



# VALIDATION REPORT

Carbon Gold Beijing Technology Co., Ltd.

CFL Distribution Programme in Shanxi Province

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**China Environmental United Certification Center Co., Ltd**

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<b>Project Title:</b>	<b>Country:</b>		
CFL Distribution Programme in Shanxi Province	People's Republic of China		
Methodology	Sectoral Scope:		
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PoA-DD for GSP	Final PoA-DD		
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<p><b>Summary:</b></p> <p>China Environmental United Certification Center Co., Ltd (CEC) has performed the validation of the "CFL Distribution Programme in Shanxi 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) and specific CPA-DD (the CPA1, 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 &amp; 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 and specific CPA-DD.</p> <p>In summary, it is CEC's opinion that the "CFL Distribution Programme in Shanxi 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 4.0, and also meets the stated validation criteria. CEC thus requests the registration of the project as a CDM Programme of activities.</p>			
<b>Work Carried out by:</b>	<b>Date of this version</b>	<b>Version</b>	<b>Pages:</b>
XU Linghua, QIN Boya, LIU Yimin	28/12/2012	3	83
<b>Work Reviewed by:</b>	<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		
LIU Qingzhi, YIN Yun			
<b>Approved by:</b>			
SONG Tiedong Chairman of Board			



## Abbreviations

ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CER	Certified Emission Reduction
CFL	Compact Fluorescent Lamps
CG	Carbon Gold Beijing Technology Co., Ltd.
CL	Clarification Request
CME	Coordinating and/or managing entity
DNA	Designated National Authority
DOE	Designated Operational Entity
DD	Document design
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
IRR	Internal Rate of Return
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	Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities
SSC-CPA-DD	Small-scale CDM Component Project Activity Design Document
SSC-PoA-DD	Small Scale CDM Programme of Activities Design Document
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard



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## 1. Introduction

Carbon Gold Beijing Technology Co., Ltd.(PP, also coordinating/management entity) has commissioned CEC to perform the validation of the small scale CDM Programme of Activities “CFL Distribution Programme in Shanxi Province” (hereafter called “the proposed 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 small-scale Programme of Activities (PoA) and the CDM Programme Activity (CPA) template with generic information applicable to all CPAs under that PoA 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 proposed 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 Shanxi 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 Standard (VVS) version 02.0/29/. 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 (PoA Standard) /25/, Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities v03.0 /41/ and Guidelines for sampling and surveys for CDM project activities and Programme of activities v02.0 /42/. 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 two 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 ( <b>OK</b> ), or a Corrective Action Request ( <b>CAR</b> ) due to non-compliance with the checklist question. (See below). Clarification Request ( <b>CL</b> ) is used when the validation team has identified a need for further clarification. A request for forward action request ( <b>FAR</b> ) 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**

<b>Validation Team</b>	<b>Role</b>	<b>Qualification</b>	<b>Specific scope</b>	<b>Participated in the on-site visit</b>
XU Linghua	Team Leader	Auditor	--	✓
QIN Boya	Team Member	Auditor	--	✓
LIU Yimin	Team Member	Technical Expert	✓	✓

<b>Technical Review</b>	<b>Role</b>	<b>Specific Scope</b>	<b>Participated in the on-site visit</b>
LIU Qingzhi	Technical Reviewer	--	--
YIN Yun	Technical Reviewer	✓	--

**Brief background information of assessment team:**

Xu Linghua is a lead Greenhouse Gas(GHG) assessor. Ms. Xu worked on environmental monitoring, waste water treatment, and quality control of the adhesive product for over 20 years. She is an experienced senior EMS auditor with over 10 years' accreditation organization working experience, who has completed various CEC CDM training courses and technology trainings. Ms. XU has participated in over 30 validation/verification CDM projects in the areas of hydropower, wind power and biomass power generation. Most of the projects are in sectoral scope 1 (energy industries), which gives her abundant experience in renewable energy sector.

Qin Boya is a lead 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

Liu Yimin is a technical expert in technical areas 3.1. He is an experienced Senior Environmental Engineer, who has worked in the Health Safety and Environment management position for over 30 years and has involved in various energy-saving monitoring and energy saving technology promotion projects for over 10 years. He has involved in several CDM training courses since 2012 and participated in several CDM validation projects in the area of demand-side activities for efficient lighting technologies as validation team member and technical expert.

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.

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).



## 2.2 Document Review

The proposed PoA-DD and specific CPA-DD (the CPA1, hereafter referred to as “the proposed CPA”) version 01 dated 20/07/2012 /1/ were submitted by the CME, they were made publicly available on the internet on the UNFCCC CDM web pages for a 30 days global stakeholder consultation process (GSP) from 24/07/2012 to 22/08/2012.

To address the validation team’s corrective action and clarification requests, the PP revised the project design documents. The PDDs of the proposed PoA and the proposed CPA version 03 dated 27/12/2012 /2/ forms the basis for the final evaluation as presented by this report. The information on the PoA-DD version is presented on Page 1.

The document review involves:

- 1) A review of data and information
- 2) Cross checks between information provided in the PoA-DD and information from sources other than those used, if available, CEC’s sectoral and local expertise and if necessary, independent background investigations.

To address the validation team’s corrective action and clarification requests, the PP revised the PoA-DD and CPA-DD and resubmitted them to the validation team and the validation findings presented in this report related to the project are described in the PoA-DD and CPA-DD version 03 dated 27/12/2012 /2/.

## 2.3 Follow-up Interviews

The validation team performed on-site interviews with representatives of the PP and local stakeholders on 22/08/2012 and 23/08/2012 (See Section 6: Personnel 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"> <li>• Project background information.</li> <li>• PoA technology, operation, maintenance and monitoring capability.</li> <li>• Project implementation, monitoring and management plan.</li> <li>• Stakeholder consultation process and sustainable development.</li> <li>• Applicability of selected methodology.</li> <li>• Baseline determination.</li> <li>• Eligibility criteria for CPA inclusion</li> <li>• Emission reductions calculation.</li> <li>• Emission reduction monitoring plan.</li> </ul>	<p>Carbon Gold Beijing Technology Co.,Ltd.</p> <p>(the PP and also coordinating/management entity)</p> <p>Sino Carbon Innovation &amp; Investment Co.,Ltd</p> <p>(the consultant)</p>





<ul style="list-style-type: none"> <li>• Government policies related to CFL projects</li> <li>• Realistic and credible baseline scenario alternatives</li> <li>• CFLs and ICLs application situation in the area</li> <li>• Environmental and social impacts</li> <li>• Stakeholder comments</li> </ul>	<p>Local Stakeholders (local officials and households)</p>
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## 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 proposed PoA 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 13/09/2012. 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 is verified by the Director. And finally the report will be 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 **5 Corrective Action Requests and 11 Clarification Requests**.

#### 3.1 Approval and Participation

The project participant is Carbon Gold Beijing Technology Co., Ltd. (CG), authorized by China. The host party, China has ratified the Kyoto Protocol and established a DNA as per the participating requirements for CDM under the Kyoto Protocol.

The host Party China meets the requirements to participate in the CDM.

Non-Annex 1 Country: <http://maindb.unfccc.int/public/country.pl?country=CN>

**CAR03** was raised requesting the PP to provide the LoA from DNA of China. The PP has provided the LoA from DNA of China dated October 2012, the LoA has been validated and cross-checked to be authentic, hence CAR03 was closed.

The host country Letter of Approval (LoA) has been issued by the DNA of China, in October 2012(the document No.4672 in English version)/3/. The LoA was received from the project participant through the CDM consultant, and the authenticity of the LoA has been confirmed by cross-checking against the list of approved projects on the web-site of China DNA/4/. The letter confirms that:

- China ratified the Kyoto Protocol on 30/08/2002;
- Carbon Gold Beijing Technology Co., Ltd. (CG) is authorized as a project participant and also the CME of the proposed PoA by the P.R. China to voluntarily participate in the project activity;
- CFL Distribution Programme in Shanxi Province and the 1<sup>st</sup> CPA complies with the permission requirements provided for in the Measures for Operation and Management of CDM projects in P.R. China, and assists China in achieving sustainable development;
- The LoA references the precise project title “CFL Distribution Programme in Shanxi Province”. This is consistent with the project title in the SSC PoA-PDD.

It is necessary to note that the LoA does not specify a version number of the PoA-DD, CPA-DD or validation report.

In addition, during the validation, it is confirmed that for the participating households, contracts will be signed with CG, 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/7/. Also, as required in the CDM Quality Management Manual/8/, the CG will make agreement with the CPA implementer(s) and CFLs supplier, so as to make sure that only CG is qualified to claim CERs for this PoA. This is confirmed by reviewing the template of the agreement /7/ and CFLs procurement contract for CPA1 /12/.



Complying with Para. 38&45 of VVS v02, the validation team concluded that the participation and approval are fully complying with the requirements of the CDM.

### 3.2 Modalities of communications

Modalities of communication statement (MoC)/5/ and a written confirmation to state the corporate and personal details/6/ have been provided directly from the CME CG. Latest version of the form Modalities of Communication statement (F-CDM-MoC) under VVS track is applied/49/. The information required as per the F-CDM-MoC, including its annex 1, is correctly completed and the project participant's authorized signatories signing the F-CDM-MoC correspond to the project participant's authorized signatories included in F-CDM-MoC, annex 1.

The validation team confirms that:

- 1) The MoC statement is received from a project participant with whom CEC has a contractual relationship.
- 2) The official who submits the MoC statement and the official who signed the written confirmation (if a different person) is/are duly authorized to do so on behalf of the respective project participant or coordinating/managing entity.
- 3) All corporate and personal details, employment status and specimen signatures included in the MoC statement, are valid and accurate and comply with the requirements of VVS v02.

Complying with Para. 58 and 61 of VVS v02, the validation team concluded that the modalities of communications are fully complying with the requirements of the CDM.

### 3.3 Programme Design Document

Due to the clarifications and corrective actions requested during the validation process, the project participant made a final version of the PoA-DD dated 27/12/2012 /2/, which include corrections or clarifications to all issues raised.

The PoA-DD is in compliance with relevant form and guidance as provided by UNFCCC. The most recent version of the forms under VVS track is used /27//28/.

CEC considers that the guidelines for the completion of the PoA documents in their most recent version under VVS track have been followed. Relevant information was provided by the Managing entity and/or project participants in the applicable PoA sections. Completeness was assessed through the protocol included in Annex A.

### 3.4 Programme Description

The following description of the project as per PoA-DD and CPA1 can be verified during the on-site visit:

The PoA involves the distribution of approximately 50 million high quality and efficiency self-ballasted compact fluorescent lamps (CFLs) to residential households within the rural area of Shanxi Province, to replace low efficient incandescent lamps (ICLs) in Shanxi Province, P.R. China, with the center geographical coordinates of north latitude 37°52'22.29" and east longitude 112°33'22.61". The coordinates was confirmed by checking publication information



from official website of Government of Shanxi Province/9/. CPAs under the PoA will be implemented in different rural areas within Shanxi Province, P. R. China. The PoA is a voluntary action by Carbon Gold Beijing Technology Co., Ltd.(CG), 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), due to the electricity consumed by the project residents is imported from NCPG, which is the connected electricity system of the proposed PoA.

The length of the PoA is 28 years. The start date of the PoA is defined as 24/07/2012, which is publication of the PoA-DD for global stakeholder consultation. The determination of start date of the PoA is consistent with the Glossary of CDM terms version 07.0. There are no mandatory policies/regulations for the distribution of CFLs in households in China or Shanxi Province at present, this has been verified by reviewing the public available information.

Specially marked CFLs would be distributed to residential households in exchange of an incandescent lamp (ICL) for free or for a minimal fee not higher than 1RMB. This has been verified during on-site review. Each household can exchange no more than six CFLs. The distributed CFLs have an average life of 10,000 hours or above, which conforms to national technical standard GB/T 17263 /10/. 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 is equal to or more than that of the ICL being replaced, while the power of CFL is lower than that of the substituted ICL, this has been confirmed by checking the test report of the CFLs /14//15/.

The distribution can 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) will educate the recipient to install the CFL in high-usage areas. This distribution method has been confirmed during on-site review. 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) will ensure that the returned ICLs are recorded and destroyed in a manner which allows for verification.

Confirmed by document review and on-site review, the ICLs will be collected and destroyed in China, the CFLs are made and distributed in China. No technology transfer is involved.

Contributions of the proposed PoA to sustainable development have been verified through reviewing the LoA. The proposed PoA and the 1<sup>st</sup> CPA comply with the permission requirements provided for in the Measures for Operation and Management of CDM projects in P.R. China, and assists China in achieving sustainable development.

**CL01** was raised requesting to clarify the basis for the estimated amount of the replaced household incandescent lamps (ICLs) and provide relevant evidence. CME explained that the amount is estimated based on the statistics of populations located in Shanxi Province and provided the official link. The validation team verified this official website and interviewed with the local officers, thus confirmed total estimated amount of 50 million is considered appropriate and reasonable. Hence CL01 was closed.

**CL02** was raised requesting to describe how the PoA contributes to the sustainable development and clearly clarify whether there is a minimal fee charge involved in the CPAs under the proposed PoA. The CME stated the successful implementation of the PoA will have



environmental, social and technological benefits, and under each CPA, the high quality long-life CFLs would be distributed by CG and other project implementer(s) to residential households in exchange of ICLs for free or for a minimal fee no higher than 1RMB. The information has been indicated in the revised PoA-DD, it is validated during document review and on-site review and confirmed credible. Hence CL02 was closed.

**CL03** was raised requesting to provide valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity (DNA approval) /3/. The DNA approval has been provided and the voluntary action by the CME CG has been clearly indicated in the approval. Hence CL03 was closed.

**CL04** was raised requesting to clarify whether there is national subsidy involved in the proposed PoA regarding the CFLs distribution. CME explained there were no public funding involved in the proposed PoA. This has been confirmed during on-site interviewing with local governmental officials. In addition, CEC has checked the public available information regarding promoting CFLs purchase and distribution in rural households, no regulations are found besides "The Provisional Measures of Financial Subsidy for Promoting Efficient Lighting Equipment" /18/ which 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/19/. This was verified by interviewing local government officials. Hence CL04 was closed.

**CAR01** was raised requesting to provide evidence to demonstrate the geographical coordinates of Shanxi Province. The official geographical coordinates linkage has been provided. It is checked to be convincing. Hence CAR01 was closed.

**CAR02** was raised requesting to describe the technology of baseline scenario in section A.6 as per the requirements of the SSC PoA-DD template. The baseline technology, i.e. the minimum output of incandescent lamps are described in the revised DD. Hence CAR02 was closed.

Detail information of the proposed PoA 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 5 and 6 of the validation report. The validation team confirmed that the description of the proposed PoA as contained in the PoA-DD /2/ 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 rural areas of Shanxi Province, P. R. China by contracted CPA implementers, following the management system established by CG. The latest version of CDM small scale methodology AMS-II.J/30/ shall be applied. A certain amount of CFLs will be distributed within a single CPA, which should meet the requirement of the limitation of 60 GWh per year.

Complying with Para. 64&189 of VVS, through above mentioned validation methods, it has been validated that the framework provided in the updated PoA-DD is consistent with the actual situation and planning. The description is complete, sufficiently accurate and therefore complies with CDM requirements.

### 3.5 Operational and Management Arrangement

Transparent operational and management arrangements have been established by the management/coordinating entity of the PoA, i.e., Carbon Gold Beijing Technology



Co.,Ltd.(CG). For each CPA, CPA implementers 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:

CME will establish managing team and technical advisory team, their responsibilities are:

For managing team:

- 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;
- Carry out the 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;
- 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.

The above responsibilities are in accordance with the requirement of para. 19 (a) and (f) of PoA Standard.

For technical advisory team, their responsibilities are:

- Provide training and capacity development for personnel in the whole process of CPA implementers;
- Carry out the technical review and control of inclusion of CPAs according to the Quality Control & Manage Manual(QCMM);
- Review of the competencies of personnel involved in the process of inclusion of CPAs

The above responsibilities are in accordance with the requirement of para.19 (c) of PoA Standard.

Under the proposed PoA, each CPA implementer will be responsible for:

- Submit a proposal about CPA implementation to CG 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 CG 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.19 (e) and (g) of PoA Standard.

Besides, according to other requirements of para.19 of PoA Standard, CG has established the following management system:

(1) **Records of arrangements for training and capacity development for personnel:** CG will determine the necessary competence for these personnel, provide training or take other actions achieve the necessary competence, evaluate the effectiveness of the actions taken, and maintain appropriate records of training and capacity development. This is in accordance with para. 19 (b) of PoA Standard.

(2) **Procedures for technical review of inclusion of CPAs:** CG will 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 non conformity, the CPA implementer should make the CPA conform to the all criteria and submit proposal to CG again. CG will make sure that each CPA conforms to the requirements of PoA-DD, CPA-DD and related standards, and maintain appropriate records and documents of the control process. This is in accordance with para. 19 (c) of PoA Standard.

(3) **A system/procedure to avoid double accounting:** To avoid double counting, CFL manufacturer and project households will sign agreements with CG to give up the CERs generated from the project, only CG is qualified to claim for the emission reduction of the proposed project. When inclusion of a CPA, CPA implementers will provide a declaration that are aware and agree that the project will be subscribed to the PoA, and acknowledge that their project is not registered or seeking registration as a stand-alone CDM project activity, part of a bundle CDM project activity, or CPA under a PoA different from this PoA. Each CPA will be uniquely identified and checked against the projects seeking validation or already registered in UNFCCC database online to ensure that there is no double counting. Geographic coordinates of the CPA can be checked against existing CDM projects and CPAs in the region. This is in accordance with para. 19 (d) of PoA Standard.

(4) **Records and documentation control process for each CPA under the PoA:** CG will maintain records for each CPA including following information, (a) The geographical location of each CPA; (b)The name, address and record of specifications of ICLs exchanged and distributed CFLs in households participating in the CPA; (c) The names, addresses and monitoring data of each household involved in sample households for lamp failure rates and monitoring surveys; (d)Destruction of ICLs. This is in accordance with para.19(e) of PoA Standard.

(5) **Measures for continuous improvements of the PoA management system:** CG will continually improve the effectiveness of the PoA management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review according to the QCMM. And if the methodology and standard are updated, the PoA management system should be improved too. This is in accordance with para.19(f) of PoA Standard.

(6) **Procedure to check for De-bundling:** The procedure to check for de-bundling has been included in the PoA-DD. The maximum wattage rating of an ICL which can be replaced under the programme is 200 W (from AMS-II.J) and the wattage of an equivalent CFL is similar to 40 W. Hence the maximum annual energy saving potential from a measure taking 3.5 hours usage per day is  $= 3.5 * 365 * (200-40) = 0.0002$  GWh. As per de-bundling criteria, 1% of the small scale threshold is 0.6 GWh per annum for a single measure. As is demonstrated above 0.0002 GWh per CFL is much less than the de-bundling requirement. Hence the SSC-CPA is



not a de-bundled component of a large scale activity. This is in accordance with para.19(g) of PoA Standard and EB 54 Annex 13 “Guidance on assessment of de-bundling for SSC project activities” version 03.

(7) **Awareness of CPA implementer(s) on PoA Provisions:** before the CPA inclusion, the CME requires SSC-CPA implementer(s) to sign an agreement with it, to ensure the SSC-CPA implement(s) are aware of and have agreed that their activity is being subscribed to the PoA. This is in accordance with para.19(g) of PoA Standard.

**CL08** was raised requesting to identify the CME operational and management system according to para.19 of the PoA standard. The description of CME operational and management system has been revised in the final PoA-DD, it is checked to be in line with para.19 of the PoA standard. Hence CL08 was closed.

Complying with Para.186 of VVS v02, the validation team confirms that the operational and management arrangements have been established by the CME and are suitable for the proposed PoA. The validation team considers that the arrangements are sufficient to ensure that the CME 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. 19 and 20 of PoA Standard, 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.

### **3.6 Eligibility criteria for CPA inclusion**

The validation team validates the eligibility criteria in accordance with the VVS (v02) para.196. According to CDM project standard (version 02.0) para.150 /51/, and PoA Standard (version 02.0) para.15-18 /25/, PP shall define (DOE shall assess) the eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, applicability of applied methodology (ies), and the type and/ or extent of information that shall be provided by each CPA in order to ensure its eligibility.

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





**Table 5 Eligibility Criteria Assessment**

No.	Eligibility Criteria	Assessment
1	The geographical boundary of the SSC-CPA area is uniquely defined and located in Shanxi Province. Map of the CPA location and its coordinate's description can be checked.	The following documents will be provided: (1) Map of the CPA location; (2) CPA coordinate.  This criterion ensures that the geographical boundary of the CPAs is within the geographical boundary of the PoA. This is consistent with para 16 (a) of PoA Standard.
2	CFLs utilized under the SSC-CPA are marked for clear unique identification for the PoA and the SSC-CPA, which will be specified on the CFL procurement contract.	The following documents and methods will be applied: (1) CFL procurement contract; (2) Agreements signed between CFL manufacturer/ project households and CG; (3) double-counting avoid check.  This criterion ensures that double counting will be avoided. This is consistent with para 16 (b) of PoA Standard.
3	CFL manufacturer and project households will sign agreements with CG to relinquish their rights over the CERs generated from the project CFL use.	
4	Confirmation that this SSC-CPA is not registered or being registered, as a stand-alone CDM or as a CPA of another PoA	
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 criterion ensures the specifications of technology/measures are satisfied. This is consistent with para 16 (c) of PoA Standard.
6	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 lower than that of the ICLs. This shall be tested and confirmed according to relevant national or international standards.	
7	The start date of the SSC-CPA is not, or will not be, prior to the commencement of validation of the programme of activities. The start date of the SSC-CPA shall be checked through documentary evidence, e.g. CFL procurement contract.	The following documents will be applied: CFL procurement contract.  This criterion ensures the conditions to check the start date of the CPA, this is consistent with para 16 (d) of PoA Standard.



8	The baseline and monitoring methodology AMS-II.J is applied. All the CPAs should meet applicability and other requirements of AMS-II.J.	This criterion ensures each CPA's compliance with applicable and other requirements of applied methodology AMS-II.J. This is consistent with para 16 (e) of PoA Standard.
9	The maximum annual saved electricity of each project household, due to using the distributed project CFLs, is less than 3000 MWh per year.	This criterion ensures each CPA's additionality. It is consistent with para 16 (f) of PoA Standard and para.2(c) of Guidelines on the demonstration of additionality of small-scale project activities v09.0.
10	Stakeholders' consultation meeting is conducted prior to the publication of SSC-CPA-DD on the UNFCCC website and CPA inclusion.  Each CPA should carry out local stakeholder consultations and provide stakeholder questionnaires to the CME, which should question on the followings, but are not limited to:  <ul style="list-style-type: none"> <li>◆ Will the Project bring improvements to their livelihoods?</li> <li>◆ Will the Project have negative impacts on their livelihoods?</li> <li>◆ Do they support the Project?</li> </ul>	<p>The following document will be provided: (1) stakeholder questionnaires; (2) Approval letter of Environmental impact analysis.</p> <p>This criterion ensures each CPA satisfies the conditions related to undertaking local stakeholder consultations and environmental impact analysis, this is consistent with para 16 (g) of PoA Standard.</p>
11	Environment impact analysis should be included in stakeholder consultation process. The approval letter of Environmental impact analysis will be checked.	
12	Each CPA will not have funding from Annex I parties; if any, does not result in a diversion of official development assistance, otherwise it will not be included in the PoA.	
13	The target group should be the residents who will participate in the PoA voluntarily and are using ICLs in their houses.	This criterion ensures each CPA satisfies the target group and distribution mechanisms. This is consistent with para 16 (i) of PoA Standard.
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.	
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 example common areas.	
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 criterion ensures each CPA satisfies the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys. This is consistent with para 16 (j) of PoA Standard.
17	The aggregate electricity savings by a single SSC-CPA do not exceed the equivalent of 60 GWh per year.	This criterion ensures each CPA in aggregate meets the small-scale or micro-scale threshold criteria and remains within those thresholds throughout the crediting period of the CPA, this is consistent with para 16(k) of PoA Standard.
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 criterion ensures each CPA satisfies de-bundling check and the validity of the crediting period of each CPA. It is consistent with para 16(k) and (l) of PoA Standard.



**CL06** was raised requesting to further identify the CPA eligibility criteria according to the PoA standards and further clarify how to avoid the double counting, especially the avoidance of double counting under each CPA. The eligibility criteria for CPA inclusion have been clearly further identified in the final PoA-DD, and the measures used for double counting check have also been detailed. The revision is verified to be in line with the PoA standard, and the measures used for double counting check are judged to be adequately and appropriate. Hence CL06 was closed.

**CL10** was raised requesting to clarify how to check the compliance of CPA with the eligibility criteria. The relevant documents and methods are clearly indicated in the Eligibility Criteria in section B.2 Part I of revised PoA-DD, which is verified to be appropriate and reasonable. Hence, CL10 was closed.

Based on above assessment to each eligibility criteria, the validation team can conclude as below:

- All of eligibility criteria are appropriate to the PoA and its CPA inclusion;
- All of eligibility criteria are verifiable;
- All of eligibility criteria are sufficiently objective and comprehensive to permit validation team on assessment of the inclusion of CPA(s) in the PoA.

In addition, as per PoA-DD Section C (detailed assessment in above section, Section 3.5) and supporting evidences provided, the validation team considers that the CME CG has developed and implemented a clear, transparent operation and management system for checking any potential CPA inclusion so as to ensure each CPA that meets all requirements of eligibility criteria. The validation team checked the below components.

A CME Management Manual /8/ was established according to Part III Section B of PoA standard, and the manual was valid from 01/06/2012. In the Manual, management system such as (i) organization chart, (ii) responsibility of each position, (iii) training, (iv) document control, (v) procedures for technical review of CPA inclusion, (vi) procedures for avoiding double counting, (vii) Nonconformity and corrective & preventive actions, (viii) Continuous Improvement, etc. A well-established quality management system for CPA inclusion can be seen.

As above and the detailed assessment in Section 3.5, the validation team confirms the compliance of EB70 Annex 5 para.19. A clear, assessable and transparent management system for CPA inclusion was well-established by the CME and validated by the validation team.

In conclusion, the validation team considers that the stated eligibility criteria in the PoA-DD comply with the VVS v02 requirements and the PoA Standard.

### **3.7 Baseline and Monitoring Methodology**

#### **3.7.1 Applicability of the Selected Methodology**

The project applies approved methodology AMS-II.J version4.0: "Demand-side activities for efficient lighting technologies" dated 28/05/2010/30/. The assessment of the relevant information contained in the project design documents against each applicability condition of the methodology is conducted:



**Table 6: validation of applicability of methodology**

No.	AMS-II.J Requirement	SSC-CPA Qualification	Validation Method
1	Adoption of new self-ballasted compact fluorescent lamps (CFLs) to replace incandescent lamps (ICLs) in residential applications	<p>The CG 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 CG and distribute CFLs (i.e. energy efficient lamps) to households in the CPA area.</p>	Document review, interviews with the PP and local stakeholders.
2	The CFLs adopted to replace existing equipment must be new equipment and not transferred from another activity	The CFLs provided by CG 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 local stakeholders and on-site visit.
3	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.
4	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.
5	The average life or the rated average life of the CFLs shall be known ex-ante. IEC 60969 (Self	CFLs distributed in the proposed project have extra Long average life of 10,000 hours or longer. This shall be tested by an	Documents review, test report of CFLs, IEC 60969 /23/ and



	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.	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.  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. The relevant documentation has been provided to the DOE for verification.	qualification of the testing laboratory are checked.
6	CFLs utilized under the project activity shall, in addition to the standard lamp specifications, be marked for clear unique identification for the project.	The distributed CFL lamps under the CPA shall carry on the unique logos which identify these CFLs belonging to this PoA.	Document review, interviews with the PP and on-site visit.
7	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.  Project participants are required to undertake at least one of the following actions:  1) Directly installing the CFLs; 2) Charging at least a minimal price for efficient	The replaced ICLs will be destroyed, thus the project activity will limit undesired secondary market effects.  At least Option (3) 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.	Document review, interviews with the PP and on-site visit.



	lighting equipment; 3) Restricting the number of lamps per household distributed through the project activity to six		
8	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.	To eliminate double counting, the CME shall sign agreements with the manufacturer and project residents during implementation. According to the agreements, the emission reduction is only employed by the CME (CG) and all rights about emission reductions are given up by the manufacturer and project residents.	Document review, interviews with the PP and local stakeholders.
9	Ensure that the replaced ICLs are collected, destroyed and documented; the proposed method of CFL distribution is explained in the project document.	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.  In addition, the distribution method will be defined in the CPA-DD.	Document review, interviews with the PP and local stakeholders.
10	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.	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: <ul style="list-style-type: none"><li>• direct installation at each household; and/or</li><li>• ICL collection and CFL distribution through dedicated distribution points e.g. resident association offices, schools etc.</li></ul> Where direct installation is not done, the recipient shall be	Document review, interviews with local stakeholders and on-site visit.



		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.	
11	The Project design document shall also explain how the proposed procedures eliminate double counting of Emission Reductions.	<p>CG 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 Shanxi Province.</p> <p>During CPA implementation, CFL manufacturer and project households will sign agreements with CG 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 CG will not proceed with the submission for inclusion of the SSC-CPA in the PoA.</p>	Document review, interviews with the PP and on-site visit.





**CL07** was raised requesting to clarify each CPA qualification justification with the applied methodology. The qualification justification has been demonstrated in the final PoA-DD. The justification is verified to be credible. Hence CL07 was closed.

**CAR04** was raised requesting to mention reference of methodologies and tools in the PoA-DD. Relevant information has been identified correctly and included in the final PoA-DD. Hence CAR04 was closed.

The test reports of CFLs separately issued by Shenzhen POCE Technology Co., Ltd. for 22W CFLs and 12W CLFs dated 20/07/2012 /14//15/ were checked. The qualification of the Testing Laboratory valid from 15/11/2010, which is in line with the requirement of ISO17025, was also checked /16/. It is validated that the lumen output of the CFLs is determined in accordance with the international standard IEC60969/35/. The lumen output of a 12W CFL is 760, more than the lumen output of a 60W ICL (715) and a 40W ICL (415); 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 40W 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 24/07/2012, at which time the AMS-II.J version 4.0 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.

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

Complying with Para.77&190 of VVS v02, 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.

### **3.7.2 Programme Boundary**

As per the methodology AMS-II.J v4.0, the proposed project boundary is the physical, geographical location of each CFL installed for which an ICL has been collected and destroyed, covering the CPA area in Shanxi Province.

As the electricity consumed by the project residents is imported from the local power grid which belongs to Shanxi 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 latest delineation which is published by the Chinese DNA /17/, Shanxi 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 NCPG. The electricity is supplied by the NCPG which is pre-dominantly fossil fuel based. Therefore, high efficient CFLs used results in-directly GHG emission from grid-connected power plants are reduced. CO<sub>2</sub> emission by power plants serving the electricity grid is correctly identified as the only gases included in the project boundary.

The physical delineation of the CPA under the PoA and the description of the emission



sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for each CPA. In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of the PoA-DD /2/.

Complying with Para. 86&87 of VVS v02, 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.

### 3.7.3 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 Shanxi 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” /18/ 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 /19/. This was checked by interviewing local government officials.

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 /20/, much higher than that of widely used ICLs (1 to 2 RMB) /20/. This was checked by asking local retail sellers and visiting local supermarket;

(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. This has been cross-check during on-site households' interview.

(3) Doubts that promised savings will accrue there are low quality CFLs in China market /21/. 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.

Based on the above discussion, it is concluded 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 Shanxi 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. Public information used for eliminating the baseline scenario alternatives are checked, the exclusion of alternatives is reasonable and



well evidenced.

**CAR05** was raised requesting to provide evidence to demonstrate the barrier “Lack of consumer information”. CME explained that this barrier was demonstrated in the stakeholder consultation process. Via on-site interview with local households, CEC confirmed the description reflected the actual situation. Hence CAR05 was closed.

Complying with Para94&95 of VVS v02, by validating the assumptions, calculations and rationales used, as described in the PoA-DD, and cross checking with public available information, the validation team is able to confirm that the baseline scenario identified is reasonable, and that:

- 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 (AMS-II.J v4.0) has been correctly applied to identify the most plausible baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity.

### 3.8 Additionality demonstration

The validation team assessed the additionality of the PoA with the following steps as below, and confirmed that the latest Guidelines on the demonstration of additionality of small-scale project activities version 09.0 /22/ have been applied.

#### 3.8.1 Additionality of the PoA and a typical CPA

The additionality analysis was chosen to be performed for SSC CPAs under the proposed PoA. Basic analysis method was also provided in PoA level. The approach used in the PoA-DD has been assessed initially through the document review followed by on-site discussions. Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise.

**CL05** was raised requesting to clarify the additionality of the proposed PoA as per the latest guideline. The proposed PoA is within the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds according to Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0). The additionality analysis in the final PoA-DD is validated to be reasonable and appropriate. Hence, CL05 was closed.

The PoA-DD establishes the conditions that ensure that CPAs meet the requirements pertaining to the demonstration of the additionality. According to latest Guidelines on the demonstration of additionality of small-scale project activities v09.0 /22/, documentation of four barriers, defined in guidelines/22/, is not required for 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 (e.g. installed capacity up to 15 MW). Paragraph 2(c)



of this document reads as follows:

“Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5% of the small-scale CDM thresholds.”

As CPAs under the proposed PoA solely compose 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, 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.

The proposed PoA is a voluntary action by CG. Based on the submitted documents and substantiation it is evident that this voluntary coordinated action would not be implemented in the absence of the PoA.

It has been clearly demonstrated that there is no mandatory policy or regulation in the host country enforcing the implementation of energy efficient CFLs at household level. This was confirmed based on the on-site interviews and the host country experience of the audit team.

### 3.8.2 PoA Starting Date

The starting date of the proposed PoA is defined as 24/07/2012, which is the date of publication of the PoA-DD for global stakeholder consultation.) According to the definition of Glossary of CDM terms ver.07.0, the starting date should be 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. So the determination of starting date of the proposed PoA is in line with the Glossary of CDM terms /26/.

The start date of the crediting period of PoA is defined to be 31/01/2013 (expected the completion date of CFLs installation of the CPA1) or the date of registration, whichever is later. 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.

**CL09** was raised requesting to justify how the start date of the PoA and start date of the crediting period are determined. The justification is indicated in the final PoA-DD, and it is verified to be appropriate. Hence CL09 was closed.

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.

### 3.9 Emission Reductions

The calculations of emission reductions have been checked by the validation team. The parameters and equations presented in the PoA-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 latest AMS-I.D. version 17.



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

Where:

$ER_y$  Emission reductions in year y (tCO<sub>2e</sub>)

$NES_y$  Net electricity saved in year y (kWh)

$EF_{CO2,ELEC,y}$  Grid Emission factor in year y, (tCO<sub>2e</sub>/MWh); Under the PoA, the EF 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). Refer Annex 3 for how to calculate the EF. The calculated EF value is fixed ex-ante in the SSC-CPAs.

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 (W)

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

$O_i$  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/31/, which refers to the latest tool to calculate the emission factor for an electricity system/32/. The detailed EF calculation will be determined in specific CPAs based on the most recent information available.

**CL11** was raised requesting to clarify the assumption employed by the parameter  $TD_y$  and which option is chosen for ex-post determination frequency. CME explained a default value 10% is applied for parameter  $TD_y$ , and the monitoring surveys will be determined on CPA level. This explanation is verified to be in line with the applied methodology. Hence CL11 was closed.

The calculation process of emission reductions have been checked by the validation team. The calculations were carried out in accordance with the requirement of the applied methodology, correct equations and parameters have been used accordingly. 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.

Based on above discussion, and according to Para.99 &100 of VVS v02.0, CEC hereby confirms 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 project activity.
- (d) The baseline methodology and corresponding tool(s) have been applied correctly to calculated project emissions, baseline emissions, leakage and emission reductions.
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PoA-DD.





### 3.10 Monitoring plan

#### 3.10.1 Compliance of the monitoring plan with the approved methodology

Monitoring will be carried out during the process of CFLs 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 CPA-DD. The SSC-CPAs 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. This is in line with the applied methodology. The first sample survey will be carried out within the first year after installation of all efficient lighting equipment, and the subsequent surveys will be carried out once every 3 years.

**$LFR_{i,y}$ : Ex post Lamp Failure Rate for CFL type  $i$  in year  $y$  (fraction), %.** It is determined as per 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 current 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 first sample survey will be carried out within the first year after installation of all efficient lighting equipment to confirm the  $Q_{PJ}$ . The subsequent surveys will be carried out once every 3 years to determine the  $LFR_{i,y}$ . 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.

**$DATE_{start}$  and  $DATE_{end}$ : The start date and completion date of installation of CFLs.** The information from the installation form is afterwards entered into the SSC-CPA database, the data should be documented by implementer, and it is verifiable by CME.

**$Q_{BL,i}$ : The number of each type of the replaced ICLs collected and destroyed.** Once determined, the value is fixed for the entire project crediting period. The destruction of replaced ICLs shall be documented via witnessing by local environmental officials or time stamped video records.

**$Q_{PJ,i}$ : Number of each type of CFLs in operation under the SSC-CPA.** 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 SSC-CPA database, which is related to the first ex-post monitoring survey. This parameter will be confirmed by the first ex-post monitoring survey, which is within the first year after installation of all CFLs.

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

**$P_{i,PJ}$ : Rated power of each type of CFLs distributed under the SSC-CPA.** This parameter will be read by the distribution team from the lamp while replacement is taking place and recorded on the distribution form. The data will be entered into the SSC-CPA database.



Besides, CFL distribution, ex-post monitoring survey, database, ICL destruction, roles and responsibilities, and training are clearly mentioned in the monitoring plan in the PoA-DD.

For CFLs distribution, CLFs will be distributed directly by the CG or other SSC-CPA implementers, using one or more of the following methods: (a) Direct installation at each household; and/or (b) ICL collection and CFL distribution through dedicated distribution points, for instant, residential association offices, schools etc. If direct installation is not done, SSC-CPA shall educate the recipient to install the CFL in high-usage areas. During CFLs distribution, the following will be recorded into the database: Number, Wattage, date of supply of each household.

For the SSC-CPA database, such information includes in the database, inter alia:

- (1) Defined geographical area of the SSC-CPA, for instance, political district maps etc.
- (2) For each household that receives CFLs:
  - A list of each household that received CFLs (name, address, and applicable SSC-CPA area).
  - For each corresponding light bulb.
    - Date of installation of the CFLs.
    - Number and nominal power ratings of the replaced ICLs and distributed CFLs.
    - Date of collection of the replaced ICLs.
    - Number of ICLs destroyed.
    - Date of return and safe disposal of the distributed CFLs that were broken.
- (3) In addition to above, for each household included in Monitoring survey (if applicable)
  - A list of each household in the survey (house address, name of occupant, and applicable SSC-CPA area).
  - Information on when the household has been added to the survey and information on when it has been removed (if applicable).
  - Information on any changes made to the CFL (exchange, repair, removed and installed else-where etc).

For Ex-post Monitoring Survey, the households will be random selected, and the following survey principles will be followed:

- The sampling size will be determined by a minimum 90% confidence interval and the 10% maximum error margin; the size of the sample shall be no less than 100.
- Sampling must be statistically robust and relevant i.e., the survey has a random distribution and is representative of target population (size, location).
- The method to select respondents for interviews is random.
- The survey is conducted by site visits.
- Only persons over age 12 are interviewed

The parameter  $n$  (Sample size of Monitoring Survey) will be calculated during Ex-post monitoring survey, which is as per statistical analysis provided in PoA-DD and SSC-CPA-DD. Each SSC-CPA under the proposed PoA 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.

- (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 ( $0.1 \times 0.5 = 0.05 = 5\%$  points either side of  $p$ )

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.

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

To estimate the proportion,  $p$ , of CFLs installed and not working, we define the target value  $p$  is the value of LFR, 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:

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

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 ( $0.1 \times 0.5 = 0.05 = 5\%$  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  $n/0.8$ .



For ICL Destruction, 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.

Therefore, in opinion of CEC, all necessary parameters required by the selected approved methodology are contained in the monitoring plan. They are clearly described and the means of monitoring, described in the plan, comply with the requirements of the methodology. The monitoring of the parameters involved in the emission reductions has been established in a transparent and clear way. Thus, the monitoring plan is in compliance with the requirements of the applied methodology.

### **3.10.2 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.

### **3.11. Environmental Impacts**

Environmental Analysis is chosen to be done at PoA level because the CFLs distributed in this programme meet the requirements of GB/T17263: Self-ballasted lamps for general lighting service-Performance requirement /10/ 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 /40/. This is crosschecked against the statement on EIA of CFL Distribution programme in Lvliang City, which was issued by Lvliang City Environment Protection Bureau on 16/05/2012 /38/. In addition, this is also cross-checked via interviewing local government officials.

For the proposed PoA, CG will make sure that itself and CPA implementers 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.

### **3.12. 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 at 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.

By considering the local stakeholders' comments for each specific CPA, the proposed PoA ensures that the impact of the specific CPA in the neighbour communities will be considered.



### 3.13. Comments by Parties, Stakeholders and NGOs

The PoA-DD was made publicly available from 24/07/2012 in accordance with paragraph 40(b) of the modalities and procedures for the CDM, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

During this process, 3 comments have been submitted by Mr.Max Power on 21/08/2012. CEC has asked for his further opinion regarding the 3 comments by email, however Mr.Max Power did not respond. Explanation of how the comment was taken into account is listed as follows:

Comments 1:	The additionality is not demonstrated appropriately. Although it is obvious that the NPV of distributing CFLs below the purchase price has a negative NPV, however, it is not shown that the CFLs are not the financially most attractive option for the households, taking into account electricity savings. Furthermore, the NPV calculations are not provided.
PP response:	As per the latest Guidelines on the demonstration of additionality of small-scale project activities version 09.0, EB68 annex 27, the proposed PoA is within the positive list of technologies project activity types that are defined as automatically additional, hence the additionality of the proposed PoA is automatically.
DOE opinion:	<p>As per CL05, the additionality of the proposed PoA has been demonstrated as follows:</p> <ol style="list-style-type: none"> <li>(1) 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, no larger than 5% of the small-scale CDM thresholds;</li> <li>(2) Thus the CPAs are within the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds (e.g. installed capacity up to 15 MW), which is regulated in “Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0), Annex 27 to EB 68.</li> <li>(3) 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.</li> </ol> <p>In addition, the proposed PoA is a programme voluntarily developed by CG to promote high quality CFL in Shanxi Province, China. There are no mandatory requirements in China requiring the use of energy efficient CFL at the household level.</p> <p>Furthermore, the NPV calculation spreadsheet of the CPA1 /54/ has been provided by CME, the data and calculation process have been assessed by the validation team. The NPV is <math>-8,764 \times 10^3</math> Yuan (negative), calculated based</p>



	<p>on estimated amount of 12W/22W CFLs and their different prices. Due to the calculated NPV of CPA1 is lower than the benchmark zero(0), it is judged the proposed PoA and CPA1 is financial unattractive.</p> <p>Furthermore, it is verified that, in the agreement template for relinquishing CERs right between CME and participating households, the revenues from electricity savings will only be owned by the participating households, it shall not be owned by the CME, thus the revenues from electricity savings have no impact on the finance of the proposed PoA and CPAs. This has been cross-checked during the on-site interview.</p> <p>Therefore, it is justified, as per the latest guideline, the additionality of the proposed PoA and CPAs has been demonstrated sufficiently and appropriately.</p>
Comments 2:	Double counting is not excluded effectively. Not only can double counting occur when a single CPA is registered as stand alone CDM project or under a different CPA, but also by having single CFLs included in several CPAs. No provisions are provided for this situation.
PP response:	Provisions for avoid double counting are further stated in the CPA eligibility criteria in the final PoA-DD, it can exclude double counting effectively.
DOE opinion:	<p>As per CL06, the CME further clarifies the measures to avoid the double counting, especially the avoidance of double counting under each CPA. This has been defined as an eligibility criterion to include CPA as follow:</p> <ol style="list-style-type: none"> <li>(1) CFLs utilized under the SSC-CPA are marked for clear unique identification for the PoA and the SSC-CPA, which will be specified on the CFL procurement contract.</li> <li>(2) CFL manufacturer and project households will sign agreements with CG to relinquish their rights over the CERs generated from the project CFL use.</li> <li>(3) Confirmation that this SSC-CPA is not registered or being registered, as a stand-alone CDM or as a CPA of another PoA.</li> </ol> <p>The agreement template and the signed agreements between CME and CFL manufacturer and project households for CPA1 have been reviewed, and CME confirmed the CPA1 is not registered or being registered, as a stand-alone CDM or as a CPA of another PoA.</p> <p>Therefore, it is concluded the double counting is excluded effectively in the PoA and CPAs.</p>
Comments 3:	The source of funding is unclear. No sufficient information is given on how national subsidy fundings are used for the distribution of CFLs that are available with or without CDM
PP response:	The proposed programme of activities does not involve any public funding.
DOE opinion:	As per CL04, CME explained the proposed PoA does not involve any public funding. This is cross-checked during the document review and on-site



	<p>interview with local government officials.</p> <p>In addition, CEC has checked the public available information regarding promoting CFLs purchase and distribution in rural households, no any regulations are found besides “The Provisional Measures of Financial Subsidy for Promoting Efficient Lighting Equipment” /18/ 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/19/. This was verified by interviewing local government officials.</p> <p>Therefore it is confirmed the proposed PoA does not involve any public funding.</p>
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#### 4. Validation Opinion

China Environmental United Certification Center Co., Ltd. (CEC) has performed a validation of “CFL Distribution Programme in Shanxi Province” project 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 programme design documentation and additional documents related to baseline and monitoring methodology, and the subsequent background investigation, follow-up interviews and review of comments by parties and stakeholders have provided CEC with sufficient evidence to validate the fulfilment of the stated criteria.

The conclusions can be summarized in detail as follows:

- The PoA is in line with all relevant host country criteria of China, with the Letter of Approval from the China DNA and with all relevant UNFCCC requirements for Programme of Activities.
- The operational and management plan established by the coordinating entity is suitable for the PoA validated.
- The baseline has been appropriately identified as per the applied methodology.
- Eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the proposed PoA. These requirements include the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.
- The PoA's additionality is sufficiently justified in the PoA-DD.
- The monitoring plan and the Operational and Management Plan are transparent and adequate.
- The calculation of validated CPA emission reductions has been carried out in a transparent and conservative manner, following the approved methodology AMS-II.J version 4.0.
- Information on the local stakeholders' consultation by the project participants prior to submitting the PoA for validation is sufficiently provided in the PoA-DD.
- All information has been also consistently applied in the PoA-DD and CPA-DD form.

It is CEC's opinion that “CFL Distribution Programme in Shanxi Province” project, as described in the PoA-DD version 03 dated 27/12/2012, correctly applies and meets the relevant UNFCCC requirements for the CDM Programme of Activities and the relevant host country criteria, correctly applies the baseline and monitoring methodology AMS-II.J, 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 '徐玲华' (XU Linghua).

XU Linghua  
Validation Team Leader

Beijing, 28/12/2012

A handwritten signature in black ink, appearing to read '宋铁东' (SONG Tiedong).

SONG Tiedong  
Chairman of Board



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## 6. Personnel interviewed

Name	Organization
WANG Dianliang	Lvliang City, Poverty relief Office
ZHANG Yanjun	Lvliang City, Poverty relief Office
LI Zhirong	Lin County, Poverty relief Officer
ZHAO Xiaofang	Lin County, Poverty relief Officer
CAO Junwang	Lin County, Poverty relief Officer
ZHANG Jianjun	Lin County, Eenvitronmental Protection Bureau
LIU Zhengming	Lin County, Economic Development Bureau
WANG Ruikui	Lin County, Government office
XUE Zengping	Chengzhuang Town, Lin County, Government office
WU Zhen	Carbon Gold Beijing Technology Co.,Ltd
SHI Xiaochen	Sino Carbon Innovation & Investment Co.,Ltd



## Appendix A Validation Protocol

**Table 1 PoA-DD Requirement Checklist**

Checklist Question	MoV	Comments	Draft Concl	Final Concl
MoV=Means of Validation, DR=Document Review, I=Interview, O=Observation				
<b>Part I: Programme of Activities(PoA)</b>				
<b>A. General Description of SSC Programme of activities</b>				
<b>A.1. Title of the Programme of activities</b>				
A.1.1 Does the project title clearly identify the unique CDM activity?	DR	Yes.The project title is “CFL Distribution Programme in Shanxi Province”, which identifies the unique CDM programme of activity clearly. The project title is consistent with that indicated in Host Party LoA and MoC. 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. PoA-DD version 01 was compiled for the GSP in UNFCCC website.  The final revised PoA-DD version 03 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 CPA-DD of the proposed PoA and CPA apply the latest UNFCCC templates under VVS track (Programme Design Document Form for Small-Scale CDM Programme of Activities, and Component Project Design Document Form for Small-Scale Component Project Activities) completely and accurately.	OK	OK
<b>A.2. Purpose and general description of the PoA</b>				



<p>A.2.1 Is the description delivering a transparent overview of the general operating and implementing framework of the PoA?</p>	<p>DR O</p>	<p>Yes. The small scale proposed PoA is to replace approximately 50 million household incandescent lamps (ICLs) with equal number of energy efficient, self-ballasted, compact fluorescent lamps (CFLs), of same or higher lumen output, which is in Shanxi Province of China. This will result in CO<sub>2</sub> 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. Therefore the proposed PoA will improve the local residents' living environment and it will contribute to local sustainable development.</p> <p>Carbon Gold Beijing Technology Co.,Ltd (called CG) is the coordinating/managing entity(CME) of the proposed SSC PoA, it will support the SSC CPA implementer(s) in implementing the proposed PoA.</p> <p>Under proposed PoA, high quality long-life CFLs would be distributed by CG and other project implementer(s) to residential households in exchange of an incandescent lamp (ICL) for free or for a minimal fee. 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>As it is verified that there are no mandatory requirements in Shanxi Province and in China requiring the use of energy efficient CFLs at the household level, and all the participation involved in the proposed PoA are validated to be voluntarily take part in the programme, it is confirmed the proposed PoA ia a voluntary action by the CME.</p>		<p>OK</p>
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		<p><b><u>CL01</u></b></p> <p>Please clarify the basis for the estimated amount of the replaced household incandescent lamps (ICLs) and provide relevant evidence.</p> <p><b><u>CL02</u></b></p> <p>1.Please clarify whether there is a minimal fee charge involved in the CPAs under the proposed PoA.</p> <p>2.Please further describe how the PoA contributes to the sustainable development.</p>	<p>CL01</p> <p>CL02</p>	OK
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 evidences available and checked against the information in PoA-DD by the validation team:</p> <ul style="list-style-type: none"> <li>• Business licence of the CME CG valid from 02/02/2012</li> <li>• Approval of the proposed CPA1 by Lvliang City Development and Reform Committee on 10/05/2012</li> <li>• CME qualification approval by Shanxi Province on 24/07/2012, document no.[2012]887</li> <li>• Statement of Environmental Impact Assessment of CPA1 issued by Lvliang City Environmental Protection Bureau on 16/05/2012</li> <li>• Baseline Survey spreadsheet of CPA1</li> <li>• Lifetime and light output(lumen) test report of CFLs(12W and 22W)</li> </ul>	OK	OK



A.2.3	Is the policy/measure or stated goal of the PoA clearly and unambiguously presented?	DR	Yes, it has been clearly presented that the proposed PoA is to distribute around 50 million CFLs, replacing low efficient ICLs, mainly covering area of Shanxi Province and to reduce the electricity consumed by local residents, in order to reduce corresponding CO <sub>2</sub> emissions during power generation. The employed CFLs have same or higher lumen output than the ICLs.	OK	OK
A.2.4	Is there a valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity?	DR	Yes, it has been indicated that proposed PoA is a voluntary action by the CME Carbon Gold Beijing Technology Co.,Ltd(called CG).  <b><u>CL03</u></b>  A valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity (DNA approval) shall be provided.	<del>CL03</del>	OK
A.2.5	Is the information provided by the PoA-DD consistent with the information provided by proofs?	DR	Yes. The information indicated in the proposed PoA-DD is consistent with that in the evidences.  <b><u>CL04</u></b>  Please clarify whether there is national subsidy involved in the proposed PoA regarding the CFLs distribution.	<del>CL04</del>	OK
A.2.6	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 O	The proposed PoA 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 60GWh per year.  During 22/08/2012-23/08/2012, the validation team performed an on-site visit and interviews with project participants, local officials and stakeholders to confirm the provided information.	OK	OK



A.2.7 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   O	Through document review and on-site visit, it is confirmed that the proposed PoA does not involve alteration of existing installations.	OK	OK
A.2.8 Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	DR	Yes, the description of technology to be applied provides sufficient and transparent input to evaluate its impact on the greenhouse gas balance.	OK	OK
<b>A.3. CMEs and participants of PoA</b>				
A.3.1 Is the CME clearly indicated in the PoA-DD?	DR	Yes. Carbon Gold Beijing Technology Co.,Ltd (called CG) is clearly indicated as the coordinating/managing entity(CME) of the proposed SSC PoA in the PoA-DD.  This has been confirmed via reviewing PoA and CME qualification approval by Shanxi Development and Reform Committee on 24/07/2012, document no.[2012]887.	OK	OK
A.3.2 Is the information of CME consistent in the whole PoA-DD?	DR	The information of the CME is consistent in the whole PoA-DD, including that in the annex 1.	OK	OK
<b>A.4 Party(ies)</b>				
A.4.1 Is the form required for the indication of project participants correctly applied?	DR	Yes.The form is correctly applied.	OK	OK



A.4.2	Does it clearly specify all the Parties and project participants?	DR	Carbon Gold Beijing Technology Co.,Ltd is the participating private entity, and China is the Host Party. China is directly involved as a PP.	OK	OK
<b>A.5 Physical/Geographycal Boundary of the PoA</b>					
A.5.1	Does the information provided on the location of the programme allow for a clear definition identification of the boundary for the PoA in terms of a geographical area, within which all CPAs included in this PoA will be implemented?	DR O	<p>Yes.The Programme of Activities will be implemented within the geographical limits of Shanxi Province of China.</p> <p><b><u>CAR01</u></b></p> <p>Please provide evidence to demonstrate the geographical coordinates of Shanxi Province, and the map of Shanxi Province shall be indicated in the PoA-DD.</p>	CAR01	OK
A.5.2	Do the requirement that all applicable national and/or sectoral policies and regulations of the host country within the boundaries chosen taken into account?	DR	Yes. The boundaries of the Programme have been well established, and all sectoral policies and regulations of the host country have been taken into account	OK	OK
<b>A.6 Technology/Measures</b>					
A.6.1	Is it unambiguously stated which technology or measures are to be employed by the SSC-CPA?	DR	Yes, Long life quality and energy efficient CFLs distributed to a household by SSC-CPA implementer(s) would satisfy the national technical specifications GB/T 17263.	OK	OK
A.6.2	Does the technical design of the programme of activities reflect current good practices?	DR I	Yes. Via document review and on-site visit, it is confirmed the proposed PoA and CPAs use energy saving CFLs instead of ICLs, which reflects the advanced technology and current good practices.	OK	OK





A.6.3 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	<p>Yes. The description of the technology is complete, relative document evidences have been provided and checked.</p> <p>The proposed PoA will replace approximately 50 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 NCPG. The CFLs have an average life of 10,000 hours or longer, which comply to national standard GB/T 17263 which specifies a minimum 6000 hours rated life time.</p> <p><b><u>CAR02</u></b></p> <p>Please describe the technology of baseline scenario in section A.6 as per the requirements of the SSC PoA-DD template.</p>	CAR02	OK
A.6.4 Is the type and category of project activities correctly identified and indicated?	DR	Yes, the proposed PoA belongs to Type II and Category is "Demand-side activities for efficient lighting technologies". It is correctly identified.	OK	OK
A.6.5 Is the technology implemented by the programme of activities environmentally safe?	DR I	Yes. As the project is CFLs 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.6.6 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.6.7 Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	DR	Project does not require extensive initial training and maintenance effort.	OK	OK
<b>A.7 Public funding of PoA</b>				
A.7.1 Is any public funding from Annex I countries available to the proposed project?	DR I	No. According to the document review and on-site auditing, there is no public funding involved in the proposed PoA.	OK	OK
A.7.2 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.7.3 Is all information provided consistent with the details given in remaining chapters of the PoA-DD?	DR	Yes, the information provided is consistent.	OK	OK
<b>Section B Demonstration of additionality and development of eligibility criteria</b>				
<b>B.1 Demonstration of additionality for PoA</b>				



<p>B.1.1 Is the PoA additionality assessed according to current versions of :</p> <ul style="list-style-type: none"> <li>• Applicable methodology;</li> <li>• Tool used to demonstrate the Additionality;</li> <li>• 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</li> </ul>	<p>DR</p>	<p><b><u>CL05</u></b></p> <p>Please further clarify the additionality of the proposed PoA as per the latest guideline</p> <p>In the final PoA-DD, the PoA additionality is assessed according to the latest Guidelines on the demonstration of additionality of small-scale project activities v09.0, EB68 annex27. The additionality of the proposed PoA is demonstrated as follows:</p> <ol style="list-style-type: none"> <li>1) The proposed PoA is a programme voluntarily developed by CG to promote high quality CFL in Shanxi Province, China. There are no mandatory requirements in China requiring the use of energy efficient CFL at the household level.</li> <li>2) 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, no larger than 5% of the small-scale CDM thresholds;</li> <li>3) Thus the CPAs are within 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 (e.g. installed capacity up to 15 MW), which is regulated in “Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0), Annex 27 to EB 68.</li> <li>4) 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.</li> </ol>	<p>CL05</p>	<p>OK</p>
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B.1.2	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.1.3	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.1.4	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.1.5	Is sufficient evidence provided to support the relevance of the arguments made?	DR	The final PoA-DD 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>B.2 Eligibility criteria for inclusion of a CPA in the PoA</b>					



<p>B.2.1 Are there clear and unambiguous eligibility criteria for the inclusion of a SSC CPA into the PoA?</p>	<p>DR I</p>	<p><b><u>CL06</u></b></p> <p>1.The CPA inclusion eligibility criteria shall be identified according to PoA standard.</p> <p>2.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</p> <p>In the final PoA-DD, the eligibility criteria has been stated clearly with regards to the following:</p> <p>1.The geographical boundary of the SSC-CPA area is uniquely defined and located in Shanxi Province. Map of the CPA location and its coordinate's description can be checked.</p> <p>2.CFLs utilized under the SSC-CPA are marked for clear unique identification for the PoA and the SSC-CPA, which will be specified on the CFL procurement contract.</p> <p>3.CFL manufacturer and project households will sign agreements with CG to relinquish their rights over the CERs generated from the project CFL use.</p> <p>4.Confirmation that this SSC-CPA is not registered or being registered, as a stand-alone CDM or as a CPA of another PoA.</p> <p>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.</p> <p>6.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 lower than that of the ICLs. This shall be tested and confirmed according to relevant national or international standards.</p>	<p><del>CL06</del></p>	<p>OK</p>
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<p>B.2.2 Are there clear and unambiguous eligibility criteria for the inclusion of a SSC CPA into the PoA?</p>	<p>DR</p>	<p>7. The start date of the SSC-CPA is not, or will not be, prior to the commencement of validation of the programme of activities. The start date of the SSC-CPA shall be checked through documentary evidence, e.g. CFL procurement contract.</p> <p>8. The baseline and monitoring methodology AMS-II.J is applied. All the CPAs should meet applicability and other requirements of AMS-II.J.</p> <p>9. The maximum annual saved electricity of each project household, due to using the distributed project CFLs, is less than 3000 MWh per year.</p> <p>10. Stakeholders' consultation meeting is conducted prior to the publication of SSC-CPA-DD on the UNFCCC website and CPA inclusion.</p> <p>Each CPA should carry out local stakeholder consultations and provide stakeholder questionnaires to the CME, which should question on the followings, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Will the Project bring improvements to their livelihoods?</li> <li>• Will the Project have negative impacts on their livelihoods?</li> <li>• Do they support the Project? .</li> </ul> <p>11. Environment impact analysis should be included in stakeholder consultation process. The approval letter of Environmental impact analysis will be checked.</p> <p>12. Each CPA will not have funding from Annex I parties; if any, does not result in a diversion of official development assistance, otherwise it will not be included in the PoA.</p> <p>13. The target group should be the residents who will participate in the PoA voluntarily and are using ICLs in their houses.</p> <p>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>	<p>CL06</p>	<p>OK</p>
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B.2.3 Are there clear and unambiguous eligibility criteria for the inclusion of a SSC CPA into the PoA?	DR	<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 example common areas</p> <p>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</p> <p>17. The aggregate electricity savings by a single SSC-CPA do not exceed the equivalent of 60 GWh per year</p> <p>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.</p>	CL06	OK
B.2.4 Are the eligibility criteria for CPAs sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA?	DR	Yes, the eligibility criteria for CPAs sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA.	OK	OK
<b>B.3 Application of methodologies</b>				
B.3.1 Are reference number, version number, and title of the approved baseline and monitoring methodology clearly indicated?	DR	The reference number and title of the approved baseline and monitoring methodology AMS-II.J is indicated.	OK	OK





B.3.2	Is the applied version the most recent one and/or is this version still applicable?	DR	Yes. The applied version is the latest at the commencement of the validation.	OK	OK
B.3.3	Is the baseline methodology applicable to Programmes of Activities?	DR	<p>Yes. According to the technology/measures employed by the proposed PoA, the AMS-II.J is applicable to the proposed PoA.</p> <p>There is no tool referred in the applied 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> <p><b><u>CL07</u></b></p> <p>Please clarify each CPA qualification justification with the applied methodology.</p>	<del>CL07</del>	OK
B.3.4	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	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.	OK	OK
<b>Section C Management System</b>					



C.1 Does the PoA-DD clearly state the coordinating/managing entity?	DR	Yes. Carbon Gold Beijing Technology Co., Ltd. (CG) is identified to be the coordinating/managing entity of the PoA. This has been confirmed by reviewing the CME qualification approval issued by Shanxi Development and Reform Committee.	OK	OK
C.2 Are the operational and management arrangements established by the coordinating/managing entity suitable for the PoA being validated?	DR	<b><u>CL08</u></b> Please identify the CME operational and management system according to para.19 of the PoA standard.	<del>CL08</del>	OK
C.3 Are records keeping system for each CPA under the PoA suitable?	DR	<p>Yes, each CPA will maintain an appropriate records system with standardized formats, which includes the following information:</p> <ul style="list-style-type: none"> <li>• The geographical location of each CPA;</li> <li>• The name, address and record of specifications of ICLs exchanged and distributed CFLs in households participating in the CPA;</li> <li>• The names, addresses and monitoring data of each household involved in sample households for lamp failure rates and monitoring surveys;</li> <li>• Destruction of ICLs. To facilitate random verification, dates of ICL destruction would be communicated to CG in advance by SSC-CPA implementer(s). To enhance process credibility, SSC-CPA shall carry out the destruction in the presence of responsible witnesses e.g. local environmental officials, or documented by time stamped video records.</li> </ul> <p>Based on CEC local and sectoral knowledge, it is judged the record keeping system is appropriate to the proposed PoA.</p>	OK	OK



C.4 Are methods to avoid double counting suitable?	DR	<p>CG seeks confirmation in SSC-CPA when conducting CPA eligibility check .The methods to avoid double counting are as follows:</p> <ul style="list-style-type: none"> <li>• A declaration stating that CPA implementers are aware and agree that the project will be subscribed to the PoA.</li> <li>• CPA implementers acknowledge that their project is not registered or seeking registration as a stand-alone CDM project activity, part of a bundle CDM project activity, or CPA under a PoA different from this PoA.</li> <li>• Each CPA will be uniquely identified and checked against the projects seeking validation or already registered in UNFCCC database online to ensure that there is no double counting.</li> <li>• Geographic coordinates of the CPA can be checked against existing CDM projects and CPAs in the region.</li> <li>• During CPA implementation, CFL manufacturer and project households will sign agreements with Carbon Gold Beijing Technology Co., Ltd. to relinquish their rights over the CERs generated from the project CFL use.</li> </ul>	OK	OK
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C.5 Is there procedure to check for de-bundling?	DR	<p>CME maintained a criteria to check for de-bundling, it is in line with EB guidance "Guidance on assessment of de-bundling for SSC project activities" version 03: If each of the independent subsystems/measures (e.g., biogas digester, solar home system) included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity.</p> <p>As under the proposed PoA, the maximum wattage rating of an ICL which can be replaced under the programme is 200 W (from AMS-II.J) and the wattage of an equivalent CFL is similar to 40 W. Hence the maximum annual energy saving potential from a measure taking 3.5 hours usage per day is <math>= 3.5 * 365 * (200-40) = 0.0002\text{GWh}</math>. As per de-bundling criteria, 1% of the small scale threshold is 0.6GWh per annum for a single measure. As is demonstrated above 0.0002GWh per CFL is much less than the de-bundling requirement.</p> <p>Therefore it is judged each CPA under the proposed PoA is not a de-bundled component of a large scale activity.</p>	OK	OK
C.6 Is there procedure for awareness of CPA implementers on PoA provisions?	DR	<p>Before inclusion of a specific CPA, CG as CME requires all SSC-CPA implementer(s) to sign an agreement with CG before the CPA enrolled, if the SSC project activity was not implemented by the CG itself. In particular, the SSC-CPA implement(s) are aware of and have agreed that their activity is being subscribed to the PoA.</p>	OK	OK
<b>Section D Duration of PoA</b>				
<b>D.1 Start Date of PoA</b>				



D.1.1 Is the start date of PoA indicated and justified?	DR	<b>CL09</b> Please justify how the start date of the PoA and the start date of the crediting period of PoA determined	CL09	OK
D.1.2 Is the start date of the crediting period of PoA indicated and justified?	DR	Please refer to CL09.	CL09	OK
<b>D.2 Length of the PoA</b>				
D.1 Is the length of the PoA clearly indicated?	DR	28 years for the length of the PoA is clearly indicated in the PoA-DD.	OK	OK
D.2 Is the length of the PoA compliance to the EB requirements?	DR	Yes, it is.	OK	OK
<b>Section Environmental impacts</b>				
<b>E.1 Level at Which environmental analysis is undertaken</b>				
E.1.1 Is the environment analysis undertaken at PoA level? In negative case, is this issue correctly described and reflected in the CDM-PoA-DD?	DR	It is justified that the environmental analysis will be done in PoA level due to the following reason: <ul style="list-style-type: none"> <li>• The CFLs distributed in this programme meet the requirements of GB/T 17263;</li> <li>• There are no statutory environmental impact assessment requirements on lighting facilities distribution and disposal.</li> </ul> Based on CEC local knowledge, it is judged the environment analysis undertaken at proposed PoA level is appropriate.	OK	OK



E.1.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	DR	Via checking the enforcement of " Environmental Impact Assessment Law of People's Republic of China "and Classified Management List of Environmental Impact Assessment of Infrastructure Projects, Ministry of Environmental Protection, 02/09/2008, it is confirmed Chinese Government does not mandate an EIA or any precautionary measures for CFL use,	OK	OK
<b>E.2 Analysis of the environmental impacts</b>				
E.2.1 Has the analysis of the environmental impacts of the project activity been sufficiently described?	DR	Yes. CG will require itself and SSC-CPA implementer(s) to take suitable measures to contribute to the prevention of mercury pollution from the CPA project activity	OK	OK
E.2.2 Will the Programme create any adverse environmental effects? Have they identified as significant?	DR	Not applicable, the proposed PoA does not create any adverse environmental effects.	OK	OK
E.2.3 Were transboundary environmental impacts identified in the analysis?	DR	Not applicable, the proposed PoA does not create any transboundary environmental impacts.	OK	OK
<b>Section F Local Stakeholder Comments</b>				
<b>F.1 Solicitation of comments from local stakeholder</b>				
F.1.1 Is the stakeholders' consultation process undertaken at PoA level? In negative case, is this issue correctly described and reflected in the CDM-PoA-DD?	DR	It is justified that the stakeholders' consultation process undertaken at CPA level. Considering the different consumption and living conditions, it is judged the stakeholders' consultation process undertaken at PoA level is appropriate.	OK	OK



F.1.2	Have relevant stakeholders been consulted?	DR	A consultation meeting will be carried out in each CPA district and the comments by local stakeholders will be recorded.	OK	OK
F.1.3	Have appropriate media been used to invite comments by local stakeholders?	DR	Not applicable, as the stakeholders' consultation process undertaken at CPA level.	OK	OK
F.1.4	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	DR	Not applicable, as a stakeholder consultation process is not required by regulations/laws in the host country.	OK	OK
F.1.5	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	DR	Not applicable, as the stakeholders' consultation process undertaken at CPA level.	OK	OK
<b>F.2 Summary of comments received</b>					
F.2.1	Is a summary of the received stakeholder comments provided?	DR	Not applicable, as the stakeholders' consultation process undertaken at CPA level.	OK	OK
<b>F.3 Report on consideration of comments received</b>					
F.3.1	Has due account been taken of any stake-holder comments received?	DR	Not applicable, as the stakeholders' consultation process undertaken at CPA level.	OK	OK





Section G Approval and authorization				
G.1 Is the participation of the listed entities or Parties confirmed by each one of them?	DR	CG as the CME of the proposed PoA, it is also a project participant.  <b><u>CAR03</u></b>  The LoA from China DNA and the MoC of the proposed PoA and CPA1 has not been available.	<del>CAR03</del>	OK
G.2 Is all information on participants /Parties provided in consistency with details pro-vided by further chapters of the PDD (in par-ticular annex 1)?	DR	Please refer to CAR03.	<del>CAR03</del>	OK
G.3 Is the Coordinating Agency a project participant authorized by all participating host countries DNAs involved and identified in the modalities of communication as the entity which communicates with the Board?	DR	Please refer to CAR03.	<del>CAR03</del>	OK
G.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 CAR03.	<del>CAR03</del>	OK
G.5 Will the project create other environmental or social benefits than GHG emission reductions?	DR	Please refer to CAR03.	<del>CAR03</del>	OK



Part II: Generic Component Project Activities					
Section A General description of a generic CPA					
A.1 Purpose and general description of generic CPAs					
A.1.1	Is the description delivering a transparent overview of the purpose and description of generic CPA?	DR	<p>Yes. A certain amount of energy efficient, self-ballasted, compact fluorescent lamps CFLs can be distributed within a single SSC-CPA small scale CDM, which should meet the requirement of the limitation of 60 GWh. The CFLs have same or higher lumen output than the replaced ICLs. CG as CME will support the project implementer(s) in implementing the CDM Programme Activities (CPAs) in Shanxi Province. The CFL distribution under a SSC-CPA is restricted to the project boundary which will be identified by the CPA implement(s) in CPA-DD.</p> <p>The CFLs distribution and replaced ICLs destruction are also regulated. And under the programme the SSC-CPA shall use a fixed value of 3.5 hours to estimate the carbon dioxide emission reductions under the CDM project.</p>	OK	OK
A.1.2	Is the information provided by the generic CPA consistent with the information in PoA?	DR	Yes. the information provided by the generic CPA consistent is consistent with the information in PoA	OK	OK
A.1.3	Do the CPAs 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	Via documents review and on-site interview, it is confirmed that CPAs will new CFLs to replace ICLs, no alternative of existing installation involved in CPAs.	OK	OK
Section B Application of a baseline and monitoring methodology					



<b>B.1 Reference of the approved baseline and monitoring methodology(ies) selected</b>				
B.1.1	Are reference number, version number, and title of the approved baseline and monitoring methodology clearly indicated?	DR	<p>The approved methodology AMS-II.J “Demand-side activities for efficient lighting technologies” is applicable to the CPAs.</p> <p><b><u>CAR04</u></b></p> <p>The reference of methodologies and tools are not mentioned in the PoA-DD</p>	OK
B.1.2	Is the applied version the most recent one and / or is this version still applicable?	DR	Please refer to CAR04	OK
B.1.3	Does the PoA-DD refer to the corresponding tools with their latest approved versions?	DR	Please refer to CAR04	OK
<b>B.2 Application of methodology(ies)</b>				
B.2.1	Is the choice of the methodology correctly justified by the PoA-DD and are the CPAs in conformance with all applicability criteria of the applied methodology?	DR	Yes, the applied methodology AMS-II.J has been correctly justified in the PoA-DD, and all the CPAs under the PoA are demonstrated to be in line with the requirements of the methodology.	OK
<b>B.3 Sources and GHGs</b>				



B.3.1	Are all the sources and gases included in the boundary of the CPAs (baseline scenario, project scenario and leakage) in accordance with the applied methodology?	DR O	Yes, the project boundary is the physical, geographical location of each project CFL installed and all power plants connected physically to North China Power Grid (NCPG), which Shanxi Province is located in. NCPG is dominated by fossil-fuel. All the sources and gases included in the boundary of the CPAs (baseline scenario, project scenario and leakage) are in accordance with the applied methodology.	OK	OK
B.3.2	Are the inclusion or exclusion of the sources of gases correctly justified?	DR O	Yes, the inclusion and exclusions included are correctly justified.	OK	OK
B.3.3	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PoA-DD?	DR O	Yes, the spatial and technological boundaries as verified on-site comply with the discussion provided by the PoA-DD.	OK	OK
B.3.4	In case of grid connected electricity CPAs, is the relevant grid correctly identified in accordance with EB guidance and the underlying methodology?	DR O	Not applicable.	OK	OK
<b>B.4 Description of baseline scenario</b>					



B.4.1	Have all technically feasible baseline scenario alternatives to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	DR	<p>As per PoA-DD, three baseline alternatives are considered:</p> <ul style="list-style-type: none"> <li>• Mandatory replacement of ICLs with new lighting devices with same or greater efficiency without being registered as a CDM project activity;</li> <li>• Autonomously replacing ICLs with new lighting devices with same or greater efficiency without being registered as CDM project activity;</li> <li>• Continued use of ICLs.</li> </ul> <p>The China national regulations and public information such as reporting for CFLs price are reviewed to validate the identified alternatives. Based on CEC local knowledge, it is judged that baseline alternatives identified is appropriate and complete.</p>	OK	OK
B.4.2	Does the project identifies correctly and excludes those options not in line with regulatory or legal requirements?	DR	Yes. During the identification, national regulatory has been fully considered.	OK	OK
B.4.3	Have applicable regulatory or legal requirements been identified?	DR	Yes. See above.	OK	OK
B.4.4	Does the PDD identify the most likely baseline scenario in absence of the project activity?	DR	Yes. The most likely baseline scenario in absence of the project activity is the scenario of “continued use of ICL”, which represents the lighting option choice in the business as usual scenario in China households.	OK	OK
B.4.5	Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc)?	DR	<p><b>CAR05</b></p> <p>Please provide evidence to demonstrate the barrier “Lack of consumer information”.</p>	<del>CAR05</del>	OK
<b>B.5 Demonstration of eligibility for a generic CPA</b>					



B.5.1	Is the approach criteria for CPAs in accordance with that stated under the PoA?	DR	<p>The eligibility criteria stated under SSC-PoA should be confirmed by the SSC-CPA implementer(s).</p> <p><b><u>CL10</u></b></p> <p>Please clarify how to check the compliance of CPA with the eligibility criteria.</p>	<del>CL40</del>	OK
B.5.2	Is the CPAs in accordance with the above criteria?	DR O	Yes. The specific information refers to CPA-DD.	OK	OK
<b>B.6 Estimation of emission reductions of a generic CPA</b>					
<b>B.6.1 Explanation of methodological choices</b>					
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 v4.0, the total lumen output of the CFL should be equal to or more than that of the ICL being replaced; lumen output of ICL &amp; 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



<p>B.6.1.2 Have conservative assumptions been used when calculating the emission reductions?</p>	<p>DR</p>	<p>Yes. Conservative assumptions for the parameters are shown below:</p> <p>NTG: Net-to-gross adjustment factor, a default value of 0.95 is used.</p> <p><math>O_i</math>(Average daily operating hours of the lighting devices (ICLs) replaced by the group of "i" lighting devices): A fixed value of 3.5 hours is used to estimate the carbon dioxide emission reductions under the CDM project.</p> <p>Lamp Failure Rate (<math>LFR_y</math>): for ex-ante Estimation, a linear curve will be employed by CPA in the case of 10,000 hour lamp implies 5% LFR for every 1000 hours and once 50% LFR is reached, the life of the project comes to an end; for Ex-post Determination, either of the following two options will be employed by CPA to determine the minimum number of <i>ex post</i> monitoring surveys for Lamp Failure Rate (<math>LFR_{i,y}</math>) and where relevant <i>ex post</i> average daily operating hours (<math>O_i</math>):</p> <ol style="list-style-type: none"> <li>1. Once every 3 years; or</li> <li>2. Once for every 30% of the elapsed rated lifetime of the lamp.</li> </ol> <p>CFLs utilized under the proposed PoA shall be marked for clear unique identification.</p> <p>This is in accordance with the requirements of the methodology.</p> <p><b><u>CL11</u></b></p> <p>During the explanation of methodologies choices, the following shall be further clarified:</p> <ol style="list-style-type: none"> <li>1. The assumption employed by the parameter <math>TD_y</math>(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).</li> <li>2. Which option is chosen for ex-post determination frequency</li> </ol>	<p>CL11</p>	<p>OK</p>
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<b>B.6.2 Data and parameters that are to be reported ex-ante</b>				
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	<p>Yes. Parameters to be reported in each CPA are complete and in line with the applied methodology</p> <p><math>O_i</math>: Average daily operating hours of the baseline ICLs of the group of "I", fixed 3.5 hours per 24 hrs</p> <p><math>X_i</math>: Number of operating hours per year for equipment type I, 1277.5 hours per year (default value of 3.5 hours per 24 hrs)</p> <p><math>TD_y</math>: The factor for average annual technical grid losses during year y, default value of 10% under the proposed programme</p> <p>NTG: Net-to-gross adjustment factor, default value of 0.95 under the proposed programme.</p> <p><math>L_i</math>: Average life (or Rated Average Life until average life value is available) for equipment type i</p>	OK	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><math>EF_{CO_2,ELEC,y}</math> will be calculated as per the latest approved version methodology AMS-I.D and fix the value ex-ant.</p>	OK	OK
<b>B.6.3 Ex-ante calculations of emission reductions</b>				
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, the explanation of methodological choices is correctly selected for the CPA.</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, the equations to be used for calculation of emission reductions of a CPA are correctly indicated.	OK	OK
<b>B.7 Application of the monitoring methodology and description of the monitoring plan</b>				
<b>B.7.1 Data and parameters to be monitored by each generic CPA</b>				
B.7.1.1 Are the parameters to be monitored in accordance with the requirement of the applied methodology?	DR	<p>Yes. According to the AMS-II.J v4.0, the parameters to be monitored are listed in the PoA-DD.</p> <p>Monitored parameters are: <math>n</math> (Sample size of Monitoring Survey), <math>LFR_{i,y}</math> (Ex post Lamp Failure Rate for CFL type <math>i</math> in year <math>y</math> (fraction)), <math>DATE_{start}</math> and <math>DATE_{end}</math> (The start date and completion date of installation of CFLs), <math>Q_{BL,i}</math> (The number of each type of the replaced ICLs collected and destroyed), <math>Q_{PJ}</math> (Number of each type of CFLs in operation under the CPA), <math>P_{i,BL}</math> (Rated power of each type of the replaced ICLs) and <math>P_{i,PJ}</math> (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 <math>n</math> (Sample size of Monitoring Survey) is defined as 20%, and therefore the final sample size is finalized as the calculated <math>n/0.8</math>.</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	Yes.  The information all parameters contained in the monitoring plan, including name, data unit, description, source of data are stated clearly and transparently.	OK	OK
<b>B.7.2 Description of the monitoring plan for a generic CPA</b>				
B.7.2.1 Is the monitoring plan clearly described and in compliance with methodology?	DR	Yes. As per applied methodology AMS-II.J, the monitoring for the SSC-CPA will be carried out at the following levels:  1. CFL distribution  2. Ex-post Monitoring Survey  3. ICL destruction  The relevant monitoring plan has been clearly described in the PoA-DD.	OK	OK
B.7.2.2 Are the responsibilities and institutional arrangements for data collection and archiving clearly provided?	DR	Yes, roles and responsibilities of CME and CPA implementer separately and the training are clearly described.	OK	OK
B.7.2.3 Is there a sampling plan involved in each CPA? If yes, the following requirements shall be checked.	DR	Yes, there is a sampling plan designed for each CPA.	OK	OK



B.7.2.4 Does the sampling plan present a reasonable approach for obtaining unbiased, reliable estimates of the variables?	DR	<p>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 v4.0.</p> <p>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.</p>	OK	OK
B.7.2.5 Is the population clearly defined, and how well does the proposed approach to developing the sampling frame represent that population?	DR	<p>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.</p>	OK	OK
B.7.2.6 Is the proposed sampling approach clear?	DR	<p>Yes. It is 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.</p>	OK	OK



<p>B.7.2.7 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?</p>	<p>DR</p>	<p>Yes, principles for determine the proposed sample size has been regulated in the PoA-DD:</p> <ul style="list-style-type: none"> <li>• The sampling size will be determined by a minimum 90% confidence interval and the 10% maximum error margin; the size of the sample shall be no less than 100.</li> <li>• Sampling must be statistically robust and relevant i.e., the survey has a random distribution and is representative of target population (size, location).</li> <li>• The method to select respondents for interviews is random.</li> <li>• The survey is conducted by site visits.</li> <li>• Only persons over age 12 are interviewed.</li> </ul> <p>Detailed proposed sample size will be determined in each CPA-DD.</p>	<p>OK</p>	<p>OK</p>
<p>B.7.2.8 Is the sample representative?</p>	<p>DR</p>	<p>Yes. It is 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"> <li>1. Each household is allotted a unique serial number starting at 1 and up to the total number of households in the project boundary.</li> <li>2. Using random number generators, the households are randomly chosen.</li> </ol>	<p>OK</p>	<p>OK</p>



B.7.2.9 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	Yes. 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.	OK	OK
B.7.2.10 Are the procedures for the data measurements well defined and do they adequately provide for minimizing non-sampling errors?	DR	<p>Yes. The procedure for the data measurements was well defined. Only the definite information will be asked and archived. The data collection method was provided adequately for minimizing non-sampling errors. 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.</p> <p>Thus it is assessed that the quality control and assurance strategy is adequate, and the mechanisms for avoiding bias in the answer.</p>	OK	OK
B.7.2.11 Does the frame contain the information necessary to implement the sampling approach?	DR	<p>Yes. The schedule for implementing the survey for a SSC-CPA is that: 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-ant 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**

<b>CL/CAR/FAR Requests</b>		<b>Ref. to table 1</b>	<b>PP's Response</b>	<b>Validation Team's Conclusion</b>
CAR01	Please provide evidence to demonstrate the geographical coordinates of Shanxi Province, and the map of Shanxi Province shall be indicated in the PoA-DD.	Part I A.5.1	The official link has demonstrated the geographical coordinates. Please refer to footnote 6. And the map of Shanxi Province Region has included in the PoA-DD. Pls. refer to Part I section A.5.	OK.  The evidence for geographical coordinates of Shanxi Province has been checked to be official and authentic, the map has also been indicated in the final PoA-DD.  CAR01 is closed.
CAR02	Please describe the technology of baseline scenario in section A.6 as per the requirements of the SSC PoA-DD template.	Part I A.6.3	The baseline technology, i.e. the minimum output of incandescent lamp are included in Part I section A.6.	OK.  The technology of baseline scenario has been described in the final PoA-DD, the baseline information is consistent throughout the DD.  CAR02 is closed.
CAR03	The LoA from China DNA and the MoC of the proposed PoA and CPA1 has not been available	Part I G.1	LoA and MoC have been provided to the DOE.	OK.  The information in the LoA and MoC is verified to be authentic, and the latest template of MoC under VVS track is correctly applied.  CAR03 is closed.



CAR04	The reference of methodologies and tools are not mentioned in the PoA-DD	Part II B.1.1.1	“AMS-II.J: Demand-side activities for efficient lighting technologies” (Version 4.0) and “Tool to calculate the emission factor for an electricity system” (Version 02.2.1) are applied to this PoA. Pls. refer to section B.3.	OK.  The reference of methodologies and tools are correctly applied in the final PoA-DD.  CAR04 is closed.
CAR05	Please provide evidence to demonstrate the barrier “Lack of consumer information”	Part II B.4.5	This has been demonstrated in the stakeholder consultation process.	OK.  Confirmed by reviewing the stakeholders’ meeting minutes, the barrier is really existed. This is cross-checked during the on-site interview with the householders.  CAR05 is closed.
CL01	Please clarify the basis for the estimated amount of the replaced household incandescent lamps (ICLs) and provide relevant evidence.	Part I A.2.1	The amount of planned installed CFLs is estimated based on the statistics of populations located in Shanxi Province. The official link has been provided.	OK.  The statistics of households has been cross-checked via reviewing the official website and on-site interview, and updated total estimated amount 50 million CFLs is considered appropriate.  CL01 is closed.
CL02	1. Please clarify whether there is a minimal fee charge involved in the CPAs under the proposed PoA.  2. Please further describe how the PoA contributes to the sustainable	Part I A.2.1	1. Under the programme, high quality long-life CFLs would be distributed by CG and other project implementer(s) to residential households in exchange of ICLs for free or for a minimal fee.  2. The successful implementation of the PoA	OK.  1. The CME states CFLs will be distributed by CG and other project implementer(s) to residential households in exchange of ICLs for free or for a minimal fee no higher than 1RMB. This is





	development.		will have environmental, social and technological benefits.  Please refer to Part I section A.2.	cross-checked against the CME Management Manual and on-site interview.  2. The measures that the PoA contributes to the sustainable development have been clearly indicated in the final PoA-DD. Also it is confirmed by reviewing the LoA.  CL02 is closed.
CL03	A valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity (DNA approval) shall be provided	Part I A.2.4	LoA of the proposed PoA has been provided to the DOE to confirm that the proposed PoA is a voluntary action by the CME.	OK.  Confirmed by reviewing the LoA, the proposed PoA is a voluntary action by the CME CG.  CL03 is closed.
CL04	Please clarify whether there is national subsidy involved in the proposed PoA regarding the CFLs distribution.	Part I A.2.5	The proposed programme of activities does not involve any public funding.	OK.  Cross-checking by document review and on-site interview with local government officials, it is confirmed that no any public funding is involved in the proposed PoA.  In addition, CEC has checked the public available information regarding promoting CFLs purchase and distribution in rural households, no any regulations are found besides "The Provisional Measures of Financial Subsidy for Promoting Efficient Lighting Equipment" /18/ was published by NDRC and Ministry of Finance in 2007 to provide government subsidy for the sales of



				<p>CFLs, however, the promotion was limited in major cities of China and small proportion was promoted in rural areas/19/. This was verified by interviewing local government officials.</p> <p>CL04 is closed.</p>
CL05	Please further clarify the additionality of the proposed PoA as per the latest guideline.	Part I B.1.1	<p>According to the “Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0), reported as Annex 27 to EB 68, documentation of barriers defined above is not required for 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 (e.g. installed capacity up to 15 MW). Paragraph 2(c) of this document reads as follows:</p> <p>“ Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5% of the small-scale CDM thresholds.”</p> <p>The component project activities, 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</p>	<p>OK.</p> <p>As the proposed PoA is within the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds according to Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0). Therefore, the additionality is automatic.</p> <p>The demonstration in the final PoA-DD is validated to be credible.</p> <p>CL05 is closed.</p>



			<p>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.</p> <p>Please refer to section B.1 of PoA-DD for detail.</p>	
CL06	<p>1. The CPA inclusion eligibility criteria shall be identified according to the PoA standard.</p> <p>2. 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.</p>	Part I B.2.1	<p>1 . Eligibility criteria have been revised according to Para.16 of the PoA standard. Pls. refer to Part I section B.2.</p> <p>2. The related revision has been reflected in the PoA-DD. Pls. refer to Part I section B.2 and section C (d).</p>	<p>OK.</p> <p>1. Eligibility criteria in the final PoA-DD have been thoroughly checked and confirmed to be in accordance with the requirements of Para.16 of the PoA standard.</p> <p>2. Three measures regulated in the final PoA-DD to avoid double counting: (1)CFLs unique mark; (2) agreements from CFL manufacturer and project households to relinquish their rights over the CERs generated from the project CFL use; (3) Confirmation that this SSC-CPA is not registered or being registered, as a stand-alone CDM or as a CPA of another PoA.</p> <p>It is judged the measures can effectively exclude the double counting.</p>



				CL06 is closed.
CL07	Please clarify each CPA qualification justification with the applied methodology.	Part I B.3.3	Justification has been provided in the revised PoA-DD.	OK.  It is verified the qualification justification for each CPA is appropriate and credible.  CL07 is closed.
CL08	Please identify the CME operational and management system according to para.19 of the PoA standard.	Part I C.2	The description of CME operational and management system has been revised in Part I section C.	OK.  It is confirmed CME operational and management system has been established according to para.19 of the PoA standard. In addition, the description in the PoA-DD is cross-checked against the CME Management Manual.  CL08 is closed.
CL09	Please justify how the start date of the PoA and the start date of the crediting period of PoA determined.	Part I D.1.1	The start date of the PoA is defined as the date GSP of the PoA-DD.  The start date of the crediting period of PoA is chosen as CFL-installation completion date or the first CPA or registration date, whichever is late.	OK.  The start date of the PoA and the start date of the crediting period of PoA have been clearly justified.  The start date is correctly defined as 24/07/2012, which is the date of publication of the PoA-DD for global stakeholder consultation, it is cross-checked against the UNFCCC website.  CL09 is closed.



CL10	Please clarify how to check the compliance of CPA with the eligibility criteria	Part II B.5.1	Related evidence documents should be provided to the DOE according to eligibility criteria. Pls. refer to Part I section B.2.	OK.  The applied documents and methods are indicated in the Eligibility Criteria in Part I section B.2. it is judged appropriate.  CL10 is closed.
CL11	During the explanation of methodologies choices, the following shall be further clarified:  1. The assumption employed by the parameter $TD_y$ (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).  2. Which option is chosen for ex-post determination frequency.	Part II B.6.1.2	1. A default value 10% is applied. Pls. refer to Part II section B.6.1.  2. The first sample survey will be carried out within the first year after installation of all efficient lighting equipment, and the subsequent surveys will be carried out once every 3 years.	OK.  A default value 10% is chosen for the parameter $TD_y$ .  Ex-post determination frequency is clearly defined in section B.7.1.  The above is verified to be in accordance with the applied methodology.  CL11 is closed.



## Appendix B Certificate of Competence

### XU Linghua

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, 5.1, 11.1, 12.1, 13.1

Beijing, 01 Dec 2011

ZHANG Xiaodan

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CDM Supervisor, Technical Director

ZHANG Ruizhi

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Project Implementation 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

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Quality Assurance Management Division



## LIU Yimin

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

CDM Technical Expert: Yes

Industry Sector Expert for Technical Area(s): 3.1

Beijing, 05 Jul 2012

ZHANG Xiaodan

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CDM Supervisor, Technical Director

XU Linghua

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Quality Assurance Management Division

## 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 name.

CDM Supervisor, Technical Director

XU Linghua

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

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 positioned below the name.

CDM Supervisor, Technical Director

XU Linghua

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

Quality Assurance Management Division