




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

<b>Title and UNFCCC reference number of the project activity</b>	Proactiva Tijuquinhas Landfill Gas Capture and Flaring project (UNFCCC reference number 1506)
<b>Process track</b>	<input type="checkbox"/> Prior approval <input checked="" type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period
<b>Version number of the validation report</b>	2.0
<b>Completion date of the validation report</b>	06/08/2020
<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 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 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>	PDD Version 8.0, dated 12/06/2020
<b>Project participants</b>	Proactiva Meio Ambiente – Brasil First Climate (Switzerland) AG
<b>Host Party</b>	Brazil
<b>Applied methodologies and standardized baselines</b>	ACM0001 - "Flaring or use of landfill gas" (version 18.0)
<b>Mandatory sectoral scopes</b>	13 - Waste handling and disposal

<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>Conditional sectoral scopes, if applicable</b>	Not applicable.
<b>Name and UNFCCC reference number of the DOE</b>	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032
<b>Name, position and signature of the approver of the validation report</b>	Mr. Juan Sendín Caballero <i>Applus+ Certification Business Unit Managing Director</i> Signature: 

**SECTION A. Executive summary**

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Background and summary of the post-registration changes:

LGAI Technological Center S.A., accredited DOE E-0032 (hereinafter referred to as *Applus+ Certification*) was commissioned by the project participant First Climate (Switzerland) AG to perform a validation assessment of post-registration change (PRC) applicable for the registered CDM project activity “Proactiva Tijuquinhas Landfill Gas Capture and Flaring project” (UNFCCC Project no. 1506) as part of the performance of the verification assessment for the 8<sup>th</sup> periodic verification of the project activity. The post-registration changes for the project activity were assessed by Applus+ Certification under the “*Issuance*” process track and encompass the following type/category of PRC (as correctly summarized in Appendix 7 of the revised PDD for the 2<sup>nd</sup> 7-year crediting period of the project activity):

“(…)

- *Correction in information (that do not affect the project design):*
  - *Specification detail related to maximum operational LFG flow for the currently installed high temperature enclosed flares is corrected in Sections A.3 and B.6.2 as per technical declaration provided by the manufacturer of the flares GRS VALTECH.*
  - *Information details for the project participants are updated in the cover (first page), Section A.4 and Appendix 1.”*

The correction was addressed through the compilation of a revised version of the PDD valid for the 2<sup>nd</sup> 7-year renewable crediting period of the project activity (PDD version 8.0, dated 12/06/2020)<sup>/2/</sup>. This Validation Opinion Report includes the Applus+ Certification assessment and the validation opinion for the addressed PRC as per this latest version of the revised PDD<sup>/2/</sup>. This Validation Opinion Report and the revised version of the PDD<sup>/2/</sup> will be submitted to UNFCCC for approval under the “*Issuance*” process track.

In accordance with applicable CDM requirements, the revised version of the PDD (version 8.0, dated 12/06/2020)<sup>/2/</sup> correctly applies the latest version of the CDM-PDD form (version 11.0)<sup>/11/</sup>. Moreover, the revised version of the PDD<sup>/2/</sup> was completed by correctly taking into account all applicable guidance/requirements for completing the CDM-PDD form (version 11.0) (as established by the Attachment to the CDM-PDD form (version 11.0) - Instructions for completing this form”). For the completion of the revised version of the PDD<sup>/2/</sup>, besides of addressing the PRCs encompassed by this Validation Opinion Report, previously existent project description information (as per the previous version of the registered PDD (version 7.0, dated 07/05/2018)<sup>/3/</sup>) were fully and correctly considered in the completion of the revised PDD as also required by applicable CDM rules.

*Brief summary of the project activity:*

As outlined in both the previous version of the registered PDD (version 7.0, dated 07/05/2018)<sup>/3/</sup> and the revised version of the PDD (version 8.0, dated 12/06/2020)<sup>/2/</sup>, the project activity was initially conceived, implemented and has operated since early 2008 as a project based initiative implemented at the Tijuquinhas landfill that promotes efficient collection and destruction (through combustion in high temperature enclosed flares) of landfill gas (LFG) that has been historically generated at this landfill site. LFG (which is rich in CH<sub>4</sub>) has been historically generated at the project site as result of the anaerobic decomposition of municipal solid waste (MSW) disposed in the landfill site for which appropriate MSW landfilling techniques and procedures has been continuously applied. The landfill where the project activity is implemented serves as a Municipal Solid Waste (MSW) disposal site serving inter alia the city of Florianopolis (the capital of Santa Catarina State) and it is named Tijuquinhas landfill. This landfill address is BR 101, km 177.6 – Biguaçu – Santa Catarina, Brazil. The geographical coordinates of the project site are as follows:

- 27°21'39.5" S (-27.3609)
- 48°38'15.50" W (-48.6375)

*Summary of the assessed (validated) PRCs:*

The single PRC addressed in the revised version of the PDD<sup>/2/</sup> and assessed/validated by Applus+ Certification are summarized above in a quotation from summarized description of the PRC that is appropriately included in Appendix 7 of the revised version of the<sup>/2/</sup>.

*Scope and objective of the validation assessment for post-registration changes:*

The objective of the validation assessment for PRCs is to have an independent evaluation (validation opinion) being performed by a Designated Operational Entity (DOE) for project related documents (including, if applicable, a revised version of the PDD of a project activity) in order to validate occurred or yet to occur (planned) post-registration changes of a registered CDM project activity, with such independent evaluation being performed as per applicable CDM rules and requirements for addressing and validating/assessing PRCs. The validation assessment for PRCs aims to confirm whether occurred or planned PRCs applicable for a registered CDM project activity are correctly addressed by the project participant(s) and whether such changes are under compliance with all applicable CDM rules and requirements. In summary, the objective of the validation assessment for PRCs of a CDM project activity is thus, by following applicable guidance and requirements from the CDM Validation and Verification Standard for Project Activities (CDM-VVS-PA) <sup>/1/</sup>, performing an independent third party assessment in order to determine whether the project participants have *inter alia* correctly revised the PDD (if applicable) as per the latest guidance from the CDM-EB as required in the CDM Project Standard for Project Activities (CDM-PS-PA) <sup>/8/</sup>, CDM Project Cycle Procedure for Project Activities (CDM-PCP-PA) <sup>/9/</sup> and other relevant applicable guidance/standard. The use of complementary standard auditing techniques for validation assessments (as referred to in section 7.1.3.1 of the CDM-VVS-PA <sup>/1/</sup>) was systematically applied/considered as part of the performed validation assessment in light of the decision agreed by the CDM Executive Board (CDM-EB) (in March/2020) to relax mandatory site visits by DOEs for a 3-month period (from 23/03/2020 to 23/06/2020) because of COVID-19 pandemic (+ decision also agreed by the CDM-EB to extend the relaxation of mandatory site visits until 31/12/2020) <sup>/13/</sup>.

The outcome/result of a validation assessment for PRCs is a positive or negative validation opinion regarding its/their compliance with all applicable criteria/requirements and recommending or not its/their later approval by the CDM-EB.

In the particular case of the assessed PRC, its validation assessment was carried out on the basis of the following rules and requirements that are applicable for the particular case of the PRC for the project activity:

- Article 12 of the Kyoto Protocol <sup>/5/</sup>,
- Guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 3/CMP.1 <sup>/6/</sup> and subsequent decisions made by the Executive Board and COP/MOP,
- Other relevant rules, including applicable and valid host country legislation/regulations,
- The CDM Validation and Verification Standard for Project Activities (CDM-VVS-PA) version 02.0<sup>/1/</sup>.
- The CDM baseline and monitoring methodology ACM0001 "Flaring or use of landfill gas" (version 18.0) <sup>/4/</sup>,
- The CDM methodological tool "Project emissions from flaring" (version 02.0.0) <sup>/7/</sup>
- The previous version of the registered PDD<sup>/3/</sup> (version 7.0, dated 07.05/2018 that is valid for the 2<sup>nd</sup> 7-year crediting period of the project activity.

- The revised version of the PDD<sup>/2/</sup> for the 2<sup>nd</sup> 7-year crediting period of the project activity (version 08.0, dated 12/06/2020) that addresses the assessed PRC.
- Decision agreed by the CDM Executive Board (CDM-EB) (in March/2020) to relax mandatory site visits by DOEs for a 3-month period (from 23/03/2020 to 23/06/2020) because of COVID-19 pandemic (+ decision also agreed by the CDM-EB to extend the relaxation of mandatory site visits until 31/12/2020) <sup>/13/</sup>.

*Process of validation opinion for PRCs:*

The process for validation opinion for PRCs is an independent assessment performed by a DOE that is based on applicable and valid guidelines described in the latest version of the CDM-VVS-PA<sup>/1/</sup>. In addition to that, standard auditing techniques have been systematically applied by the Applus+ Certification's assessment team as part of the performed validation assessment. The Applus+ Certification's assessment team initially performed a desk review on related documents, followed by interviews with representative of the project participants in order to confirm the correctness and appropriateness of information added and/or editing's in the revised version of the PDD<sup>/2/</sup>. For all identified inconsistencies and lack of clarity, related findings (list of outstanding issues) are raised. The next steps of the performed assessment is closing out the findings through direct communication with the representatives of the project participant and receipt of updated version of the PDD<sup>/2/</sup> and/or supporting documents (if applicable) and finally preparing the Validation Opinion Report. The draft version of the Validation Opinion Report undergoes a technical review by Applus+ Certification prior to its approval and submission to the CDM-EB.

*Validation opinion assessment conclusion and summary of its validation opinion:*

As part of the conducted validation assessment, while no outstanding issues (findings) were identified by the Applus+ Certification's assessment team, it is the opinion of Applus+ Certification that the revised version of the PDD (version 8.0, dated 12/06/2020)<sup>/2/</sup> for the CDM project activity "Proactiva Tijuquinhas Landfill Gas Capture and Flaring project" appropriately and correctly addresses the PRC that is summarized and assessed in this Validation Opinion Report. All applicable CDM rules and requirements for addressing the assessed PRCs were sufficiently met. The Applus+ Certification's assessment team also confirms that, *inter alia* other relevant requirements, the previously assessed and demonstrated additionality for the project activity is not undermined by the assessed PRC. Furthermore, the assessed PRC does not adversely affects the application of the CDM baseline and monitoring methodology ACM0001 (version 18.0) + applicable methodological tools either. Finally, the previously defined scale of the project activity (registered as large-scale project activity) is not adversely impacted by the assessed PRC either. Thus, in accordance with applicable rules as per the latest version of the CDM-PS-PA <sup>/8/</sup>, the PRC is correctly addressed and it is assessed under the so-called "*Issuance*" process track. Applus+ Certification thus recommends the CDM-EB to approve the PRC addressed for the project activity.

**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.	Lead Auditor / Technical Expert	EI	Ratton	Marco A.	Applus+ Certification	Y	n/a	Y	Y

Note: IR: Internal Resources, EI: External Individuals, OR: Outsourced Resource.

Demonstration how the Applus+ Certification's validation team meets the competence required for the performance of the validation assessment of renewal of crediting period is included in Appendix 2.

**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 / Technical Expert (13.1)	EI	Xue	Denny	Applus+ Certification
2.	Report Approver	IR	Sendín	Juan	Applus+ Certification

Note: IR: Internal Resources, EI: External Individuals, OR: Outsourced Resource.

Demonstration how the appointed validation team meets the competence required for the performance of the validation assessment of renewal of crediting period is included in Appendix 2.

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

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A detailed and extensive document review was performed by the Applus+ Certification's assessment team in order to assess the revised version of the PDD<sup>/2/</sup> addressing the assessed PRC. Besides the revised version of the PDD<sup>/2/</sup>, documents such as the applied CDM baseline and monitoring methodology ACM0001 (version 18.0)<sup>/4/</sup> and the methodological tool "Project emissions from flaring" (version 02.0.0)<sup>/7/</sup> were also reviewed by the Applus+ Certification's

assessment team by *inter alia* applying standard auditing techniques in order to assess the quality and relevance of information provided. The performed document review encompassed the following:

- Review of data and information made available in the revised version of the PDD<sup>/2/</sup> in order to verify the correctness of its completion, credibility and interpretation of the presented information;
- Confirmation, based on review of the applied CDM baseline and monitoring methodology ACM0001 (version 18.0) <sup>/4/</sup> + methodological tool “Project emissions from flaring” (version 02.0.0) <sup>/7/</sup> of the appropriateness/correctness of the correction made in the revised version of the PDD<sup>/2/</sup>.
- Besides of the revised PDD<sup>/2/</sup>, the following documents were *inter alia* assessed:
  - The currently registered version of the PDD valid for the 2<sup>nd</sup> 7-year crediting period (version 7.0, dated 07.05/2018)<sup>/3/</sup>.
  - Relevant decisions, clarifications and guidance from the CMP and the CDM-EB

A complete list of all documents reviewed or referred to in the course of the performed validation opinion assessment for PRCs is included in Appendix 3.

## C.2. On-site inspection

Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
1.				

It is relevant to note that the validation assessment of post-registration changes addressed in this Validation Opinion Report was performed, under the “Issuance” process track, in the context of the performed 8<sup>th</sup> periodic verification assessment for the project activity (monitoring period from 01/05/2019 to 31/03/2020) for which no on-site visit to the project site was conducted either. While, the need of correcting information made available in the currently registered version of the PDD for the project activity was identified as part of the performance of desk review, interviews with representatives of the project participants on 05/06/2020 and additional complementary audit measures<sup>2</sup>, all corrections of information provided in the revised version of the PDD (version 8.0, dated 12/06/2020 <sup>/2/</sup>) were verified on the basis of additional desk-review phase (document review) + performed interviews with representatives of the project participants.

<sup>2</sup> It is relevant to note that, as detailed in the Verification Report for the 8<sup>th</sup> period verification of the project activity (monitoring period from 01/05/2019 to 31/03/2020) <sup>/14/</sup>, by taking into account the deadline in terms of delivery/forwarding of Certified Emission Reductions (CERs) generated by project activity during the considered monitoring period, by acknowledging that a previously planned physical on-site inspection to the project site could not be performed as part of the verification assessment due to the COVID-19 pandemic, by assuming that such on-site inspection could not be postponed, and by taking into consideration all guidance and requirements of the CDM-EB recently agreed relaxing of the rule requiring mandatory on-site inspection by DOEs for a 3-month period (from 23/03/2020 to 23/06/2020) because of COVID-19 pandemic (+ decision also agreed by the CDM-EB to extend the relaxation of mandatory site visits until 31/12/2020) <sup>/13/</sup>; the Applus+ Certification's verification team performed, as part of its verification assessment, document review and interviews with representatives of the project participants by incorporating the following additional checking's/assessments (complementary auditing measures):

- Remote (online) watching by the Applus+ Certification's verification team of live video (movie) produced by members of project operational staff located on-site (allowing remote complete and comprehensive assessment and observations for the project activity):
- Review of finding's and observations from the previously performed latest periodic verification assessment for the project activity (monitoring period from 25/07/2018 to 30/04/2019).

Such additional interview with representatives of the project participants was conducted by Applus+ Certification by on 05/06/2020 by means of remote communication using Google Meet application (with details about such performed interviews presented in the Section C.3).

By taking into account the category and nature of the assessed post-registration changes (“Corrections (in information that do not affect the project design)”) and by also taking into account the CDM-EB recently agreed relaxing of the rule requiring mandatory on-site inspection by DOEs (valid for the period from 23/03/2020 to 23/06/2020 and because of COVID-19 pandemic (+ decision also agreed by the CDM-EB to extend the relaxation of mandatory site visits until 31/12/2020)) <sup>/13/</sup>, Applus+ Certification judged the conduction of an on-site inspection to the project site (as part of its validation opinion assessment) as not necessary.

### C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Barbosa	Nuno (Mr.)	UniCarbo - Energia e Biogás Ltda. <sup>3</sup>	05/06/2020	Interview through Google Meet application encompassing the following topics: - General technical aspects about details for the correction in information (that do not affect the project design) as per the revised version of the PDD <sup>/2/</sup> including correctness and appropriateness of texts added in the revised version of the PDD <sup>/2/</sup> and their compliance with applicable CDM rules.	Marco A. Ratton

<sup>3</sup> As appropriately outlined in the revised version of the PDD <sup>/2/</sup>, UniCarbo Energia e Biogás Ltda. is a CDM consulting and advisory service company that has supported the project participants with CDM related issues for the project activity (*inter alia* completion of the revised version of the PDD <sup>/2/</sup>). This CDM consulting and advisory service company is not a project participant.



**C.4. Sampling approach**

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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	0	0	0
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	n/a	n/a	n/a
Corrections	0	0	0
Changes to the start date of the crediting period	n/a	n/a	n/a
Inclusion of a monitoring plan to a registered project activity	n/a	n/a	n/a
Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline	n/a	n/a	n/a
Changes to the project design of a registered project activity	n/a	n/a	n/a
Types of changes specific to afforestation and reforestation project activities	n/a	n/a	n/a
Others (please specify)	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<b>Means of validation</b>	<p>In accordance with applicable requirements of the CDM-VVS-PA (version 02.0)<sup>/1/</sup>, the Applus+ Certification's assessment team assessed and evaluated the completion of the revised version of the PDD (version 8.0, dated 12/06/2020)<sup>/2/</sup> addressing a PRC in order to <i>inter alia</i> determine whether this PDD was completed by correctly applying a valid version of the CDM-PDD form (and by correctly following all applicable guidance for its completion). In this assessment context, Applus+ Certification also assessed whether information transferred from the currently registered version of the PDD<sup>/3/</sup> to the revised version of the PDD<sup>/2/</sup> is materially the same.</p> <p><i>General assessment for the completion of the revised version of the PDD:</i></p> <p>The Applus+ Certification's assessment team verified that the revised version of the PDD<sup>/2/</sup> (made available in both clean and tracked changes versions) was completed by the project participant by correctly applying the latest version of the CDM-PDD form (version 11.0)<sup>/11/</sup> (with all applicable guidance for its completion being sufficiently and appropriately followed). Applicable guidance and requirements for completing the CDM-PDD form (version 11.0) as established by its attachment "Instructions for completing this form"<sup>/11/</sup> were confirmed by the Applus+ Certification's assessment team to be correctly and sufficiently considered for the completion of the revised version of the PDD<sup>/2/</sup>.</p> <p>Relevant rules and requirements as per the CDM Project Standard for Project Activities (CDM-PS-PA) (version 02.0)<sup>/8/</sup> were also confirmed to be met/followed in the completed revised version of the PDD<sup>/2/</sup>.</p> <p>While the currently registered version of the PDD valid for the 2<sup>nd</sup> 7-year crediting period (version 7.0, dated 07/05/2018)<sup>/3/</sup> was completed by applying a previous version of the CDM-PDD form (version 10.1), as confirmed by the Applus+ Certification's assessment team, all information included in the revised version of the PDD<sup>/2/</sup> is materially the same as that available in its previous version (with exception of information related to the assessed PRC).</p> <p>In summary, the Applus+ Certification's assessment team was able to confirm that the revised version of the PDD<sup>/2/</sup> is correctly completed and provides clear understanding of the project activity design and monitoring as well as the assessed</p>
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	PRC.
<b>Findings</b>	No CARs and/or CLs were raised regarding the completion of the revised PDD for the 2 <sup>nd</sup> 7-year crediting period <sup>/3/</sup> under conformance with application of a valid/latest version of the CDM-PDD form and applicable guidance for its completion.
<b>Conclusion</b>	In summary, the Applus+ Certification's assessment team was able to confirm that the revised version of the PDD <sup>/2/</sup> addressing the assessed PRC (made available in both clean and tracked changes versions) was completed by correctly applying the latest version of the CDM-PDD form (version 11.0) <sup>/11/</sup> (with all applicable guidance for its completion being sufficiently followed). It is also the opinion of the Applus+ Certification's assessment team that the revised version of the PDD <sup>/2/</sup> provides clear understanding of the project activity design and monitoring, including assessed PRC.

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

<b>Means of validation</b>	Not applicable. No temporary deviations from the registered monitoring plan are encompassed by the performed validation assessment for PRC.
<b>Findings</b>	Not applicable. No temporary deviations from the registered monitoring plan are encompassed by the performed validation assessment for PRC.
<b>Conclusion</b>	Not applicable. No temporary deviations from the registered monitoring plan are encompassed by the performed validation assessment for PRC.

## D.3. Corrections

<b>Means of validation</b>	<p>In accordance with applicable requirements of the CDM-VVS-PA (version 02.0)<sup>/1/</sup>, the Applus+ Certification's assessment team assessed and evaluated performed correction (in information that do not affect the project design) implemented in the revised version of the PDD (version 8.0, dated 12/06/2020) <sup>/2/</sup> addressing PRC in order to <i>inter alia</i> determine whether such performed corrections are under compliance with applicable CDM rules and requirements for addressing PRCs.</p> <p><i>General description of the performed Corrections (that do not affect the project design):</i> As verified by the Applus+ Certification's assessment team, the performed Correction (in information that do not affect the project design) are summarized as follows (as correctly outlined in Appendix 7 of the revised version of the PDD<sup>/2/</sup>):</p> <p style="padding-left: 40px;"><i>"Correction in information (that do not affect the project design):</i></p> <ul style="list-style-type: none"> <li>- <i>Specification detail related to maximum operational LFG flow for the currently installed high temperature enclosed flares is corrected in Sections A.3 and B.6.2 as per technical declaration provided by the manufacturer of the flares GRS VALTECH.</i></li> <li>- <i>Information details for the project participants are updated in the cover (first page), Section A.4 and Appendix 1."</i></li> </ul> <p><i>Assessment of the performed Corrections (that do not affect the project design):</i></p> <p><i>Indication of the maximum operational LFG flow for the currently installed high temperature enclosed flares:</i> The Applus+ Certification's assessment team confirmed that the performed correction in the indication of the maximum operational LFG flow for the currently installed high temperature enclosed flares made in Sections A.3 and B.6.2 of the PDD are under conformance with a technical declaration <sup>/12/</sup> issued by the company GRS VALTECH (manufacturer of the flares) that was compiled upon request of the</p>
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	<p>project participants and is dated 12/08/2019.</p> <p>As confirmed by the Applus+ Certification's assessment team, the assessed technical declaration <sup>/12/</sup> issued by the company GRS VALTECH includes the following relevant clarification:</p> <p><i>"By taking into consideration both (i) the design &amp; construction characteristics of each installed unit of the BG2000 high temperature enclosed flare and (ii) current operational conditions of both flares operating as part of the landfill gas (LFG) collection and destruction initiative implemented and under regular operation at the Tijuquinhas landfill; we hereby confirm that each one of the flares can operate (promoting efficient and safe destruction of LFG) with continuous flow of LFG (i.e. with typical fraction of methane (CH<sub>4</sub>) in the range of 25% to 70%) being sent to the burner of each flare of up to 2,500 Nm<sub>3</sub>/h, thus ensuring desirable high CH<sub>4</sub> destruction efficiency, detention time higher than 0.3 seconds and with no apparent flame in the upper section of the flare."</i></p> <p>In summary, the assessed technical declaration sufficiently confirms the LFG flow operational range for the installed flares (with indication of minimum and maximum LFG flow values).</p> <p>The Correction is thus in full accordance with the project design and applicable CDM rules. It is relevant to note that, no change or modification was made in the previously installed flares. Thus, the project design per se is confirmed as not changed.</p> <p><i>Updating of information details for the project participants:</i> The Applus+ Certification's assessment team confirmed that information details for the project participants were correctly updated in the revised version of the PDD <sup>/2/</sup> (as per the latest version of the completed Modalities of Communication (MoC) form for the project activity <sup>/10/</sup>).</p> <p>In summary, as verified by the Applus+ Certification's assessment team, the performed corrections in information (that do not affect the project design) enhance the project design description and ensure the correct and complete completion of the revised version of the PDD <sup>/2/</sup>, applying the CDM baseline and monitoring methodology ACM0001 (version 18.0) <sup>/1/</sup> + applicable methodological tools.</p>
<b>Findings</b>	No CARs and/or CLs were raised regarding the performed Corrections (in information that do not affect the project design) in the revised version of the PDD for the 2 <sup>nd</sup> 7-year crediting period <sup>/3/</sup> .
<b>Conclusion</b>	It is the opinion of the Applus+ Certification's assessment team that the description of the performed Corrections (in information that do not affect the project design) is correctly and sufficiently described in the revised version of PDD <sup>/2/</sup> .

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

<b>Means of validation</b>	Not applicable. No changes to the start date of the crediting period for the project activity have occurred and/or are encompassed by the performed validation assessment for PRC.
<b>Findings</b>	Not applicable. No changes to the start date of the crediting period for the project activity have occurred and/or are encompassed by the performed validation assessment for PRC.
<b>Conclusion</b>	Not applicable. No changes to the start date of the crediting period for the project activity have occurred and/or are encompassed by the performed validation assessment for PRC.

**D.5. Inclusion of a monitoring plan**

<b>Means of validation</b>	Not applicable. No inclusion of a monitoring plan are encompassed by the performed validation assessment for PRC.
<b>Findings</b>	Not applicable. No inclusion of a monitoring plan are encompassed by the performed validation assessment for PRC.
<b>Conclusion</b>	Not applicable. No inclusion of a monitoring plan are encompassed by the performed validation assessment for PRC.

**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>	Not applicable. No permanent changes to the registered monitoring plan, or permanent deviation from the applied CDM baseline and monitoring methodology and/or methodological tools are encompassed by the performed validation assessment for PRC.
<b>Findings</b>	Not applicable. No permanent changes to the registered monitoring plan, or permanent deviation from the applied CDM baseline and monitoring methodology and/or methodological tools are encompassed by the performed validation assessment for PRC.
<b>Conclusion</b>	Not applicable. No permanent changes to the registered monitoring plan, or permanent deviation from the applied CDM baseline and monitoring methodology and/or methodological tools are encompassed by the performed validation assessment for PRC.

**D.7. Changes to the project design**

<b>Means of validation</b>	Not applicable. No change to the project design are encompassed by the performed validation assessment for PRC.
<b>Findings</b>	Not applicable. No change to the project design are encompassed by the performed validation assessment for PRC.
<b>Conclusion</b>	Not applicable. No change to the project design are encompassed by the performed validation assessment for PRC.

**D.8. Changes specific to afforestation and reforestation project activities**

<b>Means of validation</b>	Not applicable. The project activity is not of afforestation and/or reforestation category.
<b>Findings</b>	Not applicable. The project activity is not of afforestation and/or reforestation category.
<b>Conclusion</b>	Not applicable. The project activity is not of afforestation and/or reforestation category.

**SECTION E. Internal quality control**

&gt;&gt;

The Validation Opinion Report underwent a Technical Review (TR) prior of being approved and submitted to UNFCCC in the context of the request for approval of post-registration changes of the registered CDM project activity. The TR is an independent process that is performed by an internal technical review team (a qualified technical reviewer, with assistance from specialists where necessary) and aims to examine thoroughly that the process of validation assessment for PRCs has been fully performed under conformance with applicable CDM rules and requirements for assessment of PRCs (as established by the latest version of the CDM-VVS-PA (version 02.0)<sup>1/</sup> as well as under conformance with internal working procedures of Applus+ Certification. The Team Leader provides a copy of the draft version of the Validation Opinion Report to the appointed Technical Review Team Leader (including any necessary validation documentation). The Technical Review Team reviews the documentation. It is the role of the Technical Review Team to ensure that all related assessment activities have been performed by the assessment team by exercising utmost diligence and complete adherence to the applicable CDM rules and requirements for assessment of PRCs (including compilation of the Validation Opinion Report). The review encompasses all aspects related to the assessment of the post-registration changes as well as, if applicable, the closure of raised CARs, CLs and/or FARs during the assessment process.

As part of its performed tasks, the technical review team may raise Clarification Requests to the assessment team and/or discuss raised issues with the Team Leader. After the agreement of the responses to the Clarification Requests received from the assessment team (as well as from the project participant(s) if applicable), the final version of the Validation Opinion Report is thus accepted for further processing (such as approval and uploading phases via the UNFCCC interface).

**SECTION F. Validation opinion**

&gt;&gt;

LGAI Technological Center, S.A., accredited DOE E-0032 (hereinafter referred to as *Applus+ Certification*) was commissioned to perform the 8<sup>th</sup> periodic verification assessments for CDM project activity titled “Proactiva Tijuquinhás Landfill Gas Capture and Flaring project” (UNFCCC reference number 1506) (monitoring period from 01/05/2019 to 31/03/2020). As part of the performance of such verification assessments, it was identified the need of correcting information previously made available in the registered version of the PDD for the project activity. Thus, a validation assessment of post-registration change (PRC) applicable for the project activity was performed by Applus Certification.

The occurred post-registration change valid for the CDM project activity were assessed and addressed by Applus+ Certification under the “Issuance” process track and encompasses the following Corrections:

- *Correction in information (that do not affect the project design):*
  - *Specification detail related to maximum operational LFG flow for the currently installed high temperature enclosed flares is corrected in Sections A.3 and B.6.2 as per technical declaration provided by the manufacturer of the flares GRS VALTECH.*
  - *Information details for the project participants are updated in the cover (first page), Section A.4 and Appendix 1.”*

Addressing by the project participants of the above summarized PRC was correctly performed through the compilation of a revised version of the PDD (version 8.0 dated 12/06/2020). The revised version of the PDD had its performed changes validated by the appointed Applus+ Certification’s assessment team. The revised version of the PDD was made available and was assessed by the assessment team.

As also verified by the Applus+ Certification’s assessment team, the revised version of the PDD (version 8.0, dated 12/06/2020) is completed by correctly applying the previously selected CDM baseline and monitoring methodology ACM0001 (version 18.0) – “Flaring and utilization of landfill gas” + all the methodological tools the previous version of the PDD refers to (including the methodological tool “Project emissions from flaring” (version 02.0.0) <sup>17/</sup>).

Moreover, the Applus+ Certification’s assessment team was also able to confirm that the revised version of the PDD was completed by correctly applying the latest version of the CDM-PDD form (version 11.0) with applicable guidance for its completion being appropriately followed.

As an outcome of its performed assessment, it is the opinion of Applus+ Certification that the revised version of the PDD sufficiently addresses and incorporates the above summarized eligible post-registration changes. Furthermore, all explanations and justifications provided to Applus+ Certification by the representatives of the project participants regarding information and assumptions, as presented in the revised version of the PDD, are deemed reasonable, trustful, and acceptable.

In summary, applied corrections (in information that do not affect the project design) correctly reflect the application of the applicable CDM guidance and procedures regarding these particular category of post-registration changes as per the latest version of the Clean Development Mechanism Project Standard for Project Activities (CDM-PS-PA).

Applus+ Certification thus recommends approval of the revised version of the PDD (version 8.0, dated 12/06/2020) for the project activity under the “*Issuance*” process track for addressing post-registration permanent changes of a registered CDM project activity.

Note: Applus+ Certification highlights that as part of its assessment and validation opinion for the post-registration changes for the CDM project activity “Proactiva Tijuquinhas Landfill Gas Capture and Flaring project” as per the revised version of the PDD (version 8.0, dated 12/06/2020), no re-assessment of any CDM requirements and criteria other than the ones applicable/required for the assessing the post-registration changes, was performed by the appointed Applus+ Certifications’s assessment team (e.g. assessments previously performed as part of the CDM validation of the project activity and/or its CDM renewal of crediting period). The limited scope of the validation opinion assessment performed by Applus+ Certification for the encompassed post-registration changes is under full compliance with applicable assessment requirements and rules as per the latest version of the CDM Validation and Verification Standard for Project Activities (CDM-VVS-PA).

## Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-EB	Clean Development Mechanism Executive Board
CDM-M&P	Modalities and Procedures for Clean Development Mechanism
CDM-PCP-PA	Clean Development Mechanism Project Cycle Procedures for Project Activities
CDM-PS-PA	Clean Development Mechanism Project Standard for Project Activities
CDM-VVS-PA	Clean Development Mechanism Validation and Verification Standard for Project Activities
CER	Certified Emission Reduction
CH <sub>4</sub>	Methane
CL	Clarification Request
CMP	Meeting of Parties to the Kyoto Protocol
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
COP/MOP	The Conference of the Parties to the United Nations Framework Convention on Climate Change serving as the Meeting of the Parties to the Kyoto Protocol
COVID-19	Coronavirus disease (infectious disease caused by a new virus that caused a worldwide pandemic in year 2020).
DOE	Designated Operational Entity
ER	Emission Reduction
GHG	Greenhouse Gas
LFG	Landfill gas
IPCC	Intergovernmental Panel on Climate Change
MSW	Municipals solid waste
PDD	Project Design Document
PP	Project Participant
PRC	Post-registration changes
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention for Climate Change



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

According to the applicable sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed an assessment team in compliance with the Contract Review and Assessment Team appointment rules in the internal Quality Management System of Applus+ Certification as well as in compliance with the applicable requirements in the Accreditation Standard.

The composition of the Assessment Team (Applus+ Certification's validation team) has been approved by Applus+ Certification during the Contract Review process ensuring that the required skills and capabilities are covered.

The qualification levels for Assessment Team members that are assigned by aforementioned appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A).
- Technical Expert (TE).
- Technical Reviewer (TR).
- Any of the above mentioned roles in training (iT, e.g. AiT for auditor in training).

The Sectoral Scope / Technical Area required knowledge linked to the applied methodology(ies) is covered by the Assessment Team as shown below:

Name	Role	SS/TA Knowledge	Financial Expertise	Attendance to on-site visit
Mr. Marco A. Ratton	LA/ TE	YES (13.1)	n/a	n/a
Mr. Denny Xue	TR /TE	YES (13.1)	n/a	n/a

A brief Curriculum Vitae (CV) of the Assessment Team members is provided below:

### Mr. Marco A. Ratton:

Marco A. Ratton is based in Brazil and has acted as a GHG auditor since 2007. He holds vast experience with independent assessments of GHG project activities within the area of renewable energies, solid waste management and effluent treatment implemented in Latin America and other regions. He also has previous working experience with planning of municipal waste management as well as educational background in mechanical fabrication and manufacturing technologies, economics and environmental management & policy.

He has undergone extensive training on GHG validation and verification and is a qualified Expert for Sectoral Scope 13 under Technical Area "Waste management" and Sectoral Scope 1, among others and in accordance with procedures of Applus+. He also has years-long previous experience on conducting ISO 9001/14001 assessments.

**Mr. Denny Xue:**

Denny Xue (Master's Degree in Environmental Engineering, Bachelor's Degree in Thermal Engineering) is an Auditor appointed by Applus+ Certification for the GHG project assessment, auditing and technical review.

He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and technical review with Applus+.

Before he joined Applus+, he has been working for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/1/	UNFCCC/CDM-EB	Clean Development Mechanism Validation and Verification Standard for Project Activities (CDM-VVS-PA), (version 02.0)	Dated 29/11/2018. Available online: <a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Others
/2/	Proactiva Meio Ambiente – Brasil	Revised version of the Project Design Document (PDD) for the 2 <sup>nd</sup> 7-year renewable crediting period for the CDM project activity: “Proactiva Tijuquinhas Landfill Gas Capture and Flaring project” (version 8.0) (in both clean and tracked changes versions).	Dated 12/06/2020	Project Participants <sup>4</sup>
/3/	Proactiva Meio Ambiente – Brasil	Project Design Document (PDD) for the 2 <sup>nd</sup> 7-year renewable crediting period for the CDM project activity: “Proactiva Tijuquinhas Landfill Gas Capture and Flaring project” (version 7.0).	Dated 07/05/2018 Available online: <a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1200058130.23/view?cnp=2">https://cdm.unfccc.int/Projects/DB/DNV-CUK1200058130.23/view?cnp=2</a>	Project Participants
/4/	UNFCCC/CDM-EB	Consolidated baseline and monitoring methodology ACM0001 - “Flaring or use of landfill gas” (version 18.0).	Dated 04/05/2017. Available online: <a href="https://cdm.unfccc.int/methodologies/DB/JPYB4DYQUXQPZLBDVPHA87479EMY9M">https://cdm.unfccc.int/methodologies/DB/JPYB4DYQUXQPZLBDVPHA87479EMY9M</a>	Others
/5/	UNFCCC	Kyoto Protocol to the United Nations Framework Convention on Climate Change	Dated 1998. Available online: <a href="http://unfccc.int/resource/docs/convkp/kpeng.pdf">http://unfccc.int/resource/docs/convkp/kpeng.pdf</a>	Others
/6/	UNFCCC	Decision 3/CMP. 1 (Marrakesh – Accords)	Dated 30/03/2006. Available online: <a href="https://cdm.unfccc.int/Reference/COPMOP/08a01.pdf">https://cdm.unfccc.int/Reference/COPMOP/08a01.pdf</a>	Others
/7/	UNFCCC/CDM-EB	Methodological tool “Project emissions from flaring” (version 02.0.0).	Dated 20/07/2012. Available online: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-06-v2.0.pdf/history_view">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-06-v2.0.pdf/history_view</a>	Others

<sup>4</sup> All document with provider indicated as “Project Participants” were sourced by the host-country project participant and project owner Proactiva Meio Ambiente – Brasil.

/8/	UNFCCC/CDM-EB	Clean Development Mechanism Project Standard for Project Activities (CDM-PS-PA) (version 02.0)	Dated 29/11/2018. Available online: <a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Others
/9/	UNFCCC/CDM-EB	Clean Development Mechanism Project Cycle Procedure for Project Activities (CDM-PCP-PA) (version 02.0)	Dated 29/11/2018. Available online: <a href="https://cdm.unfccc.int/Reference/Procedures/index.html">https://cdm.unfccc.int/Reference/Procedures/index.html</a>	Others
/10/	Proactiva Meio Ambiente – Brasil	Completed Modalities of Communication (MoC) form for the CDM project activity “Proactiva Tijuquinhas Landfill Gas Capture and Flaring project”	Available online: <a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1200058130.23/view?cp=1">https://cdm.unfccc.int/Projects/DB/DNV-CUK1200058130.23/view?cp=1</a>	Project Participants
/11/	UNFCCC	Project design document form for CDM project activities (incl. the Attachment “Instructions for completing this form”, version 11.0.	Dated 31/05/2019. Available online: <a href="https://cdm.unfccc.int/Reference/PDDs_Forms/index.html">https://cdm.unfccc.int/Reference/PDDs_Forms/index.html</a>	Others
/12/	GRS VALTECH	Declaration: Operational performance statement for the 2 units of the high temperature enclosed flare model BG2000 currently installed and under continuous operation at the Tijuquinhas landfill site, in the city of Biguaçu-SC, Brazil	Dated: 12/08/2019	Others
/13/	CDM-EB	Agreed relaxing of the rule requiring mandatory on-site inspection by DOEs (valid for the period from 23/03/2020 to 23/06/2020 and because of COVID-19 pandemic (+ decision also agreed by the CDM-EB to extend the relaxation of mandatory site visits until 31/12/2020))	Dated March/2020 Available online: <a href="https://cdm.unfccc.int/newsroom/latestnews/releases/2020/01041_index.html">https://cdm.unfccc.int/newsroom/latestnews/releases/2020/01041_index.html</a>	Others
/14/	Applus+ Certification	Verification Report for the 8 <sup>th</sup> period verification of the project activity “Proactiva Tijuquinhas Landfill Gas Capture and Flaring project” (monitoring period from 01/05/2019 to 31/03/2020)	Dated 06/08/2020	Others

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

**Table 1. CLs from this validation**

<b>CL ID</b>	xx	<b>Section no.</b>	-	<b>Date:</b> DD/MM/YYYY
<b>Description of CL</b>				
No CLs were raised as part of the performed validation assessment.				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
-				
<b>Documentation provided by project participant</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
-				

**Table 2. CARs from this validation**

<b>CAR ID</b>	xx	<b>Section no.</b>	-	<b>Date:</b> DD/MM/YYYY
<b>Description of CAR</b>				
No CARs were raised as part of the performed validation assessment.				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by project participant</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
-				

**Table 3. FARs from this validation**

<b>FAR ID</b>	xx	<b>Section no.</b>	-	<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
No FARs were raised as part of the performed validation assessment.				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
-				
<b>Documentation provided by project participant</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
-				

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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		