



## Validation report form for post-registration changes for CDM project activities

(Version 01.0)

## VALIDATION REPORT ON POST-REGISTRATION CHANGES (PRCs)

<b>Title and reference number of the project activity</b>	Central de Resíduos do Recreio Landfill Gas Project (CRRLGP) (UNFCCC reference number 0648)
<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 on PRCs</b>	01.0
<b>Completion date of the validation report on PRCs</b>	16/06/2017
<b>Type(s) of PRCs</b>	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline <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 to a registered project activity <input type="checkbox"/> Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline <input type="checkbox"/> Changes to the project design of a registered project activity <input type="checkbox"/> Types of changes specific to afforestation and reforestation project activities
<b>Version number of PDD to which this report applies</b>	PDD Version 9.2 (dated 16/06/2017)
<b>Project participant(s)</b>	- Companhia Riograndense de Valorização de Resíduos S/A - Biogas Riograndense Ltda. - Belektron d.o.o.
<b>Host Party</b>	Brazil
<b>Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)</b>	<u>Sectoral Scope:</u> 13 - Waste handling and disposal  <u>Selected Methodology:</u> ACM0001 - "Flaring or use of landfill gas" (version 15.0)
<b>Name of DOE</b>	EPIC Sustainability Services Pvt. Ltd. (EPIC) Report no: ESSPL/CDM/2017/153a
<b>Name, position and signature of the</b>	Mr. Marco A. Ratton (Assessment Team Leader)

approver of the validation report on PRCs



Mr. K Sudheendra (Head - Operations)



**SECTION A. Executive summary**

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Background and summary of the post-registration changes:

EPIC Sustainability Services Pvt. Ltd. (EPIC) was commissioned by the project participant Biogas Riograndense Ltda. to performing periodic verification assessment for CDM project activity titled “Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)” (UNFCCC Project no. 0648). As part of the performance of such verification assessment, it was identified the need of correcting information made available in the registered version of the PDD for the project activity. Thus, a validation assessment of post-registration changes applicable for the project activity was performed by EPIC under the “Issuance” process track.

The occurred post-registration changes valid for the CDM project activity were assessed and addressed by EPIC under the “Issuance” process track and encompasses the following type/category:

- Corrections in information made available in the PDD (that do not affect the project design)

All post-registration changes (PRCs) were addressed by the project participant through the completion of a revised version of the PDD valid for the 2<sup>nd</sup> 7-year renewable crediting period (version 9.2, dated 16/06/2017) <sup>/2/</sup>.

This Validation Opinion Report thus includes the assessment and the validation opinion of EPIC for all post-registration changes valid for the registered CDM project activity as per such latest version of its revised PDD. In accordance with applicable guidance of the latest version of the CDM Project Standard (CDM-PS) (version 09.0) <sup>/15/</sup>, the EPIC assessment and validation opinion for all applicable post-registration changes are combined into one single Validation Opinion Report (to be submitted to the CDM Executive Board (CDM-EB) for approval under the “Issuance” process track)<sup>1</sup>.

Also in accordance with applicable CDM requirements, the revised version of the PDD (version 9.2, dated 16/06/2017) <sup>/2/</sup> correctly applies the latest version of the CDM-PDD form (version 08.0) <sup>/19/</sup>. Moreover, the revised version of the PDD <sup>/2/</sup> was verified by EPIC as being completed by correctly taking into account all applicable guidance/requirements for completing the CDM-PDD form (version 08.0) <sup>/19/</sup> (as established by the “Attachment to the CDM-PDD form (version 08.0) - Instructions for filling out the project design document form for CDM project activities” <sup>/19/</sup>). For the completion of the revised version of the PDD <sup>/2/</sup>, besides of addressing all post-registration changes encompassed by this Validation Opinion Report, previously existent project description information and data (as per the previous version of the PDD (version 9.1, dated 14/09/2015) <sup>/3/</sup>) were also confirmed as being 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 the currently registered version of the PDD (version 9.1, dated 14/09/2015) <sup>/3/</sup> and also highlighted in the revised version of the PDD (version 9.2, dated 16/06/2017) <sup>/2/</sup>, the project activity was initially conceived, implemented and has operated as a project based initiative implemented at the Central de Resíduos do Recreio (CRR) landfill promoting efficient collection and destruction (through combustion in high temperature enclosed flares) + utilization as gaseous fuel for electricity generation of landfill gas (LFG) historically generated at this landfill. As also outlined in both the currently registered and in the revised versions of the PDD <sup>/3/</sup> <sup>/2/</sup>, utilization of LFG as gaseous fuel for electricity generation is made in the project’s electricity generation infrastructure of which has been under operation since July 2015 and has nameplate installed

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<sup>1</sup> Implemented corrections (in information that do not affect the project design) were confirmed by the EPIC assessment team as being permanent post-registration changes that *per se* would not require prior approval by the CDM-EB. This is under conformance with applicable guidance from the latest version of the CDM Project Standard (CDM-PS) (version 09.1) <sup>/15/</sup>.

capacity of 8.556 MW. LFG (which is rich in CH<sub>4</sub>) has been historically generated at the CRR landfill as result of the anaerobic decomposition of municipal solid waste (MSW) disposed in the site using appropriate MSW landfilling techniques and procedures. The CRR landfill is a Municipal Solid Waste (MSW) disposal site. The CRR landfill is located in the Municipality of Minas do Leão, Rio Grande do Sul State, approximately 80 km Western from Porto Alegre city, in the Southern Region of Brazil. The site operations are managed by Companhia Riograndense de Valorização de Resíduos S/A. The exact geographic coordinates of the project site are:

30° 8' 49" S (-30.1469)

52° 1' 33" W (-52.0258)

Besides of promoting avoidance of emissions of methane (CH<sub>4</sub>) into the atmosphere (that would occur in the absence of the project activity (baseline scenario)), the project activity has also promoted real and permanent CO<sub>2</sub> emission reductions by generation of electricity using collected LFG (that is regarded as a renewable energy source), thus displacing equivalent amount of electricity that would otherwise be generated by existing grid-connected power plants (including fossil-fuel fired power plants (and addition of new power generation units)) within National Electricity Grid of Brazil.

Also in accordance to the project design, as also outlined in both the currently registered version of the PDD (version 9.1, dated 14/09/2015) <sup>/3/</sup> and the revised version of the PDD (version 9.2, dated 16/06/2017) <sup>/2/</sup>, a backup captive off-grid electricity generator (fuelled by diesel) is also currently installed/under operational status at the project site. This backup electricity generator has been used uniquely for meeting the project's electricity demand during temporary planned or unplanned circumstances when the project's electricity generation facility is temporarily not under operation and/or supply of grid-sourced electricity to the project activity is temporarily interrupted.

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 vis-à-vis applicable CDM rules and requirements for addressing PRCs. The validation assessment for PRCs aims to confirm whether occurred or yet to occur (planned) PRCs applicable for a particular registered CDM project activity are correctly addressed by the project participant(s) and/or are under compliance with all applicable related CDM rules and requirements. In summary, the objective of the validation assessment for PRCs of a CDM project activity is thus, by *inter alia* following applicable guidance and requirements from the CDM Validation and Verification Standard (CDM-VVS) <sup>/1/</sup>, performing an independent third party assessment in order to determine whether the project participant(s) has/have *inter alia* correctly revised the PDD and other documentation (if applicable) as per the latest guidance from the CDM-EB as established in the latest versions of the CDM Project Standard (CDM-PS) (version 09.0) <sup>/18/</sup>, CDM Project Cycle Procedure (CDM-PCP) (version 09.0) <sup>/36/</sup> and other relevant guidance/standard.

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

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

- Article 12 of the Kyoto Protocol <sup>/6/</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 (CDM-VVS) version 09.0 <sup>/1/</sup>,
- The CDM baseline and monitoring methodology ACM0001 “Flaring or use of landfill gas” (version 15.0) <sup>/4/</sup>,
- The currently registered version of the PDD (version 9.1, dated 14/09/2015) <sup>/3/</sup> that is valid for the 2<sup>nd</sup> 7-year crediting period of the project activity.
- The latest issued version of the revised PDD (version 9.2, dated 16/06/2017) <sup>/2/</sup>, (that addresses the PRCs and is also valid for the whole 2<sup>nd</sup> 7-year crediting period of the project activity) <sup>/2/</sup>.
- The following CDM methodological tools, that the revised version of the PDD refers to:
  - Emissions from solid waste disposal sites (version 07.0) <sup>/7/</sup>
  - Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 1) <sup>/8/</sup>
  - Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion (version 02) <sup>/9/</sup>
  - Project emissions from flaring (version 02.0.0) <sup>/10/</sup>
  - Tool to determine the mass flow of a greenhouse gas in a gaseous stream (version 02.0) <sup>/11/</sup>
  - Tool to calculate the emission factor for an electricity system (version 04.0) <sup>/14/</sup>
  - Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period (version 03.0.1) <sup>/13/</sup>

*Process of validation opinion for PRCs:*

The process for validation opinion for PRCs is an assessment performed by a DOE that is based on applicable and valid guidelines described in the latest version of the CDM-VVS <sup>/1/</sup>. In addition to that, standard auditing techniques have been applied by the EPIC assessment team. As part of the performed validation assessment for PRCs, the EPIC assessment team initially performed a desk review on related documents, followed by interviews with representative of the project participant Biogas Riograndense Ltda. in order to confirm the correctness and appropriateness of information added 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 are to close out the findings through direct communication with the project participant and receipt of updated version of the PDD <sup>/2/</sup> and/or supporting documents and finally preparing the Validation Opinion Report. As per EPIC assessment procedures, the draft version of the Validation Opinion Report undergoes a technical review by EPIC 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, no Corrective Action Request (CAR), Clarification Request (CL) and/or Forward Action Request (FAR) was raised by the EPIC assessment team. It is thus the EPIC opinion that such revised version of the PDD for the CDM project activity “Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)” appropriately and correctly addresses all PRCs that are encompassed and are assessed in this Validation Report. All applicable CDM rules and requirements for addressing PRCs were met.

The EPIC assessment team also confirms that, *inter alia* other relevant requirements, the project activity remains being eligible for the application of the CDM baseline and monitoring methodology ACM0001 (version 15.0) <sup>17/</sup> + applicable methodological tools <sup>17/ 18/ 19//10/ 111/ 13/ 14/ 17/</sup> and that the previously assessed and demonstrated additionality for the project activity is not undermined by the assessed PRCs. Furthermore, it is also the opinion of EPIC that the performed revision of the monitoring plan and corrections (in information that do not affect the project design) does not negatively affect the level of accuracy in overall monitoring of the project activity (when compared to related monitoring requirements valid and available prior to the revision of the monitoring plan). In the opinion of EPIC, the performed revision of the monitoring plan is not likely to lead to a reduction in the accuracy of calculation of emission reductions to be achieved by the project activity along its 2<sup>nd</sup> 7-year crediting period either. EPIC thus recommends the CDM-EB to approve the PRCs 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 review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader / Technical expert	EI	Ratton	Marco	EPIC Sustainability Services Pvt. Ltd. - Central office	X	-	X	X
2.	Auditor	IR	Vishnu	Govindarao	EPIC Sustainability Services Pvt. Ltd. - Central office	X	-	-	X

EI: External individual

Demonstration how the appointed verification team meets the competence required for the performance of the verification assessment 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	IR	Radhamadhavan	Vijayaraghavan	EPIC Sustainability Services Pvt. Ltd. - Central office
2.	Approver	IR	Sudheendra	Krishnachar	EPIC Sustainability Services Pvt. Ltd. - Central office

IR: Internal resource

Demonstration how the appointed technical reviewer and approver of the Verification Report meet the competence required for the performance of the verification assessment is included in Appendix 2.

## SECTION C. Means of validation

### C.1. Desk review

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A detailed and extensive document review was performed by the EPIC 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 15.0) <sup>/4/</sup> and the methodological tool “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 1) <sup>/8/</sup> were also reviewed by the EPIC 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, credibility and interpretation of presented information;
- Confirmation, based on review of the applied CDM baseline and monitoring methodology ACM0001 (version 15.0) <sup>/4/</sup> + methodological tool “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 1) <sup>/8/</sup> of the appropriateness/correctness of formulae, calculation approaches and monitoring approaches referred 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 9.1, dated 14/09/2015) <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.	N/A (no on-site inspection was performed)	N/A	N/A	

It is relevant to note that the performed validation assessment of post-registration changes addressed in this Validation Opinion Report was performed, under the “Issuance” process track, in the context of performed verification assessment for the project activity for which an on-site visit to the project site was conducted. While, the need of correcting information made available in the currently registered version of the PDD for the project activity was identified after the performance of such on-site visit, all information provided in the revised version of the PDD (version 9.2, dated 16/06/2017) <sup>/2/</sup> was verified on the basis of desk-review phase (document review) + performed interviews with representatives of the host country project participant and project owner Biogas Riograndense Ltda. Interviews with representatives of the host country project participant Biogas Riograndense Ltda. were conducted by EPIC by means of telephone communications (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)”), EPIC judged the conduction of an additional on-site inspection to the project site (as part of its validation opinion assessment for PRCs) 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>2</sup>	16/06/2017	Telephone based interview on 16/06/2017 encompassing the following topics: <ul style="list-style-type: none"> <li>- 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.</li> </ul>	Marco A. Ratton

## C.4. Clarification requests, corrective action requests and forward action requests 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>

<sup>2</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 host-country project participant Biogas Riograndense Ltda. 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.

## 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 (version 09.0) <sup>/1/</sup>, the EPIC assessment team assessed and evaluated the completion of the revised version of the PDD (version 9.2, dated 16/06/2017) <sup>/2/</sup> addressing PRCs 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, EPIC 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><b>D.1.1. – General assessment for the completion of the revised version of the PDD:</b></p> <p>The EPIC assessment team verified that the revised version of the PDD <sup>/2/</sup> (made available in both clean and tracked changes versions) were completed by the project participant by correctly applying the latest version of the CDM-PDD form (version 08.0) <sup>/19/</sup> (with all applicable guidance for its completion being sufficiently and appropriately followed). Applicable guidance and requirements for completing the CDM-PDD form (version 08.0) as established by the “Attachment to the CDM-PDD form (version 08.0) - Instructions for filling out the project design document form for CDM project activities” <sup>/19/</sup> were confirmed by the EPIC 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 (CDM-PS) <sup>/15/</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 9.1, dated 14/09/2015) <sup>/3/</sup> was completed by applying a previous version of the CDM-PDD form (version 06.0), as confirmed by the EPIC 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 PRCs).</p> <p>In summary, the EPIC 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 PRCs.</p>
<b>Findings</b>	<p>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>/2/</sup> under conformance with application of a valid/latest version of the CDM-PDD form and applicable guidance for its completion.</p>
<b>Conclusion</b>	<p>In summary, the EPIC assessment team was able to confirm that the revised version of the PDD <sup>/2/</sup> addressing the assessed PRCs (made available in both clean and tracked changes versions) was completed by correctly applying the latest version of the CDM-PDD form (version 08.0) <sup>/19/</sup> (with all applicable guidance for its completion being sufficiently followed). It is also the opinion of the EPIC assessment team that the revised version of the PDD <sup>/2/</sup> provides clear understanding of the project activity design and monitoring, including assessed PRCs.</p>

### D.2. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

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

	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 (version 09.0) <sup>/1/</sup>, the EPIC assessment team assessed and evaluated performed corrections (in information that do not affect the project design) implemented in the revised version of the PDD (version 9.2, dated 16/06/2017) <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><b>D.3.1. - General description of the performed Corrections (that do not affect the project design):</b></p> <p>As verified by the EPIC assessment team, the performed Corrections (in information that do not affect the project design) are summarized as follows (as correctly outlined in Appendix 6 of the revised version of the PDD <sup>/2/</sup>:</p> <p><i>“Corrections (in information that do not affect the project design):</i></p> <ul style="list-style-type: none"> <li>- <i>Missing default value (applicable for generated electricity exported through the electricity grid the project activity is connected to) is added in details for the ex-ante determined (fixed) parameter “Average technical transmission and distribution losses for providing electricity to the grid and/or for grid sourced electricity consumed by the project activity” (<math>TDL_{grid,y}</math>) in Section B.6.2. Furthermore, while the previously selected 20% default value became applicable only for grid-sourced electricity imported by the project activity and is termed as <math>TDL_{grid,import,y}</math>, the added 3% missing default value is termed as <math>TDL_{grid,export,y}</math>. Texts in Sections B.6.1 and B.6.3 are adjusted accordingly.</i></li> <li>- <i>Calculations of ex-ante estimates of emission reductions to be achieved by the project activity during the 2<sup>nd</sup> 7-year crediting period are corrected in both Section B.6.3 and in a revised version of the emission reduction calculation spreadsheet (that is enclosed to the PDD) by taking into account the missing 3% default value for the ex-ante determined (fixed) parameter <math>TDL_{grid,y}</math> (value applicable for generated electricity exported through the electricity grid the project activity is connected to).</i></li> <li>- <i>The formula for the determination of baseline emissions of methane (<math>BE_{CH_4,y}</math>) applied in the context of ex-ante estimates of emission reductions to be achieved by the project activity is corrected in the emission reduction calculation spreadsheet that is enclosed to the PDD with related annual values being corrected accordingly. Figures for ex-ante estimates of emission reductions to be achieved by the project activity during the 2<sup>nd</sup> 7-year crediting period as reported in Section B.6.3 are corrected accordingly.</i></li> <li>- <i>Information details for the project participants are updated (as per the latest version of the completed Modalities of Communication (MoC) form for the project activity).”</i></li> </ul>
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**D.3.2 - Assessment of the performed Corrections (that do not affect the project design):**

The EPIC assessment team confirmed that the performed general text revisions of the project description are in full accordance with the project design and applicable CDM rules.

*Adding of the missing 3% default value (applicable for generated electricity exported through the electricity grid the project activity is connected to) (termed as  $TDL_{grid,export,y}$ ) in details for the ex-ante determined (fixed) parameter  $TDL_{grid,y}$  (with the previously selected 20% default value becoming applicable only for grid-sourced electricity imported by the project activity ( $TDL_{grid,import,y}$ )):*

The following disclaimers were correctly and appropriately added in Section B.6.2 of the revised version of the PDD <sup>12/</sup> justifying the addition of the previously missing value for the parameter  $TDL_{grid,y}$  applicable for electricity exported through the electricity grid the project activity is connected to:

**“Value(s) applied:**

3% (for generated electricity exported through the electricity grid the project activity is connected to ( $TDL_{grid,export,y}$ ))

20% (for electricity imported by the project activity through the electricity grid the project activity is connected to ( $TDL_{grid,import,y}$ ))

**Choice of data or Measurement methods and procedures:**

The “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 01) defines, as alternative, default value of 20% for project consumption sources (applicable for determination of project emissions due to consumption of grid-sourced electricity by the project activity) and default value of 3% for baseline electricity consumption sources (applicable for the determination of baseline emissions for electricity generation by the project activity). The selection of these default values are under conformance with applicable guidance of ACM0001 (version 15.0).

While transmission and distribution sources applicable for both grid-sourced electricity to be consumed by the project activity and for electricity generation by the project activity (equivalent to electricity consumption of baseline electricity consumption sources when applying the underlying tool) do not fit under Scenario B and/or Scenario C (case II) of the such tool, the selected 20% value for  $TDL_{grid,import,y}$  and 3% values for  $TDL_{grid,export,y}$  are thus under conformance with applicable guidance of the tool.

The selection of 20% value for  $TDL_{grid,import,y}$  and 3% values for  $TDL_{grid,export,y}$  meets applicable guidance for Scenarios A and C (cases I and III) of the Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 01) (whichever of these scenarios are applicable for the particular case of the project activity, where, as per the tool, in the case of doubts, case C.III should be identified as a conservative approach).

It is relevant to note that as per the project design, the amount of electricity to be consumed by the project activity (project electricity consumption sources) to which scenario C of the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 01) refers is smaller than the so-called electricity consumption of baseline electricity consumption sources ( $EC_{BL,k,y}$ ) as per such tool (where  $EC_{BL,k,y}$  in the tool is equivalent to the net amount of electricity generated using LFG in year y ( $EG_{PJ,y}$ ) as defined by ACM0001 (version 15.0)). In summary, the project activity generates more electricity than it requires for its operation, with the largest amount of generated electricity being exported through the electricity grid the project activity is connected to. Under these particular conditions, also considering the 3% default value for electricity imported by the project activity (through the electricity grid the project activity is connected to) in thesis would represent an acceptable alternative. However, as a conservative approach, the generic 20%

default value of the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 01) applicable for project consumption sources is selected. This approach results in higher project emissions, thus reducing emission reductions to be achieved by the project activity accordingly.”

Through review of CDM baseline and monitoring methodology ACM0001 (version 15.0) <sup>/4/</sup> and the methodological tool “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 1) <sup>/8/</sup> and by taking into account the design for the project activity; the EPIC assessment team confirmed that 3% and 20% values indeed correspond to the default values applicable for generated electricity exported through the electricity grid the project activity is connected to (to be considered for the determination of baseline emissions for electricity generation by the project activity) and for electricity imported by the project activity through the electricity grid the project activity is connected to (to be considered for determination of project emissions due to consumption of grid-sourced electricity by the project activity) respectively.

The decision of the project participant Biogas Riograndense Ltda. of maintaining the previously selected 20% default value of the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 01) <sup>/8/</sup> as the value of  $TDL_{grid,y}$  applicable for project consumption sources ( $TDL_{grid,import,y}$ ) as a conservative measure is deemed reasonable and acceptable.

Thus, it is deemed reasonable and acceptable to address such inclusion of missing value for the ex-ante determined parameter  $TDL_{grid,y}$  as Corrections (that do not affect the project design).

*Corrections in calculations of ex-ante estimates of emission reductions to be achieved by the project activity during the 2<sup>nd</sup> 7-year crediting period:*

Upon the consideration of (a) the added previously missing 3% default value (applicable for generated electricity exported through the electricity grid the project activity is connected to) for the ex-ante determined (fixed) parameter “Average technical transmission and distribution losses for providing electricity to the grid and/or for grid sourced electricity consumed by the project activity” ( $TDL_{grid,y}$ ) (value termed as  $TDL_{grid,export,y}$ ) in the particular context of determination of baseline emissions for electricity generation ( $BE_{EC,y}$ ) and (b) the corrected application of the formulae for the determination of baseline emissions of methane ( $BE_{CH_4,y}$ ); annual and total estimates of GHG emission reductions to be achieved by the project activity during its 2<sup>nd</sup> 7-year crediting period were appropriately corrected in Section B.6.3. elated calculations of ex-ante estimates of emission reductions to be achieved by the project activity during the 2<sup>nd</sup> 7-year crediting period were also appropriately corrected in the revised version of the emission reduction calculation spreadsheet <sup>/2/</sup> as summarized below:

Year	Annual ex-ante estimates of baseline emissions for methane ( $BE_{CH_4,y}$ ) (in tCO <sub>2</sub> e)	Annual ex-ante estimates of baseline emissions for electricity generation ( $BE_{EC,y}$ ) (in tCO <sub>2</sub> e)	Annual ex-ante estimates of emission reductions to be achieved by the project activity ( $ER_y$ ) (in tCO <sub>2</sub> e)
2014	27,080	0	27,059
2015	370,714	10,854	381,312
2016	410,917	24,157	434,817
2017	446,390	24,157	470,291
2018	477,824	24,157	501,725
2019	505,797	24,157	529,698
2020	530,795	24,157	554,696
2021	507,126	22,105	528,996
		Annual average	489,799

	<p><i>Updating of information details for the project participants:</i></p> <p>The EPIC 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>/18/</sup>).</p> <p>In summary, as verified by the EPIC 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 15.0) <sup>/4/</sup> + applicable methodological tools <sup>/7/ /8/ /9/ /10/ /11/ /13/ /14/ /17/</sup>.</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>/2/</sup> .
<b>Conclusion</b>	It is the opinion of the EPIC 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 as per the currently registered version of the PDD valid for the 2 <sup>nd</sup> 7-year crediting period <sup>/3/</sup> have occurred.
<b>Findings</b>	Not applicable.
<b>Conclusion</b>	Not applicable.

#### D.5. Inclusion of a monitoring plan to a registered project activity

<b>Means of validation</b>	Not applicable. The monitoring plan for the project activity was previously described in the previous version of the PDD valid for the 2 <sup>nd</sup> 7-year crediting period <sup>/3/</sup> and its correctness and compliance with the applied baseline and monitoring methodology ACM0001 (version 15.0) <sup>/4/</sup> was assessed by the DOE which performed the validation assessment for the renewal of crediting period of the project activity. The revised monitoring plan for the project activity is described in the revised version of the PDD valid for the 2 <sup>nd</sup> 7-year crediting period <sup>/2/</sup> and is assessed in Section D.6 below.
<b>Findings</b>	Not applicable.
<b>Conclusion</b>	Not applicable.

#### D.6. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

<b>Means of validation</b>	Not applicable. No permanent changes from registered monitoring plan or applied monitoring methodology are encompassed by the performed validation assessment for PRC.
<b>Findings</b>	Not applicable. No permanent changes from registered monitoring plan or applied monitoring methodology are encompassed by the performed validation assessment for PRC.
<b>Conclusion</b>	Not applicable. No permanent changes from registered monitoring plan or applied

	monitoring methodology are encompassed by the performed validation assessment for PRC.
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**D.7. Changes to the project design of a registered project activity**

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

**D.8. Types of changes specific to afforestation and reforestation project activities**

<b>Means of validation</b>	Not applicable. The project activity is not if afforestation and/or reforestation category.
<b>Findings</b>	Not applicable. The project activity is not if afforestation and/or reforestation category.
<b>Conclusion</b>	Not applicable. The project activity is not if 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 (version 9.0) <sup>(1)</sup>) as well as under conformance with EPIC internal working procedures.

The Assessment 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 the closure of eventually raised CARs and CLs 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;

EPIC Sustainability Services Pvt. Ltd. (EPIC) was commissioned by the project participant Biogas Riograndense Ltda. to performing periodic verification assessment for CDM project activity titled “Central de Resíduos do Recreio Landfill Gas Project (CRRLLGP)” (UNFCCC Project no. 0648). As part of the performance of such verification assessments, it was identified the need of correcting information made available in the registered version of the PDD for the project activity. Thus, a validation assessment of post-registration changes applicable for the project activity was performed by EPIC.

The occurred post-registration changes valid for the CDM project activity were assessed and addressed by EPIC under the “Issuance” process track and encompasses the following:

Corrections (in information that do not affect the project design):

- Missing default value (applicable for generated electricity exported through the electricity grid the project activity is connected to) is added in details for the ex-ante determined (fixed) parameter “Average technical transmission and distribution losses for providing electricity to the grid and/or for grid sourced electricity consumed by the project activity” ( $TDL_{grid,y}$ ) in Section B.6.2. Furthermore, while the previously selected 20% default value became applicable only for grid-sourced electricity imported by the project activity and is termed as  $TDL_{grid,import,y}$ , the added 3% missing default value is termed as  $TDL_{grid,export,y}$ . Texts in Sections B.6.1 and B.6.3 are adjusted accordingly.
- Calculations of ex-ante estimates of emission reductions to be achieved by the project activity during the 2<sup>nd</sup> 7-year crediting period are corrected in both Section B.6.3 and in a revised version of the emission reduction calculation spreadsheet (that is enclosed to the PDD) by taking into account the missing 3% default value for the ex-ante determined (fixed) parameter  $TDL_{grid,y}$  (value applicable for generated electricity exported through the electricity grid the project activity is connected to).
- The formula for the determination of baseline emissions of methane ( $BE_{CH_4,y}$ ) applied in the context of ex-ante estimates of emission reductions to be achieved by the project activity is corrected in the emission reduction calculation spreadsheet that is enclosed to the PDD with related annual values being corrected accordingly. Figures for ex-ante estimates of emission reductions to be achieved by the project activity during the 2<sup>nd</sup> 7-year crediting period as reported in Section B.6.3 are corrected accordingly.
- Information details for the project participants are updated (as per the latest version of the completed Modalities of Communication (MoC) form for the project activity).

Addressing by the project participant Biogas Riograndense Ltda. of all the above summarized PRCs was performed through the compilation of a revised version of the PDD (version 9.2, dated 16/06/2017) (that includes an also revised version of the spreadsheet with ex-ante estimates of emission reductions to be achieved by the project activity during its 2<sup>nd</sup> 7-year crediting period). The revised version of the PDD had its performed changes validated by the appointed EPIC assessment team. The revised version of the PDD (version 9.2, dated 16/06/2017) was made available and was assessed by the EPIC assessment team.

As also verified by the EPIC assessment team, the revised version of the PDD (version 9.2, dated 16/06/2017) is completed by correctly applying the CDM baseline and monitoring methodology



ACM0001 (version 15.0) – “Flaring and utilization of landfill gas” + the following methodological tools:

- Emissions from solid waste disposal sites (version 07.0)
- Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 1)
- Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion (version 02)
- Project emissions from flaring (version 02.0.0)
- Tool to determine the mass flow of a greenhouse gas in a gaseous stream (version 02.0.0)
- Tool to calculate the emission factor for an electricity system (version 04.0)
- Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period (version 03.0.1)



Moreover, the EPIC 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 08.0) with applicable guidance for completing the CDM-PDD form being appropriately followed.

As an outcome of its performed assessment, it is the EPIC opinion that the revised version of the PDD (that includes an also revised version of the spreadsheet with ex-ante estimates of emission reductions to be achieved by the project activity during its 2<sup>nd</sup> 7-year crediting period) sufficiently addresses and incorporates the above summarized eligible post-registration changes. Furthermore, all explanations and justifications provided to EPIC by the representatives of the project participant Biogas Riograndense Ltda. 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 (CDM-PS).

EPIC thus recommends approval of the revised version of the PDD (version 9.2, dated 16/06/2017) for the project activity under the “*Issuance*” process track for addressing post-registration permanent changes of a registered CDM project activity.

Note: EPIC highlights that as part of its assessment and validation opinion for the post-registration changes for the CDM project activity “Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)” as per the revised version of the PDD (version 9.2, dated 16/06/2017), no re-assessment of any CDM requirements and criteria other than the ones applicable/required for the assessing such post-registration changes, was performed by the EPIC assessment team (e.g. assessment previously performed as part of the CDM validation of the project activity and/or CDM renewal of crediting period for the project activity). The limited scope of the validation opinion assessment performed by EPIC 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 (CDM-VVS).

Prepared by	Approved by :
 (Marco A. Ratton) Assessment Team Leader	 (Krishnachar Sudheendra) Director & Head-Operations

## 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	Clean Development Mechanism Project Cycle Procedures
CDM-PS	Clean Development Mechanism Project Standard
CDM-VVS	Clean Development Mechanism Validation and Verification Standard
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
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
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention for Climate Change

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

All personnel being engaged in CDM verification/validation assessments performed by EPIC are qualified based on the established procedures of EPIC to assure the resource requirements that sufficiently satisfy all the requirements of competence criteria for Designated Operational Entities (DOEs) as established the CDM Accreditation Standard (CDM-AS). EPIC is accredited as a DOE and holds the full responsibility on decision-making and opinion in the context of performed validation/verification/certification CDM assessments in accordance with the accreditation requirements as defined by the CDM-EB.

The following assessment team has been assigned to carry out the validation opinion assessment for post-registration changes applicable for the CDM project activity “Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)” (UNFCCC reference number 0648):

Name	Mr Marco A. Ratton	Dr G. Vishnu	Mr. R. Vijayaraghavan
Role	Lead Auditor	Auditor	Technical Reviewer
Competence in relevant sectors	Sectors 1 and 13	N/A	Sectors 1 and 13
Responsibility	Doc review, elaboration of draft of Validation Report, preparation of final Validation Report.	Review of documents, assistance in report preparation	Technical review

**Mr. Marco A. Ratton** is based in Brazil and has acted as a CDM auditor since 2007. He holds vast experience with independent assessments of CDM project activities within the area of 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 & manufacturing technologies, economics and environmental management & policy. He has undergone extensive training on CDM validation and verification and is a qualified Lead Auditor for Sectoral Scope 13 under Technical Area “Waste handling and disposal” and Sector Scope 1 in accordance with procedures of EPIC sustainability services Pvt. Ltd. He also has previous experience on conducting ISO 9001/14001 assessments.

**Dr. G. Vishnu** holds a Masters and Doctorate in Environmental Science. He has around 8 years of experience in the field of research and consultancy related to water, wastewater, solid waste management systems, implementation of new, Cleaner Production technologies and biomass assessment studies. He has more than four years’ experience in validation verification of more than thirty CDM, projects and has undergone extensive training on GHG validation and verification. He is a Lead Auditor for various technical areas. He is also an ISO 26000 lead auditor and ISO 50001 auditor certified by Professional Evaluation and Certification Board (PECB). He is a Certified Sustainability Assurance Practitioner (CSAP) from AccountAbility, UK. He is qualified as Lead Auditor based on EPICs CDM accreditation procedures.

**Mr. R. Vijayaraghavan** holds BE in Mechanical Engineering, M.Tech in Energy Conservation and Management and MBA in Technology Management. He is certified as Energy Auditor by Bureau of Energy Efficiency (BEE), Government of India. He has 10 years of working experience in energy sector including validation / verification of fifty CDM and VCS/GS projects and has undergone

extensive training on CDM validation and verification and has been qualified as Lead Auditor with Sectoral Scope 1 and 13. He is also an ISO 26000 lead auditor certified by Professional Evaluation and Certification Board (PECB).

### 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 (CDM-VVS), version 09.0 as per EB 65	Dated 20/02/2015. Available online: <a href="https://cdm.unfccc.int/filestore/age/e/x/t/extfile-20150225165216290-accr_stan02.pdf/accr_stan02.pdf?t=c1l8b2dhNWFqfDCiZQF8NncxUhdqc8EJcYCg">https://cdm.unfccc.int/filestore/age/e/x/t/extfile-20150225165216290-accr_stan02.pdf/accr_stan02.pdf?t=c1l8b2dhNWFqfDCiZQF8NncxUhdqc8EJcYCg</a>	Others
/2/	Biogas Riograndense Ltda.	Revised version of the Project Design Document (PDD) for the 2 <sup>nd</sup> 7-year renewable crediting period for the CDM project activity: "Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)", version 9.2 (clean and tracked changes versions) (including a revised version of the calculation spreadsheet with ex-ante estimates of emission reductions to be achieved by the project activity during its 2 <sup>nd</sup> 7-year crediting period (spreadsheet version 9.2, dated 16/06/2017))	Dated 16/06/2017	Project Participants <sup>3</sup>
/3/	Biogas Riograndense Ltda.	Project Design Document (PDD) for the 2 <sup>nd</sup> 7-year renewable crediting period for the CDM project activity: "Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)", version 9.1.	Dated 14/09/2015 Available online: <a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1158844635.31/view?cp=2">https://cdm.unfccc.int/Projects/DB/DNV-CUK1158844635.31/view?cp=2</a>	Project Participants
/4/	UNFCCC/CDM-EB	Consolidated baseline and monitoring methodology ACM0001 - "Flaring or use of landfill gas", version 15.0 as per EB 76.	Dated 08/11/2016. Available online: <a href="https://cdm.unfccc.int/filestore/age/3/W/Z/3WZCULIMGVXJHNY0EFKB72SQ4PO5DR/EB%2076_repan07_ACM0001_ver15.0.pdf?t=dE58b2djNXBkfDDdYdcxblQO889qgwWfvZQr">https://cdm.unfccc.int/filestore/age/3/W/Z/3WZCULIMGVXJHNY0EFKB72SQ4PO5DR/EB%2076_repan07_ACM0001_ver15.0.pdf?t=dE58b2djNXBkfDDdYdcxblQO889qgwWfvZQr</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

<sup>3</sup> All document with provider indicated as "Project Participants" were sourced by the host-country project participant and project owner Biogas Riograndense Ltda.

/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	Methodological tool “Emissions from solid waste disposal sites” (version 07.0)	<a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v7.pdf">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v7.pdf</a>	Others
/8/	UNFCCC/CDM-EB	Methodological tool “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”, version 1 as per EB 39.	Dated 16/05/2008. Available online: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v1.pdf/history_view">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v1.pdf/history_view</a>	Others
/9/	UNFCCC/CDM-EB	Methodological tool “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion”, version 02 as per EB 41.	Dated 02/08/2008. Available online: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf/history_view">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf/history_view</a>	Others
/10/	UNFCCC/CDM-EB	Methodological tool “Project emissions from flaring”, version 02.0.0 as per EB 68.	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
/11/	SIRIM QAS INTERNATIONAL SDN.BHD	Validation Report for the renewal of the 7-year crediting period of the CDM project activity “Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)”. Version 2.	Dated 15/10/2015 Available online: <a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1158844635.31/view?cp=2">https://cdm.unfccc.int/Projects/DB/DNV-CUK1158844635.31/view?cp=2</a>	Others
/12/	UNFCCC/CDM-EB	Methodological tool “Tool to determine the mass flow of a greenhouse gas in a gaseous stream”, version 02.0.0 as per EB 61.	Dated 03/06/2011. Available online: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-08-v2.0.0.pdf/history_view">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-08-v2.0.0.pdf/history_view</a>	Others
/13/	UNFCCC/CDM-EB	Methodological tool “Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period”, version 03.0.1 as per EB 66.	Dated 02/03/2012. Available online: <a href="http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf">http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf</a>	Others
/14/	UNFCCC/CDM-EB	Methodological tool “Tool to calculate the emission factor for an electricity system”, version 04.0 as per EB 75.	Dated 04/10/2013. Available online: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf/history_view">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf/history_view</a>	Others
/15/	UNFCCC/CDM-EB	Clean Development Mechanism Project Standard (CDM-PS), version 09.0 as per EB 82	Dated 20/02/2015. Available online: <a href="http://cdm.unfccc.int/Referen">http://cdm.unfccc.int/Referen</a>	Others

			ce/Standards/index.html	
/16/	UNFCCC/CDM-EB	Clean Development Mechanism Project Cycle Procedure (CDM-PCP), version 09.0 as per EB 82	Dated 20/02/2015. Available online: <a href="http://cdm.unfccc.int/Reference/Procedures/index.html#proj_cycle">http://cdm.unfccc.int/Reference/Procedures/index.html#proj_cycle</a>	Others
/17/	UNFCCC/CDM-EB	Methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, version 06.0 as per EB 85.	Dated 24/07/2015. Available online: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v4.0.0.pdf/history_view">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v4.0.0.pdf/history_view</a>	Others
/18/	Biogas Riograndense Ltda.	Completed Modalities of Communication (MoC) form for the CDM project activity “Central de Resíduos do Recreio Landfill Gas Project (CRRLGP)”	Available online: <a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1166695034.41/view?cp=1">https://cdm.unfccc.int/Projects/DB/DNV-CUK1166695034.41/view?cp=1</a>	Project Participants
/19/	UNFCCC	Project design document form for CDM project activities (incl. the Attachment “Instructions for filling out the project design document form for CDM project activities”, version 08.0.	Dated 22/07/2016. Available online: <a href="https://cdm.unfccc.int/filestorage/e/x/t/extfile-20160808113849139-PDD_form05.pdf/PDD_form05.pdf?t=NW58b2djNmE4fDBMHOHvssXYLhOuaypF1Vsb">https://cdm.unfccc.int/filestorage/e/x/t/extfile-20160808113849139-PDD_form05.pdf/PDD_form05.pdf?t=NW58b2djNmE4fDBMHOHvssXYLhOuaypF1Vsb</a>	Others

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

As part of the conducted validation assessment, no Corrective Action Request (CAR), Clarification Request (CL) and/or Forward Action Request (FAR) was raised by the EPIC assessment team.

**Table 1. CL from this validation**

CL ID		Section no.		Date: DD/MM/YYYY
Description of CL				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

**Table 2. CAR from this validation**

CAR ID		Section no.		Date: DD/MM/YYYY
Description of CAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

**Table 3. FAR from this validation**

FAR ID		Section no.		Date: DD/MM/YYYY
Description of FAR				
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