




**Validation report form for post-registration changes for  
CDM project activities  
(Version 03.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the project activity</b>	EnviroServ Chloorkop Landfill Gas Recovery Project UNFCCC Ref. No.: 0925
<b>Process track</b>	<input checked="" type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period
<b>Version number of the validation report</b>	054
<b>Completion date of the validation report</b>	1146/053/2020
<b>Type(s) of PRCs</b>	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents <sup>1</sup> <input checked="" type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of a monitoring plan <input checked="" type="checkbox"/> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents <input checked="" type="checkbox"/> Changes to the project design <input type="checkbox"/> Changes specific to afforestation and reforestation project activities
<b>Version number of PDD to which this report applies</b>	Version: 109 Dated: 1142/053/2020
<b>Project participants?</b>	EnviroServ Waste Management (Pty) Ltd
<b>Host Party</b>	South Africa
<b>Applied methodologies and standardized baselines</b>	ACM0001: Large-scale Consolidated Methodology: Flaring or use of landfill gas (version 15.0). ASB0001: Standardized baseline: Grid emission factor for the Southern African Power Pool (Version 01.0)
<b>Mandatory sectoral scopes</b>	13: Waste handling and disposal
<b>Conditional sectoral scopes, if applicable</b>	1: Energy industries (renewable-/non-renewable sources)

<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

<b>Name and UNFCCC reference number of the DOE</b>	E-0052: Carbon Check (India) Private Ltd.
<b>Name, position and signature of the approver of the validation report</b>	Vikash Kumar Singh, Compliance Officer 

**SECTION A. Executive summary**Purpose, general description and location of the project activity:

EnviroServ Waste Management (Pty) Ltd (here after referred as "Project Participants" (PP)), has appointed the DOE, Carbon Check (India) Private Ltd. (CC IPL) to perform an independent validation of the post registration changes to the CDM Project Activity "EnviroServ Chloorkop Landfill Gas Recovery Project" (UNFCCC Ref. No.: 0925) in Republic of South Africa (hereafter referred to as "Project Activity"). The objective of the project is to extract landfill gas (LFG) at the site and combust the LFG by flaring. In addition, the project includes the staggered implementation of project components that entail the productive use of the gas. These components include [off-site](#) electricity generation [using the LFG captured from the project activity](#), for sale to third parties upon the finalisation of purchase agreements.

The EnviroServ Chloorkop Landfill Site has been used for the disposal of municipal solid waste since 1997. The landfill site is located in the eastern parts of Gauteng Province in South Africa and receives approximately 400 000 tons annually. Waste accepted includes general (or domestic) waste, garden waste, soil and builder's rubble.

Scope of validation:

This validation is an independent and objective review of the post registration changes in registered PDD. The scope of the validation of post registration changes is to determine whether there are proposed or actual changes to the project design of the registered CDM project activity. CC IPL also determined whether the description in the revised PDD submitted by project participants, which describe the nature and extent of the actual changes, accurately reflects the implementation, operation and monitoring of the modified project activity. The validation of post registration changes in the revised PDD /01/ were based on the following:

- (i) Approved consolidated methodology ACM0001 (version 15.0) /B02/ and the applied tools
- (ii) Revised PDD (in track change and clean mode) /01/
- (iii) CDM VVS for Project Activities (version 02.0) /B01-1/
- (iv) CDM PS for Project Activities (version 02.0) and /B01-2/
- (v) CDM PCP for Project Activities (version 02.0) /B01-3/
- (vi) Relevant decisions, guidance and clarifications of the CMP and CDM EB

Validation process:

The validation process for post registration changes includes the following steps:

- (a) Contract with project participants and appointment of validation team and technical review team
- (b) Desk review of the revised PDD by validation team
- (c) Interview of the representative of PP and consultant by the validation team
- (d) Reporting and closure of findings (CARs/CLs/FARs) and preparation of validation report
- (e) Independent technical review of the validation report
- (f) Issuance of final validation report to contracted PP and submission to UNFCCC for approval of post registration changes as appropriate.

Conclusion:

In summary, the post registration changes consist of corrections, permanent changes to registered monitoring plan and changes to the project design. The validation team confirms that the post registration changes proposed for the project activity require prior approval from the Board as the proposed change falls under §241 [\(b\)](#), [\(ca\)](#) and [\(h\)](#) ~~(i)~~ of CDM PS for Project Activities (version 02.0) /B01-2/. The DOE therefore accepts the changes and notifies the EB of request for the approval of the post registration changes viz., corrections, permanent changes to registered monitoring plan and changes to the project design of the registered Project Activity. The validation team confirms that the proposed post registration changes are in line with the applied methodology and all other applicable tools and guidance.

This report is the combined assessment opinion for all the changes that are proposed in the PDD /01/ and the request is submitted for approval by CDM EB for prior approval.

## SECTION B. Validation team, technical reviewer and approver

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### 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 / Verifier / Validator / Technical Expert	IR	Anand	Amit	CC IPL	X		X	X

### B.2. Technical reviewer and approver of the validation report on PRCs

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	Agarwalla	Sanjay Kumar	CC IPL
2.	Approver	IR	Singh	Vikash Kumar	CC IPL

## SECTION C. Means of validation

### C.1. Desk/document review

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

### C.2. On-site inspection

No on site assessment was carried out for the validation of post registration changes for the project activity. However, telephonic and Skype based interviews were conducted with the project participants.

### C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Tuchten	Olivia	Promethium Carbon	12/02/2020 & 06/03/2020	<ul style="list-style-type: none"> <li>Technologies/ measures being used,</li> <li>Project boundary, sources and GHGs,</li> <li>Application of</li> </ul>	Amit Anand

					<p>the methodology</p> <ul style="list-style-type: none"> <li>• Reasons for the PRC in accordance with §229 of CDM PS for project activities (version 02.0);</li> <li>• Impacts of the proposed or actual changes to the registered CDM project activity</li> </ul>	
2.	Malan	Terence	EnviroServ Waste Management (Pty) Ltd	12/02/2020 & 06/03/2020	<ul style="list-style-type: none"> <li>• Technologies/ measures being used,</li> <li>• Project boundary, sources and GHGs,</li> <li>• Application of the methodology</li> <li>• Reasons for the PRC in accordance with §229 of CDM PS for project activities (version 02.0);</li> <li>• Impacts of the proposed or actual changes to the registered CDM project activity</li> </ul>	Amit Anand
3.	Cornish	David	ENERGY Systems SA (PTY) LTD	12/02/2020 & 06/03/2020	<ul style="list-style-type: none"> <li>• Technologies/ measures being used,</li> <li>• Project boundary, sources and GHGs,</li> <li>• Application of the methodology</li> <li>• Reasons for the PRC in accordance with §229 of CDM PS for project activities (version 02.0);</li> <li>• Impacts of</li> </ul>	Amit Anand

					the proposed or actual changes to the registered CDM project activity	
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**C.4. Sampling approach**

Not Applicable.

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

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	--	CAR 01	--
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	--	--	--
Corrections	CL 03	--	--
Changes to the start date of the crediting period	--	--	--
Inclusion of a monitoring plan	--	--	--
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents	CL 03	--	--
Changes to the project design	CL 01 CL 02 CL 04	CAR 02 CAR 03 CAR 04	--
Changes specific to afforestation and reforestation project activities	--	--	--
Others (please specify): <u>Against UNFCCC clarification request</u>	--	--CAR 05	--
<b>Total</b>	04	054	--

**SECTION D. Validation findings****D.1. Compliance with PDD form**

<b>Means of validation</b>	DR
<b>Findings</b>	CAR 01 had been raised in this regard and resolved. Please refer to Appendix 4 of this report for detailed closure of this finding.
<b>Conclusion</b>	<p>The revised PDD /01/ has been completed using the latest available template of CDM-PDD-FORM /B05/ and has been submitted in both track change and clean versions /01/.</p> <p>Both the registered /B04/ and revised PDD /01/ were reviewed for the consistency of the information and it is confirmed that the information transferred from the previous template to the new template is materially the same as in the registered PDD /B04/ except the changes due to the proposed PRC.</p> <p>Few addition or deletions have been made in the revised PDD /01/ as compared to the registered PDD /B04/. These addition or deletions are primarily due to the adoption of latest template of the CDM-PDD-FORM (version 11.0) /B05/.</p> <p>This confirms to the requirements of §278 and 279 of the CDM VVS for project activities (version 02.0) /B01-1/.</p> <p>Furthermore, in accordance with §280 (a) of CDM VVS for project activities (version 02.0) /B01-1/, the validation team confirms that:</p> <p>(i) The revised PDD /01/ is compliant with the valid version of the CDM-PDD-Form /B05/ and instructions therein; and</p>

- |  |   |
|--|---|
|  | (ii) The information transferred to the revised PDD /01/ is materially the same as that provided in the registered PDD /B04/. |
|--|---|

## D.2. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

Means of validation	DR
Findings	Not Applicable
Conclusion	Not Applicable

## D.3. Corrections

Means of validation	DR										
Findings	CL 03 had been raised in this regard and resolved. Please refer to Appendix 4 of this report for detailed closure of this finding.										
Conclusion	<p>Following corrections have been made to the revised PDD /01/:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th><th>Corrections</th></tr> </thead> <tbody> <tr> <td>1.</td><td>The range of operating temperatures (°C) and gas flow volumes (Nm<sup>3</sup>/h) in the fixed parameter Spec<sub>flare</sub> were incorrectly recorded in the registered PDD. The values have been changed accordingly and are aligned with the manufacturer's specifications.</td></tr> <tr> <td>2.</td><td>The measurement of gas mass flow and subsequent calculation of volume were incorrectly recorded as being undertaken on a dry basis. The monitored parameters have been revised to reflect gas flow monitoring on a wet basis, by a mass flow meter.</td></tr> <tr> <td>3.</td><td>The requirement to overhaul the flare every three years was incorrectly included in the registered PDD in section B.6.1. The manufacturer has confirmed that the decision to overhaul the flare is at the project participant's discretion because the general plant parts and the CDM equipment are fully operational and calibrated as required.</td></tr> <tr> <td>4.</td><td>Other corrections (addition or deletions) are primarily due to the adoption of latest template of the CDM-PDD-FORM (version 11.0) /B05/.</td></tr> </tbody> </table> <p>Validation team has accepted all the proposed corrections in the revised PDD /01/ and confirms that the corrected information is an accurate reflection of actual project information and the corrected parameters are in accordance with the applied methodology and the monitoring plan.</p> <p>Furthermore, the above listed revisions do not have any impact on the following:</p> <ul style="list-style-type: none"> <li>• Scale of the project</li> <li>• Applicability of the applied baseline and monitoring methodology</li> <li>• Baseline &amp; additionality of the project</li> <li>• Completeness and accuracy of the Monitoring</li> <li>• Actual or estimated Emission reductions from the project.</li> </ul> <p>The validation took cognizance of §287, 288 and 289 of CDM VVS for project activities (version 02.0) /B01-1/.</p>	Sl. No.	Corrections	1.	The range of operating temperatures (°C) and gas flow volumes (Nm <sup>3</sup> /h) in the fixed parameter Spec <sub>flare</sub> were incorrectly recorded in the registered PDD. The values have been changed accordingly and are aligned with the manufacturer's specifications.	2.	The measurement of gas mass flow and subsequent calculation of volume were incorrectly recorded as being undertaken on a dry basis. The monitored parameters have been revised to reflect gas flow monitoring on a wet basis, by a mass flow meter.	3.	The requirement to overhaul the flare every three years was incorrectly included in the registered PDD in section B.6.1. The manufacturer has confirmed that the decision to overhaul the flare is at the project participant's discretion because the general plant parts and the CDM equipment are fully operational and calibrated as required.	4.	Other corrections (addition or deletions) are primarily due to the adoption of latest template of the CDM-PDD-FORM (version 11.0) /B05/.
Sl. No.	Corrections										
1.	The range of operating temperatures (°C) and gas flow volumes (Nm <sup>3</sup> /h) in the fixed parameter Spec <sub>flare</sub> were incorrectly recorded in the registered PDD. The values have been changed accordingly and are aligned with the manufacturer's specifications.										
2.	The measurement of gas mass flow and subsequent calculation of volume were incorrectly recorded as being undertaken on a dry basis. The monitored parameters have been revised to reflect gas flow monitoring on a wet basis, by a mass flow meter.										
3.	The requirement to overhaul the flare every three years was incorrectly included in the registered PDD in section B.6.1. The manufacturer has confirmed that the decision to overhaul the flare is at the project participant's discretion because the general plant parts and the CDM equipment are fully operational and calibrated as required.										
4.	Other corrections (addition or deletions) are primarily due to the adoption of latest template of the CDM-PDD-FORM (version 11.0) /B05/.										

## D.4. Changes to the start date of the crediting period

Means of validation	DR
Findings	Not Applicable
Conclusion	Not Applicable

## D.5. Inclusion of a monitoring plan

Means of validation	DR
Findings	Not Applicable
Conclusion	Not Applicable

**D.6. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents**

<b>Means of validation</b>	DR														
<b>Findings</b>	CL 03 had been raised in this regard and resolved. Please refer to Appendix 4 of this report for detailed closure of this finding.														
<b>Conclusion</b>	<p>Following permanent changes have been made to the registered monitoring plan of the registered <a href="#">PoA-DDPDD</a>:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th><th>Permanent changes to monitoring Plan of PDD</th></tr> </thead> <tbody> <tr> <td>1.</td><td>The reference to the GIR 5000 gas analyser in section B.6.1 was removed as the gas analyser has been replaced with a Guardian NG Infrared Gas Monitor.</td></tr> <tr> <td>2.</td><td>Change the monitoring plan to use the default flare emission value as opposed to biannual sampling for flare efficiency. The use of the default value is preferred as it is considered the more efficient and cost-effective method of monitoring the flare efficiency. The change is also likely to result in fewer emission reductions (due to the flare being low height the default efficiency factor will be 80%, which is lower than the expected actual methane destruction efficiency of the flare of 99%, as specified by the manufacturer.</td></tr> <tr> <td>3.</td><td>The monitored parameters <math>M_{t,wb}</math> and <math>V_{k,t,wb}</math> were included in the monitoring plan to reflect actual gas monitoring on a wet basis by a mass flow meter.</td></tr> <tr> <td>4.</td><td>The monitored parameters <del><math>EG_{PJ,y}</math></del>, <i>Tariff of electricity exported</i>, <math>EC_{PJ,j,t}</math> and <math>EC_{BL,k,t}</math> were included in monitoring plan to accommodate the inclusion of electricity generation in the project design.</td></tr> <tr> <td>5.</td><td> <p><u>The monitored parameters from methodology ACM0001 (version 15.0), related to electricity consumption and generation, <math>EG_{PJ,y}</math> and <math>EG_{EC,y}</math> were removed from the PDD to avoid duplications of the same parameters required by the methodology and the Tool 5 ("Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation", Version 03.0). The parameters in question from Tool 5 are <math>EC_{PJ,i,t}</math> and <math>EC_{BL,k,t}</math>, discussed in point above.</u></p> <p><u>The methodology (page 19) states that <math>EG_{PJ,y}</math> is the equivalent to parameter <math>EC_{BL,k,t}</math> which is the parameter in Tool 5 for electricity generated in the baseline. Therefore, the parameter table for <math>EC_{BL,k,t}</math> has been included in section B.6.1, B.6.3 and B.7.1 of the PDD, and references to parameter <math>EG_{PJ,y}</math> have been removed to avoid duplication.</u></p> <p><u>Similarly, ACM0001 (version 15.0) requires project emissions from electricity consumption to be calculated using Tool 5. Therefore, parameter <math>EG_{EC,y}</math> (from ACM0001, version 15.0) has been replaced by the equivalent monitored parameter <math>EC_{PJ,i,t}</math> (from Tool 5) to avoid duplication</u></p> </td></tr> <tr> <td>65.</td><td>The monitored parameters <math>FC_{i,j,y}</math>, <math>NCV_{diesel,y}</math> and <math>EFCO2_{diesel,y}</math> were included in monitoring plan to accommodate the inclusion of project emissions from a back-up diesel generator in the project design.</td></tr> </tbody> </table> <p>Validation team has accepted all the proposed permanent changes to the monitoring plan in the revised PDD /01/ and confirms that these changes are an accurate reflection of actual project information and monitoring activity being undertaken at the project site by PP.</p> <p>In accordance with requirements of §297 of CDM VVS for PA (version 02.0) /B01-1/, the validation team confirms that these permanent changes are in compliance with the applied methodology, the applied standardized baseline, the applied methodological tools and is unlikely to lead to a reduction in the accuracy of the calculation of emission reductions.</p>	Sl. No.	Permanent changes to monitoring Plan of PDD	1.	The reference to the GIR 5000 gas analyser in section B.6.1 was removed as the gas analyser has been replaced with a Guardian NG Infrared Gas Monitor.	2.	Change the monitoring plan to use the default flare emission value as opposed to biannual sampling for flare efficiency. The use of the default value is preferred as it is considered the more efficient and cost-effective method of monitoring the flare efficiency. The change is also likely to result in fewer emission reductions (due to the flare being low height the default efficiency factor will be 80%, which is lower than the expected actual methane destruction efficiency of the flare of 99%, as specified by the manufacturer.	3.	The monitored parameters $M_{t,wb}$ and $V_{k,t,wb}$ were included in the monitoring plan to reflect actual gas monitoring on a wet basis by a mass flow meter.	4.	The monitored parameters <del><math>EG_{PJ,y}</math></del> , <i>Tariff of electricity exported</i> , $EC_{PJ,j,t}$ and $EC_{BL,k,t}$ were included in monitoring plan to accommodate the inclusion of electricity generation in the project design.	5.	<p><u>The monitored parameters from methodology ACM0001 (version 15.0), related to electricity consumption and generation, <math>EG_{PJ,y}</math> and <math>EG_{EC,y}</math> were removed from the PDD to avoid duplications of the same parameters required by the methodology and the Tool 5 ("Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation", Version 03.0). The parameters in question from Tool 5 are <math>EC_{PJ,i,t}</math> and <math>EC_{BL,k,t}</math>, discussed in point above.</u></p> <p><u>The methodology (page 19) states that <math>EG_{PJ,y}</math> is the equivalent to parameter <math>EC_{BL,k,t}</math> which is the parameter in Tool 5 for electricity generated in the baseline. Therefore, the parameter table for <math>EC_{BL,k,t}</math> has been included in section B.6.1, B.6.3 and B.7.1 of the PDD, and references to parameter <math>EG_{PJ,y}</math> have been removed to avoid duplication.</u></p> <p><u>Similarly, ACM0001 (version 15.0) requires project emissions from electricity consumption to be calculated using Tool 5. Therefore, parameter <math>EG_{EC,y}</math> (from ACM0001, version 15.0) has been replaced by the equivalent monitored parameter <math>EC_{PJ,i,t}</math> (from Tool 5) to avoid duplication</u></p>	65.	The monitored parameters $FC_{i,j,y}$ , $NCV_{diesel,y}$ and $EFCO2_{diesel,y}$ were included in monitoring plan to accommodate the inclusion of project emissions from a back-up diesel generator in the project design.
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3.	The monitored parameters $M_{t,wb}$ and $V_{k,t,wb}$ were included in the monitoring plan to reflect actual gas monitoring on a wet basis by a mass flow meter.														
4.	The monitored parameters <del><math>EG_{PJ,y}</math></del> , <i>Tariff of electricity exported</i> , $EC_{PJ,j,t}$ and $EC_{BL,k,t}$ were included in monitoring plan to accommodate the inclusion of electricity generation in the project design.														
5.	<p><u>The monitored parameters from methodology ACM0001 (version 15.0), related to electricity consumption and generation, <math>EG_{PJ,y}</math> and <math>EG_{EC,y}</math> were removed from the PDD to avoid duplications of the same parameters required by the methodology and the Tool 5 ("Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation", Version 03.0). The parameters in question from Tool 5 are <math>EC_{PJ,i,t}</math> and <math>EC_{BL,k,t}</math>, discussed in point above.</u></p> <p><u>The methodology (page 19) states that <math>EG_{PJ,y}</math> is the equivalent to parameter <math>EC_{BL,k,t}</math> which is the parameter in Tool 5 for electricity generated in the baseline. Therefore, the parameter table for <math>EC_{BL,k,t}</math> has been included in section B.6.1, B.6.3 and B.7.1 of the PDD, and references to parameter <math>EG_{PJ,y}</math> have been removed to avoid duplication.</u></p> <p><u>Similarly, ACM0001 (version 15.0) requires project emissions from electricity consumption to be calculated using Tool 5. Therefore, parameter <math>EG_{EC,y}</math> (from ACM0001, version 15.0) has been replaced by the equivalent monitored parameter <math>EC_{PJ,i,t}</math> (from Tool 5) to avoid duplication</u></p>														
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	Furthermore, in accordance with §298 of CDM VVS for PA (version 02.0) /B01-1/, the validation team concludes that the permanent changes comply with the relevant requirements related to the permanent changes from the registered monitoring plan, the applied methodology.
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## D.7. Changes to the project design

<b>Means of validation</b>	DR, I								
<b>Findings</b>	CAR 02, CAR 03, CAR 04, CL 01, CL 02 and CL 04 were raised and resolved. Please refer to appendix 4 for the detailed closure of the validation finding.								
<b>Conclusion</b>	<p>Following permanent changes have been made to the project design of the registered <del>PeA-DBPDD</del>:</p> <p>The current project design involves changes compared to the project design in the registered project activity /B04/. The project design changes to the project activity are:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th><th>Changes to the project design</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Decrease in capacity: the project participant removed one of two the flares from the emission boundary due to low gas volumes. Flare 2 was decommissioned on 8 June 2019.</td></tr> <tr> <td>2.</td><td> <p>Addition of new component: the project participant is investigating <del>off-site</del> electricity generation from the landfill gas <u>captured from the project activity</u> and hence this technology component has been added to the project design. The capacity of the generator is expected to be 950 kW and is expected to run for an average of 7210 hours per annum.</p> <p>The project boundary has therefore been <del>expanded</del> <u>revised</u> to reflect the offsite generation of electricity.</p> </td></tr> <tr> <td>3.</td><td> <p>Actual operational parameters that are within the control of the project participants, differing from the expected parameters:</p> <p>a. The project participant has moved the remaining flare to a different area of the landfill site to accommodate <del>expansion of the more efficient</del> landfill <u>space utilization</u>. The new flaring compound was officially commissioned on 9 December 2019 <del>and remains materially the same as the original design (which now includes only one flare)</del>.</p> <p>b. A back-up diesel generator has been added in the project boundary. The decision to utilize the back-up diesel generator was motivated by the current programme of electricity load shedding by Eskom, the national electricity utility, which is expected to continue for the next two years.</p> </td></tr> </tbody> </table> <p>The actual changes in the project design as compared to the description of project design as provided in the registered PDD /B04/ have been assessed in accordance with §309 (a) of VVS for project activities (version 02.0) /B01-1/ and the validation team confirms that this change is in accordance with the §241 (b), (c) and (h) of the CDM Project Standard for Project Activities (version 02.0) /B01-2/. The validation team further confirms that this project design change does not have any adverse impact on the compliance of the monitoring plan, the level of accuracy of the monitoring activity, the applied monitoring methodology including applicable tool(s) thereby complying with §302 of CDM VVS for project activities (version 02.0) /B01-1/.</p> <p>Further in line with §309 (b) of VVS for project activities (version 02.0) /B01-1/, the VT based on interviews with PP and its representatives confirms that the changes to the project design such as decommissioning of flare 2, shifting of flare compound and installation of back-up diesel generator has happened during the previous year and the addition of electricity generation component is futuristic in nature and is anticipated to happen by the end of this year. There is no way that these changes would have been known prior to the registration of the CDM project activity. Furthermore, the VT based on the assessment of revised PDD /01/ also confirms</p>	Sl. No.	Changes to the project design	1.	Decrease in capacity: the project participant removed one of two the flares from the emission boundary due to low gas volumes. Flare 2 was decommissioned on 8 June 2019.	2.	<p>Addition of new component: the project participant is investigating <del>off-site</del> electricity generation from the landfill gas <u>captured from the project activity</u> and hence this technology component has been added to the project design. The capacity of the generator is expected to be 950 kW and is expected to run for an average of 7210 hours per annum.</p> <p>The project boundary has therefore been <del>expanded</del> <u>revised</u> to reflect the offsite generation of electricity.</p>	3.	<p>Actual operational parameters that are within the control of the project participants, differing from the expected parameters:</p> <p>a. The project participant has moved the remaining flare to a different area of the landfill site to accommodate <del>expansion of the more efficient</del> landfill <u>space utilization</u>. The new flaring compound was officially commissioned on 9 December 2019 <del>and remains materially the same as the original design (which now includes only one flare)</del>.</p> <p>b. A back-up diesel generator has been added in the project boundary. The decision to utilize the back-up diesel generator was motivated by the current programme of electricity load shedding by Eskom, the national electricity utility, which is expected to continue for the next two years.</p>
Sl. No.	Changes to the project design								
1.	Decrease in capacity: the project participant removed one of two the flares from the emission boundary due to low gas volumes. Flare 2 was decommissioned on 8 June 2019.								
2.	<p>Addition of new component: the project participant is investigating <del>off-site</del> electricity generation from the landfill gas <u>captured from the project activity</u> and hence this technology component has been added to the project design. The capacity of the generator is expected to be 950 kW and is expected to run for an average of 7210 hours per annum.</p> <p>The project boundary has therefore been <del>expanded</del> <u>revised</u> to reflect the offsite generation of electricity.</p>								
3.	<p>Actual operational parameters that are within the control of the project participants, differing from the expected parameters:</p> <p>a. The project participant has moved the remaining flare to a different area of the landfill site to accommodate <del>expansion of the more efficient</del> landfill <u>space utilization</u>. The new flaring compound was officially commissioned on 9 December 2019 <del>and remains materially the same as the original design (which now includes only one flare)</del>.</p> <p>b. A back-up diesel generator has been added in the project boundary. The decision to utilize the back-up diesel generator was motivated by the current programme of electricity load shedding by Eskom, the national electricity utility, which is expected to continue for the next two years.</p>								

that these changes would have no impact on the overall operation/ability of the CDM project activity to deliver emission reductions as stated in the revised PDD /01/.

Further in line with §309 (c) of VVS for project activities (version 02.0) /B01-1/, the validation team has assessed the effect of the project design change as below:

(i) **Additionality of the registered CDM project activity:**

The current project design, which has been proposed as a part of renewal of crediting period involves addition of [off-site](#) electricity generation component with an installed capacity of 1.136 MW by the end of this year.

“Simplified procedures to identify the baseline scenario and demonstrate additionality” in accordance with ACM0001 (version [15.08.4](#)) /B02/ have been used to demonstrate the additionality of the project activity.

As per §21 of the applied methodology, following types of project activities at new or existing landfills (greenfield or brownfield) are deemed automatically additional, if prior to the implementation of the project activity the LFG was or would have been only vented and/or flared but not utilized for energy generation:

- (a) The LFG is used to generate electricity in one or several power plants with a total nameplate capacity that equals or is below 10 MW;
- (b) The LFG is used to generate heat for internal or external consumption;
- (c) The LFG is flared

In case of the project activity the LFG was being flared prior to the implementation of the project activity. This has been established in the registered PDD /B04/. In the project activity, the LFG is used to generate electricity in project power plant and the total proposed capacity of the generating plant is 1.136 MW i.e., below 10 MW. Prior to the project activity there was no power generation facility consuming LFG.

Hence the VT concludes that the proposed design change has no impact on the additionality of the registered project activity.

(ii) **Scale of the registered CDM project activity:**

The project is a large-scale project activity and the project design change does not adversely affect the scale of the project activity.

(iii) **Applicability and application of the approved baseline methodology under which the CDM project activity has been registered:**

The fulfilment of applicability conditions of the applied methodology ACM0001 (version 15.0) /B02/ are demonstrated as below:

Applicability Criteria	Justification / Assessment
(a) <i>Install a new LFG capture system in an existing or new (Greenfield) SWDS where no LFG capture system was or would have been installed prior to the implementation of the project activity; or</i>	Not Applicable.  Conclusion: The design change has no impact on the fulfilment of this applicability criterion of the methodology by the project activity.
(b) <i>Make an investment into an existing LFG capture system to increase the recovery rate or change the use of the captured LFG, provided that:</i> i) <i>The captured LFG was vented or flared and not used prior to the implementation of the project activity; and</i>	The project activity is the installation of a new LFG capture system in an existing SWDS where no LFG capture system was installed prior to the implementation of the project activity.  The LFG captured prior to the project activity was vented or flared but never

	<p>ii) <i>In the case of an existing active LFG capture system for which the amount of LFG cannot 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;</i></p>	<p>used.</p> <p>This been assessed based on the knowledge of the project from the renewal of crediting period validation /B04/ and through interviews with the project participant.</p> <p>Conclusion: The design change has no impact on the fulfilment of this applicability criterion of the methodology by the project activity.</p>
	<p>c) <i>Flare the LFG and/or use the captured LFG in any (combination) of the following ways:</i></p> <ul style="list-style-type: none"> <li>i) <i>Generating electricity;</i></li> <li>ii) <i>Generating heat in a boiler, air heater or kiln (brick firing only) or glass melting furnace; and/or</i></li> <li>iii) <i>Supplying the LFG to consumers through a natural gas distribution network;</i></li> <li>iv) <i>Supplying compressed/liquefied LFG to consumers using trucks;</i></li> <li>v) <i>the LFG to consumers through a dedicated pipeline;</i></li> </ul>	<p>The Project involves utilization of captured landfill gas for generation of electricity and flaring the surplus gas captured, if any.</p> <p>This has been assessed based on the knowledge of the project from the renewal of crediting period validation/B04/ and through interviews with the project participant.</p> <p>Conclusion: The design change has no impact on the fulfilment of this applicability criterion of the methodology by the project activity.</p>
	<p>d) <i>Do not reduce the amount of organic waste that would be recycled in the absence of the project activity.</i></p>	<p>The implementation of the project activity does not imply any change in the waste received at the landfill and has not reduced the amount of organic waste that would have been recycled in the absence of the project activity.</p> <p>This been assessed based on the knowledge of the project from the renewal of crediting period validation /B04/ and through interviews with the project participant.</p> <p>Thus, validation team concluded that the project does not reduce the amount of organic waste that would be recycled in the absence of the project activity.</p> <p>Conclusion: The design change has no impact on the fulfilment of this applicability criterion of the methodology by the project activity.</p>
	<p><i>The methodology is only applicable if the application of the procedure to identify the baseline scenario confirms that the most plausible baseline scenario is:</i></p> <ul style="list-style-type: none"> <li>(a) <i>Atmospheric release of the LFG or capture of LFG and destruction through flaring to comply with regulations or contractual requirements, to address safety</i></li> </ul>	<p>(b) Validation team based on the knowledge of the project from the renewal of crediting period validation /B04/ and through interviews with the project participant confirms that the baseline scenario for the project activity continues to be <b>capture</b></p>

	<p>and odour concerns, or for other reasons; and</p> <p>(b) In the case that the LFG is used in the project activity for generating electricity and/or generating heat in a boiler, air heater, glass melting furnace or kiln:</p> <p>(i) For electricity generation: that electricity would be generated in the grid or in captive fossil fuel fired power plants; and/or</p> <p>(ii) For heat generation: that heat would be generated using fossil fuels in equipment located within the project boundary;</p>	<p><u>and destruction of LFG through flaring atmospheric release of LFG and where no use of LFG existed. Moreover, no regulations or contractual requirements, prescribing capturing of LFG and/or flaring thereof, exist currently.</u></p> <p>(c) Validation team based on the knowledge of the project from the renewal of crediting period validation /B04/ and through interviews with the project participant confirms that the electricity generated by the project, in the absence of the project activity would have been generated in the South African grid and/or captive DGs.</p> <p>Conclusion: The design change has no impact on the fulfilment of this applicability criterion of the methodology by the project activity.</p>
	<p><i>This methodology is not applicable:</i></p> <p>(a) In combination with other approved methodologies. For instance, ACM0001 cannot be used to claim emission reductions for the displacement of fossil fuels in a kiln or glass melting furnace, where the purpose of the CDM project activity is to implement energy efficiency measures at a kiln or glass melting furnace;</p> <p>(b) If the management of the SWDS in the project activity is deliberately changed during the crediting in order to increase methane generation compared to the situation prior to the implementation of the project activity.</p>	<p>(a) The project activity does not apply any methodologies in addition to ACM0001 (Version 15.0) /B02/. This was checked and confirmed by the validation team.</p> <p>(b) The management of the SWDS shall not be deliberately changed in order to increase methane generation. This been assessed based on the knowledge of the project from the initial validation /B04/ and through interviews with the project participant.</p> <p>Conclusion: The design change has no impact on the fulfilment of this applicability criterion of the methodology by the project activity.</p>
	<p>(iv) <b><u>The compliance of the monitoring plan with the applied monitoring methodology:</u></b></p> <p>There are new requirements in the monitoring plan that is specific to the changes and these changes are in compliance with applied methodology ACM0001 (version 15.0) as a result of the proposed changes in the PRC.</p> <p>The same has been assessed through review of revised PDD /01/, applied methodology /B02/ thorough review of documents pertaining to renewal of crediting period validation /B04/. This is appropriate and deemed acceptable.</p> <p>(v) <b><u>The level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan:</u></b></p>	

	<p>The validation team based on the knowledge of the project from the renewal of crediting period validation /B04/ and through review of revised PDD /01/ and interviews with the project participant confirms that due to the project design change, there is no change in the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan.</p> <p>The validation team confirms that PP has submitted the revised PDD /01/ in the latest valid applicable PDD Form /B05/ as per the requirement of §229 of PS for Project Activities (version 02.0) /B01-2/ and §278 of VVS for Project Activities (version 02.0) /B01-1/ for the applicable project design change for the project activity. The validation team also confirms that information transferred to the later valid version of the PDD form is materially the same as that in the registered PDD /B04/ in line with §279 of VVS for project activities (version 02.0) /B01-1/.</p>
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#### D.8. Changes specific to afforestation and reforestation project activities

<b>Means of validation</b>	DR
<b>Findings</b>	Not Applicable
<b>Conclusion</b>	Not Applicable

#### SECTION E. Internal quality control

>>

The final validation report passed a technical review before being submitted to the UNFCCC Executive Board. A technical reviewer qualified in accordance with the CCIPL's qualification scheme for CDM validation and verification performed the technical review.

#### SECTION F. Validation opinion

>>

Carbon Check (India) Private Ltd. (CC IPL) has performed the validation of the post-registration changes for the registered CDM Project Activity "EnviroServ Chloorkop Landfill Gas Recovery Project" having UNFCCC reference number 0925. During the validation of the post-registration changes to the project activity, corrections, permanent changes to registered monitoring plan and changes to project design from registered project activity has been identified. The post registration changes (PRC) to registered project activity has been validated in line with the requirements of PCP for project activities (version 02.0) /B01-3/, PS for project activities (version 02.0) /B01-2/ and VVS for project activities (version 02.0) /B01-1/. In line with §308 of VVS for project activities (version 02.0) /B01-1/, CCIPL confirms that the post registration changes information in the revised PDD (version 109, Dated 121/035/2020) /01/ reflects actual changes related to the registered PDD /B04/ and are as per section 8 of the PS for project activities (version 042.0) /B01-2/. These changes fall under the category of changes that require prior approval of the Board.

The validation was performed on the basis of rules and requirements defined by UNFCCC for the CDM project activities. The review of the revised PDD /01/, supporting documentation and subsequent follow-up actions (including interviews), have provided CCIPL with sufficient evidence to determine the fulfilment of stated criteria.

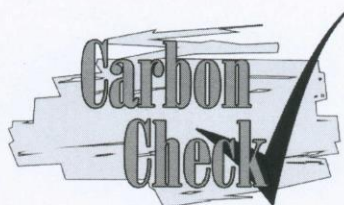
The description in the revised PDD (version 109, Dated 121/035/2020) /01/ meets all relevant UNFCCC requirements for the CDM and correctly applies the selected baseline and monitoring methodology.

This report is the assessment opinion for the changes that are proposed in the revised PDD /01/ and request is submitted for acceptance of the Board in line with §130 of the PCP for project activities (version 02.0) /B01-3/.

## Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Validation Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval(s)
LE	Leakage Emissions
MoC	Modalities of Communication
MP	Monitoring Period
MR	Monitoring Report
MWh	Mega Watt Hour
OSV	On Site Visit
PE	Project Emissions
PP(s)	Project Participant(s)
PRC	Post registration change
QC/QA	Quality Control/ Quality Assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VT	Validation / Verification team

## Appendix 2. Competence of team members and technical reviewers



### Carbon Check (India) Private Ltd.

#### Amit Anand

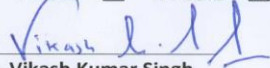
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input checked="" type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Expert <sup>1</sup>	<input checked="" type="checkbox"/>

In the following Technical Areas:

TA 1.1	<input checked="" type="checkbox"/>	TA 3.1	<input checked="" type="checkbox"/>	TA 5.2	<input type="checkbox"/>	TA 9.2	<input type="checkbox"/>	TA 13.2	<input type="checkbox"/>
TA 1.2	<input checked="" type="checkbox"/>	TA 4.1	<input type="checkbox"/>	TA 8.1	<input checked="" type="checkbox"/>	TA 10.1	<input type="checkbox"/>	TA 14.1	<input checked="" type="checkbox"/>
TA 2.1	<input type="checkbox"/>	TA 5.1	<input type="checkbox"/>	TA 9.1	<input type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		

  
Mr. Vikash Kumar Singh  
Compliance Officer

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
23/12/2016	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision
24/12/2019	Annual Revision

<sup>1</sup> India, South Africa

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Corporate off: G 49 & 50, 3<sup>rd</sup> Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301  
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e-mail: [info@carboncheck.co.in](mailto:info@carboncheck.co.in)



## 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 Expert<sup>1</sup> ☒

In the following Technical Areas:

TA 1.1 <input checked="" type="checkbox"/>	TA 3.1 <input checked="" type="checkbox"/>	TA 5.2 <input checked="" type="checkbox"/>	TA 9.2 <input checked="" type="checkbox"/>	TA 13.2 <input type="checkbox"/>
TA 1.2 <input checked="" type="checkbox"/>	TA 4.1 <input checked="" type="checkbox"/>	TA 8.1 <input type="checkbox"/>	TA 10.1 <input type="checkbox"/>	TA 14.1 <input type="checkbox"/>
TA 2.1 <input checked="" type="checkbox"/>	TA 5.1 <input checked="" type="checkbox"/>	TA 9.1 <input checked="" type="checkbox"/>	TA 13.1 <input checked="" type="checkbox"/>	

Mr. Vikash Kumar Singh  
Compliance Officer

Mr. Amit Anand  
CEO

Date of Approval  
24/12/2019

Valid Till  
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24/12/2018	Annual Revision
24/12/2019	Annual Revision

<sup>1</sup> India

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 e-mail: [info@carboncheck.co.in](mailto:info@carboncheck.co.in)

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	Promethium Carbon	Revised Final PDD	Version: <del>9</del> 10; Dated: <del>12</del> 1/035/2020	PP
/02/	Promethium Carbon	Initial Revised PDD	Version: 8; Dated: 06/03/2020 Version: 7; Dated: 28/02/2020 Version: 6; Dated: 21/01/2020 <u>Version 9;</u> <u>Dated: 12/03/2020</u>	PP
/03/	Promethium Carbon	ER Sheet corresponding to /01/	2020-01-21 EnviroServ_ex ante calculations.xlsx	PP
/04/	Promethium Carbon	ER Sheet corresponding to /02/	2020-01-21 EnviroServ_ex ante calculations.xlsx	PP
/05/	Bogas Technology Limited	Technical Manual: Biogas 2000m <sup>3</sup> h <sup>-1</sup> Enclosed Ground Flare System and Booster Set	Doc. No: 3092TM Issue: 2.0	PP
/06/	Endress+Hauser	Operation Manual: Proline t-mass 65MODBUS RS485 (Thermal Mass Flow Measuring System)	Ref. No.: BA00115D/06/EN/13.10 71123865 Version: V 3.06.XX	PP
/07/	Bogas Technology Limited	Flare overhaul: E-mail dated 09/12/2019	N/A	PP
/08/	Edinburgh Sensors	User guide: Guardian NG-Infrared Gas Monitor	Issue No. 1 – v06/16	PP
/09/	Edinburgh Sensors	Calibration certificate for Guardian NG-Infrared Gas Monitor	Dated: 23/10/2018	PP
/10/	Energy Systems SA (PTY) Ltd	Date of decommissioning of Flare 2	Dated: 04/10/2019	PP
/11/	Caterpillar	Technical specifications of Gas Engine (G3516 LE)	N/A	PP
/12/	Gauteng Department of Agriculture and Rural Development	Approval for Proposed Development Cell 7 at Chloorkop	Dated: 30/09/2019	PP
/13/	Timeslive	ESKOM - Load-shedding could be with us another two years in South Africa	Dated: 10/12/2019	PP
/B01/	UNFCCC	1. CDM Validation and Verification Standard for Project Activities 2. CDM Project Standard for Project Activities 3. CDM Project Cycle Procedure for Project Activities	Version: 02.0	Others
/B02/	UNFCCC	ACM0001 "Flaring or use of landfill gas" (version 15.0)	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>	Others
/B03/	UNFCCC	ASB000149: "Grid emission factor for Southern African Power Pool" (version 01.0)	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>	Others

/B04/	UNFCCC	Registered PDD (version 5; Dated: 13/04/2015) and the corresponding validation report	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>	Others
/B05/	UNFCCC	Project Design Document form (CDM-PDD-FORM) and filling instructions	Version: 11	Others

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

Table 1. CLs from this validation

CL ID	01	Section no.	D.7	Date: 18/02/2020
Description of CL				
<i>In accordance with the requirements of §309 (b) of CDM VVS for Project Activities (version 02.0), PP shall clarify the following:</i>				
<div><div>1. <i>when the changes occurred?</i></div><div>2. <i>reasons for these changes taking place?</i></div><div>3. <i>whether the changes would have been known prior to the registration of the CDM project activity?</i></div><div>4. <i>how the changes would impact on the overall operation/ability of the CDM project activity to deliver emission reductions or net anthropogenic removals as stated in the PDD?</i></div></div>				
Project participant response				Date: 28/02/2020
<b>Corrections</b>		<div><div><b>1. Date of change:</b> All the corrections were included in the updated PDD which was updated in the first quarter of 2020.</div><div><b>2. Reason for the change:</b> The identified errors were corrected in order to reflect the actual operation of the project.</div><div><b>3. Were changes known prior to registration:</b> Corrections #1 and #2 were known at registration but incorrectly recorded in the PDD. Correction #3 was not known at the time of registration and was recently discovered.</div><div><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> The operation/ability of the project to deliver emission reductions has been positively impacted by the correction of the errors because the monitoring plan now reflects the actual operation of the project with respect to the errors that were corrected.</div></div>		
<b>Changes to the project design</b>				
Decrease in capacity: the project participant removed one of two the flares from the emission boundary due to low gas volumes.		<div><div><b>1. Date of change:</b> Flare 2 was decommissioned on 8 June 2019.</div><div><b>2. Reason for the change:</b> Low gas volumes did not substantiate the use of two flares.</div><div><b>3. Were changes known prior to registration:</b> No.</div><div><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> The operation/ability of the project to deliver emission reductions has not been impacted in anyway by the removal of one of the flares. Emission reductions are generated by the destruction of the LFG by flaring.</div></div>		
Addition of new component: the project participant is investigating offsite electricity generation from the landfill gas and hence this technology component has been added to the project design.		<div><div><b>1. Date of change:</b> Offsite electricity generation is expected to be implemented in 2020.</div></div>		

	<p><b>2. Reason for the change:</b> A commercial opportunity exists to utilise the gas in addition to destruction of the gas by flaring.</p> <p><b>3. Were changes known prior to registration:</b> No.</p> <p><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> The inclusion of electricity generation has the potential to positively impact the project's ability to deliver emission reductions. The generation of renewable energy will displace the use of grid electricity, which is primarily fossil fuel based. The installed capacity is expected to be 950 kW which is under 10 MW. The additionality of the project will therefore not be compromised by the inclusion of the electricity generation component.</p>
Actual operational parameters that are within the control of the project participants, differing from the expected parameters: The project participant has moved the flare to a different area of the landfill site to accommodate expansion of the landfill.	<p><b>1. Date of change:</b> The flare was officially commissioned in the new location on 9 December 2019.</p> <p><b>2. Reason for the change:</b> the flare was moved to a different area of the landfill site <a href="#">for more efficient space utilisation within the landfill, to accommodate expansion of the landfill.</a></p> <p><b>3. Were changes known prior to registration:</b> No.</p> <p><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> No impact. Monitoring as per the PDD and methodology is ongoing and has not been changed on account of the move of the flare to a different location on the Chloorkop landfill site.</p>
<b>Permanent changes to the registered monitoring plan</b>	
The reference to the GIR 5000 gas analyser in section B.6.1 was removed as the gas analyser has been replaced with a Guardian NG Infrared Gas Monitor.	<p><b>1. Date of change:</b> The analyser was replaced on 17/08/2018.</p> <p><b>2. Reason for the change:</b> The GIR 5000 gas analyser became faulty and required replacement.</p> <p><b>3. Were changes known prior to registration:</b> No.</p> <p><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> The replacement of the faulty gas analyser with a new functional analyser has enhanced the operation and ability of the project to deliver emission reductions.</p>
Change the monitoring plan to use the default flare emission value as opposed to biannual sampling for flare efficiency.	<p><b>1. Date of change:</b> Formal decision to use the default value was made in 2020 by the project participant.</p> <p><b>2. Reason for the change:</b> The use of the default value is preferred as it is considered the more efficient and cost-effective method of monitoring the flare efficiency.</p> <p><b>3. Were changes known prior to registration:</b> No.</p>

	<p><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> The change is likely to result in fewer emission reductions (due to the flare being low height the default efficiency factor will be 80%, which is lower than the expected actual methane destruction efficiency of the flare of 99%, as specified by the manufacturer). See the provided Technical Manual, page 33 for supporting evidence.</p>
A back-up diesel generator has been included in the project boundary in order monitor project emissions that may occur from this source.	<p><b>1. Date of change:</b> first quarter 2020.</p> <p><b>2. Reason for the change:</b> The decision to utilise the back-up diesel generator was motivated by the current programme of electricity load shedding by Eskom, the national electricity utility, which is expected to continue for the next two years. See the provided Timeslive article for supporting evidence.</p> <p><b>3. Were changes known prior to registration:</b> No.</p> <p><b>4. How changes impact overall operation/ability of the CDM project activity to deliver emission reductions:</b> The inclusion of a back-up diesel generator in the project boundary will ensure that project emissions that arise from this emission source are accounted for in the net emission reductions. The inclusion of this piece of equipment therefore increases the conservativeness of the monitoring plan and emission reduction calculations.</p>

**Documentation provided by project participant**

- CL01 Chloorkop Flare 1 Technical Manual\_flare eff\_pg 33
- CL01 Timeslive. 2019. Load-shedding could be with us another two years

**DOE assessment****Date:** 03/03/2020

For all the changes proposed as PRC in the PDD, the PP has provided detailed clarifications in accordance with requirements of §309 (b) of CDM VVS for Project Activities (version 02.0).

VT has assessed the justification provided by PP and confirms that the justification provided by PP addresses the following:

1. when the changes occurred?
2. reasons for these changes taking place
3. whether the changes would have been known prior to the registration of the CDM project activity?

Furthermore, being proposed as part of PRC would not have any negative impact on the overall operation/ability of the CDM project activity to deliver emission reductions or net anthropogenic removals as stated in the PDD.

CL is closed.

<b>CL ID</b>	02	<b>Section no.</b>	D.7	<b>Date:</b> 18/02/2020
<b>Description of CL</b>				
<p><i>§ 241 of CDM PS for Project Activities (version 02.0) provides a list of different type of changes to project design that are applicable for project activities.</i></p> <p><i>PP shall clarify that under which type these proposed changes to this registered project activity fall?</i></p>				
<b>Project participant response</b>				<b>Date:</b> 28/02/2020
<p>The different type of changes to the project design are categorised as per § 241 of CDM PS for Project Activities (version 02.0):</p>				

	Description of design change	Type of change as per § 241 of CDM PS for Project Activities (version 02.0)
1.	Decrease in capacity: the project participant removed one of two the flares from the emission boundary due to low gas volumes.	Type (b) Decrease in the capacity specified in the registered PDD.
2.	Addition of new component: the project participant is investigating onsite electricity generation (950 kW) from the landfill gas and hence this technology component has been added to the project design.	Type (c) Addition of new components or extension/ addition of technologies/ measures that introduce complimentary technologies/ measures involving mass and/ or energy transfer to/ from the technologies/ measures specified in the originally registered PDD.
3.	Actual operational parameters that are within the control of the project participants, differing from the expected parameters: The project participant has moved the remaining flare to a different area of the landfill site to accommodate expansion of the landfill.	Type (h) Actual operational parameters that are within the control of the project participants, differing from the expected parameters.

Appendix 7 of the revised PDD has been updated to reflect these types of changes. The change related to the inclusion of a back-up diesel generator was moved to the PRC category "Permanent changes to the registered monitoring plan" as per CL03 below.

#### Documentation provided by project participant

2020-02-28 EnviroServ Chloorkop PDD v7

#### DOE assessment

Date: 03/03/2020

PP has clearly established that the proposed changes to the project design of the project activity falls under §241 (b), (c) and (h) of CDM PS for Project Activities (version 02.0). The same is acceptable to VT.

CL is closed.

CL ID	03	Section no.	D.3 / D.6	Date: 18/02/2020
<b>Description of CL</b>				
<i>In the Appendix 7 of the revised PDD, PP shall explain why these changes have not been classified as permanent changes to registered monitoring plan:</i>				
<ol style="list-style-type: none"> <li><i>Inclusion of parameters <math>M_{t,wb}</math> and <math>V_{k,t,wb}</math> in section B.7.1 of PDD.</i></li> <li><i>Inclusion of parameters <math>EG_{PJ,y}</math>, Tariff of electricity exported, <math>EC_{PJ,j,t}</math> and <math>EC_{BL,k,t}</math> in section B.7.1 of PDD.</i></li> <li><i>Inclusion of parameters <math>FC_{i,j,y}</math>, <math>NCV_{diesel,y}</math> and <math>EF_{CO2,diesel,y}</math> in section B.7.1 of PDD.</i></li> </ol>				
<b>Project participant response</b>				Date: 28/02/2020
<ul style="list-style-type: none"> <li>The inclusion of parameters <math>M_{t,wb}</math> and <math>V_{k,t,wb}</math> in section B.7.1 of PDD are considered to be corrections because they were erroneously left out of the monitored parameters section of the registered PDD due to the incorrect recording of the monitoring of gas flow on a dry basis. The monitored parameters have been corrected to reflect gas flow monitoring on a wet basis, by a mass flow meter. Hence the inclusions of parameters <math>M_{t,wb}</math> and <math>V_{k,t,wb}</math> are considered to be corrections and not changes to the registered monitoring plan. The correction will however be reflected in the revised monitoring plan going forward.</li> <li>The inclusion of parameters <math>EG_{PJ,y}</math>, Tariff of electricity exported, <math>EC_{PJ,j,t}</math> and <math>EC_{BL,k,t}</math> in section B.7.1 of PDD is considered to be a change to the registered project design because this technology component was not included in the registered PDD. Hence this requested post registration change is considered to be a change to the project design and not a change to the registered monitoring plan. The correction will however be reflected in the revised monitoring plan going forward.</li> <li>The change related to the inclusion of a back-up diesel generator was moved to the PRC category "Permanent changes to the registered monitoring plan" in Appendix 7 of the revised PDD.</li> </ul>				
<b>Documentation provided by project participant</b>				
2020-02-28 EnviroServ Chloorkop PDD v7				
<b>DOE assessment</b>				Date: 03/03/2020
<ol style="list-style-type: none"> <li>The change in measurement method from dry basis to wet basis and subsequent selection of Option F from Table 1 in the "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (Version 02.0.0) to measure the volume flow of the gaseous stream on a wet basis and to measure the volumetric fraction of CH<sub>4</sub> on a wet basis in section B.6.1 of the PDD is what can be considered as correction.</li> </ol>				

However, the inclusion of parameter  $M_{t,wb}$  and  $V_{k,t,wb}$  can't be considered as correction and shall be listed as permanent change to the registered monitoring plan. The same hasn't been done in Appendix 7 of the revised PDD. CL point is not closed.

2. Inclusion of the electricity generation component i.e., introduction of gas engines is what can be considered as change to project design. However, introduction of new parameters in the registered monitoring plan can't be considered as change to project design and shall be listed as permanent change to the registered monitoring plan. The same hasn't been done in Appendix 7 of the revised PDD. CL point is not closed.
3. The change related to the inclusion of a back-up diesel generator and subsequent changes in calculation of emission reduction is what can be considered as change to project design. However, introduction of new parameters in the registered monitoring plan can't be considered as change to project design and shall be listed as permanent change to the registered monitoring plan. The same hasn't been done in Appendix 7 of the revised PDD. CL point is not closed.

Hence, in VT's opinion the changes have not been categorised properly.

CL is not closed.

#### Project participant response

Date: 06/03/2020

- Appendix 7 has been revised to reflect the inclusion of monitored parameters  $M_{t,wb}$  and  $V_{k,t,wb}$  as permanent changes to the registered monitoring plan. The monitored parameters were included in the monitoring plan to reflect actual gas monitoring on a wet basis by a mass flow meter.
- Appendix 7 has been revised to reflect the inclusion of monitored parameters  $EG_{PJ,y}$ , *Tariff of electricity exported*,  $EC_{PJ,j,t}$  and  $EC_{BL,k,t}$  as permanent changes to the registered monitoring plan. The monitored parameters were included in the monitoring plan to accommodate the inclusion of electricity generation in the project design.
- Appendix 7 was revised to document the inclusion of the back-up diesel generator in the project boundary as a design change. Appendix 7 was also revised to reflect the inclusion of monitored parameters  $FC_{i,j,y}$ ,  $NCV_{diesel,y}$  and  $EF_{CO2,diesel,y}$  as permanent changes to the registered monitoring plan. The monitored parameters were included in the monitoring plan to accommodate the inclusion of a back-up diesel generator in the project design.

#### Documentation provided by project participant

2020-03-06 EnviroServ Chloorkop PDD v8

#### DOE assessment

Date: 06/03/2020

PP has revised the Appendix 7 of the PDD to correctly list the following changes as permanent changes to registered monitoring plan:

1. Inclusion of parameters  $M_{t,wb}$  and  $V_{k,t,wb}$  in section B.7.1 of PDD.
2. Inclusion of parameters  $EG_{PJ,y}$ , *Tariff of electricity exported*,  $EC_{PJ,j,t}$  and  $EC_{BL,k,t}$  in section B.7.1 of PDD.
3. Inclusion of parameters  $FC_{i,j,y}$ ,  $NCV_{diesel,y}$  and  $EF_{CO2,diesel,y}$  in section B.7.1 of PDD.

The same is acceptable to VT.

CL is closed.

CL ID	04	Section no.	D.7	Date:	18/02/2020	
Description of CL						
<i>In the section B.6.1 of registered PDD, the formula for calculation of Baseline emissions in year y (<math>BE_y</math>) was simplified by mentioning that there are no baseline emissions due to heat generation (<math>BE_{HG,y}</math>) and natural gas (<math>BE_{NG,y}</math>) i.e., <math>BE_{HG,y} = BE_{NG,y} = 0</math></i>						
<i>However, the same has been removed from the referred section of the revised PDD. PP shall explain if the PRC contains addition of heat generation and natural gas distribution component as part of project activity.</i>						
Project participant response					Date:	28/02/2020
The PRC does not include the addition of heat generation or natural gas distribution components. Hence, the changes made to Section B.6.1 of the revised PDD have been restored to the original format, as presented in the registered PDD (i.e. $BE_{HG,y} = BE_{NG,y} = 0$ ).						
Documentation provided by project participant						
2020-02-28 EnviroServ Chloorkop PDD v7						
DOE assessment					Date:	03/03/2020
PP has clarified that the proposed PRC doesn't involve addition of heat generation or natural gas distribution components as part of project activity and moreover, section B.6.1 of the PDD has been revised to state						

that In the baseline, no heat is generated and natural gas use is not applicable, therefore:  $BE_{HG,y} = BE_{NG,y} = 0$ .

CL is closed.

**Table 2. CARs from this validation**

<b>CAR ID</b>	01	<b>Section no.</b>	D.1	<b>Date:</b> 18/02/2020
<b>Description of CAR</b>				
<i>The template of CDM-PDD-FORM (version 11.0) has been altered with in Appendix-6 of the revised PDD.</i>				
<b>Project participant response</b>				<b>Date:</b> 28/02/2020
The erroneous copy under the heading Appendix-6 in the PDD has been deleted.				
<b>Documentation provided by project participant</b>				
2020-02-28 EnviroServ Chloorkop PDD v7				
<b>DOE assessment</b>				<b>Date:</b> 03/03/2020
The PDD has been revised to correct the error in Appendix 6 and correctly apply the template CDM-PDD-FORM (version 11.0).				
CAR is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>	D.7	<b>Date:</b> 18/02/2020
<b>Description of CAR</b>				
<i>Section A.3 of the revised PDD doesn't provide any information on the technical specifications of the electricity generation equipment. Furthermore, PP shall provide the documentary evidence for the same.</i>				
<b>Project participant response</b>				<b>Date:</b> 28/02/2020
In Section A.3 of the revised PDD, a description of the technical specifications for the electricity generation gas engine was added to the description of the project.				
<b>Documentation provided by project participant</b>				
<ul style="list-style-type: none"> <li>- CAR02 Genset tech specs – EnviroServ Chloorkop</li> <li>- 2020-02-28 EnviroServ Chloorkop PDD v7</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 03/03/2020
Section A.3 of the PDD has been revised to provide the technical specifications of the electricity generation equipment (a caterpillar gas engine of rated capacity 1136kW) to be installed as a part of the project activity. Furthermore, technical specification data sheet has also been provided.				
CAR is closed.				

<b>CAR ID</b>	03	<b>Section no.</b>	D.7	<b>Date:</b> 19/02/2020
<b>Description of CAR</b>				
<i>Appendix 7 of the PDD doesn't list all the changes made to the registered PDD viz., changes in project boundary, baseline scenario etc.,</i>				
<b>Project participant response</b>				<b>Date:</b> 28/02/2020
Item 8 in the table in Appendix 7 of the PDD has been revised to note that 1.) the project boundary has been expanded to reflect the offsite generation of electricity and 2.) the baseline scenario and emissions have been revised to include electricity generation from 2020.				
<b>Documentation provided by project participant</b>				
2020-02-28 EnviroServ Chloorkop PDD v7				
<b>DOE assessment</b>				<b>Date:</b> 03/03/2020
Appendix 7 of the PDD has been revised to include all the changes made to the registered PDD especially the changes concerning revision in project boundary and the changes to the baseline scenario and equations used for calculation of emission reductions.				
CAR is closed.				

<b>CAR ID</b>	04	<b>Section no.</b>	D.7	<b>Date:</b> 19/02/2020
<b>Description of CAR</b>				
<i>In section B.6.1 of the revised PDD, PP has added new equations for Baseline emissions associated with heat generation (<math>BE_{HG,y}</math>). However, neither Appendix 7 nor the description contained in section A.1 of PDD provide any information on addition of heat generation component in the project activity as part of PRC.</i>				

*Furthermore, there are lot of inconsistency in the referred section viz., the description sometimes contains heat generation systems, natural gas distribution networks etc. The same needs to be corrected and made consistent throughout the document.*

Project participant response	Date: 28/02/2020
<p>The PRC does not include the addition of heat generation or natural gas distribution components. Hence, the changes made to Section B.6.1 of the revised PDD have been restored to the original format, as presented in the registered PDD.</p> <p>More specifically,</p> <ol style="list-style-type: none"> <li>(1) For <i>Baseline emission</i> calculations, <math>BE_{HG,y} = BE_{NG,y} = 0</math> has been stated as per the registered PDD.</li> <li>(2) For <i>Ex-post determination of <math>F_{CH_4,PJ,y}</math></i>, it has been stated as per the registered PDD that <math>F_{CH_4,HG,y} = F_{CH_4,NG,y} = 0</math>. In addition, all wording referring to heat generation and natural gas has been adjusted to ensure that only flaring and electricity generation are calculated.</li> <li>(3) For <i>Project Emissions</i> associated with distribution of compressed/liquefied LFG using trucks, the changes reverted back to what was stated in the registered PDD, namely “<i>Project emissions from distribution of compressed/ liquefied LFG using trucks is not applicable as all the LFG captured will be flared on-site.</i>”</li> </ol>	

#### Documentation provided by project participant

2020-02-28 EnviroServ Chloorkop PDD v7

DOE assessment	Date: DD/MM/YYYY
<p>Section B.6.1 of the PDD has been revised to remove any reference to heat generation systems, natural gas distribution networks etc. PP in his response has also clarified that the PRC does not include the addition of heat generation or natural gas distribution components.</p> <p>Moreover, the PP has revised the entire PDD to remove any inconsistencies with regards to mentioning of heat generation systems, natural gas distribution networks etc.</p> <p>CAR is closed.</p>	

CAR ID	05	Section no.	Clarification request from UNFCCC	Date: 30/04/2020
Description of CAR				
<ol style="list-style-type: none"> <li>1. <u>Page 11 of the validation opinion states that the baseline scenario for the project activity continues to be capture and destruction of LFG through flaring. This statement is not consistent with other descriptions on the baseline scenario.</u></li> <li>2. <u>The revised PDD (e.g. page 7, 13 and 65) describes the added power generation component as “offsite power generation” whereas the validation opinion states it as “onsite power generation”. The DOE shall clarify the location of the added power generation component and confirm whether the LFG from the project activity is the exclusive fuel for the power generation plant.</u></li> <li>3. <u>Page 9 of the validation opinion states that the shifting of flare compound is to accommodate an expansion of the landfill. However, it is not clear whether such expansion of the landfill would result in increase of LFG generation, in particular any quantitative information is not reported. The DOE shall clarify the change to the landfill and its impact on the project capacity. Please refer to paragraph 241(a) of PS for Project Activities version 2.</u></li> <li>4. <u>The references for the applied standardized baseline (“Grid emission factor for Southern African Power Pool” version 01.0) are not described consistently within the revised PDD and validation opinion, i.e. some section refers to ASB0040 whereas some sections refer to ASB0001. In addition, the DOE shall clarify how it has validated the correctness of the ex-ante grid emission factor, considering the validation opinion does not provide such information.</u></li> <li>5. <u>Default flare efficiency is to be applied in the revised PDD. However, the default value validated (i.e. 80%, page 8 of the validation opinion) is not consistently described in page 22 of the revised PDD (i.e. 90%).</u></li> </ol>				

6. For the monitoring parameter  $v_{k,t,wb}$  (Volumetric fraction of gas  $k$  in the gaseous stream in time interval  $t$  on wet basis), the data source is to be revised from "Measurement" to "Calculated". The DOE shall clarify how the value of this ex-post parameter is to be calculated.
7. The flare specification has been changed (i.e. minimum flow rate changed from 50 to 400 Nm<sup>3</sup>/h; minimum temperature changed from 1000 to 350°C). The DOE shall clarify (a) how it has validated this proposed correction, including the evidence checked; (b) the inconsistency between the revised values against manufacturer's limits (The concentration of methane in the gas is greater than 25% v/v; the combustion temperature in the flare is greater than 700 °C and the flow of gas to the flare is greater than 200 Nm<sup>3</sup>/h) verified in previous verifications (e.g. monitoring period from 01 Jan 13 to 31 Jul 14).
8. Monitoring parameters related to flare efficiency (e.g. Temperature in the exhaust gas of the enclosed flare in minute  $m$ ) are removed from the monitoring plan. However, the DOE did not provide its validation opinion in the compliance of those change with the applied tool "Project emissions from flaring".

**Project participant response****Date:** 11/05/2020

1. The comment is directed at the DOE.
2. The added power generation component of the EnviroServ Chloorkop Landfill Gas Project will be based at an offsite location, which will receive landfill gas fed by a pipeline to the nearby site (which is estimated to be approximately 1.4km away from the Chloorkop Landfill).  
  
Landfill gas will be the only fuel source fed to the power generation unit, since this power generation unit will act as a supplementary electricity source to the existing grid connection at the relevant site. The PDD has been revised (section 6.1) so that it consistently describes offsite generation of electricity.
3. Cell 7 was developed to accommodate more efficient landfill space utilisation. The development of cell 7 allows the landfill to maintain the waste quantity that the landfill is expected to receive. Furthermore, the footprint of the Chloorkop landfill is regulated by the waste license and has remained the same. Therefore, paragraph 241(a) of PS for Project Activities version 2 does not apply to this case because it is not a capacity expansion.  
  
The development of cell 7 and relocation of the flaring compound do not result in changes to the baseline scenario. The PDD has been revised to clarify that the development of cell 7 is not a capacity expansion to the landfill site.
4. The PDD has been revised to remove the reference of ASB0040. The PDD at the time of renewal of crediting period was registered with ASB0001 and the value of grid emission factor was as per the applied standardized baseline tool. The grid emission factor was fixed ex-ante at the time of renewal of crediting period of the project activity. No changes have been made to the PDD in this regard.
5. The PDD has been revised to ensure consistent references to the default flare efficiency value of 80%.
6. This has been corrected to "Measured" as per the Tool to determine the mass flow of a greenhouse gas in a gaseous stream, Version 02.0.0, in order to correspond with the "Measurement procedure" of in-situ analyzers which will be used to measure the parameter ex post.
7. The PDD revisions regarding the minimum flow rate and temperatures of the flare are as per the manufacturer's specifications and hence the revised values are now consistent with the manufacturer's limits.  
  
With respect to the flow rate and temperature ranges used in previous verifications:  
  
During previous verifications in the first crediting period neither the methodology used (AM0011 – Landfill gas recovery with electricity generation or no capture or destruction of methane in the baseline scenario, version 02) nor the PDD required the project participant to monitor the flow and temperature operating ranges of the flare.  
  
However, during the monitoring periods of previous verifications, the project participant implemented various conservative 'failsafe mechanisms' to ensure that the number of emission reductions would not be overstated. For example, no emission reductions were claimed in previous monitoring periods where the flare temperature was below 700 °C, which is higher than the manufacturer's specification of 350 °C.

and which results in fewer emission reductions compared to setting the failsafe threshold at 350 °C. This is therefore a conservative approach.

The reason the figure related to temperature has changed is due to multiple references in the flare documentation. The original reference to a minimum range of 1,000 °C is a reference to UK regulatory requirements whereas the reference to the minimum range of 350°C relates to technical specifications of the flare and is the correct reference.

With regards to the measurement of gas flow in previous monitoring periods, no emission reductions were claimed for periods where the flow was below the 400 Nm<sup>3</sup>/h level because the flow rates did not go below this minimum range. For example, during the last verification (January 2013 to July 2014) the lowest recorded flow rate was 980 Nm<sup>3</sup>/h. Therefore, the number of emission reductions were not overestimated in the previous monitoring periods.

The reason the figure related to flow has changed is due to multiple references in the flare documentation. The original reference to a minimum range of 50 Nm<sup>3</sup>/h is a generic comment on flow of gas handled by biogas flares whereas the reference to the minimum range of 400 Nm<sup>3</sup>/h is the value specific to this type of flare.

With regards to the concentration of methane in the gas, neither the methodology nor the PDD pose any limitations in this regard. However, the project participant has implemented a 'failsafe' mechanism to discount emissions where the methane concentration is lower than 25% v/v. This was undertaken in previous verifications and will be continued going forward.

8. The removal of this parameter was an erroneous error. This parameter has been reinstated in section B.7.1 (monitored parameters) of the revised PDD and Appendix 7 has been revised accordingly.

#### **Documentation provided by project participant**

2020-05-11 EnviroServ Chloorkop PDD v10

#### **DOE assessment**

**Date:** 11/05/2020

1. The PRC validation report (pg. 11) has been revised to state that the baseline scenario for the project activity continues to be atmospheric release of LFG and where no use of LFG existed.
2. The PRC validation report has been revised to clearly state that the project activity involves off-site electricity generation from the landfill gas captured from the project activity. The added power generation component will be based at an offsite location, which will receive landfill gas fed by a pipeline to the nearby site (which is estimated to be approximately 1.4km away from the Landfill site). Landfill gas will be the only fuel source fed to the power generation unit.
3. The PRC validation report has been revised to state that the shifting of flare compound to a new location within the LFG site was due to development of cell 7 on the site for better utilization of space available on site. The same was confirmed through interview with the PP and representatives of the company responsible for designing the LFG site i.e., Energy Systems (SA) Pty Ltd.

Through the interviews it was further confirmed that the quantity of waste being received at the LFG site is regulated through the waste handling license, which has remained the same. So, in essence the amount of waste being received at the site has not increased. Hence, the shifting of flare compound and development of cell 7 will not lead to increased production of landfill gas. Hence, this change will have no impact on the capacity of the project and provisions under paragraph 241 (a) of CDM PS for project activities is not applicable.

4. The PRC VR and the PDD have been revised to correct the reference number of the standardized baseline "Grid emission factor for the Southern African Power Pool" from ASB0040 to ASB0001. It shall be noted here that the standardized baseline ASB0001 (version 01.0) was applied to the project activity and the grid emission factor fixed ex-ante at the time of renewal of crediting period. No changes have been made to the same during this PRC.
5. The PDD has been revised to ensure consistent references to the default flare efficiency value of 80%.
6. The section B.7.1 of the PDD has been revised to mention the data source for monitoring parameter  $V_{k,t,wb}$  (Volumetric fraction of gas k in the gaseous stream in time interval t on wet basis), as "Measurement" using continuous in-situ analyzers.
7. (a) The revision in flare specifications viz., change in minimum flow rate from 50 to 400 Nm<sup>3</sup>/h and change in minimum temperature from 1000 to 350°C have been made in accordance with the Technical Manual: Biogas 2000m<sup>3</sup>h<sup>-1</sup> Enclosed Ground Flare System and Booster Set (please refer to the document number 5 in Appendix 3 of this report).

(b) The values provided in earlier version of PDD viz., concentration of methane in the gas is greater than 25% v/v; the combustion temperature in the flare is greater than 700°C and the flow of gas to the flare is greater than 200 Nm<sup>3</sup>/h were failsafe measures put in place by the PP in its SOP (Standard Operating Procedure) to ensure that there was no over estimation of ERs.

Moreover, putting a failsafe measure at flow rate of 400 Nm<sup>3</sup>/h is more conservative as compared to 200 Nm<sup>3</sup>/h. Furthermore, the failsafe measures of min. flare temperature at 700°C and concentration of methane in the gas is greater than 25% v/v will continue to be followed.

Hence, the corrected information is an accurate reflection of actual project information and has been accepted by the VT.

8. The PDD has been revised to re-include the monitoring parameters related to flare efficiency viz., T<sub>EG,m</sub> (Temperature in the exhaust gas of the enclosed flare in minute m).

Finding is closed.

**Table 3. FARs from this validation**

FAR ID	Xx	Section no.	Date: DD/MM/YYYY
<b>Description of FAR</b>			
-			
<b>Project participant response</b>			<b>Date: DD/MM/YYYY</b>
-			
<b>Documentation provided by project participant</b>			
-			
<b>DOE assessment</b>			<b>Date: DD/MM/YYYY</b>
-			

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"><li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);</li><li>• Make editorial improvements.</li></ul>
02.0	31 October 2017	Revision to align with the requirements in the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Registration Keywords: post-registration change, project activities, validation report		