



“VTRM RENEWABLE ENERGY” VERIFICATION REPORT



Report ID	2024BQCE2092
Project title	VTRM Renewable Energy
Project ID	1812
Verification period	01-January-2023 to 31-December-2023
Original date of issue	13-September-2024 is the date the audit was completed (stakeholder interview was concluded)
Most recent date of issue	11-December-2024 is the date on which the document was most recently submitted
Version	2.0Aa
VCS Standard Version	4.7
Client	Auren Energia S.A.
Prepared by	RINA Services S.p.A. (RINA)

Approved by	 Laura Severino (Authorized officer signing for the VVB) Decarb & Chain of Custody Product Management
Work carried out by	Team leader, Technical Expert and Verifier: Thaís de Lima Carvalho Mehmet ERDOĞAN (ITRP)

Summary:

RINA Services S.p.A. (RINA), commissioned by Auren Energia S.A. ¹ has verified the monitoring report and greenhouse gas emission reductions reported for the project activity VTRM Renewable Energy in Brazil, with regards to relevant requirements for VCS rules

The VTRM Renewable Energy is registered under VCS Project ID 1812. Wind power plants of Ventos do Araripe III Complex are located in municipality of Araripina (State of Pernambuco) and municipality of Simões and Curral Novo do Piauí (State of Piauí), northeastern region of Brazil. The emissions reductions achieved in monitoring period from 01-January-2023 to 31-December-2023 is 382,112 tCO₂e.

This project utilizes the approved VCS Methodology ACM0002: “Grid-connected electricity generation from renewable sources, version 19.0 of 31 August 2018”, and corresponding tools are applied to quantify the GHG removals achieved in this project.

The Auren Energia S.A. has requested RINA to perform the VCS verification for which a VCS Monitoring Report and supporting documents were provided. RINA, acting as an independent third party, has assessed the documents and evidence provided, and performed desk assessment and virtual and presentational assessment at Auren office, interviews with stakeholders, interviews with the top management of PP and interviews with the technical and field staff of the project activity.

The objective/scope of the verification is to have an independent review ex post determination by a VVB (Validation and Verification Body) of the monitored GHG removals by sink that have occurred as a result of the implementation of the project activity during a defined monitoring period.

Method and Criteria: Verification was conducted using RINA procedures in line with the requirements specified in the VCS Requirements, i.e. VCS Program Guide, version 4.4 updated 29/08/2023 and VCS Standard, version 4.7. The GHG emission reductions estimated are on the basis of the approved

¹ The commercial agreement between RINA and Votorantim Energia was done in 2022. The historic of Auren creation is as follow: in 2017, Votorantim Geração de Energia S.A. (a company controlled by Votorantim S.A.) and CPP Investments created VTRM Energia Participações S.A., a joint venture to invest in clean and renewable energy generation. In 2022, Auren Energia (VTRM's new name) was born from the corporate reorganization of the energy assets of Votorantim S.A. and CPP Investments. The completion of the process took place on March 28, 2022, with the Company's listing on B3's Novo Mercado (Brazilian Stock Exchange)./37/

Baseline and monitoring methodology ACM0002: “Grid-connected electricity generation from renewable sources version 19.0 of 31 August 2018 .

RINA team verified the information contained and the emissions reductions and/or removals claimed in the Monitoring Report is calculated in compliance with the requirements of the Verified Carbon Standard (VCS) and the requirements of the methodology applied.

Any uncertainties associated with the verification: the verification was conducted in line with RINA procedures and VCS requirements with reasonable level of assurance. There are no restrictions of uncertainty for the verification.

During this verification **1** Clarification Request (CR), **3** Corrective Actions (CAR) and **0** Forward Action Request (FAR) were identified related to the monitoring, implementation or operations of the proposed VCS monitoring report (VCS MR version 01 of 04-July-2024) in relation to all relevant VCS requirements v 4.7 for the project activity and the applied baseline and monitoring methodology; these findings have been discussed in appendix 3 of this report and were correctly addressed in the final VCS MR version 3 of 11-December -2024.

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1 INTRODUCTION

1.1 Objective

RINA has been commissioned by Auren Energia S.A. to perform an independent verification of its VCS project, “VTRM Renewable Energy”, in accordance with the VCS standard version 4.7 for the monitoring period of 01-January-2023 to 31-December-2023. Wind power plants of Ventos do Araripe III Complex are located in municipality of Araripina (State of Pernambuco) and municipality of Simões and Curral Novo do Piauí (State of Piauí), northeastern region of Brazil.

The reported GHG emission reductions for the given monitoring period must undergo independent third- party verification and certification of emission reductions as the basis for issuance of Voluntary Emission Reductions (VERs/VCUs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the project description (PD) and that all physical features (technology, project equipment, and monitoring and metering equipment, if applicable) of the project are in place.
- Monitoring report and other supporting documents are complete.
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCUs) without any double counting, and
- To establish that the data reported are accurate, complete, consistent, transparent, and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- to verify that reported GHG emission data is sufficiently supported by evidence.
- to verify that the stakeholder consultation carried out is relevant and there are mechanisms for on-going communication
- to verify that the project activity has been implemented in accordance with the validated Project Description/ revised Project Description

The project is assessed against the of VCS program guide v 4.4 /09/, VCS standard version 4.7 /06/ and all the GHG program requirements RINA has, based on the recommendations in the latest version of VCS Validation and Verification Manual v 3.2 /07/, and the criteria stated in the CDM methodology ACM0002: “Grid-connected electricity generation from renewable sources version 19.0 of 31 August 2018 and employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

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

1.3 Level of Assurance

RINA provides a reasonable assurance that the “VTRM Renewable Energy” meets VCS criteria. To ensure complete transparency, any clarification or corrective actions raised have been included in the Appendix 3. The verification express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.

As per VCS Standard Version 4.7 /6/, the threshold for materiality with respect to the aggregate of errors, omissions, and misrepresentations relative to the total reported GHG emission reductions and/or removals shall be five percent for projects and one percent for large projects. The materiality of five percent is applicable to this project.

An audit has been performed on 29/08/2024 and it is confirmed that the monitoring arrangements in the monitoring plan are feasible within the project design. The data presented in the monitoring report were assessed by reviewing in detail project documentation, collection of monitored data, confirmation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment.

The final version of the verification report before being submitted to the client is subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions, with reasonable level of assurance.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for VCS and CDM validation and verification.

The verification team and the technical reviewers consist of the following personnel.

Role	Last Name	First Name	Country
Lead Assessor / Verifier / Technical Expert	Carvalho	Thaís	RINA Brazil
Technical Reviewer	ERDOĞAN	Mehmet	RINA Türkiye

1.4 Summary Description of the Project

- Project proponent: AUREN ENERGIA S.A.
- Title of the project activity: VTRM Renewable Energy
- Baseline and monitoring methodology: ACM0002: "Grid-connected electricity generation from renewable sources, version 19.0 of 31 August 2018
- Monitoring period: 01-January-2023 to 31-December-2023
- Location of the project activity: Wind power plants of Ventos do Araripe III Complex are located in municipality of Araripina (State of Pernambuco) and municipality of Simões and Curral Novo do Piauí (State of Piauí), northeastern region of Brazil. RINA verified that the geographical coordinates described in the MR are in accordance with ANEEL PowerBI, public information /19/
- Brief description of the project/ implementation status: The "VTRM Renewable Energy" is a Grouped Project, that consists on the implantation and operation of wind power plants (WPPs). All wind power plants supply clean electricity to the Brazilian National Interconnected System (SIN). RINA verified the operational licenses for all wind power plants included in the project activity /3/; installed capacity, assured energy described in the MR, in accordance with ANEEL public information /19/ and equipments's specification /35/, ONS report /38/. Project is implemented in accordance with registered PD.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification consisted of the following three phases in accordance with the approved methodology, the VCS Standard version 4.7 /6/ and other relevant VCS requirements:

- A desk review of the project documents.
- Follow-up interviews with project proponents/stakeholders (presential and remote). (For the dates, please, refer to the section 2.3 below)
- The resolution of outstanding issues and the issuance of the verification report and opinion.

During the audit it was made an open meeting, where RINA explained items related to audit verification process and project proponents had the opportunity to take doubts presented the project activity. Basically, the follow issues were verified during the audit:

- Project activity in the registered PDD
- Actual implementation and operation of the project activity
- Calibration, Maintenance procedures and storage data,
- Emission reductions calculations
- Quality control and quality assurance procedures
- Record and storage data
- Enviromental and social aspects of the project activity

The following sections outline each step in more detail.

2.2 Document Review

The following tables list the documentation that was reviewed during the verification.

Documents provided by project participants

/1/	Way Carbon VCS Monitoring Report for the project activity “VTRM Renewable Energy”, version 01 of 04-July-2024; version 2 of 12-November-2024 version 3 of 11-December -2024
/2/	Emission reduction calculation spreadsheet, version 1 ER VA3_2023_V01.xlsx
/3/	Environmental Licenses Ventos de Santo Estevão I: # 05.22.06.002712-9 issued by Agência Estadual de Meio Ambiente (CPRH) on 13 June 2022 and validity 12 June 2026. Ventos de Santo Estevão II: # 05.22.06.002711-2 issued by Agência Estadual de Meio Ambiente (CPRH) on 13 June 2022 and validity 12 June 2026.

	Ventos de Santo Estevão III: # 05.22.06.002710-5 issued by Agência Estadual de Meio Ambiente (CPRH) on 13 June 2022 and validity 12 June 2026. Ventos de Santo Estevão IV: # 05.22.06.002709-9 issued by Agência Estadual de Meio Ambiente (CPRH) on 13 June 2022 and validity 12 June 2026. Ventos de Santo Estevão V: # 05.22.06.002749-5 issued by Agência Estadual de Meio Ambiente (CPRH) on 13 June 2022 and validity 12 June 2026. Ventos de São Virgílio 01: # D000202/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 01 June 2022 and validity 01 June 2026. Ventos de São Virgílio 02: # D000209/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 02 June 2022 and validity 02 June 2026. Ventos de São Virgílio 03: # D000207/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 02 June 2022 and validity 02 June 2026. Ventos de Santo Onofre IV: # D000205/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 01 June 2022 and validity 01 June 2026. Ventos de Santo Augusto I: # D000661/21 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 24 November 2021 and validity 24 November 2025 Ventos de Santo Augusto II: # D000204/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 01 June 2022 and validity 01 June 2026 Ventos de Santo Augusto VI: # D000665/21 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 25 November 2021 and validity 25 November 2025 Ventos de Santo Augusto VII: # D000208/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 02 June 2022 and validity 02 June 2026 Ventos de Santo Augusto VIII: # D000203/22 issued by Secretaria de Meio Ambiente e Recursos Hídricos (SEMAR) on 01 June 2022 and validity 01 June 2026
/4/	Verified Carbon Standard: VCS Monitoring Report Template, VCS version 4.4 dated 19 September 2019 and updated on 16 April 2024
/5/	-Main meter: MW-2103A656-02 – Calibration Certificate issued by 3C Laboratory, dated 06/05/2021. -Backup meter: MW-1401A235-01 - Calibration Certificate #CCR 132/21, issued by Lactec, dated 08/02/2021.
/6/	Verified Carbon Standard: VCS Standard version 4.7 dated 19 September 2019, updated on 16 April 2024 (final version).
/7/	Verified Carbon Standard: VCS Validation and Verification Manual, version 3.2 dated 19 October 2016.
/8/	Verified Carbon Standard: VCS Program Definitions version 4.5 dated 19 September 2019, updated on 16 April 2024 (final version).
/9/	Verified Carbon Standard: VCS Program Guide version 4.4 dated 19 September 2019, updated 29 August 2023 (final version).
/10/	Verified Carbon Standard: VCS Verification Report Template, VCS version 4.4 dated 19 September 2019 and updated on 16 April 2024 (final version)
/11/	RINA Accreditation: https://verra.org/9project/rina-services-s-p-a/ .

/12/	VCS approved Project Description for the project activity “VTRM Renewable Energy”, version 05 dated 21 March 2019
/13/	CDM Executive Board: ACM0002: “Grid-connected electricity generation from renewable sources version 19.0 of 31 August 2018
/14/	Auren Code of Conduct, approved by the Administrative Board on 19/09/2022 (Código de Conduta Auren.pdf)
/15/	CDM Executive Board: Guidelines for Application of materiality in verifications, version 02.0
/16/	CDM Executive Board: TOOL07 - Methodological tool “Tool to calculate the emission factor for an electricity system”, version 07.0
/17/	E-mails between CCEE and Auren Energia S.A. regarding the changing on energy measurement point and replacement of energy meter
/18/	VERRA project page: https://registry.verra.org/app/projectDetail/VCS/1812
/19/	ANEEL PowerBI, (installed capacity and assured energy) https://app.powerbi.com/view?r=eyJrljoiNjc4OGYyYjQ0YWM2ZC00YjllWjIYmEtYzdkNTQ1MTc1NmM2liwidCI6IjQwZDZmOWI4LWVjYTctNDZhMi05MmQ0LWVhNGU5YzAxNzBIMSIsImMiOiR9
/20/	Assured energy https://biblioteca.aneel.gov.br/Acervo/Detalhe/173606?a=1&guid=1686267911277 - Ministry of Mines and Energy Ordinance #169 issued on 07 May 2015 for Ventos de São Virgílio 01. - Ministry of Mines and Energy Ordinance #170 issued on 07 May 2015 for Ventos de São Virgílio 03. - Ministry of Mines and Energy Ordinance #180 issued on 08 May 2015 for Ventos de Santo Onofre IV. - Ministry of Mines and Energy Ordinance #181 issued on 08 May 2015 for Ventos de Santo Estevão IV.
/21/	Auren Procedures: <i>PO.AUREN.SUT.0005 - Strategy, Planning and Management of Social Investment and Stakeholder Relations, version 2 ((PO.AUREN.SUT.0005 - Estratégia, Planejamento e Gestão do IS e Rel Stakeholders.pdf); PO.AUREN.SGI.0018 - Organizational Context, Stakeholders and Risks and Opportunities, version 1 (PO.AUREN.SGI.0018 - Contexto Organizacional, Partes Interessadas e Riscos e Oportunidades.pdf); PO.AUREN.SGI.0006- Treatment of Non-Conformities Corrective and Preventive Actions, version 7 (PO.AUREN.SGI.0006_ - _Tratamento_de_Nao_Conformidades_Acoes_Corretivas_e_Preventivas.pdf)</i> Spreadsheet: Gestão de Stakeholders ENGAJA_CP_Eolico_JULHO_2024-LGPD.xlsx
/22/	Description of Energy meters applied in project activity, available at: https://www.se.com/br/pt/product-range/61053-ion8650/#overview
/23/	Print screen of the CCEE system with energy meters serial numbers (dated on 29/08/2024-taken during the audit)
/24/	National Electric System Operator (ONS):

	http://www.ons.org.br/paginas/sobre-o-ons/procedimentos-de-rede/historico .
/25/	National Electric System Operator (ONS): <i>Module 7 sub-module 7.11 : Implementation of the measurement system for billing. Grid procedures available at: Implantação do Sistema de Medição para Faturamento (ons.org.br)</i>
/26/	Authorization for operation – ANEEL’s Dispatches: • Ventos de Santo Estevão I: # 1,810 dated 22 June 2017 (for UG1 to UG11). • Ventos de Santo Estevão II: # 1,243 dated 05 May 2017 (for UG7 to UG11), #1,368 dated 17 May 2017 (for UG1, UG2 and UG6) and #1,615 dated 06 June 2017 (for UG3 and UG5). • Ventos de Santo Estevão III: # 3,216 dated 08 December 2016 (for UG1 to UG13). • Ventos de Santo Estevão IV: # 3,358 dated 02 October 2017 (for UG1 to UG13). • Ventos de Santo Estevão V: # 277 dated 31 January 2017 (for UG11 and UG12) and #3,239 dated 12 December 2016 (for UG1 to UG10). • Ventos de São Virgílio I: # 2,714 dated 29 August 2017 (for UG1 to UG13). • Ventos de São Virgílio II: # 395 dated 09 February 2017 (for UG1 to UG5), #509 dated 17 February 2017 (for UG6 and UG8) and # 562 dated 23 February 2017 (to UG7, UG9, UG10, UG11, UG12 and UG13). • Ventos de São Virgílio III: # 3,329 dated 28 September 2017 (for UG1 to UG9). • Ventos de Santo Onofre IV: # 1,684 dated 13 June 2017 (for UG1 to UG12). • Ventos de Santo Augusto I: # 508 dated 17 February 2017 (for UG1 to UG8). • Ventos de Santo Augusto II: # 3,404 dated 28 December 2016 (for UG1 to UG12). • Ventos de Santo Augusto VI: # 827 dated 23 March 2017 (for UG1 to UG4) and #836 dated 24 March 2017 (for UG5 to UG13). • Ventos de Santo Augusto VII: # 600 dated 03 March 2017 (for UG1 to UG4) and #729 dated 15 March 2017 (for UG5 to UG8). • Ventos de Santo Augusto VIII: # 3,382 dated 23 December 2016 (for UG1 to UG8)
/27/	Auren: evidences for the ongoing communication: Relatório de Entradas Diálogo Aberto 2023 - Complexo Eólico VA III VdPs e SdP.pdf Relatório de Reclamações Diálogo Aberto 2023 - Complexo Eólico VA III e VdPI.pdf Relatório de Reclamações Diálogo Aberto 2023 - Complexo Eólico VA III VdPs e SdP.pdf
/28/	Geoconsult EIA-RIMA for the wind farms Ventos de Santo Augusto, Ventos de São Virgilio and ventos de Santo Onofre Diversa Consultoria em Sustentabilidade: Basic Environmental Program for the wind farms Ventos de Santo Estevão, dated March 2015
/29/	Auren signed declaration, dated 28/08/2024 (Declaração_Verra_-_VDP_I_e_VA3 (1).pdf)
/30/	Grid emission factor: Available at: https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/dados-e-ferramentas/fatores-de-emissao

/31/	CCEE spreadsheet downloaded during the audit “Extração CCEE - Geração Anual 2023xlsx.xlsx”
/32/	* LM Ambiente engenharia e consultoria ambiental- Noise emission reports: MONITORAMENTO DO NÍVEL DE PRESSÃO SONORA – NPS (July 2023;) * LM Ambiente engenharia e consultoria ambiental- <i>Stroboscopic Effect</i> reports: MONITORAMENTO DO EFEITO ESTROBOSCÓPICO March 2023; May 2023; July 2023; November 2023)
/33/	Eco Brasil Consultoria Ambiental, consolidated report for monitoring flying fauna at Wind complex Ventos do Araripe III and Ventos de Santo estevão, dated October 2023 (RC_ECO_VAIII_STO_EST_FAUNA_ALADA_2310)
/34/	Visiona Tecnologia espacial monitoring report: Monitoring of occupation and vegetation dynamics along VAIII, VPD 01, VPD02 and VPD03, owned by AUREN; dated 21/08/2023
/35/	Wind generator plates’ picture
/36/	Auren management standards: “Management Standard for Guaranteeing Human Rights” NG.AUREN.SUT.0001, version 2 and “Third Party Due Diligence” NG.AUREN.SGC.0007, version 4 Document: “Commitment to human rights”
/37/	- Minutes of the General Shareholder Meeting, held on February 03rd 2022, related to the <u>incorporation of Votorantim Geração de Energia S.A. by VTRM Energia Participações S.A.</u> (yellow marks on page 01). - Minutes of the General Shareholder Meeting, held on February 15th 2022, related the <u>merger of shares issued by CESP - Companhia de Energética de São Paulo S.A. into VTRM Energia Participações S.A.</u> (yellow marks on page 01). - Minutes of the General Shareholder Meeting, held on March 23th 2022, related to the <u>name change from VTRM Energia Participações S.A. to Auren Energia S.A.</u> (yellow marks on page 01) All documents were filed under the Brazilian Securities and Exchange Commission (CVM), a government agency which is responsible for market regulation and enforcement in Brazil.
/38/	ONS report RELATÓRIO ONS N° DTA-2022-PA-0024-R0-ra, dated March 2022- includes the description of wind power plants installed capacities (Parecer EOLs Complexo Ventos do Araripe III_SE Curral N 230 kV-Assinado.pdf)
/39/	Evidences for the SDGs: Evidence for Target 4.c: 1. Governança 2023 Projetos IV.pdf (page 4, table GESC and GEDU, sum Araripoina and simões) Evidence for Target 8.3:

	1. E-mail ETE - Número de Formados.pdf 2. Atestado ETE Alunos Programa de Estágio Auren Energia.pdf (need to adjust data to 4 from ETE) (Auren - Referência Documental VA3 - Evidências Achados Auditoria.xlsx)
/40/	Auren: Solid Wast management plan, 2023 (2023-VA3-PGRS_Rev01.pdf)

2.3 Interviews

On 29/08/2024 the verification team from RINA conducted audit of the “VTRM Renewable Energy” and performed interviews with project proponents’ staff. Also, stakeholders were interviewed in September 2024.

	Date	Name	Organization	Role	Topic
/a/	29/08/2024	Edson Luciano	Auren Energia	Pre and Post Operation coordinate	Energy measurements, monitoring and storage data
/b/	29/08/2024	Erivaldo Faria	Auren Energia	Post operation analist	Energy measurements, monitoring and storage data
/c/	29/08/2024	Janaína Garcia*	Auren Energia	Control and invoicing coordinator	Energy measurements/ cross check CCEE data
/d/	29/08/2024	Henrique de P Barbosa*	Auren Energia	O&M Wind Complexes Manager	Technical features Project implementation and operation
/e/	29/08/2024	Jorge Lopez*	Auren Energia	Executive Manager of Generation Planning and Control	Technical features Project implementation and operation
/f/	29/08/2024	Mariana Pereira*	Auren Energia	Regulatory Manager	Technical features Project implementation and operation

/g/	29/08/2024	Raquel Leite*	Auren Energia	Social Development Manager	Social aspects, stakeholder on going communication
/h/	29/08/2024	Amanda Fraga*	Auren Energia	Sustainability Consultant	Social aspects, social programs, stakeholder on going communication
/i/	29/08/2024	Miquéias Dantas*	Auren Energia	Sustainability Analyst	Social aspects, social programs, stakeholder on going communication
/j/	29/08/2024	Alexsandro Cota*	Auren Energia	Sustainability Executive Manager	Project implementation
/k/	29/08/2024	Rodrigo Lima	Auren Energia	Sustainability Consultant	Project implementation
/l/	29/08/2024	Leandro Celestino*	Auren Energia	Sustainability Consultant	Environmental aspects, environmental programs monitoring
/m/	29/08/2024	Eduardo Baltar	WayCarbon	Consultant	Monitoring report and ER calculations
/n/	12/09/2024	Ricardo Jacó*	State Technical school Pedro Muniz Falcão-Araripe	Director-stakeholder	Social programs/ ongoing communication
/o/	12/09/2024	Francisca Jaciana**	Serra da Barrinha community	stakeholder	ongoing communication
/p/	12/09/2024	Maria Anatília**	Serra da Rancharia community	Stakeholder	
/q/	13/09/2024	David Ranieri	VDA land assignor	stakeholder	ongoing communication

*video call interview

***WhatsApp audio*

2.4 Site Visits

A complete desk review of the submitted VCS MR version 3 of 11-December -2024 and previous version/1/ and of the submitted ER spreadsheet /2/ and supportive evidence have been checked by the Verification Team. Verification was conducted using RINA procedures in line with the requirements specified in the VCS Verification Report Template version 4.4 requirements /10/, Verified Carbon Standard: VCS Standard version 4.7 /6/, Verified Carbon Standard: VCS Validation and Verification Manual, version 3.2 /7/ and applying standard auditing techniques.

As per the paragraph 4.1.12, the onsite visit for the current verification is not mandatory. RINA has performed a risk assessment and concluded that the onsite visit is not required. RINA has conducted an onsite visit in the previous verification (02/08/2022 and 11/05/2023) and since the previous monitoring period there is no change in the project implementation; project data can be confirmed/cross checked with official data (ANEEL, CCEE, environmental agencies). Moreover, RINA has conducted a presential visit at Auren office on 29/08/2024, to interview PP and responsible for management and monitoring of the project activity and also stakeholders were interviewed in September 2024.

The Verification team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification:

- By review of VCS MR
- By taking follow up actions by conducted interview with PP and stakeholders, to gather information about knowledge of project design.
- By Cross-checking evaluation under the scope of all information and references provided in VCS MR, including official third part cross check information. Details interviews, topics covered, and additional information presented in the above section “2.3 – Interviews”.
- Presential visit at Auren office and video calls/interviews with personnel involved in the project activities and stakeholders

2.5 Resolution of Findings

The objective of this phase of the verification was to resolve any outstanding issues that needed be clarified prior to RINA’s positive conclusion on the monitoring report.

A corrective action request (CAR) is issued if one of the following occurs:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions.
- There is a risk that emission reductions cannot be monitored or calculated.
- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient.
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

3 CARs and **1 CR** were raised (refer to Appendix 3). CARs and CRs were satisfactory addressed by PP.

2.5.1 Forward Action Requests

A forward action request (FAR) is raised during verification to highlight issues related to project implementation that require review during the next verification of the project activity.

A forward action request (FAR) should be issued, where:

1. the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification period, or
2. an adjustment of the MP is recommended.

No Forward action request (FAR) was identified.

2.6 Eligibility for Validation Activities

Not applicable. As of the contractual service date with the client, RINA holds accreditation for validation and verification activities under sectoral scope 1 as set out by the eligibility guidelines set forth in the VCS Program Guide /9/ and as recognized by the VCS /11/.

3 VALIDATION FINDINGS

3.1 Methodology Deviations

Not applicable. RINA team verified that no methodology deviations are applied to the project during the monitoring period.

3.2 Project Description Deviations

There is a project description deviation that is applicable since previous monitoring period /18/. The project deviation is as follow:

- Energy measurement point - the measurement points where the net electricity generation supplied by the project plant/unit to the grid is measured was changed in 12/04/2022, once the company Simões Transmissora de Energia Elétrica S.A, responsible the transmission of energy, took over the operation of the 230kV sector of the connection substation Curral Novo do Piauí II and the energy meter was changed and it is now located in the 230kV transmission line

RINA verified that the change on location of energy meter is in line with CCEE (Brazilian Electric Energy Commerce Chamber) requirements through e-mails between Auren Energia S.A. and CCEE provided by project proponents /17/, demonstrating the acceptance of changing on energy measurement point and the respective date when it occurred.

Due to the change of energy meters to the 230kV transmission line, the energy meters were modified, RINA verified that the calibration certificates of energy meters /5/ are valid and that this change corresponds to the energy supplied by the project plant/unit to the grid in year y (MWh/yr), as required by ACM0002: "Grid-connected electricity generation from renewable sources version 19.0 of 31 August 2018 .

RINA confirms that this deviation does not impact in the applicability of the methodology, additionality, or the appropriateness of the baseline scenario and is in line with Brazilian CCEE requirements.

3.3 New Project Activity Instances in Grouped Projects

Not applicable. RINA verified that there are no new instances in this grouped project.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes

☒ No

4 VERIFICATION FINDINGS

4.1 Project Details

Item	Evidence gathering activities, evidence checked, and assessment conclusion:				
Audit history	RINA verified in the VCS project page the audit history for the project activity /18/:				
	Audit type	Period	Program	VVB	Number of years
	Validation/ verification	09/12/2016-31/07/2018	VCS	Earthood	1.66 years (20 months)
	Verification	01/08/2018-30/09/2020	VCS	RINA	2.16 (26 months)
	Verification	01/10/2020-31/12/2021	VCS	RINA	1.25 years (15 months)
	Verification	01/01/2022-31/12/2022	VCS	RINA	1 year
	Verification (current-on going)	01/01/2023-31/12/2023	VCS	RINA	1 year
Double counting and participation under other GHG programs	Not applicable, the project activity is not receiving or seeking credit for reductions and removals from a project activity under another GHG program, nor has been reject by any other GHG program /29/.				
No double claiming with emissions trading programs or binding emission limits	The project reductions and removals or project activities is not included in an emissions trading program or binding emission limit /29/				

No double claiming with other forms of environmental credit	Project activity did not seek, receive, or is planning to receive credit from another GHG-related environmental credit system /18/
Supply chain (scope 3) emissions double claiming	The project has not sought or received any other form of GHG-related environmental credit, including renewable energy certificate, thus emissions related to scope 3 are not applicable /18/
Sustainable development contributions	RINA verified that during the monitoring period, the project activity contributed to the following SDGs /39/: 4.c: number of teachers awarded with initiatives to improve public education 8.6: % of students hired after technical training 13.0- Tonnes of greenhouse gas emissions avoided or removed PP has provided the evidences /39/ to confirm data described in the monitoring report
Additional information relevant to the project	Not applicable. There is no commercially sensitive information which has been excluded from the public version of the monitoring report

4.2 Safeguards and Stakeholder Engagement

4.2.1 Stakeholder Identification

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Stakeholder identification	PP has an internal Operational Procedure for Strategy, Planning, and Management of Social Investment and Stakeholder Relations – PO.AUREN.SUT.0005 that establishes the stakeholder identification process. /21/. During the audit RINA has interviewed Auren team responsible for the stakeholder communication and social programs. /f/ /g/ /h/

Legal or customary tenure/access rights	There are no indigenous peoples, traditional communities, or communities with collective land rights mapped in our direct area of influence, confirmed in the EIA, Basic Environmental Program and the environmental licenses. The documents also do not mention any impact in indigenous/traditional communities /28/. RINA verified that all project wind power plants have a valid operation license /3/
Stakeholder diversity and changes over time	The stakeholder diversity is not expected to change over the time. The groups are mainly formed by families residing in the rural communities around the area, rural associations grantors, and representatives of social, political, and religious institutions. /f/ /g/ /h/
Expected changes in well-being	The demands from the communities are mostly related to water access and water security, productive strengthening, and infrastructure/f/ /g/ /h/
Location of stakeholders	There are no indigenous peoples, traditional communities, or communities with collective land rights mapped in our direct area of influence /28/. The stakeholders' communities are in the rural area between the states of Pernambuco and Piauí /21/
Location of resources	During the audit RINA confirmed through interview and PP registers /21/ RINA confirmed the information presented in the MR, that the project is situated in the Caatinga biome and most of the stakeholders are rural producers.

4.2.2 Stakeholder Consultation and Ongoing Communication

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Ongoing consultation	During the audit RINA has interviewed Auren team responsible for the stakeholder communication and social programs. /f/ /g/ /h/ and also interviewed stakeholders to confirm the information presented in the MR. The strategies for the stakeholders engagement includes an open dialogue channel (WhatsApp and email); families

	committee; direct dialogue and social communication plan. /21/ /27/
Date(s) of stakeholder consultation	RINA verified that PP has an ongoing process of consulting with stakeholders, and it is part of the daily operations of the project /21/ /27/
Communication of monitored results	PP has provided the evidence for the data and results of the stakeholders consultations/inputs /21/ /27/
Consultation records	PP has provided the evidence for the data and results of the stakeholders consultations/inputs /21/ /27/
Stakeholder input	PP has provided the evidence for the data and results of the stakeholders consultations/inputs /21/ /27/

4.2.3 Free, Prior, and Informed Consent

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Consent	Not applicable. There are no indigenous peoples, traditional communities or communities with collective land rights mapped in influence direct area of the Project
Outcome of FPIC discussion	Not applicable.

4.2.4 Grievance Redress Procedure

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Grievance received and steps taken to resolve the grievance including the outcomes of the resolution	During the audit RINA has interviewed Auren team responsible for the stakeholder communication and social programs. /f/ /g/ /h/ and also interviewed stakeholders to confirm the information presented in the MR. PP keeps the register of all stakeholders contacts and one grievance related to the project activity was received /21/ /27/ RINA verified that the MR describes the grievance and action taken in accordance with PP register's /27/

Grievance redress procedure	RINA verified that PP has implemented procedure for stakeholder's communication/grievance /21/ /27/
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4.2.5 Public Comments

Comments received	Actions taken by the project proponent	Evidence gathering activities, evidence checked, and assessment conclusion
Not applicable.		

4.2.6 Risks to Local Stakeholders and the Environment

4.2.6.1 Management Experience

RINA verified that PP has a large experience in renewable energy power plants and have an experienced team for the project monitoring, stakeholder interaction and environmental aspects, supported by a consultancy for the VCS requirements (refer to section 2.3).

4.2.6.2 Risk Assessment

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Natural and human induced risks to stakeholders' wellbeing	RINA confirmed through interview that no risks resulting from project activities were identified in this monitoring period, including risks to stakeholder wellbeing, stakeholder participation, working conditions, safety of women and girls, and safety of minority and marginalized groups including children /3/ /28/. PP has a Code of conduct that
Risks to stakeholder participation	
Working conditions	
Safety of women and girls	

Safety of minority and marginalized groups, including children	express the commitments on the three axes People, Communities and Business Partners. /14/
Pollutants (air, noise, discharges to water, generation and release of hazardous materials and chemical pesticides and fertilizers	The identified risks are: noise emission; stroboscopic effect and generation of waste. PP has presented the third part noise emission report and stroboscopic monitoring report/32/ and solid waste management plan /40/ RINA verified that as part of the environmental licenses' requirements, PP monitors periodically the identified risk. /32/ /40/

4.2.7 Respect for Human Rights and Equity

4.2.7.1 Labor and Work

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Discrimination	No risk identified, PP has a Code of conduct that express the commitments on the three axes People, Communities and Business Partners. /14/ /36/. It clearly describes that the human rights and equity must be ensured to all people.
Sexual harassment	
Gender equity in labor and work	
Forced labor	
Child labor	
Human trafficking	

4.2.7.2 Human Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
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No risk identified.	There are no indigenous peoples, traditional communities or communities with collective rights to land mapped in the direct influence area /28/ /3/
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4.2.7.3 Indigenous Peoples and Cultural Heritage

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
No risk identified.	There are no indigenous peoples, traditional communities or communities with collective rights to land mapped in the direct influence area /28/ /3/

4.2.7.4 Property Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
No risk identified.	There are no indigenous peoples, traditional communities or communities with collective rights to land mapped in the direct influence area /28/ /3/

4.2.7.5 Benefit Sharing

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Summary of the benefit sharing plan	Not applicable.

Benefit sharing during the monitoring period	Not applicable.
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4.2.8 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Impacts on biodiversity and ecosystems	It was identified risk to the fauna (flying fauna). To mitigate the risk, PP carries out periodic monitoring and if large flocks, swarms, and/or nesting of these birds are observed, monitoring becomes continuous. The information presented in the MR was confirmed during the audit interview and PP has also presented the fauna monitoring report, conducted by a third part entity /33/.
Soil degradation and soil erosion	It was identified risk to Erosive processes on slopes and access roads. To mitigate the risk, PP carries out period monitoring through field inspections and satellite monitoring /34/. When the erosive process is identified, the process is contained, and the area is restored. The information presented in the MR was confirmed during the audit interview and PP has shown the registers of the monitoring during the audit.
Water consumption and stress	No risk identified, in the operation of the wind farms there is no high consumption of water.

4.2.8.1 Rare, Threatened, and Endangered species

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Species or habitat	No risk identified, no rare, threatened and endangered species were identified in the monitoring period. /33/
Areas needed for habitat connectivity	No risk identified, no rare, threatened and endangered species were identified in the monitoring period. /33/. The project does not impact areas for habitat connectivity.

Evidence gathering activities, evidence checked, and assessment conclusion	
Habitats for rare, threatened, and endangered species	No risk identified, no rare, threatened and endangered species were identified in the monitoring period. /33/
Areas for habitat connectivity	No risk identified, no rare, threatened and endangered species were identified in the monitoring period. /33/. The project does not impact areas for habitat connectivity.

4.2.8.2 Introduction of Species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
Not applicable.	There is no species introduction in the project activity
Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
Not applicable	There is no species introduction in the project activity
Evidence gathering activities, evidence checked, and assessment conclusion	
Invasive species	Not applicable. There is no species introduction in the project activity

4.2.8.3 Ecosystem conversion

Item	Evidence gathering activities and evidence checked
Ecosystem conversion	Not applicable, the project is not ARR, ALM, WRC or ACoGS. MR describes the risk identified during the project implementation and the mitigations actions taken.

4.3 Accuracy of Reduction and Removal Calculations

RINA verified that the GHG emissions reductions in accordance with the applied methodology ACM0002: “Grid-connected electricity generation from renewable sources version 19.0 of 31 August 2018 and followed the provisions described in the registered PD.

The net GHG emissions reduction calculation and removals applies the following formula:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y - Emission Reductions in year y (tCO₂e)

BE_y - Baseline Emissions in year y (tCO₂e)

PE_y - Project emissions in year y (tCO₂e)

LE_y - Leakage emissions in year y (tCO₂e)

The baseline emissions are calculates as follows:

$$BE_y = EG_{PJ, y} * EF_{grid, CM, y}$$

Where:

BE_y - Baseline emissions in year y (t CO₂/yr)

EG_{PJ, y} - Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh/yr)

As the project activity encompasses only new power plants:

$$EG_{PJ, y} = EG_{facility, y}$$

EG_{facility, y} - Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

In case of “VTRM Renewable Energy”, as per applied baseline and monitoring methodology ACM0002: “Grid-connected electricity generation from renewable sources version 19.0 of 31 August 2018”, the emissions reductions (ER_y) correspond to baseline emissions (BE_y), as project emissions (PE_y) and leakage (LE_y) are zero.

The combined margin emission factor of the applicable electricity system is determined using the procedures in the “Tool to calculate the emission factor for an electricity system” version 07.0 /16/.

The OM emission factor ($EF_{grid,OM,y}$) is calculated ex-post for the grid by applying the dispatch data analysis, based on public available data provided by the Brazilian DNA from 2023 /30/ =0.3785 tCO₂/MWh

The Built Margin (BM) emission factor ($EF_{grid,BM,y}$) is determined ex-post for the grid by the Brazilian DNA applying option 2: Brazilian interconnected system, calculated as 0.0467 tCO₂/MWh based on public available data from 2023 /30/.

The Combined Margin (CM) emission factor ($EF_{grid,CM,y}$), expressed in tCO_{2e}/MWh, is established as 0.2956 tCO₂/MWh for 2023 and calculated as per tool, considering the weighted average as: $CM = (0.75 * OM) + (0.25 * BM)$.

RINA verified that the grid emission factor applied on emissions reduction calculation spreadsheet /2/ is in accordance with data available by the Brazilian DNA /30/.

EG_{facility,y} is the net electricity generation supplied to the grid for the monitoring period 01-January-2023 to 31-December-2023, measured by electricity meters. RINA verified the energy measurements and cross-checked it against CCEE report downloaded during the audit /31/ the total energy for this monitoring period is 1,292,721 MWh. RINA verified that a conservative approach is considered by PP for the ERs calculation, considering the lowest data, in the case there is a difference between CCEE’s official data and energy meters’ readings.

Data source and the emission reductions calculations provided in the CERs calculation spreadsheet /2/ were verified and are considered accurate.

For the monitoring period from 01-January-2023 to 31-December-2023, the emission reduction calculations are based on the following parameters:

Data and parameters fixed ex ante

The parameter available at the validation stage, which do not need to monitor during the crediting period, as per the registered VCS PD&MR are:

- The percentage share of total installed capacity of the specific technology: RINA verified that the value of 10.4% applied is correct as described in the registered VCS PD&MR /12/

- The total installed capacity of the technology: RINA verified that the value of 12,537,943 MW applied is correct as described in the registered VCS PD&MR /12/

As per applied baseline and monitoring methodology the following monitored parameters are applicable to VTRM Renewable Energy:

Data and parameters monitored:

	Assessment/ Observation
Data / Parameter: (as in monitoring plan):	EG _{facility,y} - Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)
Source of data to be used:	Energy meters
Value(s) of monitored parameter:	01 Jan 2023 - 31 Dec 2023: 1,292,721
Measuring / Reading / Recording frequency:	Verified during the site visit that data is continuously monitored, and at least monthly recorded.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
Type of monitoring equipment:	Bidirectional electricity meters manufactured by Power logic, model ION 8650, accuracy class 0.2%. /22/ The energy meters verified during the audit /23/ are in line with the ones described in Monitoring report: • Main meter: MW-2103A656-02 • Backup meter: MW-1401A235-01
Calibration frequency /interval:	5 years, in accordance with ONS Grid Procedures (national requirement) /24/ /25/
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications (if local/national standards or the manufacturer's	The interval is in accordance with national law and requirements

specifications are not available, international standards may be used)?	
Is the calibration of measuring equipment carried out by an accredited person or institution?	The following calibrations certificates are applicable to the monitoring period /5/: • Main meter: MW-2103A656-02 - Calibration Certificate issued by 3C Laboratory, issued and calibrated on 06/05/2021. • Backup meter: MW-1401A235-01 - Calibration Certificate #CCR 132/21, issued by Lactec, dated 08/02/2021, calibration date 05/02/2021.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is(are) calibration(s) valid for the whole reporting period?	Yes, all calibrations certificates were provided and are in line verification period /5/
How were the values in the monitoring report verified? If applicable, has the reported data been cross-checked with other available data?	Data in the monitoring report was cross checked against data collected from the meters available and electricity reports provided by CCEE - Electricity Chamber Company (energy meters) readings download during the audit. It was made a comparison between data from the energy meters and data from CCEE and the lower values were conservatively applied /31/
Calculation method (if applicable).	N/A.

	Assessment/ Observation
Data / Parameter: (as in monitoring plan):	EF _{grid,CM,y} - Combined margin emission factor for the grid in year y
Source of data to be used:	Data is calculated by the Brazilian DNA, considering the requirements of the "Tool

	to calculate the emission factor for an electricity system”, version 07.0. The Combined Margin (CM) emission factor (EF_{grid,CM,y}), expressed in tCO₂e/MWh, is calculated as the weighted average (w_{OM} = 0.75 and w_{BM} = 0.25) of the dispatch data analysis Operating Margin (OM) and Build Margin (BM) from the Brazilian DNA. RINA verified that data from 2023 was correctly considered, in accordance with official data public available: The value of BM is 0.0467 tCO₂e/MWh and the value of OM is 0.3786 tCO₂e/MWh /30/.
Value(s) of monitored parameter:	0.2956 tCO ₂ /MWh
Measuring / Reading / Recording frequency:	N/A
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	N/A
Type of monitoring equipment:	N/A
Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer’s specifications (if local/national standards or the manufacturer’s specifications are not available, international standards may be used)?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	N/A

Is(are) calibration(s) valid for the whole reporting period?	N/A
How were the values in the monitoring report verified? If applicable, has the reported data been cross-checked with other available data?	N/A
Calculation method (if applicable).	N/A

RINA verified that the emission reduction spreadsheet /2/ reports all the monitored data in accordance with the evidences provided and no error is found. Methods and Formulaes are correctly presented in accordance with the methodology and registered VCS PD as detailed above. Data used to emission reduction calculation are from official sources and manually transferred to the GHG emission reduction spreadsheet. No transposition error was found.

It is RINA's opinion that the GHG emission reductions /2/ have been quantified correctly in accordance with the project description /12/ and applied methodology /13/ with reasonable level of assurance.

4.4 Quality of Evidence to Determine Reductions and Removals

RINA was able to confirm that the calculations are based on continuous and monthly recorded electricity generation records /2/ /31/. RINA verified the spreadsheet used to calculate the emission reduction and all figures were tracked, 100% check and found to be consistent.

The calibration periodicity was correctly followed in accordance with ONS requirements /24/ /25/: calibration should be conducted each 5 years.

The data presented in the monitoring report /01/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Verified during the audit, that the roles and responsibilities are in accordance with the registered PD.

It is RINA's opinion that the GHG emission reductions /2/ have been quantified correctly in accordance with the project description /12/ and applied methodology /13/ with reasonable level of assurance.

4.5 Non-Permanence Risk Analysis

Not applicable.

5 VERIFICATION OPINION

5.1 Verification Summary

RINA Services S.p.A. (RINA) has performed verification of the emission reductions reported for the project activity “01-January-2023 to 31-December-2023, with regard to the relevant requirements for VCS rules.

The GHG statement is the responsibility of the project proponent. It is the responsibility of RINA to express an independent verification opinion about the project’s conformity with the VCS requirements and procedures and on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by interviews RINA can confirm that:

- The project has been implemented and operated as per the registered VCS PD and validated project description deviations;
- The monitoring plan in the registered VCS-PD is as per the applied baseline and monitoring methodology.
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS requirements

5.2 Verification Conclusion

RINA concludes, with reasonable assurance, that the quantification of the net GHG emission reduction, during the verification period, is free of material misstatement and complies with the verification criteria. The GHG emission reductions were calculated correctly on the basis of the approved methodology ACM0002 (version 19.0) and the monitoring plan contained in the VCS monitoring report version 3 of 11-December -2024. In our opinion the GHG emissions reductions of the “VTRM Renewable Energy for the period 01-January-2023 to 31-December-2023 are fairly stated in the VCS monitoring report version 3 of 11-December -2024

RINA is able to issue a positive verification opinion for the 382,112 tCO₂e as reported in the monitoring report for the reporting period from 01-January-2023 to 31-December-2023

Verification period: From 01-January-2023 to 31-December-2023

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

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCUs (tCO ₂ e)	Removal VCUs (tCO ₂ e)	Total VCUs (tCO ₂ e)
01/01/2023 to 31/12/2023	382,112	0	0	382,112	0	382,112
Total	382,112	0	0	382,112	0	382,112

5.3 Ex-ante vs Ex-post ERR Comparison

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01/01/2023 to 31/12/2023	675,590 tCO ₂ e	382,112 tCO ₂ e	-43.4%	The emissions reductions verified were 43.4% lower than ex ante estimated due to the fact that the achieved $E_{g, facility, y}$ was 15.4% lower than estimated and the $EF_{grid, CM}$ of 2023 was 33% lower than estimated.
Total	675,590 tCO ₂ e	382,112 tCO ₂ e	-43.4%	

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

This section is not applicable.

<i>Section</i>	<i>Information</i>	<i>Justification</i>	<i>Assessment method and conclusion</i>

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER(s)	Certified Emission Reduction(s)
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
MR	Monitoring Report
PD	Project Description
PP(s)	Project Proponent(s)
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit
VER	Voluntary Emission Reductions
VVB	Validation and Validation Board
VVS	Validation and Validation Standard

APPENDIX 3: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUEST

Table 1. FAR from previous validation/ verification

<i>FAR ID</i>		<i>Section no.</i>		<i>Date:</i>
<i>Description of FAR</i>				
Not applicable				
<i>Project participant response</i>				<i>Date:</i>
<i>Documentation provided by project participant</i>				
<i>VVB assessment</i>				<i>Date:</i>

Table 2: CLARIFICATION REQUESTS

<i>CR ID</i>	1	<i>Section no.</i>	4.2.6.2	<i>Date:</i> 26/09/2024
<i>Description of CR</i>				
PP is requested to clarify the risks identified, also considering the requirements of the environmental licenses (stroboscopic effect; generation of waste). Also refer to CAR 3.				
<i>Project participant response</i>				<i>Date:</i> 08/10/2024
Sections 2.2.2 was revised in MR Version 02				
<i>Documentation provided by project participant</i>				
MR Version 02 Environmental Impact Assessment; Environmental Licenses.				
<i>VVB assessment</i>				<i>Date:</i> 18/11/2024
RINA verified that documents were correctly revised. This CR is closed.				

Table 3: CORRECTIVE ACTIONS

<i>CAR ID</i>	1	<i>Section no.</i>	1.4	<i>Date:</i> 26/09/2024
<i>Description of CAR</i>				
PP is requested to clarify the difference found in the description of installed capacity of Ventos de São Virgílio III in the PD and ANEEL documents/environmental license. Moreover, PP is requested to clarify the installed capacity of each wind farm considering equipments installed and definitions of ACM0002.				
<i>Project participant response</i>				<i>Date:</i> 12/11/2024

According to ACM0002 methodology, version 19.0, the installed capacity of a power plant “is the capacity, expressed in Watts or one of its multiples, for which the power unit has been designed to operate at nominal conditions. **The installed power generation capacity of a power plant is the sum of the installed power generation capacities of its power units.**”

The installed capacity of each plant, including Ventos de São Virgílio III, is obtained by the number of wind power turbines and nominal installed capacity of each wind power turbine. For all wind power plants of the project, including Ventos de São Virgílio III, the sum of the installed power generation capacities of its power units are as described in VCS PD and Monitoring Report.

For Ventos de São Virgílio III, pictures for all wind power turbines were evidence to prove the installed capacity of the plant. The difference between the information supplied in the PD/MR and ANEEL documents/environmental licenses relies on the fact that in the ONS Opinion about the Permanent Access to the Grid (page 7 /table 1), the installed capacity for electricity generation of this plant was limited to 19.8MW, which was the value expressed in the environmental license for Ventos de São Virgílio III.

Therefore, the Installed Capacity of each wind power plant (WPP) are as presented below:

Ventos de Santo Augusto I WPP – 18.4 MW

Ventos de Santo Augusto II WPP – 27.6 MW

Ventos de Santo Augusto VI WPP – 29.9 MW

Ventos de Santo Augusto VII WPP – 18.4 MW

Ventos de Santo Augusto VIII WPP – 18.4 MW

Ventos de Santo Onofre IV WPP – 27.6 MW

Ventos de Santo Estevão I WPP – 25.3 MW

Ventos de Santo Estevão II WPP – 25.3 MW

Ventos de Santo Estevão III WPP – 29.9 MW

Ventos de Santo Estevão IV WPP – 29.9 MW

Ventos de Santo Estevão V WPP – 27.6 MW

Ventos de São Virgílio I WPP – 29.9 MW

Ventos de São Virgílio II WPP – 29.9 MW

Ventos de São Virgílio III WPP – 20.7 MW

Documentation provided by project participant

Ventos de Santo Augusto I WPP Operational License D000661/21

Ventos de Santo Augusto II WPP Operational License D000204/22

Ventos de Santo Augusto VI WPP Operational License D000665/21

Ventos de Santo Augusto VII WPP Operational License D000208/22

Ventos de Santo Augusto VIII WPP Operational License D000203/22 Ventos de Santo Onofre IV WPP Operational License D000205/22 Ventos de Santo Estevão I WPP Operational License 5.22.06.002712-9 Ventos de Santo Estevão II WPP Operational License 05.22.06.002711-2 Ventos de Santo Estevão III WPP Operational License 05.22.06.002710-5 Ventos de Santo Estevão IV WPP Operational License 05.22.06.002709-9 Ventos de Santo Estevão V WPP Operational License 05.22.06.002749-5 Ventos de São Virgílio I WPP Operational License D000202/22 Ventos de São Virgílio II WPP Operational License D000209/22 Ventos de São Virgílio III WPP Operational License D000207/22 Pictures of the nameplate capacity of wind power turbine generators for all wind power plants ONS Opinion about the Permanent Access to the Grid (page 7 /table 1)	
VVB assessment	Date: 18/11/2024
<i>RINA verified that the installed capacities described in the MR are in accordance with project equipments' and registered PDD. For São Virgílio III, capacity was defined as per the equipments and ANEEL/licenses describes the limited capacity.</i> <i>This CAR is closed</i>	

CAR ID	2	Section no.	4.1	Date: 26/09/2024
Description of CAR				
As per the VCS standard, para. 3.17.1 <i>The project proponent shall demonstrate that a project contributes to at least three SDGs by the end of the first monitoring period, and in each subsequent monitoring period.</i> However, the monitoring report describes the contribution to two SDGs (4c - number of teachers awarded with initiatives to improve public education and 13.0 - Tonnes of greenhouse gas emissions avoided or removed). Moreover, PP is requested to confirm the evidence/source of information used for the numbers presented for the current monitoring period in the section 1.12 (SDGs) of the MR.				
Project participant response				Date: 08/10/2024
Section 1.12 was revised. A contribution to a new SDG was added to the MR version 02. Evidence and sources of information of information used for the numbers presented for the current monitoring period in the section 1.12 (SDGs) were supplied to VVB.				
Documentation provided by project participant				
- Evidence for "Number of teachers awarded with initiatives to improve public education" (SDG 4Cc): Files "1. Governança 2023 Projetos IV. Instruction: Page 4, tables "GESC e GEDU", to sum Araripina and Simões. - Evidence for "% of students hired after technical training": Files "1. E-mail ETE - Número de Formados; 2. Atestado ETA Alunos Programa de Estágio Auren Energia. Instructions: It is necessary to adjust OBS: necessário ajustar o dado para "4" estagiários oriundos da ETE (o outro estagiário contratado é oriundo de curso do Senai).				

VVB assessment	Date: 18/11/2024
RINA verified the revised MR and evidences provided.	
This CAR is closed.	

CAR ID	3	Section no.	4.2.6.2	Date: 26/09/2024
Description of CAR				
PP did not complete the MR, as per the MR guidelines, sections 2.2.2; 2.3.1; where no risk is identified, write "No risk identified" in the first column, and provide justification in the second column.				
Project participant response				Date: 08/10/2024
Sections 2.2.2 and 2.3.1 were revised and corrected in MR Version 02.				
Documentation provided by project participant				
MR Version 02 Environmental Impact Assessment; Environmental Licenses.				
VVB assessment				Date: 18/11/2024
RINA verified that documents were revised in accordance with the instructions.				
This CAR is closed.				

Table 1. FAR from current verification

FAR ID		Section no.		Date:
Description of FAR				
Not applicable				
Project participant response				Date:
Documentation provided by project participant				
VVB assessment				Date:

APPENDIX 4: COMPETANCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS



CERTIFICATO DI QUALIFICA PER GLI SCHEMI VOLONTARI* QUALIFICATION CERTIFICATE FOR VOLUNTARY SCHEMES*

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Thais De Lima Carvalho

è qualificato come:
is qualified as:

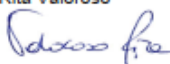
TEC, VAL, VER, TL, ITRP

per le seguenti aree tecniche:
for the following technical areas:

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.1	Thermal energy generation	1
1.2	Renewables	1
2.1	Electricity distribution	2
13.1	Solid waste and wastewater	13

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	19/07/2016	First issue with new template (this certificate is linked to CDM qualification)

Responsabile di schema
Scheme Leader
Rita Valoroso



*SCHEMI VOLONTARI/ VOLUNTARY SCHEMES: ACR American Carbon Registry, CCB The Climate, Community & Biodiversity Alliance, GS Gold Standard, JI Joint Implementation, SCS Social Carbon Standard, VCS Verified Carbon Standard.

TEC: Technical expert; VAL: Validator; VER: Verifier; TL: Team leader; FIN EXP: Financial Expert; ITRP: Independent technical reviewer

RINA Services S.p.A. è accreditato/riconosciuto da

RINA Services S.p.A. is accredited /recognized by

UNFCCC	quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects
VCSA	per condurre la Validazione e la Verifica di Progetti VCS to carry out Validation and Verification of VCS Projects
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS to carry out Validation and Verification of GS Projects
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS to carry out Validation and Verification of SCS Reports
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR to carry out Validation and Verification of ACR projects
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB to carry out Validation and Verification of co-benefit CCB projects



CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig.:
We declare that Mr:

Mehmet ERDOGAN

è qualificato come¹:
is qualified as:

TL – VAL⁴ – VER – TEC – REG-EXP³ – ITR

nello schema²:
for the scheme:

VCS – CCB – GS4GG

per le seguenti aree tecniche:
for the following technical areas:

1.1 – 1.2 – 9.2 – 13.1 – 13.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.1	Thermal energy generation	1
1.2	Renewables	1
3.1	Energy demand	3
9.2	Iron, steel and Ferro-alloy production	9
13.1	Waste handling and disposal	13
13.2	Manure	13

in accordo alle istruzioni dell'Unità responsabile (OU) per sostenibilità & cambiamenti climatici.
in accordance with the instructions of the responsible unit (OU) for the sustainability & climate change.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	24.03.2023	First Issue
1	12/04/2023	GS4GG extension
2	24/07/2023	GS4GG VAL extension
3	10/12/2023	TEC SS3 extension
4	31/01/2024	ITR extension

Il Responsabile di schema
Scheme Manager



¹
VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
REG-EXP: Regional Expert
ITR: Independent Reviewer
DET: Determiner

²
CDM: Clean Development Mechanism
VCS: Verified Carbon Standard
GS4GG: Gold Standard for Global Goals
SCS: SocialCarbon Standard
JI: Joint Implementation
ISO14064-2: International standard 14064 part 2
UER: Upstream Emission Reduction
CCB: The Climate, Community & Biodiversity Alliance

³ Turkey

⁴ For GS4GG only

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE) per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS.

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE) to carry out Validation and Verification of CDM Projects, by the VCSA to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS4GG Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports.

GHG_QUAL_CERT_EN(06-2021)

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