
VALIDATION REPORT

“Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA”

IN REPUBLIC OF KOREA

REPORT No. CDM00291

VERSION No. 2.0

PoA VALIDATION REPORT

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30/06/2012	CDM00291	
Approved by:	Organizational unit:	
INANAGA, Hiroshi	Deloitte Tohmatsu Evaluation and Certification Organization	
Client:	Client ref.:	
1. Shinsung ENG Co. Ltd. 2. Shinsung Solar Energy Co. Ltd. (CME & CPA 1 implementer)		
Programme of activity title:		
Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA		
Host country:	GHG reducing measure/technology:	Scope:
Republic of Korea	Grid connected photovoltaic system generation	1. Energy industries (renewable/nonrenewable sources)
Size:	Methodology applied:	Estimated annual emission reduction:
CDM PoA SSC	AMS. I.D (Ver. 17)	-

Report No.:	Subject group:	
CDM00291	Environment	
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Indexing terms
Climate Change, Kyoto Protocol, Validation, Clean Development Mechanism

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Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CME	Coordinating Managing Entity
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CPA	Component project of activity
CPA-DD	Component project of activity Design Document
Deloitte-TECO	Deloitte Tohmatsu Evaluation and Certification Organization
DNA	Designated National Authority
DOE	Designated Operational Entity
EIA	Environmental Impact Assessment
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(ses)
GSC	Global Stakeholder Consultation
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
KEMCO	Korea Energy Management Corporation
KEPCO	Korea Electric Power Corporation
KPX	Korea Power Exchange
LoA	Letter of Approval
MP	Monitoring Plan
NGO	Non-governmental Organization
ODA	Official Development Assistance
OM	Operational Margin
PO	Project Owner
PoA	Programme of Activities

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PoA-DD	Programme of Activities Design Document
PP	Project Participants
RPS	Renewable Portfolio Standard
UNFCCC	United Nations Framework Convention on Climate Change

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History of this document

Version	Date	Nature of revision
0.1	30/06/2012	Initial preparation
1.0	28/09/2012	Minor change
1.1	11/10/2012	Minor change
2.0	09/11/2012	Revision after Technical Review

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1 EXECUTIVE SUMMARY

Deloitte-TECO has performed a validation of the “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA”. The validation was performed on the basis of the UNFCCC criteria for the CDM and host party criteria, as well as the criteria required for consistent project operations, monitoring, and reporting.

The review of the PoA-DD, CPA-DD, the evidential documents, and the subsequent follow-up interviews have provided Deloitte-TECO with sufficient evidence to determine the fulfillment of the stated criteria.

This proposed project correctly applies AMS. I.D., “*Grid connected renewable electricity generation*” (version 17, EB61), and other relevant tools.

During the desk review and follow-up interviews of the on-site assessment, a number of outstanding issues were identified as CLs and CARs and were eventually closed in preparing for the submission of this validation report to the CDM EB.

The following major CARs were identified:

- The PP is requested to revise the eligibility criteria for inclusion of a SSC-CPA in the PoA (checklist for each CPA) consistent with the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (version 01.0), EB65, Annex 3" (A.4.2.2. of PoA-DD and B.2. of CPA-DD) (CAR 1).
- The boundary of the Figure A.4 (on-grid photovoltaic power generation process) should be revised. A map of the project site and/or the figure of the boundary will be confirmed after submitting the evidential documents (facilities location plan, etc.). (CAR 2)
- The PoA CDM operational manual 'Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction (draft)'. is not in accordance with operational and management plan in the PoA-DD and the PO is requested to revise the roles and responsibilities, record, personnel training, capacity development procedure, CPA implementer's roles and responsibilities etc.
 - Declaration letter from the CPA to the CME should be prepared and submitted to the DOE when it is available.
 - The measures for continuous improvement of the PoA management system, such as QA/QC procedure is not indicated in the PoA CDM operation instruction (draft).
 - It is necessary to describe the condition (when, how) of the training and education for the CPA by the CME, both in the PoA CDM operational manual and the PoA-DD.
 - The data maintenance for the CPA should be described in the PoA CDM operational manual 'Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction (draft)'. (CAR3)

Details of the outstanding issues, including how corrective actions were implemented with relevant evidence, were dealt with in the following part of this report and in Appendix A.

In conclusion, it was demonstrated that this proposed project “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA”, as described in the revised PoA-DD (version 2, completed on 29 October 2012), meets all relevant UNFCCC requirements for the CDM and all relevant criteria of the host country criteria, and correctly applies the baseline and monitoring

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methodology AMS.ID. (Version 17, EB61). The identified CARs and CLs identified were corrected and closed.

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2 INTRODUCTION

2.1 Objective of CDM validation

Shinsung ENG Co., Ltd. has commissioned Deloitte-TECO to validate the “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA” (hereinafter referred to as ‘the PoA’). The purpose of a validation is to conduct an independent third-party assessment on the PoA. In particular, the PoA's baseline, the MP, and the PoA's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the PoA design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM PoA and is seen as necessary to provide assurance to stakeholders on the quality of the PoA and its intended generation of CERs. The UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakesh Accords.

2.2 Scope

The validation scope is defined as an independent and objective review of the PoA-DD, the PoA's baseline study, the monitoring plan and other relevant documents. The information in these documents is reviewed against the Kyoto Protocol requirements, UNFCCC rules, and associated interpretations. Deloitte-TECO has, based on the recommendations in the Validation and Verification Standard (VVS), employed a risk-based approach in the validation process, focusing on the identification of significant risks to the PoA implementation and the generation of CERs.

While validation is a third-party exercise that is completely distinct from consulting, stated requests for clarifications and/or corrective actions may provide input for improvement of the PoA design. The validation process applied the approved consolidated baseline and monitoring methodology AMS. I.D. “Grid connected renewable electricity generation” (version 17, EB61) monitoring methodology and included a review of the following documents:

- PoA Design Document
- Supporting documents made available to the validators
- Information collected through performing interviews and during the on-site assessment

3 VALIDATION APPROACH

In order to ensure transparency, a validation protocol was customized for the PoA, according to the VVS (Version 02.0, EB65). The protocol that was prepared according to the VVS 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:

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- It organizes, details, and clarifies the requirements a CDM PoA is expected to meet
- It ensures a transparent validation process where the validator(s) will document how a particular requirement has been validated and the result of the validation

The validation protocol consists of two tables. The completed validation protocol is enclosed in Appendix A to this report.

Figure 1 Validation protocol tables

Validation Protocol Table A1: Validation Checklist based on VVS (ver02.0)						
ID	Checklist Question	Reference	Means of verification (MoV)	Draft Conclusion	Comment	Final Conclusion
requirement No. of CDM VVS	The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.	The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.

Validation Protocol Table A2: Investment Checklist based on EB62 Annex 5, Ver 05				
Category	Guidance	Comment	Draft Concl	Final Concl
As shown in Guidance	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.	The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.

Validation Protocol Table A3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Validation conclusion
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section.	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

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4 VALIDATION METHODS

The validation process consisted of the following three phases:

- I* A desk review of the PoA design documentation
- II* Follow-up interviews with the PoA stakeholders
- III* The resolution of outstanding issues and issuance of the final validation report and opinion.

4.1 Document review, including risk approach

The PoA-DD and CPA-DD (generic and specific) submitted by the client and additional background documents related to the PoA and CPA [01] design and baseline were reviewed. A complete list of all documents and evidence reviewed is included in the References section of this report. The PoA-DD, CPA-DD (generic), and CPA-DD (specific, CPA[01] (ver. 01) were submitted to the DOE (hereinafter referred to as Designated Operational Entity) for completeness check on 09 March 2012 before going to the GSC (hereinafter referred to as Global Stakeholder Consultation) on 20 March 12.

4.2 Follow-up interviews

During the period of 2-5 April 2012, Deloitte-TECO conducted interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Shinsung ENG, Shinsung Solar Energy Co., Ltd., and the related stakeholders were interviewed. The details of interviewees and main topics of the interviews are summarized below:

Interviewee list

ID	Name	Function	Organization
1	Sang Won Ahn	Sales Team Manager	Shinsung ENG.
2	Sang Sun Ha	Director	Ecoeye Co., Ltd.
3	Jeong Hwan Lee	Consultant	Ecoeye Co., Ltd.
4	Jae Hyun Yeo	Deputy General Manager	JEC Solar Co., Ltd. (local stakeholder)
5	Mi Ok Ji		Local stakeholder

The schedule for the 2-5 April 2012 on-site visits was as follows:

- 2 April 2012: opening meeting, document review
- 3 April 2012: on-site visit, including stakeholders interview, interview with the PP to check technical items
- 4 April 2012: document review
- 5 April 2012: internal meeting, closing meeting
- The validator of on-site visit:
 - Team leader: Park Yong Tae
 - Team member: Ishigai Chikara

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Main topics

2 April 2012 – 3 April 2012
<p>Opening meeting with the PO and CDM consulting company</p> <ul style="list-style-type: none"> - The purpose of the validation - Validation methods - Validation schedule - Understand the background of the PoA <p>Document review with the CDM consulting company and CME</p> <ul style="list-style-type: none"> - Confirmation on non-involvement of ODA - Monitoring and reporting procedures - Additionality - Baseline methodology - Estimated emission reduction and emission factors applied
4 April 2012
<p>Interview with local residents (stakeholders)</p> <ul style="list-style-type: none"> - Confirmation of questionnaire response - The influence by the PoA - The influence of the PoA on the local economic development
5 April 2012
<p>Document review</p> <ul style="list-style-type: none"> - Stakeholder consultation process - Environmental impacts - Legal compliance - Resources, training needs, and procedures for operation and maintenance - Benefits from the CDM registration - Prior to the CDM consideration - Environmental impacts - Stakeholder comments - Monitoring and reporting procedures <p>Closing meeting with the PO and CDM consulting company</p> <ul style="list-style-type: none"> - Summary of the CARs, CLs, and Forward Action Requests (FARs) in the Validation Checklist - Actions after the on-site assessment

4.3 Clarification requests and corrective action requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification, and any other outstanding issues that needed to be clarified for Deloitte-TECO's positive conclusion on the project design. The CARs and CLs raised by Deloitte-TECO were resolved during subsequent communications between the client and Deloitte-TECO. To guarantee the transparency of the validation process, the concerns raised and responses given are described in the validation protocol in Appendix A.

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After the on-site visit, Deloitte-TECO prepared a clarification and CAR list, and final answer from the PP submitted to Deloitte-TECO. When modifications to the PoA design were necessary to resolve Deloitte-TECO's concerns, the client revised and resubmitted the PoA-DD. After reviewing the revised and resubmitted the PoA-DD, Deloitte-TECO issued the final validation report and opinion.

4.4 Internal quality control

The draft and final validation reports were reviewed according to Deloitte-TECO's internal quality control policy. A technical review was performed by a technical reviewer meeting Deloitte-TECO's qualification criteria for CDM validation.

Engagement Quality Assurance Review System (EQAR)

		Objective	【IN】	【OUT】	Detail
Level	Reviewer	Responsibility	Information	Reports	Comments
1	Quality Control Group*4	1) Validation Review the validation implemented effectively and efficiency from an independent standpoint, in conformity with the step. Validation checklist (Internal review). Review technically the additionality, baseline methodology, and monitoring methodology. 2) Verification Review the reduction of CDM Verification checklist (Internal Review). Review the reduction of GHG.	1) Validation PDD (Monitoring plan) Audit plan document Validation/Verification report DR DR report VVS 2) Verification Monitoring report, verification report and related documents	1) Validation Completion of correction requested Confirmation of evidence for VVS Abstract of Audit outcome Witness Review Sheet Validation internal review checklist. Appropriateness of applied methodologies *3 Confirmation of accuracy and reliability of data and equations, Review Sheet 2) Verification Review Sheet Verification internal review checklist	1) Validation/Verification Checkmark Add comments to the abstract Comments to the materiality and uncertainty, consistency of reports etc. In terms of Request for Review and other requests, it will be implemented by using validation/verification review sheet during technical reviews.
	English proofreader	Review and check English grammar, spelling and imprecision of expressions.	Draft report of Validation/Verification/certification	Corrections to the grammatical, spelling mistakes and expressions.	File the result of English proofreading
2	GHG Team Leader (Engagement Quality Assurance Reviewer)	Review the appropriateness of the process from ordering the CDM project to requesting registration and issuance to EB, based on "Operational Management Procedure CDM (Validation/Verification)"	Statement on procedure Abstract of Audit outcome Witness	Engagement Quality Assurance statement for Operational procedure OMP sheet	Fill concerns in the comment field

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3	Judgment Committee	Perform the Engagement Quality Assurance Review for the determination of submission to register CDM project and/or the response to the request for review from CDM EB, in order to judge under objective and fair rules, based on the Steps (1) and (2), in case of request from the GHG Team Leader/CDM Manager	PDD, PoA-DD and CPA-DD (Monitoring plan) Draft report of Validation/Verification/Certification	Minute of Judgment Committee	Add comments to the minute
4	Chief Executive Officer	Express the final opinion, based on (1)(2) and (3), for Validation/Verification/Certification	Engagement Quality Assurance statement for Operational procedure	Expression of opinion (Validation/Verification/certification report)	Need to comment if it is an adverse opinion

* 1 Competency of reviewers shall be equal or higher than an audit team leader.

* 2 An audit team leader, an Audit Director and EQAR shall not be served concurrently by the same personnel.

* 3 Title(s) of evidential document for important expressions specifically representing numeric values and conclusions shall be clearly indicated in reports and VVS checklists.

* 4. Technical reviewer shall be designated by agreement of CDM Manager and Quality Control Group Manager.

5 GLOBAL STAKEHOLDER CONSULTATION

The PoA-DD and CPA-DD (generic and specific) were made publically available on the UNFCCC website on 20 March 2012, and invited comments until 18 April 2012 from all parties, stakeholders, and NGOs.

No comments were received during the period for comments. During the on-site visit, interviews with local stakeholders were conducted without any critical comments identified.

6 VALIDATION FINDINGS

In the following sections, the findings of the validation are stated. The validation findings presented herein include the following items:

- 1) The findings from the desk review of the original PoA-DD and CPA-DD (for CPA[01]) and the findings from follow up interviews during and after the on-site visit are summarized. The more detailed record of these findings can be found in the Validation Protocol in Appendix A.
- 2) Where Deloitte-TECO identified issues that needed clarification or that represented a risk to the fulfillment of the PoA and CPA [01] objectives, CLs or CARs were issued respectively. The CLs and CARs raised during the validation are described and accounted for in this section, and are further documented in the Validation Protocol in Appendix A. The validation of the PoA and CPA [01] resulted in three CARs and eight CLs.
- 3) Where CLs or CARs have been issued, the exchanges between the client and Deloitte-TECO to resolve these CLs or CARs are summarized.
- 4) The conclusions for validation subject are presented.

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The final PoA-DD was revised and resubmitted by the PP, which serves as a basis of the assessment described herein.

6.1 Approval

The DNAs of the respective parties have been confirmed via the DNA lists on the UNFCCC website.

Party involved	Republic of Korea (host party)	Concl.
Status of the LOA	The DOE has received the LOA from the PP.	Ok
Issued by	Ministry of Knowledge economy of Republic of Korea	Ok
Issue date of the LOA	24 August 2012	Ok
Proposed project title indicated in the LOA	Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA	Ok
Authorized PPs indicated in the LOA	Shinsugn ENG Co., Ltd. Shinsung Solar Energy Co., Ltd. (CME)	Ok
Is participation voluntary?	Yes	Ok
Contribution to the sustainable development	Stated	Ok
Does the LOA refer to a specific version of the validation report?	No	Ok

6.2 Authorization

Republic of Korea is involved in the PoA. The written LoA from the DNA has been confirmed as follows: Ratification date of the Kyoto Protocol

: 8 November 2002 (confirmed via the website of UNFCCC)

6.3 Contribution to sustainable development

The LoA was issued by the respective DNA of the PP which authorized voluntary participation in the PoA. The title of the PoA was referred to in the LoA exactly as it appeared in the PoA-DD and CPA-DD submitted for the registration. The LoA confirmed that the PoA would contribute to the sustainable development of the host party, South Korea. The approval was unconditional. Also, it was confirmed that no official development funding was involved in this PoA.

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6.4 Modalities of communications

It was confirmed valid and accurate as follows:

Identification of the signatory of the MOC statement

	PO
The name of PPs	Shinsung ENG Co., Ltd Shinsung Solar Energy Co.,Ltd. (CME)
The name of the authorized personal	Shinsung ENG Co., Ltd Mr. Sun Keuk-Sang Shinsung Solar Energy Co.,Ltd. (CME) Mr. Ahn Sang-Won Mr. Seo Hong-suk
Employment status of the authorized personal	Managers of the Shinsung ENG Co.,Ltd. and Shinsung Solar Energy Co.,Ltd.
Specimen signature	Included in the confirmation letter
The name of the authorizer	Mr. Lee Soon Ku Shinsung ENG Co., Ltd. Mr. Lee Wan-Keun Shinsung Solar Energy Co., Ltd. (CME)
Employment status of the authorizer (PP and CME)	CEO (Shinsung ENG Co., Ltd) CEO (Shinsung Solar Energy Co.,Ltd. (CME))
Signature	Included in the confirmation letter
Relevant supporting document	Official operation license, which has been issued by the local administrative management bureau

6.4.1 Modalities of communication statement

It was also ensured that the MOC statement, which complies with the following relevant forms and requirements on the MOC form (F-CDM-MOC), is received from the authorized personal of the PO (the contractual entity of the validation services) to the DOE via email directly:

Check items	Findings	Conclusion
The version of the form (F-CDM-MOC)	02.1, the latest version of the form	Ok
Nomination of focal point entity/ies	Joint focal point authorities Shinsung ENG Co., Ltd Mr. Sun Keuk-Sang Shinsung Solar Energy Co.,Ltd. (CME) Mr. Ahn Sang-Won Mr. Seo Hong-suk Have been nominated	Ok
Authorized signatory	Shinsung Solar Energy Co.,Ltd. (CME) Mr. Ahn Sang-Won (primary authorised signatory) Mr. Seo Hong-suk (alternative authorized signatory)	Ok
Annex 1	It was confirmed that the same authorized signatories of all of the PP listed in the PoA-DD have been included in this section.	Ok

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6.5 Coordinating/managing entity and participants in a PoA

The CME developed and submitted the final version of a documentary evidence of management system, the PoA CDM operational manual “Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction”, issued in October 2012.

The operational manual consists of nine items that were determined and demonstrated based on the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities” EB 65, Annex 3.

The DOE confirmed that the operational manual was developed and revised to be satisfied by the requirements of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities EB 65, Annex 3”.

6.6 PoA design document

(Ref. /1/)

Deloitte-TECO confirmed that the latest CDM SSC-PoA-DD form (Version 02.0) was used. On the stage of the global stakeholder consultation process CDM-SSC-PoA-DD (Version 01) was used. However, the PP used and updated the latest form of CDM-SSC-PoA-DD (Version 02), in accordance with “ ***GUIDELINES FOR COMPLETING THE PROGRAMME DESIGN DOCUMENT FORM FOR SMALL-SCALE CDM PROGRAMMES OF ACTIVITIES, Version 02.0)***” Annex 30 of EB67. No critical instances of noncompliance were found.

6.7 Description of PoA/CPAs

In order to validate the accuracy and completeness of the project description, the validation process consisted of the following phases:

- I Assess the CDM-PoA-DD and the CDM-CPA-DD
- II Confirm the framework developed for the implementation of the PoA and define a CPA under the PoA

6.7.1 Assessment of CDM-PoA-DD and the CDM-CPA-DD

The information presented in the CDM-PoA-DD and the PoA-specific CDM-CPA-DD was confirmed to be consistent with the actual planning and implementation procedures of the PoA as follows:

- A review of the PoA-DD, the generic CPA-DD and the specific CPA-DD
- On-site visit to the place where the relevant CPA [01] is implemented and interview with the relevant stakeholder and personnel with knowledge of the project in attendance
- A review of the PoA CDM operational manual, “Shinsung Solar Energy the grid the Grid Connected Solar PV generation of the PoA CDM operation instruction”

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- A review of specific requirements of the PoA included the eligibility criteria for inclusion of a CPA in the PoA

As described in the validation protocol, Appendix A, issued of CARs and CLs, include eligibility criteria for the inclusion of a CPA in the PoA, and requirements of the PoA CDM operational manual were assessed and revised based on the CDM PoA requirements. Therefore, Deloitte-TECO confirmed that the PoA description, as included in the latest PoA-DD and CPA-DD, is sufficiently accurate and correct in order to comply with the requirements of the CDM.

6.7.2 The framework developed for the implementation of the PoA, and defining a CPA under the PoA

The CME of the PoA is designated as Shinsung Solar Energy Co., Ltd. The CPAs under the PoA will be implemented within the host country, Republic of Korea.

The CME, Shinsung solar Energy Co., Ltd., developed a PoA CDM Operational Manual of “Shinsung Solar Energy the grid Connected Solar PV generation of Programme CDM operation instruction”, which consists of nine sections, i.e., definition of the PoA, role and responsibilities of the CMD and CPA implementers, CPA inclusion and management, training and monitoring, Document and Data control and Improvement of the operational manual. In addition to that , the CME developed to manage the PoA with eligibility criteria for inclusion of a CPA.in the PoA.

Moreover, the CME prepared additional contracts between the CME and CPA implementers, such as CPA developing contract, double counting prevention confirmation letter.

Deloitte-TECO confirmed by reviewing the relevant documents and performing interview with the CME and the CPA[01] implementer that the framework and additional documents for the implementation of the PoA were sufficiently developed.

6.7.3 The nature and technical aspects of the programme of activities

The proposed PoA involves grid-connected Photovoltaic power generation activities with installed capacity up to 15 MW in the Republic of Korea. The typical CPA will generate electricity using energy from the sunlight and will be exported to the national grid. The power plant will mainly consist of arrays of solar module, inverter, electric meter, transformer, etc.

In terms of E+/E- policy in the Republic of Korea, where the boundary of the PoA, there is no mandatory policy/regulation, which requires any public agency or private company to implement the PV power generation activity. The proposed PoA is a voluntary action by the CME. Under "Shinsung Solar Energy Grid Connected Photovoltaic Power Generation" (PoA), photovoltaic power generation will be distributed by the SSC-CPA implementer(s) to connect grid. However, there is a national policy named ‘RPS (Renewable Portfolio Standard)’, which requires power generators to mandatorily provide to the grid a certain percentage of their electricity generation with renewable energy. The legal statement about this policy was initially included in the revised version of ‘Act on the promotion of the development, use and diffusion of new and renewable energy’ published on 17 September 2010. Based on this legal requirement, the ‘Management and operation guidelines on RPS’ was legislated on 27 December 2011, and is therefore, regarded as an E-policy. However, according to “Clarifications on the consideration of national

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and/or sectoral policies and circumstances in baseline scenarios (version. 02)” EB 22, annex 3, para. 7. (b), E-policy need not be taken into account in developing a baseline scenario. Therefore, Deloitte-TECO confirmed that there were no mandatory requirements and regulations for implementation renewable energy system in the Republic of Korea. DOE also confirmed by reviewing documents and carrying out on-site assessment that the nature and technical aspects were appropriately described in the CDM-PoA-DD and the PoA-specific CDM-CPA-DD.

6.8 Application of the selected baseline and monitoring methodology

6.8.1 Applicability of the selected baseline and monitoring methodology to the programme of activity

It was confirmed that all the CPAs under the PoA are small-scale activities (i.e., installed capacity of each CPA is up to 15 MW) and the CPAs are classified as Type I project activities which is classified in the Project Standard. According to the Appendix B of “the simplified modalities and procedures for small-scale CDM project activities” of the UNFCCC, the type and category of the project can be confirmed in accordance with the methodology, AMS. I.D.: “Grid connected renewable electricity generation” (version 17, EB61) and also applied the methodological tool, “Tool to calculate the emissions factor for an electricity system (Version 02.2.1, EB 63)”.

The applicability of the selected methodology, AMS. I.D.: “Grid connected renewable electricity generation” (version 17, EB61), was confirmed as shown below:

Table1 Applicability of the approved methodology

Table of Applicability of AMS I.D. (Ver. 17)

Conditions		OK, No, N/A	Remarks
1	This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal, and renewable biomass: (a) Supplying electricity to a national or a regional grid or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement, such as wheeling.	OK	The CPA comprises PV power generation units supplying electricity to a national, KEPCO
2	Illustration of respective situations under which each of the methodology (i.e. AMS I-D, AMS-I.F. and AMS-I.A) applies is included in Table 2. *	OK	Refer AMS. I.D. version. 17 Table 2 at Page 16. Project supplies electricity to a national/regional grid, KEPCO.
3	This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (greenfield plant); (b) Involve a capacity addition; (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s).	OK	The CPA is the installation of a new greenfield power plant.
5	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: · The project activity is implemented in an existing reservoir with no change in the volume of reservoir;	N/A	This is solar PV power generation project.

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	<ul style="list-style-type: none"> The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m²; The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m². 		
5	If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	OK	The CPA will be the renewable component and less than 15 MW.
6	Combined heat and power (co-generation) systems are not eligible under this category.	OK	The CPA does not include co-generation.
7	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	N/A	Only the installation of a new greenfield power plant is applicable under the PoA.
8	In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	N/A	Only the installation of a new greenfield power plant is applicable under the PoA.

6.8.2 Deviation from an approved methodology

It is not applicable to this PoA.

6.8.3 Clarification on the applicability of an approved methodology

It is not applicable to this PoA.

6.8.4 Application of multiple methodology

It is not applicable to this PoA.

6.9 Boundary for the PoA in terms of geographical area

All CPAs boundary relevant with this proposed PoA will be implemented with the national boundary of the Republic of Korea.

Deloitte-TECO confirms that the identified boundary, the selected sources, and gases as documented in the PoA-DD are justified for the CPA, hence all sources and GHGs required by the methodology have been included within the PoA boundary. Moreover, the CPA's boundary was checked through information gathered from the physical site inspection, interview, and evidence received from the PoA-DD and CPA-DD. The sources and gases within the boundary have been considered in a clear manner. The gases and sources, which are described in the PARTII: Generic component project activity (CPA) of PoA-DD, section B.3, are fully in accordance with the requirements of the applied methodology AMS-I.D version 17.

6.10 Baseline scenario identification and description

According to AMS. I.D.: "Grid connected renewable electricity generation" (version 17, EB61), it was demonstrated that all the assumptions and data used by the PP are justified appropriately,

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which are in line with the procedures prescribed in the “*Tool to calculate the emission factor for an electricity system (version 02.2.1)*” on Annex 19 of EB63. Baseline conditions are as stated in the following table:

Table 2. Baseline identification

Items	Yes/No	Note
Electricity delivered to grid	Yes	KEPCO grid
Emission factors are calculated with the “tool to calculate the emissions factor for an electricity system.”	Yes	Data sources by Statistics of Electric power in Korea 2008, 2009, and 2010
Spatial boundary contains power plants	Yes	On-site inspection
E-policy of RPS	No	Need not be taken into account in baseline scenario based on EB22, Annex 3

As mentioned in section 6.7.1, there is E-policy in Republic of Korea, RPS, which requires power generators to mandatorily provide to the grid a certain percentage of their electricity generation with renewable energy. However, based on “Clarifications on the consideration of national and/or sectoral policies and circumstances in baseline scenarios (version. 02)” EB 22, annex 3, para. 7. (b), E-policy need not be taken into account in developing a baseline scenario. Therefore, Deloitte-TECO also confirmed that the PP properly identified the baseline scenario.

6.11 Algorithm and/or formulae used to determine emission reductions

The emission reductions are calculated based on AMS I.D. (*Version 17*) and the approved calculation tool, “*Tool to calculate the emission factor for an electricity system (version 02.2.1)*”. The project has selected the ex-ante option with fixed emission factors for both OM and BM calculations.

Deloitte-TECO confirmed the annual emission reduction for this proposed project as follows:

$$BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$$

Where:

BE_y	Baseline Emissions in year y (tCO ₂)
$EG_{BL,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EF_{CO2,grid,y}$	CO ₂ emission factor of the grid in year y (tCO ₂ /MWh)

The emission factor of the CPA was calculated in accordance with the latest version of ‘Tool to calculate the Emission Factor for an electricity system’ and each CPA specifies the calculation in the CPA-DD. According to AMS I.D, the project emission and leakage for solar photovoltaic electricity generation are not considered.

Therefore, the DOE decided that the applied algorithm and formulae in the PoA is appropriate.

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6.12 Additionality of the PoA

In terms of additionality, this “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA” has the CPAs, which has Solar Energy Grid Connected Photovoltaic Power Generation less than 15 MW. The DOE confirmed that the solar technologies (photovoltaic and solar thermal electricity generation) less than 15 MW are automatically defined as additional base on guidelines on the demonstration of additionality of small-scale project activities, EB 68, Annex 27. It was confirmed that the documentation of barriers, investment barrier, technological barrier, barrier due to prevailing practice, and other barriers, is not required for 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).

Therefore, the “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA” does not have to demonstrate its additionality.

6.12.1 Starting date of a PoA/CPA

DOE confirmed by reviewing document that the starting date for the PoA is on 15 February 2012, the contract between Shinsung ENG and the consultant.

In the eligibility criteria for inclusion of a CPA in the PoA, described in section B.2 of the PoA-DD, the start date of the CPA is not prior to the commencement of validation of the PoA, which is the date when the POA-DD was published for GSC on 20 March 2012. Any CPA starting before the GSC date of the PoA-DD, i.e., 20 March 2012, cannot be included in this PoA. Therefore, Deloitte-TECO confirmed that the proposed PoA had been seriously considered in the CDM prior to the implementation of the CPA.

6.12.2 Prior consideration of the CDM

It is stated that “the DOE is not required to assess prior consideration of the CDM for the PoAs, as it is expected that no component of the programme will commence prior to the start date of validation” in para.194 of VVS. Therefore, the DOE decided that prior consideration of the CDM does not need to be validated.

6.13 Identification of alternatives

Since the proposed project is a small-scale project applicable to AMS. I.D. (Version 17), it is not applicable to the identification of alternatives.

6.14 Assessment of investment analysis

In terms of additionality of the “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA”, which has the CPAs of Grid Connected Photovoltaic Power Generation less than 15 MW, DOE confirmed that the solar technologies (photovoltaic and solar thermal electricity generation) less than 15 MW are automatically defined as additional base on guidelines on the demonstration of additionality of small-scale project activities, EB 68, Annex 27. It was confirmed that the documentation of barriers, investment barrier, technological barrier, barrier due to prevailing practice, and other barriers, are not required for the positive list of

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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).

Therefore, the proposed PoA, “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA”, does not have to demonstrate its additionality.

6.14.1 Demonstration of additionality of the PoA as a whole

According to VVS. Para. 195, the additionality of a PoA needs to be assessed in accordance with the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (EB 65, Annex 3)”.

Based on para. 9 of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (EB 65, Annex 3)”, the proposed PoA that consists of one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of attachment A of Appendix B of the “Simplified modalities and procedures for small-scale CDM project activities”.

As mentioned in section 6.12, the proposed “Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA” has the CPAs of Grid Connected Photovoltaic Power Generation less than 15 MW. DOE confirmed that the solar technologies (photovoltaic and solar thermal electricity generation) less than 15 MW are automatically defined as additional base on guidelines on the demonstration of additionality of small-scale project activities, EB 68, Annex 27.

6.15 Barrier analysis

It is not applicable to the PoA.

6.16 Common practice analysis

It is not applicable to the PoA that has small-scale CPAs.

6.17 Eligibility criteria for inclusion of a CPA in the PoA

The CME developed the eligibility criteria for inclusion of a CPA in the PoA in the initial PoA-DD, however, was requested to revise the eligibility criteria for inclusion of a SSC-CPA in the PoA in consistent with the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (Ver. 01.0), EB65, Annex 3".

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The revised eligibility criteria are as follows:

No.	Eligibility Criteria		Minimum eligibility criteria in EB65, Annex 3
	Criteria	Description	
1	Boundary and location of CPA	The CPA shall be performed within the territory of Republic of Korea.	Satisfied para. 14 (a)
2	Avoid double counting of CPA	The CPA shall be a new project that does not register large-scale CDM or CPA in the other PoA or other carbon off-set program	Satisfied para. 14 (b)
3	Specification of technology	The applied equipment for CPA gets a renewable energy system certification of KEMCO. KEMCO promotes renewable energy, so made the certification about renewable energy technology, Renewable Energy System Certification of KEMCO.	Satisfied para. 14 (c)
4	CPA start date	The start date of the proposed CPA should not be before the first published date for GSC about PoA, i.e., 20th March 2012. In the above context, 'CPA start date' means the earliest date at which either the implementation or construction or real action of CPA	Satisfied para. 14 (d)
5	CPA type	The CPA comprises photovoltaic power generation units supplying electricity to a national grid.	Satisfied para. 14 (i)
6	CPA scale threshold	Each CPA has the total installed capacity of no more than 15 MW and will remain within 15 MW throughout its crediting period.	Satisfied para. 14 (k)
7	Methodology applicability	The CPA satisfies the applicability conditions of AMS-I.D methodology.	Satisfied para. 14 (e)
8	Additionality	The CPA satisfies the conditions to be included in the positive list of grid-connected renewable electricity generation technologies that are automatically defined as additional in accordance with Attachment A of Appendix B.	Satisfied para. 14 (f)
9	Stakeholder consultant	Local stakeholder consultations shall be done and due account shall also be taken of any comments received at the CPA level.	Satisfied para. 14 (g)
10	Environmental Impact Assessment (EIA)	EIA or Preliminary Environmental Review shall be done at the CPA level according to the related domestic regulation.	Satisfied para. 14 (a)
11	ODA diversion	CPA shall not be funded by an Annex I party. The funding by an Annex I party could lead to a diversion of ODA, so such diversion does not take place.	Satisfied para. 14 (h)
12	Debundling check	Confirmation is that the CPA is a single project that is not a debundled component of another large-scale CPA or CDM project activity as per the latest guidance given in the CDM EB at the CPA level.	Satisfied para. 14 (l)

* EB 65, Annex 3, para 14 (j) is not applicable to this PoA.

Deloitte-TECO assessed the revised eligibility criteria for inclusion of a CPA under the PoA and concluded that the revised eligibility criteria were properly developed in accordance with the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (version. 01.0)], EB65, Annex 3".

Deloitte-TECO confirmed that the applied eligibility criteria for inclusion of this PoA can cover requirement of "Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (version. 01.0), EB65, Annex 3".

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6.18 Project duration and crediting period

According to Section B of the CDM SSC-PoA-DD, the project is to last for 28 years, and has selected a crediting period of seven years, which may be renewed for two times. DOE confirmed the programme duration and decided that the crediting period was applied in accordance with the CDM requirements.

6.19 Monitoring plan for a PoA/CPA

Since this is a small-scale photovoltaic system PoA, the approved monitoring methodology AMS.I.D. (version17) was applied to the proposed PoA. The MP provided detailed information related to the compliance with the methodology and local criterion. During the validation stage, Deloitte-TECO confirmed that the PP has sufficient ability to implement the MP stated in the PoA-DD and CPA-DD.

6.19.1 Operational and management plan

It was confirmed that responsibilities and authorities of the CME and CPA implementers were clearly stated in the PoA-DD, which were consistent with the PoA CDM operation manual “Shinsung Solar Energy the Grid Connected Solar Photovoltaic power generation Programme CDM Operation Instruction” prepared by the CME. Moreover, the record keeping system for each CPA under the PoA's plan to avoid double accounting, confirmation of debundling will be confirmed under the instruction for operational and management of this proposed PoA.

6.19.2 Compliance of the monitoring plan with the approved methodology**➤ Baseline emissions**

To calculate the baseline emissions, the net electricity supplied to the national grid by the proposed solar power plant ($EG_{BL, y}$) will be measured. The baseline emission will be calculated by multiplying the net electricity generation supplied to the national grid by the emission factor as defined in CPA-DD.

➤ Project emissions

According to the applied methodology of AMS. I.D, $PE_y = 0$. However, CO₂ emissions from on-site consumption of fossil fuels due to the project activity as a CPA under the PoA, if any, will be calculated using the latest version of the ‘Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion’ and considered in ex-post ER calculation of the CPA.

➤ Project Leakage

According to the applied methodology of AMS. I.D, if the energy generating equipment is transferred from another activity for the CPA, leakage is to be considered.

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6.19.3 Implementation of the plan

Monitoring structure for the PoA is comprehensively detailed in the PoA-DD, including description of the responsibility, procedure reference, equipment details, and calibration frequency, monitoring structure, and archiving of the records. By reviewing the provided the PoA CDM operation manual, Deloitte-TECO confirmed that the monitoring arrangements, which were described in the monitoring plan within the PoA-DD, are feasible and the means of implementation of the monitoring plan is sufficient to ensure the emission reductions achieved by the PoA.

➤ Monitoring equipment and calibration

The current local regulation of the meters accuracy and the calibration frequency were described in the PoA-DD. Deloitte-TECO confirmed the relevant local regulations and the criteria of monitoring equipment accuracy and calibration frequency. By reviewing the relevant local regulations, DOE decided that the monitoring plan was effectively developed in accordance with the local regulation.

6.20 Environmental impacts

DOE confirmed that the EIA will be carried out at the CPA level and it was confirmed to be correctly described in the PoA-DD.

6.21 Local stakeholder consultation

DOE confirmed that the local stakeholder consultation will be carried out at the CPA level and it was confirmed to be correctly described in the PoA-DD.

6.22 Determination of occurrences of debundling under a PoA

Deloitte-TECO confirmed that the CME had established a clear and transparent description of the operational and management arrangements as stated in the PoA-DD and the debundling checklist described in the PoA-DD was developed in accordance with “Guidelines on Assessment of Debundling for SSC Project Activities”, EB 54, Annex 13. Moreover, there is record keeping and managing system for each CPA under the PoA. Shinsung Solar Energy Co. Ltd will check the records for each CPA before submission to the DOE.

This confirmation will be carried out by the CME, Shinsung Solar Energy Co. Ltd, through credential checks and information available on the UNFCCC. Also, as each CPA will have a unique geographical boundary in the republic of Korea, thus it can be checked whether a CPA under the proposed PoA is already a registered CDM project or CPA in another PoA from the UNFCCC website.

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6.23 Corrective action requests and clarification requests

Deloitte-TECO implemented an on-site assessment during 2-5 April 2012 and issued CARs and CLs as follows. The CARs and CLs are referred in the Validation Checklist in Table A-1 of Annex A.

Table: Resolution of CARs, CLs and FARs

Draft report clarifications and corrective actions requests by the verification team	Summary of PO response	Validation team conclusion
<p>CAR 1 (Checklist ID. Nos. 11, 12, 44, and 106)</p> <p>It is requested to revise the eligibility criteria for inclusion of a SSC-CPA in the PoA (checklist for each CPA) consistent with the 'Standard for Demonstration of Additionality, Development of eligibility Criteria and Application of Multiple Methodologies for Program of Activities (Ver. 01.1), EB66, Annex 3". (A.4.2.2. of PoA-DD and B.2. of CPA-DD)'</p>	<p>The PP revised the eligibility criteria and added the Criteria 3) technology requirement, 4) CPA start date, 7) Methodology applicability.</p> <p>-----</p> <p>1, 6 : The PP corrected the expressions in the eligibility criteria 2 : The KEMCO promoted renewable energy by making certification about renewable energy technology 'Renewable Energy System Certification of KEMCO' to demonstrate the specification of renewable energy technology. 3 : The PP added detail explanation about the CPA start date. 4, 5 : The PP revised the eligibility criteria (2012.9.10)</p>	<p>DOE confirmed the revised eligibility criteria in the PoA-DD (version. 2), which are in accordance with EB65, Annex 3.</p>
<p>CAR 2 (Checklist ID. No. 28)</p> <p>The boundary of Figure A.4 (on-grid photovoltaic power generation process) should be revised. A map of the project site and/or the figure of the boundary will be confirmed after submitting the evidential documents (facilities location plan, etc.).</p>	<p>The PP revised the project boundary, including the solar cell module, and inverter, and submitted the evidence, '#8. map of project site (geo-coordinates)', '#9. air view of CPA 01 project site', and '#10. blueprint'.</p>	<p>The revised PoA-DD (version. 2) and CPA-DD (version. 2) were confirmed.</p>
<p>CAR 3. (Checklist ID. No. 95)</p> <p>The PoA CDM operational manual ' Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction (draft)' is not in accordance with operational and management plan in the PoA-DD and the PO is requested to revise the roles and responsibilities, record, personnel training, capacity development procedure, CPA implementer's roles and responsibilities etc.-</p> <p>Declaration letter from the CPA to the CME should be prepared and submitted to the DOE when it is available.</p> <ul style="list-style-type: none"> - The measures for continuous improvement of the PoA management system, such as the QA/QC procedures are not indicated in the 'PoA CDM operation manual (draft)'. - It is necessary to describe the condition (when, how, case) of the training and education for the CPA by the CME both in the PoA CDM operational manual and PoA-DD. - The data maintenance for the CPA should be described in the instruction (draft). 	<ul style="list-style-type: none"> * The PP revised the contents of '3. role and responsibilities, and 7 Monitoring', and added the contents '6. Training, 8. Document and data control, and 9. Improvements of operation manual' in the Operational manual. * The PP will submit the declaration letter regarding avoidance of double counting <p>-----</p> <p>The PP revised the PoA operation manual and eligibility criteria. (2012.9.10)</p>	<p>The revised PoA operational manual of "the Grid Connected Solar PV generation of PoA CDM operation instruction" was confirmed.</p>

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CL 1 (Checklist ID. Nos. 1 and 3) PP will submit the LoA of Korea when they are issued. The DOE needs to submit the DVR for the LoA application to Korea.	The LoA was submitted to Deloitte-TECO	Confirmed
CL 2 (Checklist ID. No. 2, 8) PP is requested to submit the latest version of business license of Shinsung ENG, the submitted document was issued in year 2008. PP is also requested to submit the consultancy service contract between the Shinsung ENG Co., Ltd. and Ecoeye Co., Ltd. Also need provide any documentary evidence for the start date of the CPA[01], when it is available.	The PP resubmitted the latest business license of shinsung ENG issued on 29 December 2009. PP submitted the consultancy service contract between Shinsung ENG Co., Ltd. and Ecoeye Co., Ltd. The contract of CPA[01] Photovoltaic equipment construction, issued on 17 April 2012, was submitted to DOE.	DOE confirmed the documentary evidences.
CL 3 (Checklist ID. Nos. 4, 5, 6, 7, and 9) The MOC is expected to be submitted by the end of September.	The PP submitted the MoC on 21 September 2012.	MoC and MoC confirmation letter were confirmed
CL 4 (Checklist ID. No. 17) "Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction (draft)" was submitted. DOE will confirm the content of the final version of the instruction, submitted. In the "Shinsung Solar Energy the grid connected Solar PV generation of PoA CDM operation instruction (draft)", please confirm the meter calibration frequency will be once a 3 years, which is not line with PoA-DD and CPA-DD.	* The PP revised the contents of '#3. role and responsibilities, and #7 Monitoring', and added the contents of '#6. Training, #8. Document and data control, and #9. Improvements of operation manual' in the Operational manual. ----- The PP revised the 'PoA operation manual'. - meter calibration frequency will be once a 3 years in accordance with 'the rules on the operation of the electric utility marker' (2012.9.10)	The revised PoA CDM operational manual of "Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction" was confirmed.
CL 5 (Checklist ID. Nos. 36 and 37) The issuing date of the "Management and Operation Guidelines on RPS" should be revised. The DOE will reconfirm the content of the national and sectoral policies and regulations for the proposed project.	The PP submitted #13. Management and operation on RPS'. The PP checked that the revised edition about the RPS regulation was issued on 27 December, 2011, so revised the PoA-DD. (Section A.2., page 2)	Confirmed
CL 6 (Checklist ID. No. 45) It is necessary to submit the CDM notification to the DNA, even if the proposed project is a PoA project. Please submit the CDM notification when it is submitted. The board decision (CEO decision) paper will be submitted to the DOE.	The PP submitted the evidences as below: #11. CEO's decision for implementation of programme CDM #1. contract (Shinsung ENG-Ecoeye) The PP will submit the CDM notification to DNA by the end of May ----- The PP submitted the document of CDM notification that was submitted to the Korean DNA (2012.6.29)	Confirmed
CL 7 (Checklist ID. No. 52) The starting date of the proposed project was the signing date of the contract between Shinsung ENG and the consultant (Ecoeye Co., Ltd.). Please submit the contract as documentary evidence.	The PP submitted #1. contract (Shinsung ENG-Ecoeye)	Confirmed
CL 8 (Checklist ID Nos. 96 and 97) The current regulation of the meter accuracy will be informed after the on-site visit. Please add the 'Electric import meter' in the monitoring information of the Annex 4.	The PP submitted #12. regulation of the monitoring equipment ----- *The PP added the related content of meter accuracy requirement in the PoA-DD and CPA-DD.	Confirmed

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	<p>* Calibration frequency :</p> <ul style="list-style-type: none">- The PP referred to the "Guidelines for Assessing Compliance with the Calibration Frequency Requirements (EB 52, Annex 60)".- According to the rules on the operation of the electric utility market, the calibration of electricity meter should be done every 3~4 years. <p>-----</p> <p>The PP revised the MP in PoA-DD and CPA-DD, especially about QA/QC (calibration frequency)</p> <p>The PP corrected the guideline related with MP to "Clean Development Mechanism Project Standard (EB 65, Annex 5)". The PP shall ensure that the equipment are calibrated either in accordance with the local/national standards, or as per the manufacturer's specifications. If local/national standards or the manufacturer's specifications are not available, international standards may be used. " (2012.9.10)</p>	
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7 VALIDATION OPINION

Deloitte-TECO has performed a validation of the Shinsung Solar Energy Grid Connected Photovoltaic Power Generation PoA. The validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as the criteria given to provide for consistent project operations, monitoring, and reporting. The validation process comprised of a desk review and risk analysis, an on-site visit, follow up assessment, and finalized conclusion based on the evidence collected during the validation. A profile of the CDM team members is shown in section “8.1 Team”. Further information on quality controls within the team and about the validation process is shown in section “8.2 Internal Quality Control”. Public comments were invited through a consultation process for global stakeholders. Since no comments were received, no modifications were made.

The validation process found no information indicating that the project receives any public funding that could result in a diversion of ODA.

The review of the PoA-DD (version. 2, 29 October 2012) and the subsequent follow-up interviews have provided Deloitte-TECO with sufficient evidence to determine the fulfillment of stated criteria.

In our opinion, the PoA described in the PoA-DD (version. 2, 29 October 2012) meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. Deloitte-TECO has also reviewed a LoA from the host party confirming that the PoA assists in achieving sustainable development. Hence, the project will be recommended by Deloitte-TECO for registration with the UNFCCC.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO₂ emissions that are real, measurable, and give long-term benefits to the mitigation of climate change. An analysis of the investment barriers demonstrates that the proposed PoA is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the PoA. Given that the project is implemented as designed, the PoA is likely to achieve the estimated amount of emission reductions.

13 November 2012



Hiroshi Inanaga

Chief Executive Officer

Deloitte Tohatsu Evaluation and Certification Organization

Tokyo, Japan

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8 VALIDATION TEAM

8.1 Team

Name	Organization	Role	Auditor Status	CDM Audit Type (Validation/Verification)	Competences						Task/Role			
					Host Country Experience	Host Country Language	Country Regulatory Aspect	Environmental Aspect	Financial Aspect	Technical Area	Document Review	Site Visit/Interview	Report Writing	Supervision
PARK, Yong Tae	Deloitte-TECO	Team Leader	Lead Auditor	Val/Ver	Y	Y	Y	Y	-	Y	Y	Y	Y	Y
ISHIGAI, Chikara	Deloitte-TECO	Team Member	Lead Auditor	Val/Ver	-	-	-	Y	-	Y	Y	Y	Y	-
SHI, Xueting	Deloitte-TECO	Team Member	Lead Auditor	Val/Ver				Y	Y	Y	Y	-	Y	-

8.2 Reviewer

Name	Organization	Role	Host Country Experience	Host Country Language	Country Regulatory Aspect	Environmental Aspect	Financial Aspect	Technical Area
TANABE, Koichiro	Deloitte-TECO	Technical reviewer	-	-	-	Y	Y	Y
INANAGA, Hiroshi	Deloitte-TECO	Engagement Quality Assurance, Audit Director	-	-	-	Y	-	Y
ICHIKAWA, Masahiko	CDM Judging Committee	Judging Committee Chair	-	-	-	-	-	-
INANAGA, Hiroshi	Deloitte-TECO	Chief Executive Officer	-	-	-	Y	-	Y

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9 REFERENCES

No.	Title
1	CDM-SSC-PoA-DD for GSC
2	CDM-SSC-Generic-CPA-DD for GSC
3	CDM-SSC-Specific-CPA-DD for GSC
4	The PoA CDM operational manual developed by CME “Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction” issued in October 2012
5	LoA - Korea
6	Business license of the project entities (PP and CME)
7	Electricity generation business licence of CPA[01], issued on 2 April 2012
8	Minutes of the board meeting for CDM consideration
9	CDM notification submitted to the Korea DNA
10	CDM consulting agreement between the project owner and the consulting company, issued on 15 February 2012, for start date of the PoA
11	CPA[01] solar photovoltaic equipment construction contract, issued 17 April 2012, the start date of the CPA[01]
12	RPS equipment confirmation letter by KEMCO, issued on 31 July 2012
13	The documentary evidence of average solar energy in CPA[01] (based on Cheong Ju)
14	Documentary evidence for technical features of the CPA[01] plant
15	Maps of place in which the CPA[01] solar power plant is located
16	Power system diagram of CPA[01] solar power plant
17	CPA[01] construction drawing
18	Documentary evidence of the CPA[01] Business proposal, incl. amount of electricity generation.
19	CPA[01] debundling check confirmation form, issued 5 September 2012.
20	Specification of solar cell, PV module (catalogue and broacher) of CPA[01]
21	Test report and specification of installed inverter
22	Purchase agreement of monitoring equipment and inverter
23	Specification of Installed meter
24	Test report and specification of installed meter, issued on 22 March 2012
25	Gross electricity generation in the S. Korea during past 5 years. (Korea Electric Power Corporation, 2010)
26	Documentary evidence of identified 5 solar power units for calculate emission factor (Page 14 of CDM-SSC-CPA-DD)
27	Statistics of Electric Power in Korea 2008-2010 (Source KEPCO 2009 - 2011)
28	Caloric value sourced from Statistics of Electric Power in Korea 2009-2011 (Source KEPCO 2009 -2011)
29	Management and operation guidelines on RPS, issued on 27 December 2011.

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30	‘Act on the promotion of the development, use and diffusion of new and renewable energy’ published on 17th of September, 2010 - Article 12-5 (Name: Mandatory supply of renewable energy)
31	Notification of the Ministry of Knowledge Economy about Renewable energy technology certification, issued on 24 February 2012.
32	Local regulation regarding meter calibration of S. Korea
33	Environmental Impact Assessment Act of S. Korea
34	Framework Act on Environmental Policy of S. Korea
35	AMS-ID. Grid connected renewable electricity generation (Version 17)
36	Tool to calculate the emission factor for an electricity system (version 02.2.1)
37	CDM Validation and Verification Standard (Version. 02.0)
38	Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (Ver. 01.0) EB65, Annex 3
39	Guideline on Assessment of De-bundling for SSC Project Activities EB 54, Annex 13
40	Guidelines on the demonstration of additionality of small-scale project activities (Ver. 09.0) EB68, Annex27
41	Guidelines for Completing the Programme Design Document Form for SSC CDM Programme of Activities(Ver. 02.0) EB67, Annex30
42	Guidelines for Completing the Programme Design Document Form for Small-scale component project Activities(Ver. 01.0) EB66, Annex17
43	F-CDM-SSC-PoA-DD (version. 2, date 29 December 2012)
44	F-CDM-SSC -CPA-DD for GSC (version. 2, date 29 December 2012)

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APPENDIX A: VALIDATION PROTOCOL

Table A-1 Requirements Checklist

ID No.	Validation Requirements	Means of Validation	DOE comment after on-site visit (and/or summary of additional requests)	PP response to request for CAR/CL from DOE (Please add comments and/or questions against DOE comments after interview)	Draft Concl.	Final Concl.
VIII. General validation Requirements						
F. Approval						
1	38. The DOE shall determine whether the designated national authority (DNA) of each Party indicated as being involved in the proposed CDM project activity in the PDD has provided a written letter of approval.	39. The DOE shall determine whether each letter confirms that: (a) The Party is a Party to the Kyoto Protocol; (b) Participation is voluntary; (c) In the case of the host Party, the proposed project activity contributes to the sustainable development of the country; (d) It refers to the precise proposed project activity title in the PDD being submitted for registration. 40. The DOE shall determine whether the letter(s) of approval is unconditional with respect to 39 (a) to (d) above. 41. The DOE shall determine whether the letter(s) of approval has been issued by the respective Parties DNA and is valid for the proposed project activity under validation. 42. If the DOE doubts the authenticity of the letter of approval, the DOE shall verify with the DNA that the letter of approval is authentic.	<ul style="list-style-type: none"> • It was confirmed by the interview that LoAs from Korea have not been issued. The DOE is expected to submit the DVR by the end of May 2012. • The LoA of Korea will be applied in June. <p>↓</p> <ul style="list-style-type: none"> • The DOE confirmed that the LoA of Korea was issued by the Ministry of Knowledge Economy on 24 August 2012. (2012.9.4) 	PP submits the LoA at 24 August 2012	CL for both PoA and CPA [01]	OK
G. Authorization						

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2	<p>45. The DOE shall determine whether each project participant has been authorized by at least one Party involved in a letter of approval.</p>	<p>46. The DOE shall confirm that the project participants are listed in tabular form in the PDD and that this information is consistent with the information provided in the section that contains the contact information for project participants.</p> <p>47. The DOE shall confirm that no entities other than those authorized as project participants are included in these sections of the PDD.</p> <p>48. The DOE shall confirm that the approval of participation has been issued from the relevant DNA and if in doubt shall verify with the DNA that the approval of participation is valid for the proposed CDM project participants.</p>	<p>ERPA is not available during the PoA validation stage. There is no Annex 1 PP in this PoA. Shinsung ENG as a PP in the host country and Shinsung Solar Energy Co., Ltd. as the CME were described in the PoA-DD and CPA-DD.</p> <p>The PO business licenses of Shinsung ENG and Shinsung Solar Energy were submitted. The business license of Shinsung Solar Energy, CME, and CPA 1 was issued on 17 November 2011.</p> <p>However, the PP is requested to submit the latest version of the business license of Shinsung ENG, as the submitted document was issued in year 2008.</p> <p>"Shinsung Solar Energy the grid Connected Solar PV generation of the PoA CDM Operation Instruction (draft)", including the relationships among the PP and other parties concerned was submitted.</p> <p>The PP is also requested to submit the consultancy service contract between Shinsung ENG and Ecoeye, when it is available. Also need provide any documentary evidence for the start date of the CPA[01], when it is available.</p> <p>↓</p> <p>The business license of Shinsung ENG, submitted on 14 June, was confirmed by the DOE on site. Please reconfirm whether the business license issued in 2008 is the latest version.</p> <p>The DOE confirmed that the contract between Shinsung ENG (PP) and Ecoeye (consulting company) was issued on 15 February 2012. (2012.7.26).</p> <p>↓</p> <p>• The DOE confirmed that the business license of Shinsung ENG issued on 29 December 2009 was the latest business license. (2012.8.27) DOE confirmed the contract of CPA[01] Photovoltaic equipment construction, issued on 17 April 2012. (2012.8.27)</p>	<p>PP resubmit the latest business license that issued in year 2009. 12.29</p> <p>The contract of CPA[01] Photovoltaic equipment construction, issued on 17 April 2012, was submitted to DOE.</p>	CL for both PoA and CPA [01]	OK
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H. Contribution to sustainable development						
3	50. The DOE shall confirm that the DNA has considered whether the proposed CDM project activity assists the host Party in achieving sustainable development.	51. The DOE shall determine whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.	Refer to ID. No. 1 ↓ • The DOE confirmed that the LoA of Korea was issued by the Ministry of Knowledge Economy on 24 August 2012. (2012.9.4)	PP submits the LoA at 24 August 2012	CL for both PoA and CPA [01]	OK
I. Modalities of communications						
I General						
4	53. The DOE shall validate the corporate identity of all project participants and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories.	54. The DOE shall validate paragraph 53 above through: (a) Directly checking evidence for corporate, personal identity and other relevant documentation; (b) Notarized documentation; or (c) Written confirmation from the project participant or the coordinating/managing entity that submits to it the MoC statement that all corporate and personal details, including specimen signatures, are valid and accurate.	The MOC is expected to be submitted by the end of September. DOE confirmed the submitted MoC completed on 21 September 2012. DOE received the MoC confirmation letter, which demonstrated MoC authorized personal details including specimen signatures. Also confirmed the MoC statement is the same as Annex 1. (2012.10.17)	PP submits MOC at 21 September 2012.	CL for both PoA and CPA [01]	OK
5		55. When the DOE validates identity by applying paragraph 54 (c) above, the DOE shall ensure that the MoC statement is received from a project participant with whom the DOE has a contractual relationship. For CDM PoAs, the DOE shall ensure that the MoC statement is received from the coordinating/managing entity.	The MOC is expected to be submitted by the end of September. DOE confirmed the submitted MoC completed on 21 September 2012. DOE received the MoC confirmation letter, which demonstrated MoC authorized personal details including specimen signatures. Also confirmed the MoC statement is the same as Annex 1. Also confirmed the CME is involved in the MoC. (2012.10.17)	PP submits MOC at 21 September 2012.	CL for both PoA and CPA [01]	OK
6		56. When the DOE validates identity by applying paragraph 54 (c) above, the DOE shall ensure that the official who submits the MoC statement to the DOE 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.	The MOC is expected to be submitted by the end of September. DOE confirmed the submitted MoC completed on 21 September 2012. DOE received the MoC confirmation letter, which demonstrated MoC authorized personal details including specimen signatures. Also confirmed the MoC statement is the same as Annex 1. (2012.10.17)	PP submits MOC at 21 September 2012.	CL for both PoA and CPA [01]	OK

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7		57. If the DOE is unable to validate the requirements by applying paragraph 54 (a), (b) or (c) above then the DOE may perform further validation activities in order to confirm that the corporate and personal details, employment status and specimen signatures included in the MoC statement are valid and accurate and comply with the requirements of this section.	The MOC is expected to be submitted by the end of September. DOE confirmed the submitted MoC completed on 21 September 2012. DOE received the MoC confirmation letter, which demonstrated MoC authorized personal details including specimen signatures. Also confirmed the MoC statement is the same as Annex 1. (2012.10.17)	PP submits MOC at 21 September 2012.	CL for both PoA and CPA [01]	N/A
1. Coordinating/managing entity and participants in a PoA						
8	186. The DOE shall assess the management system described in the PoA design document (CDM-PoA-DD) in accordance with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for program of activities		The PO business licenses of Shinsung ENG and Shinsung Solar Energy were submitted and confirmed during the on-site validation. The PoA CDM operational manual "Shinsung Solar Energy the grid Connected Solar PV Generation of PoA CDM Operation Instruction (draft)" needs to be revised. ↓ The DOE confirmed that the PoA CDM operational manual "Shinsung Solar Energy the grid Connected Solar PV generation of PoA CDM operation instruction" was revised to cover the requirements regarding develop and implement a management system by CME as follows: As the PoA CDM operation manual - General definition of CDM PoA - Organization of PoA - Role and responsibilities - Technologies and facilities - CPA inclusion and management - Training for monitoring personnel (system) - Monitoring - Document and data control - Improvement of Operation manual As appendix document (relevant elements) - CPA project summary document - Double counting avoidance agreement document - Debundling review result report document The DOE confirmed the revised the PoA CDM	PP resubmit the latest business license that issued in year 2009. 12.29	CL For both PoA and CPA [01]	OK

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			operational manual "Shinsung Solar Energy the grid Connected Solar PV Generation of PoA CDM Operation Instruction " satisfied the requirements of EB 65 Annex 3. (2012. 09.04)			
	2 Modalities of communication statement					
9	59. The DOE shall validate that the MoC statement has been correctly completed and duly authorized.	60. The DOE shall check that: (a) The latest version of the form Modalities of Communication statement" (F-CDM-MOC) has been used; (b) The information required as per the F-CDM-MOC, including its annex 1, is correctly completed; (c) The project participants authorized signatories signing the F-CDM-MOC correspond to the project participants authorized signatories included in F-CDM-MOC, annex 1.	The MOC is expected to be submitted by the end of September. DOE confirmed the version of the MoC (F-CDM-MOC) (2012.10.17)	PP submits MOC at 21 September 2012.	CL for both PoA and CPA [01]	OK
J. Project design Document						
10	62. The DOE shall determine whether the PDD was completed using the latest version of the PDD form appropriate to the type of project activity.	63. The DOE shall provide a statement regarding the compliance of the PDD with relevant forms and guidance.	-- It was confirmed that the latest version of the POA-DD and CPA-PP forms were used.		OK	OK
2. CPA design document						
11	187. The DOE shall assess any proposed CPA that a coordinating/managing entity wishes to include in the PoA, to determine whether it complies with the eligibility criteria specified in the CDM-PoA-DD. The means of validation to determine compliance with this requirement will be specific to the PoA.		It is requested to revise the eligibility criteria for inclusion of a SSC-CPA in the PoA consistent with the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for program of activities (Ver. 01.1), EB65, Annex 3'. Under review by the DOE (2012.0815) The DOE confirmed the eligibility criteria based on EB 65, Annex 3, 1. It seems that "the CPA" should be revised as "The CPA shall". 2. Please refer "The applied equipment for CPA gets a Renewable energy system certification of KEMCO". Is it necessary to have the KEMCO certification? Does the KEMCO certification mean that "RPS Supply certificate	PP revised eligibility criteria and added the Criteria 3) technology requirement, 4) CPA start date, 7) Methodology applicability.----- 1, 6 : PP corrects expressions in the eligibility criteria2 : KEMCO promotes renewable energy, so made the certification about renewable energy technology 'Renewable Energy System Certification of KEMCO' to demonstrate the specification of renewable energy technology.3 : PP added detail explanation about CPA Start date. 4, 5 : PP revised the eligibility criteria(2012.9.10)	CAR for both PoA and CPA [01]	OK

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			<p>issuance equipment confirmation letter" (please check the English expression). If so, please clarify how it relates between KEMCO certification and this PoA? Are they internal criteria? 3. In the CPA start date description, it was defined as before the GSC of the PoA. Does the CPA start date need to be defined? (Condition to check, above description is certainly one of the conditions but not the condition for CPA start date definition, what do you think?) 4. In the stakeholder consultation, it is stated that the local stakeholder consultations have been completed and due account has also been taken of any comments received. Is it the only description for CPA 1, rather than for all CPAs? 5. Same as EIA (refer no. 4) 6. ODA diversion description needs to use "shall"? (2012.9.4)</p> <p>↓</p> <p>The DOE confirmed the revised eligibility criteria in the PoA-DD, which were in accordance with EB65, Annex 3. (2012.09.15)</p>			
12	188. The DOE should consider a desk review of the documentation sufficient to determine compliance in certain instances and also consider follow-up interviews and/or site visits necessary for other types of PoA.		Refer to ID. No. 11	PP revised eligibility criteria and added the Criteria 3) technology requirement, 4) CPA start date, 7) Methodology applicability.	CAR for both PoA and CPA [01]	OK
K. Description of project activity						
13	64. The DOE shall determine whether the description of the proposed project activity in the PDD is accurate, complete, and provides an understanding of the proposed CDM project activity.	65. Unless other means are specified in the methodology, the DOE shall conduct a physical site inspection for the following proposed project activities in existing facilities or utilizing existing equipments: (a) Large-scale projects; (b) Non-bundled small-scale projects with emission reductions exceeding 15,000 tonnes per year; (c) Bundled small-scale projects, each with emission reductions not exceeding 15,000 tonnes per year; in such cases the number of physical site visits may,	<p>The electricity business application form will be submitted once it was approved and signed. The PP is requested to provide the URL of the National Weather Service website, where it can indicate the average solar radiation for the first CPA implementation area.</p> <p>The simulation results for the electricity output of the PV power generation will be provided to the DOE (including the transmission loss and the efficiency of the inverter, etc.). The technical features of the CPA1 plant should be revised according to the specification changes (Table B.2. of CPA-DD).</p>	<p>PP submit evidence as below</p> <p>#3. electricity business license.</p> <p>#4. the average solar energy (KMA data, www.kma.go.kr)</p> <p>#5. simulation result for the electricity output</p> <p>#6. order sheet of the monitoring equipment (inverter)</p> <p>#7. specification of photovoltaic system (module)</p> <p>-----</p> <p>PP submit the specification of the inverter and revise the [table A.3]</p> <p>- technical feature of Inverter</p>	CAR for CPA [01]	OK

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		however, be based on sampling, if the sampling size is justified through statistical analysis.	<p>The order sheet of the main equipment, i.e., module and inverter will be submitted after the on-site assessment.</p> <p>The DOE confirmed that the CPA IRR simulation spreadsheet, which was prepared by the PP, together with the necessary parameters, i.e., technical parameters, in the spreadsheet will be validated by documentary evidences.</p> <p>↓</p> <ul style="list-style-type: none"> · The DOE confirmed that a documentary evidence of "Electricity business approval" issued by a local government, where the CPA 1 is located, was issued on 2 April 2012. · The DOE confirmed the average solar energy (based on Chung-Ju city near CPA 1 site), which demonstrated the average solar radiation of 4,708.28 MJ/m². · The DOE confirmed the simulation results for the electricity output of the PV power generation and also confirmed that the technical feature of inverter in the CPA-DD was revised. However, the model no. and source of imports of inverter need to be corrected at the technical feature, Table B.2, in the CPA-DD. Also, please provide further explanation as there are different capacities of the inverter, i.e., 51 kw in the order sheet and 50 kw in the design book. The PP is requested to revise the capacity of the inverter, 50 kw x 2 = 100 kw in the CPA-DD for easier identification. Also, the order sheet only demonstrated the capacity and number of equipment. Please provide specification of the inverter and monitoring equipment, i.e., the accuracy of meter. · The DOE confirmed the geographic reference based on the GPS, which is in accordance with that of CAP-DD. (2012.7.26). <p>↓</p> <ul style="list-style-type: none"> · The DOE confirmed the documentary evidence of "Test Report" and "Product Test Report" of the inverter, model no. GCI-T051, maximum continuous power of 51 kW. It was 	<p>Model no. : GCI-T051</p> <p>source of imports : willings co.,ltd.</p> <p>capacity : 51kW</p> <p>unit : 2</p>		
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			changed from the initial CPA-DD and design book of CPA 1 solar PV, in which it stated the maximum continuous power of 50 kW. The DOE also confirmed the technical parameters of the inverter, such as their maximum efficiency which is >94% and their maximum PV power of 55 kw from the maker's website. (2012.8.27)			
14		66. For other individual proposed small-scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, the DOE should conduct a physical site visit as appropriate. For proposed CDM project activities for which the DOE does not undertake a physical site inspection this shall be justified. The DOE may apply a sampling approach in accordance with the "Standard for sampling and surveys for CDM project activities and program of activities".	-		N/A	N/A
15		67. For all other proposed CDM project activities not referred to in paragraphs 65-66, the DOE shall undertake the validation of project description by reviewing available designs and feasibility studies and should conduct comparison analysis with equivalent projects, as appropriate.	-		N/A	N/A
16		68. If the proposed CDM project activity involves the alteration of an existing installation or process, the DOE shall ensure that the project description states the differences resulting from the project activity compared to the pre-project situation.	It was confirmed at the on site visit that there was the alteration of any existing installation or process involved.		N/A	N/A
3. Description of a PoA/CPAs						
17	189. The DOE shall assess the CDM-PoA-DD and the PoA-specific CDM-CPA-DD that is submitted by the coordinating/managing entity and shall confirm the framework		The PoA CDM operational manual, "Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)" was submitted. The DOE will confirm the content of the final version of the instruction submitted before the	* PP revised the contents '#3. role and responsibilities, and #7 Monitoring', and added the contents '#6. Training, #8. Document and data control, and #9. Improvements of operation manual' in the Operational manual.	CL for both PoA and CPA	OK

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	developed for the implementation of the PoA, and defining a CPA under the PoA.		<p>registration of the proposed PoA project.</p> <p>↓</p> <p>Under review by the DOE (2012.6.20)</p> <p>↓</p> <p>In the " Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)", please confirm that the meter calibration frequency will be once every three years, which is not in line with the PoA-DD and CPA-DD. (2012.9.4)</p> <p>↓</p> <p>The DOE confirmed the PoA-DD in which it includes the framework for the implementation of the PoA. The DOE also confirmed that the CME had prepared and developed a management system of the PoA CDM operational manual. The PoA CDM operational manual covers the "Organization of the PoA", "Roles and Responsibilities", "CPA Inclusion and Management", "Training", "Monitoring", "Document and Data Control", and "Improvements of the Operation Manual". The eligibility criteria for a CPA was also developed and described in the PoA-DD. The DOE confirmed the revised calibration frequency described in the PoA-DD and CPA-DD, in line with domestic regulations. (2012.09.15)</p>	<p>-----</p> <p>[01]</p> <p>-----</p> <p>PP revised 'PoA operation manual'. - meter calibration frequency will be once a 3 years in accordance with 'the rules on the operation of the electric utility marker' (2012.9.10)</p>		
2. Debundling						
18	154. The DOE shall determine whether the proposed small-scale project activity is not a debundled component of a large-scale project activity in accordance with the "Guidelines on assessment of debundling for SSC project activities"	155. The DOE shall determine the proposed small-scale project activity to be a debundled component of a large-scale project activity if there is a registered small-scale project activity or an application to register another small-scale project activity.	<p>The CPA1 project can be identified as a RPS project for E-policy, but it cannot be double counted in the other ETS schemes in Korea, such as K-VER, K-Credit, etc. The DOE will confirm whether the CPA1 project has been applied for any of these schemes.</p> <p>There are two sets of PV generation at the CPA1 site. It was confirmed at the on site visit that both PVs were not CDM projects but for internal use only.</p> <p>There was no PV panel installed at the proposed project site of CPA1.</p>	<p>Debundling confirmation result report was submitted to DOE.</p> <p>The list of all projects which were registered under the Korea domestic emission reduction scheme was also submitted.</p>	CL for CPA [01]	OK

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			The DOE confirmed that the list of all projects were registered under the Korea domestic emission reduction scheme. The CPA[01] was not part of the registered project.			
19		156. The DOE shall, where appropriate, take into account specific debundling requirements for Type I project activities and small-scale transport project activities.	Refer to ID. No. 18	Refer to ID. 18	CL for CPA [01]	OK
14. Determination of occurrences of debundling under a PoA						
20	203. The DOE shall ascertain that the proposed small-scale CPA of a PoA is not a debundled component of a large-scale project activity in accordance with the Guidelines on assessment of debundling for SSC project activities .		Refer to ID. No. 18	Refer to ID. 18	CL for CPA [01]	OK
L. Application of the selected baseline and monitoring methodology						
1. General requirements						
21	70. The DOE shall determine whether the baseline and monitoring methodologies selected by the project participants are the valid versions of those approved by the Board. 71. The DOE shall apply specific guidance and/or clarifications provided by the Board with respect to the approved methodology and any applicable tools. 72. The DOE shall determine whether the selected methodology applies to the project activity and was correctly applied with respect to the following: (a) Project boundary; (b) Baseline identification; (c) Algorithms and/or formulae used to determine emission reductions;		-- It was confirmed that AMS, I.D. version 17 was correctly used.		OK	OK

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	(d) Additionality; (e) Monitoring methodology.					
	2. Applicability of the selected baseline and monitoring methodology to the project activity					
22	73. The DOE shall validate that the selected baseline and monitoring methodology is applicable to the project activity and that the selected version is valid at the time of submission of the proposed project activity for registration.	74. The DOE shall determine whether the methodology is correctly quoted and applied by comparing it with the actual text of the applicable version of the methodology.75. If the PDD of a proposed project activity is based on a previous version of a methodology and was published for global stakeholder consultation but was not submitted for registration within the grace period, the DOE shall request the project participants to provide a revised PDD in accordance with the Project cycle procedure.	· It was confirmed that the latest version of the methodology was correctly used.		OK	OK
23		76. The DOE shall determine whether the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein. This shall be done by validating the documentation referred to in the PDD and by verifying that the documentation content is correctly quoted and interpreted in the PDD. If the DOE, based on local and sectoral knowledge, is aware that comparable information is available from credible sources other than that used in the PDD, then the DOE shall cross-check the PDD against other sources to confirm that the project activity meets the applicability conditions of the methodology.	· It was confirmed that the latest version of the methodology was correctly used.		OK	OK
	4. Application of multiple methodologies for PoA					
24	190. The DOE shall assess the application of multiple methodologies in accordance with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for		It was confirmed by the interview and the site visit that a single methodology was applied for all the proposed CPA of the PoA.		OK	OK

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	program of activities					
	3. Deviation from an approved methodology					
25	78. If project participants requested a deviation before the publication of the PDD when applying an approved methodology to a proposed project activity, or if a DOE finds at validation that project participants deviated from an approved methodology and the DOE considers that the deviation was due to a project-specific issue implying that a revision of the methodology would not be required to address the issue, it may seek guidance on the acceptability of the deviation from the Board prior to requesting registration of the proposed project activity.		There was no request for any deviation from the applied methodology before the publication of the PDD.		OK	OK
26	79. The DOE shall submit to the Board an assessment of the case including demonstration that the deviation does not require revision of an approved methodology, and shall include a description of the impact of the deviation on the emission reductions from the project activity. 80. Alternatively, if the DOE considers that a revision of the methodology would be required to address the project situation then the DOE shall request the project participants to submit a request for revision in accordance with the Project cycle procedure.		There was no request for any deviation from the applied methodology before the publication of the PDD.		OK	OK
	4. Clarification on the applicability of an approved methodology					
27	81. If the DOE cannot make a determination regarding the applicability of the selected		-		N/A	OK

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	methodology to the proposed project activity, then the DOE shall request clarification of the methodology. The DOE shall conduct an assessment to ensure that the request is not submitted with the intention of revising an approved methodology to expand its applicability.					
5. Project boundary						
28	82. The DOE shall determine whether all main GHG emission sources, the physical delineation of the proposed project activity and other relevant project and baseline emission sources covered in the methodology are included within the project boundary for the purpose of calculating project and baseline emissions for the proposed project activity.	83. The DOE shall confirm the project boundary based on documented evidence and shall corroborate it by a site visit where required. 84. If the methodology allows project participants to choose whether a source or gas is to be included within the project boundary, the DOE shall determine whether the project participants have justified that choice. The DOE shall determine whether the justification provided is reasonable, based on an assessment of supporting documented evidence provided by the project participants and corroborated by observations if required.	The boundary of Figure A.4 "On-grid photovoltaic power generation process" needs to be revised. A map of the project site and the figure of the boundary will be clarified after submitting the evidential documents: - Construction drawing of roof - Module installation - Panel - Inverter ↓ · The DOE confirmed the geographic reference based on the GPS, which is in accordance with that of the CAP-DD. · The DOE confirmed the construction drawing of the roof and equipment design book. (2012.7.26)	PP revised the project boundary. It includes solar cell module, and inverter. and PP submit the evidence, '#8. map of project site (geo-coordinates)', '#9. air view of CPA 01 project site', and '#10. blueprint'.	CAR for both PoA and CPA [01]	OK
29		85. For the project activities that have both A/R and non-A/R components, in order to avoid double counting of emission sources, the DOE shall confirm that the emissions associated with the A/R activity will be accounted for and documented by the A/R project activity.	It is not applicable to this PoA		N/A	N/A
5. Boundary for the PoA in terms of geographical area						
30	191. The DOE shall assess the boundary of the PoA within which all CPAs included in the PoA will be implemented.		The boundary of the PoA and CPA1 was confirmed at the on-site inspection of the CPA1, including the proposed PV generation site and the CME monitoring site.		OK	OK
31	192. The DOE shall determine whether, in establishing the boundary of the PoA, the project		There are no applicable national and/or sectoral policies and regulations within that chosen boundary in establishing the boundary of the		OK	OK

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	participants have taken into consideration all applicable national and/or sectoral policies and regulations within that chosen boundary.		PoA, as considered by the PP.			
	6. Baseline scenario identification and description					
32	88. The DOE shall determine whether the baseline identified for the proposed project activity is the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity.	89. The DOE shall determine whether any procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied. If the selected methodology requires the use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario, the DOE shall consult the methodology on the application of these tools. In such cases, the specific guidance in the methodology shall supersede the corresponding requirements of the tool.	· It is not applicable to this proposed project.		N/A	N/A
33		90. If the methodology requires several alternative scenarios to be considered in the identification of the most plausible baseline scenario, the DOE shall, based on financial expertise and local and sectoral knowledge, determine whether all scenarios that are considered by the project participants and any scenarios that are supplementary to those required by the methodology, are realistic and credible in the context of the proposed project activity and that no alternative scenario has been excluded.	· It is not applicable to this proposed project.		N/A	N/A
34		91. The DOE shall determine whether the most plausible baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used in the PDD. It shall determine whether documents and sources referred to in the PDD are correctly quoted and	· It is not applicable to this proposed project.		N/A	N/A

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		interpreted. The DOE shall cross-check the information provided in the PDD with other verifiable and credible sources, such as local expert opinion, if available.				
35		92. The DOE shall determine whether the PDD provides a description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity.	· It is not applicable to this proposed project.		N/A	N/A
36		<p>93. The DOE shall determine whether, drawing on its knowledge of the sector and/or advice from local experts, that all applicable CDM requirements have been taken into account in the identification of the baseline scenario for the proposed project activity, as well as relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. Two (2) types of national and/or sectoral policies have to be taken into account:</p> <p>(a) National and/or sectoral policies or regulations that give comparative advantages to more emissions-intensive technologies or fuels over less emissions-intensive technologies or fuels, otherwise known as policies that increase GHG emissions, and are called type E+. For this type of national and/or sectoral policies or regulations, only those that have been implemented before adoption of the Kyoto Protocol by the COP (decision 1/CP.3, 11 December 1997) shall be taken into account when identifying a baseline scenario. If such national and/or sectoral policies were implemented since the adoption of the Kyoto Protocol, the baseline scenario shall refer to a</p>	<p>The national and sectoral policies and regulations for the proposed project within the host party are as follows:</p> <p>-Management and operation guidelines on RPS</p> <p>-Act on the promotion of the development, use and diffusion of new and renewable energy</p> <p>The Korean official RPS documents have been published in the URL of the Ministry of Economy and Industry.</p> <p>Additional tariff for the Solar PV generation is 220 KRW/kW.</p> <p>The DOE will reconfirm the content of the national and sectoral policies and regulations for the proposed project. Please submit the relevant documents for the above regulations.</p> <p>The issuing date of the 'Management and operation guidelines on RPS' should be revised in the PoA-DD.</p> <p><Just for the reference></p> <p>Energy saving and efficiency regulations and acts are follows:</p> <p>-Energy use Rationalization Act</p> <p>-Guideline for rationalization</p> <p>↓</p> <p>· The DOE confirmed that the latest version of the 'Management and operation guidelines on RPS' was issued on 27 December 2012 and the PoA-DD was updated on the same date. (2012.7.26)</p>	<p>PP submit #13. Management and operation on RPS'.</p> <p>PP check that the issue date of regulation is '27th of November, 2011', so revised the PoA-DD. (Section A.4.3., page 7)</p>	CL for PoA	OK

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		hypothetical situation without the national and/or sectoral policies or regulations being in place;				
37		(b) National and/or sectoral policies or regulations that give comparative advantages to less emissions-intensive technologies over more emissions-intensive technologies (e.g. public subsidies to promote the diffusion of renewable energy or to finance energy efficiency programs), otherwise known as policies that decrease GHG emissions, are called type E-. For this type of national and/or sectoral policies or regulations, those that have been implemented since the adoption by the COP of the CDM M&P (decision 17/CP.7, 11 November 2001) need not be taken into account in identifying a baseline scenario (i.e. the baseline scenario could refer to a hypothetical situation without the national and/or sectoral policies or regulations being in place).	Refer ID. No. 36	PP submit #13. Management and operation on RPS'. PP check that the issue date of regulation is '27th of November, 2011', so revised the PoA-DD. (Section A.4.3., page 7)	CL for PoA	OK
7. Algorithms and/or formulae used to determine emission reductions						
38	96. The DOE shall determine whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).	97. Where the methodology allows for selection between options for equations or parameters, the DOE shall determine whether adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed project activity and other evidence provided) and that the correct equations and parameters have been used, in accordance with the methodology selected 8 including applicable tool(s).	The data source of Annex 3 of the CPA-DD was confirmed at the on site visit by the following documents: - Statistics of electric power in Korea, 2011.05, 2010.05, and 2009.06 - Power generation status data book in Korea, 2010 and 2009 under review by the DOE.		OK	OK
39		98. The DOE shall verify the justification given in the PDD for the choice of data and parameters used in the equations. If data and parameters will not be monitored throughout the crediting period of the proposed project activity but have already	The data of the low-cost, must-run percentage calculation for recent five years was submitted. Haegwon solar power should be added to the data among the data of the recently built five plants and the data of Gunwi (small	PP added the data of low-cost/must-run percentage calculation in Section B.3 of CPA-DD (page 10) and revised the list of the recent built 5 plants in Table B.5 (page 14) ** PP checked the emission factor calculation sheet and found the error of BM	CAR for CPA [01]	OK

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		been determined and will remain fixed throughout the crediting period, the DOE shall determine whether all data sources and assumptions are appropriate and calculations are correct as applicable to the proposed project activity, and will result in an accurate or otherwise conservative estimate of the emission reductions. If data and parameters will be monitored or estimated on implementation and hence become available only after validation of the project activity, the DOE shall determine whether the estimates provided in the PDD for these data and parameters are reasonable.	<p>hydropower) should be deleted in the CPA-DD.</p> <p>↓</p> <p>The DOE confirmed that the Haengwon solar park (Photovoltaic) operation, which was started in November 2010, was selected to calculate the grid emission factor, instead of Gunwi (small hydropower).</p> <p>The appropriateness of the grid emission factor is under review by the DOE. (2012.7.27)</p> <p>↓</p> <p>The DOE confirmed that all applied values of the CPA-DD were in accordance with those of the Korea electricity statistics of 2010. However, please clarify the "Net caloric value" in the CPA-DD and those of the Korea electricity statistics of 2008 and 2009.</p> <p>-----</p> <p>The DOE confirmed that the revised grid emission factor was determined appropriately.</p>	<p>calculation. So PP revised the data and BM and CM emission factor was changed. BM is 0.6357, CM is 0.6789 for solar energy. (PP re-submit the emission factor calculation sheet. the changed point is stated in this sheet)</p> <p>-----</p> <p>Grid emission factor is revised by the consultant (2012.9.10)</p>		
8. Additionality of a project activity						
40	101. The DOE shall determine whether the proposed project activity is additional as demonstrated in the PDD.	102. The DOE shall assess and verify the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by project participants to support the demonstration of additionality. This requires the DOE to critically assess the evidence presented, using local knowledge and sectoral and financial expertise.	· It was confirmed that solar technologies (photovoltaic and solar thermal electricity generation) were automatically defined as additional base on Annex 24 Attachment A of Appendix B (Version 08).		OK	OK
41		103. If required by the applicable approved methodology, the DOE shall consider tools and guidelines provided by the Board to demonstrate the additionality of proposed project activities. The DOE shall also consider specific complementary or alternative requirements included in the methodology for demonstrating the additionality of the proposed project activity.	· It was confirmed that solar technologies (photovoltaic and solar thermal electricity generation) were automatically defined as additional base on Annex 24 Attachment A of Appendix B (Version 08).		OK	OK
3. Additionality						
42	158. The DOE shall determine whether the proposed SSC project	159. The DOE shall refer to the specific requirements on demonstration of	· It was confirmed that solar technologies (photovoltaic and solar thermal electricity		OK	OK

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	activity is additional in accordance with CDM requirements applicable for small-scale project activities.	additionality for small-scale project activities and the “Non-binding best practice examples to demonstrate additionality for SSC project activities”	generation) were automatically defined as additional base on Annex 24 Attachment A of Appendix B (Version 08).			
43		160. In the case of Type I project activities up to 5 MW that employ renewable energy as their primary technology, Type II energy efficiency project activities that aim to achieve energy savings at a scale of no more than 20 GWh per year, and Type III project activities that aim to achieve emissions reductions at a scale of no more than 20 ktCO ₂ e per year, the DOE shall assess the relevant criteria to establish the automatic additionality for these projects.	· It was confirmed that solar technologies (photovoltaic and solar thermal electricity generation) were automatically defined as additional base on Annex 24 Attachment A of Appendix B (Version 08).		OK	OK
8. Demonstration of additionality of the PoA as a whole						
44	195. The DOE shall assess the additionality of a PoA in accordance with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for program of activities		Refer to ID. No. 11 ↓ The DOE confirmed the revised eligibility criteria in the PoA-DD, which were in accordance with EB65, Annex 3. (2012.09.15)	PP revised eligibility criteria and added the Criteria 3) technology requirement, 4) CPA start date, 7) Methodology applicability.	CAR for both PoA and CPA [01]	OK
9. Assessment of prior consideration of the clean development mechanism						
45	105. The DOE shall determine whether CDM benefits were considered necessary in the decision to undertake the project as a proposed project activity if the starting date of the proposed project activity is prior to the start of validation, which is the date of publication of the PDD for global stakeholder consultation.	106. The DOE shall determine whether the start date of the project activity, reported in the PDD, is the earliest date at which either the implementation or construction or real action of a project activity begins.10 For project activities that require construction, retrofit or other modifications, the date of commissioning cannot be considered the project activity start date. The DOE shall determine whether it is a project activity with a start date: (a) On or after 2 August 2008; or (b) Before 2 August 2008.	It is necessary to submit the CDM notification to the DNA of Korea, even if the proposed project is a PoA project. Please submit the CDM notification when it is available. The board decision (CEO decision) paper will be submitted to the DOE. The starting date of the proposed project was the contract signing date between Shinsung ENG and the consultant (Ecoeye Co., Ltd.). The documentary evidence needs to be submitted. ↓	PP submit the evidences as below. #11. CEO decision for implementation of programme CDM #1. contract (shinsung eng-ecoeye) PP will submit the CDM notification to DNA at the end of May ----- PP submit the document of CDM notification that submitted to Korea DNA (2012.6.29)	CL for PoA	OK

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			<p>The DOE confirmed that the minutes of the board meeting for CDM consideration was issued on 19 January 2012; however, the capacity was stated at 99 kw.</p> <p>· The DOE confirmed that the contract between Shinsung ENG Co., Ltd. (the PP) and Ecoeye Co., Ltd. (consulting company) was issued on 15 February 2012.</p> <p>However, CDM notification submitted to the DNA of Korea was not provided. (2012.7.26)</p> <p>↓</p> <p>· The DOE confirmed that a document of CDM notification to the Korean DNA was produced on 29 June 2012. (2012.8.26)</p>			
46		<p>107. For a project activity with a start date on or after 2 August 2008, for which a PDD has not been published for global stakeholder consultation or a new methodology has not been proposed to the Board before the project activity start date, the DOE shall confirm by referring to the list of prior consideration notifications from the UNFCCC website and communication between the project proponent, the secretariat and the host Party DNA regarding the commencement of a new project activity. If such notification has not been provided by the project participants within 180 days of the project activity start date, the DOE shall determine that the CDM was not seriously considered in the decision to implement the project activity.</p>	<p>· It was confirmed that prior consideration of the CDM was not required for the PoAs.</p>		N/A	N/A
47		<p>108. For a project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, the DOE shall assess the project participants prior consideration of the CDM. Specifically, the DOE shall assess whether the project participants:</p> <p>(a) Had an awareness of the CDM prior to the project activity start date, and that the</p>	<p>· It was confirmed that prior consideration of the CDM was not required for the PoAs.</p>		N/A	N/A

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		benefits of the CDM were a decisive factor in the decision to proceed with the project. Evidence to support this could include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participants, to undertake the project as a proposed project activity;				
48		(b) Demonstrated that real and continuing actions were taken to secure CDM status for the project in parallel with its implementation. Evidence to support this could include one or more of the following: contracts with consultants for CDM/PDD/methodology services, draft versions of PDDs and underlying documents such as letters of authorization, and if available, letter of intent, emission reduction purchase agreements (ERPA) term sheets, ERPAs or other documentation related to the potential sale of the certified emission reductions (CERs) (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology or requests for clarification or revision of existing methodologies to the Board, publication in a newspaper, interviews with the DNA, and earlier correspondence on the project with the DNA or the secretariat.	· It was confirmed that prior consideration of the CDM was not required for the PoAs.		N/A	N/A
49		109. Assessment of real and continuing actions shall be conducted by the DOE and should focus on real documented evidence as indicated in paragraph 108(b) above, including an assessment by the DOE of the authenticity of the evidence. The DOE shall assess letters, e-mail exchanges and other documented communications submitted by the project participants to substantiate the above	· It was confirmed that prior consideration of the CDM is not required for PoAs.		N/A	N/A

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		information, and these shall be considered as evidence only after the DOE has assessed the reliability and authenticity of such communications, inter alia through cross-checking (e.g. interviews).				
50		110. In validating proposed project activities where: (a) There is less than two years of a gap between the documented evidence, the DOE shall conclude that continuing and real actions were taken to secure CDM status for the project activity; (b) The gap between documented evidence is greater than two years and less than three years, the DOE may determine that continuing and real actions were taken to secure CDM status for the project activity and shall justify any positive or negative validation opinion based on the context of the evidence and information assessed; (c) The gap between documented evidence is greater than three years, the DOE shall conclude that continuing and real actions were not taken to secure CDM status for the project activity.	· It was confirmed that prior consideration of the CDM was not required for the PoAs.		N/A	N/A
51		111. If evidence to support the serious prior consideration of the CDM as indicated above is not available, the DOE shall determine that the CDM was not considered in the decision to implement the project activity.	· It was confirmed that prior consideration of the CDM was not required for the PoAs.		N/A	N/A
6. Start date of a PoA/CPA						
52	193. The DOE shall confirm that the start date of any CPA is not prior to the commencement of the validation of the PoA, which is the date the CDM-PoA-DD is first published for global stakeholder consultation.		The starting date of the proposed project was the signing date of the contract between Shinsung ENG and the consultant (Ecoeye Co., Ltd.). Please submit the contract as documentary evidence.↓ Also need provide any documentary evidence for the start date of the CPA[01], when it is available. Refer ID. No. 2 (2012.9.24)	PP submit #1. contract (shinsung eng-ecoeye)	CL for PoA	OK

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7. Prior consideration of the CDM						
53	194. The DOE is not required to assess prior consideration of CDM for PoAs, as it is expected that no component of the program will commence prior to the start date of validation.		· It was confirmed that prior consideration of the CDM was not required for the PoAs.		N/A	N/A
10. Identification of alternatives						
54	113. Where the baseline scenario is not prescribed in the approved methodology, the DOE shall assess the list of identified credible alternatives to the project activity in the PDD selected to determine the most realistic baseline scenario.	114. The DOE shall assess the list of alternatives given in the PDD and to determine whether: (a) The list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed project activity; (b) The list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the comparable outputs or services that are to be supplied by the proposed project activity; (c) The alternatives comply with all applicable and enforced legislation.	· It is not applicable to this PoA and CPA.		N/A	N/A
55		115. Where the baseline scenario is prescribed in the approved methodology, no further analysis is required.	It is not applicable to this PoA and CPA.		N/A	N/A
11. Investment analysis						
56	117. If investment analysis has been used to demonstrate the additionality of the proposed project activity, the DOE shall determine whether the proposed project activity would not be: (a) The most economically or financially attractive alternative; or (b) Economically or financially feasible without the revenue from the sale of CERs.	118. The DOE shall apply the latest version of the “Guidelines on the assessment of investment analysis” as provided by the Board and with other relevant provisions.	It is not applicable to this PoA and CPA.		N/A	N/A
57		119. The DOE shall determine whether the project activity is not the most economically or financially attractive	It is not applicable to this PoA and CPA.		N/A	N/A

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		alternative, or that it is not economically or financially feasible without CDM:				
58		<p>(a) The proposed project activity would produce no financial or economic benefits other than CDM-related income. The DOE shall determine whether the documented costs associated with the proposed project activity and the alternatives identified demonstrate that there is at least one alternative which is less costly than the proposed project activity;</p> <p>(b) The proposed project activity is less economically or financially attractive than at least one other credible and realistic alternative;</p> <p>(c) The financial returns of the proposed project activity would be insufficient to justify the required investment.</p>	It is not applicable to this PoA and CPA.		N/A	N/A
59		<p>120. To verify the accuracy of financial calculations carried out for any investment analysis, the DOE shall:</p> <p>(a) Determine the suitability of the financial indicator selected by the project participants and conduct a thorough assessment of all parameters and assumptions used in calculating such financial indicators, and determine the accuracy and suitability of these parameters using available evidence and applying its expertise in relevant accounting practices;</p> <p>(b) Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices;</p>	It is not applicable to this PoA and CPA.		N/A	N/A
60		(c) Review, as appropriate, feasibility reports, public announcements and annual financial reports related to the proposed project activity and the project	It is not applicable to this PoA and CPA.		N/A	N/A

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		<p>participants;</p> <p>(d) Assess the correctness of computations carried out and documented by the project participants; and</p> <p>(e) Assess, where applicable, the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.</p>				
61		<p>121. To confirm the suitability of any benchmark applied in the investment analysis, the DOE shall:</p> <p>(a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented;</p> <p>(b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity;</p> <p>(c) Determine whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark.</p>	It is not applicable to this PoA and CPA.		N/A	N/A
62		<p>122. Where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities, the DOE shall determine whether:</p> <p>(a) The FSR is the basis for the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short that it is unlikely in the context of the underlying project activity that the input values would have materially changed;</p>	It is not applicable to this PoA and CPA.		N/A	N/A
63		(b) The values used in the PDD and	It is not applicable to this PoA and CPA.		N/A	N/A

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		associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE shall assess the appropriateness of the values; (c) The input values from the FSR are valid and applicable at the time of investment decision. The DOE shall confirm this on the basis of its specific local and sectoral expertise and by cross-checking or other appropriate means.				
"Guidelines on the assessment of investment analysis (Version05)" on EB62 of Annex5						
64	110. The DOE shall comply with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM Executive Board and with other relevant guidance including the latest guidelines on plant load factors "guidelines for the reporting and validation of plant load factors"	General issues in calculation and presentation 3-1. The period of assessment should not be limited to the crediting period of the project activity. Both project IRR and equity IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime). If shorter period is chosen - include the fair value of the PoA assets at the end of the assessment period. (In general a minimum period of 10 years and a maximum of 20 years will be appropriate)	It is not applicable to this PoA and CPA.		N/A	N/A
65		3-2. The IRR calculation may include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment.	It is not applicable to this PoA and CPA.		N/A	N/A
66		4-1. The fair value of any project activity assets at the end of the assessment period should be included as a cash inflow in the final year.	It is not applicable to this PoA and CPA.		N/A	N/A
67		4-2. The fair value should be calculated in accordance with local accounting regulations where available, or international best practice. It is expected that such fair value calculations will include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets.	It is not applicable to this PoA and CPA.		N/A	N/A

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68		5-1. Depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, should be added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV).	It is not applicable to this PoA and CPA.		N/A	N/A
69		5-2. Taxation should only be included as an expense in the IRR/NPV calculation in cases where the benchmark or other financial indicator is intended for post-tax comparisons.	It is not applicable to this PoA and CPA.		N/A	N/A
70		6. Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.	It is not applicable to this PoA and CPA.		N/A	N/A
71		7. In the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected as the recoverable value of the assets. (Capital expenditures should be included not at the original investment costs but at the market fair value at the point of the decision to proceed with the investment, demonstrating the value through assessments done by chartered specialists).	It is not applicable to this PoA and CPA.		N/A	N/A
72		8. Project participants should supply spreadsheet versions of all investment	It is not applicable to this PoA and CPA.		N/A	N/A

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		analysis. All formulas used in this analysis be readable and all relevant cells be viewable and unprotected. The spreadsheet will be made available to the Executive Board, UNFCCC secretariat and others contracted to assess the request for registration on behalf of the Board including assigned members of the Registration and Issuance Team.				
73		Specific Guidance on the Calculation of Project IRR and Equity IRR 9. The cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR.			N/A	N/A
74		10. In the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow, the portion of the investment costs which is financed by debt should not be considered a cash outflow.	It is not applicable to this PoA and CPA.		N/A	N/A
75		11. Due to the impact of loan interest on income tax calculations it is recommended that when a project IRR is calculated to demonstrate additionality a pre-tax benchmark be applied. In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax. In such situations interest should be calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years.	It is not applicable to this PoA and CPA.		N/A	N/A
76		Selection and Validation of Appropriate Benchmarks 12. In cases where a benchmark approach is used the applied benchmark shall be	It is not applicable to this PoA and CPA.		N/A	N/A

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		appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented.				
77		13. In the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on parameters that are standard in the market. The DOE's validation of the benchmark shall also include its opinion on whether a company-specific benchmark or a benchmark based on parameters that are standard in the market is suitable in the context of the underlying project activity.	It is not applicable to this PoA and CPA.		N/A	N/A
78		14-1. Internal company benchmarks / expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC), should only be applied in cases where there is only one possible project developer and should be demonstrated to have been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region.	It is not applicable to this PoA and CPA.		N/A	N/A
79		14-2. This shall require as a minimum clear evidence of the resolution by the company's Board and/or shareholders and will require the validating DOE to undertake a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial	It is not applicable to this PoA and CPA.		N/A	N/A

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		behavior of the entity during at least the last 3 years in relation to similar projects.				
80		15. If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, while properly justifying all underlying factors. The values in the table in Appendix A may also be used, as a simple default option, if a company internal benchmark is used.	It is not applicable to this PoA and CPA.		N/A	N/A
81		16. If a company's internal benchmark is used for the expected return on equity, the cost of debt should be based on the weighted average cost of debt financing of the legal entity owning the CDM project activity. For loans, use the weighted average cost of outstanding long-term debt. For bonds, use the weighted average yield of the bonds during the last three months prior to the submission of the CDM-PDD for validation or prior to the investment decision, whichever is earlier. The use of bonds to determine the cost of debt is only appropriate for corporate bonds issued in the host country of the CDM project. In cases where the debt finance structure of the project is not yet available (e.g. a letter of intent for debt funding is not available), the cost of debt can be assumed as the commercial lending rate in the country or the yield of a 10 year bond issued by the government of the host country or, if this is not available, the bond with the maturity which is closest to 10 years. The following should be documented in the CDM-PDD: (a) for bonds: the key parameters of the bond including the time of maturity, yield,	It is not applicable to this PoA and CPA.		N/A	N/A

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		<p>registration issuance in the financial system and set-up in the market; (b) for loans from a financial institution: the contract of lending between the financial institution and the legal entity owning the assets of the project activity, or, in absence of the contract, a letter from the bank stating its intention to award the loan and the key terms for the loan; (c) for debt financing from a parent company: the transfer of capital to the legal entity, documented with the contract of lending between the parent company and the legal entity owning the assets of the project activity and/or the parameters of the corporate bonds as mentioned above. This latter option is only valid for corporate bonds issued in the host country of the CDM project activity. If the benchmark is based on parameters that are standard in the market, the cost of debt should be calculated as the cost of financing in the capital markets (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on documented evidence from financial institutions with regard to the cost of debt financing of comparable projects. In cases where this data is not available, use the commercial lending rate in the host country to calculate the cost of debt.</p>				
82		<p>17. If a company's internal benchmark is used for the expected return on equity, then the percentage of debt financing and equity financing should reflect the long-term debt/equity finance structure of the legal entity owning the assets of the project activity. The percentage should be determined based on the latest balance sheet provided under local fiscal/accounting standards and rules if:</p>	It is not applicable to this PoA and CPA.		N/A	N/A

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		(a) the legal entity owning the assets of the project activity has balance sheets audited by a third party within two years prior to the submission of the CDM-PDD for validation; and (b) the accounting books of the legal entity reflect at least the total value of all the assets needed for the project activity. If the debt/equity finance structure is not yet available, 50% debt and 50% equity financing may be assumed as a default.				
83		18. If the benchmark is based on parameters that are standard in the market, then the typical debt/equity finance structure observed in the sector of the country should be used. If such information is not readily available, 50% debt and 50% equity financing may be assumed as a default.	It is not applicable to this PoA and CPA.		N/A	N/A
84		Investment comparison analysis and benchmark analysis 19. If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate.	It is not applicable to this PoA and CPA.		N/A	N/A
85		Sensitivity analysis 20. Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude). The results of this variation should be presented in the PDD	It is not applicable to this PoA and CPA.		N/A	N/A

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		and be reproducible in the associated spreadsheets. Where a DOE considers that a variable which constitute less than 20% have a material impact on the analysis they shall raise a corrective action request to include this variable in the sensitivity analysis.				
86		21-1. The DOE should assess in detail whether the range of variations is reasonable in the project context. Past trends may be a guide to determine the reasonable range. As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances.	It is not applicable to this PoA and CPA.		N/A	N/A
87		21-2. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity.	It is not applicable to this PoA and CPA.		N/A	N/A
88		In situations where an investment analysis is carried out in nominal terms, project participants can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period. If this information is not available, the target inflation rate of the central bank shall be used. If	It is not applicable to this PoA and CPA.		N/A	N/A

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		this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used.				
(b) Barrier analysis						
89	115. If barrier analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall demonstrate that the proposed CDM project activity faces barriers that: (a) Prevent the implementation of this type of proposed CDM project activity; (b) Do not prevent the implementation of at least one of the alternatives.	116. Issues that have a clear direct impact on the financial returns of the project activity cannot be considered barriers and shall be assessed by investment analysis. This does not refer to either (a) Risk related barriers, for example risk of technical failure, that could have negative effects on financial performance, or (b) Barriers related to the unavailability of sources of finance for the project activity.	It is not applicable to this PoA and CPA.		N/A	N/A
90		117. The DOE shall apply a two-step process to assessing the barrier analysis performed, as follows: (a) Determine whether the barriers are real. The DOE shall assess the available evidence and/or undertake interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist. The DOE shall ensure that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics. If existence of a barrier is substantiated only by the opinions of the project participants, the DOE shall not consider this barrier to be adequately substantiated. If the DOE	It is not applicable to this PoA and CPA.		N/A	N/A

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		considers, on the basis of its sectoral or local expertise, that a barrier is not real or is not supported by sufficient evidence, it shall raise a CAR to have reference to this barrier removed from the project documentation;				
91		(b) Determine whether the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives. Since not all barriers present an insurmountable hurdle to a project activity being implemented, the DOE shall apply its local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of at least one of the possible alternatives, in particular the identified baseline scenario.	It is not applicable to this PoA and CPA.		N/A	N/A
92		(b) Determine whether the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives: Since not all barriers present an insurmountable hurdle to a project activity being implemented, the DOE shall apply its local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed project activity and would not equally prevent implementation of at least one of the possible alternatives, in particular the identified baseline scenario.	It is not applicable to this PoA and CPA.		N/A	N/A
13. Common practice analysis						
93	128. For proposed large-scale project activities, unless the proposed project type is first-of-its-kind as determined in accordance with the relevant guidelines, the DOE shall assess whether the project participants have conducted a common practice analysis.	129. The DOE shall use official sources and its local and sectoral expertise to: (a) Assess whether the geographical scope (e.g. the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activities technology or industry type. For certain technologies,	It is not applicable to this PoA and CPA.		N/A	N/A

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		the relevant region for assessment will be local and for others it may be transnational/global. If a region other than the entire host country is chosen, the DOE shall assess the explanation of why this region is more appropriate;				
94		(b) Determine to what extent similar and operational projects (e.g. using similar technology or practice), other than project activities, 17 have been undertaken in the defined region; (c) Assess, if similar and operational projects, other than project activities, are already “widely observed and commonly carried out” in the defined region, whether there are essential distinctions between the proposed project activity and the other similar activities.	It is not applicable to this PoA and CPA.		N/A	N/A
14. Monitoring plan						
95	131. The DOE shall determine whether the description of the monitoring plan included in the PDD is based on the approved monitoring methodology including applicable tool(s).	132. The DOE shall apply a two-step process to meet the above requirement: (a) To assess compliance of the monitoring plan with the approved methodology and the applicable tool(s), the DOE shall: (i) Identify the list of parameters required by the selected approved methodology including applicable tool(s) by means of document review; (ii) Confirm that the description of the monitoring plan contains all necessary parameters, that they are described and that the means of monitoring described in the plan complies with the requirements of the methodology including applicable tool(s).	<ul style="list-style-type: none"> · The PoA CDM operational manual "Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)" is not in accordance with the operational and management plan in the PoA-DD. · The PO is requested to revise the sections of the PoA CDM operational manual dealing with roles and responsibilities, record, personnel training, capacity development procedures, CPA implementer's roles and responsibilities, etc. · Declaration letter, regarding double counting of the CPA project within other schemes in Korea, from the CPA to the CME, should be prepared and submitted to the DOE when it is available. · The measures for continuous improvement of the PoA management system, such as QA/QC procedures are not indicated in the PoA CDM operational manual. · It is necessary to describe the condition (when, how, case) of the training and education 	<ul style="list-style-type: none"> * PP revised the contents '3. role and responsibilities, and 7 Monitoring', and added the contents '6. Training, 8. Document and data control, and 9. Improvements of operation manual' in the Operational manual. * PP will submit Declaration letter regarding avoidance of double counting <p>----- PP revised PoA operation manual and eligibility criteria. (2012.9.10)</p>	CAR for PoA	OK

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			<p>for the CPA by the CME, both the PoA CDM operational manual of "The Grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)" and the PoA-DD.</p> <p>· The data maintenance for the CPA should be described in the " Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)".</p> <p>Please refer EB65 Annex 3, para 13 to para 20.</p> <p>↓</p> <p>Revised " Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)" is under review by the DOE. (2012.7.30)</p> <p>↓</p> <p>The DOE confirmed " Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)" and the eligibility criteria of the PoA-DD.</p> <p>Please refer ID. No. 11 and ID. No. 17. (2012.09.4)</p>			
96		<p>(b) To assess the implementation of the plan the DOE shall, by means of review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection of the proposed project activity site, assess whether:</p> <p>(i) The monitoring arrangements described in the monitoring plan are feasible within the project design;</p> <p>(ii) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project activity can be reported ex post and verified.</p>	<p>The sample of monitoring system (operational screen) was confirmed at the on site visit. It was confirmed by interview that the same system will be used for CPA1.</p> <p>The current regulation of the meter accuracy will be informed after the on site visit.</p> <p>The calibration frequency of the importing meters is regulated by the current domestic regulation because the meters are owned by KEPCO, but the exporting meters can be calibrated every three years according to the CDM guidelines because the meters are owned by the PO.</p> <p>↓</p> <p>· The DOE confirmed the order sheet of the monitoring meter, however, specification was not demonstrated in the order sheet. The monitoring meter is required to have accuracy lower than 1% based on "Standard and Instruction regarding Supporting to the New</p>	<p>PP submit #12. regulation of the monitoring equipment</p> <p>-----</p> <p>*PP add related content of meter accuracy requirement in the PoA-DD and CPA-DD.</p> <p>* Calibration frequency :</p> <p>- PP refer to the "Guidelines for assessing compliance with the calibration frequency requirements" (EB 52, Annex 60).</p> <p>- According to the rules on the operation of the electric utility market, the calibration of electricity meter should be done every 3~4 years.</p> <p>-----</p> <p>PP revised the monitoring plan in PoA-DD and CPA-DD, especially about QA/QC (calibration frequency)</p> <p>PP corrects the related guideline about monitoring plan to "Clean Development Mechanism Project Standard" (EB 65, Annex 5).</p> <p>" Project participants shall ensure that the</p>	CL for both PoA and CPA [01]	OK

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			<p>and Renewable Energy Equipment" (regulation of the monitoring equipment). ID. No. 34. The PP is requested to add the related content of meter accuracy requirement in the PoA-DD and CPA-DD.</p> <p>· Please confirm the calibration frequency of "the exporting meters once every three years according to the CDM guidelines". It is believed that the guidelines may be "General Guidelines to SSC CDM methodologies" that has para. 17. (c) "Measuring equipment should be certified to national or IEC standards and calibrated according to the national standards and reference points or IEC standards and recalibrated at appropriate intervals according to manufacturer specifications, but at least once in three years; However, from version 18 of the guidelines, there is no sentence of "but at least once in three years". Please consider whether the calibration frequency of exporting (even importing) will be applied once every three years.</p> <p>Also, the submitted reference No. 12 "Regulation of the Monitoring Equipment" has criteria about the accuracy of meter but no calibration frequency regulation. (2012.7.30)</p> <p>↓</p> <p>The DOE confirmed the revised calibration frequency in the PoA-DD, CPA-DD, and "Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft)".</p> <p>However, please confirm whether the "Guidelines for Assessing Compliance with the Calibration Frequency Requirements" (EB 52, Annex 60) was referred properly. Please revise and unify calibration frequency among the PoA-DD, CPA-DD, and "Shinsung Solar Energy the grid Connected Solar PV Generation of the PoA CDM Operation Instruction (draft) (esp. appendix 5 of each DD)." (2012.9.4)</p> <p>↓</p>	<p><i>equipments are calibrated either in accordance with the local/national standards, or as per the manufacturer's specifications. If local/national standards or the manufacturer's specifications are not available, international standards may be used. " (2012.9.10)</i></p>		
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			The revised PoA-DD and CPA-DD were confirmed to be corrected.			
	11. Monitoring plan for a PoA/CPA					
97	198. The DOE shall determine whether the monitoring plan for a CPA is in accordance with the approved monitoring methodology, including applicable tool(s).		Refer. ID. Nos. 95 and 96		CL for both PoA and CPA [01]	OK
	M. Environmental impacts					
98	134. The DOE shall determine whether the project participants conducted an analysis of the environmental impacts of the proposed project activity, including transboundary impacts, and whether those impacts are considered significant by the project participants or the host Party.	136. The DOE shall assess the above requirements by means of a document review and/or using local official sources and expertise.	The copies of "The Environmental Impact Assessment Act" and "Framework Act on Environmental Policy" were received on site. An EIA needs to be conducted in the case of Solar PV and wind power generation plants over 100 MW in Korea according to the 'Environmental Impact Assessment Act'. Also, a Preliminary Environmental Review needs to be implemented in the case of the designed planning electricity power generation area, but the CPA1 plant is not located in the selected areas.		OK	OK
99	135. The DOE shall also determine whether the project participants conducted an environmental impact assessment, if required to do so by the host Party, in accordance with the host Parties procedures.		Please revise the description of C.3. in the CPA-DD according to "Framework Act on Environmental Policy". It is not applied based on the size of the land but based on the purpose of projects. ↓ The DOE confirmed that the PoA-DD and CPA-DD were revised with respect to the description of C.3 in the CPA-DD in accordance with "Framework Act on Environmental Policy" (2012.7.25)	PP revised the PER criteria '...the project developers to implement Preliminary Environmental Review (PER) depending on the purpose of project activity' (PoA-DD; Section C.3, page 15, CPA-DD; Section C.3, page 20)	CAR for CPA [01]	OK
	12. Environmental analysis of a PoA					
100	199. The DOE shall determine whether an analysis of the environmental impacts of the PoA was undertaken as per the requirements of the CDM modalities and procedures.		Refer. ID.# 98		OK	OK

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101	200. If the analysis was not undertaken for the PoA but conducted at the CPA level, the DOE shall determine whether the analysis of the environmental impacts was conducted as described in the CDM-PoA-DD and the CDM-CPA-DD.		<p>Refer. ID. No. 99</p> <p>Please revise the description of C.3. in the CPA-DD according to "Framework Act on Environmental Policy". It is not applied based on the size of the land but based on the purpose of projects.</p> <p>An EIA does not need to be conducted for the proposed PoA project according to the 'Environmental Impact Assessment Act' as described in the CDM-PoA-DD and the CDM-CPA-DD.</p> <p>↓</p> <p>The DOE confirmed that the PoA-DD and CPA-DD were revised with respect to the description of C.3 in the CPA-DD in accordance with "Framework Act on Environmental Policy". (2012.7.25)</p>	PP revised the PER criteria '...the project developers to implement Preliminary Environmental Review (PER) <u>depending on the purpose of project activity</u> ' (PoA-DD; Section C.3, page 15, CPA-DD; Section C.3, page 20)	CAR for CPA [01]	OK
N. Local stakeholder consultation						
102	138. The DOE shall determine whether the project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project activity.	139. The DOE shall, by means of document review and interviews with local stakeholders as appropriate, determine whether: (a) Comments have been invited from local stakeholders that are relevant for the proposed project activity; (b) The summary of the comments received as provided in the PDD is complete; (c) The project participants have taken due account of all comments received and have described this process in the PDD.	The DOE interviewed the local stakeholders at the on site visit. There were no negative opinions.	Actually, Shinsung and neighbour company have a meeting regularly, but there are no evidence about. So PP can not submit the relevant documents. For local stakeholder consultant, PP upload the information of CPA[01] at Shinsung-website.	CL for CPA [01]	OK
13. Local stakeholder consultation						
103	201. The DOE shall determine whether the local stakeholder consultation process was carried out for the whole PoA or at the CPA level. If comments by local stakeholders were invited with regard to the whole PoA, the DOE shall determine how these comments were invited; whether		-		N/A	N/A

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	the summary of the comments received is complete and how due account was taken of all comments received.					
104	202. If the local stakeholder consultation is conducted at the CPA level, the DOE shall determine whether it is in accordance with the level of consultation specified by the coordinating/managing entity and whether the local stakeholder comments were taken into account and described in the CDM-PoA-DD and the CDM-CPA-DD.		The stakeholder consultation was done through the CPA1 website from 30 Jan 2012 to 14 February 2012. No comments were submitted during this period. The DOE interviewed the local stakeholders at the on site visit. There were no negative opinions.	Actually, Shinsung and neighbour company have a meeting regularly, but there are no evidence about. So PP can not submit the relevant documents. For local stakeholder consultant, PP upload the information of CPA[01] at Shinsung-website.	CL for CPA [01]	OK
VIII. Specific validation requirements (additional)						
1. Project activity eligibility						
104	150. The DOE shall determine whether the proposed project activity meets the small-scale eligibility requirements.	151. For a project activity that is within the small-scale project activity threshold but applies a large-scale approved methodology, the DOE shall determine whether this project activity follows the modalities and procedures for large-scale project activities.	-		N/A	N/A
105		152. The DOE shall determine whether: (a) The project activity qualifies within the thresholds of the three possible types of small-scale project activities. It may include more than one component; for example, a type III methane recovery component activity and a type I electricity component activity; (b) The project activity conforms to one or more of the approved small-scale methodologies applied in conjunction with the general guidelines to SSC CDM methodologies; (c) The proposed small-scale project activity is not a debundled component of a	Refer. ID. No. 18		CL for CPA [01]	OK

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		large-scale project activity.				
	9. Eligibility criteria for inclusion of a CPA in the PoA					
106	196. The DOE shall assess the eligibility criteria for inclusion of a CPA in the PoA in accordance with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for program of activities		Refer to ID. No. 11 It is requested to revise the eligibility criteria for inclusion of a SSC-CPA in the PoA consistent with the 'Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Program of Activities (Ver. 01.1), EB65, Annex 3.' ↓ DOE confirmed the revised eligibility criteria in the PoA-DD, which are in accordance with EB65, Annex 3. (2012.09.15)	PP revised eligibility criteria and added the Criteria 3) technology requirement, 4) CPA start date, 7) Methodology applicability. -----	CAR for both PoA and CPA [01]	OK
	10. Crediting period of a PoA/CPA					
107	197. The DOE shall determine whether the length of a PoA does not exceed 28 years (60 years for A/R).		-		OK	OK
	15. Inclusion or renewal of a crediting period of a CPA under a registered PoA					
108	204. The DOE shall assess the CPA and the specific CDM-CPA-DD against the latest version of the PoA to determine whether the CPA meets the requirements of the PoA.		-		N/A	N/A

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Table A-2 Risk analysis before on-site assessment

*Evaluation: High = No descriptions in the PDD / Moderate = some descriptions but necessary to cross-check / Low = descriptions confirmed

ID	Risk		Checkpoint	H/M/L	Comment
1	Additionality requirements	Investment analysis (VVS paragraph 117-122, EB65 Annex4)	Accuracy of financial (IRR) calculations?	L	It is not applicable to this PoA. The positive list of grid-connected renewable electricity generation technologies that are automatically defined as additional, without further documentation of barriers, consists of the following grid-connected renewable electricity generation technologies of installed capacity up to 15 MW: (a) Solar technologies (photovoltaic and solar thermal electricity generation); (b) Off-shore wind technologies; (c) Marine technologies (wave, tidal)
2			Sensitivity analysis: parameter selection complete & reasonable?	L	Refer ID. #1
3			Sensitivity analysis: fluctuation of range complete & reasonable?	L	Refer ID. #1
4			Suitable benchmark applied for the type of financial indicator?	M	Refer ID. #1
5			The following investment indicators are reasonable? 1) Total static investment (VND) per kW? 2) Total static investment (VND) per MWh?	M	Refer ID. #1
6			Plant load factor (estimated operation hours/8760 h) is reasonable?	M	Refer ID. #1

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7			Coefficient of effective electricity generation is reasonable?	L	Refer ID. #1
8			Electricity tariff is reasonable?	M	Refer ID. #1
9		Prior CDM consideration (VVS paragraph 105-111, paragraph 195, EB65 Annex 4)	The period of time between PDR finalization and CDM decision is sufficiently short?	M	It was confirmed that Prior consideration of the CDM is not required for PoAs. VVS, para. 194 (EB 65, Annex 4)
10			CDM benefits were considered?	M	Refer ID. #9
11			Start date substantiated? & according to Glossary of Terms -Implementation -Construction -Real action	M	15 th February 2012 (Equipment contract date)
12			Real & continuing action after CDM decision making?	L	Refer ID. #9
13		Common practice analysis (VVS paragraph 128-129, Add. Tool)	Extent of similar & operational non-CDM projects in region, distinctions between CDM project & other similar activities (VVM paragraph 117-119, Add. Tool)	N/A	
14		Barrier analysis (Add. Tool)	Investment barriers, other than the economic/financial, technological barriers, barriers due to prevailing practice, other barriers, specified in methodology	N/A	
15	Baseline methodology	Baseline identification (VVS paragraph 88-93)	Baseline scenario applied validated, referenced, & reasonable to occur without CDM, identification of alternatives, supplementary & no reasonable baselines excluded	L	Need to confirm by evidential document.

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16		Methodology specific requirements	requirements as specified in the approved methodology used?	L	Need to confirm by evidential document.
17		Applicability conditions (VVS paragraph 73-76, Deviation at registration & methodology revision procedures)	Substantiate methodology applicability conditions, request a revision to or a deviation from the methodology	L	Applicability of the methodology (AMS. I.D ver.17), relevant tools (additionality and emission factor calculation), and calculation of EF (OM, BM and CM) in S. Korea.
18		Algorithms and/or formulae (VVS paragraph 96-98)	Equations & parameters correctly applied, justification of the choice of data & parameters used in the equations	L	Some descriptions on formulae and in tables of parameters should be carefully checked.
19		Project boundary (VVS paragraph 82-85)	Correct delineation of project boundary & meets requirements, all sources & GHGs included in project boundary	L	The PoA boundary and sources and GHGs included are consistent with definition in the applied methodology. The power density of the proposed PoA will be confirmed at the on-site assessment.
20	Emission reduction	Baseline emissions	The entities involved in the study are reliable?	L	It will be confirmed during on-site assessment.
21			External data sources are appropriate?	L	Emission factors will be confirmed by relevant documentary evidences.
22		Project emissions	Major emission sources, if any?	L	According to the applied methodology (AMS.I.D ver.17), there is no project emission.
23	Monitoring methodology	Monitoring plan compliance	All parameters provided	L	It is in accordance with the applied methodology.
24			Means & provision for monitoring	L	Basic information seems to be covered in the PoA-DD and CPA-DD. Details need to be confirmed by on-site assessment and evidential documents (if any at present status).
25			Reporting & verification (methodologies & PDD)	L	Basically information seems to be covered in the PoA-DD and CPA-DD. Details need to be confirmed by on-site assessment and evidential documents (if any at present status).
26		Implementation of the plan	monitoring arrangements feasible	L	Basically information seems to be covered in the PoA-DD and CPA-DD. Details need to be confirmed by on-site assessment and evidential documents (if any at present status).
27			Means of implementation for ex-post reporting & verification (methodologies & PDD)	M	Basically information seems to be covered in the PoA-DD and CPA-DD. Details need to be confirmed by on-site assessment and evidential documents (if any at present status).
28	Participation	Project description (VVM	Not a de-bundled large scale project?	M	Need to confirm at on-site assessment and interviews.

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29	requirements	paragraph	In terms of retrofit, are any differences compared to pre-project?	L	The proposed PoA is Greenfield solar power PoA. Need to confirm at on-site assessment.
30			Leakage covered?	L	According to applied methodology, there is no leakage. Need to confirm during the on-site assessment.
31			Bundled project?	L	The proposed PoA is not a bundled project. Need to confirm at on-site assessment.
32			Increase in fuel or production?	L	The proposed PoA is Solar power, and don't need fuel consumption basically.
33			Is plant capacity concrete?	L	
34					
34		LoA from Parties (VVS paragraph 45-48)	Provided & complete?	L	LoA has not been published. Need to be confirmed during validation
35			Correct & cross references?	H	LoA has not been published. Need to be confirmed during validation
36		PoA-DD and CPA-DD (VVM paragraph 62-63)	As per template & guidance?	L	The received PoA-DD, CPA-DD is the latest version of template.
37	Consultation requirements	Local stakeholder	Inconsistency & details of the local stakeholder consultation? (e.g. benefits of the CDM)	M	Need to confirm by local stakeholder interview.
38			Local residents are resettled with sufficient compensation?	M	Need to confirm at on-site assessment and interviews.
39		Global stakeholder	Inconsistency & details of the global stakeholder consultation? (e.g. different approved methodology applied)	L	Still on the process of GSC. Need to confirm by public comments.
40	Environmental impact assessment		Licensed?	M	Need to confirm at the on-site assessment.
41			Any further requirements when approved?	L	Need to confirm by EIA is necessary

PoA VALIDATION REPORT

APPENDIX B: QUALIFICATIONS

Name:	PARK, Yong Tae		
Position:	<input checked="" type="checkbox"/> 1. Lead Auditor <input type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert		
Fields of Expertise:	Sectoral Scopes (SS) SS 1: Energy industries (renewable/non-renewable sources) SS 2: Energy distribution SS 3: Energy demand SS 4: Manufacturing industries SS 5: Chemical industry SS 6: Construction SS 7: Transport SS 8: Mining/mineral production SS 9: Metal production SS 10: Fugitive emissions from fuels (solid, oil and gas) SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride SS 12: Solvents use SS 13: Waste handling and disposal SS 14: Afforestation and reforestation SS 15: Agriculture	Technical Areas (TA) <input type="checkbox"/> TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX) <input checked="" type="checkbox"/> TA 1.2: Energy generation from renewable energy sources <input type="checkbox"/> TA 2.1: Electricity distribution <input type="checkbox"/> TA 2.2: Heat distribution <input type="checkbox"/> TA 3.1: Energy demand <input type="checkbox"/> TA 4.1: Cement sector (COMPLEX) <input type="checkbox"/> TA 4.2: Aluminum (COMPLEX) <input type="checkbox"/> TA 4.3: Iron and steel (COMPLEX) <input type="checkbox"/> TA 4.4: Refinery (COMPLEX) <input type="checkbox"/> TA 5.1: Chemical process industries (COMPLEX) <input type="checkbox"/> TA 6.1: Construction <input type="checkbox"/> TA 7.1: Transport <input type="checkbox"/> TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below <input type="checkbox"/> TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX) <input type="checkbox"/> TA 9.1: Metal production <input type="checkbox"/> TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below <input type="checkbox"/> TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX) <input type="checkbox"/> TA 11.1: Chemical process industries (COMPLEX) <input type="checkbox"/> TA 11.2: GHG capture and destruction <input type="checkbox"/> TA 12.1: Chemical process industries (COMPLEX) <input type="checkbox"/> TA 13.1: Waste handling and disposal <input type="checkbox"/> TA 13.2: Animal waste management <input type="checkbox"/> TA 14.1: Forestry <input type="checkbox"/> TA 15.1: Agriculture <input type="checkbox"/> TA 15.2: Animal waste management	
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"

PoA VALIDATION REPORT

Name:	ISHIGAI,Chikara		
Position:	<input checked="" type="checkbox"/> 1. Lead Auditor <input type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert		
Fields of Expertise:	Sectoral Scopes (SS)	Technical Areas (TA)	
	SS 1: Energy industries (renewable/non-renewable sources)	<input checked="" type="checkbox"/>	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX)
		<input checked="" type="checkbox"/>	TA 1.2: Energy generation from renewable energy sources
	SS 2: Energy distribution	<input checked="" type="checkbox"/>	TA 2.1: Electricity distribution
		<input checked="" type="checkbox"/>	TA 2.2: Heat distribution
	SS 3: Energy demand	<input checked="" type="checkbox"/>	TA 3.1: Energy demand
	SS 4: Manufacturing industries	<input type="checkbox"/>	TA 4.1: Cement sector (COMPLEX)
		<input type="checkbox"/>	TA 4.2: Aluminum (COMPLEX)
		<input type="checkbox"/>	TA 4.3: Iron and steel (COMPLEX)
		<input type="checkbox"/>	TA 4.4: Refinery (COMPLEX)
	SS 5: Chemical industry	<input checked="" type="checkbox"/>	TA 5.1: Chemical process industries (COMPLEX)
	SS 6: Construction	<input type="checkbox"/>	TA 6.1: Construction
	SS 7: Transport	<input type="checkbox"/>	TA 7.1: Transport
	SS 8: Mining/mineral production	<input type="checkbox"/>	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below
		<input checked="" type="checkbox"/>	TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 9: Metal production	<input type="checkbox"/>	TA 9.1: Metal production
	SS 10: Fugitive emissions from fuels (solid, oil and gas)	<input type="checkbox"/>	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below
		<input checked="" type="checkbox"/>	TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	<input type="checkbox"/>	TA 11.1: Chemical process industries (COMPLEX)
		<input type="checkbox"/>	TA 11.2: GHG capture and destruction
	SS 12: Solvents use	<input checked="" type="checkbox"/>	TA 12.1: Chemical process industries (COMPLEX)
	SS 13: Waste handling and disposal	<input type="checkbox"/>	TA 13.1: Waste handling and disposal
		<input type="checkbox"/>	TA 13.2: Animal waste management
	SS 14: Afforestation and reforestation	<input type="checkbox"/>	TA 14.1: Forestry
	SS 15: Agriculture	<input type="checkbox"/>	TA 15.1: Agriculture
		<input type="checkbox"/>	TA 15.2: Animal waste management
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"

PoA VALIDATION REPORT

Name:	SHI, Xueting		
Position:	<input checked="" type="checkbox"/> 1. Lead Auditor <input type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert		
Fields of Expertise:	Sectoral Scopes (SS)	Technical Areas (TA)	
	SS 1: Energy industries (renewable/non-renewable sources)	<input type="checkbox"/>	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX)
		<input checked="" type="checkbox"/>	TA 1.2: Energy generation from renewable energy sources
	SS 2: Energy distribution	<input type="checkbox"/>	TA 2.1: Electricity distribution
		<input type="checkbox"/>	TA 2.2: Heat distribution
	SS 3: Energy demand	<input type="checkbox"/>	TA 3.1: Energy demand
	SS 4: Manufacturing industries	<input type="checkbox"/>	TA 4.1: Cement sector (COMPLEX)
		<input type="checkbox"/>	TA 4.2: Aluminum (COMPLEX)
		<input type="checkbox"/>	TA 4.3: Iron and steel (COMPLEX)
		<input type="checkbox"/>	TA 4.4: Refinery (COMPLEX)
	SS 5: Chemical industry	<input type="checkbox"/>	TA 5.1: Chemical process industries (COMPLEX)
	SS 6: Construction	<input type="checkbox"/>	TA 6.1: Construction
	SS 7: Transport	<input type="checkbox"/>	TA 7.1: Transport
	SS 8: Mining/mineral production	<input type="checkbox"/>	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below
		<input type="checkbox"/>	TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 9: Metal production	<input type="checkbox"/>	TA 9.1: Metal production
	SS 10: Fugitive emissions from fuels (solid, oil and gas)	<input type="checkbox"/>	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below
		<input type="checkbox"/>	TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	<input type="checkbox"/>	TA 11.1: Chemical process industries (COMPLEX)
		<input type="checkbox"/>	TA 11.2: GHG capture and destruction
	SS 12: Solvents use	<input type="checkbox"/>	TA 12.1: Chemical process industries (COMPLEX)
	SS 13: Waste handling and disposal	<input type="checkbox"/>	TA 13.1: Waste handling and disposal
		<input type="checkbox"/>	TA 13.2: Animal waste management
	SS 14: Afforestation and reforestation	<input type="checkbox"/>	TA 14.1: Forestry
	SS 15: Agriculture	<input type="checkbox"/>	TA 15.1: Agriculture
		<input type="checkbox"/>	TA 15.2: Animal waste management
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"

PoA VALIDATION REPORT

Name:	TANABE, Koichiro		
Position:	<input checked="" type="checkbox"/> 1. Lead Auditor <input type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert		
Fields of Expertise:	Sectoral Scopes (SS)		Technical Areas (TA)
	SS 1: Energy industries (renewable/non-renewable sources)	<input checked="" type="checkbox"/>	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX)
		<input checked="" type="checkbox"/>	TA 1.2: Energy generation from renewable energy sources
	SS 2: Energy distribution	<input type="checkbox"/>	TA 2.1: Electricity distribution
		<input checked="" type="checkbox"/>	TA 2.2: Heat distribution
	SS 3: Energy demand	<input type="checkbox"/>	TA 3.1: Energy demand
		<input type="checkbox"/>	TA 4.1: Cement sector (COMPLEX)
	SS 4: Manufacturing industries	<input type="checkbox"/>	TA 4.2: Aluminum (COMPLEX)
		<input type="checkbox"/>	TA 4.3: Iron and steel (COMPLEX)
		<input type="checkbox"/>	TA 4.4: Refinery (COMPLEX)
	SS 5: Chemical industry	<input type="checkbox"/>	TA 5.1: Chemical process industries (COMPLEX)
	SS 6: Construction	<input type="checkbox"/>	TA 6.1: Construction
	SS 7: Transport	<input type="checkbox"/>	TA 7.1: Transport
	SS 8: Mining/mineral production	<input type="checkbox"/>	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below
		<input type="checkbox"/>	TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 9: Metal production	<input type="checkbox"/>	TA 9.1: Metal production
	SS 10: Fugitive emissions from fuels (solid, oil and gas)	<input type="checkbox"/>	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below
		<input type="checkbox"/>	TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	<input type="checkbox"/>	TA 11.1: Chemical process industries (COMPLEX)
<input type="checkbox"/>		TA 11.2: GHG capture and destruction	
SS 12: Solvents use	<input type="checkbox"/>	TA 12.1: Chemical process industries (COMPLEX)	
SS 13: Waste handling and disposal	<input checked="" type="checkbox"/>	TA 13.1: Waste handling and disposal	
	<input type="checkbox"/>	TA 13.2: Animal waste management	
SS 14: Afforestation and reforestation	<input type="checkbox"/>	TA 14.1: Forestry	
SS 15: Agriculture	<input type="checkbox"/>	TA 15.1: Agriculture	
	<input type="checkbox"/>	TA 15.2: Animal waste management	
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"