



VALIDATION REPORT

VALIDATION OF SH Corporation Solar photovoltaic housing complex programme in Republic of Korea

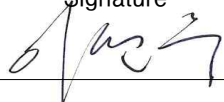
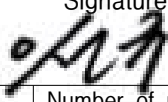
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KOREA ENVIRONMENT CORPORATION



VALIDATION REPORT

Date of first issue: 14-06-2012		Project No: KC11-012	
APPROVED BY: Lee Seon-woo GHG Certification Center manager		Organizational unit: Korea Environment Corporation (Keco)	
Client: RCC Co., Ltd		Client ref: Kim Jong-kyu	
<p>Signature</p> 			
<p>Summary:</p> <p>► A project title: SH Corporation Solar photovoltaic housing complex programme in Republic of Korea</p> <p>► Host Country: Republic of Korea</p> <p>► Annexl Country: Not identified (Unilateral CDM)</p> <p>► A brief description of the validation project: This small scale CDM PoA has been developed by SH Corporation and RCC Co., Ltd. The objective of the project is to reduce Greenhouse Gases by introducing captive use types of solar PV and/or BIPV into housing complexes in the Metropolis of Seoul for displacing electricity supplied from Korea Power grid.</p> <p>► Scale: Small</p> <p>► Methodology: AMS-I.F(ver.02), 'Renewable electricity generation for captive use and mini-grid'</p> <p>► Emission Reduction Estimate: Total estimated reduction will be calculated on each CPA level. The lengths of the programme of activities is twenty-eight (28) years.</p> <p>► Scope of validation: This is the validation report prepared on the basis of the UNFCCC criteria. Validation has been concurrently prepared by a desk review based on the project documents provided by the project participants, cross-checks with on-site visit and interviews with relevant personnel.</p> <p>► The applicability of the methodology and criteria used for validation: Methodology AMS-I.F(ver.02) is applicable to the proposed project as it satisfies several conditions mentioned in the methodology.</p> <p>► Any restrictions or uncertainties related to the validation: None</p> <p>► Main conclusions and corrective action requests: Based on the desk review and feedback from the project participants, five (5) Corrective Action Requests and fourteen (14) Clarification Requests have been raised by Keco and corrected by the project participants.</p> <p>► Summary of the validation status and opinion:</p> <p><input type="checkbox"/> Corrective Action Requested</p> <p><input type="checkbox"/> Clarification requested</p> <p><input checked="" type="checkbox"/> Full approval and submission for registration</p> <p><input type="checkbox"/> Rejected</p>			
Work carried out by: Park Beom-woong (Team leader) Lee Seon-woo (Team member) Park Ji-hee (Trainee) Lee Yeon-Jae (Trainee)		Service area: Validation	
Work carried out by: Lee Seon-gyoo Independent technical reviewer		Sectoral scope of CDM project activity 1- Energy industries	
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<p>Signature</p> 			
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Abbreviations

AMS	Approved Methodology Small scale
BM	Build Margin
BIPV	Building Integrated Photovoltaic system
CAR	Corrective Action Request
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	CDM Programme of activities
CPA-DD	CDM Programme of activities Design Document
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IRR	Internal Rate of Return
Keco	Korea Environment Corporation
KEPCO	Korea Electric Power Corporation
LoA	Letter of Approval
MP	Monitoring Plan
NGO	Non Governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
PoA-DD	Programme of activities Design Document
PoA	Programme of activities
PPs	Project Participants
PV	Photovoltaic electrical system
VVM	Validation and Verification Manual
UNFCCC	United Nations Framework Convention on Climate Change



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1. INTRODUCTION

Keco has been commissioned as a DOE to validate a small scale CDM PoA, 'SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' (hereinafter referred to as 'the PoA'), by RCC Co. Ltd. The CME of the PoA is SH Corporation. This report summarizes the findings of the validation on the project to prove that the project meets all the relevant requirements based on the UNFCCC criteria.

1.1. Objective

The purpose of the validation is to ensure a thorough and independent assessment of the proposed small scale PoA submitted for registration as a proposed CDM project activity against the applicable CDM requirements. The validation has been performed to confirm general description, baseline selection, additionality, calculation of emission reductions, monitoring plan, crediting period, environmental impacts and stakeholder's comments on a basis of the Kyoto Protocol, CDM rules, modalities, related decisions by the COP/MOP, CDM Executive Board, and host country criteria. This report includes results of its assessment.

1.2. Scope

The scope of the validation is an independent and objective review on the small scale CDM PoA design document(hereinafter referred to as 'PoA-DD') and other relevant documents. The PoA-DD has been reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-I.F(ver.02). Keco has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs. The validation is not meant to provide any consulting towards the clients. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3. Names and Roles of the Validation Team Members

This is a brief description of validation team members.

Role	Name	Technical Area competence	Competence Demonstration	Type of involvement			
				Desk review	Interview	On-site visit/ Reporting	Technical review
Team leader (Validator)	Park Beom-woong	✓ (Under Observation)		✓	✓	✓	✓
Team Member (Validator)	Lee Seon-woo	✓	✓	✓	✓	✓	✓
Team Member (Trainee)	Park Ji-hee			✓	✓		
Team Member (Trainee)	Lee Yeon-Jae			✓	✓		



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2. METHODOLOGY

Standard auditing techniques(following CDM Validation and Verification Manual, version01.2) have been applied to assess the correctness of the information provided by the PPs.

The validation consisted of the following three phases.

- (a) Document review
 - (i) Review of data and information
 - (ii) Cross-checks between information provided in the PoA-DD and information from sources other than that used
- (b) Follow-up actions (i.e. on-site visit, telephone, email interviews)
 - (i) Interview with relevant stakeholders in the host country
 - (ii) Cross-checks of information provided by interviewed personnel
- (c) Resolution of outstanding issues and the issuance of the final validation report and opinion

The validation serves the following purposes.

- (a) It organizes, details and clarifies the requirements the project is expected to meet
- (b) It documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of a couple of tables. The different columns in these tables are described at Figure1.

The findings established during the validation can either be seen as a non-fulfillment of validation protocol criteria or where a risk to the fulfillment of project objectives is identified. Corrective Action Requests(CARs) are issued, where:

- (a) The PPs have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reduction;
- (b) The CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

Clarification requests(Cls) have been raised where information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.



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Validation Protocol Table 1: Mandatory Requirements

Requirement	Reference	Conclusion	Cross reference/Comment
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.

Validation Protocol Table 2: Requirement checklist

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

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Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests				
Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of PPs responses	Review by DOE	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.	Corrective Action or a Clarification #1 It should address the corrective action or a clarification from PPs	DOE review comment #1 This section should summarise the way of review (based on relevant document, statistical data, sectoral experience) by DOE about responses of PPs. In case of non-closure additional corrective action or clarification and DOE review comment should be added such as #2 or #3.	This section should summarise the validation team's conclusion.

Figure1. Validation protocol tables (See also Appendix A to this report)

2.1. Documents Review

The PoA-DD has been submitted by the PPs and additional documents has reviewed. Followings are the documentation reviewed during the validation.

Documents provided by the PPs directly related to the project:

- <1> PoA-DD [ver 01], SH Corporation Solar photovoltaic housing complex programme in Republic of Korea dated 01/10/2011
- <2> Specific CPA-DD [ver 01] SH Corporation Solar photovoltaic housing complex programme in Republic of Korea – CPA1 dated 01/10/2011
- <3> Generic CPA-DD Solar photovoltaic housing complex programme in Republic of Korea — CPA<number> dated 01/10/2011
- <4> PoA-DD [ver 02] dated 25/04/2012
- <5> Specific CPA-DD [ver 02] dated 25/04/2012
- <6> Generic CPA-DD SH Corporation Solar photovoltaic housing complex programme in Republic of Korea<number> dated 25/04/2012
- <7> PoA-DD [ver 03] dated 16/05/2012
- <8> Specific CPA-DD [ver 03] dated 16/05/2012
- <9> Municipal Ordinance on the Metropolis of Seoul SH Corporation establishment and operation
- <10> Standard agreement for CPA involvement
- <11> Guidelines on the green design construction of the Metropolis of Seoul
- <12> Renewable energy(Photovoltaic) potential of the Metropolis of Seoul by Korea institute of



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energy Research, <http://kredc.kier.re.kr> dated 10/05/2009

- 〈13〉 Act on the promotion of the development, use and diffusion of new and renewable energy by Republic of Korea dated 09/03/2011(Act No.10445)
- 〈14〉 Enforcement decree of the environment impact assessment act Annex 1 by Republic of Korea dated 25/1/2012(Act No.11019)
- 〈15〉 Statistics of Electric Power in KOREA for 2010, KEPCO in brief dated 03/2011.
- 〈16〉 Statistics of Electric Power in KOREA for 2011, KEPCO in brief dated 30/06/2011.
- 〈17〉 Agreement between SH Corporation and RCC Co., Ltd for CDM Registration dated 22/09/2011
- 〈18〉 Magok/Naegok photovoltaic power generating system implementation plan by Technology division of SH Corporation dated 09/01/2012
- 〈19〉 The guideline on management of SH Corporation Solar photovoltaic housing complex programme in Republic of Korea dated 26/06/2012
- 〈20〉 Specification on electric construction of SH Corporation(related to accuracy of meter)
- 〈21〉 Million green home project regulated by article 27 of 'Act on the promotion of the development, use and diffusion of new and renewable energy by Republic of Korea'
- 〈22〉 Green Energy Master plan 2030 by the Metropolis of Seoul dated 12/03/2012 and its website (<http://environment.seoul.go.kr/archives/1490>)
- 〈23〉 MoC dated 18/05/2012
- 〈24〉 Application method of BIPV for various standard design by Korea Energy management corporation dated 20/11/2008
- 〈25〉 EF calculation sheet dated 07/06/2012
- 〈26〉 PoA-DD [ver 04] dated 25/07/2012
- 〈27〉 Specific CPA-DD [ver 04] dated 25/07/2012
- 〈28〉 Generic CPA-DD dated 25/07/2012
- 〈29〉 Letter of Approval(LoA) issued by the DNA of Republic of Korea 18/07/2012

Background documents related to the design and/or methodologies employed in the design or other reference documents:

- (1) EB33 Annex43, CDM-SSC-PoA-DD – Small-Scale CDM Programme of Activities Design Document form, version 01
- (2) EB33 Annex44, CDM-SSC-CPA-DD – Small-Scale CDM Programme Activity Design Document form, version 01
- (3) EB 68 Annex 27, Guidelines on the demonstration of additionality of small-scale project activities, version 09.0
- (4) EB63 Annex19, Tool to calculate the emission factor an electricity system, version 02.2.1
- (5) EB62 Annex5, Guidelines on the assessment of investment analysis, version 05
- (6) EB55 Annex1, Clean Development Mechanism Validation and Verification Manual, version 01.2



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- (7) EB61 Annex22, Procedures for review of erroneous inclusion of a CPA, version 03.0
- (8) EB55 Annex38, Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA, version 04.1
- (9) EB61 Annex21, General Guidelines to SSC CDM methodologies, version 17
- (10) EB61 Annex17, AMS-I.D. Grid connected renewable electricity generation, version 17
- (11) EB61 Annex18, AMS-I.F. Renewable electricity generation for captive use and mini-grid, version 02
- (12) EB54 Annex13, Guidelines on assessment of debundling for SSC project activities, version 03
- (13) EB68 Annex26, Guidelines for demonstrating additionality of microscale project activities, version 04
- (14) EB65, Annex3, Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities (ver.01.0).
- (15) EB66 Annex35, ACM0002, Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 12.3.0
- (16) EB22 Annex3, Clarifications on the consideration of national and/or sectoral policies and circumstances in baseline scenarios, version 02
- (17) EB60 Annex 26, Clarification regarding the 'Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA', version 01
- (18) EB45 Annex59, Procedures for modalities of communication between project participants and the Executive Board, version 01

2.2. Follow-up Actions

Keco conducted on-site visit on 16/03/2012 and had interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in Table 1 below.

Interviewed organization	Interview topics
➤SH Corporation • Mr. Kim Jong-kwon, Manager • Mr. Oh Je-young, Assist. Manager	✓General aspects of the project ✓Involved personnel and responsibilities ✓Contribution to sustainable development ✓License, operation & maintenance authority and responsibility ✓Monitoring Plan
➤RCC Co., Ltd • Mr. Kim Jong-kyu, Director • Mr. Lee Hee-sung, Assist. Manager • Mr. Kim Hye-jun, Assist. Manager	✓Legal aspects of the project ✓Project boundary ✓Technical details of the project realization ✓Involved personnel and responsibilities ✓Monitoring and measurement equipment ✓Contribution to sustainable development



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Interviewed organization	Interview topics
	<ul style="list-style-type: none"> ✓Additionality ✓Baseline methodology ✓License, operation & maintenance authority and responsibility ✓QA/QC procedure ✓Project management system ✓Duration of the project/Crediting period ✓Environmental impacts ✓Comments by local stakeholder, process ✓Approval by the host country

Table 1. Interview topics

2.3. Resolution of Clarification and Corrective Action Requests

The objective of this phase is to resolve the requests for corrective actions, clarifications, forward actions and any other outstanding issues, which should be clarified for Keco's positive conclusions on the project design. Five (5) Corrective Action Requests and fourteen (14) Clarification Requests have been identified in an initial validation. In order to guarantee the transparency of the validation process, the raised concerns and given responses were documented in the validation protocol in Appendix A. However, all of the CARs and CLs have been completely corrected through the validation process. Since modifications to the PoA-DD were necessary to resolve Keco's concerns, the PPs revised the PoA-DD on 25/07/2012(26) in the 2.1 Documents review). After reviewing the resubmitted PoA-DD, Keco issues this final validation report and opinion.

2.4. Internal Quality control

The final validation report was published after a review by a qualified independent technical reviewer as per the Keco's quality management system.

3. FINDINGS

The validation function of Keco and results are described as below in accordance with the VVM reporting requirements.

3.1. Approval

The PPs are SH Corporation and RCC Co. Ltd. The host Party, the Republic of Korea, meets the requirements of participation of the CDM. Annex1 Party is not identified and this is Unilateral CDM. The DNA of Republic of Korea issued the Letter of Approval(LoA) on 18/07/2012 (29). From the letter, Keco confirms that:

- (a) Republic of Korea is a Party to the Kyoto Protocol;
- (b) Participation is voluntary;
- (c) The proposed PoA contributes to the sustainable development of the host Party;
- (d) It refers to the precise proposed CDM project title in the PDD.

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To confirm authenticity of LoA, Keco cross-checked it by interviewing a LoA issuer of DNA .

3.2. Participation

Keco confirms that all the PPs are listed in a tabular form in section A.3 of the PoA-DD and that information is consistent with the contact details in Annex 1 of the PoA-DD. It has been confirmed by LoA that the participants were approved by the corresponding Party <29>.

3.3. Programme of activities design document

The PoA-DD is in compliance with relevant forms and guidances as currently provided by UNFCCC http://cdm.unfccc.int/Reference/PDDs_Forms/PoA/PoA_form02_v01.pdf. The latest version of the CDM-SSC-PoA-DD template was applied. This section has been handled in a checklist of Appendix A in this report.

3.4. Project description

The proposed PoA includes greenfield captive use types of solar photovoltaic electrical system(hereinafter refer to as 'PV') and/or building integrated photovoltaic system(hereinafter refer to as 'BIPV') introduced to housing complexes in the Metropolis of Seoul. The PoA will reduce GHG emissions by replacing electricity based on fossil fuel power plant, Korea power grid. The Seoul metropolitan government established a vision of 'Green Energy Master Plan 2030' <22>, promoting the proportion of renewable energy systems to 10% by 2020 and 30% by 2030. Keco confirms the vision through its official website. The CME of the PoA, SH Corporation, wholly-owned by Seoul metropolitan government, voluntarily planned the PoA to meet the policy of Seoul. Keco checks the LoA <29> and confirms that the PoA is a voluntary action by the CME. The boundary of the PoA is the Metropolis of Seoul, the Republic of Korea. The PPs firstly set its territory as the Republic of Korea in the PoA-DD [ver 01] <1> used for GSP, but changed it into the Metropolis of Seoul in the PoA-DD [ver 03] <7>.

There is a mandatory regulation on renewable energy system installation in the Republic of Korea, which is 'Act on the promotion of the development, use and diffusion of new and renewable energy'(Act No.10445) <13>. Article 12 of the Act forces the self-supply of renewable energy above a certain percentage of estimated energy use(Enforcement date: 13/04/2011) by installing a renewable energy system for buildings newly built/extended/remodelled by (a)state and a local government, (b)a public corporation, (c)a government contributed institution, (d)a government-invested corporation and etc. But housing complexes are out of the force of the act. The subject of the PoA introducing solar PV and/or BIPV is the housing complex newly built by SH Corporation or other entities. Thus, Keco confirms that there are no mandatory regulations applicable to the PoA to install solar PV and/or BIPV at a housing complex in the Metropolis of Seoul.

Through on-site visit(16/03/2012), Keco confirms the followings.

- ✓The PoA will be implemented in the Metropolis of Seoul, the Republic of Korea.
- ✓The objective of the PoA is to reduce GHG emissions from the existing power plant by introducing captive use types of solar PV and/or BIPV systems into the housing complex for power generation.



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✓The power generated by the system replaces electricity which should be purchased from the Korea power grid in the absence of the PoA otherwise.

Keco confirms that the system does not include transformers to export electricity to the grid through on-site visit and interviews with the PPs. The length of the PoA is 28 years. The accuracy and completeness of the PoA description is secured by the on-site visit including stakeholder interviews and cross-checks with other sources(see 2.1 Documents review). In conclusion, Keco confirms that the project description, as included in the PoA-DD, is sufficiently accurate and complete to comply with the requirements of CDM.

3.5. Baseline and monitoring methodology

3.5.1 Applicability of the selected methodology to the project activity

The PoA applies methodologies, AMS-I.F, 'Renewable electricity generation for captive use and mini-grid(ver 02)'. Through the on-site visit, interviews with the PPs and the documents provided, Keco confirms that the information in the PoA-DD complies with the criteria of the methodologies, AMS-I.F(ver 02). Table 2 below is to assess the applicability of the methodology.

Condition	Applicability check		
	Criteria discussed in the PoA-DD	Compliance provable	Compliance verified
1 This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). The project activity will displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit i.e., in the absence of the project activity, the users would have been supplied electricity from one or more sources listed below: (a) A national or a regional grid (grid hereafter); (b) Fossil fuel fired captive power plant; (c) A carbon intensive mini-grid.	Yes	Yes	Yes
	§ The CPA involves installation of photovoltaic renewable energy generation units to supply electricity to user(s), which displaces the electricity supplied by the national grid.		
2 For the purpose of this methodology, a mini-grid is defined as small-scale power system with a total capacity not exceeding 15MW (i.e., the sum of installed capacities of all generators connected to the mini-grid is equal to or less than 15MW)which is not connected to a national or a regional grid.	N/A	N/A	N/A
	§ The PoA does not involve a mini-grid		
3 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 in the	Yes	Yes	Yes
	§ No 2 project types are applicable for the PoA		



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Condition		Applicability check		
		Criteria discussed in the PoA-DD	Compliance provable	Compliance verified
AMS-I.F.		§ The PoA displaces grid electricity consumption at the user end and excess electricity shall not be exported to a national grid.		
No.	Project type			
1	Project supplies electricity to a national/regional grid			
2	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)			
3	Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)			
4	Project supplies electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel			
5	Project supplies electricity to household users (included in the project boundary) located in off grid areas			
4	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: <ul style="list-style-type: none"> • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • 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 4W/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 4W/m². 	N/A	N/A	N/A
		§ The PoA does not involve hydro power plants.		
5	For biomass power plants, no other biomass other than renewable biomass is to be used in the project plant.	N/A	N/A	N/A
		§ The PoA does not involve biomass power plants.		
6	This methodology is applicable to project activities that (a) install a new power plant at a site where there	Yes	Yes	Yes
		§ The PoA involves only (a)Greenfield		



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Condition	Applicability check		
	Criteria discussed in the PoA-DD	Compliance provable	Compliance verified
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).	plant types of solar PV and/or BIPV.		
7 In the case of project activities that involve the capacity 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 15MW and should be physically distinct from the existing units.	N/A	N/A	N/A
	§ The PoA does not involve capacity addition of solar PV and/or BIPV.		
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 15MW.	N/A	N/A	N/A
	§ The PoA does not involve retrofit or replacement of solar PV and/or BIPV.		
9 If the unit added has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.	N/A	N/A	N/A
	§ The PoA does not involve capacity addition of solar PV and/or BIPV and non-renewable components.		
10 Combined heat and power (co-generation) systems are not eligible under this category.	N/A	N/A	N/A
	§ The PoA does not involve co-generation.		
11 In case electricity produced by the project activity is delivered to another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the electricity will have to be entered into specifying that only the facility generating the electricity can claim emission reductions from the electricity displaced.	Yes	Yes	Yes
	§ The emission reductions from the electricity displaced regulated by 'Standard agreement for CPA involvement' <10>.		

Table 2. Applicability of the methodology AMS-I.F.

Keco confirms that a selected baseline and monitoring methodology are applicable to the project activity. Emission reductions that are expected to contribute more than 1% of the overall expected average annual emission reductions, which are not addressed by the applied methodology, have



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not been identified.

3.5.2 CPA boundary

The CPA boundary has been assessed based on documented evidences, on-site visit and interviews. Keco 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 CPA boundary. The spatial extent of the CPA boundary is the physical, geographical location of each CPA, at which solar PV and/or BIPV into housing complex is installed by the entity participating in the CPA, and Korea power grid. All CPAs boundaries relevant with the PoA will be implemented within the geographical boundary of the Metropolis of Seoul in the Republic of Korea. There is one GHG involved in the project boundary; CO₂ from power plants serving the electricity grid.

	Sources	GHGs
Baseline	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO ₂

Table 3. Summary of emission sources and gases included in the project boundary

The identified boundary, selected gases and sources, as documented in the PoA-DD, are justified in the PoA and are fully in line with the requirements set by the applied methodology AMS-I.F(ver.02).

3.5.3 Baseline identification

In accordance with the methodology AMS-I.F(ver.02), the baseline scenario is listed below.

	AMS-I.F(ver.02)
Baseline scenario	Baseline emissions are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor.

Table 4. Baseline scenario of AMS-I.F(ver.02)

The continue use of the existing fossil fuel based plant has been identified as the likely baseline scenario. From above analysis, Keco confirms that the baseline determination is transparent and deemed reasonable.

- ✓All the assumptions and data used by the PPs are listed in the PoA-DD;
- ✓Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- ✓Relevant national and/or sectoral policies and circumstances are considered and listed in the PoA-DD;
- ✓The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.



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3.5.4 Algorithm and/or formulae used to determine emission reductions

Keco conducted the assessment of baseline emissions, project emissions, leakage, and emission reductions. The parameters and equations presented in the PoA-DD, as well as other applicable documents, have been compared with the information and requirements stipulated in the methodology and respective tools. The assumptions and data used to determine the emission reductions are described in the PoA-DD and all the sources have been checked and confirmed by Keco. Based on the reviewed information, it can be confirmed that the used sources are correctly quoted and interpreted in the PoA-DD. The value in the PoA-DD are considered to be reasonable based on the documentation and references reviewed, as well as the result of the interviews. The baseline methodology has been correctly applied according to the requirements.

1) Baseline Emissions

As per the methodology AMS-I.F(ver.02), baseline emissions(BE_y) of the project is calculated using below formula:

$$BE_y = EG_{BL,y} * EF_{CO_2,y} \quad (1)$$

where: BE_y = Baseline emissions in year y (tCO₂)

$EG_{BL,y}$ = Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y (MWh)

$EF_{CO_2,y}$ = Emission factor (tCO₂/MWh)

In accordance with the methodology AMS-I.F(ver.02), $EF_{CO_2,y}$ (Emission factor of a grid) is calculated as per the procedures provided in AMS-I.D and same with $EF_{CO_2,grid,y}$.

Calculation of $EG_{BL,y}$

The calculation of $EG_{BL,y}$ is explained using below formula:

$$\checkmark EG_{BL,y} = C * H * U \quad (2)$$

Where: C = Capacity of PV and/or BIPV system(MW)

H = Hours in year(hr)

U = coefficient of utilization for PV and/or BIPV system(%)

Calculation of $EF_{CO_2,grid,y}$

$EF_{CO_2,grid,y}$ is calculated using the 'Tool to calculate the emission factor for an electricity system(ver.02.2.1)' in the PoA-DD. The operating margin emission factor has determined based on the simple OM method. The ex-ante option has chosen for this calculation. The option 1 has chosen for calculation of the build margin emission factor. The operating margin($EF_{grid,OM,y}$) of the Korea power grid is 0.6933tCO₂e/MWh, and the build margin($EF_{grid,BM,y}$) is calculated as 0.6357tCO₂e/MWh. The value for the combined margin emission factor($EF_{grid,CM,y}$) is determined with the weighted average of the $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ using the default values for the factors as described in the methodology as follows.

✓ Solar power generation project activities: $w_{OM} = 0.75$ and $w_{BM} = 0.25$ (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods;

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM} \quad (3)$$



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As per the methodology the combined margin emission factor for solar power generation project($EF_{grid,CM,y}$) is $0.6789tCO_2e/MWh$. The ex-ante $EF_{CO_2,grid,y}$ would be fixed ex-ante at the time of PoA-DD submission and revised at the point of the renewal of crediting period of the PoA.

2) Project Emissions

As per the methodology AMS-I.F(ver.02) and ACM0002(ver.12.3.0), project emissions (PE_y) of the solar PV and/or BIPV project are zero. Internal consumption of the electricity for the PoA will be deducted from total electricity generations.

3) Leakage

Energy generating equipment shall not be transferred from another activity for the PoA. Thus the leakage is not to be considered.

4) Emission reductions

Emission reductions due to the project activity during the year y are follows according to the methodology.

$$ER_y = BE_y - PE_y - LE_y \quad (4)$$

where: ER_y = Emissions reductions in year y (tCO_2e/yr)

BE_y = Baseline emissions in year y (tCO_2e/yr)

PE_y = Project emissions in year y (tCO_2e/yr)

LE_y = Leakage emissions in year y (tCO_2e/yr)

Keco judges that the calculation of the baseline emissions, project emissions, leakage and the emission reductions are appropriate.

3.6. Additionality

Following documents are reviewed to assess the approach used in the PoA-DD:

- ✓PoA-DD [ver 04] 'SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' <26>
- ✓Specific CPA-DD [ver 04] 'SH Corporation Solar photovoltaic housing complex programme in Republic of Korea - CPA1' <27>

The data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral expertise.

3.6.1 Prior consideration of the clean development mechanism

The starting date of the PoA is expected 01/04/2013, which is based on the expected contract date of the first CPA, 'Naegok complex 7 project site'(#16 of CPA1), and it will be the earliest date on which the real action of the PoA begin. Since the PPs will not undertake any construction or real action for the implementation of the PoA prior to the expected date, as per Glossary of CDM terms (ver.06), this date can be appropriately treated as the starting date of the PoA. Keco confirms it through reviewing 'Magok/Naegok photovoltaic power generating system implementation plan by Technology division of SH Corporation' <18>.



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The starting date of the PoA is not prior to the commencement of validation of the programme of activities since the POA-DD was published for global stakeholder consultation on 07/Feb./2012. Any CPA starting before the GSP date of PoA-DD, 07/Feb./2012, can not be included in this PoA in accordance with the eligibility criteria for inclusion of a CPA in the PoA. Keco therefore confirms that the proposed PoA has seriously considered CDM prior to the implementation of the CPA.

3.6.2 Additionality of PoA

The additionality of the proposed PoA has been described in section A.4.3 of the PoA-DD. The approach used in the PoA-DD has been assessed through the document review followed by on-site visit. Finally the data, rationales, assumptions, justifications, and documentation provided have been finally verified using local knowledge as well as sectoral expertise.

The additionality of the PoA level has been demonstrated as follows:

- The proposed PoA is voluntary coordinated actions
 - ☞ There are no applicable mandatory policies/regulations in Korea forcing SH Corporation to introduce solar PV and/or BIPV into housing complexes in the Metropolis of Seoul. Also, Keco confirms it through Letter of Approval(LoA) issued by the DNA of the Republic of Korea <29>.
- If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;
 - ☞ The PoA-DD describes additionality of the PoA using 'Guidelines for demonstrating additionality of microscale project activity(ver.04)'
- If the PoA is implementing a mandatory policy/regulation, this would/is not enforced
 - ☞ There are no applicable mandatory policies/regulations in Korea forcing SH Corporation or other entities to introduce solar PV and/or BIPV to housing complexes in the Metropolis of Seoul.
- If mandatory a policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.
 - ☞ There are no applicable mandatory policy/regulation in Korea forcing SH Corporation to introduce solar PV and/or BIPV to housing complexes in the Metropolis of Seoul.

3.6.3 Assessment and demonstration of additionality for a typical CPA

The PoA-DD has presented a method to assess additionality of CPA in accordance with the para 2.(c) of 'Guidelines for demonstrating additionality of microscale project activity(ver.04)';

The CPA up to five megawatts that employs renewable energy technology are additional if the conditions below are satisfied:

The project activity is designed for distributed energy generation (not connected to a national or regional grid) with both conditions (i) and (ii) satisfied;

- (i) Each of the independent subsystems/measures in the project activity is smaller than or equal to 1500kW electrical installed capacity;
- (ii) End users of the subsystems or measures are households/communities/small and medium enterprises (SMEs).

The approach to demonstrate additionality of CPA presented above has been analyzed and considered to be reasonable, because it provides transparent criteria for assessment of additionality



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for a typical CPA and is in accordance with the guideline approved by the EB. Taking into account the description of the validation of additionality, Keco can confirm, with reasonable certainty, that the assessment and demonstration of additionality are credible and can be correctly applied to a typical SSC CPA.

3.7. Monitoring plan

Keco has applied a two-step process to assess compliance with the requirement of the VVM as below:

(a) Compliance of the monitoring plan with the approved methodology

The monitoring plan presented in the PoA-DD complies with the requirements of the applicable methodology AMS-I.F(ver.02). Keco has verified parameter in the monitoring plan against the requirements of the methodology, and no relevant deviations have been found.

The parameter monitored as per the methodologies have been validated as follows:

Parameter	Unit	Description
$EG_{BL,y}$	MWh	Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y

Table 5. Parameter to be monitored in the methodology AMS-I.F(ver.02)

Monitoring parameters to determine baseline emissions are $EG_{BL,y}$:

✓ $EG_{BL,y}$ will be continuously monitored, hourly measured and monthly recorded by an electricity meter and calibrated at least once in every three years. Auxiliary electricity consumption will be deducted from the total electricity generation by calculated based on the equipment specifications or metered using electricity meter.

'Guideline on the management of SH Corporation solar photovoltaic housing complex programme in Republic of Korea' <19> (hereinafter referred to as 'SH Guideline') includes monitoring procedures and clearly explains a calibration standard and the specification of monitoring equipment to verify its capability and excellence.

(b) Implementation of the Plan

Monitoring structure for the project activity is comprehensively detailed in the PoA-DD including responsibility, procedure references, equipment details, calibration frequency and maintenance. Archiving of the records is indicated. By reviewing SH Guideline <19> and on-site interview with the PPs, Keco confirms that the monitoring arrangements described in the monitoring plan are feasible within the PoA-DD, and the means of implementation of the monitoring plan is sufficient to ensure the emission reductions achieved by the proposed CDM project activity can be reported ex post and verified.

3.8. Sustainable development

The DNA of the Host country, Republic of Korea issued the Letter of Approval(LoA) on 18/07/2012 <29>, has confirmed the contribution of the project to the sustainable development.



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3.9. Local stakeholder consultation

The stakeholder survey will be carried out at CPA level and Keco has confirmed that it is correctly indicated in the PoA-DD.

3.10. Environmental Impacts

Keco confirms that the PPs chose to carry out EIA at PoA level. EIA is not necessary for this PoA in accordance with the 'Enforcement decree of the environment impact assessment act Annex 1 by Republic of Korea' (14) since the act regulates EIA over 100MW PV installation capacity. The CPA is only applicable to the PoA with PV and/or BIPV installation capacity under 5 MW.

3.11. Specific Validation Activity for PoA

(a) Operational and Management Plan

A description of the operational and management arrangements is given in the PoA-DD. It has been verified by SH Guideline (19). Each CPA is controlled by a record keeping and managing system under the PoA according to SH Guideline (19): (a)roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies, (b)records of arrangements for training and capacity development for personnel, (c)a procedure for technical review of inclusion of CPAs, (d)a procedure to avoid double counting, (e)a record and documentation control process for each CPA under the PoA and (f)measures for continuous improvements of the PoA management system. The CME, SH Corporation, will check the records for each CPA before submission to a DOE for inclusion. The arrangements are sufficient to ensure that the CME is in a position to control and secure the records, information and operation of individual CPA in accordance with the specific requirements of the PoA.

(b) Eligibility Criteria for inclusion of a SSC-CPA under PoA

The CME applies clear and unambiguous criteria for the inclusion of the CPA. The eligibility criteria are verifiable with regard to the applicability of the applied methodologies, geographical boundary, technology used to the CPA, double counting and the host country's regulations. Keco checks the specified eligibility criteria in the PoA-DD and confirms that the criteria are sufficient to ensure that all CPAs would comply with the minimum eligibility criteria as per in the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (EB65, Annex3, ver.01.0).

Minimum eligibility criteria in the Standard (EB65, Annex3, ver.01.0)	Eligibility criteria Category in the PoA-DD
(a)The geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA;	The geographical territory of the CPA is the metropolis of Seoul and the location of the CPA will be identified using GPS.
(b)Conditions that avoid double counting of emission reductions like unique identifications of product and	The unique identifications of a PV/BIPV or end-user location will be used to



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Minimum eligibility criteria in the Standard (EB65, Annex3, ver.01.0)	Eligibility criteria Category in the PoA-DD
end-user locations (e.g. programme logo);	avoid double counting.
(c)The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications;	The specification of the technology will be submitted to the DOE at the time of validation and the CPA will apply PV/BIPV module certified from an official institute.
(d)Conditions to check the start date of the CPA through documentary evidence;	The CPA start date will not be prior to the validation of the PoA.
(e)Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;	The CPA will meet the applicability of the AMS-I,F (ver.02)
(f)The conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality;	CPA is only applicable for below conditions; <ul style="list-style-type: none"> - Smaller or equal to 5MW PV/BIPV installation capacity - Smaller or equal to 1.5MW independent subsystem - Distributed energy system and not connected to a national grid - Electricity generation for households, communities or SMEs
(g)The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;	The stakeholder consultations will be carried out at CPA level and the EIA is not required for the CPA under 5MW installation capacity of the PV/BIPV.
(h)Conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance;	The CPA does not involve any public funding.
(i)Where applicable, target group (e.g. domestic/commercial/ industrial, rural/urban, grid-connected /off-grid) and distribution mechanisms (e.g. direct installation);	The target group for the CPA is newly installed housing complex and household.
(j)Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys;	The CPA does not use any sampling method.
(k)Where applicable, the conditions that ensure that every CPA in aggregate meets the small-scale or microscale threshold criteria and remains within those thresholds throughout the crediting period of the CPA;	Each CPA in aggregate meets the microscale threshold.



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Minimum eligibility criteria in the Standard (EB65, Annex3, ver.01.0)	Eligibility criteria Category in the PoA-DD
(l)Where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or microscale project categories.	The CPAs belong to microscale project categories so the requirements for the debundling check will be checked at each CPA level.
(m)Etc	<ul style="list-style-type: none"> - The crediting period shall not exceed the end date of the PoA - Agreement between CME and CPA implementer

Table 6. Comparison of eligibility criteria in the Standard and the PoA-DD

The eligibility criteria ensure the smooth functioning of PoA and can be checked at CPA level by the CME and confirmed by a DOE at the time of inclusion.

4. COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, DOE shall make publicly available the PoA-DD, CPA-DD, generic CPA-DD and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. Keco published the project documents on the UNFCCC CDM web site (<http://cdm.unfccc.int>) on 07/02/2012 and invited comments by 07/03/2012 from Parties, stakeholders and non-governmental organizations. No Comments have been received.

5. VALIDATION OPINION

Keco has performed the validation of the proposed PoA, 'SH Corporation Solar photovoltaic housing complex programme in Republic of Korea'. The validation has performed on the basis of UNFCCC criteria and host country criteria.

Keco carried out the validation via i) desk review of PoA-DD, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders and technical experts; and iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

No public funding is involved and the validation did not reveal any information indicating that the project can be seen as a diversion of ODA funding.

The PoA applies the baseline and monitoring methodology AMS-I.F(ver.02), 'Renewable electricity generation for captive use and mini-grid'. The PoA also applies 'Guidelines for demonstrating additionality of microscale project activity' (ver.04) to determine the additionality.

Emission reductions from the PoA are hence additional to any that would have occurred in the absence of the PoA. Emission reductions will be calculated at each CPA level by utilizing a PV and/or BIPV system. The PoA results in reductions of CO₂ emissions that are real, measurable and



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give long-term benefits to the mitigation of climate change.

In our opinion, this PoA, as described in the revised and resubmitted PoA-DD dated 25/07/2012(ver.04) meets all relevant UNFCCC requirements for CDM and relevant host country criteria. Keco ,therefore, recommends the registration of the PoA, 'SH Corporation Solar photovoltaic housing complex programme in Republic of Korea', as CDM PoA.

The validation is based on the information made available to the DOE and the engagement conditions detailed in this report. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, Keco cannot be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

03/08/2012

Signature: 

Keco GHG Certification Center Manager
Lee Seon-woo



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6. VALIDATION TEAM

□ Team Members

Park Beom-woong, Keco, Republic of Korea- Validation Team leader(Under Observation)

Lee Seon-woo, Keco, Republic of Korea – Team member

Park Ji-hee, Keco, Republic of Korea – Team member, Trainee

Lee Yeon-Jae, Tongyang Cement & Energy Corp, Republic of Korea – Team member, Trainee

□ Qualification of Validator

a. Park Beom-woong, Team Leader

b. Lee Seon-woo, Team member

CERTIFICATE

No. 110073

Name : **Park Beom-woong** (Date of Birth : 3 Nov. 1980)

Qualification

Team leader ☒ Validator ☒ Verifier ☒

Qualified for the following technical areas

Sectoral Scope	Technical Area	Valid from
1 Energy industries	Energy generation from renewable energy sources	29 Jun. 2011
	Waste heat/gas recovery	15 Feb. 2011
13 Waste handling and disposal	Waste handling and disposal	15 Feb. 2011
	Animal waste management	15 Feb. 2011
15 Agriculture	Animal waste management	15 Feb. 2011

As a auditor, based on the competence requirements of Korea Environment Corporation.

Date : 12 Mar. 2012

Park Seung-hwan
Chairman of Korea Environmental Coporation

CERTIFICATE

No. 110041

Name : **Lee Seon-woo** (Date of Birth : 8 Mar. 1962)

Qualification

Team leader ☒ Validator ☒ Verifier ☐

Qualified for the following technical areas

Sectoral Scope	Technical Area	Valid from
1 Energy industries	Energy generation from renewable energy sources	15 Feb. 2011
	Waste heat/gas recovery	15 Feb. 2011
5 Chemical industry	Chemical process industries	15 Feb. 2011
13 Waste handling and disposal	Waste handling and disposal	15 Feb. 2011

As a auditor, based on the competence requirements of Korea Environment Corporation.

Date : 12 Mar. 2012

Park Seung-hwan
Chairman of Korea Environmental Coporation

Appendix A

Validation Protocol for small-scale programme of activities

Table 1. Mandatory Requirements for Clean Development Mechanism(CDM) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	CROSS REFERENCE/COMMENT
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art. 12.2	OK	The type of this project is Unilateral and no Annex1 has been identified.
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities § 23a	OK	In accordance with a Letter of Approval (LoA), the DNA of the Host country confirms the sustainable development.
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art. 12.2.	OK	The project result in fewer GHG emissions than the baseline case.
4. The project shall have written approval of voluntary participation from the designated national authorities of each party involved	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities § 23a	OK	Written approval letter (LoA) from Republic of Korea has been received.
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section 5
6. Reduction in GHG emissions must be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities § 26	OK	Table 2, Section 6
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords (Decision 17/CP.7)	OK	No public funding has been involved.

REQUIREMENT	REFERENCE	CONCLUSION	CROSS REFERENCE/COMMENT
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures § 29	OK	DNA of Republic of Korea is the Prime Minister' s Office organized at Jun. 2004
9. The host Party and the participating Annex1 Party shall be a Party to the Kyoto Protocol	CDM Modalities and Procedures § 30, 31b	OK	Republic of Korea is a party to the Kyoto Protocol. Ratification date is Nov 8, 2002
10. The participating Annex1 Party' s assigned amount shall have been calculated and recorded	CDM Modalities and Procedures § 31b	OK	The type of this project is Unilateral and no Annex1 has been identified.
11. The participating Annex1 Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures § 31b	OK	The Republic of Korea is a party to the Kyoto Protocol. Ratification date is Nov 8, 2002
12. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a de-bundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities § 12a,c	OK	Table 2, Section 11
13. The project design document shall conform with the Small Scale CDM Programme of Activities Design Document format	Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA	OK	Project Design Document form for Small-scale CDM Programme of Activities Design Document format [CDM-SSC-PoA-DD-Ver.01] is used for project activity
14. The proposed project activity shall confirm to one of the project categories defined for small scale CDM project activities and uses the simplified baseline and monitoring methodology for that project category	Simplified Modalities and Procedures for Small Scale CDM Project Activities § 22e	OK	Table 2, Section 11 The project activity has confirmed to category I.F. Renewable electricity generation for captive use and mini-grid, ver. 02 in sectoral scope 01 energy industries.
15. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small	OK	Table 2, Section 9

REQUIREMENT	REFERENCE	CONCLUSION	CROSS REFERENCE/COMMENT
	Scale CDM Project Activities § 22b		
16. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities § 22c	OK	Table 2, Section 10
17. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities § 23b,c,d	OK	The SSC-PoA-DD, generic SSC-CPA-DD and specific SSC-CPA-DD have been published for public comments on the UNFCCC CDM website during a period of 30 days, from 07/02/2012 to 07/03/2012.
18. The baseline and monitoring methodology shall be previously approved by the CDM Executive Board.	CDM Modalities and Procedures § 37e	OK	Table 2, Section 5
19. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	CDM Modalities and Procedures § 45c,d	OK	Table 2, Section 5

Table 2. Requirement Check list

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
1. Approval					
All Parties involved have approved the project activity.	/1/ 44				
1.1. Has the DNA of each Party indicated as being involved in the proposed SSC-PoA activity in Section A.3 of the SSC-PoA-DD provided a written letter of approval?	/1/ 45	DR/I	No, A written approval letter (LoA) from the DNA of Republic of Korea isn't obtained yet.	CARt	OK
1.2. Does the written letter of approval from each DNA involved;	/1/ 45				
1.2.1. Does it confirm that the party is a Party of the Kyoto Protocol?	/1/ 45(a)	DR	Refer to section 1. 1 The validation team confirms below through UNFCCC website. Host party: Republic of Korea Republic of Korea is a party to the Kyoto Protocol. Ratification date is 08 November 2002.	CARt	OK
1.2.2. Does it confirm that participation is voluntary?	/1/ 45(b)	DR	Refer to section 1. 1	CARt	OK
1.2.3. In the case of the host Party, does the proposed SSC-PoA activity contribute to the sustainable development of the country?	/1/ 45(c)	DR	Refer to section 1. 1	CARt	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
1.2.4. Does it refer to the precise proposed SSC-PoA activity title in the SSC-PoA-DD being submitted for registration?	/1/ 45(d)	DR	Refer to section 1. 1	GAR†	OK
1.3. Is the letter of approval unconditional with respect to 1.2.1 to 1.2.4 above?	/1/ 46	DR/I	Refer to section 1. 1	GAR†	OK
1.4. Has the letter of approval been issued by the respective Party' s designated national authority (DNA)?	/1/ 47	DR/I	Refer to section 1. 1	GAR†	OK
1.5. Is the letter of approval authentic?	/1/ 48	DR/I	Refer to section 1. 1	GAR†	OK
1.6. Do letters of approval contain additional specification of the project activity, such as the SSC-PoA-DD version number?	/1/ 50	DR	Refer to section 1. 1	GAR†	OK
1.7. Does a letter of approval refer to a specific version of the validation report and the DOE therefore is unable to submit this precise version of the validation report?	/1/ 50	DR	Refer to section 1. 1	GAR†	OK
2. Participation			In the section A.3 of the SSC-PoA-DD		
Coordinating/managing entity and participants have been listed in a consistent manner in the project documentation, and their participation in the project activity has been approved by a Party to the Kyoto Protocol.	/1/ 51				

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
2.1. Are the Coordinating/managing entity and participants listed in tabular form in Section A.3 of the SSC-PoA-DD?	/1/ 52	DR	Yes. Keco has cross-checked the contract between SH Corporation and RCC Co., Ltd to confirm the project participation. With the PDD and interviews with the PPs during the course of on-site visit, Keco confirms that there are no entity other than those approved as the PPs.	OK	OK
2.2. Is the information consistent with the contact details provided in annex 1 of the SSC-PoA-DD?	/1/ 52	DR	Yes. The information consistent with the contact details provided in annex 1 of the SSC-PoA-DD.	OK	OK
2.3. Has the participation of each PPs been approved by at least one Party involved either in a letter of approval or in a separate letter specifically to approve participation?	/1/ 52	DR/I	Refer to section 1. 1	CARt	OK
2.4. Are any entities other than those approved as PPs included in these Sections of the SSC-PoA-DD?	/1/ 52	DR/I	There are no entities other than approved as the PPs.	OK	OK
2.5. Has the approval of participation been issued from the relevant DNA?	/1/ 53	DR/I	Refer to section 1. 1	CARt	OK
<i>Requirements related to participation in the PoA</i>	/4/				
2.6. Are the operators of individual CPAs same with PPs?	/4/ 8		No, The PPs describe that others can participate CPA in the section A.4.1.2 of PoA-DD other	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
			than the PPs of PoA and submitted 'The guideline on management of SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' as a evidence documents. Keco has cross-checked the guidance and confirmed that others can participate as a CPA operator.		
2.7. Is the CDM programme participation only recorded at the PoA level?	/4/ 8		Yes, CDM programme participation is recorded at the PoA level.	OK	OK
2.8. Does the coordinating/managing entity obtain letters of approval from each host Party and Annex I Party which wishes to be involved in the PoA?	/4/ 9		Refer to section 1. 1	CAPI	OK
2.9. Are letters of approval issued in accordance with the guidance provided by the Board(EB 16 report, Annex 6)?	/4/ 9		Refer to section 1. 1	CAPI	OK
2.10. Does the coordinating/managing entity obtain letters of authorization of its coordination of the PoA from each host Party?	/4/ 10		Refer to section 1. 1	CAPI	OK
2.11. Do the coordinating/managing entity apply MoC using the latest version of the 'Procedures for modalities of communication between PPs and the Executive Board' with the exception that the coordinating/managing entity shall be either sole or joint focal point for each area of communication?	/4/ 11		No, The PPs need to submit MoC in accordance with the latest procedure.	CI	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
2.12. How many of joint focal points and host parties for the programme?	/4/ 11		Refer to section 2. 11	GH	OK
2.13. If, subsequent to the registration of the programme, the coordinating/managing entity has changed then the DOE who is undertaking the next inclusion of a CPA shall submit:	/4/ 12		N/A This is a validation report used for registration of the PoA.	N/A	N/A
2.13.1. New letter(s) of authorization by the each respective host Party stating the change in coordinating/managing entity;	/4/ 12		N/A	N/A	N/A
2.13.2. A confirmation from new coordinating/managing entity that the PoA will be developed and implemented with the same set framework as originally described in the CDM-PoA-DD; and	/4/ 12		N/A	N/A	N/A
2.13.3. A validation opinion by a DOE regarding the compliance of the new coordinating/managing entity with the requirements of paragraph 15 (c)/4/ below.	/4/ 12		N/A	N/A	N/A
3. SSC-PoA-DD					
The SSC-PoA-DD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.	/1/ 55 /5/				
3.1. Is the SSC-PoA-DD used as a basis for validation prepared in accordance with the latest template and guidance?	/1/ 55	DR	Yes, PoA-DD used small-scale programme of activities design Project Design Document	GH	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.								
			Form (SSC-PoA-DD), Ver. 01. But there is typographical error in the form . CDM SSC-OPA-DD needs to be changed.										
3.2. Is the PDD in accordance with the applicable CDM requirements for completing PDD?	/1/ 56 57	DR	Yes.	OK	OK								
3.2.1. Are the following indicated in Section A.1 of the SSC-PoA-DD; • The title of the project activity, • The current version number of the document, and • The date when the document was completed?	/2/	DR	Yes There are the title of the project activity, the current version number of the document, and the date when document has completed in section A.1 of the PoA-DD. The PPs are recommended to use the below format for a clearer expression. ✓Title: ✓Current version number and the date: <table border="1"><tr><td>Ver 01</td><td>01/10/2011 (for GSP)</td></tr><tr><td>Ver 02</td><td></td></tr><tr><td>Ver 03</td><td></td></tr><tr><td>Ver 04</td><td></td></tr></table> ✓Completion date PoA-DD: dd/mm/yyyy	Ver 01	01/10/2011 (for GSP)	Ver 02		Ver 03		Ver 04		OK	OK
Ver 01	01/10/2011 (for GSP)												
Ver 02													
Ver 03													
Ver 04													
3.2.2. Has not potential public funding for the project from Parties in Annex I be a diversion of official development assistance?	/2/	DR/I	No public funding is involved and the validation did not reveal any information that indicates that the PoA can be seen as a diversion of ODA funding towards.	OK	OK								

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
			Keco confirms the PoA does not includes subsidy from government refering to the 'Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy' during on-site visit. And the CPA using ODA from annex I parties can not enter the PoA in accordance with the eligibility criteria.		
<p>3.2.3. Has the Section E.8 of the SSC-PoA-DD provided followings?</p> <ul style="list-style-type: none"> • Date of completion of the application of the methodology to the project activity • Contact information of the persons(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity 	/2/	DR	<p>Yes.</p> <p>The PoA-DD describes the date of completion of the methodology and a contact person responsible for application of the baseline and monitoring methodology the project activity.</p>	OK	OK
Validation of a programme of activities	/4/ 13				
<p>3.3. Does the coordinating/managing entity submit to a DOE the following documentation?</p> <ul style="list-style-type: none"> • A completed CDM-PoA-DD; • A PoA generic CDM-CPA-DD, which specifies the generic information relevant to all CPAs that may be included in the PoA; • A completed CDM-CPA-DD which is to be based on the application of the PoA to one real case. 			<p>Yes,</p> <p>The PPs submit a completed CDM-PoA-DD, generic CDM-CPA-DD and one specific CDM-CPA-DD.</p>	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
3.4. Does the DOE make the above documents publicly available on the UNFCCC CDM website in accordance with the latest version of the Procedures for processing and reporting on validation of CDM project activities?			The SSC-PoA-DD, generic SSC-CPA-DD and specific SSC-CPA-DD have been published for public comments on the UNFCCC CDM website during a period of 30 days, from 07/02/2012 to 07/03/2012.	OK	OK
Preparation of a CDM-PoA-DD A coordinating/managing entity shall develop a PoA Design Document (CDM-PoA-DD) setting a framework for the implementation of the PoA and unambiguously defining a CPA under the PoA.	/4/ 6				
3.5. Does the CDM-PoA-DD include the following information:					
3.5.1. Identification of the coordinating/managing entity, host Party(ies) and PoA participants;	/4/ 6(a)		SH Corporation and RCC Co., Ltd are PoA participants and Republic of Korea is host party. Coordinating or managing entity of the PoA is SH Corporation. The PPs clearly indicated that the Party involved does not wishes to be considered.	OK	OK
3.5.2. Definition of the boundary for the PoA in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CPAs included in the PoA will be implemented, taking into consideration all applicable national and/or sectoral policies and regulations within that chosen boundary are reflected in the determination of the baseline;	/4/ 6(b)		Yes. The geographical area of PoA is within Republic of Korea and all applicable national and/or sectoral policies of host country are considered. Keco confirms that article 12 of 'Act on the promotion of the development, use and diffusion of new and renewable energy' only	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
			recommends to use new and renewable energy for housing complex.		
3.5.3. Description of the policy/measure or stated goal that the PoA seeks to promote;	/4/ 6(c)		Yes, It has been clearly presented that the objective of PoA is to supply solar PV and BIPV energy based electricity at housing complexes instead of fossil fuel based electricity supplied by Korea power grid in the Republic of Korea.	OK	OK
3.5.4. Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity;	/4/ 6(d)		Refer to section 1. 1	OK	OK
3.5.5. Demonstration that in the absence of the CDM either: <ul style="list-style-type: none"> the proposed voluntary measure would not be implemented, or the mandatory policy/regulation would be systematically not enforced and that non-compliance with those requirements is widespread in the country/region, or that the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation. This shall constitute the demonstration of additionality of the PoA as a whole; 	/4/ 6(e)		The PPs demonstrated that the proposed voluntary measure would not be implemented in the absence of the CDM in PoA-DD section A.4.3. There are no mandatory enforcements in Korea that enforces introduction of renewable energy system to housing complex.	OK	OK
3.5.6. Description of a typical CPA that will be included in the PoA covering the technology or measures to be used, justification of the choice of an approved baseline and monitoring methodology (or combination of approved methodologies), application of an approved baseline and	/4/ 6(f)		The program applies AMS-I.F.(ver2.0). There are no combination of approved methodologies	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
monitoring methodology;					
3.5.7. Definition of eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, and the type and/or extent of information (e.g. criteria, indicators, variables, parameters or measurements) that shall be provided by each CPA in order to ensure its eligibility;	/4/ 6(g)		<p>Yes, Definition of eligibility criteria is expressed in PoA-DD section A.4.2.2. But more clarifications are needed as follows;</p> <ul style="list-style-type: none"> - 4.2: Prior consideration notification - Contractual relationship between CPA implementer and CME. - Characteristic of power plant(newly built, capacity addition of an existing facility for solar PV and BIPV energy generation system) - 6.2: The PoA does not clearly indicate the type of energy generation system. - The difference between 7.2 and 7.3 - The minimum eligibility criteria (i), (j) and (k) is not addressed in accordance with the EB 65, Annex 3, 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (ver. 01.0). 	GI4	OK
3.5.8. Starting date and length of the PoA not exceeding 28 years (60 years for A/R);	/4/ 6(h)		<p>The PPs explained the start date, 1 Feb. 2013, and length of the PoA as 28 years. The PPs choose a length of the PoA which does not exceeding 28 years. But the PPs need to submit evidence documents for the start date. The start date needs to be the earliest date</p>	GI5	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.				
			at which either the implementation or construction or real action of a PoA begins, corresponding to the start date of the first CPA. The first construction contract dates for Magok and Naegok photovoltaic power system shall be taken as the start date of the CPA and PoA if the project developer had not undertaken any construction or any real action on the implementation of the project activity prior to this date, as per Glossary of CDM terms (Ver.06).						
3.5.9. Description of the operational and management arrangements established by the coordinating/managing entity for the implementation of the PoA, including <ul style="list-style-type: none">• a record keeping system for each CPA under the PoA,• a system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as CDM project activity or as a CPA of another PoA,• the provisions to ensure that those operating the CPA are aware and have agreed that their activity is being subscribed to the PoA;	/4/ 6(i)		<div>✓ The PPs need to submit evidence documents related with a record keeping system and standard contract form between SH Corporation which is CME and CPA implementor.</div> <div>✓ The PPs need to submit management system including belows in accordance with the the EB 65, Annex 3, 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (ver. 01.0):</div> <table><tr><td>(a)</td><td>A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;</td></tr><tr><td>(b)</td><td>Records of arrangements for training</td></tr></table>	(a)	A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;	(b)	Records of arrangements for training	Cl6	OK
(a)	A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;								
(b)	Records of arrangements for training								

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.												
			<table><tr><td></td><td>and capacity development for personnel;</td></tr><tr><td>(c)</td><td>Procedures for technical review of inclusion of CPAs;</td></tr><tr><td>(d)</td><td>A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);</td></tr><tr><td>(e)</td><td>Records and documentation control process for each CPA under the PoA;</td></tr><tr><td>(f)</td><td>Measures for continuous improvements of the PoA management system;</td></tr><tr><td>(g)</td><td>Any other relevant elements.</td></tr></table>		and capacity development for personnel;	(c)	Procedures for technical review of inclusion of CPAs;	(d)	A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);	(e)	Records and documentation control process for each CPA under the PoA;	(f)	Measures for continuous improvements of the PoA management system;	(g)	Any other relevant elements.		
	and capacity development for personnel;																
(c)	Procedures for technical review of inclusion of CPAs;																
(d)	A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);																
(e)	Records and documentation control process for each CPA under the PoA;																
(f)	Measures for continuous improvements of the PoA management system;																
(g)	Any other relevant elements.																
3.5.10. Description of a monitoring plan for a CPA, developed in accordance with the approved monitoring methodology, and identification of the monitoring provisions and data parameters a CPA has to apply/monitor;	/4/ 6(j)		<p>The CME opts for a verification method that does not use sampling but verifies each CPA by DOE.</p> <p>The CME will use a transparent system to define and describe that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA. But the PPs need to submit evidence documents for the monitoring manual.</p>	GI7	OK												
3.5.11. If the coordinating /managing entity does not wish to have all CPAs verified, a description of the proposed statistically	/4/ 6(k)		N/A	N/A	N/A												

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
sound sampling method/procedure to be used by DOEs for verification of the amount of reductions of anthropogenic emissions by sources or removals by sinks of greenhouse gases achieved by CPAs under the PoA;					
3.5.12. Environmental analysis of the PoA as per requirements of the CDM modalities and procedures. If this analysis is not undertaken for the PoA but is to be done at the CPA level this shall be described and reflected in the CDM-PoA-DD and the CDM-CPA-DD;	/4/ 6(l)		Yes, The PPs choose to carry out EIA at PoA level and explained that it is not required for this program in accordance with the 'Enforcement decree of the environment impact assessment act Annex 1' <14>. Keco confirms that the EIA is applicable only when installing photovoltaic power plant bigger than 100MW capacity.	OK	OK
3.5.13. If comments by local stakeholders were invited with regard to the total PoA, information on how comments by local stakeholders were invited, a summary of the comments received and how due account was taken of any comments received, as applicable. If such comments are to be sought at the CPA level this shall be described and reflected in the CDM-PoA-DD and the CDM-CPA-DD;	/4/ 6(m)		The PPs will invite stakeholder comments at CPA level. Keco has cross-checked the web-site survey which carried out by CME through its website (http://shville.i-sh.co.kr/).	OK	OK
3.5.14. In case public funding is used a confirmation that official development assistance is not being diverted to the implementation of the PoA.	/4/ 6(n)		Keco confirms the PoA does not includes subsidy from government refer to the 'Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy' during on-site visit. And the CPA using ODA from annex I parties can not enter the PoA in	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
			accordance with the eligibility criteria.		
4. Project description					
The SSC-PoA-DD shall contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.	/1/ 58				
4.1. Is the description of the proposed SSC-PoA activity sufficiently covering all relevant elements accurate?	/1/ 59	DR/I	Yes.	OK	OK
4.2. Does the description provide a clear understanding of the nature of the proposed SSC-PoA activity?	/1/ 59	DR/I	Yes, The description provides a clear understanding of the nature of the proposed CDM project activity.	OK	OK
4.3. If the proposed SSC-PoA activity involves the alteration of an existing installation or process, are the differences resulting from the project activity compared to the pre-project situation clearly stated in the project description?	/1/ 63	DR	No, The proposed SSC-PoA activity does not involve the alteration of an existing installation or process.	OK	OK
4.4. Are followings included in the description in Section A.2 of the SSC-PoA-DD? <ul style="list-style-type: none"> • General operating and implementing framework of PoA • Policy/measure or stated goal of the PoA • Confirmation that the proposed PoA is a voluntary action by 	/5/	DR	<ul style="list-style-type: none"> ✓ The PPs explained the Metropolis of Seoul's policy to be a world-wide green city by 2030. The PPs need to submit evidence documents related with policy. ✓ The physical boundary of the PoA is Republic of Korea but the PPs explained only policy of the Metropolis of Seoul. 	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
the coordinating/managing entity.			✓ The PPs need to clearly explain the definition of housing complex where solar PV and BIPV will be implemented.		
4.5. Are the project's spatial (geographical) boundaries clearly defined so that no submitted project could potentially be confused with another in Section A.4.1 of the SSC-PoA-DD?	/2/	DR/I	The physical boundary of the PoA is the Republic of Korea. SH Corporation is a public entity established by 'Municipal Ordinance on the Metropolis of Seoul SH Corporation establishment and operation' (9) and business area is regulated only in Seoul. Because of above, the PPs will make an agreement or contract with a CPA implementer for other areas. (The PPs changed physical boundary of the PoA from the Republic of Korea to Metropolis of Seoul)	OK	OK
4.6. Has the type and category of the project activity using the categorization of Appendix B to the simplified modalities and procedures for small-scale CDM been specified in section A.4.2 of the SSC-PoA-DD?	/2/	DR	Yes, The proposed project activity falls under the following type and category. Type I. Energy industries (renewable/non-renewable sources) Category: AMS-I.F. Renewable electricity generation for captive use and mini-grid (Ver. 2.0)	OK	OK
4.7. Have a description of how environmentally safe and sound technology and knowhow is being applied by the project activity inter alia technology transfer to the Host Party(ies) for application in the project activity been included in Section	/2/	DR/I	✓ The PoA-DD does not describe whether the technology applied to the project is introduced from a foreign country(s) or domestically developed.	GI9	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
A.4.2 of the SSC-PoA-DD?			✓ The PoA-DD needs to clearly explain whether all of the CPA will include solar PV and BIPV at the same time or not.		
4.8. Does SSC-PoA-DD demonstrate that the project activity qualifies as a small-scale project activity and that it will remain under the limits of small-scale project activity types during every year of the crediting period?	/2/	DR	Refer to section 3.5.7	GH	OK
5. Baseline and monitoring methodology					
The baseline and monitoring methodology shall be previously approved by the CDM Executive Board. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	/1/ 65				
(a) General requirement					
5.1. Do the baseline and monitoring methodologies selected by the PPs comply with the methodologies previously approved by the CDM Executive Board?	/1/ 65 68	DR	No, There is typographical error in the section E.1. The AMS-I.F has approved at EB61 meeting not 54.	GH	OK
5.2. Are the number and the version of the approved methodology that is used indicated and correctly quoted in Section E.1 of the SSC-PoA-DD?	/5/	DR	Yes. The project activity is confirmed to category I.F.	OK	OK
5.3. Is the used version of the baseline and monitoring methodology valid?	/1/	DR	Yes, The methodology applied belows;	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.				
	68		AMS I.F(Ver. 2), is revised at EB 61 and valid after 3 June 11.						
5.4. Is the selected methodology applicable to the project activity?	/1/ 66(a)	DR/I	<p>Yes.</p> <p>The baseline methodology is applicable for the project and the appropriateness is justified in the PoA-DD.</p> <p>However, the PPs need to clearly describe applicability condition of methodology using table.</p> <p>AMS I.F(Ver. 2)</p> <table><tr><td>Requirements</td><td>Applicability of the Project</td></tr><tr><td>1. to 11.</td><td>Explanation</td></tr></table>	Requirements	Applicability of the Project	1. to 11.	Explanation	GAR2	OK
Requirements	Applicability of the Project								
1. to 11.	Explanation								
(b) Applicability of the selected methodology to the project activity			In the section E.2 of the PoA-DD						
5.5. Is the methodology correctly quoted and applied by comparing it with the actual text of the applicable version of the methodology?	/1/ 70	DR	Refer to section 5.4	GAR2	OK				
5.6. Have the PPs shown that the project activity meet each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein?	/1/ 66(b) 71 76	DR	Refer to section 5.4	GAR2	OK				

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
5.7. Is the project activity expected to result in emissions other than those allowed by the methodology?	/1/ 71	DR/I	No, Other expected emissions other than CO ₂ are identified.	OK	OK
5.8. Is it possible to make a determination regarding the applicability of the selected methodology to the proposed SSC-PoA activity?	/1/ 72-75	DR/I	Refer to section 5.4	GAR2	OK
(c) Project boundary			In the section E.2 and 3 of the PoA-DD		
5.9. Requirements of the selected baseline?	/2/ /1/ 78-80	DR/I	Refer to section 5.4	GAR2	OK
5.10. Have all sources and GHGs required by the methodology been included within the project boundary?	/2/ /1/ 78	DR/I	No, The PPs need to correctly describe included or excluded emissions sources from the project boundary in accordance with the ACM0002(ver 12.1.0)	GAR3	OK
5.11. If the methodology allows PPs to choose whether a source or gas is to be included within the project boundary, is the justification provided reasonable?	/2/ /1/ 79 80	DR/I	N/A	N/A	N/A
(d) Baseline identification			In the section E.4 of the PoA-DD		

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
5.12. Has the PDD identified the baseline for the proposed SSC-PoA activity?	/1/ 81	DR	No, PoA-DD did not describe baseline scenario based on the methodologies.	GAR3	OK
5.13. Has any procedure contained in the methodology to identify the most reasonable baseline scenario been correctly applied?	/1/ 82	DR	There are no procedures contained in the methodology to identify the most reasonable baseline scenario.	OK	OK
5.14. Has each step in the procedure been described in the PDD against the requirements of the methodology?	/1/ 82	DR/I	Refer to section 5.13.	OK	OK
5.15. If the selected methodology requires use of tools to establish the baseline scenario, has it been correctly applied?	/1/ 82	DR	No. The selected methodology, AMS-I.F, do not require use of tools to establish the baseline scenario.	OK	OK
5.16. Does the methodology require several alternative scenarios for reasonable baseline scenario? • If yes, are all those scenarios reasonable in the context of the proposed SSC-PoA activity? • Has no reasonable alternative scenario been excluded?	/1/ 83	DR	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
5.17. Have the key assumptions and rational been explained and justified? <ul style="list-style-type: none"> • Are all the assumptions and data used by the PPs listed in the SSC-PoA-DD, including their references and sources? • Is all documentation used relevant for establishing the baseline scenario and correctly quoted and interpreted in the SSC-PoA-DD? • Are the assumptions, calculations and rationales used reasonable? 	/1/ 84 87(a)- (c) /2/	DR/I	N/A	N/A	N/A
5.18. Have all relevant policies and circumstances been identified and correctly considered in Section E.4 of the PDD?	/1/ 85 87(d) /2/	DR/I	Keco confirms that article 12 of 'Act on the promotion of the development, use and diffusion of new and renewable energy' only recommends to use new and renewable energy for collective housing complex.	OK	OK
5.19. Does the SSC-PoA-DD provide a verifiable description of the identified baseline scenario, including description of the technology that would be employed and/or the activities that would take place in the absence of the proposed SSC-PoA activity?	/1/ 86 87(e)	DR/I	Refer to section 5.12.	GAR3	OK
(e) Algorithms and/or formulae used to determine emission reductions			In the section E.6 of the PoA-DD		
5.20. Has the SSC-PoA-DD explained how the procedures, in the approved project category to calculate project emissions, baseline emissions, leakage emissions and emission	/1/ 89	DR/I	The procedures to calculate leakage is not explained(If the energy generating equipment	GAR4	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
reductions are applied to the proposed project activity?	/2/		is transferred from another activity, leakage is to be considered in accordance with the AMS-I.F).		
5.21. Does the SSC-PoA-DD clearly state which equations will be used in calculating emission reductions?	/2/	DR	Yes, PoA-DD clearly explains equation for emission reduction calculation.	OK	OK
5.22. Have the equations and parameters in the SSC-PoA-DD been correctly applied by comparing them to those in the selected approved methodology?	/1/ 90	DR/I	A typical small-scale CPA includes (a)install a new power plant at a site where there was no renewable energy power plant operation prior to the implementation of the project activity or (b) involve a capacity addition in accordance with the AMS-I.F. But the parameters and equations related with capacity addition are not explained in PoA-DD.	GAR5	OK
5.23. If the methodology provides for selection between different options for equations or parameters, has adequate justification been provided and have correct equations and parameters been used in accordance with the methodology selected?	/1/ 90	DR	Refer to section 5.22	GAR5	OK
5.24. (For Section E.6.3 of the SSC-PoA-DD) If data and parameters have already been determined and will remain fixed throughout the crediting period without being monitored throughout the crediting period of the proposed SSC-PoA activity. • Are all data sources and assumptions appropriate?	/1/ 91 /2/	DR/I	✓ PoA-DD described yearly proportion of the generation of electricity based on the source of energy in page 33. The PPs need to submit evidence documents used for OM, BM calculation and calculation sheet.	GH1	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
<ul style="list-style-type: none"> Are calculations are correct, applicable to the proposed SSC-PoA activity? Will calculations result in a conservative estimate of the emission reductions? 			✓ The PPs explained that the OM factor calculated using recent three years(2008~2010) data and it will be used as a fixed value along the credit period. The PPs need to clearly explain whether the PPs will use fixed OM data for all of crediting periods of CPA.		
5.25. (For Section E.6.2 of the SSC-PoA-DD) Has the SSC-PoA-DD provided a transparent ex-ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations?	/1/ 92 /2/	DR/I	Refer to 5.22 and 5.24	CAR5 GH1	OK
5.26. Has it documented how each equation is applied, in a manner that enables the reader to reproduce the calculation?	/1/ 92 /2/	DR	The PPs need to submit emission factor calculation sheet.	GH1	OK
5.27. If the project activity involves more than one component activity, have emission reduction calculations for each of the component been provided separately in a transparent manner?	/2/	DR/I	N/A	N/A	N/A
5.28. (For Section A.4.4 of the SSC-CPA-DD) Has the SSC-CPA-DD summarized the results of the ex-ante estimation of emission reductions for all years of the crediting period, using the tabular form provided?	/2/	DR	N/A	N/A	N/A
5.29. Have all data used to determine the baseline emissions	/1/	DR	Refer to section 5.20-27	Pending	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
(variables, parameters, data sources etc.) been illustrated in a transparent manner?	93 /2/				
6. Additionality of a project activity			In the section E.5 of the SSC-PoA-DD		
The SSC-PoA-DD shall describe how a proposed CDM project activity is additional.	/1/ 94		✓ The validation report shall clearly describe all steps taken, and sources of information used, by the DOE to cross-check the information contained in the SSC-PoA-DD on this matter. The validation report shall contain information regarding how the DOE has determined that the documentation assessed is authentic, where appropriate. (96)		
6.1. Do PPs describe how a proposed SSC-PoA activity is additional in SSC-PoA-DD?	/1/ 94	DR/I	Yes. The PPs proposed method to check the additionality of the program activity as belows; ✓ Guidelines for demonstrating additionality of microscale project activities But para 2(c) of 'Guidelines for demonstrating additionality of microscale project activities' only applicable for the project activity for distributed energy generation not connected to a national or regional grid.	GH2	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
6.2. Are all data, rationales, assumptions, justifications and documentation provided by PPs to support the demonstration of additionality reliable and credible?	/1/ 95	DR/I	N/A	N/A	N/A
6.3. Does the proposed project activity comply with the latest tools and documents provided by the CDM Executive Board to demonstrate the additionality of proposed SSC-PoA activities, as well as specific complementary or alternative requirements included in approved CDM methodology?	/1/ 96 137	DR	Yes. For demonstration of additionality of proposed project, the PPs used below guidelines. ✓ Guidelines for demonstrating additionality of microscale project activities	OK	OK
(a) Prior consideration of the clean development mechanism					
6.4. If this starting date is earlier than the date of publication of the SSC-PoA-DD for global stakeholder consultation, has Section B.1 in the SSC-PoA-DD contain a description of how the benefits of the CDM were seriously considered prior to the starting date?	/1/ 98 /2/	DR/I	N/A	N/A	N/A
6.5. Did PPs reported in Section B.1 of the SSC-PoA-DD about the start date of the project activity in accordance with the "Glossary of CDM terms"?	/1/ 99 /2/	DR/I	✓ Refer to section 3.5.8 ✓ In accordance with the 'Glossary of CDM terms', the start date of a CDM programme activity is the earliest date at which either the implementation or construction or real action of a programme activity begins. The start date of the CPA cannot be prior to the commencement of validation of the programme of activities, i.e. the date on which the CDM-PoA-DD is first published	⊖15	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
			<p>for global stakeholder consultation.</p> <p>✓ The SSC-PoA-DD has been published for public comments on the UNFCCC CDM website during a period of 30 days, from 07/02/2012 to 07/03/2012. So any CPA which started before 07/02/2012 can not included in this PoA.</p>		
6.6. For a new project activity (a project activity with a start date on or after 02 August 2008), if SSC-PoA-DD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, did PPs had informed the host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status?	/1/ 100 101	DR	<p>✓ In accordance with the 'Clarification regarding the 'Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA' (ver 01, EB60, Annex26), 'Guidelines for the demonstration and assessment of prior consideration of the CDM' do not apply to PoAs.</p> <p>✓ Any CPA which started before GSP which is 07/02/2012 can not included in this PoA.</p>	OK	OK
6.7. For an existing project activity(a project activity with a start date before 02 August 2008), for which the start date is prior to the date of publication of the SSC-PoA-DD for global stakeholder consultation, are there sufficient and available evidence to support the serious consideration of the CDM in the decision to implement the project activity?	/1/ 100 102(a)	DR	N/A	N/A	N/A
6.7.1. Does the evidence from PPs indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation?	/1/ 102(b)	DR	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
(b) Identification of alternatives			<i>Unless the approved methodology that is selected by the proposed SSC-PoA activity prescribes the baseline scenario and no further analysis is required</i>		
6.8. Does approved methodology that is selected by the proposed SSC-PoA activity prescribe the baseline scenario so that no further analysis is required?	/1/ 105	DR	Yes, The selected methodology which is AMS-I.F, by the proposed SSC-PoA activity prescribe the baseline scenario as belows; Baseline emissions are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor. ✓ Refer to section 5.12	EAR3	OK
6.9. If no above question, does the SSC-PoA-DD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	/1/ 105	DR/I	N/A	N/A	N/A
6.9.1. Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a proposed SSC-PoA activity?	/1/ 106(a)	DR/I	N/A	N/A	N/A
6.9.2. Does the list contain all plausible alternatives?	/1/ 106(b)	DR/I	N/A	N/A	N/A
6.9.3. Do the alternatives comply with all applicable and enforced legislation?	/1/ 106(c)	DR/I	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
(c) Investment analysis	/1/ 108		<i>If investment analysis has been used to demonstrate the additionality of the proposed SSC-PoA activity ⇒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'.(110)</i>		
6.10. If investment analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall provide evidence that the proposed CDM project activity would not be below? <ul style="list-style-type: none"> • The most economically or financially attractive alternative; or • Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs) 	/1/ 108	DR/I	N/A	N/A	N/A
6.11. Do PPs demonstrate this through one of the following approaches? <ul style="list-style-type: none"> • The proposed SSC-PoA activity would produce no financial or economic benefits other than CDM-related income.; • The proposed SSC-PoA activity is less economically or financially attractive than at least one other credible and realistic alternative; • The financial returns of the proposed SSC-PoA activity would be insufficient to justify the required investment. 	/1/ 109	DR/I	N/A	N/A	N/A
6.12. Has PPs choose appropriate investment analysis method?	/3/	DR	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
- simple cost analysis, investment comparison analysis or benchmark analysis	16				
6.13. Is the plant load factor defined ex-ante in the SSC-PoA-DD according to the latest 'Guidelines for the reporting and validation of plant load factors'?	/1/ 110	DR	The PPs need to submit evidence documents for coefficient of utilization on photovoltaic power plant.	GH3	OK
(d) Barrier analysis	115	<i>(If barrier analysis has been used to demonstrate the additionality of the proposed SSC-PoA activity)</i>			
6.14. Has the SSC-PoA-DD demonstrated that the proposed SSC-PoA activity faces barriers that; <ul style="list-style-type: none"> • Prevent the implementation of this type of proposed SSC-PoA activity • Do not prevent the implementation of at least one of the alternatives 	/1/ 115	DR	N/A	N/A	N/A
6.15. Are not the barriers presented issues that have a clear direct impact on the financial returns of the project activity?	/1/ 116	DR	N/A	N/A	N/A
6.16. Is existence of barriers substantiated by independent sources?	/1/ 117(a)	DR/I	N/A	N/A	N/A
6.17. Do the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives?	/1/ 117(b)	DR/I	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
(e) Common practice analysis	/1/ 119		<i>(For proposed large-scale CDM activities, unless the proposed project type is first-of-itskind, common practice analysis shall be carried out as a credibility check of the other available evidence used by the PPs to demonstrate additionality.)</i>		
6.18. Is the geographical scope (i.e. the defined region) of the common practice analysis appropriate for the assessment of common practice related to the project activity's technology or industry type?	/1/ 120(a)	DR/I	N/A	N/A	N/A
6.19. Were official sources and local and industry expertise used to determine to what extent similar and operational projects (i.e. using similar technology or practice), other than CDM project activities, have been undertaken in the defined region?	/1/ 120(b)		N/A	N/A	N/A
6.20. If similar and operational projects, other than CDM project activities, are already "widely observed and commonly carried out" in the defined region, are there the essential distinctions between the proposed CDM project activity and the other similar activities?	/1/ 120(c)		N/A	N/A	N/A
7. Monitoring plan					
The SSC-PoA-DD shall include a monitoring plan. This monitoring plan shall be based on the approved monitoring methodology applied to the proposed SSC-PoA activity.	/1/ 122				
7.1. (For section E.7 of the SSC-PoA-DD) Has the SSC-PoA-DD noted that data monitored and required for verification and	/2/	DR	Yes,	GI6	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
issuance are to be kept for a minimum of two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later?			The PoA-DD noted that the data monitored under the monitoring plan will be kept for two (2) years after the end of crediting period. Refer to section 3.5.9 However, type of storage system(Record keeping system) is not clearly noted.		
7.2. (For section E.7 of the SSC-PoA-DD) If data and parameters will be monitored on implementation and hence become available only after validation on the project activity, are the estimates provided in the SSC-PoA-DD for these data and parameters reasonable?	/2/	DR/I	No, Refer to section 5.22	GAR5	OK
For compliance of the monitoring plan with the approved methodology					
7.3. Is the list of parameters required by the selected approved methodology identified in Section E.7.1 of the SSC-PoA-DD, using tabular form provided by guideline for completing the SSC-PoA-DD?	/1/ 123(a) /2/	DR	No, Refer to section 5.22	GAR5	OK
7.4. Does the monitoring plan contain all necessary parameters?	/1/ 123(a)	DR	No, Refer to section 5.22	GAR5	OK
7.5. Are the parameters clearly described?	/1/ 123(a)	DR/I	✓ The PPs used tabular format to explain data and parameters to be monitored and reported. But some of explanation in the	GH4	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
	/2/		<p>parameters are not consistently applied such as any comments. And some of parameters explanation are missing in PoA-DD page 27.</p> <ul style="list-style-type: none"> ✓ The PPs explained that EG_y will be measured each hourly and recorded monthly. But in accordance with the para 17 (b) of 'General Guidelines to SSC CDM methodologies', the amount of electricity produced should be measured continuously. ✓ In accordance with the para 17 (c) of 'General Guidelines to SSC CDM methodologies', measuring equipment should be certified to national or IEC standards and calibrated according to the national standards at least once in three years. But 'The guideline on management of SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' indicates that the electricity meter will be calibrated every eight years. ✓ A monitoring manner(i.e. reporting procedure), calibration standard, personnel information, a specification of monitoring equipment to verify its capability and excellence and an organization chart of the assigned team for monitoring emission reductions should be provided. 		

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
7.6. Does the means of monitoring described in the plan comply with the requirements of the methodology?	/1/ 123(a)	DR	Refer to section 7.5	GH4	OK
For implementation of the plan					
7.7. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/1/ 123(b)	DR	Refer to section 3.5.10 The PPs need to submit an monitoring manual for the PoA.	GH7	OK
7.8. Is the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, sufficient to ensure that the emission reductions achieved by/resulting from the proposed SSC-PoA activity can be reported ex post and verified?	/1/ 123(b)	DR/I	Refer to section 7.5	GH4	OK
7.9. Have the operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity been described in the SSC-PoA-DD?	/2/	DR/I	Yes, The PoA-DD demonstrates operational and management structure. Refer to section 7.7	GH7	OK
7.10. Have the responsibilities for and institutional arrangements for data collection and archiving been clearly indicated in the SSC-PoA-DD?	/2/	DR	Refer to section 7.5	GH4	OK
7.11. Has the monitoring plan reflected good monitoring practice appropriate to the type of project activity?	/2/	DR	Refer to section 3.5.10 ✓The PoA-DD is not reflecting good monitoring practice below. The PPs need to submit monitoring manual.	GH7	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.																				
			<table><tr><td colspan="2">The SSC-PoA-DD gives detailed accounts for all of the following:</td></tr><tr><td>The authority and responsibility of project management</td><td>No</td></tr><tr><td>The authority and responsibility for registration, monitoring, measurement and reporting</td><td>No</td></tr><tr><td>Procedures for training of monitoring personnel</td><td>No</td></tr><tr><td>Procedures for emergency preparedness for cases where emergencies can cause unintended emissions</td><td>No</td></tr><tr><td>Procedures for calibration of monitoring equipment</td><td>No</td></tr><tr><td>Procedures for maintenance of monitoring equipment and installations</td><td>No</td></tr><tr><td>Procedures for monitoring, measurements and reporting</td><td>No</td></tr><tr><td>Procedures for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)</td><td>No</td></tr><tr><td>Procedures for internal review of reported results/data, including a system for corrective actions as needed, in order to provide for more accurate futur monitoring and reporting.</td><td>No</td></tr></table>	The SSC-PoA-DD gives detailed accounts for all of the following:		The authority and responsibility of project management	No	The authority and responsibility for registration, monitoring, measurement and reporting	No	Procedures for training of monitoring personnel	No	Procedures for emergency preparedness for cases where emergencies can cause unintended emissions	No	Procedures for calibration of monitoring equipment	No	Procedures for maintenance of monitoring equipment and installations	No	Procedures for monitoring, measurements and reporting	No	Procedures for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	No	Procedures for internal review of reported results/data, including a system for corrective actions as needed, in order to provide for more accurate futur monitoring and reporting.	No		
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The authority and responsibility of project management	No																								
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8. Sustainable development																									

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
SSC-PoA activities shall assist Parties not included in Annex I to the Convention in achieving sustainable development.	/1/ 125				
8.1. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed SSC-PoA activity to the sustainable development of the host Party?	/1/ 126	DR	A written approval letter (LoA) from the DNA of Republic of Korea is not obtained yet.	GAR†	OK
9. Local stakeholder consultation					
Local stakeholders shall be invited by the PPs to comment on the proposed SSC-PoA activity prior to the publication of the SSC-PoA-DD on the UNFCCC website.	128				
9.1. Were stakeholders invited by the PPs to comment on the proposed SSC-PoA activity prior to the publication of the SSC-PoA-DD on the UNFCCC website?	/1/ 128	DR/I	N/A The PPs will invite stakeholders for the comments at the CPA level.	N/A	N/A
9.2. Have comments by local stakeholder that can reasonably be considered relevant for the proposed SSC-PoA activity, been invited?	/1/ 129(a)	DR	N/A	N/A	N/A
9.3. Has the SSC-PoA-DD described the process by which comments by local stakeholder have been invited and compiled?	/2/	DR	N/A	N/A	N/A
9.4. Was an invitation for comments by local stakeholders made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.(in Section D.2 of the SSC-PoA-DD)?	/2/	DR/I	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
9.5. Does PPs describe a project activity in a manner which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.(in Section D.2 of the SSC-PoA-DD)?	/2/	DR/I	N/A	N/A	N/A
9.6. Is the summary of the comments received complete in Section D.3 of the SSC-PoA-DD?	/1/ 129(b)	DR/I	N/A	N/A	N/A
9.7. Have the PPs taken due account of any comments received and described this process in Section D.4 of the SSC-PoA-DD?	/1/ 129(c)	DR/I	N/A	N/A	N/A
10. Environmental impacts					
PPs shall submit documentation to the DOE on the analysis of the environmental impacts of the project activity in accordance with paragraph 37(c) of the CDM modalities and procedures	/1/ 131				
10.1. Have PPs submitted documentation on the analysis of the environmental impacts of the project activity?	/1/ 131	DR/I	No, The validation team verified that the proposed project activity is not subjected to assessment in accordance with Environmental Impact Assessment Act of Republic of Korea.	OK	OK
10.2. If an environmental impact assessment required by the host Party, have the PPs undertaken an analysis of environmental impacts?	/1/ 131 132	DR/I	N/A	N/A	N/A

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
11. Specific validation_SSC					
A proposed small-scale SSC-PoA activity shall meet the requirements of the simplified modalities and procedures for small-scale CDM activities	/1/ 135				
11.1. Does the project activity qualify within the thresholds of the three possible types of small-scale project activities?	/1/ 136(a)	DR	Yes. The program qualify within the thresholds of the Type I.	OK	OK
11.2. Does the project activity conform to one of the approved small-scale categories and apply the relevant tool or methodology?	/1/ 136(b)	DR	Yes. The project activity is confirmed to category AMS-I. F.	OK	OK
11.3. Are the small-scale methodologies applied in conjunction with the general guidance to the methodologies?	/1/ 136(b)	DR	Yes.	OK	OK
11.4. Is the project activity not a de-bundled component of a large-scale project? And is it described in Section A.4.4 of the SSC-PoA-DD? <ul style="list-style-type: none"> • With the same PPs • Registered within the period of 2 years • Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity under the CDM at the closest point. 	/1/ 136(c) /7/	DR/I	According to the guidance for determining the occurrence of debundling under a PoA (EB 54, Annex13), the SH Corporation will check the occurrence of debundling in each SSC-CPA and the procedure is clearly described in the PoA-DD.	OK	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
11.5. Is an assessment of the environmental impacts of the proposed SSC-PoA activity required by the host Party?	/1/ 136(d)	DR/I	No.	OK	OK
12. Specific validation_SSC-PoA					
The CDM Executive Board has provided guidance and procedures for registering a programme of activities (PoA) as a single CDM project activity. In validating a PoA and any CDM programme activities (CPAs) proposed to be included in the PoA, the DOE shall, in general, apply the means of validation and reporting requirements described in this Manual. However there are a number of requirements unique to PoAs for which additional instructions are provided below, the precise extent of validation required in each of these areas will need to be determined by the DOE based on the type or PoA being validated.	/1/ 165				
12.1. Operational and management arrangements for the PoA		DR			
12.1.1. Are the operational and management arrangements which have been established by the coordinating/managing entity in order to determine whether these arrangements suitable for the PoA being validated?	/1/ 166		Refer to section 3.5.9	⊖6	OK
12.1.2. Shall be the arrangements sufficient to ensure that the coordinating/managing entity will have control of all records and information related to the implementation of individual CPAs?	/1/ 166		Refer to section 12.1.1	⊖6	OK
12.1.3. Will be the coordinating/managing entity in a position to ensure each CPA is being operated in accordance with the	/1/		Refer to section 12.1.1	⊖6	OK

REQUIREMENT CHECK LIST	Ref. §	MoV	COMMENTS	Draft Concl.	Final Concl.
specific requirements of the programme?	166				
12.1.4. Where the DOE considers the arrangements to be unsatisfactory or insufficient?	/1/ 166		Refer to section 12.1.1	GH6	OK
12.2. Eligibility criteria for CPAs					
12.2.1. Is the specified eligibility criteria in the PoA-DD ensuring that all CPAs would comply with the CDM requirements applicable to the PoA,	/1/ 167		Refer to section 3.5.7	GH4	OK
12.2.2. Will these requirements include inter alia the means of demonstrating the additionality of the CPA and the applicability of the applied methodology?	/1/ 167		Refer to section 6.1	GH2	OK
12.2.3. Is the eligibility criteria represent an essential element of ensuring the smooth functioning or programmatic CDM?	/1/ 167		Refer to section 3.5.7	GH4	OK

/1/ Validation and Verification Manual_version 01.2

/2/ Guidelines for completing the simplified project design document(CDM-SSC-PDD) and the form for proposed new small scale methodologies(CDM-SSC-NM)_version 05

/3/ Guidelines on the assessment of investment analysis_version 05

/4/ Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA-version 04.1

/5/ CDM-SSC-PoA-DD-Small-Scale CDM Programme of Activities Design Document form_version 01

/6/ CDM-SSC-CPA-DD-Small-Scale CDM Programme Activity Design Document form_version 01

/7/ Guidelines on assessment of debundling for SSC project activities _version 03

/8/ Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities _version 01.0

Table 3. Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion				
CAR1 A written approval letter (LoA) from the DNA of Republic of Korea has yet to be obtained. The DNA of the Host country will confirm the sustainable development.	1.1 1.2 1.3 1.4 1.5 1.6 1.7 2.3 2.5 2.8 2.7 2.10 3.5.4 8.1	Corrective Action or a Clarification #1 The PPs have to submit draft validation report with project description in order to request the Approval from the DNA. Letter of approval (LoA) can be provided after approval from the DNA	DOE review comment #1 Keco will issue draft validation report for the application of host country LoA. The PPs need to submit LoA of host country after approval.	OK				
		Corrective Action or a Clarification #2 PP submitted LoA of host country	DOE review comment #2 The DNA of Republic of Korea issued the Letter of Approval(LoA) on 18/07/2012 <29>. Keco cross-checks using an interview with a person in charge from the Republic of Korea DNA to confirm its authenticity. So CAR1 is closed.					
CAR2 The PPs need to clearly describe applicability condition of methodology using table. AMS I.F(Ver. 2) <table><tr><td>Requirements</td><td>Applicability of the Project</td></tr><tr><td>1. to 11.</td><td>Explanation</td></tr></table>	Requirements	Applicability of the Project	1. to 11.	Explanation	5.4 5.5 5.6 5.8 5.9	Corrective Action or a Clarification #1 Applicability conditions are explained with table in E.2.	DOE review comment #1 AMS I.F(ver.02) Explanation on the criteria is in accordance with the methodologies. But the latest applicability conditions of methodology is not correctly applied. And there are no conclusions for the compliance of each conditions.	OK
	Requirements	Applicability of the Project						
1. to 11.	Explanation							
	Corrective Action or a Clarification #2 Refer to E.2 fulfillment of condition 12 is revised. conclusions are added in the fulfillment of conditions	DOE review comment #2 Keco confirms that the PoA-DD clearly justify the choice of the methodology, AMS-I.F(ver.02) and applicability conditions So CAR2 is closed						

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
<p>CAR3</p> <p>The PPs need to correctly describe included or excluded emissions sources from the project boundary in accordance with the ACM0002(ver 12.1.0)</p> <p>PoA-DD did not describe baseline scenario based on the methodologies.</p>	<p>5.10</p> <p>5.12</p> <p>5.19</p> <p>6.8</p>	<p>Corrective Action or a Clarification #1</p> <p>Emissions sources is revised in E.3</p> <p>Baseline scenario is explained correctly in accordance with AMS-I.F (explained in E.4)</p>	<p>DOE review comment #1</p> <p>✓The emissions sources included in or excluded from the project boundary is not described correctly.</p> <p>✓Keco has cross-checked and confirmed that the baseline scenario is in accordance with the AMS- I.F.</p>	OK
		<p>Corrective Action or a Clarification #2</p> <p>Refer to E.3</p> <p>the project boundary is revised as AMS-I.F</p>	<p>DOE review comment #2</p> <p>✓Keco confirms that the emissions sources included in or excluded from the project boundary is described correctly.</p> <p>So CAR3 is closed</p>	
<p>CAR4</p> <p>The procedures to calculate leakage is not explained(If the energy generating equipment is transferred from another activity, leakage is to be considered in accordance with the AMS- I.F).</p>	5.20	<p>Corrective Action or a Clarification #1</p> <p>Leakage and project emissions are explained in E.6.2</p>	<p>DOE review comment #1</p> <p>✓Keco has cross-checked eligibility criteria for the CPA and confirmed that only newly installed PV power generation system can be applied for the CPA.</p> <p>So CAR4 is closed</p>	OK
<p>CAR5</p> <p>A typical small-scale CPA includes (a)install a new power plant at a site where there was no renewable energy power plant operation prior to the implementation of the project activity or (b) involve a capacity addition in accordance with the AMS-I.F. But the parameters and equations related with</p>	<p>5.22</p> <p>5.23</p> <p>5.25</p> <p>7.2</p> <p>7.3</p> <p>7.4</p>	<p>Corrective Action or a Clarification #1</p> <p>The explanation of capacity addition is removed because the PoA does not involve capacity addition project(A.4.2).</p>	<p>DOE review comment #1</p> <p>✓Keco has cross-checked applicability of the methodology and eligibility criteria for the CPA and confirmed that only newly installed PV power generation system can be applied for the CPA. There will be no capacity addition CPA project. The PPs submitted 'The guideline on management of SH Corporation Solar photovoltaic</p>	OK

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion								
capacity addition are not explained in PoA-DD.			housing complex programme in Republic of Korea` <u>19</u> and it described that only newly installed PV and/or BIPV power system So CAR5 is closed.									
CI1 The PPs need to submit MoC in accordance with the latest procedure.	2.11	Corrective Action or a Clarification #1	DOE review comment #1	OK								
	2.12	MoC is sent to the DOE.	Keco cross-checked MoC but it did not follow `Procedures for modalities of communication between project`(ver.01), EB45 Annex59.									
		Corrective Action or a Clarification #2	DOE review comment #2									
		Revised MoC is sent to the DOE.	Keco has checked and confirmed that the revised MoC <u>23</u> followed related procedure. So CI1 is closed.									
CI2 There is typographical error in the form. CDM SSC-OPA-DD needs to be changed.	3.1	Corrective Action or a Clarification #1 The typographical error in the form of PoA is corrected.	DOE review comment #1 Keco has cross-checked and confirmed that the typographical error has been corrected. So CI2 is closed.	OK								
CI3 The PPs are recommended to use the below format for a clearer expression. ✔Title: ✔Current version number and the date: <table><tr><td>Ver 01</td><td>01/10/2011 (for GSP)</td></tr><tr><td>Ver 02</td><td></td></tr><tr><td>Ver 03</td><td></td></tr><tr><td>Ver 04</td><td></td></tr></table> ✔Completion date PoA-DD: dd/mm/yyyy	Ver 01	01/10/2011 (for GSP)	Ver 02		Ver 03		Ver 04		3.2.1	Corrective Action or a Clarification #1 A.1 in the PoA is revised to following form. Title: SH Corporation Solar photovoltaic housing complex programme in Republic of Korea Current version number and the date:	DOE review comment #1 The date for GSP PoA-DD is not correct.	OK
Ver 01	01/10/2011 (for GSP)											
Ver 02												
Ver 03												
Ver 04												

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion								
		<table><tr><td>Ver 01</td><td>01/12/2011 (for GSP)</td></tr><tr><td>Ver 02</td><td>25/04/2012 (at validation)</td></tr><tr><td>Ver 03</td><td>16/05/2012 (at validation)</td></tr><tr><td>Ver 04</td><td></td></tr></table> <p>Completion date PoA-DD: / /</p> <p>Corrective Action or a Clarification #2 PP updated version number and date.</p>	Ver 01	01/12/2011 (for GSP)	Ver 02	25/04/2012 (at validation)	Ver 03	16/05/2012 (at validation)	Ver 04		<p>DOE review comment #2 The PPs used the tabular format and updated version number and dates of PoA-DD to clearly describe changes. So CI3 is closed.</p>	
Ver 01	01/12/2011 (for GSP)											
Ver 02	25/04/2012 (at validation)											
Ver 03	16/05/2012 (at validation)											
Ver 04												
CI4 More clarifications are needed as follows; ✓4.2: Prior consideration notification ✓Contractual relationship between CPA implementer and CME. ✓Characteristic of power plant(newly built, capacity addition of an existing facility for solar PV and BIPV energy generation system) ✓6.2: The PoA does not clearly indicate the type of energy generation system. ✓The difference between 7.2 and 7.3 ✓The minimum eligibility criteria (i), (j) and (k) is not addressed in accordance with the EB 65, Annex 3, `Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies	3.5.7 4.8 12.2.1 12.2.3	Corrective Action or a Clarification #1 In the section A.4.2.2, ✓prior consideration notification is removed. ✓an agreement between CPA implementer and CME is included. ✓Characteristic of power plant is included.(9.1,9.2,9.3 in the table) ✓the type of energy generation system is explained in 6.2 of the table. ✓7.3 of the table is removed. ✓The minimum eligibility criteria (i), (j) and (k) is included in the table.	DOE review comment #1 Keco confirms that the eligibility criteria are sufficiently objective and comprehensive to permit the assessment of the inclusion and additionality of CPAs in the PoA. So CI4 is closed.	OK								

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
for programme of activities` (ver. 01.0).				
<p>CI5 The PPs need to submit evidence documents for the start date. The start date needs to be the earliest date at which either the implementation or construction or real action of a PoA begins, corresponding to the start date of the first CPA. The first construction contract dates for Magok and Naegok photovoltaic power system shall be taken as the start date of the CPA and PoA if the project developer had not undertaken any construction or any real action on the implementation of the project activity prior to this date, as per Glossary of CDM terms (Ver.06).</p>	3.5.8 6.5	<p>Corrective Action or a Clarification #1 According to paragraph 158 of Clean development mechanism project standard(v01.0), CME shall determine the start date and length of the proposed CDM PoA and provide a description of how the start date has been determined. Therefore, the starting date of PoA is 29/05/2014 which is the completion date of the installation of PV at Neagok 3 apartment complex. Support document is provided to DOE</p>	<p>DOE review comment #1 ✓The PPs did not applied standard correctly. The CDM PS is applicable only when the PPs are using new PDD form. ✓The start date of the PoA is not a construction completion date but the date of the implementation, construction or real action of a PoA.</p>	OK
		<p>Corrective Action or a Clarification #2 Refer to B.1 the start date of the PoA is revised as the registration date of PoA</p>	<p>DOE review comment #2 ✓Keco confirms that the PPs revise PoA-DD. ✓The start date of the PoA is not a construction completion date but the date of the implementation, construction or real action of a PoA</p>	
		<p>Corrective Action or a Clarification #3 The PPs chose 01/04/2013 as a start date of the PoA since it is the the expected date of contract for purchasing the equipment in Neagok7 apartment complex.</p>	<p>DOE review comment #3 The start date of the PoA is 01/04/2013, which is based on the expected contract date of the first CPA, `Naegok complex 7 project site`(#16 of CPA1), and it will be the earliest date on which the real action of a</p>	

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion	
			PoA begin. Since the project developer will not undertake any construction or any real action on the implementation of the project activity prior to the expected date, as per Glossary of CDM terms (ver.06), this date has been appropriately treated as the start date of the PoA. Keco confirms it through reviewing 'Magok/Naegok photovoltaic power generating system implementation plan by Technology division of SH Corporation' <u><18></u> . So CI5 is closed.		
CI6 ✓The PPs need to submit evidence documents related with a record keeping system and standard contract form between SH Corporation which is CME and CPA implementor. ✓The PPs need to submit management system including belows in accordance with the EB 65, Annex 3, 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (ver. 01.0): <table><tr><td>(a)</td><td>A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their</td></tr></table>	(a)	A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their	3.5.9 7.1 12.1.1 12.1.2 12.1.3 12.1.4 Corrective Action or a Clarification #1 The PPs submitted 'The guideline on management of SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' <u><19></u> . Record keeping system is explained in "number 6" of the guideline on management of the programme CDM standard contract form between SH Corporation and CPA implementor is provided in the annex 2 and 3 of the guideline on management of the programme CDM ✓(a) : is explained in "number 4" of the guideline on management of the programme ✓(b) : is explained in "number 9" of	DOE review comment #1 ✓The PPs adopted 'Standard agreement for CPA involvement' <u><10></u> related with CPA inclusion between SH Corporation which is CME and CPA implementor. It regulates that all of CERs belongs to SH Corporation. ✓The PPs explained that the generated and imported electricity, training materials and unusual operation would be monitored by CPA implementer and transferred to CME via E-mail. And the person in charge of monitoring in CME will record using database. ✓(a) The PPs describe a clear definition of roles and responsibilities of personnel involved in the process of inclusion of	OK
(a)	A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their				

Draft report clarifications and corrective action requests by Validation team		Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
	competencies;		<p>the guideline on management of the programme</p> <p>✓(c) : is explained in "number 5" of the guideline on management of the programme</p> <p>✓(d) : is explained in "number 5.3" of the guideline on management of the programme</p> <p>✓(e) : is explained in "number 6" of the guideline on management of the programme</p> <p>✓(f) : is explained in "number 8" of the guideline on management of the programme</p>	<p>CPAs but there are no review procedures of their competencies.</p> <p>✓(b) The PPs suggest training program for the PoA related personnel to obtain, strengthen, and maintain the capabilities to set and achieve their own development objectives over time.</p> <p>✓(c) Keco confirms that the PPs have a procedures for technical review of inclusion of CPAs including general requirements check, eligibility criteria check, double counting.</p> <p>✓(d) The PPs established procedure to prevent double counting of the CPA. The person in charge of CME will interview CPA implementer and cross-check UNFCCC website.</p> <p>✓(e) The PPs submitted list of records and documentation and its storage.</p> <p>✓(f) The PPs designated the person in charge of improvements of PoA and its approval.</p> <p>✓(g) There are no other related documents.</p>	
(b)	Records of arrangements for training and capacity development for personnel;				
(c)	Procedures for technical review of inclusion of CPAs;				
(d)	A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);				
(e)	Records and documentation control process for each CPA under the PoA;				
(f)	Measures for continuous improvements of the PoA management system;				
(g)	Any other relevant elements.				
✓Type of storage system(Record keeping system) is not clearly noted.			<p>Corrective Action or a Clarification #2</p> <p>✓Refer to PoA-DD A.4.4.1 and The guideline on management of the PoA 4 page</p>	<p>DOE review comment #2</p> <p>There are no competence review process for the personnel involved in the process of inclusion of CPAs.</p>	

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
		<ul style="list-style-type: none"> ✓ a person in charge of general management of PoA audits that all of activities under the PoA are conducted properly. 		
		<p>Corrective Action or a Clarification #3 Refer to A.4.4.1(the operational and management process of the PoA) and E.7.2(QA/QC)</p> <ul style="list-style-type: none"> ✓ Each responsible person reports the process and result to the person who in charge of the general management. And a person in charge of general management of PoA audits that all of activities under the PoA are conducted properly. ✓ Additionally, a person in charge of general management of PoA will quarterly visit the site to audit the monitoring data. 	<p>DOE review comment #3 Keco confirms that 'The guideline on management of SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' <19> regulates competence review process. So Cl6 is closed.</p>	
<p>CI7 The PPs need to submit evidence documents for the monitoring manual.</p>	<p>3.5.10 7.7 7.9 7.11</p>	<p>Corrective Action or a Clarification #1 The monitoring manual is provided in "number 10" of the guideline on management of the programme</p>	<p>DOE review comment #1</p> <ul style="list-style-type: none"> ✓ The PPs established monitoring team with their role and responsibilities. But the specification of the monitoring equipment is not clear. Please submit evidence documents(technical specification) for above. ✓ The PPs explained that the imported 	OK

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
			electricity from the grid will be calculated based on the maximum capacity of the auxiliary equipment with transmission and distribution loss. Please submit evidence documents for transmission and distribution loss.	
		<p>Corrective Action or a Clarification #2</p> <p>✓1.refer to the attached file(specification of SH Corporation related to accuracy of meter)</p> <p>✓2.transmission and distribution loss is 10% as default(refer to the AMS-II,C). In Korea, transmission and distribution loss is about 4% according to Major electric power statistics by KEPCO. at the conservative approach, the PPs chose 10% of transmission and distribution loss.</p>	<p>DOE review comment #2</p> <p>✓Keco has checked 'The guideline on management of "SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' <19>, 'Specification on electric construction of SH Corporation(related to accuracy of meter)' <20> and confirmed that accuracy of meter is 1.0S.</p> <p>✓Please submit evidence documents for transmission and distribution loss.</p>	
		<p>Corrective Action or a Clarification #3</p> <p>The method to calculate electricity consumed from the grid is changed. If the imported electricity can not be measured, it will be conservatively calculated. (Equation : The auxiliary electricity consumption = Standby power(of connector bands and inverters)*Numbers*Hours)</p>	<p>DOE review comment #3</p> <p>Keco confirms that the calculation method for the electricity consumed from the grid has changed and correctly applied in the PoA-DD.</p> <p>So CI7 is closed.</p>	

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
CI8 ✓PPs explained the Metropolis of Seoul's policy to be a world-wide green city by 2030. The PPs need to submit evidence documents related with policy. ✓The physical boundary of the PoA is Republic of Korea but the PPs explained only policy of the Metropolis of Seoul. ✓The PPs need to clearly explain the definition of housing complex where solar PV and BIPV will be implemented.	4.4	Corrective Action or a Clarification #1 ✓The policy of seoul is provided to the DOE. ✓The policy of The Korean Government is explained in A.2 of the PoA ✓The definition of housing complex is explained in A.2 of the PoA.	DOE review comment #1 ✓The PPs submitted 'Guidelines on the green design Construction of the Metropolis of Seoul' <11> but the PPs need to indicate the characteristic of the policy. ✓The PPs submitted 'Million green home project' <21> under the Korean act. Please indicate whether 'Million green home project' <21> is applicable for the PoA. ✓The definition of the housing complex is not clear. Please submit related documents. ✓The PPs explained that one of the objective is to vitalize the korean government project. But the participation rate of 'Million green home project' <21> is very high and the reason for the delay is related with subsidy. ✓The PPs described that the housing complex is separate households, complex, apartment complex. But it is not reasonable and feasible to check every household since the PPs did not adopted sampling method.	OK
		Corrective Action or a Clarification #2 ✓The boundary is revised to the	DOE review comment #2 ✓Keco has checked boundary of the PoA is	

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
		<p>Metropolis of Seoul and Green Energy Master plan 2030 by the Metropolis of Seoul is submitted. (http://environment.seoul.go.kr/archives/1490)</p> <p>✓A single house is removed.</p>	<p>changed to the Metropolis of Seoul but some of expressions and location is not correctly addressed..</p> <p>✓Keco has checked 'Green Energy Master plan 2030 by the Metropolis of Seoul' <22> and its website to confirm the Metropolis of Seoul's policy.</p> <p>✓Keco confirms that the definition of housing complex has been correctly revised.</p>	
		<p>Corrective Action or a Clarification #3</p> <p>The expression and location is changed correctly.</p>	<p>DOE review comment #3</p> <p>✓Keco has checked boundary of the PoA consistently applied throughout the PoA-DD.</p> <p>So CI8 is closed.</p>	
<p>CI9</p> <p>✓The PoA-DD does not describe whether the technology applied to the project is introduced from a foreign country(s) or domestically developed.</p> <p>✓The PoA-DD needs to clearly explain whether all of the CPA will include solar PV and BIPV at the same time or not.</p>	4.7	<p>Corrective Action or a Clarification #1</p> <p>✓The technology applied to the project is introduced from Korea.(explained in A.2)</p> <p>✓PV and/or BIPV is applied in the typical CPAs (explained in A.2)</p>	<p>DOE review comment #1</p> <p>✓There is a difference between A.2 section and eligibility criteria. Eligibility criteria did not describe origin of the technology.</p> <p>✓Keco confirms that CPA will include PV and/or BIPV system.</p>	OK
		<p>Corrective Action or a Clarification #2</p> <p>Refer to A.4.2.2 – 3.3</p> <p>Original technology of PV and/ BIPV adapted to CPAs is from Korea</p>	<p>DOE review comment #2</p> <p>✓Keco confirms that A.2 section and eligibility criteria of the PDD has been consistently explained.</p> <p>So CI9 is closed.</p>	
CI10	5.1	Corrective Action or a Clarification #1	DOE review comment #1	OK

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
There is typographical error in the section E.1. The AMS-I.F has approved at EB61 meeting not 54.		The typographical error in the section E.1 is corrected.	Keco confirms revised PDD. So CI10 is closed.	
CI11 ✓PoA-DD described yearly proportion of the generation of electricity based on the source of energy in page 33. The PPs need to submit evidence documents used for OM, BM calculation and calculation sheet. ✓The PPs explained that the OM factor calculated using recent three years(2008~2010) data and it will be used as a fixed value along the credit period. The PPs need to clearly explain whether the PPs will use fixed OM data for all of crediting periods of CPA. ✓The PPs need to submit emission factor calculation sheet.	5.24 5.25 5.26	Corrective Action or a Clarification #1 ✓Emission factor sheet is provided to the DOE. ✓The OM factor calculated using recent three years(2008~2010) data will be used as a fixed value along the credit period.(explained in E.6.2)	DOE review comment #1 ✓The PPs need to re-submit emission factor sheet. ✓It is not conservative to use fixed OM factor for all of CPA through the PoA period.	OK
		Corrective Action or a Clarification #2 ✓1. the revised emission factor sheet is submitted ✓2. the emission factor is revised at the point of renewal of the crediting period of PoA.	DOE review comment #2 ✓The PPs need to re-submit emission factor sheet.	
		Corrective Action or a Clarification #3 ✓The emission factor sheet is re-submitted. ✓Grid emission factor shall be re-calculated with the most recent information during preparation of a CPA to be included in the PoA.	DOE review comment #3 ✓Keco checks revised EF sheet and confirms that PP used latest statistical data. ✓Keco confirms that the emission factor is fixed ex-ante and will be re-calculated at the time of renewal of the crediting period for the PoA. So CI11 is closed.	
CI12 Para 2(c) of 'Guidelines for demonstrating additionality of microscale project	6.1 12.2.2	Corrective Action or a Clarification #1 ✓The additionality of SSC-CPAs is demonstrated in accordance with	DOE review comment #1 ✓The 'Guidelines on the demonstration of additionality of small-scale project	OK

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
activities` only applicable for the project activity for distributed energy generation not connected to a national or regional grid.		Guidelines on the demonstration of additionality of small-scale project activities`, reported as Annex 27 to the EB 68. Paragraph 2 of the guideline (explained in A.4.3, E.5.1, E.5.2)	activities(ver.09.0)` reported as Annex27 to the EB68 regulates grid connected solar electricity generation technologies are additional. But the definition of the grid connected is not clear.	
		<p>Corrective Action or a Clarification #2 Refer to A.4.3, E.5.1, E.5.2</p> <p>✓additionality is demonstrated according to Paragraph 2 of the Guidelines for demonstrating additionality of microscale project activities (Version 04), reported as Annex 26 to the EB 68(A.4.3, E.5.1, E.5.2)</p> <p>the eligibility criteria is revised(6.2~6.5 is added and 9.2 is removed)</p>	<p>DOE review comment #2</p> <p>✓Keco confirms that the photovoltaic system is not connected to the national grid to export generated electricity and the CPA is applicable for the option (c) of the above guideline. The PoA will not apply transformers and export generated electricity to the grid.</p> <p>✓Keco further cross-check one of the registered CDM projects, `Korea Land & Housing Corporation (LH Corporation)'s National Rental House PV power plant bundling CDM project(Ref. 5251)`, and confirms that photovoltaic system for distributed energy generation is not connected to the national grid.</p> <p>So CI12 is closed.</p>	
CI13 The PPs need to submit evidence documents for coefficient of utilization of photovoltaic power plant.	6.13	Corrective Action or a Clarification #1 The evidence documents for coefficient of utilization of photovoltaic power plant is provided to the DOE	DOE review comment #1 The PPs submitted evidence documents for coefficient of utilization of photovoltaic power plant but it is differ with specific CPA-DD.	OK
		Corrective Action or a Clarification #2	DOE review comment #2	

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
		<p>✓PV : According to 'RES-MAP' made by Energy Resource Map Data Center in 'KIER' (Korea Institute of Energy Research), the solar irradiance of Seoul is 3.23kWh/m²/day. Thus, the expected coefficient of utilization of solar PV is 13.45%(3.23hour / 24hour x 100).</p> <p>✓BIPV : According to 'Application method of BIPV for various standard design', the expected coefficient of utilization of solar PV is changed by the angle of solar PV. Solar PV installed by the proposed CPA1 will be installed at optimum angle of which utilization is 100%. However, the angle of BIPV of the proposed CPA1 is 0° of which utilization is 87%. Thus, the expected coefficient of utilization of BIPV is 11.7%(= 13.45 x 87%)</p> <p>The related document is submitted.</p>	<p>✓Keco has checked 'Renewable energy(Photovoltaic) potential of the metropolis of Seoul' <12> and confirms the solar irradiance has correctly applied.</p> <p>✓Keco has checked 'Application method of BIPV for various standard design' <24> and confirms that the coefficient of utilization of the BIPV is 87% of the PV in the consideration of the installation angle. So CI13 is closed.</p>	
<p>CI14</p> <p>✓The PPs used tabular format to explain data and parameters to be monitored and reported. But some of explanation in the parameters are not consistently applied such as any comments. And</p>	<p>7.5</p> <p>7.6</p> <p>7.8</p> <p>7.10</p>	<p>Corrective Action or a Clarification #1</p> <p>Explanation in parameters is revised correctly.(explained in E.6.3)</p> <p>✓the amount of electricity will be measured continuously.(explained in D.7.1)</p>	<p>DOE review comment #1</p> <p>✓PPs explained that the PPs would apply same value during the crediting period. But it is not conservative.</p> <p>✓The PPs did not used same parameters in accordance with the methodology.</p>	OK

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
<p>some of parameters explanation are missing in PoA-DD page 27.</p> <p>✓The PPs explained that EGy will be measured each hourly and recorded monthly. But in accordance with the para 17 (b) of 'General Guidelines to SSC CDM methodologies', the amount of electricity produced should be measured continuously.</p> <p>✓In accordance with the para 17 (c) of 'General Guidelines to SSC CDM methodologies', measuring equipment should be certified to national or IEC standards and calibrated according to the national standards at lease once in three years. But 'The guideline on management of SH Corporation Solar photovoltaic housing complex programme in Republic of Korea' <19> indicates that the electricity meter will be calibrated every eight years.</p> <p>✓A monitoring manner(i.e. reporting procedure), calibration standard, personnel information, a specification of monitoring equipment to verify its capability and excellence and an organization chart of the assigned team for monitoring emission reductions</p>		<p>✓Calibration will be carried out every three years.(explained in D.7.1)</p> <p>✓NCV(kJ) and EFco₂(GJ) are revised with the data unit in the emission factor sheet.</p> <p>✓The reporting procedure is explained in E.7.2(Data Management)</p> <p>✓The specification of monitoring equipment is explained in E.7.2(Monitoring Equipment)</p> <p>✓The organization chart is revised in E.7.2(Figure 4)</p> <p>Corrective Action or a Clarification #2</p> <p>✓1.The emission factor is revised at the point of renewal of the crediting period of PoA.(refer to E.6.2, E.6.3, E.7.1)</p> <p>✓2.The parameters are revised in accordance with the methodology(E.6.2, E.6.3, E.7.1)</p> <p>✓3.The reference is removed but the way to estimate the amount of electricity from the grid is applied to the registered CDM project. Thus, the way can be applied to the proposed project.</p> <p>✓4.The sentence is removed</p> <p>✓5.Refer to the attached</p>	<p>✓The PPs applied CDM Project Standard(ver.1) but it is not applicable for the project.</p> <p>✓The PPs explained that the monitoring data would be complied in a manner amenable to a third party audit. But the generated electricity would be supply to the captive use purpose and it is not applicable for the third party audit.</p> <p>✓The PPs need to submit evidence documents for the specification of monitoring equipment.</p> <p>DOE review comment #2</p> <p>✓The PPs need to explain renewal of the crediting period for the PoA.</p> <p>✓Keco confirms that the PPs have used parameters in accordance with the methodology.</p> <p>✓Keco confirms that the PPs have removed CDM Project Standard(ver.1) for the reference. But the PPs still do not clearly explain how to measure the quantity of net electricity.</p> <p>✓Keco has checked that the monitored data will be cross-checked between CPA implementer and CME.</p> <p>✓Keco has checked the specification of monitoring equipment and confirmed that</p>	

Draft report clarifications and corrective action requests by Validation team	Ref. to checklist question in table 2	Summary of the PPs responses	Review by DOE	Conclusion
should be provided.		file(specification of SH Corporation related to accuracy of meter)	the accuracy of the meter will be 1.0S.	
		<p>Corrective Action or a Clarification #3</p> <ul style="list-style-type: none"> ✓According to paragraph 25 of "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities(EB 65, Annex3), CME shall update the eligibility criteria as per latest revised applicable methodologies at the renewal of the crediting period of a PoA. At the time, emission factor will be also revised. ✓The method to calculate electricity consumed from the grid is changed. If the imported electricity can not be measured, it will be conservatively calculated. (Equation : The auxiliary electricity consumption = Standby power(of connector bands and inverters)*Numbers*Hours) 	<p>DOE review comment #3</p> <ul style="list-style-type: none"> ✓Keco confirms that the emission factor will be re-calculated at the time of renewal of the crediting period for the PoA. ✓Keco confirms that the auxiliary electricity consumption by the PV and BIPV will be calculated based on the standby usage or metered by electricity meter and deducted from the generated electricity. 	