

VALIDATION REPORT

Carbon Development and Trading Ltd

Title of PoA:


“Coal Mine Methane Utilisation and Destruction
Programme in DPR Korea”

Report No. CCL0052/CMMUDP/15092011

Revision No. 05

VALIDATION REPORT

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Project Title: Coal Mine Methane Utilisation and Destruction Programme in DPR Korea		Country: Democratic People's Republic of Korea		Estimated CERs (tCO₂e): 137,270 annual average (CPA- 01)	
GHG reducing measure/technology of the CPAs of the PoA:		Methane Destruction-The emission reduction would happen on account of capturing methane from existing coal mines through either utilization of methane for electricity and/or heat generation and/or destruction of methane through flaring which would have otherwise been vented directly to the atmosphere.			
Client/CME: Carbon Development and Trading Ltd.		Client contact: Ms Jacqueline Wai Ying Luke , Suite 520, 152-160 City Road, Kemp House – London United Kingdom Tel: +44 207 125 0385 E-mail: carbondevelopment@gmail.com			
Report No.: CCL0052/CMMUDP/15092011		Revision: 05		Date of this report: 17/04/2013	
Technical Reviewer: Vikash Kumar Singh				Date of approval: 16/04/2013	
Approved by (Final Report): Priyesh Ramlall 				Date of approval: 17/04/2013	
GPS coordinates of the geographical boundary of PoA:		The verified /B06-3/ geographic coordinates for DPR Korea: Latitude: 37° and 43°N Longitude: 124° and 131°E			
Organisational unit: Carbon Check (Pty) Ltd					
Report Distribution: <input type="checkbox"/> Unrestricted Distribution <input type="checkbox"/> Limited Distribution <input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)					
Methodology					
Number: ACM0008		Title: Consolidated methodology for coal bed methane, coal mine methane and ventilation air methane capture and use for power (electrical or motive) and heat and/or destruction through flaring or flameless oxidation		Scale Small <input type="checkbox"/> Large <input checked="" type="checkbox"/>	SS(s): 8 & 10
Version:	Version 07 of 13/08/2010	TA (S): 8.1, 8.2, 10.1, 10.2			
Carbon Check Pty Ltd.(Carbon Check) is commissioned by Carbon Development and Trading Ltd to perform the validation of the Program of activities "Coal Mine Methane Utilisation and Destruction Programme in DPR Korea", with regard to the relevant requirements for CDM activities.					
Summary of the CPA Validation and inclusion Opinion: <input checked="" type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have provided CCL with sufficient evidence for the determination of the PoA's fulfillment of all stated criteria. In our opinion, the PoA meets all relevant UNFCCC requirements for the CDM. Therefore, CCL recommends the PoA for registration by the CDM Executive Board. <input type="checkbox"/> The reviews of the project design documentation and the subsequent follow-up interviews have not provided CCL with sufficient evidence for the determination of the PoA's fulfillment of all stated criteria. Therefore, CCL will not recommend the PoA for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board of this decision.					

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Validation Team		Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Co- Technical Reviewer	Technical Reviewer
Full Name	Appointed for Sectoral scopes (Technical Areas)						
Ravi Shankar (until 16/01/2013)	1.2, 2.1, 2.2, 3.1, 13.1	X					
Amit Anand (from 07/02/2013) ¹	1.2	X		X			
Sean Heathcote	8.1, 8.2, 10.1, 10.2				X		
Hong Jong Chol			X				
Karun Sheel	8.1, 8.2, 10.1, 10.2				X	X	
Vikash Kumar Singh	1.2, 3.1, 13.1						X

Validation Phase	Validation Status
<input checked="" type="checkbox"/> Desk Review	<input type="checkbox"/> Corrective Actions / Clarifications requested
<input checked="" type="checkbox"/> Follow up interviews	<input checked="" type="checkbox"/> Full approval and submission for registration
<input checked="" type="checkbox"/> Resolution of outstanding issues	<input type="checkbox"/> Rejected

Executive Summary – Validation Opinion

¹ Team Leader change due to incomplete received on 02/07/2013

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The validation team of Carbon Check (Pty) Ltd., performed the validation of the PoA titled “Coal Mine Methane Utilisation and Destruction Programme in DPR Korea”, with regard to the relevant requirements for CDM activities.

Standard auditing techniques have been used for the validation of the PoA. An analysis, as provided by the applied methodology, demonstrates that the proposed PoA is not a likely baseline scenario. Emission reductions attributable to the PoA (eligible CPAs of the PoA) are additional to any that would occur in the absence of the proposed eligible CPAs. Given that the PoA is implemented as designed, the CPAs are likely to achieve the emission reductions.

The validation is based on the information made available to Carbon Check (Pty) Ltd., as well as the engagement conditions detailed in this report. The validation has been performed following the VVS requirements.

The validation was executed in the following steps so far:

- Receipt of PoA-DD (version 01 dated 10/10/2011), CPA-DD (generic) and real case CPA-DD (version 01 dated 10/10/2011) for global stakeholder comments.
- Global stakeholder comment process (22/10/2011 to 20/11/2011)
- On-site visit with stakeholder interviews (13/12/2011 to 15/12/2011)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report and protocol
- Desk review of revised DDs applying ACM0008 (Version 07)
- Review of responses for CARs/CLs
- Issue of the final validation report and protocol

During the course of validation a total of 14 Corrective Action Requests (CARs) and 10 Clarification Requests (CLs) were identified on webhosted PoA-DD (version 01 dated 10/10/2011). Upon evaluation of responses provided by the Project Participant all the identified issues were closed successfully.

The single purpose of this report is its use during the registration process as part of the CDM project cycle. In the opinion of Carbon Check (Pty) Ltd., the PoA meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. Carbon Check (Pty) Ltd. thus recommends the PoA to be registered with the UNFCCC.

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Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CC	Cross Check
CCL	Carbon Check (Pty) Ltd
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CME	Coordinating/managing entity and participants of PoA
CMM	Coal Mine Methane
CPA	CDM Programme Activity
CPA-DD	CDM Programme Activity design document
DR	Document Review
DNA	Designated National Authority
DOE	Designated Operational Entity
DPR Korea	Democratic People's Republic of Korea
EB	Executive Board
EIA	Environmental Impact assessment
ER	Emission Reductions
FAR	Forward Action Request
GBCIO	General Bureau for Cooperation with International Organizations
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
I	Interview or any follow up action
IPCC	Intergovernmental Panel on Climate Change
KCFCC	The Korea Coal Foreign Cooperation Company
LoA	Letter of Approval
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MLEP	Ministry of Land and Environment Protection
MP	Monitoring Plan
NCCE	The National Coordinating Committee for Environment
NGO	Non-governmental Organization
ODA	Official Development Assistance
PCP	Project Cycle Procedure
PE	Project Emission
PoA	Programme of Activities
PoA-DD	Programme of Activities design document
PP(s)	Project Participant(s)
PS	Project Standard
Ref.	Document Reference
SD	Sustainable Development
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

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Appendix A: Validation Protocol

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1 INTRODUCTION

Carbon Development and Trading Ltd. (CDT) (hereafter referred as "CME") has commissioned the DOE Carbon Check (Pty) Ltd to perform validation of the proposed CDM Programme of Activities (PoA) " Coal Mine Methane Utilisation and Destruction Programme in DPR Korea" in Democratic Peoples Republic of Korea (hereafter called "the PoA"). This report summarizes the findings of the validation of the PoA identified in the PoA Design Document (PoA-DD); the CDM Programme Activity Design Document (CPA-DD) template with generic information relevant to all CDM Program Activities (CPAs) to be included in the PoA; and the associated real case CPA-DD. The validation was performed on the basis of UNFCCC criteria for the PoAs under the CDM, as well as criteria given to provide for consistent programme operations, monitoring and reporting. The term "UNFCCC criteria" refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the procedures for registration of a programme of activities and the subsequent decisions by the COP/MOP and CDM Executive Board. In addition to these criteria, host country criteria are also taken into account.

1.1 Objective

The purpose of a validation is to have an independent third party assess the PoA-DD, CPA-DD template and the associated real case CPA-DD (also known as specific CPA-DD). In particular, the eligibility criteria for inclusion and demonstration of additionality of CPAs, the programme's baseline determination, monitoring plan, and the programme's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the programme design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM PoAs and is seen as necessary to provide assurance to stakeholders of the quality of the programme and its intended generation of certified emission reductions (CERs).

1.2 Scope

The validation scope is defined as an independent and objective review of the PoA-DD, CPA-DD template and the real case CPA-DD. The PoA-DD, CPA-DD template and the real case CPA-DD were reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the simplified modalities and procedures for small-scale CDM project/ programme activities, the procedures for registration of a programme of activities as a single CDM project activity and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology ACM0008 (Version 07).

The validation team has, based on the requirements contained in the Validation and Verification Standard and the procedures for registration of a programme of activities as a single CDM project activity employed a rules-based approach, focusing on the identification of significant risks for programme implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the PoA Managing Entity, CPA Implementer(s) and/or project participant(s) (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the programme design.

2 METHODOLOGY

The validation consists of the following four phases:

- I. Publication of the programme design documents (PoA-DD, CPA-DD template and completed CPA-DD) in UNFCCC for global stakeholder consultation;
- II. A desk review of the PoA-DD, CPA-DD template and the associated real case CPA-DD;
- III. On-site visit and follow-up interviews with programme stakeholders; and
- IV. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The following sections outline each step in more detail.

2.1 Document Review

The following table lists the documentation that was reviewed during the validation.

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Reference No.	Documents
/01/	POA-DD (webhosted version), for “Coal Mine Methane Utilisation and Destruction Programme in DPR Korea”, Version 01, Date - 10/10/2011
/02/	Webhosted Generic CPA-DD (Obsolete Document) ²
/03/	POA-DD for “Coal Mine Methane Utilisation and Destruction Programme in DPR Korea”, Version 10, Date – 16/04/2013
/04/	Final generic CPA-DD (g-CPA-DD) (Obsolete Document) ³
/05/	<ol style="list-style-type: none"> 1. Letter of Approval from the DNA of Democratic People’s Republic of Korea (Approval number: 2011/11/01, dated 03/11/2011), authorizing the General Bureau for Cooperation with International Organizations (GBCIO), to participate voluntarily as project participant and to implement in the CDM project in the Democratic People’s Republic of Korea. 2. Letter of Approval from the DNA of Democratic People’s Republic of Korea (Approval number: 2012/04/01, dated 19/04/2012), authorizing Carbon Trading and Development Ltd. (CDT), to participate voluntarily in as project participant and to coordinate and act as coordinating/managing entity (CME) for the Coal Mine Methane Utilisation and Destruction Programme in DPR Korea.
/06/	Modalities of communication signed on 09/04/2013 ⁴
/07/	CME Management System for Carbon Trading and Development Ltd.in its role as CME in PoA titled “Coal Mine Methane Utilisation and Destruction Programme in DPR Korea”, Version 02 dated 31/10/2012.
/08/	<ol style="list-style-type: none"> 1. Declaration letter from the CME on “no ODA involvement in the PoA”, dated 07/05/2012 2. Declaration letter from the CME on “no ODA involvement in the CPA”, dated 24/02/2012
/09/	Letter from General Bureau for Cooperation with International Organizations (GBCIO), Ministry of Foreign Trade regarding “No financial support to Carbon Development Trading Ltd., & CDM revenue agreement”, dated 06/10/2011.
/10/	Letter from Ministry of Land and Environment Protection (MLEP) regarding “EIA requirements for installation of CMM capture and destruction and/or utilization project”, dated 22/11/2011
/11/	Letter from Ministry of Land and Environment Protection (MLEP) regarding “Legal or regulatory requirements for installation of CMM capture and destruction and/or utilization project”, dated 13/10/2011
/12/	Memorandum of association of Carbon Development and Trading Ltd., under the “Companies Act 2006”, dated 13/09/2011
/13/	Certification of Incorporation of Carbon Development and Trading Ltd., under “Companies Act 2006” dated 13/09/211
/14/	Statistics for coal production in DPR Korea from Statistics Korea “2010 North Korea Mining and Industry”
/15/	Law on Environment Impact Assessment; Adopted by Decree No. 1367 of Presidium of the Supreme People’s Assembly on 09/12/2007
/16/	THE LAW OF THE DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA ON THE PROTECTION OF ENVIRONMENT; Adopted by Decree No. 5 of the Supreme People’s Assembly on 09/04/1986 and Amended by Decree No. 1083 of the Presidium of the Supreme People’s Assembly on 19/04/2005.
/17/	DPR Korea National Report on Agenda-21

² Due the transition from VVM to VVS the document has become obsolete. However for the purpose of maintaining transparency it has still been kept in the list of documents.

³ Due the transition from VVM to VVS the document has become obsolete. However for the purpose of maintaining transparency it has still been kept in the list of documents.

⁴ MoC (dated 11/12/2012) in VVM format was submitted with initial Request for Registration. Due to transition from VVM to VVS the initial MoC became obsolete and was revised

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/18/	Grid Emission Factor (GEF) calculation Sheet
/19/	Simple Cost Analysis Sheet
/20/	Declaration from CPA implementer (dated 22/10/2012) stating: The CPA implementer agrees to follow and abide by the system laid down in the management system with respect to the following: <ul style="list-style-type: none"> • Operation and management practices • Monitoring Protocol • Data collection • Data recording • Data archiving • Data control
/21/	Overview of Kogonwon Coal Mine.
/22/	Declaration from CME on voluntary participation dated 20/12/2011
/23/	Korea Coal Foreign Cooperation Company (KCFCC): CPA inclusion in PoA letter: Justification of non-availability of funds for implementation of CPA, dated 11/10/2011
/24/	Letter from General Bureau for Cooperation with International Organizations (GBCIO), Ministry of Foreign Trade stating, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs", dated 05/04/2013.
/25/	Declaration from CME on the sole financing of the future CPAs of the PoA.

Background investigation and other referred documents/websites:

/B01/	<ol style="list-style-type: none"> 1. CDM Validation And Verification Standard (Version 03.0). 2. Project Standard (Version 02.1)
/B02/	Approved Consolidated Baseline & Monitoring Methodology: ACM0008, version 07, "Consolidated methodology for coal bed methane, coal mine methane and ventilation air methane capture and use for power (electrical or motive) and heat and/or destruction through flaring or flameless oxidation"
/B03/	<ol style="list-style-type: none"> 1. Tool to calculate the emission factor for an electricity system, version 03.0 2. Tool for the demonstration and assessment of additionality, version 06.1.0 3. Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, version 02 4. Tool to determine project emissions from flaring gases containing methane , version 02
/B04/	<p>PoA Specific guidelines / standards published by UNFCCC:</p> <ol style="list-style-type: none"> 1. Programme design document form for CDM programmes of activities (F-CDM-PoA-DD), Version 03.0, EB 70 (Annex 6) 2. Component Project Activity Design Document Form (F-CDM-CPA-DD), Version 02.0, EB 66 (Annex 16) 3. Procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission Reductions for a programme of activities, Version 04.1, EB 55 (Annex 38)(obsolete in VVS) 4. Procedures for review of erroneous inclusion of a CPA, version 03, EB 61 (Annex 22) 5. Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities, version 02.0, EB 70 (Annex 05)
/B05/	Glossary of CDM terms, version 07.0, EB 70 (Annex 7)
/B06/	<p>Websites:</p> <ol style="list-style-type: none"> 1. http://www.nautilus.org/publications/essays/napsnet/reports/Choi_Mining_Industry 2. www.unfccc.int 3. http://en.wikipedia.org/wiki/North_Korea 4. http://www.naenara.com.kp/en/carbon/home_sign.php?lang=en

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The changes between the PoA-DD version 01 published for the 30 days stakeholder commenting period /01/ and the final version submitted for registration /03/ are addressed in the table 3 and 4 of the validation protocol as a part of this report and the sections of the revised DDs are marked in column 5 titled "Revised section(s) / Annexe(s) of the PoA-DD /03/".

The main changes between the PoA-DD, version 01 /01/ published for the 30 days stakeholder commenting period and the final version /03/ submitted for registration are presented in the below table as follows:

Topic	PoA-DD – GSC /01/	Final PoA-DD /03/ ⁵	Assessment
PoA title	"Coal Mine Methane Utilisation and Destruction Programme in DPR Korea"	"Coal Mine Methane Utilisation and Destruction Programme in DPR Korea"	No Change
Parties	<ul style="list-style-type: none"> Democratic People's Republic of Korea (Host) United Kingdom of Great Britain and Northern Ireland (Annex 1) 	Democratic People's Republic of Korea (Host)	Annex 1 party has been excluded in the final PoA DD (please refer to closure of CAR 1 in table 2 of protocol).
Scope	8: Mining / Mineral Production 10: Fugitive emissions from fuels (solid, oil and gas)	8: Mining / Mineral Production 10: Fugitive emissions from fuels (solid, oil and gas)	No change
Methodology / Activity	ACM0008 (Version 07) / Large scale	ACM0008 (Version 07) / Large scale	No change
Amount of emission reductions (tCO ₂)	Quantification of ERs at PoA level is not required as per the PoA DD template.	Quantification of ERs at PoA level is not required as per the PoA DD template.	No change
PoA starting date	The starting date of the PoA shall be the registration date of the PoA with the CDM Executive Board.	01/01/2014	Starting date has been changed to 01/01/2014 (please refer to closure of CAR 8 in table 2 of protocol).
Real case CPA starting date	The start date of the CPA shall be the date on which construction work for the equipment needed to destroy or utilize CMM commences.	01/07/2014.	Starting date has been changed to 01/07/2014 (please refer to closure of CAR 2 in table 2 of CPA VR protocol).
PoA Location	Democratic People's Republic of Korea	Democratic People's Republic of Korea	No change

2.2 Follow-up actions

In order to reach to a Validation Opinion a site visit along with an interview was planned for 13/12/2011 to 15/12/2011. Prior to the interview salient points to be discussed were planned. Date of interview, interviewee and points discussed are given in the following table.

Sr. No.	Date	Name & Role	Organization	Topic
/a/	13/12/2011	Thomas W., CME	Carbon Development and Trading	<ul style="list-style-type: none"> CME coordinating CDM functions and responsibilities. Discussion on eligibility criteria and inclusion of a typical CPAs in the PoA

⁵ Final PoA-DD /03/ is in VVS format whereas the PoA-DD-GSC /01/ was in VVM format.

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				<p>including the real case CPA.</p> <ul style="list-style-type: none"> • Discussion on Additionality justification on PoA level and on typical CPA level including the real case CPA. • Discussion on record keeping, monitoring plan and manual. • Discussion on double counting • Discussion on financing pattern(means of finance) of the CPAs(including real case) and involvement of public funding
/b/	13-12-2011	Ri Yong Nam	Director of General Bureau for cooperation with international organizations (GBCIO)	<ul style="list-style-type: none"> • Decision to undertake the project as CDM project. • Discussion on stated goal and policy of the PoA. • Discussion on the operational and management arrangements of the PoA. • Discussion on LSC (both on PoA level and real case CPA) and EIA done at CPA level including statutory clearances required for the implementation of the CPA.
/c/	13-12-2011	Li Chang Nan	Chief Engineer Coal Mine	<ul style="list-style-type: none"> • Baseline Additionality and Monitoring • Discussion on the typical CPA of the PoA including the technological aspect and applicability of applied baseline and monitoring methodology.
/d/	13-12-2011	Son Tong Chol	Senior Officer GBCIO	<ul style="list-style-type: none"> • Discussion on stated goal and policy of the PoA. • Discussion on the operational and management arrangements of the PoA. • Discussion on LSC (both on PoA level and real case CPA) and EIA done at CPA level including statutory clearances required for the implementation of the CPA.

Validation Team considered the views obtained in these interviews while arriving at Validation Opinion.

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2.3 Resolution of outstanding issues

The objective of this phase of the validation is to resolve any outstanding issues, which need be clarified prior to Carbon Check's conclusion on the PoA design. In order to ensure transparency a validation protocol is customised for the programme. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for the PoA is enclosed in Appendix A to this report.

Findings established during the validation could either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of programme objectives is identified. Corrective action requests (CAR) are issued, where:

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

A request for clarification (CL) may be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) may be raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity.

Figure 1 Validation protocol tables

Validation Protocol, Table 1 - Requirement checklist					
Checklist Question	Ref.	MoV	Comments	Draft Conclusion	Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in seven different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements. For CAR, CL and FAR see the definitions above.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.

Validation Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
The CAR and/or CLs raised in table 1 are repeated	Reference to the checklist question number in Table 1	The responses given by the project participants to address the CARs and/or	The validation team's assessment and final conclusion of the

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here.	where the CAR or CL is explained.	CLs.	CARs and/or CLs.
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Validation Protocol, Table 3 - Forward Action Requests		
Forward action request	Reference to Table 2	Response by project participants Validation Conclusion
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed prior to first verification.

2.4 Internal quality control

Before the assessment begins, members of the team covering the technical area(s), sectoral scope(s) and relevant host country experience for evaluating the CDM PoA/CPA are appointed. The validation report including the validation findings underwent a technical review. A technical reviewer qualified in accordance with Carbon Check's qualification scheme for CDM validation and verification performed the technical review.

2.5 Validation team and the technical reviewer(s)

The validation team and the technical reviewers consist of the following personnel:

Validation Team		Type of Involvement						
Full Name	Appointed for Sectoral scopes (Technical Areas)	Supervision of work	Desk review	Site visit & Interview	Report & protocol writing	Technical Expert Input	Reporting support	Technical Reviewer
Ravi Shankar	1.2,2.1, 2.2, 3.1, 13.1	X		X				
Amit Anand	1.2		X		X		X	
Sean Heathcote	8.1, 8.2, 10.1, 10.2					X		
Karun Sheel	8.1, 8.2, 10.1, 10.2					X		X
Vikash Kumar Singh	1.2, 3.1, 13.1							X
Hong Jong Chol				X				

3 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

During the course of validation a total of 14 Corrective Action Requests (CARs) and 10 Clarification Requests (CLs) were identified on webhosted PoA-DD (version 01 dated 10/10/2011). Upon evaluation of responses provided by the Project Participant all the identified issues were closed successfully.

The final validation findings relate to the programme design as documented and described in the PoA-DD.

3.1 Approval and Participation

The below table summarizes the project participants and parties involved. The validation team received letter of approval for Host party from the Host project participant i.e. CME of the PoA /05-1/ /05-2/. The copy of the LoA was verified against the original LoA issued by the host country DNA. Therefore, the

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team has confirmed the authenticity of the letter issued. This LoA is therefore regarded as valid and meeting the CDM requirements.

The Validation Team can confirm that issued LoAs from host party refers to the precise proposed project title as in the PoA-DD and g-CPA-DD. The Validation Team can confirm that the project participants are listed in tabular form in section A.4 of the PoA-DD and this information is consistent with the contact details provided in Annex 1 of the PoA-DD. The letter of approvals were also found to be unconditional with respect to § 39 (a) to (d) of VVS /B01/. And hence these letter(s) are in accordance with § 39 - 42 of VVS. All the two LoAs, are checked and found in compliance of CDM requirements including requirements of PoA as contained in VVS /B01-2/ and PS /B01-2/.

CAR 1 was raised with respect to parties involved and was resolved upon receipt of LoA and evaluation of PP response.

CAR 14 was raised to correctly identify whether the entity responsible for baseline and monitoring methodology is a project participant or not and the same was resolved upon evaluation of PP response.

The below table summarizes the project participants and parties involved:

CME	Carbon Development & trading Ltd.,	
Project Participants	General Bureau for Cooperation with International Organization	Carbon Development & Trading Ltd.,
Party Involved	Democratic People's Republic of Korea	Democratic People's Republic of Korea
Approval		
LoA Received	Yes	Yes
Date of LoA	03/11/2011	19/04/2012
LoA received from	DNA of DPR Korea: National Coordinating Committee for Environment	DNA of DPR Korea: National Coordinating Committee for Environment
Approval Number	2011/11/01	2012/04/01
Validation of Authenticity	It is valid. It has been verified with original LoA (Korean language) issued by the host country DNA. The original was also verified through a true copy English translation of the LoA signed by Dr. Ri Hung Sik (Secretary-General) of National Coordinating Committee for Environment, the DNA of DPR Korea on 03/11/2011.	It is valid. It has been verified with original LoA (Korean language) issued by the host country DNA. The original was also verified through a true copy English translation of the LoA signed by Dr. Ri Hung Sik (Secretary-General) of National Coordinating Committee for Environment, the DNA of DPR Korea on 19/04/2012.
Validity of LoA	Valid	Valid
Participation		
Party is party to the Kyoto Protocol	Yes	Yes
Voluntary participation	Yes	Yes
Diversion of Official Development Assistance (ODA) towards host country	No	No
Project contribution to Sustainable Development	Yes	Yes

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Validation of ODA

The validation did not reveal any evidence that this PoA can be seen as a diversion of ODA. It is also confirmed by the interview with Mr. Thomas W. /a/, and letter provided by CME /08/ about no ODA diversion from Annex-I party in the development of the PoA.

CL 6 was raised to seek clarification on involvement of ODA and the same was resolved upon evaluation of PP response.

Confirmation of Modalities of Communication (MoC)

The project Modalities of Communication (MoC) /06/ signed on 09/04/2013, was received from the CME. As required in Procedures for Modalities of Communication between Project Participants and the Executive Board, the Validation Team has verified the names of authorised signatories for future communication related to the corresponding scope of authority with UNFCCC from the Host country project participant. The Validation Team can confirm that the signatory and contact details on the MoC are authorized and credible. The MoC has been directly received from the CME.

3.2 Programme of Activities Design Document

The PoA-DD /03/ is in compliance with relevant form /B04 – 1/ and guidance /B04/ as provided by UNFCCC. The most recent version of the forms is used. Validation team confirms that the guidelines for the completion of the PoA documents (as contained in the DD form itself) in their most recent version have been followed. Relevant information was provided by the Managing entity and/ or project participants in the applicable PoA sections.

CAR 2 was raised with respect to date provided in document not being in DD/MM/YYYY format. After revision from PP it was resolved successfully.

3.3 Programme Description

The “Coal Mine Methane Utilisation and Destruction Programme in DPR Korea” (here in after referred as the “PoA”) is promoted by the Coordinating and Managing Entity (CME) “Carbon Trading and Development Ltd.”.

This programme aims to reduce GHG emissions by capturing methane from existing coal mines through either utilization of methane for electricity and/or heat generation and/or destruction of methane through flaring. The CDM programme activities (CPAs) under the PoA will be implemented in the territory of the DPR Korea. Thus, the PoA aims to support DPR Korea’s efforts to move to a low carbon future, considering the contribution to sustainable development through environmental, social and economic benefits, the same has been substantiated through letter of approval provided by DNA of DPR Korea /05-1/ /05-2/.

Currently in DPR Korea, CMM is vented into the atmosphere through the mine ventilation systems. The mine ventilation systems are designed for operational safety for underground mining activities and not for CMM capture. There are no CMM capture and/or suction systems in place at the coalmines.

Each CPA will adopt one or a combination of the following technologies/measures at existing underground coal mines in the DPR Korea:

- a) Underground boreholes in the mine to capture pre mining CMM;
- b) Surface goaf wells, underground boreholes, gas drainage galleries or other goaf gas capture techniques, including gas from sealed areas, to capture post mining CMM;

The emission reductions at the CPA level would occur either due to utilization of methane for electricity and/or heat generation and/or destruction of methane through flaring which in absence of the project activity would be vented into the atmosphere.

Review of PoA-DD /03/ reveals three possible technological scenarios in which the CPAs of the PoA may fall:

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Scenario	Description
1.	Utilisation of the methane for the production of electricity; and/or
2.	Utilisation of the methane for the production of heat; and/or
3.	Destruction of the methane through a flare.

During the on-site interview with CME and PP it was confirmed that the PoA will utilise flares and/or heat generation and/or electricity generation equipment that captures and destroys and/or utilises coal mine methane. Technology will be employed CPA specific and will vary according to the CPA requirements. For all CPAs, CMM will be used.

Validation team taken cognizance of § 46 b of EB 70 meeting report and confirms that for this PoA where even though it is expected that several technologies (for electricity and/or heat and/or flaring) will be available to be considered for each specific CPA and but considering the fact that each technology will comprise only one measures i.e. destruction of methane by using either for power and/or heat generation and/or flaring, based on the approved methodology ACM0008 (version 07) /B02/, the different generic CPA(as part II of the PoA DD) and specific CPAs are not required

The definition of measure (and notes on technology) has been provided in the standard “Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities” which is reiterated below.

“Measure is a broad class of greenhouse gas emission reduction activities possessing common features, for example fuel and feedstock switch, switch of technology with or without change of energy source (including energy efficiency improvement), methane destruction, and methane formation avoidance;

Note: Two different activities can be considered to be using the same measure if they constitute the same course of action and result in the same kind of effect.

Note: Two different activities can be considered to be applying the same technology if they provide the same kind of output and use the same kind of equipment and conversion process.”

Validation team confirms that since the measure and applied methodology for each type of CPA remains the same, the different generic CPA and specific CPA is not required. This assessment is further based on following facts:

- ⇒ The PoA-DD provides generic description, methodological equations to calculate emission reduction, monitoring parameters for each of the technology(type).
- ⇒ The generic description on baseline has been provided in the PoA DD and this would remains the same in any of technical scenario.
- ⇒ It is established by the CME that for any of the CPAs of the PoA(flaring w or w-o heat and or electricity generation), the additionality argument shall be simple cost analysis and additionality shall be checked by the validating DOE at the time of CPA inclusion (as a part of the eligibility criteria check).

Each CPA may include one or more flares and/or one or more boilers for heat generation and/or one or more power generation units.

It was also confirmed during the course of site visit and on-site interviews that DPR Korea currently does not have any CMM capture systems in place and it is anticipated that all technology, equipment and expertise will initially be provided to the DPR Korea through foreign experts and manufacturers. Such transfer would occur through the import of appropriate equipment such as drilling equipment, piping, pumps and flaring technology, and employing foreign experts in the engineering and implementation of the individual CPAs. However, as the technology for capturing and destroying/utilising CMM is already available in non-Annex-I countries, technology transfer from an Annex I country is not envisioned and it is more likely that technology will be imported from other Asian countries.

As per the PoA-DD /03/ and on-site interviews it was confirmed that there are no laws / policy in DPR Korea for capture, utilization or destruction of methane. The same was also substantiated through a duly

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signed letter (dated 13/10/2011) from Ministry of Land and Environment protection, which states, “ that there are no statutes or policy that would require the capture and/or utilization or destruction of coal mine methane in the territory of DPR Korea nor are any discussions underway to bring about such law, statutes or policies /11/”

According to the description provided under PoA-DD /03/ and based on interview with the CME and relevant stakeholders, validation team confirms that this PoA is a voluntary co-ordinated action by the CME. The same is also substantiated through the letter of approval issued by the DNA of the host country /05-1/ /05-02/.

The CME will finance the implementation of the PoA and the CPAs from its own funds, as DPR Korea lacks financial resources to implement emission reduction projects on a wide scale. The same was substantiated through a letter from GBCIO (PP) (dated 06/10/2011) which clearly states, “GBCIO is not in a position to provide any financial support or assistance to CME and that the CME is required to provide full financing for the project implementation from its own sources.”/09/. The same was further substantiated through review of a letter from GBCIO (PP) (dated 05/04/2013) which clearly states, “Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA.” /24/.

From the site visit interviews /a/ and desk review of PoA-DD and other associated template documents, it is revealed that this programme does not involve any ODA funding. Thus, the validation team considers that no ODA funding from any Annex 1 country has been involved under this programme. This is further confirmed by the undertaking /08/ provided by the CME.

As per the PoA DD, the starting date of the PoA in the PoA-DD is 01/01/2014 (or the date of registration whichever is later). The length of the PoA is taken as 28 years. The starting date of the validation of the PoA is 22/10/2011 i.e. the date the PoA was published for GSC. In the PoA DD it has been confirmed that no CPA shall be applicable for the inclusion in the PoA if the start date is before the start of validation. This is in conformity with the requirements contained in the VVS /B01-1/ and PS /B01-2/.

CAR 3, 4, 5, 8 and CL 1 and 2 were raised with respect to PoA description and were successfully resolved upon evaluation of PP response.

3.4 Eligibility Criteria for CPA Inclusion

Review of PoA-DD /03/ and on-site interview with representatives of CME reveals that the CME of the PoA employs clear and unambiguous criteria for the inclusion of the CPAs. The eligibility criteria have been stated and validation team confirms the eligibility criteria are in line with requirement of § 14, annex 5 of EB 70 /B04-5/. Additionality and applicability of the applied methodology are the eligibility criteria as per the PoA DD, which is deemed appropriate and acceptable to the validation team. The eligibility criteria can be checked at the CPA level by the CME and shall be confirmed by the DOE before inclusion of the CPAs in the PoA.

CAR 6 was raised with respect to transparency and verifiability of eligibility criteria and was successfully resolved upon evaluation of PP response.

Sl. No.	Eligibility criteria description in PoA-DD /03/	Information/document required as listed in the PoA-DD /03/	Assessment by the validation team
1.	The geographic boundary of the CPA lies within the DPR Korea.	Any of the following documents shall be provided: <ul style="list-style-type: none">• The CPA shall demonstrate this in the CPA-DD for each CPA by listing the GPS coordinates of the CPA site. GPS coordinates, if used, shall be validated through on-site visit and/or through photographic evidence and/or by comparing the GPS coordinates	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This is acceptable.

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		<p>with official maps; or</p> <ul style="list-style-type: none"> • By obtaining a letter from a competent authority in the DPR Korea confirming that the CPA is located within the political boundary of the DPR Korea. 	
2.	<p>A CPA reduces GHG emissions by utilising CMM for electricity and/or heat generation and/or destroying CMM through flaring by adopting one or a combination of the following technologies or measures at a working coal mine in the DPR Korea:</p> <ol style="list-style-type: none"> a) Underground boreholes in the mine to capture pre mining CMM; b) Surface goaf wells, underground boreholes, gas drainage galleries or other goaf gas capture techniques, including gas from sealed areas, to capture post mining CMM; 	<p>The following document shall be provided:</p> <ul style="list-style-type: none"> • Project Plan • Project description 	<p>At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This is required to check the technology opted by the proposed CPAs of the PoA. Sources and gases (for project emissions) in both the technological scenarios will be different. Hence this eligibility criterion will ensure accurate quantification of emission reduction from the CPAs. The CPAs shall be at an existing mine as per the PoA DD.</p>
3.	<p>The existing Approved CDM Methodology ACM0008 (Version 07) is applicable to the CPA.</p>	<p>The CME shall ensure that each CPA fulfils the applicability criteria of the Approved Methodology ACM0008 (Version 07) and detail in the CPA-DD how the CPA fully complies with these applicability criteria.</p>	<p>This eligibility criterion will ensure the applicability of ACM0008 (Version 07) to the proposed CPAs of the PoA.</p>
4.	<p>For the purpose of determining baseline emissions, a CPA, in the pre-project scenario, released all CMM into the atmosphere without destruction or utilisation.</p>	<p>The baseline scenario shall be clearly described in the CPA-DD and evidenced by including documentary evidence that can include but is not limited to:</p> <ul style="list-style-type: none"> • Site visits performed; or • Photographic evidence taken; or • Confirmation by a competent authority of the DPR Korea such as the Ministry of Land and Environment Protection or the Ministry of Coal 	<p>At the time of inclusion request of any proposed CPA, CME shall submit any of the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This is required to check the baseline scenario And to ensure accurate quantification of emission reduction from the CPAs.</p>
5.	<p>A CPA owner confirms in a written statement that it is aware and agrees with the inclusion of the CPA in the PoA on a voluntary basis.</p>	<p>The following document shall be provided:</p> <ul style="list-style-type: none"> • A letter issued by the CPA owner. 	<p>At the time of inclusion request of any proposed CPA, CME shall submit the mentioned document to the DOE who will be performing validation</p>

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			for the consistency and integrity check. The valid letter will ensure voluntary participation by CPA implementer in the PoA.
6.	A CPA owner confirms in a written statement that it does not belong to any other PoA or CDM Project;	<p>The following document shall be provided:</p> <ul style="list-style-type: none"> • A letter issued by the CPA owner. • Additionally, the CME will consult the CDM Project Database to ensure that the CPA is not already registered or seeking to be registered in another PoA or CDM Project. 	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned document to the DOE who will be performing validation for the consistency and integrity check. These measure would ensure avoidance of double counting as it would contain the name and full details of CPA implementer.
7.	A CPA owner confirms in a written statement that they are not required by law or other policies to capture CMM at the CPA site	<p>The following document shall be provided:</p> <ul style="list-style-type: none"> • A letter issued by the CPA owner. • Confirmation by a competent authority in the DPR Korea, such as the Ministry of Land and Environment Protection or Ministry of Coal. 	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned document to the DOE who will be performing validation for the consistency and integrity check. This would ensure that the CPA is a voluntary action and not mandated by any policy or regulation.
8.	The CME confirms in a written statement that the CPA is not currently included in the PoA and that it has consulted the CDM Project Database to ensure that the CPA is not already a registered CDM project or included in another PoA and that it has assigned a unique identification number to the CPA.	<p>The following document shall be provided:</p> <ul style="list-style-type: none"> • Confirmation CME has consulted the CDM project database to ensure that the CPA is not already a registered CDM project or included in another PoA. • Confirmation of details regarding the unique identification number (CMM-DPRK-X) that the CME has assigned to the CPA. 	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned document to the DOE who will be performing validation for the consistency and integrity check. These measure would ensure avoidance of double counting as it would contain the name and full details of CPA implementer. It would also ensure that all the CPAs under the PoA are uniquely identified.
9.	A CPA has to perform a local stakeholder consultation before it may be included in the PoA	<p>The stakeholder consultation shall be described in the CPA-DD and documentary evidence provided shall include but not limited to:</p> <ul style="list-style-type: none"> • Questionnaires distributed for 	As per the provisions in PoA DD, LSC will be done at the CPA. At the time of inclusion request of any

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		<p>stakeholder consultation</p> <ul style="list-style-type: none"> Record of minutes of meeting <p>Moreover, any issues identified during the stakeholder consultation shall be resolved to the satisfaction of the stakeholders before the inclusion of the CPA in the PoA.</p>	<p>proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.</p>
10.	A CPA has to ensure that environmental analysis has been performed	<p>The environmental analysis shall be performed by the CME and described in the CPA-DD for each CPA.</p> <p>The following document shall be provided:</p> <ul style="list-style-type: none"> Copy of Environmental Analysis report <p>Moreover, any issues identified during the environmental analysis shall be resolved to the satisfaction of the stakeholders before the inclusion of the CPA in the PoA.</p>	<p>As per the provisions in PoA DD, Environmental analysis will be done at the CPA.</p> <p>At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.</p>
11.	The CME confirms in a written statement that no funding from an Annex 1 party is provided for the CPA	<p>The following document shall be provided:</p> <ul style="list-style-type: none"> A letter from CME and CPA implementer and Supporting documentation such as bank statements 	<p>At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This eligibility criterion will ensure non-diversion of ODA during inclusion.</p>
12.	The start date (defined in the Glossary of CDM terms) of the CPA is not prior to the commencement of validation of the PoA, which is the 22/10/2011.	<p>The start date of the CPA shall be clearly described in the CPA-DD. The CME shall ensure that the CPA has not started before the validation of the PoA by including documentary evidence that can include but is not limited to:</p> <ul style="list-style-type: none"> Site visits performed; and/or Photographic evidence taken (with time stamps); and/or Contractual agreements entered into by the CPA owner or CME and/or A letter from a competent authority confirming the CPA start date 	<p>At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This eligibility criteria will ensure CPA start date of should not be before start date of validation as required by VVS /B01-1/.</p>
13.	<p>The Additionality of a CPA will be demonstrated as follows:</p> <p>(i) The CME provides all financing for the implementation of the future CPAs under this PoA.</p> <p>(ii) Using Step 2 of the</p>	<p>The following documents to be provided:</p> <ul style="list-style-type: none"> Letters from relevant authorities like Ministry of Environment and Land Protection and The ministry of coal industry. Simple cost analysis 	<p>At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This</p>

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	methodological tool "Tool for the demonstration and assessment of additionality" (Version 06.1.0): Investment Analysis i.e., sub-step 2b: Option I. Simple Cost Analysis; and (iii) Common practise analysis in accordance with §47 of the methodological tool "Tool for the demonstration and assessment of additionality" (Version 06.1.0).	<ul style="list-style-type: none"> Evidence of project costs through quotations and/or invoices. 	eligibility criterion will ensure that CPA is additional at the time of validation as per Annex 5, EB 70.
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Validation team has checked the CME Management System /07/ of CME and based on this documents and on-site interview with personnel involved at the CME end, validation team confirms that the CME has competencies to check the features of potential CPAs of PoA and also have competency to check that each CPA meets all requirements and eligibility criteria before submission to the DOE for the inclusion. Based on above validation team confirms the compliance of § 14 -15 of Annex 5 of EB 70 /B04-5/.

3.5 Operation and Management Plan

Validation team based on the review of PoA-DD /03/ and CME Management System /07/ confirms that clear and transparent description of the operational and management arrangement has been established by the CME for the PoA. The same has also been confirmed during the on-site interview. All the details of individual CPAs including the documents shall be controlled at CME end. Furthermore the records of individual CPAs shall be maintained by the CME at their office in electronic (excel sheet) format.

Individual CPA implementer shall provide a voluntary declaration /20/ and agree to comply with all terms and conditions of the PoA including those related to the monitoring and data control. The same has been confirmed from the review of a letter of declaration /20/ from CPA implementers. This voluntary declaration is also one of the eligibility criteria. Hence any CPA which would be included in the PoA, shall follow the operation and management plan of the PoA as stated in the PoA-DD and CME Management System /07/.

The system to avoid double counting and technical review of the potential CPAs of the PoA has been clearly indicated in the CME Management System /07/. Specifically developed for the PoA. By reviewing this validation team confirms that the CME have the competencies to check the features of potential CPAs and can ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. Based on above, validation team confirms the compliance of following, in the management system of CME (in line with the requirement of §17 annex 5 of EB 70 /B04-5/):

- A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;
- Records of arrangements for training and capacity development for personnel;
- Procedures for technical review of inclusion of CPAs;
- 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);
- Records and documentation control process for each CPA under the PoA;
- Measures for continuous improvements of the PoA management system;

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The CME Management System /07/ shall in due course of time as a part of continual improvement shall address any other relevant elements if required. This shall be checked again by the DOEs at the time of inclusion of any CPAs in the PoA inline with the requirement of §17 of annex 5 of EB 70 /B04-5/.

CAR 7 and CL 3, 5 and 10 were raised with respect to Operation and management plan of PoA and were successfully resolved upon evaluation of PP response.

Based on above it can be confirmed that the CME would be able to ensure that no double counting occurs. Also, since as each CPA is uniquely identified in the format of CPA DD (CMM-DPRK-X), the CME can check whether a CPA under the PoA is already a registered CDM project or CPA in another PoA from the UNFCCC website. In this regard CME will also seek a declaration/letter from the CPA implementer.

3.6 Monitoring Plan

There is no sampling approach for the verification of the CPAs of the PoA. As per PoA-DD /03/, CME of the PoA shall opt each of the CPA for the verification. Furthermore for the monitoring parameters to be opted by CPAs of the PoA, 100% data shall be monitored and no parameters shall be monitored on sampling approach. The same has been verified from the PoA-DD /03/. Review of monitoring plan provides a transparent system to ensure that no double counting occurs and that the status of verification can be determined any time for each CPA. The system to avoid double counting has been indicated in the PoA-DD /03/.

The description provided in the PoA-DD /03/ on the operational and management arrangements were confirmed based on document review and through on-site interviews.

3.7 Baseline and monitoring methodology

3.7.1 Applicability of selected methodology

The compliance of the applied baseline and monitoring methodology /B02/ is a part of eligibility criteria as mentioned in the PoA DD /03/. The DOE shall check the same during inclusion of the CPA in the PoA. The assessment of the validation team (for the requirement to be checked during inclusion) is summarised below:

Criteria of methodology	Justification in PoA-DD /03/	Assessment by the validation team
Applicability to extraction activities:		
Surface drainage boreholes to capture CBM associated with mining activities	Excluded. CBM will not be eligible in this PoA.	Not applicable since CPA will not have surface drainage boreholes to capture CBM associated with mining activities as confirmed in the PoA-DD /03/.
Underground boreholes in the mine to capture pre mining CMM	Included. CPAs will drain and capture methane by means of underground boreholes in coalmines in the DPR Korea.	It shall be checked during inclusion of the CPA that CPA uses underground boreholes in the mine to capture pre mining CMM.
Surface goaf wells, underground boreholes, gas drainage galleries or other goaf gas capture techniques, including gas from sealed areas, to capture post mining CMM	Included. Different goaf gas capture techniques will be used in order to extract methane from the coalmines. The exact gas capture technique will depend on the circumstances at the CPA site and will individually adjust to each CPA.	It shall be checked during inclusion of the CPA that CPA uses Surface goaf wells, underground boreholes, gas drainage galleries or other goaf gas capture techniques, including gas from sealed areas, to capture post mining CMM.
Ventilation air methane that	Excluded.	Not applicable since CPA will

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would normally be vented	VAM will not be captured and destroyed or utilised.	neither capture nor destroy or utilize Ventilation Air Methane (VAM) that would normally be vented as PoA-DD /03/.
Applicability to CMM capture, utilisation and destruction:		
The methane is captured and destroyed through flaring	Included. Flares will be used at CPAs in order to destroy methane rather than vent the methane into the atmosphere as currently the case.	It shall be checked during inclusion of the CPA that CPA captures methane and destroys it using flares.
The methane is captured and destroyed through flameless oxidation	Excluded. CPAs will not use flameless oxidizers to destroy methane from VAM or CMM.	Not applicable since CPA will neither capture nor destroy or utilize VAM or CMM using flameless oxidizers as confirmed in the PoA-DD /03/.
The methane is captured and destroyed through utilisation to produce electricity, motive power and/or thermal energy; emission reductions may or may not be claimed for displacing or avoiding energy from other sources	Included. Electricity and heat production at suitable CPA sites will be implemented to provide some respite for power shortages and to use the methane to satisfy heat-demand and replace coal-fired boilers.	It shall be checked during inclusion of the CPA that specific CPA captures and destroys through utilization for electricity and heat production.
The remaining share of the methane, to be diluted for safety reason, may still be vented	Included. If methane needs to be diluted for safety reason and therefore cannot be destroyed or utilised, the remaining part will be vented. Each CPA will aim to use and/or destroy the maximum amount of methane possible.	It shall be checked during inclusion of the CPA that whether specific CPA dilutes remaining share of methane for safety reasons and vents it in the atmosphere.
All the CMM captured by the project should either be used or destroyed, and cannot be vented.	Included. Each CPA aims to capture the methane available from each coal mine, and either destroy it in a flare or use it for electricity and/or heat generation.	It shall be checked during inclusion of the CPA that specific CPA captures and destroys all CMM and no amount of CMM is vented.
Applicability for opencast mines:		
The mines should have had a working mining concession for at least three years prior to the start of project	Excluded. No CPAs will be implemented at open cast mines.	Not applicable since no CPAs under the PoA will be implemented at open cast mines as confirmed in the PoA-DD /03/.
Only pre-mine drainage from wells placed within the area to be mined are considered as eligible for crediting	Excluded. No CPAs will be implemented at open cast mines.	Not applicable since no CPAs under the PoA will be implemented at open cast mines as confirmed in the PoA-DD /03/.
Such pre-mine drainage well life may be credited up to but no more than ten years prior to actual mining or the date of issuance of mining concession, whichever is later	Excluded. No CPAs will be implemented at open cast mines.	Not applicable since no CPAs under the PoA will be implemented at open cast mines as confirmed in the PoA-DD /03/.
For open cast mines, avoided emissions from methane	Excluded.	Not applicable since no CPAs under the PoA will be

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extracted should only be credited in the year in which the seam is mined through the well zone of influence or the de-stressing zone	No CPAs will be implemented at open cast mines.	implemented at open cast mines as confirmed in the PoA-DD /03/.
Inapplicability due to incompatibility:		
Capture methane from abandoned/decommissioned coalmines	Excluded. The CPAs will not be implemented at abandoned/decommissioned coalmines	Not applicable since no CPAs under the PoA will be implemented at abandoned/decommissioned coalmines as confirmed in the PoA-DD /03/.
Capture/use of virgin coal bed methane, e.g. methane of high quality extracted from coal seams independently of any mining activities	Excluded. In accordance with applied Methodology ACM0008 (Version 07) /B02/.	Not applicable since no CPAs under the PoA will Capture/use virgin coal bed methane, e.g. methane of high quality extracted from coal seams independently of any mining activities as confirmed in the PoA-DD /03/.
Use CO ₂ or any other fluid/gas to enhance CBM drainage before mining takes place	Excluded. In accordance with applied Methodology ACM0008 (Version 07) /B02/.	Not applicable since no CPAs under the PoA will use CO ₂ or any other fluid/gas to enhance CBM drainage before mining takes place as confirmed in the PoA-DD /03/.

In addition to above validation team noted that the applied methodology has directed for the use of the following tools:

1. Tool to calculate the emission factor for an electricity system (Version 03.0)
2. Tool for the demonstration and assessment of additionality (Version 06.1.0)
3. Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion (Version 02)
4. Tool to determine project emissions from flaring gases containing methane, (Version 02)

Validation team based on review of PoA-DD /03/ confirms that the tools have been correctly quoted and used in the PoA-DD /03/. Based on above validation team confirms to the requirement of the VVS /B01-1/ and PS /B01-2/.

3.7.2 CPA boundary

The boundary of the potential/future CPAs of the PoA has been assessed by considering information gathered from the site visit, interviews, and from the technological description of the three different technological scenario of the PoA as contained in the PoA-DD /03/.

Validation team confirms that the project boundary for the potential/future CPAs is based on the applied methodology /B02/ and the sources and gases within the boundary have been considered in a clear manner as detailed below:

A) For the purpose of determining project activity emissions, each CPA includes:

- CO₂ emissions from the combustion of methane in a flare, engine, power plant or heat generation plant;
- CO₂ emissions from the combustion of non methane hydrocarbons (NMHCs), if they represent more than 1% by volume of the extracted coal mine gas;
- CO₂ emissions from on-site fuel consumption due to the project activity, including transport of the fuel;
- Fugitive emissions from unburned methane.

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B) For the purpose of determining baseline emissions, each CPA includes the following emissions sources:

- CH₄ emissions as a result of venting gas that would be captured in the project scenario;
- CO₂ emissions from the destruction of methane in the baseline scenario;
- CO₂ emissions from the production of heat and power (motive and electrical) that is replaced by the project activity.

C) The special extent of each CPA comprises:

- All equipment installed and used as part of the project activity for the extraction, compression, and storage of CMM at the project site, and transport to an off-site user;
- Flaring, captive power and heat generation facilities installed and used as part of the project activity;
- Power plants connected to the electricity grid, where the project activity exports power to the grid, as per the definition of project electricity system and connected electricity system given in "Tool to calculate the emission factor for an electricity system".

CL 8 was raised with respect to sources of gases in CPA boundary and was successfully resolved upon evaluation of PP response.

Validation team based on the above confirms that the project boundary for all the technological scenarios, as documented in the PoA-DD/03/ are justified for the project activity and are fully in line with the requirements set by the applied methodology /B02/.

3.7.3 Baseline identification

The PoA-DD /03/ defines the following baseline scenario:

The baseline scenario equals the scenario prior to the implementation of this project activity. This scenario simply involves the continued venting of the extracted CMM and the continued electricity generation by the regional grid of DPR Korea, which predominantly consists of carbon intensive fossil fuel energy sources. Coal-fired boilers cover the on-site heat demand.

The information presented in the PoA-DD /03/ has been validated by an initial document review of all the data. Further confirmation has been made based on the on-site visit and researched information from similar projects and/or technologies.

The applied methodology ACM0008 (Version 07) /B02/ provides for steps to be followed for identification of baseline scenario. The steps are mentioned as below:

Step 1: Identify technically feasible options for capturing and/or using CBM or CMM or VAM

Step 1a: Options for CBM and CMM or VAM extraction

PoA-DD /03/ in accordance with applied methodology ACM0008 (Version 07) /B02/, provides a list of all technically feasible options to extract CMM. These include:

According to Approved Methodology ACM0008 (Version 07) /B02/, all technically feasible options to extract CMM should be listed. These include:

- A. Ventilation air methane: Common practice for extraction of CMM in the PoA in DPR Korea
- B. Pre-mining CMM extraction
- C. Post-mining CMM extraction
- D. Possible combination of A, B, C

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Step 1b: Options for extracted CMM

- (i) Venting;
- (ii) Using/destroying ventilation air methane rather than venting it;
- (iii) Flaring of CMM;
- (iv) Use for additional grid power generation;
- (v) Use for additional captive power generation;
- (vi) Use for additional heat generation;
- (vii) Feed into gas pipeline (to be used as fuel for vehicles or heat/power generation);
- (viii) Possible combinations of options iii, iv, v, and vi. This is the proposed PoA not implemented as a CDM project.

Step 1c: Options for energy production

The alternatives for power generation include:

- 1. Electricity generation by the relevant grid of DPR Korea, i.e., Eastern Power Grid, Western Power Grid or Central Power Grid;
- 2. Electricity supply from captive coal-fired power generation of same scale;
- 3. CMM power generation. This is the project activity not undertaken as a CDM project.

The alternatives for heat generation include:

- 4. Continuation of current heat supply by coal-fired boilers;
- 5. Heat supply by heat generation technologies, including conventional steam boiler, or conventional hot water boiler, which would be fired by CMM. This is the proposed project activity not undertaken as a CDM project.

After thorough review of the indicated options, as well as based on validation team's knowledge and expertise in this field, DoE confirms that the indicated options are reasonable and the provided list is complete when compared with the requirements of the applied methodology ACM0008 (Version 07) /B02/.

Step 2: Eliminate baseline options that do not comply with legal or regulatory requirements

Step 2 of the applied methodology ACM0008 (Version 07) /B02/, for the identification of the baseline scenario requires the elimination of any options that do not comply with legal or regulatory requirements. As per the PoA-DD /03/ and on-site interviews it was confirmed that there are no laws / policy in DPR Korea for capture, utilization or destruction of methane. The same was also substantiated through a duly signed letter (dated 13/10/2011) from Ministry of Land and Environment protection, which states, " that there are no statutes or policy that would require the capture and/or utilization or destruction of coal mine methane in the territory of DPR Korea nor are any discussions underway to bring about such law, statutes or policies /11/".

Hence validation team confirms that all alternatives listed in *Step 1b: Options for extracted CMM* are in full compliance with all applicable rules and regulations.

Step 3: Formulate baseline scenario alternatives

This step requires the presentation of a complete list of baseline scenario alternatives that are feasible and comply with all legal and regulatory requirements.

Step 3a: Alternatives for CMM extraction

Alternative A: Extraction on CMM through Ventilation Air Methane (VAM)

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Step 3b: Alternatives for extracted CMM

Alternative (i): Venting of CMM

Alternative (ii): Using/destroying VAM

Alternative (iii): Flaring of CMM

Alternative (iv): Use for additional grid power generation

Alternative (v): Use for additional captive power generation

Alternative (vi): Use for additional heat generation

Alternative (vii): Feed into gas pipeline (to be used as fuel for vehicles or heat/power generation)

Alternative (viii): Possible combinations of options iii, iv, v, and vi. This is the proposed PoA not implemented as a CDM project.

Step 3c: Alternatives for energy generation

Alternative 1: Electricity generation by the relevant grid of DPR Korea, i.e., Eastern Power Grid, Western Power Grid or Central Power Grid.

Alternative 2: Electricity supply from captive coal-fired power generation of same scale.

Alternative 3: CMM power generation. This is the project activity not undertaken as a CDM project.

Alternative 4: Continuation of current heat supply by coal-fired boilers.

Alternative 5: Heat supply by heat generation technologies, including conventional steam boiler, or conventional hot water boiler, which would be fired by CMM. This is the proposed project activity not undertaken as a CDM project.

After thorough review of the listed alternatives in the POA-DD /03/ and comparison with the requirements of the applied methodology, as well as based on validation team's knowledge in the sector of methane gas utilization and destruction, the provided list is considered as complete.

Step 4: Eliminate baseline scenario alternatives that face prohibitive barriers

Step 4 of the applied methodology ACM0008 (Version 07) /B02/ requires the elimination of alternatives that are facing prohibitive barriers. After a thorough review, the audit team confirms that the following alternative scenarios could be eliminated due to the following prohibitive barriers and reasons for elimination based on cross-checks with other verifiable and credible sources as outlined in the following sections:

Step 4a: Barrier analysis of the alternatives for CMM extraction

Alternative A: Extraction on CMM through Ventilation Air Methane (VAM)

This is continuation of current practice for extraction of CMM at coalmines in DPR Korea. Hence, this alternative doesn't face any alternative barriers.

Step 4b: Barrier analysis of the alternatives for extracted CMM

Alternative (i): Venting of CMM

IN DPR Korea, the current national regulations require venting of CMM from coalmines for safety reasons. As this is the current practice in the host country hence no barriers exist.

Alternative (ii): Using/destroying VAM

Utilization/destruction of VAM is not a legal requirement /11/ in DPR Korea and further, utilization/destruction of VAM requires investment in a new combustion facility or investment in

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installation of VAM oxidizers, which would not generate any returns apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 makes it really unattractive to invest in such technologies. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not at all a realistic alternative and faces investment barriers.

Alternative (iii): Flaring of CMM

Flaring of CMM is not a legal requirement /11/ in DPR Korea and further, flaring requires investment in a new combustion facility, which would not generate any returns apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 makes it really unattractive to invest in such technologies. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option (Flaring of CMM) is not at all is not at all a realistic alternative and faces investment barriers.

Alternative (iv): Use for additional grid power generation

Utilization of CMM for power generation for export to the grid is not a legal requirement /11/ in DPR Korea and further, it requires investment in a new power generation facility, which would not generate any returns apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no revenue from sale of power make it really unattractive to invest in a power generation facility. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not a realistic alternative and faces investment barriers.

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Alternative (v): Use for additional captive power generation

Utilization of CMM for captive power generation to displace grid electricity or enhance fuel savings is not a legal requirement /11/ in DPR Korea and further, it requires investment in a new power generation facility, which would not generate any tangible or intangible returns apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no tangible or intangible benefits resulting from either savings on account of reduction in power purchased from grid or reduced fuel consumption to the project implementer makes it really unattractive to invest in a power generation facility. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not at all a realistic alternative and faces investment barriers.

Alternative (vi): Use for additional heat generation

Utilization of CMM for heat generation to displace existing coal fired boilers is not a legal requirement /11/ in DPR Korea. It requires investment in a new capture and combustion system, which would not generate any tangible or intangible returns for the CME apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no tangible or intangible benefits resulting from reduced coal consumption to the project implementer makes it really unattractive to invest in a new capture and combustion system. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not at all realistic alternative and faces investment barriers.

Alternative (vii): Feed into gas pipeline (to be used as fuel for vehicles or heat/power generation)

This scenario is facing an investment barrier due to non-availability of already existing pipelines in the area. This option would require installation of a new pipeline leading to a huge investment with only no tangible or intangible revenues apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this

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PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no tangible or intangible benefits resulting from installation of gas pipelines and feeding gas in pipelines for other uses to the project implementer makes it really unattractive investment option. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not at all in practise in DPR Korea and faces investment barriers.

Alternative (viii): Possible combinations of options iii, iv, v, and vi.

As described above there are serious investment and technological barriers to all the options except (a) and so, a possible combination of option (a) to (f) with the relative shares of gas treated under each option specified is not a feasible scenario. As all the combinations of various options would require a huge investment to be made by CME and there would be no tangible or intangible revenues apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no tangible or intangible benefits or revenues to the project implementer makes it really unattractive investment option. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not at all a realistic alternative and faces investment barriers.

Moreover as this alternative scenario is the proposed PoA not implemented as a CDM project activity, hence in absence of CDM revenue this can't be implemented.

Step 4c: Barrier analysis of the alternatives for energy production

Alternative 1: Electricity generation by the relevant grid of DPR Korea, ie Eastern Power Grid, Western Power Grid or Central Power Grid.

This is the continuation of current practice and hence faces no barrier.

Alternative 2: Electricity supply from captive coal-fired power generation of same scale.

This is a continuation of current practice in DPR Korea. No barriers exist.

Alternative 3: CMM power generation.

Utilization of CMM for power generation for export to the grid is not a legal requirement /11/ in DPR Korea and further, it requires investment in a new power generation facility, which would not generate any returns apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this

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PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no revenue from sale of power make it really unattractive to invest in a power generation facility. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not a realistic alternative and faces investment barriers.

Alternative 4: Continuation of current heat supply by coal-fired boilers.

No barriers exist as this a continuation of the current practice.

Alternative 5: Heat supply by heat generation technologies, including conventional steam boiler, or conventional hot water boiler, which would be fired by CMM

Utilization of CMM for heat generation to displace existing coal fired boilers is not a legal requirement /11/ in DPR Korea. It requires investment in a new capture and combustion system, which would not generate any tangible or intangible returns for the CME apart from sale of carbon credits. This is because a letter /09/ (dated 06/10/2011) from GBCIO (PP) clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

Given uncertainty in the future of the carbon market post-2012 and no tangible or intangible benefits resulting from reduced coal consumption to the project implementer makes it really unattractive to invest in a new capture and combustion system. Furthermore the infrastructure does not currently exist at any coalmine in the DPR Korea. For these reasons, this option is not at all realistic alternative and faces investment barriers.

Moreover as this alternative scenario is the proposed PoA not implemented as a CDM project activity, hence in absence of CDM revenue this can't be implemented.

In summary, based on its local and sectoral expertise in this sector, validation team confirms that the indicated barriers are credible and real. Furthermore, validation team confirms that the list of the baseline alternative scenarios is complete and also reasonable in the context of the proposed CDM programme of activity. Validation team is further of the opinion that no reasonable and feasible scenario was excluded from this assessment above.

Step 5: Identify most economically attractive baseline scenario alternative

Based on the assessment of barriers to all the alternatives selected, the validation team confirms that potential baseline scenarios that are not facing prohibitive barriers are continuation of the current practice and they are:

- For treatment of extracted CMM: Venting
- For Power: Electricity generation by regional grids of DPR Korea
- For Heat: Continuation of current heat supply by coal-fired boilers.

A verifiable description of the baseline scenario has been included in the PoA-DD /03/. Validation team confirms the following statements by reviewing the PoA-DD /03/:

- All the assumptions and data used by the project participants are listed in the PoA-DD /03/, including their references and sources;

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- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PoA-DD /03/;
- 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 /03/;
- The approved baseline methodology /B02/ 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.

3.8 Additionality

3.8.1 Prior consideration of CDM

As per § 4 of annex 13, EB 62 /B04-6/, “Guidelines for the demonstration and assessment of prior consideration of the CDM” do not apply to PoAs, as at present it is expected that no component of the programme will commence prior to the start date of validation of the PoA.

3.8.2 Additionality of PoA

As per section B.1 of PoA-DD /03/, CME has opted for Simple Cost Analysis to substantiate the additionality of PoA i.e., none of the CPAs under this PoA would occur in the absence of CDM, as there is no other source of revenue for CME apart from CDM revenues and Carbon Development and Trading Ltd., (CME) is solely responsible for financing the implementation of the PoA and all future CPA under the PoA.

The same is also an eligibility criterion for inclusion of CPAs under this PoA, wherein before inclusion in the PoA every CPA has to demonstrate that CME is the sole financier of the CPA and there is no other source of revenues except from sale of CERs.

The validation team verified the same through review of a letter /09/ (dated 06/10/2011) from GBCIO which, clearly states the following:

- Foreign entity to fully finance the implementation of PoA
- Foreign entity to share carbon credit revenues with GBCIO
- Foreign entity shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that foreign entity shall not accrue any benefits.

It was further substantiated through review of a letter from GBCIO (dated 05/04/2013) clearly states, “Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs”. /24/.

Hence, the claim of the CME, that none of the CPAs under the PoA would occur in absence of CDM is justified. This demonstration is in compliance with § 195 of annex 03 of EB 70 /B01/.

CL 4 was raised with respect to additionality of PoA and same were successfully resolved upon evaluation of PP response.

The additionality of the programme has been presented in section B.1 of the PoA-DD /03/. As the PoA applies the large-scale methodology, therefore the additionality has been demonstrated using “Tool for the demonstration and assessment of additionality” /B03-2/, which is in line with requirements of § 10 of Annex 5 of EB 70 /B04-5/.

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3.8.3 Approach for demonstrating CPA Additionality

It has been described in the PoA-DD /03/ that the additionality of a typical CPA will be demonstrated on CPA level. This is described in the eligibility criteria of the PoA-DD /03/, where it is defined that additionality will be documented in the specific CPA-DD, applying Simple Cost Analysis (Sub-step 2b: Option 1) as provided under Investment Analysis (Step 2) of the Tool for the demonstration and assessment of additionality /B03-4/. Furthermore, barrier analysis (Step 3) and/or common practice will be demonstrated on CPA level, in line with the requirements of the Tool for the demonstration and assessment of additionality /B03-4/.

3.8.3.1 Investment Analysis

As per step 2 of the Tool for the demonstration and assessment of additionality /B03-4/ investment analysis is used to determine whether the project activity is not the most economically or financially attractive alternative, or not economically or financially feasible without the revenue from the sale of CERs.

For the typical CPA included in this PoA there is no other source of revenue except CER revenues for the investor i.e., CME. The same has been substantiated through a letter /09/ (dated 06/10/2011) from GBCIO, which states the following:

- CME to fully finance the implementation of PoA as GBCIO is not in any position to provide any financial assistance
- CME to share carbon credit revenues with GBCIO
- CME shall assign all other benefits accruing out of the project activity to people of DPR Korea and for that CME shall not accrue any benefits.

Furthermore, a letter from GBCIO (PP) (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERs". /24/.

So, all the CPAs under this PoA will not generate any financial or economic benefits other than CDM related income; therefore simple cost analysis (Option I) is applicable. For a simple cost analysis, the capital investment costs and the operation and maintenance costs shall be included, and no revenues shall come from the CPA.

CL 4 was raised with respect to additionality of PoA and same were successfully resolved upon evaluation of PP response.

Validation team confirms that option has been chosen in accordance with the Tool for the demonstration and assessment of additionality /B03-4/.

Appropriateness of the approach of additionality and choice of input parameters at CPA level is detailed below:

PARAMETER	JUSTIFICATION IN POA-DD /03/	ASSESSMENT BY VALIDATION TEAM
Type of investment Analysis	<p>Simple Cost Analysis.</p> <p>For the typical CPA included in this PoA there is no other source of revenue except CER revenues for the investor i.e., CME. So, all the CPAs under this PoA will not generate any financial or economic benefits other than CDM related income.</p>	<p>§ 25 of Tool for the demonstration and assessment of additionality /B03-4/ states "If the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income, then apply the simple cost analysis".</p> <p>All the potential CPAs under this PoA will generate no other revenue than</p>

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	The CPA shall use the excel tool /19/ made available by the CME for this analysis.	CDM related income. The same was substantiated through a letter /09/ (dated 06/10/2011) from GBCIO. It was further substantiated through review of a letter from GBCIO (dated 05/04/2013) clearly states, "Carbon Development and Trading Ltd is the sole financier for the implementation of the PoA, as well as all CPAs included in this PoA. The only financial benefit that Carbon Development and Trading Ltd is entitled to receive from implementation of the PoA and CPA is from sale of CERS". /24/. Hence, acceptable to validation team
Project Cost	The total costs of the CPA will include capital investment costs (CAPEX) and operation and maintenance costs (OPEX). The source for the costs will be based on the Feasibility Studies conducted per CPA, and when available, quotations and/or O&M contracts.	Project cost and basis for the same shall be checked during inclusion of the CPA.

3.8.3.2 Common practice analysis:

Common practice analysis will be performed for each CPA on CPA level, in accordance with the steps prescribed under § 47 of the Tool for the demonstration and assessment of additionality /B03-4/. The PoA-DD /03/ in section B1. And B.5 clearly states that all the future CPAs under the PoA are relevant measures as recognized under § 6 (c) the Tool for the demonstration and assessment of additionality /B03-4/. Hence the choice of using § 47 for common practice analysis is deemed appropriate by validation team.

In conclusion, validation team is of the opinion that the prescribed procedure for demonstrating the additionality of the individual CPA is adequate and in accordance with the methodology ACM0008 (Version 07) /B02/ and Tool for the demonstration and assessment of additionality /B03-4/.

3.9 Emission reduction from a typical CPA of the PoA

The equations and choices provided in the methodology and all other methodological tools are correctly quoted in the PoA-DD /03/. The emission reductions of the CPAs of the PoA would be calculated using the formulae mentioned in the applied methodology ACM0008 (version 07) /B02/.

CAR 11 and CL 9 were raised with respect to formulae used for emission reduction calculation and CL 4 was raised with respect to additionality of PoA and same were successfully resolved upon evaluation of PP response.

Validation team based on the review of PoA-DD /03/ confirms that the formulae are correctly presented for the determination of emission reductions at CPA level. The parameters and equations presented in the PoA-DD /03/, as well as other applicable documents, have been compared with the information and requirements presented in the methodology. An equation comparison has also been made to ensure consistency between all the formulae presented in the PoA-DD /03/ calculation files (for the real case CPA-DD), methodology ACM0008 (Version 07) /B02/.

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According to the applied methodology ACM0008 (Version 07) /B02/, The emission reduction (ER_y) by the project activity during a given year y is the difference between the baseline emissions (BE_y) project emissions (PE_y) and leakage emissions (LE_y), as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (1)$$

Where:

ER_y	=	Emissions reductions of the project activity during the year y (tCO ₂ e)
BE_y	=	Baseline emissions during the year y (tCO ₂ e)
PE_y	=	Project emissions during the year y (tCO ₂ e)
LE_y	=	Leakage emissions in year y (tCO ₂ e)

Project Emissions

Project emissions are defined by the following equation:

$$PE_y = PE_{ME} + PE_{MD} + PE_{UM} \quad (2)$$

Where:

PE_y	=	Project emissions in year y (tCO ₂ e)
PE_{ME}	=	Project emissions from energy use to capture and use methane (tCO ₂ e)
PE_{MD}	=	Project emissions from methane destroyed (tCO ₂ e)
PE_{UM}	=	Project emissions from un-combusted methane (tCO ₂ e)

Combustion emissions from additional energy required for CMM capture and use

Additional energy may be used for the capture, transport, compression and use or destruction of CMM. Emissions from this energy use should be included as project emissions.

$$PE_{ME} = CONS_{ELEC,PJ} \cdot CEF_{ELEC} + CONS_{HEAT,PJ} \cdot CEF_{HEAT} + CONS_{FossFuel,PJ} \cdot CEF_{FossFuel} + PE_{FC,j,y} \quad (3)$$

Where:

PE_{ME}	=	Project emissions from energy use to capture and use or destroy methane (tCO ₂ e)
$CONS_{ELEC,PJ}$	=	Additional electricity consumption for capture and use or destruction of methane, if any (MWh)
CEF_{ELEC}	=	Carbon emissions factor of electricity used by coal mine (tCO ₂ /MWh)
$CONS_{HEAT,PJ}$	=	Additional heat consumption for capture and use or destruction of methane, if any (GJ)
CEF_{HEAT}	=	Carbon emissions factor of heat used by coal mine (tCO ₂ e/GJ)
$CONS_{FossFuel,PJ}$	=	Additional fossil fuel consumption for capture and use or destruction of methane, if any (GJ)
$CEF_{FossFuel}$	=	Carbon emissions factor of fossil fuel used by coal mine (tCO ₂ /GJ)
$PE_{FC,j,y}$	=	CO ₂ emissions from fossil fuel combustion in process j during the year y . Calculated using the "Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion"

To determine the electricity emissions factor, the same formulae are used as in the calculations of baseline emissions. In other words, if the source of power for the coalmine is the grid, then the formulae from "Tool to calculate the emission factor for an electricity system" (Version 02.2.1) for calculating the combined margin emissions factor are used. If the source of power for the coalmine is captive power generation, then the emissions factor is calculated based on the emission factor for the fuel used and the efficiency of the captive power plant.

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To determine the heat generation emission factor, the same formulae are used as in the calculations of baseline emissions. In other words, the boiler efficiency and the emission factor for the fuel used are the basis of the emissions factor.

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} * COEF_{i,y} \quad (4)$$

Where:

$PE_{FC,j,y}$	=	CO ₂ emissions from fossil fuel combustion in process j during the year y (tCO ₂ e/y)
$FC_{i,j,y}$	=	Quantity of fuel type i combusted in process j during the year y (mass or volume unit/y)
$COEF_{i,y}$	=	CO ₂ emissions coefficient of fuel type i during the year y (tCO ₂ /mass or volume unit)
i	=	Are the fuel types combusted in process j during the year y

The CO₂ emission coefficient $COEF_{i,y}$ is calculated based on the chemical composition of the fossil fuel type i , using the following approach:

$$\text{If } FC_{i,j,y} \text{ is measured in a mass unit: } COEF_{i,y} = w_{C,i,y} * 44 / 12 \quad (5)$$

$$\text{If } FC_{i,j,y} \text{ is measured in a volume unit: } COEF_{i,y} = w_{C,i,y} * \rho_{i,y} * 44 / 12 \quad (6)$$

Where:

$COEF_{i,y}$	=	CO ₂ emissions coefficient of fuel type i (tCO ₂ /mass or volume unit)
$w_{C,i,y}$	=	Weighted average mass fraction of carbon in fuel type i in year y (tC/mass unit of the fuel)
$\rho_{i,y}$	=	Weighted average density of fuel type i in year y (mass unit/volume unit of the fuel)
i	=	Fuel types combusted in process j during the year y

Combustion emissions from use of captured methane

When the captured methane is burned in a flare, heat or power plant, combustion emissions are released. In addition, if NMHC account for more than 1% by volume of the extracted CMM or more than 0.1% by volume of the extracted VAM, combustion emission from these gases should also be included.

$$PE_{MD} = (MD_{FL} + MD_{ELEC} + MD_{HEAT}) * (CEF_{CH_4} + r * CEF_{NMHC}) \quad (7)$$

with:

$$r = PC_{NMHC} + PC_{CH_4} \quad (8)$$

Where:

PE_{MD}	=	Project emissions from CMM destroyed (tCO ₂ e)
MD_{FL}	=	Methane destroyed through flaring (tCH ₄)
MD_{ELEC}	=	Methane destroyed through power generation (tCH ₄)
MD_{HEAT}	=	Methane destroyed through heat generation (tCH ₄)
CEF_{CH_4}	=	Carbon emission factor for combusted methane (2.75 tCO ₂ /tCH ₄)
CEF_{NMHC}	=	Carbon emission factor for combusted non methane hydrocarbons (the concentration varies and, therefore, to be obtained through periodical analysis of captured methane) (tCO ₂ /tNMHC)
r	=	Relative proportion of NMHC compared to methane
PC_{CH_4}	=	Concentration (in mass) of methane in extracted gas (%), measured on wet basis
PC_{NMHC}	=	NMHC concentration (in mass) in extracted gas (%)

In each end-use, the amount of gas destroyed depends on the efficiency of combustion of each end use.

$$MD_{FL} = MM_{FL} - (PE_{flare,y} / GWP_{CH_4}) \quad (9)$$

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Where:

MD_{FL}	=	Methane destroyed through flaring (tCH ₄)
MM_{FL}	=	Methane measured sent to flare (tCH ₄)
$PE_{flare,y}$	=	Project emissions from flaring of the residual gas in year y (tCO ₂ e)
GWP_{CH4}	=	Global warming potential of methane (21 tCO ₂ e/tCH ₄)

The project emissions of non-combusted CH₄ expressed in terms of CO₂e from flaring of the residual gas stream ($PE_{flare,y}$) shall be calculated following the procedures described in the "Project emissions from flaring" (Version 02.0.0). $PE_{flare,y}$ shall be calculated on an annual basis or for the required period of time using this tool.

$$MD_{ELEC} = MM_{ELEC} * Eff_{ELEC} \quad (10)$$

Where:

MD_{ELEC}	=	Methane destroyed through power generation (tCH ₄)
MM_{ELEC}	=	Methane measured sent to power plant (tCH ₄)
Eff_{ELEC}	=	Efficiency of methane destruction/oxidation in power plant (taken as 99.5% from IPCC)

$$MD_{HEAT} = MM_{HEAT} * Eff_{HEAT} \quad (11)$$

Where:

MD_{HEAT}	=	Methane destroyed through heat generation (tCH ₄)
MM_{HEAT}	=	Methane measured sent to heat plant (tCH ₄)
Eff_{HEAT}	=	Efficiency of methane destruction/oxidation in heat plant (taken as 99.5% from IPCC)

Un-combusted methane from project activity

Not all of the methane sent to the flare or used to generate power and heat will be combusted, so a small amount will escape to the atmosphere. These emissions are calculated using the following:

$$PE_{UM} = [GWP_{CH4} \times \sum_i MM_i \times (1 - Eff_i)] + PE_{flare,y} \quad (12)$$

Where:

PE_{UM}	=	Project emissions from un-combusted methane (tCO ₂ e)
GWP_{CH4}	=	Global warming potential of methane (21 tCO ₂ e/tCH ₄)
i	=	Use of methane (power generation, heat generation, supply to gas grid to various combustion end uses)
MM_i	=	Methane measured sent to use i (tCH ₄)
Eff_i	=	Efficiency of methane destruction in use i (%)
$PE_{flare,y}$	=	Project emissions from flaring of the residual gas in year y (tCO ₂ e)

Project emissions from flaring

Project emissions from flaring ($PE_{flare,y}$) are calculated in accordance with the methodological tool "Project emissions from flaring" (Version 02.0.0).

$$PE_{flare,y} = GWP_{CH4} \times \sum_{m=1}^{525600} F_{CH4,RG,m} \times (1 - \eta_{flare,m}) \times 10^{-3} \quad (13)$$

Where:

$PE_{flare,y}$	=	Project emissions from flaring of the residual gas in year y (tCO ₂ e)
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GWP_{CH_4}	=	Global warming potential of methane valid for the commitment period (tCO_2e/tCH_4)
$F_{CH_4, RG, m}$	=	Mass flow of methane in the residual gas in the minute m (kg)
$\eta_{flare, m}$	=	Flare efficiency in minute m

The flare efficiency in minute m ($\eta_{flare, m}$) is determined as the average of two measurements of the flare efficiency made in year y ($\eta_{flare, y}$) as follows:

$$\eta_{flare, y} = 1 - \frac{1}{2} \sum_{t=1}^2 \left(\frac{F_{CH_4, EG, t}}{F_{CH_4, RG, t}} \right) \quad (14)$$

Where:

$\eta_{flare, y}$	=	Flare efficiency in year y
$F_{CH_4, EG, t}$	=	Mass flow of methane in the exhaust gas of the flare on a dry basis at reference conditions in the time period t (kg)
$F_{CH_4, RG, t}$	=	Mass flow of methane in the residual gas in the time period t (kg)
t	=	The two time periods in year y during which the flare efficiency is measured, each a minimum of one hour and separated by at least six months

Mass flow of methane in the residual gas in minute m ($F_{CH_4, RG, m}$) is calculated using the methodological tool "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (Version 02.0.0). According to the methodological tool "Project emissions from flaring" (Version 02.0.0), the parameter $F_{CH_4, RG, m}$ shall be determined as the mass flow during minute m and shall be measured on a dry basis. This represents Option D of Table 1 of the methodological tool "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (Version 02.0.0).

$$F_{CH_4, RG, m} = V_{m, db} * v_{CH_4, m, db} * \rho_{CH_4, m} \quad (15)^6$$

Where:

$F_{CH_4, RG, m}$	=	Mass flow of methane in the residual gas in minute m (kg)
$V_{m, db}$	=	Volumetric flow of the residual gas in minute m on a dry basis (m^3 dry gas/h) m^3 of dry gas)
$v_{CH_4, m, db}$	=	Volumetric fraction of CH ₄ in the residual gas in minute m on a dry basis (m^3 CH ₄ /m ³ of dry gas)
$\rho_{CH_4, m}$	=	Density of CH ₄ in the residual gas in minute m (kg CH ₄ /m ³ CH ₄)

$$\rho_{CH_4, m} = \frac{P_m * MM_{CH_4}}{R_u * T_m} \quad (16)^7$$

Where:

$\rho_{CH_4, m}$	=	Density of CH ₄ in the residual gas in minute m (kg gas i / m ³ gas i)
P_m	=	Pressure of the residual gas in minute m (Pa)
MM_{CH_4}	=	Molecular mass of CH ₄ (kg / kmol)
R_u	=	Universal ideal gases constant (Pa.m ³ / kmol.K)
T_m	=	Temperature of the residual gas in minute m (K)

⁶ The equation 5 from the "Tool to determine mass flow" (Version 02.0.0) has been updated to reflect that the mass flow relates to the greenhouse gas CH₄ in time interval m as required by the methodological tool "Project emissions from flaring" (Version 02.0.0).

⁷ The equation 6 from the "Tool to determine mass flow" (Version 02.0.0) has been updated to reflect that the mass flow relates to the greenhouse gas CH₄ in time interval m as required by the methodological tool "Project emissions from flaring" (Version 02.0.0).

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$$V_{m,db} = M_{m,db} / \rho_{m,db} \quad (17)^8$$

Where:

$V_{m,db}$	=	Volumetric flow of the residual gas in minute m on a dry basis (m^3 dry gas/h)
$M_{m,db}$	=	Mass flow of the residual gas in minute m on a dry basis (kg/h)
$\rho_{m,db}$	=	Density of the residual gas in minute m on a dry basis (kg dry gas / m^3 dry gas)

$$\rho_{m,db} = \frac{P_m * MM_{m,db}}{R_u * T_m} \quad (18)^9$$

Where:

$\rho_{m,db}$	=	Density of the residual gas in minute m on a dry basis (kg dry gas / m^3 dry gas)
P_m	=	Pressure of residual gas in minute m (Pa)
$MM_{m,db}$	=	Molecular mass of the residual gas in minute m on a dry basis (kg dry gas / kmol dry gas)
R_u	=	Universal ideal gases constant (Pa. m^3 / kmol.K)
T_m	=	Temperature of the residual gas in minute m (K)

$$MM_{m,db} = \sum_k (v_{k,m,db} * MM_k) \quad (19)^{10}$$

Where:

$MM_{m,db}$	=	Molecular mass of the residual gas in minute m on a dry basis (kg dry gas / kmol dry gas)
$v_{k,m,db}$	=	Volumetric fraction of gas k in the residual gas in minute m on a dry basis (m^3 gas k / m^3 dry gas)
MM_k	=	Molecular mass of gas k (kg / kmol)
k	=	N_2 , CH_4 (in accordance with the simplification outlined in Option 1 of the methodological tool "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (Version 02.0.0).

The value for $F_{CH_4,RG,t}$ is calculated using the formulae for $F_{CH_4,RG,m}$ and consists of the sum of methane flow in the minutes m that make up the time period t .

BASELINE EMISSIONS

Baseline emissions are given by the following equation:

$$BE_y = BE_{MR,y} + BE_{Use,y} \quad (20)$$

Where:

BE_y	=	Baseline emissions in year y (tCO ₂ e)
$BE_{MR,y}$	=	Baseline emissions from release of methane into the atmosphere in year y that is avoided by the project activity (tCO ₂ e)
$BE_{Use,y}$	=	Baseline emissions from the production of power, heat or supply to gas grid replaced by the project activity in year y (tCO ₂ e)

⁸ The equation 12 from the "Tool to determine mass flow" (Version 02.0.0) has been updated to reflect the time interval m as required by the methodological tool "Project emissions from flaring" (Version 02.0.0).

⁹ The equation 13 from the "Tool to determine mass flow" (Version 02.0.0) has been updated to reflect the time interval m as required by the methodological tool "Project emissions from flaring" (Version 02.0.0).

¹⁰ The equation 3 from the "Tool to determine mass flow" (Version 02.0.0) has been updated to reflect the time interval m as required by the methodological tool "Project emissions from flaring" (Version 02.0.0).

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Methane released into the atmosphere

Depending on the nature of the project activity, CMM can be removed at different stages – (1) from underground pre-mining CMM drainage; (2) during the mining process using surface or underground post mining CMM drainage techniques; (3) during the mining process using ventilation air or (4) after the mining process by drainage from sealed goafs but before the mine is closed.

This methane would have been emitted to the atmosphere in the baseline scenario.

$$BE_{MR,y} = GWP_{CH_4} \times [\sum_i CMM_{PJI,y} + \sum_i PMM_{PJI,y}] \quad (21)$$

Where:

- $BE_{MR,y}$ = Baseline emissions from release of methane into the atmosphere in year y that is avoided by the project activity (tCO₂e)
- i = Use of methane (flaring, power generation, heat generation, supply to gas grid to various combustion end uses)
- $CMM_{PJI,y}$ = Pre-mining CMM captured, sent to and destroyed by use i in the project activity in year y (expressed in tCH₄)
- $PMM_{PJI,y}$ = Post-mining CMM captured, sent to and destroyed by use i in the project activity in year y (tCH₄)
- GWP_{CH_4} = Global warming potential of methane (21 tCO₂e/tCH₄)

The methane that is still vented in the project scenario (PE_{Mvent}) is not accounted for in the project emissions or in the baseline emissions, since it is vented in both scenarios.

Pre-mining and post-mining CMM extraction

Both CMM_{PJ,y}, PMM_{PJ,y} are directly monitored as part of the project activity. CMM_{PJ,y}, PMM_{PJ,y} shall be measured separately as the extraction system will not always be located in the underground mine.

Emissions from power/heat generation replaced by project

$$BE_{Use,y} = ED_{CPMM,y} \quad (22)$$

Where:

- $BE_{Use,y}$ = Total baseline emissions from the production of power or heat replaced by the project activity in year y (tCO₂)
- $ED_{CPMM,y}$ = Emissions from displacement of end uses by use of coal mine methane, and post-mining methane (tCO₂)

The total methane captured during year y can be described as follows:

$$CMM_{tot,y} = CMM_{PJ,y} + PMM_{PJ,y} \quad (23)$$

Where:

- $CMM_{tot,y}$ = Total CMM captured and utilised by the project activity (tCH₄)
- $CMM_{PJ,y}$ = Pre-mining CMM captured by the project activity in year y (tCH₄)
- $PMM_{PJ,y}$ = Post-mining CMM captured by the project activity in year y (tCH₄)

The total potential emissions reductions from displacement of power/heat generation are given by the following equation:

$$PBE_{Use,y} = GEN_y * EF_{ELEC} + HEAT_y * EF_{HEAT} \quad (24)$$

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Where:

$PBE_{Use,y}$	=	Potential total baseline emissions from the production of power or heat replaced by the project activity in year y (tCO ₂ e)
GEN_y	=	Electricity generated by project activity in year y (MWh)
EF_{ELEC}	=	Emissions factor of electricity (grid, captive or a combination) replaced by project (tCO ₂ /MWh)
$HEAT_y$	=	Heat generation by project activity in year y (GJ)
EF_{HEAT}	=	Emissions factor for heat production replaced by project activity (tCO ₂ /GJ)

To identify the CMM that should receive credits in the year during which the gas is captured and used, the following formulae are used, assuming that CMM is used for various end uses in the same proportions as the overall supply for that year of different gas sources:

$$ED_{CPMM,y} = \frac{CMM_{PJ,y} + PMM_{PJ,y}}{CMM_{tot,y}} \times PBE_{Use,y} \quad (25)$$

Where:

$ED_{CPMM,y}$	=	Emissions from displacement of end uses by use of coal mine methane and post-mining methane (tCO ₂ e)
$CMM_{PJ,y}$	=	Pre-mining CMM captured by the project activity in year y (tCH ₄)
$PMM_{PJ,y}$	=	Post-mining CMM captured by the project activity in year y (tCH ₄)
$CMM_{tot,y}$	=	Total CMM captured and utilised by the project activity in year y (tCH ₄)
$PBE_{Use,y}$	=	Potential total baseline emissions from the production of power or heat replaced by the project activity in year y (tCO ₂ e)

Captive power emissions factor

If the baseline scenario includes captive power generation (either existing or new) that would be replaced by the project activity, the Emissions Factor for displaced electricity is calculated as follows:

$$EF_{captive,y} = \frac{EF_{CO2,j}}{Eff_{captive}} \cdot \frac{44}{12} \cdot \frac{3.6TJ}{1000MWH} \quad (26)^{11}$$

Where:

$EF_{captive,y}$	=	Emissions factor for captive power generation (tCO ₂ /MWh)
$EF_{CO2,i}$	=	CO ₂ emissions factor of fuel used in captive power generation (tC/TJ)
$Eff_{captive}$	=	Efficiency of the captive power generation (%)
$44/12$	=	Carbon to Carbon Dioxide conversion factor
$3.6/1000$	=	TJ to MWh conversion factor

Combination of grid power and captive power emissions factor

If the baseline scenario selection determines that both captive and grid power would be used, then the emissions factor for the baseline is the weighted average of the emissions factor for grid power and captive power.

$$EF_{ELEC,y} = s_{grid} \cdot EF_{grid,y} + s_{captive} \cdot EF_{captive,y} \quad (27)$$

Where:

$EF_{ELEC,y}$	=	CO ₂ baseline emission factor for the electricity displaced due to the project activity during the year y (tCO ₂ /MWh).
$EF_{grid,y}$	=	CO ₂ baseline emission factor for the grid electricity displaced due to the project activity

¹¹ Equation 30 of the Approved Methodology ACM0008 (Version 07) was updated to use index j instead of i .

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	during the year y (tCO ₂ /MWh).
$EF_{captive,y}$	= CO ₂ baseline emission factor for the captive electricity displaced due to the project activity during the year y (tCO ₂ /MWh)
S_{grid}	= Share of facility electricity demand supplied by grid imports over the last 3 years (%)
$S_{captive}$	= Share of facility electricity demand supplied by captive power over the last 3 years (%)

Heat generation emissions factor

If the baseline scenario includes heat generation (either existing or new) that is replaced by the project activity, the Emissions Factor for displaced heat generation is calculated as follows:

$$EF_{heat,y} = \frac{EF_{CO_2,k}}{Eff_{heat}} \cdot \frac{44}{12} \cdot \frac{1TJ}{1000GJ} \quad (28)^{12}$$

Where:

$EF_{heat,y}$	= Emissions factor for heat generation (tCO ₂ /GJ)
$EF_{CO_2,k}$	= CO ₂ emissions factor of fuel used in heat generation (tC/TJ)
Eff_{heat}	= Boiler efficiency of the heat generation (%)
$44/12$	= Carbon to Carbon Dioxide conversion factor
$1/1000$	= TJ to GJ conversion factor

LEAKAGE

The formula for leakage is given as follows:

$$LE_y = LE_{o,y} \quad (29)$$

Where:

LE_y	= Leakage emissions in year y (tCO ₂ e)
$LE_{o,y}$	= Leakage emissions due to other uncertainties in year y (tCO ₂ e)

Impact of CDM project activity on coal production

The additional CMM extraction from the CDM project activity could in some cases release certain constraints that currently limit mining operations. In cases of gassy mines where production is constrained by gas drainage capacity (i.e. too high concentration requires temporary interruption of mining operation), CER value can cover both the cost of CMM destruction and increase of extraction capacity to release the concentration constraint, then allowing increased coal production. This will only be the case, however, when no CMM extraction is present in the baseline scenario (i.e. the baseline scenario is ventilation of mine gas only).

As the project activity is CMM extraction and the baseline scenario is ventilation only as outlined in Section E.4, project participants should apply a standard discount factor of 10% for all CPAs.

$$LE_{o,y} = BE_y * 10\% \quad (30)$$

Calculation of Grid Emission Factor ($EF_{grid,y}$)

CO₂ emission factor of the grid ($EF_{grid,y}$) was calculated according to Tool to calculate the emission factor for an electricity system, version 02.2.1 /B03/, and by using data obtained from Central Bureau of Statistics, DPR Korea. The combined margin emission factor (CM) of the electricity system consists of the combination of operating margin (OM) and build margin (BM).

¹² Equation 32 of the Approved Methodology ACM0008 (Version 07) was updated to use index k instead of j.

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The table below describes how the validation team cross-checked the calculation of emission the factor of the grid ($EF_{CO_2, grid, y}$):

Step	Description	Determination and Assessment	Justified
1	Identify the relevant electricity systems.	The project electricity system includes all power plants attached to the eastern region grid of DPR Korea. The electricity system in DPR Korea consists of multiple grids i.e. Eastern Power Grid, Western Power Grid. The DNA of DPR Korea has confirmed the delineation of the project electricity system and connected electricity systems /22/.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	Choose whether to include off-grid power plants in the project electricity system (optional).	Option 1 (Only grid connected power plants are included in the calculation) is selected.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Select a method to determine the operating margin (OM).	<p>Average OM (out of the four methods provided in the tool /B03-1/) is applied for the calculation of the operating margin.</p> <p>The average OM emission factor ($EF_{grid, OM-ave, y}$) has been calculated as the average emission rate of all power plants serving the grid, using the methodological guidance as described for the simple OM, but also including the low-cost/must-run power plants in all equations. /18/</p> <p>The validation team confirms that data applied is consistent with the data provided by Central Bureau of Statistics, DPR Korea /23/.. Thus the selection of OM calculation method is justified.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4	Calculate the operating margin emission factor ($EF_{grid, OM, y}$) according to the selected method.	<p>In the PoA DD, Option A, is selected to calculate the operating margin emission factor.</p> <p>The validation team confirms that data of quantity of electricity generated, types of fuel used and consumption of each fuel type are the latest 3 years data, most recent data available at the time of submission of the CDM-DDs to the DOE for validation and they are sourced from available data provided by Central Bureau of Statistics, DPR Korea /23/. PP has considered /03/, the Option B for calculation of OM as on the net electricity generation and a CO_2 emission factor of each power unit is not available. Only data on total fuel consumption and electricity generation of the system are provided by Central Bureau of Statistics, DPR Korea /23/ for the calculation of simple OM, which is in line with the requirement of tool /B03-1/.</p> <p>Therefore, the calculated average OM = 0.883 tCO₂/MWh is correct and inline</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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		with the requirements of tool.	
5	Calculate the build margin (BM) emission factor.	<p>The data requirements for calculation of BM as required under step 5 of the tool /B03-1/ is not available and could not be acquired from the relevant authorities in DPR Korea.</p> <p>According to the “<i>Tool to calculate the emission factor for an electricity system</i>” (Version 02.2.1) /B03-1/, Option b i.e., Simplified CM is chosen for. As DPR Korea has less than 10 registered CDM projects at the starting date of validation and moreover data requirements for calculation of BM as required under step 5 of the tool /B03-1/ is not available and could not be acquired from the relevant authorities in DPR Korea.</p> <p>Therefore, BM = 0 tCO₂/MWh is justified.</p> <p>The validation team confirms that the BM calculation is correctly applied complying with the Tool.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6	Calculate the combined margin (CM) emissions factor.	<p>According to the “<i>Tool to calculate the emission factor for an electricity system</i>” (Version 02.2.1) /B03-1/, Option b i.e., Simplified CM is chosen for. As DPR Korea has less than 10 registered CDM projects at the starting date of validation and moreover data requirements for calculation of BM as required under step 5 of the tool /B03-1/ is not available and could not be acquired from the relevant authorities in DPR Korea. The choice of using Simple CM is justified.</p> <p>The default weights applicable for Simple CM calculation are $W_{OM} = 1$ and $W_{BM} = 0$. The CM has been calculated for the first crediting period and fixed ex-ante.</p> <p>The weighting of OM emission factor and BM emission factor for calculate CM emission factor is categorized by Simple CM calculation.</p> <p>The calculation of CM = 0.883 tCO₂/MWh is justified.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

As per the PoA-DD /03/, the CM is fixed or the first crediting period of the PoA for all CPAs to be included during the first crediting period of PoA.

3.10 Monitoring Plan of a typical CPA

The monitoring plan presented in the PoA-DD /03/ complies with the requirements of the applicable methodology. The validation team has checked all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

CAR 12, 13 were raised with respect to parameters in the monitoring plan and were resolved successfully upon evaluation of PP response.

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The validation team through document review and interviews with the relevant personnel has reviewed the procedures. The information provided has allowed the validation team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the CME of the PoA and the CPA implementer.

The management system document of the CME provide sufficient information which forms the basis of confirmation by the validation team on the issues related but not limited to the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the programme. Therefore, the CME and/or CPA implementer(s) will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

3.10.1 Parameters determined ex-ante

Following are the parameters as per the PoA-DD, fixed either ex-ante at the PoA level or shall be fixed ex-ante at the time of inclusion of the CPA:

- Carbon emissions factor of electricity used by coal mine (CEF_{ELEC})
- Carbon emissions factor of heat used by coal mine (CEF_{HEAT})
- Carbon emissions factor of fossil fuel used by coal mine ($CEF_{FossilFuel}$)
- Efficiency of methane destruction in power plant (Eff_{ELEC})
- Efficiency of methane destruction/oxidation in heat plant (Eff_{HEAT})
- Efficiency of methane destruction in use i (Eff_i)
- Global warming potential of methane (GWP_{CH_4})
- Carbon emission factor for combusted methane (CEF_{CH_4})
- Molecular mass of methane (MM_{CH_4})
- Molecular mass of Nitrogen (MM_{N_2})
- Universal ideal gas constant (R_u)
- CO₂ emission factor of fossil fuel type i in year y ($EF_{CO_2,i,y}$)
- Build margin CO₂ emission factor in year y ($EF_{grid, BM,y}$)
- Net calorific value (energy content) of fossil fuel type i in year y ($NCV_{i,y}$)
- Amount of fossil fuel type i consumed in the project electricity system in year y ($FC_{i,y}$)
- Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must-run power plants / units, in year y (EG_y)
- CO₂ emissions factor of fuel used in captive power generation ($EF_{CO_2,j}$)
- Share of facility electricity demand supplied by grid imports over the last 3 years (s_{grid})
- Share of facility electricity demand supplied by captive power over the last 3 years ($s_{captive}$)
- CO₂ emissions factor of fuel used in heat generation ($EF_{CO_2,k}$)

3.10.2 Parameters determined ex-post

Following are the parameters as per the PoA-DD, shall be monitored ex-post by the CPAs of the PoA:

- Additional electricity consumption for capture and use or destruction of methane ($CONS_{ELEC,PJ}$)
- Additional heat consumption for capture and use or destruction of methane ($CONS_{HEAT,PJ}$)
- Additional fossil fuel consumption for capture and use or destruction of methane ($CONS_{FossilFuel,PJ}$)
- Quantity of fuel type i combusted in process j during the year y ($FC_{i,j,y}$)
- Weighted average mass fraction of carbon in fuel type i in year y ($w_{c,i,y}$)
- Weighted average density of fuel type i in year y ($\rho_{c,i,y}$)
- Methane measured sent to flare (MM_{FL})
- Methane measured sent to power plant (MM_{ELEC})
- Methane measured sent to heat plant (MM_{HEAT})
- Carbon emission factor for combusted non-methane hydrocarbons (CEF_{NHMC})
- Concentration (in mass) of methane in extracted gas (%), measured on wet basis (PC_{CH_4})
- NMHC concentration (in mass) in extracted gas (%) (PC_{NHMC})
- Methane measured sent to use i (MM_i)

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- Emissions of methane vented to atmosphere during the project activity (PE_{Mvent})
- Mass flow of methane in the exhaust gas of the flare on a dry basis at reference conditions in the time period t ($F_{CH_4,EG,t}$)
- Mass flow of the residual gas in minute m on a dry basis ($M_{m,db}$)
- Temperature of the residual gas in minute m (T_m)
- Pressure of the residual gas in minute m (P_m)
- Volumetric fraction of methane in the residual gas in minute m on a dry basis ($V_{CH_4,m,db}$)
- Volumetric fraction of nitrogen in the residual gas in minute m on a dry basis ($V_{N_2,m,db}$)
- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)
- Flame detection of flare in the minute m ($Flame_m$)
- Maintenance events completed in year y ($Maintenance_y$)
- Pre-mining CMM captured, sent to and destroyed by use i in the project activity in year y ($CMM_{Pji,y}$)
- Post-mining CMM captured, sent to and destroyed by use i in the project activity in year y ($PMM_{Pji,y}$)
- Electricity generated by project activity in year y (GEN_y)
- Heat generation by project activity in year y ($HEAT_y$)
- Energy Efficiency of the captive power generation ($Eff_{captive}$)
- Energy efficiency of heat plant (Eff_{heat})

3.10.3 Monitoring and reporting system and quality assurance

The operational and management structure of the CME in context of the PoA has been clearly described in the PoA-DD /03/ and checked from the review of CME Management System document /07/ provided by the CME. The responsibilities and institutional arrangements for data collection and archiving has been clearly provided in the same document /07/.

The data, as much as possible, will be collected through electronic transmission of data from the monitoring equipment to the offices of the person appointed by the CPA owner responsible for monitoring. Only qualified and trained personnel will collect data, which cannot be collected through electronic means. All data continuously measured will be electronically archived. At the same time, data monitored will be checked manually every day and recorded in hard copy measurement tables.

3.11 Environmental Impacts

It has been indicated in the PoA DD, that the environmental analysis shall be done at the individual CPA level. This is deemed appropriate in the context of the CPAs of the PoA.

CAR 9 and CL were raised with respect to EIA and were resolved successfully upon evaluation of PP response.

3.12 Local stakeholders consultation

It has been indicated in the PoA DD, that the local stakeholder consultation shall be done at the individual CPA level. This is deemed appropriate in the context of the CPAs of the PoA.

CAR 10 was raised with respect to local stakeholder consultation process and was resolved successfully upon evaluation of PP response.

4 Comments By Parties, Stakeholders And NGOs

The PoA-DD /01/, g-CPA-DD/02/ and real-case CPA-DD, all dated 10/10/2011 were made publicly available on UNFCCC's website (<http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/XMRDKSVTYTXGMAVLC73ZNR4V43AVPV/view.html>) and parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 22/10/2011 to 20/11/2011, where no comment was received.

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APPENDIX A

VALIDATION PROTOCOL FOR PROGRAMME OF ACTIVITIES COAL MINE METHANE UTILISATION AND DESTRUCTION PROGRAMME IN DPR KOREA REPORT No. CCL0052/CMMUDP/15092011

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Table 1: Conformity of CDM Programme of Activities

CHECKLIST TOPIC / QUESTION	REF.	COMMENTS	GSP	FINAL
A. GENERAL DESCRIPTION OF CDM PROGRAMME OF ACTIVITIES (POA)				
A.1. Title of the programme of activities (PoA)				
A.1.1. Does the used PoA title clearly enable to identify the unique CDM programme of activities?	/01/	<p>Yes, the title “Coal Mine Methane Utilisation and Destruction Programme in DPR Korea” clearly identifies the unique CDM programme of activities. The same was verified from the letter of approval (approval no.: 2011/11/01) issued to the programme of activities by National Coordinating Committee for Environment, Democratic People’s republic of Korea.</p> <p>However, letter of approval from the Annex I country has not been provided. Hence CAR is raised.</p> <p>CAR 1: Letter of Approval from the DNA of Annex I country i.e., United Kingdom of Great Britain and Northern Ireland has not been submitted to DoE for validation.</p>	CAR-1	OK
A.1.2. Are there any indications concerning the revision number and the date of the revision?	/01/	<p>Yes, the GSP-PoA-DD has indicated version number 01, dated 10 October 2011. However, the date format as presented under section A.1 and section B.1 are not in standard format. Hence CAR is raised.</p> <p>CAR 2: In section A.1 and B.1 of the webhosted CDM-PoA-DD, the date format are not a standard format i.e. DD/MM/YY.</p>	CAR-2	OK
A.1.3. Is this consistent with the time line of the programme’s history?	/01/	Yes, this is consistent with the time line of the programme’s history.	OK	
A.2. Description of the programme of activities				
A.2.1. Is the description delivering a transparent overview of the general operating and implementing framework of the PoA?	/01/	Yes, it has been clearly stated that Carbon Development and Trading Ltd., is the coordinating/managing entity (CME) of the PoA and it is required to finance the investment of the PoA and future CPAs. The project will be implemented in Democratic People’s Republic of Korea (DPR Korea). The description considers the project activity as the utilisation of methane for electricity and/or heat generation and/or flaring of methane. However it is not clear from the description whether	CL-1	OK

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		the project involves only existing mines or both existing and new mines. Hence CL is raised. CL 1: The PP is required to clearly state and mention whether the project involves only existing mines, new mines or both.		
A.2.2. Is the policy/measure or stated goal of the PoA clearly and unambiguously presented?	/01/	Yes, it has been clearly stated that the PoA objective is development and implementation of Coal Mine Methane Utilisation and Destruction Programme in DPR Korea which will result in fulfilment of the following stated goals: <ul style="list-style-type: none"> • Energy generation • Abatement of GHG emissions • Improvement in working conditions in mines • Creation of employment opportunities. • Introduction of new technology in the host country. 	OK	OK
A.2.3. Is there a valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity?	/01/	In Section A.2 of the PoA-DD, it has been clarified that the PoA is a voluntary action undertaken by Carbon Development and Trading Ltd (CME).	OK	OK
A.2.4. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	/01/	No, the description of the technology to be applied does not provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance. Hence CAR is raised. CAR 3: Description of the technology measure to be applied under the proposed PoA is not sufficient and transparent under section A.4.2.1 of the PoA-DD. Further, the explanation that how the PoA will reduce the green house emission and also description how the project activity is environmentally safe is not transparently described.	CAR-3	OK
A.2.5. Is the brief explanation how the programme will reduce greenhouse gas emission transparent and suitable?	/01/	Depends on the closure of CAR 3 in section A.2.4 above.	Refer CAR-3	OK
A.3. Coordinating/managing entity and participants of CDM-PoA				
A.3.1. Is the form required for the indication of project participants correctly applied?	/01/	Yes, the form providing information regarding project participants in section A.3 has been correctly applied.	OK	OK

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A.3.2. Is the participation of the listed entities or Parties in the PoA confirmed by each one of them?	/01/	Depends on the closure of CAR 1 in section A.1.1 above.	Refer CAR 4	OK
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the POA-DD (in particular annex 1)?	/01/	Yes, information provided on participants / Parties is consistent with details provided in Annex1 of the PoA-DD.	OK	OK
A.3.4. Is it evident that the coordinating or managing entity of the PoA is the entity which communicates with the Executive Board (EB)?	/01/	Yes, Carbon Development and Trading Ltd., which is the coordinating or managing entity (CME) of the PoA is the entity responsible for communication with Executive Board. The same was verified through duly filled and signed Modalities of Communication Form (F-CDM-MoC) dated 29/09/2011.	OK	OK
A.4. Technical description of the CDM programme of activities				
A.4.1. Location of the programme of activities				
A.4.1.1. Does the information provided on the location of the programme allow for a clear definition identification of the boundary for the PoA in terms of a geographical area, within which all CPAs included in this PoA will be implemented?	/01/	The CPAs under the PoA will be implemented throughout the host country i.e., Democratic People's Republic of Korea.	OK	OK
A.4.1.2. Is the consideration of all applicable national and/or sectoral policies and regulations of each host country within the boundary evident and substantiated?	/01/	The consideration of all applicable national and/or sectoral policies and regulations of each host country within the boundary is not evident and not clearly described. Hence CAR is raised. CAR 4: The section A.4.1.2 of PoA-DD does not provide the description on policies or regulations on Coal Mine Methane (CMM) and its usage including description on all applicable national and/or sectoral policies and regulations, which are relevant to the PoA with respect to the CDM-PoA-DD, Version 01.	Refer CAR 4	OK
A.4.1.3. Is/are the Host Party (ies) stated?	/01/	Yes, Democratic People's Republic of Korea is identified as the host country	OK	OK
A.4.2. Description of a typical CDM programme activity (CPA)				
A.4.2.1. Is it unambiguously stated which technology or measures are to be employed by the CPA?	/01/	Depends on the closure of CAR 3 in section A.2.4 above.	Refer CAR 3	OK

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A.4.2.2. Is the type and category of project activities correctly identified and indicated?	/01/	No, the type and category of project activities are neither correctly identified nor indicated. CAR 5: In Section A.4.2.1 of the webhosted PoA-DD The applicable type and category of the proposed PoA is not mentioned.	CAR-5	OK
A.4.2.3. Does the technical design of the project activity reflect current good practices?	/01/	Depends on the closure of CAR 3 in section A.2.4 above.	Refer CAR-3	OK
A.4.2.4. Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country (ies)?	/01/	Yes, the implementation of the project activity involves technology transfer to the host countries as mentioned in the section A.2 of the PoA-DD. However it has not been clearly stated how the technology transfer would take place and what technology needs to be transferred. Hence CL is raised. CL 2: The PP is requested to clarify in section A.4.1.2 of the PoA-DD, how the technology transfer would take place and what technology needs to be transferred from Annex-I-countries to the host country?	CL-2	OK
A.4.2.5. Is the technology implemented by the project activity environmentally safe?	/01/	Depends on the closure of CAR 3 in section A.2.4 above.	Refer CAR-3	OK
A.4.2.6. Is the information provided in compliance with actual situation or planning?	/01/	Depends on the closure of CAR 3 in section A.2.4 above.	Refer CAR-3	OK
A.4.2.7. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	/01/	Depends on the closure of CAR 3 in section A.2.4 above.	Refer CAR-3	OK
A.4.2.8. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	/01/	There is no information provided on training and maintenance efforts required to carry out the project as per schedule. Hence CL is raised. CL 3: The PP is requested to clearly specify in the PoA-DD about what training and maintenance efforts required to carry out the project as per schedule during the project period.	CL-3	OK
A.4.2.9. Is information available on the demand and requirements for training and maintenance?		Depends on the closure of CL 3 in section A.4.2.8 above.	Refer CL-3	OK

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A.4.2.10. Are there clear and unambiguous eligibility criteria for the inclusion of a CDM-CPA into the PoA?	/01/	<p>The PoA-DD provides a list of eligibility criteria for the inclusion of CPA into the PoA but these are not clear, unambiguous and in line with the provisions of the latest guidelines. Hence CAR is raised.</p> <p>CAR 6: In section A.4.2.2, the eligibility criteria for inclusion of a CPA in the PoA is not in line with "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities (version 01.0)" EB 65 Annex 3.</p>	CAR-6	OK
A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a CDM-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality of the PoA as a whole)				
A.4.3.1. Is it evident and clearly documented that the proposed PoA is a voluntary coordinated action?	/01/	<p>In section A.2 the PP has stated that the PoA is a voluntary action undertaken by Carbon Development and Trading Ltd.</p> <p>This statement has been supported with letters from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.</p>	OK	OK
A.4.3.2. Is it evident and substantiated that this voluntary coordinated action would not be implemented in the absence of the PoA?	/01/	<p>No, in the section A.4.3 it has not been substantiated clearly that this voluntary coordinated action would not be implemented in the absence of the PoA.</p> <p>A letter from the Korea Coal Foreign Cooperation Company (KCFCC), which operates Kogonwon Coal Mines (CPA01) regarding lack of funds for implementation of the CMM project activity. The same cannot be considered as sufficient evidence as KCFCC is an interested party in the project activity. Hence a CL is raised.</p> <p>CL 4: From the descriptions provided in section A.4.3 and E.5 (E.5.1 & E.5.2) of the PoA-DD the following issues are not clearly and distinctly defined:</p> <ul style="list-style-type: none"> Whether the additionality would be proven at PoA level or CPA level? Whether barrier analysis or Investment analysis or both will be used for demonstration of additionality of CPAs to be included in PoA? 	CL-4	OK

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		<ul style="list-style-type: none"> Which tool or guidelines has been used to demonstrate additionality? <p>Moreover a qualitative summary of the approach being used to assess the additionality of PoA is not provided in section A.4.3 of the PoA-DD.</p>		
A.4.3.3. Is it evident and substantiated that in case the PoA implements a mandatory policy or regulation this would not be enforced otherwise?	/01/	<p>In section A.4.3 of the PoA-DD, PP has stated “there are no laws in the DPR Korea requiring the owners of coal mines to utilise or capture CMM.”</p> <p>This statement has been supported with letters from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.</p>	OK	OK
A.4.3.4. Is it evident and substantiated that in case the PoA implements a mandatory policy or regulation that is enforced the PoA will lead to a greater level of enforcement?	/01/	<p>In section A.4.3 of the PoA-DD, PP has stated “there are no laws in the DPR Korea requiring the owners of coal mines to utilise or capture CMM.”</p> <p>This statement has been supported with letter from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.</p>	OK	OK
A.4.4. Operational, management and monitoring plan for the programme of activities (PoA)				
A.4.4.1. Is there a clear and transparent description of the operational and management arrangements established by the coordinating/managing entity?	/01/	<p>In section A.4.4.1 of the PoA-DD, the operation and management plan to be established by CME has been stated. But the same is not in line with the requirements laid down under Annex 3 of EB 65 § 17. Hence a CAR is raised.</p> <p>CAR 7: Section A.4.4.1 of the webhosted PoA-DD is not in line with the requirements laid down under Annex 3 of EB 65 § 17. This section lacks in the following:</p> <ul style="list-style-type: none"> A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies; Records of arrangements for training and capacity development for personnel; Procedures for technical review of inclusion of CPAs; 	CAR 7	OK

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		<ul style="list-style-type: none"> Records and documentation control process for each CPA under the PoA; Measures for continuous improvements of the PoA management system; 		
A.4.4.2. Is there a record keeping system for each CPA under the PoA?	/01/	<p>Yes, a provision for record keeping system for each CPA under the PoA has been provided in section A.4.4.1 of the PoA-DD. The PP has proposed a record system for CPAs; describing a database that lists all CPAs in order to identify CPAs considering specific characteristics in each case. But no evidence has been provided to substantiate the same. Hence CL is raised.</p> <p>CL 5: The PP needs to provide evidences to the DoE to validate that a record keeping system for each CPA under the PoA, exists and is holistic and complete.</p>	CL-5	OK
A.4.4.3. Is there a system or procedure to avoid double accounting, i.e. to avoid that an included CPA under this PoA already is a registered CDM project or CPA in another PoA?	/01/	In section A.4.4.1 of the PoA-DD it has been stated that each CPA owner will confirm in writing at the time of inclusion that the CPA does not belong to any other PoA or other registered CDM project activity to ensure avoidance of double counting.	OK	OK
A.4.4.4. Is there a system or procedure to detect whether a CDM-CPA to be included in the PoA is not a de-bundled component of another CPA or CDM project?	/01/	In section A.4.4.1 of the PoA-DD it has been stated that each CPA owner will confirm in writing at the time of inclusion that the CPA does not belong to any other PoA or other registered CDM project activity to ensure avoidance of double counting.	OK	OK
A.4.4.5. Are provisions in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA?	/01/	In section A.4.4.1 of the PoA-DD it has been stated that each CPA owner will confirm in writing at the time of inclusion that the CPA owner is aware and agreed to be included in the PoA.	OK	OK
A.4.4.6. Is there a monitoring plan for the PoA, including a description of the proposed statistically sound sampling methods or procedures to be used by the DOE for the verification (please consider sampling among CPAs and within CPAs)?	/01/	In section A.4.4.2 of the PoA-DD it is stated that monitoring will be carried out at CPA level and each individual CPA will be verified. The CME will act as the focal point for data collection and archiving to ensure accessibility to data and parameters.	OK	OK

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A.4.4.7. In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA, does the monitoring plan provide a transparent system to ensure that no double accounting occurs and that the status of verification can be determined any time for each CPA?	/01/	<p>Yes, the CME opts for a verification method that does not use sampling but verifies each CPA.</p> <p>The CME has ensured that no double accounting of emission reductions occur by including a CPA inclusion criteria which requires every CPA owner to confirm in writing that the CPA does not belong to any other PoA or other registered CDM project activity.</p> <p>It has also been stated that CME will act as the focal point for data collection and archiving to ensure accessibility to data and parameters. CPA owner will provide all the data required for verification of emission reduction to CME who in turn will provide it to DOE.</p>	OK	OK
A.4.5. Public funding of a programme of activities				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	/01/	<p>In the section A.4.5 of PP states, "No public funding is provided for the PoA or any of the CPAs included in the PoA". But no supporting evidence has been provided to validate that such a funding has not been availed and does not result in diversion of ODA. Hence CL is raised.</p> <p>CL 6: Project participants needs to substantiate with evidences that such funding has not been availed and does not result in a diversion of official development assistance, is separate from, and is not counted towards the financial obligations of those parties.</p>	CL-6	OK
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PoA-DD (in particular annex 2)?	/01/	Depends on the closure of CL 6 in section A.4.5.1 above.	Refer CL-6	OK
B. DURATION OF THE PROGRAMME OF ACTIVITIES				
B.1. Starting date of the programme of activities				
B.1.1. Is the programme's starting date clearly defined and reasonable?	/01/	<p>No, the starting date of the PoA has not been provided in the section B.1 of the PoA-DD. Hence CAR is raised.</p> <p>CAR 8: A clear, definite and reasonable starting date for the PoA has not been provided in section B.1 of the PoA-DD.</p>	CAR-8	OK
B.2. Length of the programme of activities (PoA)				
B.2.1. Is the assumed length of the PoA clearly	/01/	Yes, the length of the PoA is taken is 28 years which is in accordance	OK	OK

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defined by the coordinating managing entity and reasonable (max 28 years)?		with the requirements of EB 55 Annex 38.		
C. ENVIRONMENTAL ANALYSIS				
C.1. Definition of the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken:				
C.1.1. Is it defined whether the environmental analysis takes place at PoA or CPA level?	/01/	As per section C.1 of the webhosted PoA-DD, the environmental analysis is done at PoA level.	OK	OK
C.1.2. Is the choice whether the environmental analysis takes place at PoA or CPA level justified?	/01/	<p>In Section C.1 the PP has given a description considering the applicability of environmental laws of DPR Korea seeking to justify environmental analysis at PoA level. Nonetheless, the provided description is neither clear nor precise and does not deliver accurate justification for the level of choice. Hence CAR is raised.</p> <p>CAR 9:</p> <p>PP should justify the choice of level for environmental analysis with reference to applicable national or sectoral guidelines / regulations / legislations.</p>	CAR 9	OK
C.2. Documentation on the analysis of the environmental impacts of the PoA, including transboundary impacts:				
C.2.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	/01/	<p>The established mines do not require any Environment Impact Assessment (EIA) to be conducted in DPR Korea for the project activity as evident from the letter (13/10/2011) from the Department of Environment Protection of the Ministry of Land and Environment Protection. But the letter doesn't state whether an EIA is required or not for new mines implementing the project activity. Hence a CL is raised.</p> <p>CL 7:</p> <p>The PP is requested to clarify in line with the host country rules and regulations whether new mines implementing the project activity require an EIA or not.</p> <p>Depends on the closure of CL 1 in section A.2.1 above.</p>	CL 7 Refer CL 1	OK
C.2.2. Has the analysis of the environmental impacts of the project activity been sufficiently described?	/01/	<p>Depends on the closure of CL 7 in section C.2.1 above.</p> <p>Depends on the closure of CL 1 in section A.2.1 above.</p>	Refer CL 7 & CL 1	OK
C.2.3. Will the project create any adverse	/01/	Depends on the closure of CL 7 in section C.2.1 above.	Refer	OK

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environmental effects?		Depends on the closure of CL 1 in section A.2.1 above.	CL7 & CL1	
C.2.4. Were trans-boundary environmental impacts identified in the analysis?	/01/	Depends on the closure of CL 7 in section C.2.1 above. Depends on the closure of CL 1 in section A.2.1 above.	Refer CL7 & CL1	OK
C.3. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA of the PoA:				
C.3.1. Have the identified environmental impacts been addressed in the project design sufficiently?	/01/	Depends on the closure of CL 7 in section C.2.1 above. Depends on the closure of CL 1 in section A.2.1 above.	Refer CL7 & CL1	OK
C.3.2. Does the project comply with environmental legislation in the host country?	/01/	Depends on the closure of CL 7 in section C.2.1 above. Depends on the closure of CL 1 in section A.2.1 above.	Refer CL7 & CL1	OK
C.3.3. Is, per host country laws/regulations, an environmental impact assessment necessary for a typical CPA?	/01/	Depends on the closure of CL 7 in section C.2.1 above. Depends on the closure of CL 1 in section A.2.1 above.	Refer CL7 & CL1	OK
D. STAKEHOLDERS' COMMENTS				
D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:				
D.1.1. Is there a clear statement whether the stakeholder comments will be invited at PoA or CPA level?	/01/	Yes, stakeholder comments will be invited at CPA level.	OK	OK
D.1.2. Is the choice justified in a clear and reasonable manner?	/01/	No reasonable justification has been provided in section D.1 of the PoA-DD for choosing to carry out stakeholder consultation at CPA level. Hence CAR is raised. CAR 10: PP is required to provide the justification of his choice of conducting stakeholder consultation meeting at CPA level	CAR 10	OK
D.1.3. If the stakeholder comments will be invited at PoA level, is there sufficient information provided, on how comments by local stakeholders were invited?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK

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D.1.4. If the stakeholder comments will be invited at PoA level, is there a summary of the contents?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.1.5. If the stakeholder comments will be invited at PoA level, is there sufficient information provided, on how due account was taken of any comments received?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.2. Brief description how comments by local stakeholders have been invited and compiled				
D.2.1. Have relevant stakeholders been consulted?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.2.2. Have appropriate media been used to invite comments by local stakeholders?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.2.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.2.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.3. Summary of the comments received				
D.3.1. Is a summary of the received stakeholder comments provided?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
D.4. Report on how due account was taken of any comments received				
D.4.1. Has due account been taken of any stakeholder comments received?	/01/	Stakeholders consultation process will be carried out at CPA level, therefore this checklist question is not applicable.	OK	OK
E. APPLICATION OF A BASELINE AND MONITORING METHODOLOGY TO A TYPICAL CPA				
E.1. Title and reference of the approved baseline and monitoring methodology applied to CPA included in the PoA				
E.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	/01/	Yes, the proposed PoA under section E.1 is correctly provided with approved methodology ACM0008 "Consolidated methodology for coal bed methane, coal mine methane and ventilation air methane capture and use for power (electrical or motive) and heat and/or destruction through flaring or flameless oxidation" Version 7.0	OK	OK

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E.1.1.2. Is the applied version the most recent one and / or is this version still applicable?	/01/	The most recent version for methodology ACM0008 is Version 07. The same has been applied in the PoA-DD and is still applicable. The same was verified from the website of United Nations Framework Convention on Climate Change (UNFCCC) i.e., http://cdm.unfccc.int/methodologies/DB/OA37XAW7EI9WHJVZ97RGH2EZ5S9E93	OK	OK
E.1.1.3. Is the applied methodology approved by the board, for use in PoA?	/01/	Yes, the CDM Executive Board has approved the applied methodology for use in PoA.	OK	OK
E.2. Justification of the choice of the methodology and why it is applicable to a CPA				
E.2.1.1. Is the applied methodology considered the most appropriate one?	/01/	Yes, the applied methodology ACM0008 is the most appropriate for coal mine methane capture and use for power and heat/or destruction through flaring.	OK	OK
E.2.1.2. Does the methodology account for leakage in the context of a CPA?	/01/	According to ACM0008, leakage can be ignored if the project activity prevents CMM from being used to meet baseline thermal energy demand. The baseline of PoA is the venting of all CMM into the atmosphere as there is no CMM capture system installed at coal mines in DPR Korea. Therefore, there is no leakage resulting from displacement of baseline thermal energy use. Moreover PP has considered leakage because of impact of CDM programme of activity on coal production.	OK	OK
E.3. Description of the sources and gases included in the CPA boundary				
E.3.1.1. Does the CPA boundary include the physical and geographical location where the programme activities take place?	/01/	Yes, it is indicated at the PoA, the physical/geographical boundary includes all coal mines in the territory of DPR Korea	OK	OK
E.3.1.2. Are all sources and gases within the boundary considered in a clear manner?	/01/	As per the methodology ACM0008 (Version 7.0), all the sources and gases within the project boundary have been considered in a clear and transparent manner in section E.3 of the PoA-DD. But the justification provided for inclusion of CO ₂ emissions resulting from captive usage for power and/or heat, and vehicle usage under baseline emissions is ambiguous. Hence a CL is raised. CL 8: PP is required to justify in the baseline emissions, inclusion of CO ₂ emissions resulting from captive usage for power and/or heat, and	CL-8	OK

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		vehicle usage with respect to exclusion of CO ₂ emissions resulting from destruction of methane where it is stated "There is no flaring or use for heat and/or electricity in the baseline".		
E.3.1.3. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PoA-DD?	/01/	Yes, the spatial and technological boundaries as verified on-site comply with the discussion provided in the PoA-DD.	OK	OK
E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:				
E.4.1.1. Have all technically feasible baseline scenario alternatives to the PoA been identified and discussed by the PoA-DD? Why can this list be considered as being complete?	/01/	Yes, the PP in section E.4 has identified and included technically feasible options for capturing and/or using CMM which include: <ul style="list-style-type: none"> • Ventilation air methane; • Pre-mining CMM extraction • Post-mining CMM extraction • Possible combination of A, B, C The list of technically feasible baseline scenario alternatives to the PoA is complete.	OK	<u>OK</u>
E.4.1.2. Does project identify correctly and exclude those options not in line with regulatory or legal requirements?	/01/	In section E.4 of the PoA-DD, all the possible options for extracted CMM have been identified and listed. As the host country does not have any legal or statutory requirements to capture, use and/or destroy the captured CMM. This same was verified through the letter from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.	OK	OK
E.4.1.3. Have applicable regulatory or legal requirements been identified?	/01/	Yes, the applicable regulatory or legal requirements have been identified and discussed. The host country does not have any legal or statutory requirements to capture, use and/or destroy the captured CMM. This same was verified through the letter from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.	OK	OK

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E.4.1.4. Does the PoA-DD identify the most likely baseline scenario in absence of the project activity?	/01/	<p>In section E.4 of the PoA-DD various alternative baseline scenarios have been identified. None of the alternatives are mandated with applicable regulatory or legal requirements, but except from venting the CMM into atmosphere all other require an additional investment or capital expenditure to be incurred.</p> <p>Hence venting of CMM into atmosphere has been identified as the most likely baseline scenario to the project activity.</p> <p>This same was substantiated through the letter from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.</p> <p>As all the alternatives require capital input, except venting of CMM into atmosphere. The same has been chosen as the most likely baseline scenario.</p>	OK	OK
E.4.1.5. Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc?)	/01/	<p>Yes, the identification was supported by official and/or verifiable documents.</p> <p>This same was verified through the letter from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.</p>	OK	OK
E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of a typical CPA, included in a registered PoA (assessment and demonstration of additionality):				
E.5.1. Are the key criteria and data for assessing additionality of a CPA that is to be included into the PoA clearly and unambiguously stated?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2. Key criteria and data for assessing additionality of a CPA				
E.5.2.1. Are the key criteria and data for assessing additionality of a CPA that is to be included into the PoA based on the additionality assessment in section E.5.1 of the PoA-DD?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.2. Is the choice of the criteria justified, based on the analysis in section E.5.1 of the PoA-	01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK

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DD?				
E.5.2.3. Does it become evident how these criteria would be applied to assess the additionality of a typical CPA at the time of inclusion?	01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.4. Is this information incorporated into the specific CDM-CPA-DD ("real case")?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.5. If the starting date of the programme activity is before the date of validation, is evidence available to prove that incentive from the CDM was seriously considered in the decision to proceed with the programme activity?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.6. Is a complete list of barriers developed that prevents the project activity to occur?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.7. Does this list include at least one of the following barriers?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.8. Does the discussion sufficiently take into account relevant national and/or sectoral policies?	01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.9. Is transparent and documented evidence provided on the existence and significance of these barriers?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.5.2.10. Is it appropriately explained how the approval of the project activity will help to overcome the identified barriers?	/01/	Depends on the closure of CL 4 in section A.4.3.2 above	Refer CL 4	OK
E.6. Estimation of Emission reductions of a CPA				
E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical CPA				
E.6.1.1. Is it explained how the procedures provided in the methodology are applied?	/01/	No, it is not explained how the procedures provided in the methodology are applied with respect to the PoA. Hence CAR is raised. CAR 11:	CAR 11	OK

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		In section E.6.1 of the PoA-DD, the explanation of methodological choices, provided in the approved baseline and monitoring methodology applied have not been clearly demonstrated and explained.								
E.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	/01/	<p>No, in Section E.6.2 of the PoA-DD, the options offered by the methodology are not correctly justified and not in line with the applied methodology. Hence CL has been raised.</p> <p>CL 9: In section E.6.2 the PP needs to address the following:</p> <ul style="list-style-type: none">• The PP has presented the formulae for CBM but the same has not been included in the assessment of baseline alternatives and additionality. Justify the same.• PP has not presented the approach and formulae used to calculate the Grid Emission Factor (GEF) or the emission factor for fossil fuel combustion for production of thermal energy for the alternatives chosen as well for the applicability of methodology in such situations. Justify the same.• In formulae (9) of the PoA-DD, to calculate project emissions from un-combusted methane (tCO₂e) has been altered from the original version presented in the Methodology.	CL-9	OK						
Determination of Project Emission (Comment on any line answered “No”)										
E.6.1.3. Component 1: Combustion emissions from additional energy required for CBM/CMM/VAM capture and use	/01/	<table><tr><td>Project emission checklist</td><td>Yes / No /NA</td></tr><tr><td>Component discussed in the PoA-DD?</td><td>YES</td></tr><tr><td>Formulae correctly applied?</td><td>YES</td></tr></table>	Project emission checklist	Yes / No /NA	Component discussed in the PoA-DD?	YES	Formulae correctly applied?	YES	OK	OK
Project emission checklist	Yes / No /NA									
Component discussed in the PoA-DD?	YES									
Formulae correctly applied?	YES									
E.6.1.4. Component 2: Combustion emissions from use of captured methane.	/01/	<table><tr><td>Project emission checklist</td><td>Yes / No /NA</td></tr><tr><td>Component discussed in the PoA-DD?</td><td>YES</td></tr><tr><td>Formulae correctly applied?</td><td>YES</td></tr></table>	Project emission checklist	Yes / No /NA	Component discussed in the PoA-DD?	YES	Formulae correctly applied?	YES	OK	OK
Project emission checklist	Yes / No /NA									
Component discussed in the PoA-DD?	YES									
Formulae correctly applied?	YES									
E.6.1.5. Component 3: Un-combusted methane from project activity.	/01/	<table><tr><td>Project emission checklist</td><td>Yes / No /NA</td></tr><tr><td>Component discussed in the PoA-DD?</td><td>YES</td></tr><tr><td>Formulae correctly applied?</td><td>NO</td></tr></table> <p>Depends on the closure of CL 9 in section E.6.1.2 above</p>	Project emission checklist	Yes / No /NA	Component discussed in the PoA-DD?	YES	Formulae correctly applied?	NO	Refer CL-9	OK
Project emission checklist	Yes / No /NA									
Component discussed in the PoA-DD?	YES									
Formulae correctly applied?	NO									
E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a CPA:										

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E.6.2.1. Are the formulae required for the determination of emission reductions correctly presented, enabling a complete identification of parameters to be used and / or monitored?	/01/	Depends on the closure of CL 9 in section E.6.1.2 above.	Refer CL-9	OK
E.6.2.2. Are the equations, including fixed parametric values, to be used for calculation of emission reductions of a CPA, completely presented?	/01/	Depends on the closure of CL 9 in section E.6.1.2 above.	Refer CL-9	OK
E.6.3. Data and parameters that are to be reported in CDM-CPA-DD form				
E.6.3.1. Is the list of parameters presented in chapter E.6.3 considered to be complete with regard to the requirements of the applied methodology?	/01/	No, the list of parameters presented in chapter E.6.3 are not complete with regard to the requirements of the applied methodology. Hence a CAR is raised. CAR 12: The list of parameters to be presented in E.6.3 of the PoA-DD is not complete and the values for parameters to be fixed ex-ante have not been provided.	CAR-12	OK
E.7. Application of the monitoring methodology and description of the monitoring plan				
E.7.1. Data and parameters to be monitored by each CPA				
E.7.1.1. Is the list of parameters presented in chapter E.7.1 considered to be complete with regard to the requirements of the applied methodology?	/01/	Section E.7.1 of the webhosted PoA-DD has been provided with a complete and required monitoring parameter in accordance with the applied methodology. However this section does not provide with the description of measurement method, monitoring, calibration frequency and QA/QC procedure for the parameters presented there in. Hence CAR has been raised. CAR 13: Section E.7.1 of the webhosted PoA-DD does not provide the measurement method, monitoring, calibration frequency and QA/QC procedure for all the parameters listed therein.	CAR-13	OK
E.7.2. Description of the monitoring plan for a CPA				
E.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	/01/	The operational and management structure has not been clearly described in the PoA-DD. Hence CL has been raised. CL 10: In section E.7.2 of the PoA-DD, clearly specify the operation and	CL-10	OK

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		management structure along with procedure for data collection, recording, checking, data transfer and archiving system for CPA under PoA and justify how it is consistent for all CPA under this PoA.		
E.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	/01/	Depends on the closure of CL 10 in section E.7.2.1 above.	Refer CL 10	OK
E.7.2.3. Does the monitoring plan provide current good monitoring practice?	/01/	Depends on the closure of CL 10 in section E.7.2.1 above.	Refer CL 10	OK
E.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	/01/	N/A	OK	OK
E.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)				
E.8.1.1. Is there any indication of a date when the baseline was determined?	/01/	Yes, under section E.8 of the PoA-DD a date of application of the baseline and monitoring methodology has been provided; 05/10/211	OK	OK
E.8.1.2. Has dd/mm/yyyy format been used to indicate the date?	/01/	Yes the correct format has been applied : 05/10/2011	OK	OK
E.8.1.3. Is this consistent with the time line of the PoA-DD history?	/01/	Yes it is consistent with the time line of the POA-DD (the date of the PoA-DD is 10/10/2011)	OK	<u>OK</u>
E.8.1.4. Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	/01/	The information on the person responsible for the development of the baseline study and monitoring methodology was clearly stated and presents in section E.8 of the PoA-DD.	OK	<u>OK</u>
E.8.1.5. Is information provided whether this person / entity are also considered a project participant?	/01/	Mr Kwak Man Su is the person responsible for application of baseline study and monitoring methodology. However it is not clear whether he is a project participant or not. Hence a CAR is raised. CAR 14: It has also not been clearly mentioned whether the entity responsible for determining the same are also the project participant as mentioned in Annex I of PoA-DD.	CAR 14	<u>OK</u>
F. ANNEXES 1 – 4				
F.1. Annex 1: Contact Information				
F.1.1. Is the information provided consistent with	/01/	Depends on the closure of CAR 1 in section A.1.1 above.	Refer	Ok

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the one given under section A.3?				CAR 4	
F.1.2.	Is the information on all private participants and directly involved Parties presented?	/01/	Depends on the closure of CAR 1 in section A.1.1 above.	Refer CAR 4	OK
F.2. Annex 2: Information regarding public funding					
F.2.1.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	/01/	Depends on the closure of CL 6 in section A.4.5.1 above.	Refer CL 6	OK
F.2.2.	If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	/01/	Depends on the closure of CL 6 in section A.4.5.1 above.	Refer CL 6	OK
F.3. Annex 3: Baseline information					
F.3.1.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PoA-DD?	/01/	No additional background information for baseline emissions has been provided under annex 3.	OK	OK
F.3.2.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	/01/	NA	OK	OK
F.3.3.	Does the additional information substantiate / support statements given in other sections of the PoA-DD?	/01/	NA	OK	OK
F.4. Annex 4: Monitoring information					
F.4.1.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PoA-DD?	/01/	No, additional background information on monitoring is provided in Annex-4.	OK	OK
F.4.2.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	/01/	NA	OK	OK
F.4.3.	Do the additional information and / or	/01/	NA	OK	OK

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documented procedures substantiate / support statements given in other sections of the PoA-DD?				
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Table 2: Resolution of Clarification and Corrective Action Requests

Requests by Validation Team	Ref. To Table 1	Summary of programme owner response	Validation TEAM CONCLUSION
CORRECTIVE ACTION REQUESTS			
CAR 1: Letter of Approval from the DNA of Annex I country i.e., United Kingdom of Great Britain and Northern Ireland has not been submitted to DoE for validation.	A.1.1. / A.3.2. / F.1.1. / F.1.2.	PoA-DD v2 has been updated to reflect that the CME has obtained a LoA from DPR Korea and aims to register the PoA as a unilateral PoA. The LoA was provided to Carbon Check on 08/05/2012.	The section A.3 of the revised PoA-DD (version 03) has been suitably modified to indicate that the PoA is unilateral in nature with DPR Korea as the host country. The PoA titled "Coal Mine Methane Utilisation and Destruction Programme in DPR Korea" has been granted the letter of approval (approval no.: 2011/11/01; dated: 19/04/2012) issued by National Coordinating Committee for Environment, Democratic People's Republic of Korea. CAR is closed.
CAR 2: In section A.1 and B.1 of the webhosted CDM-PoA-DD, the date provided are not as per standard format i.e. DD/MM/YYYY.	A.1.2. /	Sections A.1 and B.1 of the POA-DD has been updated in version 2 to ensure the use of the standard date format.	In section A.1 and B.1 of the revised PoA-DD, the dates are provided in the standard DD/MM/YYYY format. CAR is Closed.
CAR 3: Description of the technology measure to be applied under the proposed PoA is not sufficient and transparent under section A.4.2.1 of the PoA-DD. Further, the explanation that how the PoA will reduce the green house emission and also description how the project activity is	A.2.4. / A.2.5. / A.4.2.1. / A.4.2.3. / A.4.2.5. / A.4.2.6. /	Section A.4.2.1. of the POA-DD has been updated in version 2 to specify the technology or measures to be employed by the CPA. As the technologies/measures are in line with Approved Methodology ACM0008 (Version 7). Both technologies /	Section A.4.2.1 of revised PoA-DD clearly states: <ul style="list-style-type: none"> In the absence of PoA, methane is being vented out in the atmosphere. There is currently no legal requirement in the DPR Korea to utilize or destroy CMM in the

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environmentally safe is not transparently described.	A.4.2.7. /	measures capture CMM from existing underground coal mines and destroy or utilise the captured methane rather than venting it in to the atmosphere.	<p>territory of the DPR Korea.</p> <ul style="list-style-type: none"> • The PoA will utilize flares and/or heat generation and/or electricity generation equipment that captures and destroys and/or utilizes coal mine methane. • Each CPA will adopt one or a combination of the following technologies or measures at existing underground coal mines in the DPR Korea: <ul style="list-style-type: none"> ○ Underground boreholes in the mine to capture pre mining CMM; ○ Surface goaf wells, underground boreholes, gas drainage galleries or other goaf gas capture techniques, including gas from sealed areas, to capture post mining CMM; • The PoA reduces GHG emissions and is environmentally safe as it involves flaring or utilization of CH₄ for energy generation and emitting CO₂, which has a lesser GWP of 1 as compared to 21 of CH₄. <p>Hence CAR is closed.</p>
<p>CAR 4:</p> <p>The section A.4.1.2 of PoA-DD does not provide the description on policies or regulations on Coal Mine Methane (CMM) and its usage including description on all applicable national and/or sectoral policies and regulations, which are relevant to the PoA with respect to the CDM-PoA-DD, Version 01.</p>	A.4.1.2. /	Section A.4.2.1. of the POA-DD has been updated in version 2 to clarify that there are no legal requirements to capture methane at existing coal mines	<p>Section A.4.1.2 of the revised PoA-DD states “DPR Korea currently does not have any CMM capture systems in place and there is currently no legal requirement in the DPR Korea to utilise or destroy CMM in the territory of the DPR Korea.”</p> <p>This same was verified through letters (13/10/2011) from the Department of Environment Protection of the Ministry of Land and Environment Protection, stating there is no regulations or policies that requires coal mines methane to be captured and/or utilized, and/or destroyed in the territory of DPR Korea.</p>

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			Hence CAR is closed.
CAR 5: In Section A.4.2.1 of the webhosted PoA-DD The applicable type and category of the proposed PoA is not mentioned.	A.4.2.2. /	Section A.4.2.1. of the POA-DD has been updated in version 2 to clarify that the PoA is a Large Scale PoA with Sectoral Scopes 08 and 10.	Section A.4.2.1 of the revised PoA-DD has been suitably modified to indicate that the PoA-DD falls within the sectoral scope 8 & 10. Hence CAR is closed.
CAR 6: In section A.4.2.2, the eligibility criteria for inclusion of a CPA in the PoA is not in line with "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities (version 01.0)" EB 65 Annex 3.	A.4.2.10. /	Section A.4.2.2. of the POA-DD has been updated in version 2 to comply with the "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities.	In section A.4.2.2 of the revised PoA-DD the eligibility criterion have been developed against the requirements as mentioned under §14, EB 65 Annex 3. However: <ul style="list-style-type: none"> The criteria's developed are not transparent and verifiable and do not detail specific requirements that a CPA needs to fulfil for its inclusion in the PoA. <p>Section A.4.2.2 of the PoA-DD has been suitably modified to develop transparent and verifiable eligibility criteria in line with requirements of § 14 and §15 of Annex 5, EB 70.</p> <p>The same is found acceptable to the validation team.</p> <p>Hence CAR is closed.</p>
CAR 7: Section A.4.4.1 of the webhosted PoA-DD is not in line with the requirements laid down under Annex 3 of EB 65 § 17. This section lacks in the following: <ul style="list-style-type: none"> A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies; Records of arrangements for training and capacity development for personnel; Procedures for technical review of inclusion of 	A.4.4.1. /	Section A.4.4.4.1 has been updated in version 2 to ensure compliance with Annex 3 of EB 65 §17.	In section A.4.4.1 the revised PoA-DD does not address the following point as per § 17 of Annex 3, EB 65: <ul style="list-style-type: none"> Records and documentation control process for each CPA under the PoA; <p>The section provides information on the roles and responsibility of CME but fails to provide clear definition of roles and responsibilities of personnel involved in the process of inclusion</p>

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<p>CPAs;</p> <ul style="list-style-type: none"> Records and documentation control process for each CPA under the PoA; Measures for continuous improvements of the PoA management system; 			<p>of CPAs, including a review of their competencies.</p> <p>Section A.4.4.1 of PoA-D has been suitably revised to provide information on:</p> <ul style="list-style-type: none"> Records and documentation control process for each CPA under the PoA clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies. <p>The same was also verified through review of CME Management system /07/.</p> <p>Hence CAR is closed.</p>
<p>CAR 8:</p> <p>A clear, definite and reasonable starting date for the PoA has not been provided in section B.1 of the PoA-DD in line with requirements of UNFCCC interface.</p>	B.1.1. /	<p>Section B.1 of the POA-DD has been updated in version 2 to include the estimated starting date for the PoA.</p>	<p>In section B.1 of revised PoA-DD, start date of the PoA has been revised to 01/01/2014 (or the date of registration whichever is later).</p> <p>The same is in line with requirement of UNFCCC upload interface.</p> <p>Hence CAR is closed.</p>
<p>CAR 9:</p> <p>PP should justify the choice of level for environmental analysis with reference to applicable national or sectoral guidelines / regulations / legislations.</p>	C.1.2. /	<p>As each CPAs has a choice of technology to be implemented in line with individual CPA feasibility, it is appropriate for each CPA to perform its own environmental analysis. Therefore Section C.1. of the POA-DD has be updated to reflect that Environmental analysis should be done on the CPA level.</p>	<p>In section C.1 of PoA-DD, it has been clearly stated and justified that environmental analysis will be conducted at CPA level as each CPA has a choice of technology to be implemented and hence it is appropriate that environmental analysis be conducted at CPA level.</p> <p>Hence CAR is closed.</p>
<p>CAR 10:</p> <p>PP is required to provide the justification of his choice of conducting stakeholder consultation meeting at CPA level</p>	D.1.2. /	<p>Section D.1.of the POA-DD has been updated in version 2 to include a justification of the choice of level on which stakeholder consultation is performed.</p>	<p>In section D.1 the PP has justified his choice to develop stakeholder consultation meeting at CPA level.</p> <p>As the PoA covers the entire territory of the</p>

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			DPR Korea, the stakeholder consultation is performed on a CPA level in order to ensure that comments from locally affected people can be taken into consideration. Hence CAR is closed.
CAR 11: In section E.6.1 of the PoA-DD, the explanation of methodological choices, provided in the approved baseline and monitoring methodology applied have not been clearly demonstrated and explained.	E.6.1.1. /	Section E.6.1.of the POA-DD has been updated in version 2 to include the explanation of methodological choices.	In Section E.6.1 of the revised PoA-DD the explanation of methodological choices, provided in the approved baseline and monitoring methodology applied have not been clearly demonstrated, explained and documented. Hence CAR is closed.
CAR 12: The list of parameters to be presented in E.6.3 of the PoA-DD is not complete and the values for parameters to be fixed ex-ante have not been provided.	E.6.3.1. /	Section E.6.3.of the POA-DD has been updated in version 2 to complete the values for parameters to be fixed ex-ante.	Section E.6.3 of revised PoA-DD provides list of parameters and the values for parameters to be fixed ex-ante. Hence CAR is closed.
CAR 13: Section E.7.1 of the webhosted PoA-DD does not provide the measurement method, monitoring, calibration frequency and QA/QC procedure for all the parameters listed therein.	E.7.1.1. /	Section E.7.1.of the POA-DD has been updated in version 2 to include the missing information.	Section E.7.1 of the revised PoA-DD has been modified to include information regarding measurement method, monitoring, calibration frequency and QA/QC has been provided in section. Hence CAR is closed.
CAR 14: It has also not been clearly mentioned whether the entity responsible for determining the same are also the project participant as mentioned in Annex I of PoA-DD.	E.8.1.5.	Section E.81.of the POA-DD has been updated in version 2 to clarify that Mr. Kwak performed the baseline study and monitoring methodology for the CME.	In section E.8 of the revised PoA-DD, it has been clearly stated that the entity responsible for baseline study and monitoring methodology is not a project participant. Hence CAR is closed.
CLARIFICATION REQUESTS			

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CL 1: The PP is required to clearly state and mention whether the project involves only existing mines, new mines or both.	A.2.1. / C.2.1. / C.2.2. / C.2.3. / C.2.4. / C.3.1. / C.3.2. / C.3.3	Sections A.2 of the POA-DD has been updated in version 2 to clarify that only existing underground coal mines will be involved in this PoA.	In section A.2 of revised PoA-DD it has been clearly stated that only existing underground coal mines are involved in the project activity. Hence CL is closed.
CL 2: The PP is required to clarify in section A.4.2.1 of the PoA-DD, how the technology transfer would take place and what technology needs to be transferred from Annex-I countries to the host country?	A.4.2.4. /	Section A.4.2.1. of the POA-DD has been updated in version 2 to clarify the technology transfer that will be associated with the PoA.	Section A.4.2.1 of revised PoA-DD states "As the technology for capturing and destroying/utilising CMM is already available in non Annex-I countries, it is not compulsory for technology transfer from an Annex I country and it is more likely that technology will be imported from other Asian countries that are non-Annex I countries." So, the project may involve import of technology but there is no technology transfer. Hence CL is closed.
CL 3: The PP is required to clearly specify in the PoA-DD about what training and maintenance efforts are required to carry out the project as per schedule during the project period.	A.4.2.8. / A.4.2.9. /	Section A.4.2.1. of the POA-DD has been updated in version 2 to clarify the technology transfer that will be associated with the PoA.	Section A.4.2.1 of the revised PoA-DD states that "CME envisages that training will be provided to the workforce in the DPR Korea in order to ensure that the equipment can be maintained in accordance with manufacturer specifications. Training will be provided to people on a CPA specific basis and will be performed by the relevant equipment manufacturers as appropriate. Additionally, people at each CPA-site will be trained to perform monitoring." Hence CL is closed.

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<p>CL 4: From the descriptions provided in section A.4.3 and E.5 (E.5.1 & E.5.2) of the PoA-DD the following issues are not clearly and distinctly defined:</p> <ul style="list-style-type: none"> Whether the additionality would be proven at PoA level or CPA level? Whether barrier analysis or Investment analysis or both will be used for demonstration of additionality of CPAs to be included in PoA? Which tool or guidelines has been used to demonstrate additionality? 	<p>A.4.3.2. / E.5.1. / E.5.2.1. / E.5.2.2. / E.5.2.3. / E.5.2.4. / E.5.2.5. / E.5.2.6. / E.5.2.7. / E.5.2.8. / E.5.2.9. / E.5.2.10. /</p>	<p>Sections A.4.3 and E.5.1 and E.5.2 have been updated to address the questions regarding and assessment of additionality.</p>	<p>Section A.4.3 of the revised PoA-DD provides information on the following:</p> <ul style="list-style-type: none"> (i) The proposed PoA is a voluntary coordinated action; (ii) If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA; (iii) If the PoA is implementing a mandatory policy/regulation, this would/is not enforced; (iv) If mandatory a policy/regulation are enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation. <p>The section E.5.1 and E.5.2 have been revised in PoA-DD and clearly provide information on:</p> <ul style="list-style-type: none"> • Additionality at CPA level • Investment Analysis (Simple cost analysis) and common practice analysis will be used for demonstration of additionality of CPA. • Additionality is being proved using Tool for demonstration and assessment of additionality version 06.1.0 <p>Hence CL is not closed.</p>
<p>CL 5: The PP needs to provide evidences to the DoE to validate that a record keeping system for each CPA under the PoA, exists and is holistic and complete.</p>	<p>A.4.4.2. /</p>	<p>The database was provided to Carbon Check on 08/05/2012.</p>	<p>A record keeping system has been provided to DoE for Validation and its holistic and complete.</p> <p>Hence CL is closed.</p>
<p>CL 6: Project participants need to substantiate with evidences that such funding has not been availed and does not result in a diversion of official development assistance, is</p>	<p>A.4.5.1. / A.4.5.2. / F.2.1. / F.2.2.</p>	<p>The CME who is responsible for the implementation fo the PoA has issued a letter confirming that no Annex 1 funding involved. The letter was provided to Carbon</p>	<p>The CME has provided a letter dated 07/05/2012 stating that no public funding is involved in the PoA.</p>

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separate from, and is not counted towards the financial obligations of those parties.		Check on 08/05/2012.	The CME has also provided bank statements dating from 21/09/2011- 08/03/2012 to substantiate that no public funding or ODA has been availed. Hence CL is closed.
CL 7: The PP is required to clarify in line with the host country rules and regulations whether new mines implementing the project activity require an EIA or not.	C.2.1. / C.2.2. / C.2.3. / C.2.4. / C.3.1. / C.3.2. / C.3.3.	A letter from the Ministry of Land and Environment Protection clarified the EIA requirements, which leads the CME to conclude that a typical CPA will not require an EIA. The letter was provided to Carbon Check on 08/05/2012. Additionally, CPA-DD in v2 clarified that only existing underground mines are eligible for inclusion in the PoA.	CME has provided a letter (dated: 13/10/2011) from the Ministry of Land and Environment protection which clearly states that for existing mines Implementing CMM projects don't require EIA but for new mining licenses an EIA is mandatory. Hence CL is closed.
CL 8: PP is required to justify in the baseline emissions, inclusion of CO ₂ emissions resulting from captive usage for power and/or heat, and vehicle usage with respect to exclusion of CO ₂ emissions resulting from destruction of methane where it is stated "There is no flaring or use for heat and/or electricity in the baseline".	E.3.1.2. /	The table in Section E.3 has been updated to clarify that currently there is no methane capture and destruction or utilisation in the DPR Korea.	Section E.3 of the revised PoA-DD has been suitably modified to exclude CO ₂ emissions resulting from captive usage for power and/or heat, and vehicle usage as at present the entire methane is vented into the atmosphere. Hence CL is closed.
CL 9: PP is required to clarify, why the following were not addressed in section E.6.2 of PoA-DD: <ul style="list-style-type: none"> The PP has presented the formulae for CBM but the same has not been included in the assessment of baseline alternatives and additionality. Justify the same. PP has not presented the approach and formulae used to calculate the Grid Emission Factor (GEF) or the emission factor for fossil fuel combustion for production of thermal energy for the alternatives chosen as well for the applicability of methodology in such situations. Justify the same. In formulae (9) of the PoA-DD, to calculate 	E.6.1.2. / E.6.1.5. / E.6.2.1. / E.6.2.2.	The POA-DD was updated in version 2 to update the formulae in order to reflect that CBM is not included in the PoA. The alternatives chosen for the calculation of the GEF were included in Section E.6.1. to provide the methodological choices. Section E.6.2. of the POA-DD was updated to include the formulae (27) and (28) used from the "Tool to calculate the emission factor for an electricity system" In Section formula E.6.2 Formula (9) has been altered in order to account for the fact that flameless oxidation is not eligible in the	Section E.6.2 of the PoA-DD has been revised: <ul style="list-style-type: none"> The revised PoA-DD does not include CBM hence not considered in baseline and additionality. Approach and formulae used to calculate Grid Emission Factor (GEF) and emission factor for fossil fuel combustion for production of thermal energy for the alternatives chosen have been presented. Formula (9) has been altered in order to account for the fact that flameless oxidation is not eligible in the PoA and therefore the part of the formula purely

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project emissions from un-combusted methane (tCO ₂ e) has been altered from the original version presented in the Methodology.		PoA and therefore the part of the formula purely relating to the oxidation of VAM has been removed. Formulae in Section E.6.2. were generally modified compared to Approved Methodology ACM0008 (Version 7) to account for the specificities of the PoA, such as no VAM or CBM, while ensuring compliance with the baseline and monitoring methodology.	relating to the oxidation of VAM has been removed. Hence CL is closed.
CL 10: In section E.7.2 of the PoA-DD, clearly specify the operation and management structure along with procedure for data collection, recording, checking, data transfer and archiving system for CPA under PoA and justify how it is consistent for all CPA under this PoA.	E.7.2.1. / E.7.2.2. / E.7.2.3.	Section E.7.2. of the POA-DD has been updated in version 2 to provide more clarity on the operation and management structure along with procedure for data collection, recording, checking, data transfer and archiving system for CPA under PoA and justify how it is consistent for all CPA under this PoA.	Section E.7.2 of the revised PoA-DD provides information on operation and management structure along with procedure for data collection, recording, checking, data transfer and archiving system. Hence CL is closed.

Table 3: Forward Action Requests

Forward Action Request	Reference to Table 2	Response by Project Participants	Validation Conclusion
-	-		-

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APPENDIX B CERTIFICATE OF COMPETENCE

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Ravi Shankar

is hereby certified as a

Qualified CDM Lead Assessor

*with Carbon Check (Pty) Ltd, under the regulations of the
UNFCCC and Carbon Check's qualification criteria, in the following
Technical Area/s:*

1.2, 2.1, 2.2, 3.1 & 13.1

Awarded: 12 May 2011

Chief Executive Officer
Mr Adam Simcock

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