




**Validation report form for inclusion of component
project activities
(Version 03.0)**

Complete this form in accordance with instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	City of Cape Town Landfill Gas Extraction and Utilisation Programme UNFCCC Reference No. 10004	
Version number of the validation report	02	
Completion date of the validation report	05/12/2020	
Version numbers of the PoA-DD to which this report applies	18	
Title and reference number of each CPAs to be included	CPA Ref. no.	Title
	10004-P1-0003-CP1	Landfill Gas Extraction and Utilisation at Vissershok
Applied methodologies and standardized baselines for each CPA	CPA Ref. no.	Applied methodologies and standardized baselines
	10004-P1-0003-CP1	Methodology: ACM0001, "Flaring or use of landfill gas", Version 15.0
	10004-P1-0003-CP1	Standardized baseline: ASB0001 "Grid emission factor for the Southern African power pool" (Version 01.0)
Sectoral scopes for each CPA	CPA Ref. no.	Sectoral scopes (indicate mandatory and conditional sectoral scopes)
	10004-P1-0003-CP1	Mandatory sectoral scope: 13 Conditional sectoral scope: 1
Coordinating/managing entity (CME)	City of Cape Town	
Host Parties	Republic of South Africa	
Estimated amount of annual average greenhouse gas (GHG) emission reductions or GHG removals by sinks in the crediting period (tCO₂e), per CPA	CPA Ref. no.	tCO₂e
	10004-P1-0003-CP1	100,784
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Ltd. (E-0052)	
Name, position and signature of the approver of the validation report	 Vikash Kumar Singh Compliance Officer	

SECTION A. Executive summary

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Purpose and general description

The CME, City of Cape Town, hereafter referred as (CCT), has appointed Carbon Check (India) Private Ltd. (CCIPL) to perform the validation of the proposed CPA titled "Landfill Gas Extraction and Utilisation at Vissershok" requesting to be included in the revised and approved PoA "City of Cape Town Landfill Gas Extraction and Utilisation Programme" /B03-2/. CCIPL was appointed to assess the information in the CDM-CPA-DD for the CPA titled "Landfill Gas Extraction and Utilisation at Vissershok" (hereafter called "the CPA") against the requirements for including CPAs to the PoA "City of Cape Town Landfill Gas Extraction and Utilisation Programme" and further documentation requirements for including CPAs to a PoA. This report summarises the findings of the validation of the CPA, performed on the basis of relevant applicable UNFCCC CDM guidance and standards, as well as criteria given to provide for consistent project operations, monitoring and reporting and compliance with host country criteria and other relevant UNFCCC CDM criteria.

The proposed component project activity (henceforth referred to as CPA) has been developed under Programme of Activities (PoA) titled: "City of Cape Town Landfill Gas Extraction and Utilisation Programme" which involves to promote the recovery and utilization of landfill gas utilization projects i.e.the renewable resource over the Republic of South Africa. Under this CPA, it is confirmed that the landfill gas (LFG) capture and utilisation project at Vissershok Landfill in Cape Town, South Africa falls under generic CPA: 'Type 2: Flaring with Electricity Generation' of the PoA. The estimated annual average emission reductions from this CPA is estimated to be 100,784 tCO₂e. The CPA involves use of methodology ACM0001, "Flaring or use of landfill gas", Version 15.0 /B02/. The CPA results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the CPA is not a likely baseline scenario. Emission reductions attributable to the CPA are hence additional to any that would occur in the absence of the CPA in accordance with the UNFCCC CDM requirements for additionality.

The validation scope is defined as an independent and objective review of the CPA-DD. The CPA-DD /01/ is reviewed against the relevant UNFCCC CDM criteria for validation and inclusion of CPA. The validation team has, based on the recommendations in the CDM Validation and Verification Standard for Programme of Activities, version 02.0 /B01-1/ and employed a rule-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

While carrying out the validation, CCIPL determines if the CPA complies with the requirements of UNFCCC, specifically the applicability conditions of the selected methodology /B02/ and also assesses the claims and assumptions made in the CPA-DD /01/ without limitation on the information provided by the project participants.

The report is based on the assessment of the CPA-DD /01/ undertaken through application of standard auditing techniques including but not limited to document reviews, site visit, and stakeholder interviews, review of the applicable/applied methodology and its underlying formulae and calculations.

This report contains the findings and resolutions from the validation and a validation opinion on the proposed CPA thus confirming the project design as document is sound and reasonable and meets the stated requirements and identified criteria.

SECTION B. Validation team, technical reviewer and approver**B.1. Validation team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader / Technical Expert	IR	Agarwalla	Sanjay Kumar	CC IPL	X	-	X	X

B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Singh	Vikash Kumar	CC IPL
2.	Approver	IR	Singh	Vikash Kumar	CC IPL

SECTION C. Means of validation**C.1. Desk/document review**

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List of all documents reviewed or referenced during the validation is provided in Appendix-3.

C.2. On-site inspection

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On-site visit for the CPA inclusion was avoided due to travel restrictions imposed globally due to COVID-19 pandemic impact. DOE also noted CDM EB's decision to relax mandatory site visits by DOEs for a period of three months (23 March 2020 to 31 December 2020) because of COVID-19 /B05/. In view of the notification, DOE could not further postpone the site visit due to the fact that the DOE has a commitment/ timeline as per the validation contract for completion of the validation /17/.

The alternative means used for the purpose of validation are demonstrated as follow:

The validation team has carried out remote interviews (by telephone / skype / video calls) in order to assess the information included in the CPA-DD.

Remote interviews were performed by the validation team in order to assess the following:

Duration of remote inspection: 30/11/2020				
No.	Activity performed on-site	Site location	Date	Team member
1.	Approval of project activity from Host Party and approval of participation of Project Participant(s).	Remote interviews	30/11/2020	Sanjay Kumar Agarwalla

2.	<ul style="list-style-type: none"> • Eligibility Criteria for Inclusion of a CPA in the PoA • Competence of CME to evaluate the inclusion of a CPA • Technology/measure employed in specific CPA; 	Remote interviews	30/11/2020	Sanjay Kumar Agarwalla
3.	<ul style="list-style-type: none"> • Emission reductions calculations. • Monitoring plan • Baseline identification and Additionality demonstration of the CPA 	Remote interviews	30/11/2020	Sanjay Kumar Agarwalla
4.	<ul style="list-style-type: none"> • Implementation, Operation and Management of specific CPA; • Training of personnel • Local laws and regulations in host country applicable to the project activity. 	Remote interviews	30/11/2020	Sanjay Kumar Agarwalla

C.3. Interviews

No	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Louw	Robbie	Promethium	30/11/2020	<ul style="list-style-type: none"> • Project Design • Proposed Technology to be used • Environmental Management Plan/ EIA • Local stakeholders meeting process • Management structure with Roles and Responsibilities • Monitoring Plan and process to be adopted • Socio-economic Impacts of the project activity • Sustainability aspects of the project • Baseline Scenarios and alternatives • Additionality • Emission Reduction 	Sanjay Kumar Agarwalla
2.	Tuchten	Olivia	Promethium	30/11/2020	<ul style="list-style-type: none"> • Project Design • Proposed Technology to be used • Environmental Management Plan/ EIA • Local stakeholders meeting process • Management structure with Roles and Responsibilities • Monitoring Plan and process to be adopted • Socio-economic Impacts of the project activity • Sustainability aspects of the project • Baseline Scenarios and alternatives 	Sanjay Kumar Agarwalla

					<ul style="list-style-type: none"> •Additionality •Emission Reduction 	
3.	Naidoo	Johara	Promethium	30/11/2020	<ul style="list-style-type: none"> •CPA-DD •Emission Reduction calculations 	Sanjay Kumar Agarwalla
4.	Coetzee	Barry	City of Cape Town	30/11/2020	<ul style="list-style-type: none"> • Project Design • Proposed Technology to be used • Environmental Management Plan/ EIA • Local stakeholders meeting process • Management structure with Roles and Responsibilities • Socio-economic Impacts of the project activity • Sustainability aspects of the project •Baseline Scenarios and alternatives •Additionality 	Sanjay Kumar Agarwalla
5.	Riedewaan	Anthony	City of Cape Town	30/11/2020	CPA implementation and operation	Sanjay Kumar Agarwalla
6.	Daniels	Steven	City of Cape Town	30/11/2020	CPA implementation and operation	Sanjay Kumar Agarwalla

C.4. Sampling approach

>> N/A

C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of validation of compliance (SECTION D)	No. of CL	No. of CAR	No. of FAR
Titles of the CPAs and corresponding generic CPAs	--	--	--
Compliance with CPA-DD form	--	--	--
General description of the CPAs	01	--	--
Application of methodologies and standardized baselines	--	--	--
<ul style="list-style-type: none"> • Reference to methodologies and standardized baselines 	--	--	--
<ul style="list-style-type: none"> • Project boundary, sources and GHGs 	--	--	--
<ul style="list-style-type: none"> • Baseline scenario 	--	--	--
Estimation of emission reductions or net anthropogenic removals	--	--	--
<ul style="list-style-type: none"> • Equations and parameters applied to calculate GHG emission reductions or net anthropogenic GHG removals 	--	--	--
<ul style="list-style-type: none"> • Data and parameters fixed ex ante 	--	01	--
<ul style="list-style-type: none"> • Ex ante calculation of GHG emission reductions or net anthropogenic GHG removals 	--	--	--
<ul style="list-style-type: none"> • Summary of ex ante estimates of GHG emission reductions or net anthropogenic GHG removals 	--	--	--
Monitoring plan	--	--	--
<ul style="list-style-type: none"> • Data and parameters to be monitored 	--	--	--
<ul style="list-style-type: none"> • Description of the monitoring plan 	--	--	--
Start date, crediting period type and duration	--	01	--
Environmental impacts	--	--	--
Local stakeholder consultation	--	--	--
Eligibility for inclusion	--	--	--
Others (please specify) – Finding raised during TR process	--	--	--
Total	01	02	--

SECTION D. Validation findings

D.1. Proposed CPAs and corresponding generic CPAs

CPA title and reference number	Version number of the CPA-DD	Host Party	Generic CPA title, identification/reference number	Version number of the PoA-DD into which the CPA is included
Landfill Gas Extraction and Utilisation at Vissershok CPA reference no.: 10004-P1-0003-CP1	Version 02, dated 04/12/2020	Republic of South Africa	Type 2.Flaring with Electricity Generation	Version 18, dated 05/02/2020

D.2. Compliance with CPA-DD form

Means of validation	DR, I
Findings	-
Conclusion	<p>Through means of document review and interviews with stakeholders, the validation team considers that the CPA description in the CPA titled “Landfill Gas Extraction and Utilisation at Vissershok”, as described in the CDM-CPA-DD /01/, is accurate and complete; meets the requirements to be included in the PoA titled “City of Cape Town Landfill Gas Extraction and Utilisation Programme” /B03/ and correctly applies the monitoring methodology ACM0001, “Flaring or use of landfill gas”, Version 15.0 /B02/ and standardized baseline methodology, ASB0001 “Grid emission factor for the Southern African power pool”, version 01.0 /B06/ and the requirements of CDM VVS for PoAs, version 02.0 /B01-1/.</p> <p>Validation team confirms that the requirements of the CDM-CPA-DD-FORM filling guidelines /B04/ and section 8.1 of CDM VVS for PoAs, version 02.0 /B01-1/ have been appropriately met.</p>

D.3. General description of the CPAs

Means of validation	DR, I
Findings	CL 01 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
Conclusion	<p>The following description of the proposed component project activity as per CPA-DD /01/ is verified. The proposed large-scale component project activity (henceforth referred to as CPA) has been developed under Programme of Activities (PoA) titled: “City of Cape Town Landfill Gas Extraction and Utilisation Programme” /B03/ which involves to promote the recovery and utilization of landfill gas utilization projects i.e.the renewable resource over the Republic of South Africa. Under this CPA, it is confirmed that the landfill gas (LFG) capture and utilisation project at Vissershok Landfill in Cape Town, South Africa falls under generic CPA ‘Type 2: Flaring with Electricity Generation’ of the PoA. The Vissershok Landfill has been operating since 1976. The site received approximately 552,946 tonnes of waste per year comprising general municipal waste, garden refuse and builders’ rubble which is compacted in place /06-3/. The landfill site is located in Western Cape Province, Vissershok Landfill near Table View on Portion of the Farm Vissershok Outspan No. 153, City of Cape Town, Republic of South Africa. In the CPA, the technology measures to be employed are LFG capture, combustion by flaring and electricity generation. The technologies will be employed in different phases. The Phase 1 entails only the capture and flaring of LFG onsite the Vissershok Landfill in an enclosed flare and the Phase 2 entails the addition of 2.4 MW power generation gas engine (using the captured LFG) at the project site and supply the generated electricity to SAPP grid. Any LFG that is not used for electricity generation will be combusted by flaring.</p> <p>CME is expected to start Phase 1 by the commissioning of a flare in December 2020 /06-1/. Phase 2, which involves electricity generation using LFG is expected to be implemented in 2023.</p>

	<p>The CPA involves use of methodology ACM0001, “Flaring or use of landfill gas”, Version 15.0 /B02/. The CPA results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the CPA is not a likely baseline scenario. Emission reductions attributable to the CPA are hence additional to any that would occur in the absence of the CPA in accordance with the UNFCCC CDM requirements for additionality.</p> <p>The CPA aims to support sustainable development in the host country, Republic of South Africa (RSA). There are no mandatory policies or regulations mandating the adoption/usage of LFG extraction and utilization for electricity generation. In fact, no such policies exist in RSA. Through document review and interviews with the stakeholders, the validation team reveals that there is no mandatory regulation on the implemenataion of LFG extraction and utilisation projects in the host country. Furthermore, the CME has provided a declaration confirming the voluntary participation for the CPA /03/. Therefore, the validation team considers the CPA is a voluntary action by the CPA implementer.</p> <p>The CPA implementer is City of Cape Town as confirmed by reviewing the CPA-DD /01/ and the interviews with the representative of CME/CPA implementer. The CME shall be responsible to perform quality control activities for the proposed CPA and the same has been checked and confirmed by reviewing the CPA-DD /01/ and interviews with the representative of CME/CPA implementer during the remote intevIEWS.</p> <p>The unique geographical location of the CPA area, with (latitude and longitude), have been clearly stated in the CPA-DD /01/. CME confirms that there is no double counting of emission reductions due to the implementation/inclusion of CPA. The same was also validated though review of UNFCCC website /B07/.</p> <p>The average annual emission reductions on account of the CPA are estimated to be 100,784 tCO₂e for the duration of the first 7 years renewable crediting period. The total emission reductions over the entire first 7 years crediting period are estimated to be 705,485 tCO₂e. The validation team reviewed the CPA-DD /01/ and the ER sheet /02/ and confirm the same to be accurate. In addition, the steps used for ER calculations were found to be in conformance with the requirements of the applied methodology ACM0001, version 15.0 /B02/ and the revised and approved PoA-DD /B03/.</p> <p>Based on the information furnished by the CME/CPA implementer no ODA contributes to the financing of the CPA /01/ /04/.</p> <p>The description of the CPA as provided in the CPA-DD /01/ is in accordance with the revised and approved PoA-DD /B03/.</p> <p>The validation team confirms that the description of the proposed CPA in the CPA-DD is accurate, complete, and provides an understanding of the proposed CPA.</p> <p>The validation team took cognizance of §185-191 of CDM VVS for PoAs, version 02.0 /B01-1/.</p>
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D.4. Application of methodologies and standardized baselines

D.4.1. Reference to methodologies and standardized baselines

Means of validation	DR,I	
Findings	--	
Conclusion	<p>The compliance of the CPA to the applicability conditions of the applied methodology ACM0001, “Flaring or use of landfill gas”, Version 15.0 /B02/ and the standardized baseline ASB0001 “Grid emission factor for the Southern African power pool”, version 01.0 /B06/ have been confirmed in the CPA-DD /01/. The assessment is provided below:</p> <table border="1" style="width: 100%; margin-top: 5px;"> <tr> <td>Applicability of selected methodology ACM0001, version 15</td> </tr> </table>	Applicability of selected methodology ACM0001, version 15
Applicability of selected methodology ACM0001, version 15		

	Applicability criterion	DOE assessment
	The project activity shall install a new LFG capture system in a new or existing SWDS where no LFG capture system was installed prior to the implementation of the project activity.	The proposed project activity is the installation of a new landfill gas capture system at an existing SWDS /05/ /09/. Hence this meth applicability condition is met.
	The project activity shall flare LFG and use the captured LFG in the generation of electricity.	The project generates electricity and flares the surplus LFG gas. Hence this meth applicability condition is met.
	The project activity shall not reduce the amount of organic waste that would be recycled in the absence of the project activity.	It is confirmed by document review /01/ /06/ /08/ /09/ and remote interviews that the project does not reduce the amount of organic waste that would be recycled in the absence of the project activity . Hence this meth applicability condition is met.
	<p>The most plausible baseline scenario shall be the atmospheric release of the LFG or capture of LFG and destruction through flaring to comply with regulations or contractual requirements, to address safety and odour concerns, or for other reasons.</p> <p>For electricity generation the baseline would be that electricity be generated in the grid or in captive fossil fuel fired power plants.</p>	It is confirmed by document review /01/ /05/ /08/ /09/ and remote interviews that the project baseline is the venting of landfill gas with electricity generated in the grid. Hence this meth applicability condition is met.
	The Methodology shall not be used in combination with other approved methodologies	The project uses the methodology ACM001 version 15.0 without combination with any other methodology as confirmed by review of the CPA-DD /01/ and remote interviews. Hence this meth applicability condition is met.
	The management of the SWDS in the project activity shall not be deliberately changed during the crediting in order to increase methane generation compared to the situation prior to the implementation of the project activity	The project retains the same waste disposal practices for residual waste and the management of the landfill remains unchanged. This is confirmed by review of the CPA-DD /01/ and remote interviews. Hence this meth applicability condition is met.

In the PoA-DD (version 18, 05/02/2020) section 1.6.2 it is stated “*All fixed parametric values, including the ex-ante grid emission factor, shall be revised at each point of the renewal of the crediting period of the CPAs. CPAs that are included or that renew their crediting period shall always apply the fixed parameters of the latest version of the PoA-DD. The following parameters are fixed for all CPAs including the first 7 years of the PoA crediting period and for the respective first 7 years crediting period of the CPAs*”. Accordingly in line with the PoA-DD, CME has adopted the value of grid emission factor from the Standardized baseline: Grid emission factor for the Southern African power pool, ASB0001, version 01 as 0.9644 tCO₂/MWh. The validation team deemed this acceptable for the CPA.

Hence the validation team confirms the applicability of the applied standardized baseline ASB0001 and applied methodology ACM0001, version 15.0 for the CPA.

This is in conformance with the requirements of §193 of CDM VVS for PoAs, version 02.0 /B01-1/.

D.4.2. Project boundary, sources and GHGs

Means of validation	DR,I
Findings	--
Conclusion	<p>As per § 15 of the applied methodology ACM0001 (version 15.0) /B02/, the boundary of a typical CPA under this PoA confines to “<i>The geographical boundary of Republic of South Africa</i>”. Thus the project boundary for the CPA is the physical, geographical location of the Vissershok South Landfill project site. The project boundary for CPA-03 encompasses the Vissershok South Landfill, the flaring of the excess gas and the engines for electricity generation including the SAPP grid. Using a tabular approach, the sources and gases has been correctly identified in CPA-DD /01/.</p> <p>The physical delineation of the CPA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for the CPA.</p> <p>Validation team confirms that the justification provided by the CME is reasonable and evidenced for the project boundary. Besides, there are no other sources, which are impacted by the projects and not addressed by the applied methodology /B02/.</p> <p>This is in conformance with § 15 of the applied methodology /B02/ and §194 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

D.4.3. Baseline scenario

Means of validation	DR,I
Findings	--
	<p>The procedure to identify the most plausible baseline scenario derived from the applied methodology has been applied correctly and is transparently and sufficiently documented in the CPA-DD /01/.</p> <p>Validation team based on the review of the PoA-DD /B03/ and CPA-DD /01/, confirms that the additionality is being assessed at CPA level. Moreover, “Simplified procedures to identify the baseline scenario and demonstrate additionality” in accordance with ACM0001 (version 15.0) have been used to demonstrate the additionality of the CPA.</p> <p>Validation team has reviewed the Waste Management Licence /05-1/, LFG Extraction Licence /05-2/, Construction permit for LFG collection and flare from Dept; Employment and Labour , Republic Of South Africa” /09/ and also a self declaration in this respect from CME /08/. Based on the above stated documents review and remote interviews, the validation team confirms that the LFG was only vented prior to the implementation of the project.</p> <p>Based on the available landfill gas extraction data for the project site /07/, it is envisaged that 2.4 MW power generation capacity can be installed. In the second phase of the project, LFG will be utilised to generate electricity for supply to SAPP grid and excess LFG will be flared. Hence the baseline scenario for electricity is the existing SAPP grid.</p> <p>Furthermore, §20 of the applied methodology ACM0001, Version 15.0 /B02/ states that the simplified procedures are valid for three years from the date of entry into force of Version 15.0 of ACM0001 on 08/11/2013 i.e., till 07/11/2016. It further states that any update of the simplified procedures does not affect the projects that request registration as a CDM programme of activities by 07/11/2016 and apply the simplified procedures contained in Version 15.0 of ACM0001 /B02/. Hence all the CPAs to be included in this PoA can apply Simplified procedures to identify the baseline scenario and demonstrate additionality, as specified in section 5.3.1 (§20 – 24) of the applied methodology ACM0001 (version 15.0) /B02/ for demonstration of additionality.</p>

	<p>The approved baseline methodology /B02/ has been correctly applied to identify a realistic and credible baseline scenario, and the identified baseline scenario most reasonably represents what would occur in the absence of the proposed CPA.</p> <p>Thus, the above baseline scenario is considered to be accurate and in conformance with the approved revised PoA-DD /B03/, requirements of the applied methodology /B02/ and §195 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>
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D.5. Estimation of emission reductions or net anthropogenic removals

D.5.1. Equations and parameters applied to calculate GHG emission reductions or net anthropogenic GHG removals

Means of validation	DR,I
Findings	--
Conclusion	<p>The equations and choices provided in the applied methodology /B02/, revised and approved PoA-DD /B03/ are correctly quoted in the CPA-DD /01/. The emission reductions of the CPA of the PoA would be calculated using the formulae mentioned in the applied methodology ACM0001 (Version 15.0) /B02/.</p> <p>The parameters and equations presented in the CPA-DD /01/ and ER spread-sheets /02/ have been compared with the information and requirements presented in the methodology /B02/. Validation team based on the review of CPA-DD /01/ and the ER spread sheets /02/ and other supporting documents, confirms that the formula are correctly presented for the determination of emission reductions at CPA level and the values of the input parameters used are accurate, appropriate and consistent.</p> <p>Thus, the equations and parameters applied to calculate the emission reductions are considered to be accurate and in conformance with the requirements of §197 (a) of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

D.5.2. Data and parameters fixed ex ante

Means of validation	DR,I																						
Findings	CAR 01 has been raised. Please refer to Appendix 4 for further details.																						
Conclusion	<p>Ex-ante parameters provided under section B.4.2 of the CPA-DD /01/ are found to be appropriate and in line with the PoA-DD /B03-2/ and the applied methodology ACM0001 (version 15.0) /B02/. Ex-ante parameters of the proposed CPA are as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Parameter</th> <th style="width: 35%;">Description</th> <th style="width: 15%;">Verified Value</th> <th style="width: 35%;">Verified Source</th> </tr> </thead> <tbody> <tr> <td>OX_{toplayer}</td> <td>Fraction of methane that would be oxidized in the top layer of the SWD in the baseline</td> <td>0.1</td> <td>ACM0001 (Version 15) /B02/</td> </tr> <tr> <td>GW_{PCH4}</td> <td>Global warming potential of CH₄</td> <td>25 tCO₂e/tCH₄</td> <td>ACM0001 (Version 15) /B02/</td> </tr> <tr> <td>η_{PJ}</td> <td>Efficiency of the LFG capture system that will be installed in the project activity</td> <td>0.5</td> <td>ACM0001 (Version 15) /B02/</td> </tr> <tr> <td>EF_{EL}</td> <td>Emission factor for electricity generation</td> <td>0.9644 tCO₂/MWh</td> <td>PoA-DD /B03-2/ and "Standardized baseline: Grid emission factor for the Southern African Power</td> </tr> </tbody> </table>			Parameter	Description	Verified Value	Verified Source	OX _{toplayer}	Fraction of methane that would be oxidized in the top layer of the SWD in the baseline	0.1	ACM0001 (Version 15) /B02/	GW _{PCH4}	Global warming potential of CH ₄	25 tCO ₂ e/tCH ₄	ACM0001 (Version 15) /B02/	η_{PJ}	Efficiency of the LFG capture system that will be installed in the project activity	0.5	ACM0001 (Version 15) /B02/	EF _{EL}	Emission factor for electricity generation	0.9644 tCO ₂ /MWh	PoA-DD /B03-2/ and "Standardized baseline: Grid emission factor for the Southern African Power
Parameter	Description	Verified Value	Verified Source																				
OX _{toplayer}	Fraction of methane that would be oxidized in the top layer of the SWD in the baseline	0.1	ACM0001 (Version 15) /B02/																				
GW _{PCH4}	Global warming potential of CH ₄	25 tCO ₂ e/tCH ₄	ACM0001 (Version 15) /B02/																				
η_{PJ}	Efficiency of the LFG capture system that will be installed in the project activity	0.5	ACM0001 (Version 15) /B02/																				
EF _{EL}	Emission factor for electricity generation	0.9644 tCO ₂ /MWh	PoA-DD /B03-2/ and "Standardized baseline: Grid emission factor for the Southern African Power																				

				Pool” (Version 01.0) (ASB0001) /B06/
f	Fraction of methane captured at the SWDS and flared, combusted or used in another manner that prevents the emissions of methane to the atmosphere	0		§ 38 (a) of ACM0001 (Version 15) /B02
k_j	Decay rate for the waste type j (1/yr)	Pulp, paper, cardboard (other than sludge), textiles	0.04	Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1) /B07/
		Wood, wood products & straw	0.02	
		Other (non-food) organic putrescible garden and park waste	0.05	
		Food, food waste, sewage, sludge, beverages & tobacco	0.06	
Ψ_y	Default value for the model correction factor to account for model uncertainties	0.75		Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1) /B07/
OX	Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste)	0.1		Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1) /B07/
F	Fraction of methane in the SWDS gas (volume fraction)	0.5		Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1) /B07/
$DOC_{f,default}$	Default value for the fraction of degradable organic carbon (DOC) in MSW that decomposes in the SWDS	0.5		Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1) /B07/
$MCF_{default}$	Methane correction factor	1.0		Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1) /B07/

	DOC _j	Fraction of degradable organic carbon in the waste type <i>j</i>	Waste type <i>j</i>	DOC _j (% wet waste)	Methodological tool 'Emissions from solid waste disposal sites' (Version 06.0.1) /B07/
			Wood and wood products	43	
			Pulp, paper and cardboard	40	
			Food, food waste, beverages and tobacco	15	
			Textiles	24	
			Garden, yard and park waste	20	
			Glass, plastic, metal, other inert waste	0	
	W _{j,x}	Amount of solid waste type <i>j</i> disposed in the SWDS in year <i>x</i>	Data provided in Appendix 3 of the CPA-DD	Data taken from historical records of landfill operation, aggregated into annual figures and provided by City of Cape Town /07/	
	SPEC _{flare}	Manufacturer's flare specifications for temperature, flow rate and maintenance schedule	Min flow: 400m ³ /hr Max flow: 2,500 m ³ /hr Min temp: 1,000 °C Max temp: 1,200 °C Maintenance schedule is not required if Option A is selected to determine flare efficiency of an enclosed flare	Technical specification by flare manufacturer /12/	
MM _{CH₄}	Molecular mass of methane	16.04 kg/kmol	Methodological tool "Project emissions from flaring" (Version 02.0.0) /B08/		
R _u	Universal ideal gas constant	0.008314472 Pa.m ³ /kmol.K	Methodological tool "Project emissions from flaring" (Version 02.0.0) /B08/		
P _{ref}	Atmospheric pressure at reference conditions	101,325 Pa	Methodological tool "Project emissions from flaring" (Version 02.0.0) /B08/		
T _{ref}	Atmospheric temperature at reference conditions	273.15 K	Methodological tool "Project emissions from flaring" (Version 02.0.0) /B08/		
Thus, the data and parameters fixed ex-ante are considered to be accurate and in conformance with the requirements of §197(b) of CDM VVS for PoAs (version 02.0) /B01-1/.					

D.5.3. Ex ante calculation of GHG emission reductions or net anthropogenic GHG removals

Means of validation	DR,I
Findings	-
Conclusion	<p>The estimation of ER values is carried out based on equations given in the applied methodology ACM0001 (version 15.0) /B02/ and conforms to the requirements of section 8.3.4 (titled “estimation of Emission reductions”) of CDM VVS for PoAs (version 02.0).</p> <p>The average annual emission reductions are estimated to be 100,784 tCO_{2e}. The total ex ante emission reduction resulting from the CPA for the entire first renewable crediting period of seven years is estimated to be 705,485 tCO_{2e}. The appropriateness of this value has been cross-checked through review of ER spreadsheet /02/ and CPA-DD /01/.</p> <p>The validation team reviewed the ER spread-sheet calculations /02/ and confirms the same to be correct.</p> <p>The Validation team confirms that the steps taken and the equations and parameters applied in the CPA-DD /01/ to calculate baseline emissions emission reductions comply with the requirements of the selected methodology including applicable tools and the revised and approved PoA-DD /B03/.</p> <p>The validation team confirm that all assumptions and data used by the CME are listed in the CPA-DD /01/ (including their references and sources). All documentation used as a basis for assumptions and sources of data are confirmed as correctly quoted and interpreted in the CPA-DD /01/. The values stated in the CPA-DD /01/ are considered reasonable and the baseline methodology /B02/ and applicable tools have been correctly applied to calculate the emission reductions.</p>

D.5.4. Summary of ex ante estimates of GHG emission reductions or net anthropogenic GHG removals

Means of validation	DR,I
Findings	--
Conclusion	<p>The ex-ante estimation of ER values is carried out based on equations given in the applied methodology ACM0001 (Version 15.0) /B02/ and conforms to the requirements of § 197 of CDM VVS for PoA (version 02.0) /B01-1/.</p> <p>The total ex ante emission reductions resulting from the CPA for the entire first renewable crediting period of seven years is estimated to be 705,485 tCO_{2e}, leading to an annual average of 100,784 tCO_{2e}. The validation team reviewed the ER spread-sheets calculations /02/ and confirms the same to be correct.</p>

D.6. Monitoring plan

D.6.1. Data and parameters to be monitored

Means of validation	DR,I
Findings	--
Conclusion	<p>The monitoring plan presented in the CPA-DD /01/ complies with the requirements of the revised and approved PoA-DD /B03/ and the applied monitoring methodology /B02/. The validation team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.</p> <p>The validation team through a document review and interviews with the relevant stakeholders 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.</p> <p>The parameters that are to be monitored ex-post are:</p>

Parameter	Data unit	Description	Frequency
Management of SWDS	-	Management of SWDS	Annual
$Op_{j,h}$	-	Operation of the equipment that consumes the LFG	Continuous (once every 1 minute)
CAPEX and OPEX	Currency (USD, EUR, etc.)	Total investment to implement the project and total cost to operate the project	At the first issuance request after each phase of the project is fully implemented.
Tariff of electricity exported	Currency (USD, EUR, etc.)	Tariff of the electricity exported	At the first issuance request after each phase of the project is fully implemented.
$EC_{PJ,y}$	MWh/y	Quantity of electricity consumed by the project electricity consumption source in year y	Annual
$EC_{BL,y}$ or $EG_{PJ,y}$	MWh/y	Quantity of electricity that would be consumed by the baseline electricity consumption source in year y	Annual
TDL_y	%	Average technical transmission and distribution losses for providing electricity	Annual
$\eta_{flare,m}$	-	Flare efficiency for the minute m	Once per minute
$T_{EG,m}$	°C	Temperature in the exhaust gas of the enclosed flare in minute m	Once per minute
Flame _m	Flame on or Flame off	Flame detection of flare in the minute m	Once per minute
$V_{i,t,db}$ (also equivalent to $V_{k,t,db}$)	m^3 gas i/k / m^3 dry gas	Volumetric fraction of greenhouse gas i/k (methane in both cases) in a time interval t on a dry basis	Continuous (once every 1 minute)
$V_{t,db}$	m^3 dry gas/h	Volumetric flow of the gaseous stream in time interval t on a dry basis	Continuous (once every 1 minute)
T_t	K	Temperature of the gaseous stream in time interval t	Continuous (once every 1 minute)
$\rho_{CH_4,h}$	kg/m ³	Density of methane gas stream in hour h	Continuous (once every 1 minute)
P_t	Pa	Pressure of the gaseous stream in time interval t	Continuous (once every 1 minute)

In summary, the parameter(s) to be monitored have been presented correctly according to requirements and are considered in accordance with the applied methodology /B02/ and revised and approved PoA-DD /B03/. This is in conformance with the requirements of §198(a) of CDM VVS for PoAs (version 02.0) /B01-1/.

D.6.2. Description of the monitoring plan

Means of validation	DR,I
Findings	--
Conclusion	<p>The monitoring plan presented in the CPA-DD /01/ comply with the requirements of the revised and approved PoA-DD /B03/ and the applied monitoring methodology /B02/. The validation team of CCIPL has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.</p> <p>The validation team through a document review and interviews with the relevant stakeholders 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.</p> <p>The responsibilities and institutional arrangements for data collection and archiving have been clearly provided. The information provided in the CPA-DD /01/ could be confirmed based on the interviews and also through the submitted documentary evidence namely CME management manual /15/ covering all requirements as stated in section B.5.1 and B.5.3 of CPA-DD /01/. Based on the same, it can be confirmed that the CME and the CPA implementer will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.</p>

D.7. Start date, crediting period type and duration

Means of validation	DR,I
Findings	CAR 02 has been raised. Please refer to Appendix 4 for further details.
Conclusion	<p>The start date for the CPA is 30/09/2019 as stated in the CPA-DD /01/. The start date is the date of the signed engineering, procurement and construction agreement for the flare at Vissershok South Landfill /10/. The start date of the PoA /B03/ is 17/04/2012. The validation team confirms that the start date of the CPA is after the start date of the PoA. This is in line with the registered PoA-DD /B03/ and requirements of § 200 CDM VVS for PoAs, version 02.0 and hence deemed acceptable.</p> <p>In addition, the type and duration of the crediting period for the CPA was confirmed to be renewable at 7 years and is as per requirements of §184 to §190 of CDM PS for PoAs (version 02.0)/B01-2/and §201 of CDM VVS for PoAs (version 02.0)/B01-1/.</p>

D.8. Environmental impacts

Means of validation	DR,I
Findings	--
Conclusion	<p>As mentioned in the revised and approved PoA-DD /B03/, the environmental impact analysis is carried out at CPA level. The CPA involves landfill gas capture and flaring and or utilisation for electricity. Validation team, based on document review, using official source i.e. Environmental Impact Assessment Regulations (GN R385), in terms of GN R718, Category A, Clause 13 (The extraction, recovery or flaring of landfill gas) and Clause 18 (The construction of facilities for activities listed in Category A). The National Environmental Management Act No 107 of 1998. According to regulations, a basic environmental impact assessment (EIA) is required for a typical CPA included under the PoA.</p> <p>City of Cape Town, commissioned an Environmental Impact Assessment (EIA) of the CPA 03 activity at the Landfill Site as required by the South African environmental regulation in place. EIA process involved consideration of the environmental status of the project location, the purpose and need for the project, views and concerns of interested and affected parties, and compliance with environmental legislation and guidelines.</p>

	<p>Department of Environmental Affairs issued a Waste Management Licence (Licence No.: 12/9/11/L1470/9/R1) /05-1/ for CPA 32 on 20/06/2017. This Waste Management Licence serves as approval of the Basic Assessment that was conducted for the site.</p> <p>This is in conformance with the requirements of §210, §211 and §233 of CDM VVS for PoAs (version 02.0) /B01-1/ and deemed appropriate to the validation team.</p>
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D.9. Local stakeholder consultation

Means of validation	DR,I
Findings	--
Conclusion	<p>It has been indicated in the PoA-DD /B03/ that the local stakeholder consultation shall be done at the CPA level. For the current CPA, the LSC was conducted on 07/03/2012 at the Vissershok South Landfill Site Boardroom, Frankdale Road, Vissershok. Local stakeholders were invited through advertisement in newspapers, emails, notices. Comments were invited from stakeholders that physically attended the meeting and through email/telephone for those who couldn't be present. The summary of the comments received during the consultation process is complete and CME took the appropriate steps to ensure that there were mechanisms in place to gather feedback and address any queries/concerns.</p> <p>The above has been confirmed by review of the LSC Report and related documents /13/ as well as the CPA-DD /01/. Comments were received during the local stakeholders consultation process and those comments were taken up by City of Cape Town and SLR.</p> <p>This is deemed appropriate in the context of the PoA and is in accordance with the requirement of section 7.9 of CDM VVS for PoAs, version 02.0. /B01-1/.</p>

D.10. Eligibility for inclusion

Means of validation	DR,I
Findings	
Conclusion	All the eligibility criteria required for the inclusion of the CPA under the PoA have been addressed in the CPA-DD /01/. The stated confirmation against each eligibility criteria has been checked / assessed and found acceptable by the validation team and complete assessment is provided in Appendix 5.

SECTION E. Internal quality control

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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 CPA validation report underwent a technical review before requesting inclusion (upload) of the CPA. A technical reviewer qualified in accordance with Carbon Check (India) Private Ltd.'s qualification scheme for CDM validation and verification performed the technical review.

SECTION F. Validation opinion

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The DOE, Carbon Check (India) Private Ltd., hereafter referred as CCIPL, has been appointed by the CME, City of Cape Town to perform the validation for inclusion of their proposed component project activity (CPA) "Landfill Gas Extraction and Utilisation at Vissershok " to the programme of activity "City of Cape Town Landfill Gas Extraction and Utilisation Programme". The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism.

The scope of the validation is defined as an independent and objective review of the programme of activities design document (PoA-DD) /B03/, component project activity document (CPA-DD) /01/, the project's baseline establishment and monitoring plan and other relevant documents. CDM Validation and Verification Standard for Programme of Activities /B01-1/, Kyoto Protocol requirements, CDM Modalities & Procedures and subsequent decisions and guidance by the COP/MOP and CDM Executive Board are used to review the information presented in these documents.

The report is based on the assessment of the CPA-DD /01/ (and PoA-DD /B03/) undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews and remote interviews, review of the applicable/applied methodology /B02/ and its underlying formulae and calculations.

The Validation team confirms the contractual relationship signed on 14/10/2020 between the DOE, Carbon Check (India) Private Ltd. And the CME, City of Cape Town. The team assigned for the validation meets the CCIPL's internal procedures including the UNFCCC requirements for the team composition and competence. The validation team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

Validation methodology and process

The validation has been performed as described in the VVS for PoAs /B01-1/ and constitutes the following steps:

- Receipt of initial CPA-DD /01/
- Desk review of revised CPA-DD
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report
- Remote Interview with the CME
- Follow up actions (interviews) for cross checking data
- Review of responses for CARs/CLs
- Receipt of final revised CPA-DD /01/
- Issue of the final validation report

Validation criteria

The following CDM requirements have been considered:

- Article 12 of the Kyoto Protocol,
- Modalities and procedures for CDM (CDM M & P)
- Subsequent decisions by the COP/MOP and CDM Executive Board
- Host country criteria
- Criteria given to provide for consistent project operations, monitoring and reporting.

The host party is the South Africa and fulfils the participation requirements and have approved and authorized the project and the project participants. The DNA of South Africa confirms that the project assists in achieving sustainable development.

The CPA correctly applies the baseline and monitoring methodology of the PoA namely ACM0001 (version 15.0) /B02/.

The validation did not reveal any information that indicates that ODA contributes to the financing of the CPA and that the CPA can be seen as a diversion of ODA funding. This is further confirmed from the declaration provided by the CME /04/.

The CPA-DD /01/ contains monitoring plan for the monitoring of the emission reductions from the project. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is CCIPL's opinion that the project participants are able to implement the monitoring plan.

The proposed component project activity has been developed under Programme of Activities (PoA) titled: "City of Cape Town Landfill Gas Extraction and Utilisation Programme" which involves the recovery and utilization of landfill gas utilization projects i.e.the renewable resource over the Republic of South Africa. Under this CPA, it is envisaged that the landfill gas (LFG) capture and utilisation project at Vissershok South Landfill in Cape Town, South Africa with 'Type 2: Flaring with Electricity

Generation' project. The total emission reduction ensuing from this CPA is estimated to be 100,784 t CO₂ eq. per year. The project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and provide long-term benefits to the mitigation of climate change.

The validation protocol describes a total of 03 findings, which include:

- 02 Corrective Action Requests (CARs);
- 01 Clarification Requests (CLs);
- 00 Forward Action Requests (FARs);

All the above findings have been resolved by the CME.

The single purpose of this report is its use during the inclusion process (of the specific CPA). The review of the CPA-DD /01/, subsequent follow-up interviews and further verification of references have provided CCIPL, with sufficient evidence to determine the fulfilment of stated criteria in the PoA-DD /B03/ and the CPA-DD /01/. In the opinion of CCIPL, the CPA meet all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. CCIPL recommends the CPA for inclusion in the revised and approved PoA /B03/.

Appendix 1. Abbreviations

Abbreviations	Full Texts
BE	Baseline Emission
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
CER	Certified Emission Reduction
CL	Clarification Request
CME	Co-ordinating or Managing Entity
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
COP/MOP	Conference of Parties/ Meeting of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas
GSC	Global Stakeholders Consultation
GWh	Giga Watt Hours
I	Interview
IPCC	Intergovernmental Panel on Climate Change
kW	Kilo Watt
kWh	Kilo Watt Hours
LoA	Letter of Approval
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MOC	Modalities of Communications
MW	Mega Watt
MWh	Mega Watt Hours
ODA	Official Development Assistance
PE	Project Emission
PoA	Programme of Activities
PoA-DD	Programme of activities design document
PP	Project Participant
PPA	Power Purchase Agreement
PS	Project Standard
PCP	Project Cycle Procedure
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
PoA-DD	Programme of activities design document

Appendix 2. Competence of team members and technical reviewers



Carbon Check (India) Private Ltd.

Sanjay Agarwalla


has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

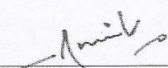
For following functions:

Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

TA 1.1 TA 3.1 TA 5.2 TA 9.2 TA 13.2
 TA 1.2 TA 4.1 TA 8.1 TA 10.1 TA 14.1
 TA 2.1 TA 5.1 TA 9.1 TA 13.1


 Mr. Vikash Kumar Singh
 Compliance Officer


 Mr. Amit Anand
 CEO

Date of Approval
 24/12/2019

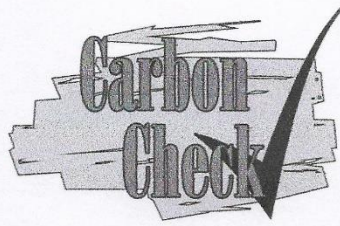
Valid Till
 23/12/2020

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2017	Annual Revision
24/12/2018	Annual Revision
24/12/2019	Annual Revision

¹ India

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 Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
 Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
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 e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Vikash Kumar Singh

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

TA 1.1 TA 3.1 TA 5.2 TA 9.2 TA 13.2
 TA 1.2 TA 4.1 TA 8.1 TA 10.1 TA 14.1
 TA 2.1 TA 5.1 TA 9.1 TA 13.1

Mr. Amit Anand
CEO

Date of Approval
24/12/2019

Valid Till
23/12/2020

Revision History of the Document

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¹ India, South Africa

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 e-mail: info@carboncheck.co.in

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	CME	a) Initial CPA-DD	Version 01; Dated 06/11/2020	CME
		b) Final CPA-DD	Version 02; Dated 04/12/2020	
/02/	CME	a) ER spread sheet corresponding to /1-a/	--	CME
		b) ER spread sheet corresponding to /1-b/		
/03/	CME	Undertaking for voluntary participation in PoA by CPA implementer	Dated 01/12/2020	CME
/04/	CME	Declaration letter from the CME on no ODA involvement in the CPA	Dated 01/12/2020	CME
/05/	Dept. of Environmental Affairs	<p>Compliance with South African waste legislation for the CPA (eligibility criteria 3 and 11):</p> <ol style="list-style-type: none"> 1 Waste Management licence issued by Dept of Environmental affairs (Waste Management Licence for construction and operation of a landfill gas extraction, recovery and flaring plant at Vissershok Disposal Site) 2 Registration of the Landfill gas extraction for Vissershok waste disposal site, Western Cape Province issued by Dept of Environmental Affairs 	<p>Reference number 12/9/11/L147 0/9/R1 : Dated 20/06/2017</p> <p>Reference number 12/9/11/LGE02/9: Dated 21/07/2014</p>	CME
/06/	CME	<ol style="list-style-type: none"> 1 CPA 03 implementation schedule (in two phases): <ul style="list-style-type: none"> - Flaring in December 2020 - Proposed date for start of electricity generation in 2023 2 CPA site operating since 1976 3 Evidence for receiving 552,956 tonnes of waste per year 	-	CME
/07/	CME	Landfill Gas Extraction and Utilisation at Vissershok South – Waste records from City of Cape Town	-	CME
/08/	CME	Declaration from CME confirming on all the Eligibility Criteria for inclusion of the CPA in the PoA	Dated 01/12/2020	CME
/09/	CME	<p>Evidence confirming that baseline for proposed CDM project does not include:</p> <ul style="list-style-type: none"> - The active capture and flaring of natural gas over the whole site; - Electricity generation - Heat generation - Supply to a natural gas distribution network; and/or - a combination of above 	-	CME
/10/	CME	Evidence for start date of the CPA on 30/09/2020	-	CME
/11/	CME	Evidence confirming that CERs will be owned by city of Cape Town in its role as CME and CPA Implementer	Self declaration dated 01/12/2020	CME
/12/	CME	Technical specification for project equipment including evidence to proof that the flare is enclosed flare including technical life time	-	CME

/13/	CME	Local stakeholders meeting related documents: <ul style="list-style-type: none"> - Advertisement for local stakeholder consultation process including invitation copies to the identified stakeholders - Background information document for the project - Attendance Register for local stakeholders consultation - Local stakeholder meeting report 	-	CME
/14/	CME	Evidence for eligibility criterion 14: <ol style="list-style-type: none"> 1. Confirm the ranges of landfill design specification by demonstrating the monthly waste disposal is greater than 1,000 tons of waste per month. 2. Confirm that the volume of waste disposed in the landfilled waste body is greater than 500,000 cubic metres. 3. Confirm the efficiency of the landfill gas collection system would be greater than 20%. 4. Confirm that the type of solid waste disposal site is an existing site 5. Confirmation that the cost of the technology implementation is greater than ZAR 2.5 million. 6. Confirmation that the revenue received by the CPA is from a combination of (but not limited to) the following: <ol style="list-style-type: none"> i. CER sales (all types); ii. Electricity sales (type 2) 	<ol style="list-style-type: none"> 1. Independent third party report (by Pegasys) 2. Waste volume declaration by the CME 3. Independent third party report (by Ingerop) 4. Waste Management licence issued by Dept of Water Affairs and Forestry 5. Resolution by the CME for payment 6. Declaration signed by the CME 	CME
/15/	CME	CME Management Manual	-	CME
/16/	Dept. of Environmental Affairs	Construction permit for LFG collection and flare from Dept; Employment and Labour , Republic Of South Africa	Dated 12/02/2020-	CME
/17/	CC IPL	Validation contract for CPA 3 inclusion in the PoA 10004	Dated 05/11/2020	
/B01/	UNFCCC	<ol style="list-style-type: none"> 1. CDM Validation and Verification Standard for Programme of Activities (Version 02.0). 2. CDM Project Standard for Programme of Activities (Version 02.0) 3. CDM Project Cycle Procedure for Programme of Activities (Version 02.0) 	--	CME
/B02/	UNFCCC	ACM0001, "Flaring or use of landfill gas", Version 15.0	http://cdm.unfccc.int/	Others
/B03/	CME	<ol style="list-style-type: none"> 1. Registered PoA-DD, Version 17; Dated 09/07/2014 2. Approved revised PoA-DD, version 18, dated 05/02/2020 	http://cdm.unfccc.int/	Others
/B04/	UNFCCC	1. Component project activity design document form for CDM component project activities (CDM-CPA-DD-FORM), (Version 09.0)	http://cdm.unfccc.int/	UNFCCC

		2. Instructions for filling out the component project design document form for CDM component project activities (Version 09.0)		
/B05/	UNFCCC	Glossary of CDM Terms, Version 10.0	http://cdm.unfccc.int/	Others
/B06/	UNFCCC	Standardized baseline: ASB0001 “Grid emission factor for the Southern African power pool” (Version 01.0)	http://cdm.unfccc.int/	Others
/B07/	UNFCCC	Methodological tool ‘Emissions from solid waste disposal sites’ (Version 06.0.1).	http://cdm.unfccc.int/	Others
/B08	UNFCCC	Methodological tool “Project emissions from flaring” (Version 02.0.0)	http://cdm.unfccc.int/	Others
/B09/	UNFCCC	Websites: http://cdm.unfccc.int/	http://cdm.unfccc.int/	Others

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CLs from this validation

CL ID	01	Section no.	D.3	Date: 30/11/2020
Description of CL				
CME is requested to provide the expected implementation schedule for phase 2 (electricity generation) for the CPA.				
CME's response				Date: 04/12/2020
The procurement and commissioning of Phase 2 electricity generation is expected to be completed in approximately two years i.e. in 2023.				
Documentation provided by CME				
2020-12-01 Vissershok CPA inclusion_CME declarations_signed				
DOE assessment				Date: 05/12/2020
CME has confirmed that the phase 2 of the CPA is expected to be commissioned in 2023 and provided a declaration in this respect. The CL is closed.				

Table 2. CARs from this validation

CAR ID	01	Section no.	D.5.2	Date: 30/11/2020
Description of CAR				
In section B.4.2 of the CPA-DD, for the parameter "Ru" value provided is 8,314 Pa.m ³ /kmol.K which is incorrect when compared with the TOOL06 for "Project emissions from flaring" and also the source of data is not mentioned. As per the CPA DD filling guideline provided in the CPA DD template which says "Source of data: indicate and justify the choice of data source. Provide clear and valid references".				
CME's response				Date: 04/12/2020
The value in parameter table "Ru" in section B.4.2 of the CPA-DD has been revised accordingly as per TOOL06. The source of data has also been revised accordingly, to reference TOOL06.				
Documentation provided by CME				
2020-12-04 Vissershok Landfill CPA-DD v2				
DOE assessment				Date: 05/12/2020
CME has corrected the parameter "Ru" value as 0.008314472 Pa.m ³ /kmol.K which is in line with Tool 6. The CAR is closed.				

CAR ID	02	Section no.	D.10	Date: 30/11/2020
Description of CAR				
CME needs to provide the start date of the CPA in section C.1 of the CPA-DD and provide evidence for the same.				
CME's response				Date: 04/12/2020
The start date of the CPA in has been provided section C.1 of the CPA-DD. The EPC contract has also been provided as evidence.				
Documentation provided by CME				
VH EPC contract_2019-09-30				
DOE assessment				Date: 05/12/2020
CME has confirmed the start date of the CPA as 30/09/2019 and provided the EPC contract for the Flare in this respect. This is deemed acceptable and the CAR is closed.				

Table 3. FARs from this validation

FAR ID	xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
-				
CME response				Date: DD/MM/YYYY
-				
Documentation provided by CME				
-				
DOE assessment				Date: DD/MM/YYYY
-				

Appendix 5. Assessment of the response to the requirements of the eligibility criteria for inclusion of CPA into the PoA

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence	DOE Assessment
1.	The geographical boundary of the CPA falls within the geographical boundary of South Africa and is therefore consistent with the geographical boundary of the PoA	The CME shall check the GPS co-ordinates of the site provided in Section A.1 of this CPA-DD.	CME signoff only	<p>The CME has confirmed the GPS co-ordinates of the site (33°46'26.4"S 18°32'42.5"E).</p> <p>The CME has confirmed that the geographical boundary of the project falls within the boundaries of South Africa (22 – 35 S, 16 – 33 E).</p>	<p>Based on the review of the CPA-DD /01/, a self declaration letter from the CME /08/ and remote interviews, the validation team is able to confirm that the CPAs are located in South Africa.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
2.	<p>The proposed CPA shall be uniquely identified and defined in an unambiguous manner.</p> <p>There is no other registered CDM project activity with the same identification data.</p>	<p>The CME will check that the CPA uniquely identified and defined in an unequivocal manner, with precise geographic references (e.g. GPS co-ordinates).</p> <p>The CME will check with the UNFCCC CDM database to ensure that the CPA is not registered or under consideration for any other CDM activity.</p>	CME signoff only	<p>The CME has checked that CPA-03 is uniquely identified and defined by confirming the GPS coordinates (33°46'26.4"S 18°32'42.5"E).</p> <p>The CME has also checked the UNFCCC CDM database to ensure that the CPA is not registered or under consideration for any other CDM activity.</p>	<p>Based on the review of the CPA-DD /01/, a self declaration letter from the CME /08/, review of the UNFCCC web site /B09/ and remote interviews, the validation team is able to confirm that the CPA is uniquely identified and defined in an unambiguous manner and there is no other registered CDM project activity with the same identification data.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
3.	It has to be demonstrated that prior to the implementation of the project activity the LFG was only vented and/or	1. The baseline will be demonstrated based on third party report or publicly available documents/literatures	<p>Evidence required from CPA implementer for CME signoff:</p> <p>Waste Management Licence.</p>	<p>The CME has verified that the baseline is correctly defined in the CPA-DD.</p> <p>The CME has verified that the LFG was only vented prior to the implementation of</p>	Based on the review of the CPA-DD /01/, the Landfill Waste Management Licence /05-1/, LFG Extraction Licence /05-2/, a self declaration letter from the CME /08/ and remote interviews, the validation team is able to confirm that the LFG was only vented prior to the implementation of the project.

	<p>flared but not utilized for energy generation.</p>		<p>LFG Extraction Licence.</p>	<p>the project, as per the conditions of the Vissershok South Landfill Waste Management Licence. The LFG Extraction Licence (12/9/11/LGE02/9) was issued on 11/07/2014, which is before the project implementation, meaning the commissioning of the flare, which is expected by December 2020 .</p>	<p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
<p>4.</p>	<p>This programme is specifically for the extraction of landfill gas which will be utilized in the following types of project activities: 1. LFG is used to generate electricity in one or several power plants with a total nameplate capacity that equals or is below 10MW; 2. The LFG is used to generate heat for internal or external consumption; 3. The LFG is flared For further measures see Criterion No. 14.</p>	<p>The CME will verify the technology by final design documents, purchase agreement document or quotes obtained for feasibility study to ensure that it is in accordance with the PoA.</p>	<p>Evidence required from CPA implementer for CME signoff: Supply agreements for flaring and electricity generation equipment.</p>	<p>The CME has verified that the supply agreement for the flaring is in place. Once the decision to pursue electricity generation is in place, the CME will verify that a supply agreement for the electricity generation equipment is in place for the provision of equipment under under 10MW. Based on the calculations, it has been estimated that a 2.4 MW electrical engine may feasibly be installed.</p>	<p>Based on the review of the CPA-DD /01/, supply agreement for the flaring system /10/, a self declaration letter from the CME /08/ /09/ and remote interviews, the validation team is able to confirm that the under the CPA, LFG is being extracted and flared. Furthermore, based on the available data for waste volumes deposited at the project site /07/, it is envisaged that 2.4 MW power generation capacity can be installed. In the second phase of the project, LFG will be utilised to generate electricity for supply to SAPP grid and excess LFG will be flared. Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>

<p>5.</p>	<p>The starting date of the CPA shall be earliest date at which the project implementation begins, which shall be determined based on the first signed major contract related to the CPA equipment. The CPA starting date needs to be after 01 January 2013.</p>	<p>The CME will verify the technology by final design documents, purchase agreement document or quotes obtained for feasibility study to ensure that it is in accordance with the PoA.</p>	<p>Evidence required from CPA implementer for CME signoff:</p> <p>EPC contract for flare construction</p>	<p>The start date is in accordance with the definition. The CPA operator has supplied the CME with proof of the project start date, which is the first signed major contract related to the implementation of the CPA. The start date is 30/09/2019.</p>	<p>The start date for the CPA is 30/09/2019 as stated in the CPA-DD /01/ and confirmed on review of the EPC contract for flare construction /10/. CME has considered the start date as the date of signing the first major contract related to the implementation of the CPA (EPC contract for flare construction) on 30/09/2019 /10/. The validation team confirms that the start date is after the start date of the PoA.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the CPA complies with this eligibility criterion of the PoA.</p>
<p>6.</p>	<p>Compliance with the relevant applicability conditions listed in the applied methodology ACM0001 version 15, namely project activities which;</p> <p>a) Install a new LFG capture system in a new or existing SWDS where no LFG capture system was installed prior to the implementation of the project activity; or</p> <p>b) Make an investment into an existing LFG capture system to increase the</p>	<p>The CME will check the CPA-DD to confirm that all tools used in the CPA-DD are valid under the methodology ACM0001, and that only methodology ACM0001 is used. Compliance with the applicability conditions listed will be checked by the CME. This will be signed off in a letter/checklist.</p>	<p>CME signoff only</p>	<p>The CME has checked the CPA-DD to confirm that all tools used in the CPA-DD are valid under the methodology ACM0001 , and that only methodology ACM0001 was used. Compliance with the applicability conditions listed was checked by the CME.</p> <p>a.) The CME has verified that a new LFG capture system will be installed in the existing Vissershok Landfill, where no LFG capture system was installed prior to the implementation of the project activity was installed. The flare is expected to be commissioned by December 2020 .</p> <p>b.) Not applicable as the project design entails the installation of a new LFG</p>	<p>Based on the review of the CPA-DD /01/ Waste Management Licence /05/, EPC contract for Flare /10/, evidence for the operation of the project site since 1976 /06-2/, Landfill waste record /07/, a self declaration letter from the CME /08/ and remote interviews, the validation team is able to confirm the applicability of the methodology ACM0001, version 15 and the methodological tools. Please refer to section D.4.1 above for further assessment of each of the meth applicability criterion.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>

<p>recovery rate or change the use of the captured LFG, provided that:</p> <p>i. The captured LFG was vented or flared and not used prior to the implementation of the project activity; and</p> <p>ii. In the case of an existing active LFG capture system for the amount of LFG can not be collected separately from the project system after the implementation of the project activity and its efficiency is not impacted on by the project system: historical data on the amount of LFG capture and flared is available.</p> <p>c) Flare the LFG and/or use the capture LFG in any (combination) of the following ways;</p>			<p>capture system in a new or existing SWDS where no LFG capture system was installed prior to the implementation of the project activity.</p> <p>c.i) The CME has verified that the CPA-03 project design entails flaring and electricity generation. The supporting evidence is the contract document for the design and supply of the flaring equipment.</p> <p>d.) CPA-03 does not reduce the amount of organic waste that would be recycled in the absence of the project activity. The City of Cape Town has published an Integrated Waste Management Plan (IWMP) of 2015, which is aligned with 2017-2020 Integrated Development Planning cycle for local government in South Africa. The City's existing and planned initiatives that aim to minimize the landfilling of organic waste include the composting of green waste across the municipality . For example, composting sites are located at the Radnor and Bellville compost plants . The City also considers the expansion of its composting</p>	
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<p>i. Generating electricity;</p> <p>ii. Generating heat in a boiler or glass melting furnace;</p> <p>d) Do not reduce the amount of organic waste that would be recycled in the absence of the project activity.</p> <p>The methodology is only applicable if the application of the procedure to identify the baseline scenario confirms that the most plausible baseline scenario is:</p> <p>a) Atmospheric release of the LFG or capture of LFG and destruction through flaring to comply with regulations or contractual requirements, to address safety and odour concerns, or for</p>			<p>facilities as a “key focus area” .</p> <p>Furthermore, the City promotes the sorting or organic waste at source. The City plans to roll-out 15,000 home composters to homeowners from 2015-16 to 2017-18, at a rate of 5000 per annum. The City has already rolled out approximately 5,500 home composters.</p> <p>Therefore, the presence of existing and planned composting initiatives (composting plans and home composting) prove that the recycling of organic waste would not be reduced in the absence of the CPA-03 project activity, which is still under development.</p> <p>Applicability of the methodology:</p> <p>a.) The baseline scenario is atmospheric release of the LFG, which was the activity allowed for by the Vissershok Landfill Waste Management Licence . CPA-03 received a new LFG Extraction Licence in 2014 for the purpose of undertaking the project activity.</p>	
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<p>other reasons; and b) In the case that the LFG is used in the project activity for generating electricity and /or generating heat in a boiler, or glass melting furnace; i. For electricity generation; that electricity would be generated in the grid or in captive fossil fuel fired power plants; and/or For heat generation: that heat would be generated using fossil fuels in equipment located within the project boundary.</p>			<p>1. b.) The baseline scenario for electricity generation will be the generation of electricity by the grid.</p>	
<p>7. Additionality will be assessed at the CPA level in the CPA-DD and checked by the CME. This programme will only utilise the “Simplified procedures to identify the baseline scenario and demonstrate</p>	<p>Additionality must be assessed by the CME and relevant supporting documents provided by the CPA implementer to the CME.</p>	<p>Evidence required by the CPA implementer for CME signoff: Evidence provided in criteria 3 and 4 above.</p>	<p>The CME confirms that Criteria 3 and 4 have been met by the CPA and, as such, the project is automatically additional (in accordance with paragraph 21 of ACM0001 version 15). The CME has verified that the baseline scenario is LFG venting (only) on the Vissershok Landfill and electricity generation by the grid</p>	<p>As the CPA complies with eligibility criteria 3 and 4 (as assessed above), the CPA complies with “Simplified procedures to identify the baseline scenario and demonstrate additionality” in accordance with ACM0001 (version 15.0). Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>

	<p>additionality” in accordance with ACM0001 (version 15.0). For this reason, if the project activity satisfied both eligibility criterion 3 and 4, it is automatically additional under this methodology.</p>				
<p>8.</p>	<p>A local stakeholder consultation must be undertaken</p>	<p>A stakeholder consultation report must be completed at the CPA level (by the CPA implementer) for each CPA. The report must include</p> <ul style="list-style-type: none"> • photocopy of the newspaper advert where the invitation was published; • or copies of the invitation sent to local stakeholders; and • the minutes of the meeting and list of attendants; and • Brief description how comments were invited and complied; and • Summary of comments received* • Report on how due account was taken of any comments received 	<p>Evidence required from CPA implementer for CME signoff</p> <p>*CME to note how CDM related comments have been addressed</p> <p>The evidence required includes:</p> <ul style="list-style-type: none"> • Newspaper advertisements; • Copies of the invitation sent to local stakeholders; • List of attendants; • Brief description how comments were invited and complied; • Summary of comments received • Report on how due account was taken of comments received 	<p>The documents related to the stakeholder consultation were provided to the CME.</p>	<p>It has been indicated in the PoA-DD /B03/ that the local stakeholder consultation shall be done at the CPA level. For the current CPA, the LSC was conducted on 07/03/2012 at the Vissershok South Landfill Site Boardroom, Frankdale Road, Vissershok. Local stakeholders were invited through advertisement in newspapers, emails, notices. Comments were invited from stakeholders that physically attended the meeting and through email/telephone for those who couldn't be present. The summary of the comments received during the consultation process is complete and CME took the appropriate steps to ensure that there were mechanisms in place to gather feedback and address any queries/concerns.</p> <p>The above has been confirmed by review of the LSC Report and related documents /13/ as well as the CPA-DD /01/. No negative comments were received during the local stakeholders consultation process.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>

<p>9.</p>	<p>CPA s will have undertaken an analysis of their environmental impacts which will have been formally recorded.</p>	<p>The documents related to the environmental analysis must be provided to the CME.</p>	<p>Evidence required by CPA implementer for CME signoff: Environmental Management Plan</p>	<p>The documents related to the environmental analysis were provided to the CME. The Vissershok Landfill Waste Management Licence (12/9/11/L1470/9/R1) was granted by the Department of Environmental Affairs on 20/06/2017.</p>	<p>As mentioned in the revised and approved PoA-DD /B03/, the environmental impact analysis is carried out at CPA level. The CPA involves landfill gas capture and flaring and or utilisation for electricity. Validation team, based on document review, using official source i.e. Environmental Impact Assessment Regulations (GN R385), in terms of GN R718, Category A, Clause 13 (The extraction, recovery or flaring of landfill gas) and Clause 18 (The construction of facilities for activities listed in Category A). The National Environmental Management Act No 107 of 1998. According to regulations, a basic environmental impact assessment (EIA) is required for a typical CPA included under the PoA.</p> <p>City of Cape Town, commissioned an Environmental Impact Assessment (EIA) of the CPA 03 activity at the Landfill Site as required by the South African environmental regulation in place. EIA process involved consideration of the environmental status of the project location, the purpose and need for the project, views and concerns of interested and affected parties, and compliance with environmental legislation and guidelines.</p> <p>Department of Environmental Affairs issued a Waste Management Licence (Licence No.: 12/9/11/L1470/9/R1) /05-1/ for CPA 03 on 26/06/2017. This Waste Management Licence serves as approval of the Basic Assessment that was conducted for the site.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
<p>10.</p>	<p>No official Development Aid will be involved or diverted as a</p>	<p>Signed declaration from the Project developer of the CPA and</p>	<p>Evidence required by the CPA implementer for signoff by the CME:</p>	<p>No ODA is used to implement the CPA. A written declaration will be stored in the CME database.</p>	<p>Based on the review of the CPA-DD /01/, interviews and a self declaration letter from the CME /04/, validation team is able to confirm non involvement of</p>

	<p>result of activities under the CPA. The official declarations of 'no development aid' have been provided by the landfill gas project developers. If Annex 1 countries are involved, then a declaration from the concerned agency in Annex 1 country should also be submitted</p>	<p>the concerned agency in Annex 1 country (if involved)</p>	<p>Signed declaration as per Appendix 2 of this CPA-03 DD.</p>		<p>any ODA funds in the CPA.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
11.	<p>Compliance with South African waste legislation. This includes:</p> <ol style="list-style-type: none"> Proof of ownership and/or permit to operate the landfill Proof of permission to flare/utilise landfill gas 	<ol style="list-style-type: none"> A permit for disposal is required by the CPA implementer to show that the site is licensed Permit for landfill gas extraction and/or flaring to be provided by the CPA owner OR an agreement between the CPA owner and CME to be duly signed 	<p>Evidence required by the CPA implementer for CME signoff:</p> <ol style="list-style-type: none"> Waste Management Licence. <p>Evidence required for CME signoff:</p> <ol style="list-style-type: none"> LFG Extraction Licence 	<p>The CME and CPA implementer verify that the project complies with South African waste legislation.</p> <p>The Vissershok Landfill Waste Management Licence (12/9/11/L1470/9/R1) was granted by the Department of Environmental Affairs on 20/06/2017.</p> <p>The Landfill Gas Extraction Licence registered on 11/07/2014, number 12/9/11/LGE02/9, has been provided to the CME.</p>	<p>Based on the review of the CPA-DD /01/, Waste Management Licence /05-1/, Landfill Gas Extraction Licence /05-2/, interviews with CME representatives and a self declaration letter from the CME /08/, validation team is able to confirm the compliance with South African waste legislation for the CPA.</p> <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
12.	<p>Agreement of revenue of CERs from project.</p>	<p>The CME and CPA implementer will duly both sign an agreement denoting which party will receive the revenue from the CERs</p>	<p>Evidence required for CME signoff:</p> <p>Draft or final Inclusion agreement</p>	<p>For this CPA this criterion is not applicable as the CME and the CPA implementer are the same party.</p>	<p>Based on the review of the CPA-DD /01/, self declaration by the CME /08/ and remote interviews, it is confirmed that the CME and CPA implementer are the same entity for the CPA and hence this eligibility criterion becomes redundant for CPA 03.</p> <p>Conclusion:</p>

					Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.
13.	Additional Requirement	For the project activity there would be no fossil fuel consumption other than electricity generation or transportation due to the project activity.	Evidence required for CME signoff: Confirmation of project documentation by CME.	The proposed project activity will not consume fossil fuel, other than grid electricity. This is checked by the CME in the CPA documentation.	Based on the review of the CPA-DD /01/, self declaration by the CME /08/ and remote interviews, it is confirmed that there would be no fossil fuel consumption other than electricity generation or transportation due to the project activity. Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.
14.	Technical and Economic Parameters	In accordance with paragraph 76 of ACM0001 (version 15.0), a CPA is eligible for inclusion under this PoA if it can: 1. Confirm the ranges of landfill design specification by demonstrating the monthly waste disposal is greater than 1,000 tons of waste per month. 2. Confirm that the volume of waste disposed in the landfilled waste body is greater than 500,000 cubic metres. 3. Confirm the efficiency of the landfill gas collection system would greater than 20%. 4. Confirm that the type of solid waste	Evidence required from CPA implementer for CME signoff: Report by independent engineer or technically competent entity to support the condition stated.	1. The average monthly airspace consumption (i.e. waste disposed) at Vissershok is approximately 66 167 m3, based on deposits August 2012 and May 2020 (794,000m3 /12). According to a journal article published in Scientific African, the density of waste in a landfill is approximately 900kg/m3. This value can be used to convert the m3 disposed at the Vissershok Landfill to tonnes. The approximate monthly disposal rate over the last eight years has been approximately 59,550 tonnes (66,167 m3 x 900 kg/m3 / 1,000). This value is therefore above the specified threshold of 1,000 tonnes of waste per month. 2. The total volume of waste in the Vissershok Landfill as	Based on the review of the CPA-DD /01/, Independent third party report (by Pegasys) /14-1/, Waste volume declaration by the CME /14-2/, Independent third party report (by Ingerop) /14-3/, Waste Management licence issued by Dept of Water Affairs and Forestry /14-4/, Evidence of payment to Ingerop /14-5/, Declaration signed by the CME /14-6/, self declaration by the CME /08/ and remote interviews, it is confirmed that: 1. ranges of landfill design specification by demonstrating the monthly waste disposal is greater than 1,000 tons of waste per month 2. the volume of waste disposed in the landfilled waste body is greater than 500,000 cubic metres 3. efficiency of the landfill gas collection system would greater than 20% 4. the type of solid waste disposal site is an existing site 5. the cost of the technology implementation is greater than ZAR2.5 million

		<p>disposal site is a new or an existing site.</p> <p>5. Confirmation that the cost of the technology implementation is greater than ZAR2.5 million.</p> <p>6. Confirmation that the revenue received by the CPA is from a combination of (but not limited to) the following:</p> <ul style="list-style-type: none"> i. CER sales (all types); ii. Electricity sales (type 2); iii. Sale of gas for heat generation (type 3 and 4). 		<p>of February 2020 was over 6 million cubic meters. The volume of waste disposed in the landfilled waste body is therefore greater than 500,000 cubic metres.</p> <p>3. The efficiency of the LFG collection system is greater than 20%.</p> <p>4. Vissershok Landfill is an existing SWDS. The Vissershok Landfill Waste Management Licence (12/9/11/L1470/9/R1) was granted by the Department of Environmental Affairs on 20/06/2017.</p> <p>5. The capital cost for CPA-03 is R80.5 million.</p> <p>6.i. The CPA Inclusion Agreement stipulates that the revenue received by the CPA is from the sale of CERs and also the possibility of electricity if sold to a third party.</p>	<p>6. the revenue received by the CPA is from a combination of the following:</p> <ul style="list-style-type: none"> i. CER sales ii. Electricity sales <p>Conclusion: Based on the above assessment, validation team concludes that the subject CPA complies with this eligibility criterion of the PoA.</p>
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Appendix 6. Validation Protocol for proposed CPA Inclusion into the PoA

Conformity of Component Project Activities

CDM-CPA-DD Requirements Checklist

Landfill Gas Extraction and Utilisation at Vissershok

Table 1: CDM-CPA-DD / CDM-SSC-CPA-DD Requirements Checklist ((based on § 37 of the CDM Modalities and Procedures and on VVS , Project Standard and Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities,))				
Checklist	Comment	Ref.	Draft Concl.	Final Conc.
<i>Specific requirements of CPA</i>				
<i>SECTION A. General description of CPA</i>				
<i>A.1. Title of the proposed or registered PoA</i>				
A.1.1. Is the reference and title of the PoA to which this CPA is included provided?	Yes, the reference number of the PoA has been provided in this section.	/01/	OK	OK
<i>A.2. Title of the CPA</i>				
A.2.1. Is the title of the CPA and the unique identification of the CPA Indicated?	Yes, the title of the CPA and the unique identification of the CPA has been appropriately indicated.	/01/	OK	OK
A.2.2. Is the current version number of the CPA-DD Indicated?	Yes, the current version number of CPA-DD has been provided in this section.	/01/	OK	OK
A.2.3. Is the date the CPA-DD was completed (DD/MM/YYYY) Indicated?	Yes, the date of completion of CPA-DD has been provided in this section.	/01/	OK	OK
<i>A.3. Description of the CPA</i>				
A.3.1 Is the description of the technology(ies) and/or measures used by the CPA is in accordance with the proposed or registered PoA, and in accordance with the applicable provisions in the Project standard?	Yes, the description of the technology and/or measure used by the CPA is in accordance with the proposed or registered PoA, and the applicable provisions in the Project standard. However, CL 01 is raised.	/01/	CL-01	OK
<i>A.4 Entity/individual responsible for CPA</i>				
A.4.1.1 Is the information on the CPA implementer(s) provided? (CPA implementers can be project participants of the PoA, under which the CPA is submitted, provided)	Yes, appropriate information on the CPA implementer has been provided.	/01/	OK	OK
A.4.1.2 Is the name of CPA implementers included in the CPA is consistent with the proposed/ registered PoA?	Yes, the name of CPA implementer included in the CPA is consistent with the registered PoA. For this CPA the CPA implementers are Brightspark Energy Private Limited, Ecoeye Co Ltd., Korea Impact Carbon Corporation.	/01/	OK	OK

A.5 Technical description of the CPA				
A.5.1. Is the description the technologies and/or measures to be employed and/or implemented by the CPA including a list of the facilities, systems and equipment that will be installed and/or modified by the CPA provided?	Yes	/01/, /B03/	OK	OK
A.5.2 Does the description includes;				
A.5.2.1 A list and the arrangement of the main manufacturing/production technologies, systems and equipment involved provided?	Not Applicable	/01/, /B02/	OK	OK
A.5.2.2 information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies?	Yes, information about the age and average lifetime of the equipment is based on manufacturer's specifications.	/01/	OK	OK
A.5.2.3 The monitoring equipment detail and their location in the systems. Does the monitoring detail provided are complete to measure all data and parameters such that Emission reduction can be measured or calculated?	Yes	/01/, /B02/	OK	OK
A.5.2.4 Energy and mass flows and balances of the systems and equipment included in the CPA?	Yes	/01/, /B02/	OK	OK
A.5.2.5 The types and levels of services (normally in terms of mass or energy flows) provided by the systems and equipment that are being modified and/or installed under the CPA and their relation, if any, to other manufacturing/production equipment and systems outside the project boundary?	yes	/01/, /B02/	OK	OK
A.5.2.6 if the types and levels of services provided by those manufacturing/production systems and equipment outside the project boundary also constitute important parameters of the description. Does the description clearly explain how the same types and levels of services provided by the CPA would have been provided in the baseline scenario?	Yes	/01/, /B02/	OK	OK
A.5.3 Does the description contains a list of:-				
A.5.3.1 Facilities, systems and equipment in operation under the existing scenario prior to the implementation of the CPA?	Yes, this section contains description of equipment in operation under the existing scenario prior to the implementation of the CPA.	/01/, /B02/	OK	OK
A.5.3.2 Facilities, systems and equipment in the baseline scenario?	Yes, this section contains description of systems/equipment in operation existing in the baseline scenario.	/01/, /B02/	OK	OK

A.5.3.3 In case the baseline scenario is a continuation of current practice. Is it stated that both the scenarios are same?	Yes, the baseline scenario is a “continued use of existing luminaries in the households” i.e.continuation of current practice.	/01/, /B02/	OK	OK
A.5.3.4 Does the information provides the purpose of the CPA and how it reduces GHG emissions?	Yes, information provided describes the purpose of the CPA and how it reduces GHG emissions.	/01/, /B02/	OK	OK
A.6. Party(ies)				
A.6.1 Does the Party (ies) and CPA implementer(s) involved in the CPA provided in tabular format and in Appendix 1 Consistent and the contact information complete?	Yes, the Party and CPA implementer involved in the CPA has been provided in tabular format and it is inconsistent with the information contained in Appendix 1.	/01-(a)/	OK	OK
A.7. Geographic reference or other means of identification				
A.7.1 Is the geographic reference or other means of identification that allows for the unique identification of the CPA provided? (maximum in one page)?	Yes.	/01/, /12/	OK	OK
A.8. Duration of the CPA				
A.8.1 Start date of the CPA				
A.8.1 Is the start date provided in (DD/MM/YYYY) format?	Yes, the start date has been provided in the DD/MM/YYYY format.	/01/	OK	OK
A.8.1 Does the description, of how the start date was determined and is in line with the definition of start date in “Glossary of CDM terms” and provided in POA-DD?	Yes, CME has mentioned the description of how the start date was determined has been provided and is further in line with the definition of start date in “Glossary of CDM terms” and Instructions for completing this form CPA-DD. CAR 02 is raised.	/01/	CAR-02	OK
A.8.2 Expected operational lifetime of the CPA				
A.8.2.1 Is the expected operational lifetime of the CPA stated in years and months?	Yes	/01/	OK	OK
A.9. Choice of the crediting period and related information				
Does the type of crediting period renewable or Fixed chosen and clearly stated?	The type of crediting period chosen is renewable and is clearly stated.	/01/	OK	OK
A.9.1 Choice of the crediting period and related information				

Is the expected start date of the crediting period of the CPA indicated in (DD/MM/YYYY) format, and line with PoA?	Yes, the expected start date of the crediting period of the CPA has been indicated in (DD/MM/YYYY) format and is line with PoA.	/01/	OK	OK
A.9.2 Length of the crediting period				
A.9.2.1 Is the length of the crediting period chosen clearly indicated?	Yes	/01/	OK	OK
A.9.2.1.1 In case a renewable crediting period is chosen, does the length of the first crediting period and the number of renewal periods provided?	Yes, renewable crediting period is chosen and the same has been clearly mentioned in the CPA DD. However, CME has not mentioned the number of renewal periods.	/01-(a)/	OK	OK
A.9.2.1.2 Does the total renewal periods comply and do not exceed the PoA validity period?	Yes, the total renewal periods comply and do not exceed the PoA validity period.	/01-(a)/	OK	OK
A.10 Estimated amount of GHG emission reductions				
Does the estimated annual GHG emission reductions for each year of the crediting period and, the annual average and the total GHG emission reductions over the chosen crediting period (or the first crediting period) provided in the table?	Yes, the estimated annual GHG emission reductions for each year of the crediting period and, the annual average. However, the total GHG emission reductions over the chosen crediting period (or the first crediting period) have been provided in the table.	/01/	OK	OK
A.11. Public funding of the CPA				
A.11.1 Does the PoA receives public funding from Parties included in Annex I?	No, the PoA does not receive public funding from Parties included in Annex I.	/01/,/05/,/B03/	OK	OK
A.11.2 if the PoA receives public funding from Parties included in Annex I, is the information on Parties providing public funding Provided in Appendix 2 and the affirmation obtained from such Parties is in accordance with applicable provisions related to official development assistance in the Project standard?	Not Applicable	/01/,/05/,/B03/	OK	OK
A.12. Confirmation for CPA				
A.12. Does the description include and confirm that the CPA is neither registered as an individual CDM project activity nor is part of another registered PoA?	Yes, the description includes and further confirms that the CPA is neither registered as an individual CDM project activity nor is part of another registered PoA.	/01/	OK	OK
SECTION B. Environmental analysis				
B.1. Analysis of the environmental impacts				
B.1.1 Is the analysis of the environmental impacts required and is undertaken,	Yes	/01/, /B03/	OK	OK

B.1.2 Does the description and the analysis of environmental impacts undertaken is as per the PoA.	Yes	/01/	OK	OK
B.2. Environmental impact assessment				
B.2.1. Is an environmental impact assessment required?	Yes	/01/, /B03/	OK	OK
B.2.1.1 Does the assessment of the requirement of Environmental impact assessment and the conclusion & related references to all documentation provided?	Yes	/01/	OK	OK
B.2.2 In case the section B1and B.2 is kept blank. Is it indicated and confirmed that the environmental analysis is provided at the PoAlevel.	Not Applicable	/01/	OK	OK
SECTION C. Local stakeholder comments				
C.1. Solicitation of comments from local stakeholders				
C.1 Is the detail of process by which comments from local stakeholders have been invited for the CPA described?	Local Stakeholder Consultation was conducted at CPA level.	/01/, /B03/	OK	OK
C.2. Summary of comments received				
C.2 Are all stakeholders that have made comments Identified and Is the summary of these comments provided?	Yes	/01/, /B03/	OK	OK
C.3. Report on consideration of comments received				
C.3.1 Does the information provided demonstrate that all comments received have been considered?	Not applicable as no comments were received	/01/, /B03/	OK	OK
C.3.2. In case the section C1 and C.2 is kept blank. Is it indicated and confirmed that the stakeholder consultation information is provided at the PoA level?	Not Applicable	/01/, /B03/	OK	OK
SECTION D. Eligibility of CPA and estimation of emissions reductions				
D.1. Title and reference of the approved baseline and monitoring methodology(ies) selected.				
D.1. Is the exact methodology(ies) Identified and reference& title of the approved methodology provided?	Yes, CME has provided the UNFCCC reference of the applied methodology.	/01/	OK	OK
D.2. Application of methodology(ies)				
D.2.1 Is it demonstrated how the applicability conditions of the approved methodology(ies) and the PoA are met?	Yes the CME has demonstrated the applicability conditions of the methodology.	/01/	OK	OK
D.2.2 Has the documentation that has been used provided and explained? Is the reference of documentation included in Appendix 3?	Yes, appropriate documentation has been provided and explained. The references have been included in Appendix-3 of this report.	/01/	OK	OK
D.3. Sources and GHGs				

D.3.1 Does all the sources and GHGs included in the CPA boundary Described in accordance with the PoA?	The description of project boundary provided is complete and as per the narrative provided in the applied methodology.	/01/	OK	OK
D.3.2 Does the proof which shows that the CPA is located within the geographical boundary of the proposed or registered PoA Provide?	Yes, the proof which shows that the CPA is located within the geographical boundary of the proposed or registered PoA has been mentioned and provided.	/01/	OK	OK
D.3.3. Does all emission sources and GHGs included in the CPA boundary described, explained and justified using the table provided?	Yes, all emission sources and GHGs included in the CPA boundary described are explained and justified using the table provided.	/01/	OK	OK
D.3.4 Does the section Include a flow diagram of equipment, energy and mass flows based on the description provided in section A.5. of CPA-DD?	Yes	/01/	OK	OK
D.4. Description of the baseline scenario				
D.4 Is the description of the baseline scenario and its identification for the CPA is in accordance with the PoA?	Yes, the description of the baseline scenario and its identification for the CPA is in accordance with the PoA.	/01/, /B03/	OK	OK
D.5. Demonstration of eligibility for a CPA				
D.5.1 Does CPA meets each of the eligibility criteria of the PoA including confirmation of additionality of the CPA for its inclusion into the PoA? Please provide assessment for each of the eligibility criteria as per the proposed or registered PoA DD, the eligibility criteria shall cover (unless differently mentioned in the registered PoA DD, if the registered PoA DD provides different set of eligibility criteria, consider those in the below row) a minimum the following :	Yes, the CPA meets each of the eligibility criteria of the PoA including confirmation of additionality of the CPA for its inclusion into the PoA.	/01/, /B03/	OK	OK
(a) The geographical boundary of the CPA including any time-induced boundary # consistent with the geographical boundary set in the PoA # For example, an emission factor for electricity generation is dependent on the boundaries of regional or state or sub-regional grids.	The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.	/01/, /B03/	OK	OK

<p>(b) Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo);</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(c) The specifications of technology/measure # including the level * and type of service, performance specifications including compliance with testing/certifications;</p> <p># Specifications of the technology/measure shall include the type, capacity and other key features of the design of the systems. For example, indicating the installed capacity (in kW), size or dimensions, fixed/portable operation, and other key design features that makes the project cook stoves efficient, would be appropriate; however, only indicating that all cook stoves will have an efficiency X% would not be sufficient.</p> <p>* The level of service shall be defined in comparison with the baseline system being replaced.</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(d) Conditions to check the start date of the CPA through documentary evidence;</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(e) Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(f) The conditions that ensure that the CPA meets the requirements pertaining to the demonstration of additionality as assessed in section B.1 above;</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(g) The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;# # See also relevant paragraphs of "CDM project cycle procedure".</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>

<p>(h) Conditions to provide an affirmation that funding from Annex I Parties, if any, does not result in a diversion of official development assistance;</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(i) Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation) \$; \$ This is to re-test the validity of assumptions made at the PoA level. For example, in a lighting efficiency application, lighting usage hours of 3.5 hours per day would be valid if the target group is residences/households. Usage hours would be different in commercial applications and vice versa.</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(j) Where applicable, the conditions related to sampling requirements for the PoA in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities";</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(k) Where applicable, the conditions that ensure that every CPA meets the small- scale or microscale threshold # and remains within those thresholds throughout the crediting period of the CPA. However, for a CPA that consists of only units that qualify as 'microscale CDM units' as defined in the methodological tool "Demonstration of additionality of microscale project activities", this condition is not required; # Please refer to the latest approved version of the methodological tool "Demonstrating additionality of microscale project activities" and the latest approved version of the "General Guidelines to SSC CDM methodologies".</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>
<p>(l) Where applicable, the requirements for the debundling check, in case the CPA belongs to small-scale or microscale project categories #. However, if a CPA solely consists of 'microscale CDM units', the requirement regarding debundling is not applicable. # Please refer to the latest approved version of the methodological tool "Assessment of debundling for small-scale project activities".</p>	<p>The demonstration of the CPA's compliance with this eligibility criterion has been successfully made by the CME. Refer to the assessment provided in Appendix-5 for further details.</p>	<p>/01/, /B03/</p>	<p>OK</p>	<p>OK</p>

D.6. Estimation of emission reductions				
D.6.1.Explanation of methodological choices				
D.6.1.1 Is Explanation and justification for the methods and/or methodological steps, based on the applied methodology, for calculating baseline emissions applied to the CPA provided?	Yes, explanation and justification for the methods and/or methodological steps for calculating baseline emissions applied to the CPA have been provided in accordance with the applied methodology.	/01/, /B03/	OK	OK
D.6.1.2 Is Explanation and justification for the methods and/or methodological steps, based on the applied methodology, for calculating, project emissions, are applied to the CPA provided?	Yes, explanation and justification for the methods and/or methodological steps for calculating project emissions applied to the CPA have been provided in accordance with the applied methodology.	/01/, /B03/	OK	OK
D.6.1.3Is Explanation and justification for the methods and/or methodological steps, based on the applied methodology, for calculating, leakage emissions and emission reductions applied to the CPA provided?	Yes, explanation and justification for the methods for calculating leakage emissions applied to the CPA have been provided in accordance with the applied methodology.	/01/, /B03/	OK	OK
D.6.1.4 Is Explanation and justification for the methods and/or methodological steps, based on the applied methodology, for calculating, emission reductions applied to the CPA provided?	Yes, explanation and justification for the methods and/or methodological steps, based on the applied methodology, for calculating, emission reductions applied to the CPA have been provided.	/01/, /B03/	OK	OK
D.6.1.5 Is the equation for calculating the emission reductions for CPA is in line with the methodology and the PoA?	Yes, the equation for calculating the emission reductions for CPA is in line with the methodology and the PoA.	/01/, /B03/	OK	OK
D.6.2. Data and parameters that are to be reported ex-ante				
D.6.2.1 Does the compilation of information on the data and parameters that are not monitored during the crediting period but are determined before the registration and remain fixed throughout the crediting period described and provided?	Yes, the compilation of information on the data and parameters that are not monitored during the crediting period but are determined before the registration and remain fixed throughout the crediting period has been described and provided. However, CAR 01 is raised.	/01/, /B03/	CAR-01	OK
D.6.2.2. Is the compilation of information for data that are measured or sampled, and data that are collected from other sources (e.g. official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature, etc.) are complete and as per the methodology and applicable conditions?	Yes, the compilation of information for data that are measured or sampled, and data that are collected from other sources are complete and as per the methodology and applicable conditions	/01/, /B03/	OK	OK

<p>D.6.2.3. Are all data or parameter, complete with respect to the: “Value(s) of data applied, Choice of data, Purpose of data, Measurement methods and procedures to enable Calculation of baseline emissions; Project Emission, Leakage Emission, Emission Reduction? Pleas list all ex-ante parameters (as below) along with their values and provide an assessment on its appropriateness.</p>	<p>Yes, all data or parameters are complete with respect to the: “Value(s) of data applied, Choice of data, Purpose of data, Measurement methods and procedures to enable calculation of baseline emissions; project emissions, and emission reductions.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>Parameter: EF_{CO2,ELEC,y} Value: 0.92 Source of value: The latest version of CDM baseline CO₂ emission database by Central Electricity Authority (CEA), India</p>	<p>The validation team reviewed the reference source and deems the value to be appropriate. Refer to section D.5.2 for detailed assessment.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>Parameter: L_{i 9W} Value: 25,000 Hours Source of value: manufacturer’s specification (Determined from independent life-tests of the LEDs as per national / international standard or any other industry admissible test)</p>	<p>The validation team reviewed the reference source and deems the value to be appropriate. Refer to section D.5.2 for detailed assessment.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>Parameter: L_{i 14W} Value: 25,000 Hours Source of value: manufacturer’s specification (Determined from independent life-tests of the LEDs as per national / international standard or any other industry admissible test)</p>	<p>The validation team reviewed the reference source and deems the value to be appropriate. Refer to section D.5.2 for detailed assessment.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.6.3. Ex-ante calculation of emission reductions</p>				
<p>D.6.3.1. Is ex ante calculation of project emissions, baseline emissions, Leakage emissions and /or Emission reduction expected during the crediting period, Provided in a transparent manner based on data or parameters (in the table in section D.6.2 above) applying all relevant equations provided in the selected methodology?</p>	<p>Yes, the ex-ante calculation of baseline emissions and Emission reduction expected during the crediting period are provided in a transparent manner based on data or parameters (in the table in section D.6.2 above) applying all relevant equations provided in the selected methodology.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.6.3.2 If any of these estimates has been determined by a sampling approach, then are the descriptions of the sampling efforts undertaken (in accordance with the “Standard for sampling and surveys for CDM project activities and programme of activities”) Provided?</p>	<p>None of the ex-ante parameter for the CPA has been determined by a sampling approach.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.6.3.3. Are the documentation of each equation applied, represented in a manner that enables the reader to reproduce the calculation?</p>	<p>Yes.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>

D.6.3.4. Are the relevant, additional background information and/or data (including relevant electronic) spreadsheet provided in Appendix 4?	Not Applicable	/01/	OK	OK
D.6.3.5 Is a sample calculation for each equation used, substituting the values used in the equations Provided?	Yes, a sample calculation for each equation used, substituting the values used in the equations has been provided.	/01/	OK	OK
D.6.4. Summary of the ex-ante estimates of emission reductions				
Is the summary of all ex-ante estimation of Baseline Emission, Project Emission, Leakage Emission and Emission Reduction provided in accordance with given table?	Yes, the summary of all ex-ante estimation of Baseline Emission and Emission Reduction is provided in accordance with given table.	/01/	OK	OK
D.7. Application of the monitoring methodology and description of the monitoring plan				
D.7.1. Data and parameters to be monitored				
D.7.1.1. Is the specific information related to procedures for measurement, monitoring, recording, collected, archiving of data and parameters that is required for estimation and calculation of Emission Reduction provided?	Yes, the specific information related to procedures for measurement, monitoring, recording, collected, archiving of data and parameters that is required for estimation and calculation of Emission Reduction have been provided.	/01/	OK	OK
D.7.1.2 Are all data or parameter, complete with respect to the: "Value(s) of data applied, Choice of data, Purpose of data, Measurement methods and procedures, QA/QC procedures to enable Calculation of baseline emissions; Project Emission, Leakage Emission, Emission Reduction ?	Yes, all data or parameter are complete with respect to the: "Value(s) of data applied, Choice of data, Purpose of data, Measurement methods and procedures, QA/QC procedures to enable Calculation of baseline emissions; Project Emission, and Emission Reduction.	/01/	OK	OK
D.7.1.3 Are the relevant, additional background information on data and parameters to be monitored is provided in Appendix 5?	Not Applicable.	/01/	OK	OK
D.7.1.4 Is the list of parameters presented in section B.7.1 (Part II of PoA-DD) considered to be complete with regards to the requirements of the applied methodology?				

Parameter: Management of SWDS	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			
Parameter: $Op_{j,h}$	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	NA			

Parameter: CAPEX and OPEX	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	NA			
Parameter: Tariff of electricity exported	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: ECPJ,y	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: EC _{BL,y} or EG _{PJ,y}	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: TDL _y	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: $\eta_{flare,m}$	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: TEG,m	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: Flame _m	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: $v_{i,t,db}$ (also equivalent to $v_{k,t,db}$)	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: $V_{t,db}$	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: T _t	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: p _{CH4,h}	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			

Parameter: P _t	Monitoring Checklist	Yes / No / NA	/01/, /B03/	OK	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	Yes			
	Has this value been verified?	Yes			
	Measurement method and procedure correctly described?	Yes			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			
	D.7.2. Description of the monitoring plan				
D.7.2.1 Is the description of the monitoring plan for the CPA provided in accordance with the approved monitoring methodology (ies) and PoA?	Yes, the description of the monitoring plan for the CPA is provided in accordance with the approved monitoring methodology and PoA.	/01/, /B03/	OK	OK	
D.7.2.2 In case the data and parameters to be monitored determined by sampling approach, are the description of sampling plan provided in accordance with the recommended outline for a sampling plan in the “Standard for sampling and surveys for CDM project activities and programme of activities”?	Yes, for the data and parameters to be monitored determined by sampling approach, the description of sampling plan is provided in accordance with the recommended outline for a sampling plan in the “Standard for sampling and surveys for CDM project activities and programme of activities.	/01/	OK	OK	
D.7.3 Consistency check and font size	The font size mentioned in the CPA DDs and CDM-CPA-DD FORM is consistent.	/01/	OK	OK	

<p>D.7.3.1 Does the following key terms and there description is consistent within the various section of the PoA-DD? P.S.: Additional rows may be added if required.</p>				
<p>D.7.3.1.1. CME and Participants of PoA</p>	<p>Yes, the description of CME and Participants of PoA is consistent within the various sections of the PoA-DD.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.7.3.1.2. Description/ Technology or measures to be employed by the CPA</p>	<p>Yes, the description of Technology or measures to be employed by the CPA is consistent within the various sections of the PoA-DD.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.7.3.1.3. Target group (end users type)</p>	<p>Yes, the Target group (end user type) listed are consistent within the various sections of the PoA-DD.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.7.3.1.4. Eligibility criteria for inclusion of a CPA</p>	<p>Yes, the Eligibility criteria for inclusion of a CPA is consistent within the various sections of the PoA-DD.</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>
<p>D.7.3.2. Is the font size in all the respective documents is as per the requirements of Instructions for filling out the programme design document form for small-scale/large scale CDM programmes of activities?</p>	<p>Yes, the font size in all the respective documents is as per the requirements of Instructions for filling out the programme design document form for small-scale/large scale CDM programmes of activities</p>	<p>/01/</p>	<p>OK</p>	<p>OK</p>

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN);• Make editorial improvements.
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	4 May 2015	Initial publication.

Decision Class: Regulatory
Document Type: Form
Business Function: Registration
Keywords: component project activity, validation report
