



VERIFICATION REPORT OF LARIMAR WIND FARM PROJECT



Document Prepared By Colombian Institute for Technical Standards and Certification (ICONTEC)

Project Title	Larimar Wind Farm Project
Version	03.0
Report ID	VER-VCS-2020-002-02.0

Report Title	Verification Report of Larimar Wind Farm Project
Client	EGE Haina S.A. – Empresa Generadora de Electricidad Haina
Pages	32
Date of Issue	23-July-2020 report issued
Prepared By	Colombian Institute for Technical Standards and Certification (ICONTEC)
Contact	Juan Sebastián Salazar Carrera 37 N.º 52 - 95

	Bogotá, Colombia PBX: (57)(1) 607 8888 Ext 1380 or 1381 framirez@icontec.org www.icontec.org
Approved By	Diana Santos Fernando Gómez
Work Carried Out By	Francy Ramírez, lead auditor and technical expert in sectoral scope 1

Summary:

ICONTEC performed the 1st verification of the registered VCS project Larimar Wind Farm Project in Dominican Republic on the basis of VCS criteria contained in VCS standard version 4.0, as well as the operational and technical monitoring criteria specific to this type of project. Larimar Wind Farm Project is located in Barahona Province, Dominican Republic; this project activity is developed in the municipality of Enriquillo.

Larimar Wind Farm Project involves the implementation of two wind farms connected to the National Electrical Interconnected System of Dominican Republic. The wind farms are: (1) Larimar I which has 15 wind turbine generators with a total installed capacity of 49.5 MW and (2) Larimar II which has 14 wind turbines generators with a total installed capacity of 48.3 MW. The 29 wind turbine generators allow an installed capacity of 97.8 MW and expected annual supply of electricity to the grid of 370 GWh, as it was assessed for registration purpose at validation time¹.

The monitoring period under assessment is between August 1st/ 2016 to October 31st/ 2019.

The verification process consisted of the following three phases:

- I. Desk review of the monitoring documentation, registered PD, validation report.
- II. Follow up interviews with project stakeholders.
- III. Resolution of outstanding issues and the issuance of the final verification and certification report.

The review of the monitoring documentation, registered PD, validation report for registration purposes, previous validation reports, relevant information and interviews allowed ICONTEC to collect enough evidence to completely assess the verification criteria and determinate that the project has been implemented as planned and as it has been described in the approved PD version 4. Emission reductions were correctly calculated based on the PD and the monitoring equipment with an impact on the claimed emission reductions work reliably. The monitoring system is in place and has been calibrated. ICONTEC can confirm that the GHG emission reductions are calculated without material misstatements.

During this verification process, 2 findings occurred to be classified as 1 corrective action request and 1 clarification action request, which were treated by the project owner and clarified in a new version of the MR (version 3). Upon review of the documentation and explanations provided by the Project Proponent, all findings were closed out in a clear and transparent manner.

ICONTEC verified the project implementation status and the emissions reduction claimed by the PP through the documental review, addressing conservatively the restrictions and uncertainties associated to this verification process. ICONTEC confirms that it achieved a reasonable level of assurance during validation; see Section 1.3 on this report.

1

https://registry.terra.org/mymodule/ProjectDoc/Project_ViewFile.asp?FileID=22354&IDKEY=k98klasmf8jflkasf8098afnasfkj98f0a9sfsakjflsakj8dj30826166

ICONTEC can confirm that the GHG emissions reductions are calculated without material misstatements.

ICONTEC's opinion applies to the project's GHG emissions and the resulting GHG emission reductions reported and related to the validated and registered baseline, as well as the monitoring plan and its associated documents. ICONTEC confirms the following statements:

VCS Project	: 1644 - Larimar Wind Farm Project
Reporting period	: 01/08/2016 to 31/12/2019
Baseline emissions	: 581,384 tCO ₂ e
Project emissions	: 0 tCO ₂ e
Leakage	: 0 tCO ₂ e
Emission Reductions	: 581,384 tCO ₂ e

CONTENTS

1	Introduction	7
1.1	Objective	7
1.2	Scope and Criteria	7
1.3	Level of Assurance	7
1.4	Summary Description of the Project	8
2	Verification Process	9
2.1	Method and Criteria	9
2.2	Document Review	10
2.3	Interviews	13
2.4	Site Inspections	14
2.5	Resolution of Findings	14
2.5.1	Forward Action Requests	15
2.6	Eligibility for Validation Activities	15
3	Validation Findings	15
3.1	Participation under Other GHG Programs	15
3.2	Methodology Deviations	15
3.3	Project Description Deviations	15
3.4	Grouped Project	18
4	Verification Findings	18
4.1	Project Implementation Status	18
4.2	Safeguards	24
4.2.1	No Net Harm	24
4.2.2	Local Stakeholder Consultation	25
4.3	AFOLU-Specific Safeguards	25
4.4	Accuracy of GHG Emission Reduction and Removal Calculations	25
4.5	Quality of Evidence to Determine GHG Emission Reductions and Removals	27
4.6	Non-Permanence Risk Analysis	27
5	Verification conclusion	27

APPENDIX 1: RESOLUTION OF CORRECTIVE ACTION, FORWARD ACTION AND CLARIFICATION REQUEST

30

1 INTRODUCTION

1.1 Objective

The purpose of verification is to secure the opinion of an independent third party in order to assess the implementation and the reported GHG emission reductions or net anthropogenic GHG removals by a registered VCS project activity with relevant VCS requirements.

Verification is a requirement for all VCS projects with the aim to claimed emission reductions for project's implementation and it is seen as necessary to provide assurance to stakeholders of the quality of the project and its generation of certified voluntary emission reductions (VERs).

1.2 Scope and Criteria

The verification scope involves an independent and objective review to determine that the project design meets the following VCS criteria:

- VCS Program Guide, version 4.0.
- VCS Standard, version 4.0.
- Program Definitions, version 4.0.
- Program Fee Scheduled, version 4.1.
- Registration & Issuance Process, version 4.0.
- Approved Consolidated Baseline and Monitoring Methodology ACM0002, Version 17.0

ICONTEC carries out audits according to its ethics code and internal procedures for carrying out validation, verification and certification audits of VCS project activities, which, in turn, are based on the VCS Standard. Likewise, ICONTEC focuses on the identification of significant risks for VER generation, and verification of the mitigation during its audits.

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

1.3 Level of Assurance

The information sources used are deemed reliable, these are: registered PD, previous validation reports, MR, on-site visit to the project activity, interviews, document review and secondary sources for confirmation.

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent ICONTEC instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with ICONTEC's qualification scheme VCS VER validation and verification. The validation team and the technical reviewers consist of the following personnel:

Table 1. Verification team.

Role/Qualification	Last Name	Fist name
Lead Auditor and Technical Expert in Sectoral Scope 1	Ramírez	Francy
Lead Technical Reviewer	Santos	Diana
Technical Expert Reviewer in Sectoral Scope 1	Gómez	Fernando

Besides the above mentioned, during the verification ICONTEC ensured to fulfil the requirements additional to ISO 14064-3 and ISO 14065, set in VCS standard version 4.0, which are as follows:

- The level of assurance is reasonable for verification;
- The criteria is VCS standard version 4.0 or other GHG Program as approved under the VCS Program;
- The objective is in conformance with the VCS standard version 4.0 requirements and VCS program methodologies as applicable to the specific project; and
- The project is classified like a Project (Less than or equal to 300,000 tons of CO₂e per year). In consequence, the materiality with respect to the aggregate of errors, omissions and misrepresentations relative to the total reported GHG emissions reduced, is five per cent.

With the issues explained in this Section ICONTEC confirms that it achieved a reasonable level of assurance during validation.

1.4 Summary Description of the Project

The project activity consists of the supply of clean wind energy to the National Electrical Interconnected System of Dominican Republic through the implantation and operation of a 2

Greenfield Wind Farms. The wind farms are: (1) Larimar I which has 15 wind turbine generators with a total installed capacity of 49.5 MW and (2) Larimar II which has 14 wind turbines generators with a total installed capacity of 48.3 MW and is expected to generate 370 GWh/year of clean and renewable electric energy. Larimar I began its commercial operations on August 2016 /5/, and Larimar II started its commercial operations on fourth quarter of 2018 /6/.

In the absence of the project activity, the clean electricity supplied by Larimar Wind Farm Project to National Electrical Interconnected System of Dominican Republic would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

2 VERIFICATION PROCESS

The verification consisted of the three following phases: i) desk review of the registered PD, the MR and the monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

It is ICONTEC's responsibility to set an independent GHG verification opinion on the GHG emissions from the project and approved a baseline for the monitoring period.

ICONTEC utilizes a risk-based approach that draws on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate them. ICONTEC's examination process includes test-based assessments of all evidence relevant to the amounts and disclosures of a project's GHG emissions and the calculations of such reductions for the reporting period.

2.1 Method and Criteria

As it was mentioned above, a verification consists of the following three phases:

- i) A desk review of the VCS project activity documents,
- ii) Follow up interviews with project stakeholders,
- iii) Resolution of outstanding issues and the issuance of a final validation report and opinion.

As mentioned in clause 1.2 of this report ICONTEC, based on its ethics code and internal procedures, carries out validation, verification and certification audits of VCS project activities (which, in turn, are based on the VCS standard) focused on the identification of significant risks for VER generation and the verification of the contribution to climate change mitigation.

All documentation review during the validation process has been including in section 2.2 – Document Review.

Findings established during the validation can be seen as:

- A non-fulfillment of verification protocol criteria, or
- An identified risk to the fulfillment of the project objectives

The findings could take the form of a Corrective Action Request (CAR), Forward Action Request (FAR) or a Clarifications Request (CL).

Corrective action requests (CAR) are issued where:

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

A Clarification Request is required when information is insufficient or not clear enough to establish whether a requirement has been met.

ICONTEC resolved or “closed out” CARs and CLs only if the project participants modify the monitoring report, rectify the MR or provide additional explanations or evidence that satisfy the ICONTEC’s concerns.

This verification report explains the issues raised, the responses provided by the project proponent, the means of validation of such responses and references to any resulting changes in the MR or supporting annexes.

2.2 Document Review

MR submitted by EGE Haina S.A. and the additional background documents related to the project implementation and monitoring were assessed during the verification.

Main documents reviewed are:

- /1/ Registered Project Description version 3, issued on September 1st, 2017 by EGE Haina S.A.
- /2/ Revised Project Description version 3.1, issued on May 29th/2020 by EGE Haina S.A.
- /3/ Monitoring Report for first monitoring period (01/08/2016 – 31/12/2019) of Larimar Wind Farm Project, issued by EGE Haina S.A. (Version 1 dated on May 6th/2020, Version 2 dated on May 29th/2020, Version 3 dated on July 13th/2020)
- /4/ Spreadsheet used for emissions reduction issued by EGE Haina S.A. File: ER_Larimar_MR1.xlsx

- /5/ Contract signed between EGE Haina and corporation of state and electric companies from Dominican Republic (CDEEE) for buying and selling electrical energy from Larimar I from 00:00 hours on August 1st/2016
- /6/ Provisional interconnection permit for electrical work to interconnected electrical grid of Dominican Republic, with the aim to carry out operational tests of the Larimar II wind farm of the company EGE HAINA. Resolution SIE-092-2018-PS, issued by Electricity Superintendence from Dominican Republic on October 11th/2018.
- /7/ Spreadsheet with emission reduction calculations calculated at validation time (file: 41_Larimar EF calculation.xls).
- /8/ Validation report for registration purposes on VCS issued by ICONTEC (Report ID: VCSVA-17-002-4) dated on August 30th/2017
- /9/ Energy production assessment for Larimar I wind farm issued by GL Garrad Hassan Mexico (DNV-GL) on October 6th/2015
- /10/ Energy production assessment for Larimar II wind farm issued by GL Garrad Hassan Mexico (DNV-GL) on September 15th/2015
- /11/ Birth certificates for each turbine which are in Larimar I wind farm, issued by Vestas
- /12/ Birth certificates for each turbine which are in Larimar II wind farm, issued by Vestas
- /13/ Monthly reports for economic transactions issued by OC-SENI on December 2016, December 2017, December 2018, and December 2017. Files in PDF and XLSX
- /14/ Records of maintenance activities and operational stops for Larimar I wind farm and Larimar II wind farm during monitoring period under assessment
- /15/ One-line diagram of the interconnected electrical system of Dominican Republic, issued by Coordinating body of the interconnected national electricity system of Dominican Republic OC-SENI, dated on May 6th/2020
- /16/ Regulation for the application of the general electricity law N° 125-01 in the Dominican Republic, issued by National Energy Commission , dated on July 2012 (available at: https://www.cne.gob.do/wp-content/uploads/2015/05/Reglamento.Ley_.No_.125-01.pdf)
- /17/ Commercial authorization certificate HSMC-0012-2016 of the commercial measurement system for Connection ID 3276-PELAK-G10, issued by OC-SENI, dated on March 9th/2016
- /18/ Commercial authorization certificate HSMC-0013-2016 of the commercial measurement system for Connection ID 3276-PELAK-G20 , issued by OC-SENI, dated on March 10th/2016

- /19/ Test certificate ACM-0018-2018 for power meters of the commercial measurement system for Connection ID 3276-PELAK-G10 , issued by OC-SENI, dated on February 8th/2018
- /20/ Test certificate ACM-0019-2018 for power meters of the commercial measurement system for Connection ID 3276-PELAK-G20 , issued by OC-SENI, dated on February 8th/2018
- /21/ Environmental permit N° 2597-15 for Larimar I wind farm issued by the Ministry of Environment and Natural Resources from Dominican Republic on February 17th/2015
- /22/ Environmental permit N° 3103-16 for Larimar II wind farm issued by the Ministry of Environment and Natural Resources from Dominican Republic on December 13th/2016
- /23/ Environmental Impact Statement code: 10587 for Larimar I wind farm issued by SERCITEC engineers & consultants on November 2014
- /24/ Environmental Impact Statement code: 1289 for Larimar II wind farm issued by SERCITEC engineers & consultants on January 2016
- /25/ Environmental Accomplishment Report N° 10 for Larimar I wind farm (period covered: July 2019 to December 2019) issued by Medio Ambiente & Industria, dated on January 2020
- /26/ Environmental Accomplishment Report N° 6 for Larimar II wind farm (period covered: July 2019 to December 2019) issued by Medio Ambiente & Industria, dated on January 2020
- /27/ Letters from EGE Haina to Ministry of Environment and Natural Resources of Dominican Republic (with stamp of received by the Ministry) with the submission of Environmental Accomplishment Reports (3 to 10) for Larimar I wind farm
- /28/ Letters from EGE Haina to Ministry of Environment and Natural Resources of Dominican Republic (with stamp of received by the Ministry) with the submission of Environmental Accomplishment Reports (1 to 6) for Larimar II wind farm
- /29/ Claim form N-P02.F04, dated on April 4th/2009 issued by EGE HAINA

Background documents related to methodologies employed in the design or other reference document:

- /UN1/ ACM0002, Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 17.0.

2.3 Interviews

The following table outlines the persons that have directly been in contact with ICONTEC during the verification process by means of virtual meetings performed on Microsoft Teams:

Table 2. Interviewees during verification process.

Date	Interviewed person	Organization and role	Topics
May 20 th /2020 and May 21 st /2020	Ricardo Estevez	Development Manager EGE HAINA	• Description of the nature of the project, its implementation and its operation • Compliance of the monitoring report with the monitoring report form • Compliance of the project implementation and operation with the registered PD
	Karla Santana	Safety and Environmental Coordinator EGE HAINA	• Possible deviation from PD • Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines • Compliance of monitoring activities with the registered monitoring plan • Compliance with the calibration frequency requirements for measuring instruments
	Juliana Correa	VCS Consultant MGM Innova	• Assessment of data and calculation of emission reductions • Verification of operational and maintenance activities • Environmental impacts • Socio-economic impacts • Local stakeholder consultation
May 20 th /2020	Ramon Then	Plant Manager EGE HAINA	• Description of the nature of the project, its implementation and its operation • Compliance of the project implementation and operation with the registered PD • Verification of operational and maintenance activities
	Felipe Reinoso	Protection Engineer EGE HAINA	
	Antonio Fuentes	O&M Manager EGE HAINA	

Date	Interviewed person	Organization and role	Topics
	Marino Inchaustegui	Safety, Health and Environmental Manager EGE HAINA	Environmental impacts
	Vivian Corcino	Safety and environmental Coordinator EGE HAINA	
	Yleana Lazala	Social Responsibility Coordinator EGE HAINA	• Socio-economic impacts • Local stakeholder consultation
May 21 st /2020	Antonio Fuentes	O&M Manager EGE HAINA	• Compliance of monitoring activities with the registered monitoring plan • Compliance with the calibration frequency requirements for measuring instruments • Assessment of data and calculation of emission reductions
	Wilson Perez	Economic Transactions Manager EGE HAINA	

2.4 Site Inspections

Due to Covid-19 pandemic, ICONTEC decided not conduct a site visit, however the audit team used other standard techniques with the aim to achieve a reasonable level of assurance free of material misstatements. For that reason, the audit team carried out a virtual inspection by means of photographs and videos to the equipment described in the PD and MR, interviews with personnel involved in the project activity operation, as well as, it was performed an exhaustive documental review of operational records (e.g. annual maintenance program and event reports) in order to ensure an assessment free of material misstatements

It is worth to drawn attention in the fact that during February 2017, ICONTEC performed a site visit. On that days, Larimar I was operating. In this validation assessment, the audit team verified the operation characteristics for Larimar I wind farm.

2.5 Resolution of Findings

The verification audit process was prepared following a desk review of the monitoring documentation, registered PD, validation report and relevant information, as well as interviews during which all issues identified during the desk review were discussed. It has not been found

remaining FARs from previous validation assessment for registration purposes. Corrective actions and clarification requests raised by ICONTEC (1 CAR and 1 CL) were presented to the PP and resolved through communication and meetings between EGE Haina S.A. and ICONTEC. To guarantee the transparency of the validation process, the concerns raised and the response provided by the project participants are documented in more detail in Appendix 1.

2.5.1 Forward Action Requests

No forward action request was raised during the verification.

2.6 Eligibility for Validation Activities

During this verification process, ICONTEC did not undertake validation activities. Nevertheless, in accordance with the footnote 3 in Section 5 of VCS Program guide, version 4.0, ICONTEC is eligible to provide validation and verification services under the VCS Program since ICONTEC holds an accreditation granted by the CDM Executive Board (CDM EB) as designated operational entity for validation/verification functions for sectoral scope 1.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Larimar Wind Farm Project is already registered under the VCS Program. This project activity is not registered in other approved GHG program.

3.2 Methodology Deviations

The project activity has been fully implemented in accordance with the methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” version 17.0 /UN1/ and hence deviation of methodology is not applicable.

3.3 Project Description Deviations

On 2017 ICONTEC was hired by EGE Haina to carry out the validation for registration purposes for VCS scheme. Three years later, EGE Haina re-hired ICONTEC to perform the verification for this first monitoring period.

During the desk review stage for this verification, previous to interviews with the PP, the audit team, which is the same who performed the validation, noted a typo mistake in the registered PD (described in CAR 1 in this report).

The combined emission factor for electrical interconnected grid in Dominican Republic was calculated using the simple OM method, and its value was fixed during the first crediting period, $EF_{grid,CM,y} = 0.7173 \text{ tCO}_2\text{e/MWh}$, as it was presented by the PP /7/ after answered the audit team findings at validation time/. However, in registered PD version 3, section 4.1 it is stated that $EF_{grid,CM,y} = 0.6435 \text{ tCO}_2\text{e/MWh}$, despite that in section 3.4 of registered PD version 3 it was described the calculations for this parameters and also is stated the final value for $EF_{grid,CM,y} = 0.7173 \text{ tCO}_2\text{e/MWh}$.

Likewise, in the validation report section 3.2.6, it is described the assessment of the first version of the calculation presented by the PP for the combined emission factor for electrical interconnected grid in Dominican Republic during the documental review stage for validation. However in the internal traceability carried out by ICONTEC to find out what happened in this particular case, the audit team confirmed that CAR 2, CAR 3 and CAR 4 raised at validation time were addressed by the PP in the updated version of the spreadsheet used for the calculation of combined emission factor for electrical interconnected grid in Dominican Republic /7/.

The following describes, once again, the assessment made by the audit team at the time of registration.

The baseline emission factor ($EF_{grid, CM, y}$) was calculated by the PP using version 05.0 of Tool to calculate the emission factor for an electricity system as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors, according to the following steps:

Step 1. Identify the relevant electricity systems:

For Larimar Wind Farm Project case, the PP used the transmission system of Dominican Republic as the project electricity system, which is operated and maintained by Coordinating body of the interconnected national electricity system of Dominican Republic OC-SENI².

ICONTEC agreed taking into account that Larimar Wind Farm Project will be connected to this system /9//10/.

Step 2. Choose whether to include off-grid power plants in the project electricity system (optional).

In step 2, the PP chose option I, only grid power plants are included in the calculation.

Step 3. Select a method to determine the operating margin (OM).

In the step 3, simple OM was chosen by the PP to calculate the operating margin emission factor, using ex-ante data vintage taking into account that in the Colombian electric system, the lowcost/must-run resources constitute less than 50% of total grid generation, hence the Simple OM

² OC-SENI is also in charge of the National Dispatch Center.

method can be used as it was verified by ICONTEC by means of reviewing the generation average of the five most recent years³. This reviewing allowed to the audit team to verify that low-cost/must-run resources constitute less than 50 per cent of total grid generation. ICONTEC validated this choice.

Step 4. Calculate the operating margin emission factor according to the selected method.

Calculations of OM emission factor (step 4) were made as illustrated in the PD version 3.1, section 3.1, which is according to version 05.0 of Tool to calculate the emission factor for an electricity system. Plant emission factors $EF_{EL,m,y}$, were calculated under option A2 because the data on fuel consumption and energy generation are not fully available. ICONTEC validated the values comparing the values presented for the PP in the Emissions reduction file/7/, against the values downloaded from the OC-SENI website² (ICONTEC made a random sampling of 10 plants in four different dates and hours).

Regarding to the values used for NCV_i and $EF_{CO_2,i,y}$, the audit team verified the truthfulness of the sources used by the PP in the Emissions reduction file /7/ (see Sheets: “Fuel Consumption_” and “EF e,l,m,y”), and it was concluded the information used is traceable, verifiable and credible.

After the comparison, ICONTEC deemed reliable and appropriate the values used. The OM calculated was 0.7208 tCO₂/MWh, hence ICONTEC deemed the obtained value as reliable and credible.

Step 5. Calculate the build margin (BM) emission factor.

In order to calculate the BM emission factor (step 5) option 1 (ex-ante) for the first crediting period was adopted, the build margin emission factor is calculated based on the most recent information available on units already built for sample group m at the time of VCS-PD submission to the VVB for validation. The PP took the information from the latest official OC-SENI statistics⁴.

ICONTEC agreed with the data collection used for the PP to calculate the BM, hence the BM is confirmed as reliable and credible. The BM calculated was 0.7068 tCO₂/MWh, hence ICONTEC deemed the obtained value as reliable and credible.

Step 6. Calculate the combined margin (CM) emission factor.

Finally, combined margin was correctly calculated by weighted average method, as it is explained below:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$$

Where:

³ <https://www.oc.org.do/Informes/Operaci%C3%B3n-del-SENI/Programaci%C3%B3n-del-SENI>

⁴ <http://www.oc.org.do/inicio.aspx> → Informes → Memorias

$$EF_{\text{grid,OM},y}=0.7208 \text{ tCO}_2\text{e/MWh}$$

$$EF_{\text{grid,BM},y}=0.7068 \text{ tCO}_2\text{e/MWh}$$

$$W_{\text{OM}}=0.75$$

$$W_{\text{BM}}=0.25.$$

Obtaining a result for the $EF_{\text{grid,CM},y} = 0.7173 \text{ tCO}_2\text{e/MWh}$

Inasmuch as, the value of parameter $EF_{\text{grid,CM},y} = 0.6435 \text{ tCO}_2\text{e/MWh}$ stated in registered PD version 3, section 4.1 /1/ is a typo mistake, the PP presented a revised PD (version 3.1)/2/ which has this value corrected.

This correction presented by the PP in the revised PD version 3.1 /2/ do not impact the applicability of the methodology, the additionality or the appropriateness of the baseline scenario, hence Larimar Wind Farm Project remains in compliance with the VCS rules. Therefore the correction presented by the PP in the revised PD /2/ is valid.

3.4 Grouped Project

The project consists of two wind farms presented as a single project. It is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

At the time of the desk review, the audit team assessed the implementation of the project reported on MR version 1, against the one established on the registered PD. An inconsistency was found regarding to the value of parameter $EF_{\text{grid,CM},y}$. This issue was already discussed, described and assessed in section 3.3 on this report.

During the virtual interviews performed by the audit team, it was asked for evidences with the aim to assess if the characteristic described in PD /2/ were implemented in Larimar Wind Farm Project.

Regarding to the project location, the audit team verified by means of Google maps the locations of wind generators provided by the PP in the MR /3/ (section 1.7) and PD /2/ (Section 1.9). No inconsistencies were found.

Regarding to the technical characteristics described by the PP in the PD /2/ (Sections 1.1 and 1.8) and MR /3/ (Section 1.1), the PP provided the energy production assessment for Larimar I and Larimar II /9//10/, and the birth certificates for the turbines in the project activity /11//12/. No inconsistencies were found.

Table 3. Implementation status.

Phase/site	Status of implementation	Operation	Comments
Start operation of two Wind farms, with an Installed capacity of 97.8 MW	Larimar I started operation on August 1 st /2016 /5/ and Larimar II started operation in the fourth quarter of 2018 /6/; and they are still in operation	The starting date of the project activity operation was on August 1 st /2016 without any abnormal scenarios during its operation. This information was verified by the lead auditor by means of documental review /5/.	The project activity is already implemented and it is currently operating as it was described in the registered PD.

The audit team verified the electricity generation data in the spreadsheet with ERs calculation // with the electricity generation reported in the information service about the Wholesale Power Market in Dominican Republic operated by OC-SENI. The information provided by the PP is coherent, traceable and reliable with other information sources /13/.

Likewise, the audit team reviewed the maintenance activities planned and executed for both wind farms (Larimar I and Larimar II), in order to verify a proper management of the operations /14/. These maintenance activities were implemented by Vestas. The audit team deemed that the PP has the procedures to assure a proper operation for both wind farms.

Compliance of the registered monitoring plan with the methodology including applicable tools

During the desk review phase, it was checked the monitoring plan against the monitoring methodology established in the consolidated baseline methodology ACM002 for grid-connected electricity generation from renewable sources, version 17.0./UN1/.

According to the PD /1//2/, the VCS project activity Larimar wind farm project was monitored following the guidelines of the applied methodology /UN1/.

Data and parameters fixed ex ante at registration time for monitoring plan

The parameters fixed ex-ante related to the GHG emission reductions in the project activity have been implemented in accordance with the monitoring plan contained in the PD /2/.

The following table describes the parameter that was determined ex-ante and not monitored during the monitoring period:

Table 4. Data and parameters fixed ex ante at registration time.

Parameter	Description	Value	Source
$EF_{grid,CM,y}$	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system”	0.7173 tCO ₂ e/MWh	This value was calculated once at the request of registration as it was established in the PD/2/ Sections 3.4 and 4.1.

Data and parameters monitored

The following table includes all parameters monitored and describes how the audit team verified the fulfillment of each parameter with the registered monitoring plan, including the information flow and the values as reported in the MR.

Table 5. Data and parameters monitored.

Parameter	$EG_{facility,y}$ – Larimar I - $EG_{SMC LINEA 10}$ Larimar II - $EG_{SMC LINEA 11}$			
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y			
Value	810,517.25 MWh			
	Year	Larimar I (MWh)	Larimar II (MWh)	
	2016	70,619.70	-	
	2017	179,278.16	-	
	2018	218,777.12	27,189.23	
	2019	183,249.54	131,403.92	
	Subtotal	651,924.10	158,593.15	
Means of verification	Source of data and frequency: Hourly transmission of the information to OC-SENI is done via Internet using the digital and coded mechanisms defined for all the agents of the Wholesale Power Market in Dominican Republic. The databases for recording the operations of the market are managed by OC-SENI. It is worth to mention that the transmission of information is based on the data transmitted by the measurement system located in Los Cocos Electrical Substation.			

At the same time, this hourly transmission of information is also done to EGE HAINA servers. EGE HAINA has the software Prime Read to manage the data asked to the four measurement equipment.

There are transmission lines of 34.5 kV, connecting both wind farms (Larimar I and Larimar II) with Los Cocos Substation, in Enriquillo municipality. ICONTEC verified that the connection point of the transmission line from Larimar I and Larimar II to Los Cocos substation is, in fact, the commercial frontier registered by the project responsible in the National Dispatch Center –managed by OC_SENI /15/.

Equipment used:

Two power meters with backup installed at the commercial frontier (Los Cocos Substation) two served as main meters and the other two as backup meter. These have identical Schneider Electric features, with an accuracy of 0.2 IEC features⁵

Data cross checking:

In order to verify the data provided by the PP in the spreadsheet used for emission reduction calculations/4/, ICONTEC reviewed the electricity generation reported in the information service of the Coordinating body of the interconnected national electricity system of Dominican Republic OC-SENI/13/. After this review the audit team concluded that information provided by PP is reliable, coherent, consistent and traceable with secondary sources of information.

Consistency with the QA/QC defined in methodology:

Since the electricity meters located in Los Cocos electrical substation are regulated, the applied methodology/UN1/ establishes⁶ that QA/QC procedures consists of regular maintenance and testing of electricity meters as per the requirements set by the grid operators or national requirements. Likewise the QA/QC procedure establishes that the calibration of meters, including the frequency of calibration, should be done in accordance with national standards requirements set by the grid operators. The accuracy class of the meters should

⁵ Schneider Electric Meter, Power Logic ION 8650, Voltage: 3X57.7/100V & 3x277/480V, Current: 5A, Class: 0.2S

⁶ This methodology, in paragraph 69, references version 02.0 of the methodological tool for Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (<https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-05-v2.0.pdf>)

be in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements.

The audit team reviewed the regulation for the application of the general electricity law N° 125-01 in the Dominican Republic/16/. In this mandatory document is stated in Title IX, Chapter V:

- The requirements for regular maintenance and testing of electricity meters (Article 291)
- Calibration activities and frequency of these activities (Article 342)
- Technical characteristics of electricity meters (Articles 296 to 315)

After this assessment, the audit team concluded that there is consistency with the QA/QC defined in the methodology, hence this requirement is fulfilled.

Consistency Between the QA/QC Established by the Project Participants in the PD:

In section 4.2 of PD, the PP has defined QA/QC procedures in the monitoring plan in accordance the methodology/UN1/, that is the performance of calibration activities for the measurement equipment. The assessment of this issue, is described below this table on this report.

Conclusion:

During the verification process, ICONTEC checked that this parameter is properly applied according to the monitoring plan/2/ and the applied methodology, and that the information is consistent with the secondary information sources used to verify the information.

Compliance with the calibration frequency requirements for measuring instruments

The following table includes the monitoring equipment for the parameter “EG_{facility,y} – Larimar I - EG_{SMC LINEA 10} Larimar II - EG_{SMC LINEA 11}”: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y, above mentioned, and the information about equipment identification and calibration records. ICONTEC verified that the calibration covered the entire monitoring period from August 1st/2016 to December 31st/2019.

Table 5. Calibration activities for parameters monitored.

Parameter	EG _{facility,y} – Larimar I - EG _{SMC LINEA 10} Larimar II - EG _{SMC LINEA 11} Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Calibration frequency	2 years

Equipment			Calibration Records	Date of Calibration
Larimar I	EG _{SMC} LINEA 10	Main Power measurement equipment:	Commercial authorization certificate HSMC-0012-2016 /17/	09/03/2016
		MW-1507A003-02	Test certificate ACM-0018-2018 /19/	08/02/2018
		Back-up power measurement equipment:	Commercial authorization certificate HSMC-0012-2016 /17/	09/03/2016
		MW-1507A004-02	Test certificate ACM-0018-2018 /19/	08/02/2018
Larimar II	EG _{SMC} LINEA 11	Main Power measurement equipment:	Commercial authorization certificate HSMC-0013-2016 /18/	10/03/2016
		MW-1507A001-02	Test certificate ACM-0019-2018 /20/	08/02/2018
		Back-up power measurement equipment:	Commercial authorization certificate HSMC-0013-2016 /18/	10/03/2016
		MW-1507A009-02	Test certificate ACM-0019-2018 /20/	08/02/2018

The audit team concluded that the calibration is conducted at the frequency specified by the methodology /UN1/ and monitoring plan of the PDD/2/.

Participation under Other GHG Programs

Larimar Wind Farm Project is already registered under the VCS Program. This project activity is not registered in other approved GHG program.

Other forms of environmental credit or inclusion in a emission trading programs

Currently, the project does not apply to other forms of environmental credit and is not part of any compliance scheme (binding limits).

Sustainable development contributions

Regarding to sustainable development contributions, the PP argued in MR /3/ as the project activity involves to deliver a clean energy (energy source: wind), that will help to Dominican Republic Government to fulfil their commitment to achieve INDC target. Since one of the objectives of this assessment process carried out by ICONTEC is to identify GHG assertion by this project activity, the assessment regarding the sustainable development contribution will be developed along this report.

The audit team can confirm that:

- The implementation of the project is consistent with the information provided in the registered PD (Physical features such as technology project equipment, monitoring and metering equipment).
- The project is operated as per PD.
- Information provided in the MR is in accordance with that stated in the PD.
- Parameters are properly measured according to the monitoring plan and the PD, and that the information is consistent with the secondary information sources used to verify the information.
- Data aggregation related with electrical energy generation is appropriate to comply with the methodology and it is in accordance with the PD and operation of metering equipment.
- The information of the ERs spreadsheet /4/ is consistent with raw data information generated by the OC-SENI (Official source from Dominican Republic).
- The process of data management, transfer, storage and reporting was carried out in compliance with the monitoring plan in the PD and the applied methodology /UN1/.

4.2 Safeguards

4.2.1 No Net Harm

According to the legislation in force (article 40 of law 64 of 2000⁷), an Environmental Impact Statement (DIA) is required to be carried out before the project can receive its environmental permit /21//22/.

The project participants have undertaken an analysis of environmental impacts and an environmental impact assessment was prepared in accordance with procedures as required by legislation from Dominican Republic. The DIA /23//24/, identified the project's impacts on the environment and also the necessary mitigation actions as described by PP in MR /3/ Table 3, section 2.1.

The impacts identified by the PP during operational phase of both winds farms are:

- Impact on Birdlife: Loss of individuals due to collision
- Impact on soil and water: generation of solid hazardous and non-hazardous waste.
- Impact on soil and water: Generation of liquid hazardous waste.
- Impact to soil and water: Fuel storage
- Impact on soil and water: Generation of domestic residuals.
- Impact to soil and water: Pest and weed control
- Socio-economic impact: Risk of occupational accidents

⁷ <http://www.wipo.int/edocs/lexdocs/laws/es/do/do025es.pdf>

- Socioeconomic Impact Employment generation
- Impact on flora: loss of vegetation
- Alteration to air quality

The audit team deemed the list provided by the PP in Table 3 of MR /3/ as complete and it is coherent with project activity nature. Regarding the action plans to mitigate such impacts are reasonable and all of the identified impacts have a monitoring plan in order to supervise continuously how the proposed action plans contribute to mitigate the identified impact.

During the virtual interviews to the project proponents, they explained that in accordance with the legislation from Dominican Republic, it is necessary to perform an Environmental Accomplishment Report periodically (ICA by its Spanish Acronym), with the aim to inform to environmental authorities periodically the commitment made by EGE Haina with the issuance of environmental permits. The audit team reviewed the latest ICA submitted to Ministry of Environment and Natural Resources of Dominican Republic for Larimar I wind farm/25//27/ and Larimar II wind Farm /26//28/.

ICONTEC based on the above arguments validated that the project is carrying out the environmental mitigation actions (environmental programs) in accordance with national legislation.

4.2.2 Local Stakeholder Consultation

During operation stage, EGE HAINA maintains an ongoing communication with local stakeholders. The PP has identified community leaders and EGE HAINA has also had personnel in Los Cocos Electrical substation whom can received concerns regarding with the project operation from the community. The audit team reviewed the form made by EGE HAINA to record query from local stakeholders/29/, and it was also reviewed the requests made by the local stakeholder and it was verified that during the monitoring period under assessment there were no complaints regarding project's operation. There is only one query from Enriquillo community regarding to get electric energy free of charge, this query was answered by the PP.

4.3 AFOLU-Specific Safeguards

Since this project activity is not an AFOLU project, this section is not required.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Calculation of baseline GHG emissions

In accordance with ACM0002 /UN1/, the baseline emissions are electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

In other words, The baseline emissions are quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Larimar wind farms project (in MWh) multiplied by the combined margin CO₂ emission factor for interconnected electrical grid of Dominican Republic.

$$BE_y = EG_{\text{facility},y} \times EF_{\text{grid}, CM,y}$$

$$BE_y = 810,517.25 \text{ MWh} \times 0.7173 \text{ tCO}_2\text{e/MWh}$$

$$BE_y = 581,384 \text{ tCO}_2\text{e}$$

The audit team concludes that a complete set of data for the specified monitoring period is available. The audit team also concludes that baseline emission reductions have been correctly calculated without material misstatements.

Likewise, the audit team confirmed that monitored parameter $EG_{\text{facility},y}$ involved in the baseline GHG emissions calculation was cross checked as it was described in Section 4.1 Table 5 on this report.

Calculation of project GHG emissions

In accordance to the applied methodology ACM0002, version 17.0/UN1/, emissions by sources of GHG due to the project activity are zero.

Calculation of leakage GHG emissions

In accordance with the provisions of applied methodology ACM0002 version 17.0 /UN1/: no leakage effects need to be accounted under this methodology.

Summary calculation of GHG emission reductions

In accordance with the applied methodology /UN1/ and the description provided above for baseline emission, project emission and leakage:

$$ER_y = BE_y$$

$$ER_y = 581,384 \text{ tCO}_2\text{e}$$

The data used for determination of the emission reductions are available and have been monitored in accordance with the registered monitoring plan and methodology ACM0002, version 17.0 The data used for the calculation of ERs in this monitoring period were verified and they were found consistent with those reported in the PD.

The appropriate methods and formulae for calculating baseline emissions, project emissions and leakage were followed in accordance with the PD and applied methodology /UN1/.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

In accordance with the applied methodology /UN1/ to determine the GHG emission reductions, it is only necessary to take into account the baseline emissions, since project emissions and leakage are considered as 0 as it was described previously on this report.

Consequently, the baseline emissions and hence the emission reductions are determined by quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Larimar wind farm project (in MWh) multiplied by the combined margin CO₂ emission factor for electrical interconnected grid of Dominican Republic (in tCO₂e/MWh).

The combined margin CO₂ emission factor for electrical interconnected grid of Dominican Republic was fixed ex-ante at registration time.

Regarding to the quantity of net electricity generation supplied by Larimar wind project to the grid, in section 4.1 on this report is described the assessment carried out to determine the sufficiency of quantity, and appropriateness of quality of the evidence. Including details of the reliability of the evidence, and the source and nature of the evidence, the information flow from data generation and aggregation, to recording, calculation, and crosschecks performed on the reported values.

On section 4.14 on this report is described how was assessed by the audit team the appropriateness of implemented calibration frequency for monitoring equipment for the parameter: Quantity of net electricity generation supplied by Larimar wind farms project to the grid.

The audit team can conclude that the PP has presented a complete and appropriate set of values to determine the GHG emission reductions.

4.6 Non-Permanence Risk Analysis

Since this project activity is not an AFOLU project and its emission reductions generated, does not have risk of reversibility, it is not necessary to perform a non-permanence analysis.

5 VERIFICATION CONCLUSION

ICONTEC was engaged by EGE HAINA S.A. to verify the greenhouse gas (GHG) emission reductions reported by the VCS project Larimar wind farm project, project registration number 1644, owned by EGE HAINA S.A. for the period 01/08/2016 to 31/12/2019, equating to 581,384 tCO₂e.

The verification was performed based on the requirements set out in VCS Version 4. ICONTEC considers that the project's GHG emissions and resulting GHG emissions reductions reported in the monitoring report version 3 dated on 13/07/2020, are fairly stated.

ICONTEC confirms that the project is implemented as described in the validated and registered PD. Installed equipment essential for generating emission reductions are running reliably and calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions as a VCS project.

EGE HAINA S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's monitoring and verification plan.

EGE HAINA S.A. is responsible for developing and keeping records and reporting procedures in accordance with the monitoring plan.

ICONTEC received the information and asked for explanations deemed necessary to provide enough evidence about the amount of GHG emissions and the calculation of the GHG emission reductions.

The verification consisted of the three following phases: i) desk review of the PD, the MR and the monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

It is ICONTEC's responsibility to set an independent GHG verification opinion on the GHG emissions from the project and approved a baseline for the monitoring period.

ICONTEC utilizes a risk-based approach that draws on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate them. ICONTEC's examination process includes test-based assessments of all evidence relevant to the amounts and disclosures of a project's GHG emissions and the calculations of such reductions for the reporting period.

ICONTEC can confirm that the GHG emissions reductions are calculated without material misstatements.

During the audit, it was carried out the assessment of project description deviations. ICONTEC can confirm that this assessment complies with the validation criteria for projects set out in VCS Version 4.

Verification period: From 01/08/2016 to 31/12/2019

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2016 (From August 1 st to December 31st)	50,655	0	0	50,655
2017	128,596	0	0	128,596
2018	176,432	0	0	176,432
2019	225,701	0	0	225,701
Total	581,384	0	0	581,384

APPENDIX 1: RESOLUTION OF CORRECTIVE ACTION, FORWARD ACTION AND CLARIFICATION REQUEST

The following table explains how ICONTEC resolve or “close out” CARs and CLs describing how the PP modify the project design, rectify the MR or provide additional explanations or evidence that satisfy the ICONTEC’s concerns.

This table explains the issues raised, the responses provided by the PP, the means of validation of such responses and references to any resulting changes in the MR or supporting annexes.

Report Clarifications and Corrective Action Requests	VCS’ Reference	Summary of Project Owner Response	Verification Conclusion
CL 1 In the MR version 1, section 4.1, it is described the following parameters as determined or available at validation, and remain fixed throughout the project crediting period: • $EG_{m,y}$ and $EG_{k,y}$ • $EG_{p,j,y}$ However in registered PD version 3, section 4.1, these parameters are not mentioned.	Instructions for completing the VCS monitoring report form, version 4.0 section 4.1	Parameters • $EG_{m,y}$ and $EG_{k,y}$ • $EG_{p,j,y}$ Have been removed from Monitoring Report section 4.1, to be consistent with the registered PD version 3, section 4.1. <u>See document</u> Monitoring Report - 1 - VCS-MR_Larimar v2_29 05 2020.doc	Verification Team Response: In the updated version of MR (version 2), in section 4.1 the parameters $EG_{p,j,y}$, and $EG_{m,y}$ and $EG_{k,y}$ were eliminated with the aim to be in accordance with the registered monitoring plan stated in PD version 3 Verification Team Conclusion: Closed 01/06/2020

Report Clarifications and Corrective Action Requests	VCS' Reference	Summary of Project Owner Response	Verification Conclusion
CAR 1 The value for $EF_{grid,CM,y}$ stated in section 4.1 of registered PD version 3 (0.6435 tCO₂/MWh) is not coherent with the value described in section 3.4 of registered PD version 3, and the spreadsheet used to calculate the combined margin emission factor for national electrical grid of Dominican Republic at validation for registration time.	VCS Standard, version 4.0, section 3.18	In section 3.2.2 Project Description Deviation of the Monitoring Report v2, the typo mistake in the registered PD has been explained. Also considering this typo mistake, section 4.1 of registered PD named PROJ_DESC_1644_01SEP2017.pdf has been updated with the correct combined emission factor, $EF_{grid,CM,y} = 0.7173$ tCO₂e/MWh. <u>See documents</u> 1.Updated registered PD with type correction PD - PROJ_DESC_1644_01SEP2017-updated.pdf 2.Emission Factor Calculation at validation stage – 41_Larimar EF Calculation.xls 3.Monitoring Report - 1 - VCS-MR_Larimar v2_29 05 2020.doc	Verification Team Response: The verification team which is performing the assessment of this monitoring period, was the same validation team which performed the audit for registration purpose. The combined emission factor for electrical interconnected grid in Dominican Republic was calculated using the simple OM method, and its value was fixed during the first crediting period, $EF_{grid,CM,y} = 0.7173$ tCO₂e/MWh, as it was presented by the PP (see file: 41_Larimar EF Calculation.xlsx) after responded the audit team findings at validation time: CAR 2, CAR 3 and CAR 4, in section 3.4 of PD version 3. In section 3.3 in this report, the verification team described, again, the assessment carried out to validate the combined emission factor for electrical interconnected grid in Dominican Republic fixed during the first crediting

Report Clarifications and Corrective Action Requests	VCS' Reference	Summary of Project Owner Response	Verification Conclusion
			period, $EF_{grid,CM,y} = 0.7173$ tCO₂e/MWh Inasmuch as this is a typo mistake, the verification team deemed well addressed this finding Verification Team Conclusion: Closed 01/06/2020