3.1. Is the PoA additionality assessed according to current versions of : Applicable methodology; Tool used to demonstrate the Additionality; Procedures for Registration of a Programme of Activities as a Single CDM Project Activity and issuance of Certified Emission Reductions for a Programme of Activities	DR	<u>CAR07</u> The additionality of the proposed project should be further clarified.	CAR07	OK



B.5.3.2. Has it been demonstrated that the PoA is a voluntary coordinated action that would not be implemented in the absence of CDM?	DR	Yes, the PoA is a voluntary coordinated action that would not be implemented in the absence of CDM.	OK	OK
B.5.3.3. If the PoA is implementing a mandatory policy/regulation, has it been demonstrated whether the policy/regulation is not being enforced? If it is enforced, has it been demonstrated that the PoA will lead to a higher level of enforcement?	DR	Not applicable. The programme is not implementing a mandatory policy/regulation.	OK	OK
B.5.3.4. Are all assumptions stated in a transparent and conservative manner?	DR	Yes, they have been stated in a transparent and conservative manner.	OK	OK
B.5.3.5. Is sufficient evidence provided to support the relevance of the arguments made?	DR	The final PDD details the sources and evidences to back up the additionality of the PoA, and they have been provided to the validation team and deemed adequate.	OK	OK
B.6. Emission Reductions				



B.6.1.1. Are the methodological choices correctly applied according to the applied approved methodology?	DR	<p>Yes. According to the applied AMS-II.J(version 04), the methodological choices are required to be made and the SSC-CPA shall indicate the choices in the following manner: The total lumen output of the CFL should be equal to or more than that of the ICL being replaced; lumen output of ICL & CFL shall be determined in accordance with relevant national or international standard/s. Values in the table below may be used as an alternative option to such standards. If a lamp wattage is not in the Table below, linearly interpreted value shall be used to determine the minimum light output requirements e.g., 493 Lumens for a 45 W lamp.</p> <table><tr><th>Baseline Technology - Incandescent Lamp (Watt)</th><th>Minimum Light Output (Lumen)</th></tr><tr><td>25</td><td>230</td></tr><tr><td>40</td><td>415</td></tr><tr><td>50</td><td>570</td></tr><tr><td>60</td><td>715</td></tr><tr><td>75</td><td>940</td></tr><tr><td>90</td><td>1,227</td></tr><tr><td>100</td><td>1,350</td></tr><tr><td>150</td><td>2,180</td></tr><tr><td>200</td><td>3,090</td></tr></table> <p>The distributed CFL lamps under the CPA shall meet the applicable standard CIE84:1989 or other national/international standard for CFLs.</p>	Baseline Technology - Incandescent Lamp (Watt)	Minimum Light Output (Lumen)	25	230	40	415	50	570	60	715	75	940	90	1,227	100	1,350	150	2,180	200	3,090	OK	OK
Baseline Technology - Incandescent Lamp (Watt)	Minimum Light Output (Lumen)																							
25	230																							
40	415																							
50	570																							
60	715																							
75	940																							
90	1,227																							
100	1,350																							
150	2,180																							
200	3,090																							



B.6.1.2. Have conservative assumptions been used when calculating the emission reductions?	DR	<p>Yes. For parameter of TDy: A default value of 10% is used for average annual technical grid losses, if no recent data are available or the data cannot be regarded accurate and reliable.</p> <p>For parameter of NTG: Net-to-gross adjustment factor, a default value of 0.95 is used.</p> <p>For parameter of Oi: A fixed value of 3.5 hours is used to estimate the carbon dioxide emission reductions under the CDM project. This is in accordance with the requirement of the methodology.</p>	OK	OK
B.6.2 Data and parameters available at validation				
B.6.2.1. Is the list of parameters to be reported in each CPA considered to be complete and correct with regard to the requirements of the applied methodology?	DR	Please refer to CAR04.	CAR04	OK
B.6.2.2. Is the choice of ex-ante or ex-post vintage of grid emission factors clearly specified in the PoA-DD?	DR	<p>Yes.</p> <p>Ex-ante is clearly specified in the approved methodology.</p>	OK	OK
B.6.3 Estimation of Emission reductions of a CPA				
B.6.3.1. Is the explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical CPA?	DR	<p>Yes. According to the applied AMS-II.J v04, the total lumen output of the CFL should be equal to or more than that of the ICL being replaced; lumen output of ICL & CFL shall be determined in accordance with relevant national or international standard/s. The distributed CFL lamps under the CPA shall meet the applicable standard CIE84:1989 or other national/international standard for CFLs.</p>	OK	OK



B.6.3.2. Are the equations to be used for calculation of emission reductions of a CPA correctly indicated?	DR	Yes. According to the AMS-II.J(version 04), the emission reduction calculation is demonstrated by the listed equations.	OK	OK
B.7. Application of the monitoring methodology and description of the monitoring plan				
B.7.1 Data and parameters monitored				
B.7.1.1. Are the parameters to be monitored in accordance with the requirement of the applied methodology?	DR	<p>Monitored parameters are: n (Sample size of Monitoring Survey), $LFR_{i,y}$ (Ex post Lamp Failure Rate for CFL type i in year y (fraction)), $DATE_{start}$ and $DATE_{end}$ (The start date and completion date of installation of CFLs), $Q_{BL,i}$ (The number of each type of the replaced ICLs collected and destroyed), Q_{PJ} (Number of each type of CFLs in operation under the CPA), $P_{i,BL}$ (Rated power of each type of the replaced ICLs) and $P_{i,PJ}$ (Rated power of each type of CFLs distributed under the CPA).</p> <p>During the ex post monitoring survey, the accepted non-response for the parameter n (Sample size of Monitoring Survey) is defined as 20%, and therefore the final sample size is finalized as the calculated $n/0.8$.</p>	OK	OK



B.7.1.2. Are the means of monitoring of all parameters contained in the monitoring plan in accordance with the requirements of the applied methodology? (such as name of the data/parameter, data unit, description, source of data, measurement equipment, monitoring frequency, QA/QC procedures)	DR	<p>Yes.</p> <p>The information all parameters contained in the monitoring plan, including name, data unit, description, source of data are stated clearly and transparently.</p>	OK	OK
B.7.2 Description of the monitoring plan for a CPA				
B.7.2.1. Is the monitoring plan clearly described and in compliance with methodology?	<p>DR</p> <p>O</p>	<p><u>CAR08</u></p> <p>The monitoring plan described in section A.4.4.2 and E.7.2 shall include detailed information of sampling.</p> <p><u>CL05</u></p> <p>Please clarify the description of QA/QC procedures of DATEstart and DATEend, in section B.6.1, as it was described in PoA-DD as “documented and verifiable by Managing Entity and DOE at random”.</p> <p>The monitoring plan described is in compliance with applied methodology AMS-II.J(version 04), the monitoring for the CPA would be carried out at the following levels:</p> <ol style="list-style-type: none"> 1. CFL distribution 2. Ex-post Monitoring Survey 3. ICL destruction <p>Detailed information in each level is further elaborated in section E.7.2.</p>	<p>CAR08</p> <p>CL05</p>	OK



B.7.2.2. Are the responsibilities and institutional arrangements for data collection and archiving clearly provided?	DR I	Please refer to CAR04	CAR04	OK
B.8. Date of completion of the application of the baseline and monitoring methodology study				
B.8.1 Is the information provided consistent with the actual situation?	DR	Yes. The information provided is correct.	OK	OK
C. Duration of the Programme of activities/Crediting Period				
C.1. Is the starting date of the programme of activities clearly defined and evidenced?	DR	CL06 Please clarify the definition of starting date of the PoA and the crediting period.	CL06	OK
C.2. Is the Length of the programme of activities clearly defined and evidenced?	DR I	Yes It is clearly defined as 28 years.	OK	OK
D. Environmental Impacts				
D.1. Has the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken been sufficiently indicated?	DR	CAR09 The justification of the choice at which level the environmental analysis will be done shall be added in section C.1.	CAR09	OK



D.2. Is the host Party requires environmental impact assessment by laws and regulations?	DR	<p>No. Although Chinese Government does not mandate an EIA or any precautionary measures for CFL use, QL will require itself and CPA implementer(s) to contribute to the prevention of mercury pollution from the CPA project activity, with mitigation plans.</p> <p>In addition, the waste of the collected and destroyed ICLs will be handled in an appropriate and environmental friendly way with due care and safety without causing any hazard as specified by local authority. The destruction methods will be documented via witnessing by local environmental officials or time stamped video records.</p>	OK	OK
D.3. Will the project create any adverse environmental effects?	DR I	No. As described in the PoA-DD and related documents, the programme of activities will not have major negative environmental impact.	OK	OK
D.4. Are there any transboundary environmental impacts considered in the analysis?	DR I	No. As described in the PoA-DD and related documents, the programme of activities will not have major transboundary environmental impacts.	OK	OK
E. Stakeholder Comments				
E.1. Is the information of at which level the local stakeholder comments are invited, and the choice is justified?	DR I	<p><u>CAR10</u></p> <p>The justification of the choice at which level the stakeholder comments are invited shall be added in section D.1.</p>	CAR10	OK
F. Generic CPA-DD				
F.1. Has the latest applicable version of the CDM-SSC-CPA-DD form been applied?	DR	Yes. The latest version of CDM SSC CPA-DD version 01 under VVM track has been applied.	OK	OK



F.2. Is all necessary information consistent between the PoA-DD and the generic CPA-DD?	DR	Yes. The information in the generic CPA-DD is consistent with the final version of the PoA-DD. All related requirements of the UNFCCC are met.	OK	OK
G. Sampling Plan				
G.1. Does the sampling plan present a reasonable approach for obtaining unbiased, reliable estimates of the variables?	DR	Yes. When assessing reliability, it is assessed that the elements of Objectives and Reliability Requirements is complete. The requirements specified a minimum 90% confidence interval and the 10% maximum error margin is in accordance with the requirements of AMS-II.J (version 04). As the target population is homogeneous households that participate in the project activity in same area, there is no reason to suspect that the results from the activity will be biased.	OK	OK
G.2. Is the population clearly defined, and how well does the proposed approach to developing the sampling frame represent that population?	DR	Yes. The population is clearly defined to be the households that participate in the project activity. Sample frame will be developed from the data recorded by SSC-CPA implementer. The frame will consist of the recipient information in the project region. The information sources include a list of each household that received CFLs and Information on households included in ex-post monitoring survey. The sampling frame is considered to be possible and appropriate.	OK	OK
G.3. Is the proposed sampling approach clear?	DR	Yes. Is it clear that a simple random sampling method will be used. Considering that each of the households in the project region holds an equal probability of being identified.	OK	OK



G.4. Is the proposed sample size adequate to achieve the minimum confidence/precision requirements? Is the ex ante estimate of the population variance needed for the calculation of the sample size adequately justified?	DR	Please refer to CAR08.	CAR08	OK
G.5. Is the sample representative?	DR	<p>Yes. Is it clear that a simple random sampling method will be used. Considering that each of the households in the project region holds an equal probability of being identified. The sampling plan indicates that the sampling frame will be kept in a computer file, and that samples will be selected randomly.</p> <p>To ensure random selection, random number generators will be applied:</p> <ol style="list-style-type: none"> 1. Each household is allotted a unique serial number starting at 1 and up to the total number of households in the project boundary. 2. Using random number generators, the households are randomly chosen. 	OK	OK
G.6. Is the data collection/measurement method likely to provide reliable data given the nature of the parameters of interest and project, or is it subject to measurement errors?	DR	<p>Yes.</p> <p>To achieve good quality data, a standard form shall be designed ex-ante and assessed by the CME. All field personnel will be trained to decrease the non-response error. A new sample should be selected as supplement, when there is non-response during site-visit project household; but if the non-response rate was higher than 20%, the sampling frame should be re-constructed as the above requirement. If the DOE observes greater than the acceptance number discrepant records in the sample then the PPs set of records is not accepted.</p> <p>The method of data collection is clear and unambiguous. Only the definite information will be asked and archived. The data collection method is likely to provide reliable data, it is not subject to measurement errors.</p>	OK	OK



G.7. Are the procedures for the data measurements well defined and do they adequately provide for minimizing non-sampling errors?	DR	<p>Yes.</p> <p>The procedures for the data measurements are well defined. Only the definite information will be asked and archived. The data collection method is likely to provide reliable data, it is not subject to measurement errors. It is assessed that the quality control and assurance strategy is adequate, and the mechanisms for avoiding bias in the answer.</p>	OK	OK
G.8. Does the frame contain the information necessary to implement the sampling approach?	DR	<p>Yes.</p> <p>The schedule for implementing the survey for a SSC-CPA is the first survey will be conducted within the first year after installation of project CFLs. Subsequent surveys will be carried out once every 3 years. The personnel who will conduct data collection and the analysis should be trained ex-ante through specific training programme.</p> <p>It is assessed that the proposed skill sets, qualifications and experience of the personnel to be engaged to conduct sampling is adequate.</p>	OK	OK



Table 2 Resolution of Corrective Action and Clarification Requests

CL/CAR/FAR Requests		PP's Response	Validation Team's Conclusion
CAR01	Please further state the goal of the PoA, and also state the rationale of how the PoA will achieve GHG emission reduction.	The objective of this Programme of Activities is to replace ICLs with CFLs of same or higher lumen output. This will reduce carbon dioxide emissions associated with the combustion of fossil fuel from grid connected power plants in the North China Power Grid. Pls. refer to A.2.	The information is confirmed by the validation team, revised PDD is checked to be correct. CAR01 is closed
CAR02	LoA from DNA of China has not been provided. If the project is a unilateral project, then the Host Party shall be recognized as a project participant in section A.3.	The Host Party has been recognized as a project participant in section A.3.	The revised PDD is checked to be correct. The information in the LoA is verified to be authentic. CAR02 is closed
CAR03	Please further identify CPA eligibility criteria according to para.14 of Annex 3 of EB65 (PoA Standard).	Regarding to the items h, j and l, please refer to eligibility criteria 17, 18 and 12 of PoA-DD section A.4.2.2. The target group and distribution mechanism have been described in the section A.4.2.	The requirements of Annex 3 of EB65 (PoA Standard), especially para 14 (eligibility criteria) are identified and covered in revised documents. For detailed validation process please refer to table 6. CAR03 is closed
CAR04	Detailed plan of the following content shall be mentioned appropriately in the PoA-DD, and related evidences shall be submitted to the DOE: <ul style="list-style-type: none"> The relationship between Zhenjiang Qiangling Energy-saving Light Source Co., Ltd., (QL), the project implementer(s) 	QL is the PoA managing entity. To carry out the programme and included CPAs, local companies may be searched and selected as CPA implementers, or subsidiary CDM working groups will be established. In addition, a technical advisory team will be established to provide experience, training and software support for CPA development and a quality	Required detailed information is further elaborated in the updated PDD, including detailed roles and responsibilities of each company and management procedure. The destruction method and procedure of data maintenance have been included in



	<p>implementing CPAs, and the respective responsibilities of each party, especially the ex-post monitoring and maintenance of database;</p> <ul style="list-style-type: none"> ● How will QL have control of related data, records and implementation process to ensure that each CPA is implemented in accordance with the requirements of the PoA; ● Training content for distribution team; ● More detailed process of the collection and destroy process of the replaced ICLs shall be provided, as it is only mentioned in C.2 of PoA-DD that they will be handled: "in an appropriate and environmental friendly way with due care and safety without causing any hazard as specified by local authority." ● How will the record and database of the PoA and CPAs be maintained ● The geographical coordinates are cited from a website based on public input, please determine the geographical boundary of the PoA using a reliable source. 	<p>check team will be set up to supervise CPA implementing as requirement. And local governments will assist QL and implementers. To ensure the quality of CPA implementation and confirm the completion date, a quality check shall be conducted by QL and agreement will be signed between QL and implementer, when CFL distribution and ICL collection was completed with a notification. Pls. refer to A.4.4.1. Regarding to the destruction methods, they may be different according to specific CPA, but they all can be verified by DOE. And the procedures of data maintenance have been included in section A.4.4.1</p>	<p>revised PDD. The revised PoA-DD and generic CPA-DD are checked, related information is also checked via interviewing the manager of QL.</p> <p>The geographical coordinates was confirmed by checking publication information from official website of Government of Hebei Province/5/</p> <p>CAR04 is closed.</p>
CAR05	<p>Please revise the project design documents according to 17 (management system) of Annex 3 of EB65 (PoA Standard).</p>	<p>The initial information will be collected by CPA Implementers/utilities using standardized formats. And they will then be transferred by the CPA Implementer/utility into an electronic data base, which</p>	<p>The requirements of Annex 3 of EB65 (PoA Standard), especially para 17 (management system) are identified and covered in revised documents. For</p>



		<p>will be available to QL. Please refer to PoA-DD section A.4.4.1</p> <p>QL will establish a CPA management group, which will enrol the CPAs according to the eligibility criteria. Another QC group will check the CPAs randomly and test the CPA management group, if the CPA is not accord with the eligibility conditions or the personnel in the CPA management group can't pass the test, the CPA management group will be trained again.</p> <p>Once the methodology is updated or there are other changes in the progress of CPA implement, the PoA management should be improved too.</p> <p>Regarding to the items a, b, c, e and f of para. 17, please refer to section A.4.4.1 of PoA-DD.</p>	<p>detailed validation process please refer to Section 3.4.</p> <p>CAR05 is closed</p>
CAR06	The version of the applied methodology shall be indicated, and the most updated tools referred by the methodology shall be used.	The version of the applied methodology and the most updated tools referred by the methodology have been included in the CPA-DD.	<p>Confirmed by document review, latest versions of the methodology and referred tools have been applied in the revised PoA-DD and generic CPA-DD.</p> <p>CAR06 is closed</p>
CAR07	The additionality of the proposed project should be further clarified.	The additionality has been demonstrated according to "Guidelines on the demonstration of additionality of small-scale project activities" (Version 09.0), reported as Annex 27 to EB 68, please refer to section E.5.1 for detail.	<p>The additionality demonstration of the proposed PoA and CPAs are demonstrated according to the latest guidelines(EB68 annex 27).</p> <p>CAR07 is closed</p>
CAR08	The monitoring plan described in section	Parameter value to be monitored will apply 90/10	The information is complete, and



	A.4.4.2 and E.7.2 shall include detailed information of sampling.	<p>confidence/precision for the sample size calculation separately and independently for each of the CPAs included in this PoA. To be conservative the minimum number of households surveyed should be 100. Each participating household is allotted a unique serial number and the random number generators will be applied for ex-post monitoring survey.</p> <p>The relevant parameters included in the monitoring plan shall be monitored and recorded for each of the CPAs independently. Monitoring reports will be prepared separately for each of the CPAs for the purpose of verification and request for issuance of CERs.</p> <p>If the estimates from the actual samples fail to achieve the target minimum levels of precision, project participants shall perform additional data collection that is a supplemental or new sample to reach the required precision level.</p>	<p>checked to be consistent with Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities.</p> <p>CAR08 is closed</p>
CAR09	The justification of the choice at which level the environmental analysis will be done shall be added in section C.1.	<p>Environmental Analysis is done at PoA level, due to the following reason:</p> <ol style="list-style-type: none"> 1. The CFLs distributed in this programme meet the requirements of GB/T 17263; 2. There are no statutory environmental requirements on CFL disposal. 	<p>The justification was added in the updated and checked to be appropriate.</p> <p>CAR09 is closed</p>
CAR10	The justification of the choice at which level the stakeholder comments are invited shall be added in section D.1.	<p>Local stakeholder consultation will be done at CPA level, because it is difficult to carry out the stakeholder consultation at PoA level. In particular, a consultation meeting will be carried out in each CPA district and the comments by local stakeholders will be recorded.</p>	<p>The justification was added in the updated and checked to be appropriate.</p> <p>CAR10 is closed</p>



CL01	Please add the estimated distribution plan of CFLs in section A.2, including the power, Lumen and rough number of ICLs and CFLs.	<p>The distribution plan of CFLs, including the power, Lumen and number of ICLs and CFLs has been included in the CPA-DD.</p> <p>Under the programme, approximately 100 million household incandescent lamps will be replaced by equal number of energy efficient, self-ballasted, compact fluorescent lamps, of same or higher lumen output.</p>	<p>The distribution plan has been included in the updated PDD and checked to be correct.</p> <p>CL01 is closed</p>
CL02	The documentation in footnote 4 of the PoA-DD can not be downloaded, please modify and check all the footnotes.	The footnote 4 have been corrected and all the footnotes have been checked.	The footnote 4 have been corrected. All the footnotes are checked to be workable now. The information in the footnotes are consistent with the information of the project.
CL03	<p>Please provide the below evidences:</p> <ul style="list-style-type: none"> Signed MoC CFL procurement contract and CFL specification CDM development agreement The most updated CFLs allocation plan of PoA Qualification certification of the lab doing the test of sample CFLs Training plan and content for distribution team 	These evidences have been provided to the DOE.	<p>The evidences are provided. All documents are checked to be authentic and consistent.</p> <p>CL03 is closed</p>
CL04	Please further clarify how to avoid the double counting, especially the avoidance of double	To prevent such instances, QL seeks confirmation in CPA when conducting CPA eligibility check. In	Measures to avoid the double counting are confirmed by the validation team, the



	counting under each CPA. Related revision shall also be reflected in other sections such as A.4.2.2, E.2, etc.	particular, each CPA has unique geographical boundary as defined by the project area. Pls. refer to A.4.4.1. And the information has also been reflected in section A.4.2.2 and E.2	revised information is checked to be correct and complete. CL04 is closed
CL05	Please clarify the description of QA/QC procedures of DATE _{start} and DATE _{end} , in section B.6.1, as it was described in PoA-DD as “documented and verifiable by Managing Entity and DOE at random”.	The data should be documented by implementer. And it is verifiable by Managing Entity and DOE at random.	The clarification is acceptable. CL05 is closed
CL06	Please clarify the definition of starting date of the PoA and the crediting period.	The start date of PoA is 11/11/2011, which is the date of publication of the PoA-DD for global stakeholder consultation. The start date of the crediting period of PoA is 31/01/2013, expected start date of the crediting period of PoA, choosing the later one between CFL installation completion date of the first CPA or registration date.	The start date of the PoA and the start date of the crediting period of PoA have been clearly justified. The start date of the PoA is correctly defined as 11/11/2011, it is cross-checked against view page on UNFCCC website. The start date of crediting period of the PoA is correctly defined as 31/01/2013, which is the declared completion date of installation of CFL of CPA-001. It will be updated by the secretariat as the effective date of registration. CL06 is closed



APPENDIX B CERTIFICATE OF COMPETENCE

LIU Qingzhi

Qualification in accordance with CEC-4001C-B/8 *Operation Instruction for Personal Competence Assessment* for CDM

CDM Auditor: Yes

Industry Sector Expert for Technical Area(s): 1.2, 5.1, 8.2/10.2, 11.1, 12.1

Beijing, 12 May 2012

ZHANG Xiaodan

A handwritten signature in black ink, appearing to read 'Zhang Xiaodan', is positioned above the title.

CDM Supervisor, Technical Director

XU Linghua

A handwritten signature in black ink, appearing to read 'Xu Linghua', is positioned above the title.

Quality Assurance Management Division

QIN Boya

Qualification in accordance with CEC-4001C-B/8 *Operation Instruction for Personal Competence Assessment* for CDM

CDM Auditor: Yes

Industry Sector Expert for Technical Area (s): 1.1, 1.2

Beijing, 12 May 2012

ZHANG Xiaodan

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CDM Supervisor, Technical Director

XU Linghua

A handwritten signature in black ink, appearing to read 'Xu Linghua', is positioned above the title.

Quality Assurance Management Division



ZHANG Xiaosong

Qualification in accordance with CEC-4001C-B/7 *Operation Instruction for Personal Competence Assessment* for CDM

CDM Technical Expert: Yes

Industry Sector Expert for Technical Area(s): 1.1, 2.2, 3.1

Beijing, 01 Dec 2011

ZHANG Xiaodan

A handwritten signature in black ink, appearing to read 'Zhang Xiaodan', is written over a light blue grid background.

CDM Supervisor, Technical Director

XU Linghua

A handwritten signature in black ink, appearing to read 'Xu Linghua', is written over a light blue grid background.

Quality Assurance Management Division

YIN Yun

Qualification in accordance with CEC-4001C-B/7 *Operation Instruction for Personal Competence Assessment* for CDM

CDM Auditor: Yes

Industry Sector Expert for Technical Area(s): 1.1, 1.2, 2.2, 3.1

Beijing, 01 Dec 2011

ZHANG Xiaodan

A handwritten signature in black ink, appearing to read 'Zhang Xiaodan', is written over a light blue grid background.

CDM Supervisor, Technical Director

XU Linghua

A handwritten signature in black ink, appearing to read 'Xu Linghua', is written over a light blue grid background.

Quality Assurance Management Division



ZHANG Xiaohong

Qualification in accordance with CEC-4001C-B/7 *Operation Instruction for Personal Competence Assessment* for CDM

CDM Auditor: Yes

Industry Sector Expert for Technical Area(s): 1.2, 13.1

Beijing, 01 Dec 2011

ZHANG Xiaodan

A handwritten signature in black ink, appearing to read 'Xiaodan Zhang', is positioned below the name.

CDM Supervisor, Technical Director

XU Linghua

A handwritten signature in black ink, appearing to read 'Linghua Xu', is positioned below the name.

Quality Assurance Management Division