



**Verified Carbon
Standard**

CUMARE CARBON PROJECT

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Summary:

The Cumare Carbon Project aims to promote investments in afforestation activity in the department of Meta and Vichada in Colombia. This project is based on the transition from extensive livestock production system to sustainable forest plantations, based on best forestry practices to obtain timber products and to capture large amounts of carbon dioxide from the atmosphere. This grouped project is based on 10-year to 20-year rotation of *Eucalyptus pellita*, *Eucalyptus urograndis* and *Eucalyptus urophylla* plantations; and 15-16 year rotation for *Pinus caribaea* plantations. The project area for the validated and verified first instance corresponds to the property El Porvenir (total planted area since project start date is 5,526.6 ha), previously under extensive grazing by beef cattle. A second instance, Caricare, will be added to carbon accounting area from 2022 onwards (10,536.6 ha of plantations established until 2025 between El Porvenir and Caricare). Both instances are placed in San Martin municipality (Department of Meta). Reforestadora Cumare S.A.S. is the owner of the two instances, and Campo Forestal S.A.S. is the forest management operator. In addition to the properties of Reforestadora Cumare S.A.S., other instances may be included in the future.

The purpose of the validation and verification was the independent evaluation of the project's compliance with the VCS Standard v4.2 and the assessment of the ex-post monitored anthropogenic GHG removals that have occurred as a result of the project's activities. The process was performed through a combination of document revision, remote interviews with relevant personnel and remote inspections.

During the validation and verification 18 CARs and 8 CLs were reported. All these issues were appropriately closed by means of corrections, more clear explanations and other supported documents. Two FARs were raised for the next verification event.

AENOR carried out a final validation report and deems with reasonable level of assurance that the project complies with all of the validation criteria for VCS. The assessment team has no restrictions or uncertainties with respect to the compliance of the project with the validation criteria. Hence, the audit team concludes that the GHG removals for the lands included in the project boundary have been quantified in accordance with VCS rules. AENOR can confirm that the estimated gross GHG removals are 2,918,000 tCO₂e (ex ante long term average) for the whole crediting period (100 years, from 1 November 2016 to 1 November 2116), with an annual average of 29,180 tCO₂e and 2,318,517 tCO₂e as ex post long term average. The estimated gross GHG removals for the monitoring period (1 November 2016 to 25 November 2020) are 503,404 tCO₂e; of which 453,064 tCO₂e correspond to VCU considering a 10% non-permanence risk deduction. AENOR considers these estimations are accurate and free of material errors.

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1 INTRODUCTION

1.1 Objective

The purpose of the validation and verification audit activity was to conduct an independent assessment of the project in order to determine whether the project complies with the validation and verification criteria as set out in the guidance documents listed in Section 1.2 of this report, including the monitoring procedures; and that the GHG removals reported in the monitoring report are materially accurate.

1.2 Scope and Criteria

The scope of the validation and verification audit is to validate and verify the GHG removals of the proposed project in Colombia against the Verified Carbon Standard, the identified methodology and associated tools and modules, for the crediting period from 1 November 2016 to 1 November 2116; and the first monitoring period from 1 November 2016 to 25 November 2020.

The objectives of this audit included a validation of the projects estimated ex ante removals and the verification of the ex post achieved removals with the Verified Carbon Standard requirements and any additional requirements of VCS AFOLU projects, besides the assessment of the additionality and the non-permanence risk assessment report.

The scope was defined as follows:

- The project and its baseline scenarios.
- The physical infrastructure, activities, technologies and processes of the project.
- The GHG sources, sinks and/or reservoirs those are applicable to the project.
- The types of GHGs applicable to the project.
- The project crediting period.
- The project first monitoring period.

In accordance with Section 4.1.8 of the VCS Standard, the criterion for validation and verification was the VCS Version 4, including the following documents:

- VCS Standard v4.2 issued 20 January 2022
- VCS Program Guide v4.1 issued 20 January 2022
- Program Definitions v4.1 issued 20 January 2022
- AFOLU Non-Permanence Risk Tool v4.0 issued 19 September 2019

Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS documents.

1.3 Level of Assurance

The assessment was conducted to provide a reasonable level of assurance of conformance against the defined audit criteria and materiality thresholds within the audit scope. Based on the audit findings, a positive evaluation statement reasonably assures that the project GHG assertions are materially correct and is a fair representation of the GHG data and information.

All the versions of the validation and verification report were subjected to an independent internal technical review before being submitted to the client to confirm that all validation and verification activities had been completed according to the pertinent AENOR instructions required. The technical review was performed by a technical reviewer qualified in accordance with AENOR's qualification scheme for VCS validation and verification.

Name	Role in the Team
Carlos Jiménez	Lead auditor
Juan Carlos Gómez	Technical reviewer

Carlos Jimenez is a Forestry Engineer and holds Master in Rural Development. He has 10 years of experience in natural resources management and sustainable development. His experience covers working with public and private sector, as well as civil society organizations; with focus in forest risk commodities, community-based development projects, and consultancy on ecosystem services. Since 2016 he works as an auditor of sustainable forest management (FSC) and forest carbon certification schemes (VCS, CCB) in Latin America and Asia.

Juan Carlos Gómez has more than 7 years of professional experience in climate change. He is a Forestry Engineer and holds Master in Sustainable Development and Corporate Responsibility. He has developed his entire career in the field of climate change. He is an expert in the development of climate change mitigation and adaptation policies and has worked in LATAM countries and Africa, auditing REDD+ under VCS and CCB, and forestry projects under the CDM and JI.

1.4 Summary Description of the Project

The Cumare Carbon Project aims to promote investments in afforestation activity in the department of Meta and Vichada in Colombia. This project is based on the transition from extensive livestock production system to sustainable forest plantations, based on best forestry practices to obtain timber products and to capture large amounts of carbon dioxide from the atmosphere.

This grouped project is based on 10-year to 20-year rotation of *Eucalyptus pellita*, *Eucalyptus urograndis* and *Eucalyptus urophylla* plantations; and 15-16 year rotation for *Pinus caribaea* plantations.

The project area for the first instance corresponds to the property El Porvenir (total area is 5,526.6 ha), previously under extensive grazing by beef cattle; and a second instance, Caricare (8.069.0 ha), not yet validated, will be added to carbon accounting area from 2022 onwards. Both instances are placed in San Martin municipality (Department of Meta).

Reforestadora Cumare S.A.S. is the owner of the two instances, and Campo Forestal S.A.S. is the forest management operator in this two first instances. Forest management in both instances is FSC (Forest Stewardship Council) certified, which guarantees compliance with environmental and social safeguards, in addition to compliance with the forest management plan. Being a grouped project, in addition to Reforestadora Cumare S.A.S.' properties, other instances may be included in the future.

Forests will be replanted after clear-cut harvest when the seedling genetic material compensates the cost of soil preparation and plantation. Monitoring covers carbon stock changes for living above-ground tree biomass; below ground biomass is estimated indirectly based on above-ground biomass measurements; litter, dead wood and soil organic carbon pools is estimated based on conservative default factors from the methodological tool. Non-tree vegetation and harvested wood products will not be accounted as per the methodology applied.

The baseline study determined that continuation of extensive grazing was the most likely use of the land in the Department. Additionality analysis showed that afforestation in the area of the proposed grouped project is not likely to occur without carbon financing.

The estimated gross GHG removals are 2,918,000 tCO₂e (defined by the ex ante long term average) for the whole crediting period (100 years, from 1 November 2016 to 1 November 2116), with an annual average of 29,180 tCO₂e and 2,318,517 tCO₂e as ex post long term average. The estimated gross GHG removals for the monitoring period (1 November 2016 to 25 November 2020) are 503,404 tCO₂e; of which 453,064 tCO₂e correspond to VCUs considering a 10% non-permanence risk deduction.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The validation and verification was performed through a combination of document review, interviews with relevant project personnel and stakeholders and remote inspections, as discussed in Sections 2.2 through 2.4 of this report. At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5, findings were issued to ensure that the project was in full conformance to all requirements.

A project specific sampling plan was developed to guide the validation and verification auditing process to ensure efficiency and effectiveness. The purpose of the sampling plan was to present a risk

assessment for determining the nature and extent of the validation and verification procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The validation and verification sampling plan methodology was derived from all items in our auditing process stated above. Specifically, the sampling plan utilized the VCS guidance documents and ISO 14064-3.

Based on these analyses and considering the requirements of the GHG program used, the sampling plan considered the following topics:

- Project proponent, developers/management team, local team onsite.
- Baseline scenario
- Project activities conducted during the monitoring period (reporting, results, concordance with plan as per PD, etc.)
- Monitoring procedures. Monitoring team and equipment
- Review of operation and measurement records. Controls established to detect and correct any error or omission in monitoring parameters.
- Carbon calculations. Estimates and assumptions for determining GHG data. Remote sensing.
- Project rights and legal requirements.
- Financial issues, Financial sustainability.
- Stakeholders consultation process
- Project conflicts, barriers, or difficulties.
- Project Communication & Grievance Mechanism
- Benefit permanence (mid and long term) and non-permanence risks.
- Eligibility conditions and compliance of validated instances.

The sample methods assessed the project components that match with key characteristics in the entire documentation to be examined and the requirements of the VCS. In addition, sampling was designed to yield insights and observation that closely align with the real context onsite, the current project status and its alignment with the validated project documentation. The sampling included to check the quantity and type of evidence below:

- To carefully review the Monitoring Report and supporting documentation for conformance to the verification criteria and consistency with the Project Description.
- To examine the baseline data gathered from the determined baseline for Project's region, spreadsheets used to enter, and compile information required by the methodology.
- To reproduce 100% of sheets in the MR and the other spreadsheets for the monitoring period for the project area crosschecking with used methodology requirements (AR-ACM0003 v2.0).

- To reproduce the GHG emissions reductions calculations presented in the spreadsheet and crosscheck with the Monitoring Report.
- To check 100% the project boundary and land cover changes in the project area for the monitoring period using the GIS database.
- Verify 100% and crosschecked with validated values the carbon stock changes, and the land used classes in the project area.
- To carefully review the NPRR and supporting documentation for conformance to the verification criteria and consistency with the Project Description.
- 100% verify Non-Permanent Risk Report results using the NPRR tool and considering the standard requirements and validated Project Description.

Any modifications applied to the validation and verification sampling plan were made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

The validation activities in which risks were assessed were the evaluations of the applicability, baseline scenario, additionality, leakage, non-permanence risk analysis, monitoring system, safeguards, etc.

The verification activities in which risks were assessed were the evaluations of the monitoring system (data flow, data control procedures, etc.) but mainly the quality of raw data as well as sources and the spreadsheet calculations. AENOR reproduced and verified 100% of sheets in the 'Carbon stocks - VCS Grouped project 10122021' for the crediting period (1 November 2016 to 1 November 2116) and the monitoring period 01-November-2016 to 25-November-2020. The project boundaries for the monitoring period were 100% checked using the GIS database.

The carbon stock changes, and the land used classes in the project area were also 100% verified and crosschecked with validated values. For data provided for the reference region, AENOR requested onsite samples of data.

AENOR carried out a deep and meticulous review of the spreadsheets in order to verify the correct application of the methodology (formulae, equations, etc.) and checked that data required calculating the GHG removals were appropriately provided. Based on the assessment carried out, AENOR confirms with a reasonable level of assurance that the claimed removals are free from material errors, omissions, or misstatements.

AENOR confirms that sufficient evidence was presented for the reported net anthropogenic GHG removals and that there is a clear audit trail that contains the evidence and records that validate the stated figure in this validation and verification report since:

- Sufficient evidence available: The project participant has provided the 100% of data used in the calculations to achieve the final amount of GHG removals reported.

- Nature of evidence: The raw data were collected from reliable sources. They are detailed in the project documents and have been provided to the audit team and were checked during the interviews.
- Cross-checked evidence: AENOR cross-checked the collected information through interviews with stakeholders and reproducing calculations.

Hence, AENOR confirms that the stated figures in joint Project Description and Monitoring Report are correct and confirms that is able to certify net anthropogenic GHG removals based on verifiable and reliable evidence.

2.2 Document Review

The Joint Project Description and Monitoring Report submitted by the Project Proponent (PP) was reviewed against the approved methodology and against VCS requirements. Additional background documents related to the project design, baseline, ownership, project start date and additionality were also made available before and during the remote visit, along with the non-permanence risk report. Other documents reviewed included data from monitoring, carbon rights contracts, management agreements, maps and aerial images, monitoring and grievance SOPs, biomass and carbon calculation spread sheets, etc. All documents were provided digitally to the audit team.

To address the corrective actions and clarification requests that arose from the desk review and remote visit, the PP revised the project PD/MR version 1 (dated on 28 June 2021) and developed a final version 6 dated on 26 January 2022.

For a listing of all documents received from the PP for this verification, please see Appendix I.

2.3 Interviews

The AENOR validation and verification team conducted interviews with project proponents and consultants to confirm selected information and to resolve issues identified in the document review. The list of the interviewed people is below detailed.

Name	Title/Organization/Community
Paula Sánchez	General manager
Manuel Amigo	Director of operations
Agustin Inthamoussu	CAIA Ingeniería S.A.S. / CLIMIT (consulting groups for project structuring)
Ignacio Muñoz	CAIA Ingeniería S.A.S. / CLIMIT (consulting groups for project structuring)
Fabián Herrera	Planning manager
José Luis Baquero	Manager of operations

Germán Schaub	Environmental management advisor
Sonia Garzón	Administrative and Financial Manager
Valerie Viquerat	Director of compliance and contractual matters
Graciano Camargo	Operations Central Manager

Due to the COVID-19 pandemic situation, all interviews were carried out through videoconference, as explained in Section 2.5. The interviews were carried from July 28th June to 9th July, 2021.

2.4 Site Inspections

The objectives of the inspections performed were mainly to cross check the description provided in the joint PD/MR related to the environmental and social conditions of the project area, but also:

- Ensure that the geographic area of the project, as reported in the PD and the accompanying KML file, is in conformance with Section 3.10.1 of the VCS Standard.
- Perform a risk-based review of the project area to ensure that the project conforms to all other requirements of the VCS rules and the methodology.
- Observe the PP's evidence and collect and record data in order to assess whether data collection techniques conform to the monitoring plan and related documentation and to evaluate data quality control systems.
- Select samples of data and information for validation and verification in order to meet a reasonable level of assurance and to meet the materiality requirements of the project, as required by Section 4.1.2 of the VCS Standard.
- Perform a risk-based review of the project area to ensure that the project is in conformance the eligibility requirements of the VCS rules and the applicability conditions of the methodology.
- Assess the implementation of the project activities reported.

However, due to the exceptional situation caused by the COVID-19 crisis and the travel restrictions established by governments for safety reasons, it was not possible to carry out an onsite visit as part of the validation and verification process.

In accordance with Verra's COVID-19 Travel Guidance for Projects (dated 18 March 2020), a remote audit was carried out considering that a reasonable level of assurance was achievable by other means to comply with the objectives listed above. This exemption refers to Verra guidance on site visits for VVBs, specifically from Sections 3.2.6 (recommendations on site visits), 3.4 and 5.1 (guidance as it relates to in-person interviews) of the VCS Validation and Verification Manual v3.2. While VCS rules do not explicitly require that VVBs conduct a site visit, or in-person interviews, Section 4.1.2 of the VCS Standard, v4.2 does require that validation and/or verification be conducted to a reasonable level of assurance.

The remote audit was based on the following auditing techniques:

- Document review and cross checks between the information provided in the in the PD and supporting information and evidence provided by the project proponent (PP), removals calculations, GIS database, and supporting information and evidence provided.
- Review, based on the selected methodologies, tools and the other applied methodological regulatory documents, of the appropriateness of formulae and accuracy of calculations.
- Telephone and teleconference calls, testimonial videos and supporting letters related to the implementation of project activities and the elaboration of project's documents.

2.5 Resolution of Findings

All documentation provided by the PP was assessed against the applicable version of the relevant VCS guidance document. Several clarification requests (CL) and corrective action requests (CAR) were raised and submitted to the PP, which addressed them either by providing to the audit team the requested information or by making the appropriate corrections. Updated versions of the documentation were submitted by the PP and the audit team reassessed them against the guidance documentation. This process was repeated iteratively until all CARs and CLs were fully closed. Specifically, 18 CARs and 8 CLs were raised for the joint validation and verification process.

All findings issued by the AENOR audit team during the verification process were closed. In accordance with Section 4.1.13 and 4.1.14 of the VCS Standard, all findings issued during the validation and verification process, and the inputs for their closure, are described in Appendix II of this report.

2.5.1 Forward Action Requests

Two FARs were raised for the next verification event:

FAR 01. The validation and first verification was carried out exclusively for the first instance (El Porvenir farm). As of 2022, the PP intends to add Caricare farm to the group as a second instance. This last farm will have to be previously validated for the subsequent or simultaneous verification for the issuance of its VCUs, given that only the El Porvenir farm has been included in this current validation. Therefore, the PP must provide the necessary information to the VVB for this purpose.

FAR 02: Next VCS verification requires the VVB to include an onsite inspection as part the process.

3 VALIDATION FINDINGS

3.1 Project Details

3.1.1 Project type, technologies and measures implemented, and eligibility of the project

The project is classified under sectoral scope 14 “Agriculture, Forestry and Land Use (AFOLU)”. As described in Section A1.1 of the VCS Standard, the project is eligible under the category of Afforestation, Reforestation, and Revegetation (ARR).

This is a grouped project that seeks to obtain timber products for commercialization and to capture large amounts of carbon dioxide from the atmosphere in Meta and Vichada departments on previously cattle ranching grasslands and degraded pastures.

Section 1.3 of the PD/MR indicates the process followed, through various means, to demonstrate the absence forest loss or conversion of native ecosystem in the 10 years prior to the start date of the project in the first instance: grassland areas for livestock (which make up the vast majority of the property) and the remnants of native forest around the watercourses were maintained for at least 10 years prior to the project start date. This according to the sources presented in section 1.3 of the PD/MR, which are considered as reliable, realistic and applicable by AENOR.

Land use during the 10 years previous to start date corresponds to degraded grasslands (due to cattle ranching and induced fires for cattle ranching) enriched with non-native species for livestock. This is confirmed in the report **"INFORME DE EVALUACION FÍSICA FINCA EL PORVENIR, 2013"**, technical document developed by Campo Forestal S.A.S. prior to the purchase of the fields to know the conditions and the aptitudes to carry out a forestry project. The species reported are *Brachiaria humidicola*, *Brachiaria dictyoneura* and *Brachiaria decumbens*, which are originally from equatorial Africa, with adaptability in tropical and subtropical regions and were previously introduced in the region to enrich pastures for livestock. The non-native origin of these species was verified by AENOR through various documentary sources, in addition to general compendiums on pastures, others particularly focused on cattle pastures in the eastern plains of Colombia^{1,2,3}. Due to the persistence of this type of grass, patches can still be found inside the plantation, as shown in the photographs of the document **'Identification of introduced grasses Inmueble El Porvenir, San Martín, Meta, Colombia'**, which documents the inventory of species prior to the establishment of the plantation. Said inventory of grazing species was carried out in August 2013 by a nationally accredited livestock veterinarian, whose official certificate was presented (document **'JC Morón El Porvenir Certification'**). Lastly, the document **'Material delivery of the cattle to Cialta'** contains proof of the transfer of the cattle (among other material goods) between the buyer (PP) and the seller in August 2013 (date of the sale, prior to the project start date), which again proves the previous cattle-ranching origin of the land.

1 Revista Contexto ganadero (18 de diciembre de 2020). Clave de las principales plantas de sabana de la altillanura de los Llanos Orientales en Carimagua, Meta, Colombia. Cali: CIAT-Universidad Nacional de Colombia.

2 Álvaro Rincón, Hernando Flórez, Hugo Ballesteros, Leandro M. León. Efectos de la fertilización en la productividad de una pastura de *Brachiaria humidicola* cv. Llanero en el Piedemonte de los Llanos Orientales de Colombia.

3 Lascano, C., et al. (2002). Pasto Toledo (*Brachiaria brizantha* CIAT 26110): gramínea de crecimiento vigoroso para intensificar la ganadería colombiana.

Therefore, in opinion of AENOR it was shown that forest plantations are established on intensively modified ecosystems of non-native pastures degraded by cattle ranching and periodic burns for renewal since the early 1960s, not in native ecosystems, through the clear evidences above mentioned and provided during the validation.

3.1.2 Project design

The project is design as a single activity (reforestation) grouped project. The project has started a single instance (El Porvenir farm) and from 2022 the Caricare farm will be incorporated as second instance (not validated in this current process, as indicated as FAR-01 in 2.5 Resolution of findings section of this report). Both instances are placed in San Martin municipality (Department of Meta) and owned by Reforestadora Cumare S.A.S. In addition to Reforestadora Cumare S.A.S.' two properties, other instances may be included in the future.

The PP has set the following eligibility of the new project activity instances:

1. Meet the applicability conditions set out in the methodology (AR-ACM0003, version 02.0) applied to the project.
2. The instance must comply with the conditions of eligibility, additionality and baseline scenario of the grouped project.
3. Demonstrate that there has not been any forest neither conversion of native ecosystem in the last 10 years since the beginning of the reforestation activities.
4. Systems implemented comply with the national definition of planted forest (definition of commercial plantations according to the Ministry of Agriculture and Rural Development of Colombia) and have a commercial purpose, a short rotation length and the timber produced is delivered to the market.
5. The areas eligible for forest plantations must be located in the departments of Meta and Vichada but not fall into the category of wetlands

The audit team considers that these eligibility criteria comply with VCS requirement, specifically with Sections 3.5.15 of the VCS Standard. Furthermore, the audit team confirms that the first instance of the project complied with the set eligibility criteria.

3.1.3 Project proponent and other entities involved in the project

The project is proposed by Reforestadora Cumare S.A.S., owner of the first two instances. The other entities involved in the project are Campo Forestal S.A.S., as forest management plan operator, and CAIA Ingeniería S.A.S. and CLIMIT, consulting firms who assist in VCS project structuring.

The audit team finds that contact and entity information provided in the joint PD/MR conforms to the VCS requirements.

3.1.4 Ownership

Project ownership belongs to Reforestadora Cumare S.A.S., in line with the Section 3.6.1.4 of the VCS Standard, a Colombian company identified with NIT No. 900,614,469-0 and commercial registration No. 02318894, according to the certificate of existence and legal representation issued by the Chamber of Commerce of Bogotá. Reforestadora Cumare S.A.S. is the owner of El Porvenir farm, the first instance.

The audit team checked the certificate of existence and legal representation of Reforestadora Cumare S.A.S.; and the deed of sale, ICA registry of current forest plantations and the real estate registration of the El Porvenir instance. AENOR finds that the PP's project ownership is unconditional, undisputed and unencumbered, in accordance with VCS requirements.

3.1.5 Project start date

The project start date of an AFOLU project is the date on which activities that led to the generation of GHG emission reductions or removals are implemented. The project start date is 1 November 2016, when the first plantations in the farm of El Porvenir (the first instance) were established leading to the generation of GHG emission removals.

AENOR checked with the submitted records (2016 Campo Forestal S.A.S.' silvicultural report, bills of payments to contractors for the plantation establishment during October 2016 and right before 1 November 2016, etc.) that established date is appropriate and consistent.

Then, in opinion of AENOR it is considered reasonable and correct based on the VCS requirements for start date established in Section 3.7 of the VCS Standard.

3.1.6 Project crediting period

The crediting period of the grouped project is 100 years-long, from 1 November 2016 to 1 November 2116.

According to Section 3.8.3 of the VCS Standard, the crediting period of AFOLU projects will have a minimum of 20 years and a maximum of 100 years. Therefore, the project activity is in line with the length of the crediting period.

In this regard, AENOR can confirm that PP have developed credible and robust plan for managing and implementing the project over the crediting period in compliance with Section 3.8.4 of the VCS Standard.

3.1.7 Project scale and estimated GHG emission reductions or removals

The project is classified as "project" according its scale (less than or equal to 300,000 tonnes of CO₂e per year), since it will remove an average of 29,180 tCO₂e per year during the 100 years of crediting period. The ex ante estimate considers a single instance initially and two instances from 2022, when the Caricare farm will join the group (for which it will have to be validated later).

3.1.8 Project location

The project currently contemplates two instances: El Porvenir farm for the first monitoring period (up to 5,526.6 ha of plantations) and the Caricare farm –not yet validated in the current process-, which will be incorporated into the monitoring from 2022 (10,536.6 ha of plantations established until 2025 between El Porvenir and Caricare). Both instances are placed in San Martin municipality (Department of Meta) and owned by Reforestadora Cumare S.A.S. In addition to Reforestadora Cumare S.A.S.’ two properties, other instances may be included in the future.

The location of the project area of the first instance has been presented in GIS and KML files. The coordinates of project area have been provided. During the remote inspection, AENOR verified the location of the project activity.

3.1.9 Conditions prior to project initiation

Regarding conditions prior to the project initiation, the PD and MR describes in a complete way the climate, hydrology, topography, relevant historic conditions, soils, vegetation and ecosystems for the areas involved in the project. During the remote visit, AENOR verified through documentary evidences that project is being implemented in degraded grassland previously used for cattle ranching and with no forest cover, and that there has not been any forest neither conversion of native ecosystem in the last 10 years since the beginning of the afforestation activity. On the other hand, AENOR validated (though documents such as land use defined in the contract of sale, document of delivery of livestock to third parties, deeds of former owner, etc.; complemented with interviews with manager and land owner) that the project was not implemented to generate GHG emissions for the purpose of their subsequent removal (reduction or destruction credits are not claimed), since the PP provided evidences that show that the baseline scenario was properly identified and was not intentionally created.

3.1.10 Project compliance with applicable laws, statutes and other regulatory frameworks

Section 1.14 of the PD and MR provides information related the compliance with the applicable laws, statues and other regulatory frameworks. The main and relevant Laws are detailed, and its enforcement analyzed in the PD and MR. According to the information provided and assessed during the remote interviews and document revision, the project fulfills with laws mentioned in the PD and MR as it could be verified during site visit. Thus, AENOR deems that project complies with applicable laws, statues, and other regulatory frameworks.

3.1.11 Participation under other GHG programs

The project only pursues registration under the VCS program. According to the national RENARE program (RENARE is the National Registry for the Reduction of Greenhouse Gas Emissions), it doesn’t present any overlap with any other initiative in the territory.

AENOR confirms that the project has not been registered nor is seeking registration under other GHG program, nor has it been rejected by other GHG program.

3.1.12 Other forms of credit

The removals achieved by this project will be utilized to compliance goals in a regional and national ambit under the regulation and quantification of the RENARE; however it does not have a binding limit on GHG emissions. The regional or local entities haven't established a compliance program or a limit in the carbon commerce system, other than the limits established by the NREF Colombia in 2019.

Based on the Article 43 of the 1447 Resolution of 2018, it is defined that the project is not a product of environmental licenses compensation, concessions or requests for forest wood usage or requests for national/regional forest reservation subtraction; just like it is not a product of preservation or restoration activities in strategic areas and ecosystems related to Pay for Environmental Services of Reduction and Capture of Greenhouse Gases.

The project has not sought or received other forms of environmental credit.

3.1.13 Additional information relevant to the project

Leakage management for AFOLU projects:

The project does not displace pre-project agricultural or cattle ranching activities. Thus, neither a leakage management plan nor leakage mitigation measures are required.

Commercially sensitive information:

No commercially sensitive information has been excluded from the public version of the PD and MR.

Sustainable development contributions:

The project is designed to contribute to Colombia SDGs, specifically by promoting employment, productivity and competitiveness and ensuring sustainable and transparent management of natural resources and environment.

In terms of UN SDG, the project contributes to SDG 8: Decent work and economic growth, SDG 12: Ensure sustainable consumption and production patterns, SDG 13: Climate Action and SDG 15: Life on Land.

AENOR assessed the sustainable contributions to the sustainable development through the review of the project design document but mainly through the review of evidence provided, remote visit and interviewing to the local stakeholders.

Finally, regarding the project description above, AENOR confirms that is accurate, complete, and provides an understanding of the nature of the project, and confirms that the project has been implemented as described in the project description.

3.2 Participation under Other GHG Programs

As the project has not been registered under any other GHG program, this section is not applicable.

3.3 Safeguards

3.3.1 No Net Harm

The project is not expected to generate negative environmental nor socio economic impacts, since it is implemented on private ecologically degraded lands. An environmental impact assessment was carried and concluded that no negative impacts would take place.

The project has developed a grievance structure should community members have complaints or comments, which will help insure community satisfaction with the project and mitigate any unforeseen negative impacts.

Documents supporting this information were provided to AENOR and confirms the explanations.

3.3.2 Local Stakeholder Consultation

Mechanisms/channels for stakeholder consultation and project information spread:

The PP has several mechanisms for consulting with stakeholders, through which it receives permanent information about the social and environmental impact of the operation:

- Socio-environmental diagnosis carried out by an external consulting company in 2014, after the acquisition of El Porvenir and Caricare farms, in the communities in the area of social influence of both farms and in the environmental aspects within the two farms.
- Mechanism of attention to complaints, channeled through field staff, through written forms, telephone or service mailbox at the entrance of the farms. The complete record of all the communications made in this regard is kept, as well as the donations made by the PP to the communities.
- Annual socialization events with the communities in the area of influence, where the annual activities of the project are explained, the complaints mechanism is recalled, requests are received for potential support from the company to the community, etc. All records are kept since 2014.
- The PP has a monthly monitoring system for working conditions for all direct workers and all contractors, carried out by a third party specialized in legal and labor issues. In addition, the documentary evidence of the audits was presented.
- There are annual public summaries of environmental and social monitoring (through the website and distributed to the communities), where the risks, costs, and benefits the project may bring to local stakeholders are also mentioned. The evidence of these periodic communications to the communities (local stakeholders) was shown, as well as the distribution of similar information during the 2021 to other stakeholders (contractors, institutions, etc.).

It is important to note that this is a private project carried out on private land over which there are no third-party rights (and minimal social and environmental impacts), so the information distributed to the different stakeholders varies depending on their relationship with the project. **Stakeholder input received during the local stakeholder consultation:**

The inputs of local stakeholders have been received since the acquisition of the El Porvenir (first instance joining the carbon project) and Caricare (second instance to be included in monitoring from 2022) farms, and the establishment of the first plantations in 2013. The summary of the inputs received by the PP are the following:

- Local communities perceived the project has having a positive socio-economic and environmental impact, mainly due to the generation of local employment, trainings for workers, environmental education program in schools, specific investment in social projects that benefit the communities in the area of influence, availability of means to respond to fires, conservation of native forest areas within the farms, etc. **No inputs received require changes to the project design, and no negative comments were received, nor were there any unattended requests.** The company mitigates the possible damages of its operation, mainly caused by the damage to roads by the traffic of trucks for the transport of wood and other machinery. The inputs received and their proper consideration were verified by AENOR through the following evidence:

- 1) Minutes of the assemblies and socializations carried out in the communities, presented for the period 2016-2020 (Evidence reviewed by AENOR: **Social Strategy Implementation Reports 2015-2020**);
- 2) FSC annual audit reports in Principle 2 "Workers' Rights and Employment Conditions", Principle 3 "Rights of Indigenous Peoples", Principle 4 "Relations with Communities" (Evidence reviewed by AENOR: **FSC annual audit report since 2016-2021, publicly available here /Reforestadora Cumare S.A.S./**);
- 3) Record of complaints and communications received by Cumare S.A.S./Campo Capital S.A.S. (Evidence reviewed by AENOR: **Communications and Complaints Register Campo Forestal.xlsx**);
- 4) Results of the annual social monitoring (Evidence reviewed by AENOR: **Social Strategy Implementation Reports 2015-2020**);
- 5) Reports of labor audits (Evidence reviewed by AENOR: **Reports of labor audits in the field for workers, and inspection reports on compliance with labor law for contractors 2016-2020**),
- 6) Dissemination of the forest management program summary to institutional stakeholders (ICA, ASORINOQUÍA, CORMACARENA, Ministry of Environment and Rural Development) in 2021 (Evidence reviewed by AENOR: **emails sent by the PP with project information**);
- 7) **Interviews conducted by AENOR** with PP General Manager, Forest operator Director of operations, Director of compliance and contractual matters (independent office for social and labor monitoring).

- It should be clarified that all project activities are carried out within the private properties of the PP, and that there are no third parties with any right of ownership or use of the land within El

Porvenir and Caricare. On the other hand, there are no conflicts in ownership or in the rights to use the land with neighboring communities or indigenous peoples.

- Forest management in both instances is FSC (Forest Stewardship Council) certified, which guarantees compliance with environmental and social safeguards, through a comprehensive annual onsite third-party audit, in addition to compliance with the forest management plan.

By means of documents reviewed and the interviews performed, AENOR considers that the comments received during the consultation process included in joint PD/MR are complete. The main conclusions of the meetings and opinions collected from meetings are included in the evidences of the socialization meetings, and kept and internally analysed by the PP.

To summarize, the following table indicates the channels through which the PP shared information about the project elements based on the type of stakeholder and their relevance. The evaluation of the stakeholder identification process by AENOR is described in section 3.3.5 of this report. **Project element**

Stakeholder group	Project design and implementation	Risks	Benefits	Relevant laws and regulations	Costs
Local communities in the surroundings and private neighbors	- Permanent communication through the PB field staff with continuous presence in the areas adjacent to the project and in the project area. - Annual socialization with all the local stakeholders regarding the project implementation, including potential risks (and its mitigation measures) and potential benefits (call for workers, social investment benefits applications procedure, complaints mechanism, applicable law compliance). - Annual public summaries of environmental and social monitoring (through the PP website and distributed to the communities) and the forest management plan (in PP website, in FSC website) and distributed to the communities. - Permanent mechanism of attention to complaints, channeled through field staff, through written forms, telephone or service mailbox, indicated at the entrance of the farms, as well as in the annual socializations and forest management plans and monitoring results disseminated.				NA. The project does not have any cost for any of the stakeholders, since they do not participate in it directly. It is a private project on land for private use and property.
Workers	- Annual training plan of forestry regarding applicable laws, labor conditions (including risks), forestry activities implementation, etc. - Monthly monitoring system regarding working conditions for all direct workers (onsite audit) and all contractors (legality compliance on labor issues). - Annual public summaries of environmental and social monitoring (through the PP website and distributed to the communities) and the forest management plan (in PP website, in FSC website) and distributed to the communities. - Permanent mechanism of attention to complaints, channeled through field staff, through written forms, telephone or service mailbox, indicated at the entrance of the farms, as well as in the annual socializations and forest management plans and monitoring results disseminated.				
Governmental institutions	- Annual public summaries of environmental and social monitoring and forest management plan (through the PP and FSC website and distributed by email).			Applicable law is enforced (see section 3.1.10 in	

To summarize, the following table indicates the channels through which the PP shared information about the project elements based on the type of stakeholder and their relevance. The evaluation of the stakeholder identification process by AENOR is described in section 3.3.5 of this report.					
Project element					
Stakeholder group	Project design and implementation	Risks	Benefits	Relevant laws and regulations	Costs
	- Permanent mechanism of attention to complaints, channeled telephone or service mailbox, indicated in the forest management plans and monitoring results disseminated.			this report).	
Other	- Annual public summaries of environmental and social monitoring and forest management plan (through the PP and FSC website and distributed by email). - Permanent mechanism of attention to complaints, channeled telephone or service mailbox, indicated in the forest management plans and monitoring results disseminated.				

The channels and the evidence reviewed by AENOR in this regard are discussed in this section. The process of VCS Program validation and verification and the validation/verification body's site visit was communicated by email to relevant stakeholders according to its engagement in the project.

Hence, in the opinion of the AENOR team the local stakeholder consultation process was properly performed and the PP's response to the inputs was appropriate. The audit team deems that the PP communicated the information about the project design and implementation, risks, costs and benefits, relevant laws and regulations and the process of VCS Program validation in accordance with the requirements established by the VCS Standard.

3.3.3 Environmental Impact

A socio-environmental diagnosis carried out by an external consulting company in 2014, after the acquisition of El Porvenir and Caricare farms, in the communities in the area of social influence of both farms and in the environmental aspects within the two farms. As the results of the diagnosis, it was concluded that the project is planned in line with the environmental legislation of Colombia and, also, with standards and practices considered environmentally appropriate and accepted in international level.

Forest management in both instances is FSC (Forest Stewardship Council) certified, which guarantees compliance with environmental and social safeguards, through a comprehensive annual onsite third-party audit, in addition to compliance with the forest management plan. The environmental safeguards contemplated by FSC include the permanent evaluation, prevention, mitigation and compensation of the environmental impact, the non-conversion of native ecosystems (including forests) to other non-forest ones or plantations, adequate management of chemicals and residues, conservation of flora species and fauna under protection status, evaluation of High Conservation Values, compliance with environmental legislation, among other aspects.

The audit team had access to the diagnosis and considers that the environmental impact assessment process was suitably performed.

On the other hand, it was verified that there were no failures identified in the chemical pesticides and fertilizers management, and no adverse effects are reported. As part of the forest management plan and the integrated pest management strategy, fertilizers and pesticides are only used upon need, and quantities are reduced as possible. No biological controls are currently carried out, although protocols would be put in place if the use is required. VVB verified that the documentary evidences provided were accurate and updated and cross checked with the interviews to the staff and the FSC public reports (www.info.fsc.org) for the PP during the last five third-party annual audits.

3.3.4 Public Comments

The project summary was exposed to public consultation on Verra's website from 4 June 2021 to 4 July 2021. During the validation process 2 public comments were received. The audit team reviewed the public comments received and checked the PD/MR updates carried by the PP. The following table summarizes the public comments received, the PP's response to each of them and the assessment of the audit team on regards to these responses.

No.	Commenter	Comment summary	Response from PP	Audit assessment
1	Particular person	The commenter offered financing chance.	The PP has the totality of financial resources to develop the project until the final stage, so no financial channels are looked for. The project has already disbursed in 2021 93% of total cash out (land purchase and plantation cost) which is a demonstration that almost 100% of the project cash out has been covered with financial resources. On the other hand, the project has an IRR of circa 2%, which means that the project is not profitable at the moment of doing the investment. However, the PP could be seeing the project as the starting point of a forestry sector development, where the timber could have a different value in a mid-term scenario.	The comment was properly addressed by the PP, also demonstrated in documents provided for the Non-Permanence Risk Report. No further actions are required.
2	Particular person	The commenter pointed out that 1) summary expected capture maximum is different from estimated net GHG	Regarding 1), the difference pointed out is amongst the GHG gross removals for the crediting period and the removals for the long term	The comments were properly address by the PP. No further actions are required.

No.	Commenter	Comment summary	Response from PP	Audit assessment
		Emission Reductions and Removals. 2) Also that Table 10 has an error after year 2024 in Net GHG emission reductions or removals; 3) and that the VCUs eligible for issuance are not conservatively rounded down.	average; this difference is correct and no correction proceeds. 2) The calculations were corrected due to several CARs issued by the VVB, so Table 10 was corrected either way. 3) The VCUs were already rounded conservatively, unlike what is stated in the comment.	

AENOR is able to confirm that the PP has taken due account of all the comments, as per requirement 3.16.8 of the VCS Standard v4.2.

3.3.5 AFOLU-Specific Safeguards

Considering that it is an AFOLU project, the following specific safeguards were taken into account:

- AENOR verified that the stakeholder identification process carried out by the PP, which consisted of a social diagnosis carried out in 2014, based on territorial and stakeholder mapping (communities in the area of influence, government institutions with varying degrees of relationship with the project, non-governmental social and environmental associations, contractors, neighboring neighbors, associations of indigenous peoples, etc.), from which the PP designed its social strategy. AENOR confirmed that the identification process was complete and adequate, confirmed through the diagnosis (Evidence reviewed by AENOR: **Socio-environmental diagnosis**), the list of stakeholders (Evidence reviewed by AENOR: **Stakeholder_List_Campo Forestal_2021.xls**) and the social strategy (Evidence reviewed by AENOR: **Social Strategy**); as well as confirmed during the interviews.

Regarding the results, the identified local stakeholders include any population nucleus in the area of influence of El Porvenir and Caricare. Due to the depopulation of the area, there are only three communities. The local stakeholders consider individual neighbors, as well as their authorities; in addition to the neighbors of neighboring properties (private ranchers and other land uses). In addition, institutional stakeholders, NGOs, suppliers, etc. were identified. Every year all stakeholders are contacted to receive their feedback, in some cases it is by mail and in the case of local communities a meeting is held (see 3.3.2).

- According to the socio-environmental diagnosis, no environmental or social risks are identified to the stakeholders or to their resources that are not mitigated. Forest management in both instances is FSC (Forest Stewardship Council) certified, which guarantees compliance with environmental and social safeguards, through a comprehensive annual onsite third-party audit, in addition to compliance with the forest management plan (see section 3.3.3).

- Forest management generates impacts mainly within the El Porvenir and Caricare farms, which is where the carbon project activities take place. There are no third parties with rights to the ownership or use of the farms (see 3.3.2).
- The PP has permanent channels to receive complaints from local stakeholders (see section 3.3.2).

According to the evidences presented and the interviews held, AENOR confirms that the project has been designed appropriately and is being implemented in such a way that ensures not to create any negative impacts on local stakeholders, as well as procedures to prevent, correct or mitigate such impacts where and when necessary are in place.

3.4 Application of Methodology

3.4.1 Title and Reference

The methodology used is the CDM A/R Large-scale Consolidated Methodology AR-ACM003: Afforestation and reforestation of lands except wetlands v02.0. This methodology is applicable to large scale afforestation and reforestation projects, as per the CDM scale definition.

Besides the methodological document, the following tools are applied:

- Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities v01.
- Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities v04.2.
- Estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities v01.1.0
- Estimation of carbon stocks and change in carbon stocks in deadwood and litter in A/R CDM project activity v03.1
- Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity v02.0.
- Estimation of non-CO2 greenhouse gas (GHG) emissions resulting from burning of biomass attributable to an A/R CDM project activity v04.0.0.
- Calculation of the number of sample plots for measurements within A/R CDM project activities v02.1.0.
- Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities v01.0.0

AENOR confirms that the choice of methodologies/modules/tools is correct and justified in the joint PD/MR. These methodologies/modules/tools are valid at the time of validation.

3.4.2 Applicability

The PD states all evidence used to demonstrate each condition of the applicable methodology. Complete explanations are included in the joint PD/MR. In opinion of AENOR, the evidence and explanations confirm the fulfillment of the project with the methodology. The assessment was carried out for each applicability criterion and included, amongst others, the review of evidence and sources provided in the PD/MR, and the compliance check of the local project setting with the applicability conditions in regard to baseline setting and eligible project measures as follows:

**- Applicability of the methodology: CDM A/R Large-scale Consolidated Methodology AR-ACM003:
Afforestation and reforestation of lands except wetlands v02.0**

Applicability condition	Compliance
a) The land subject to the project activity does not fall in wetland category.	The first project instance does not include wetlands, as it was confirmed during remote visit and other supported documents, including the descriptions in the PD.
b) Soil disturbance attributable to the afforestation and reforestation (A/R) project activity does not cover more than 10% of area in each of the following types of land, when these lands are included within the project boundary:	The land in the project area (first instance) does not fall within the types of land referred in points (i) and (ii). This was confirmed during the remote site visit and other supported documents, including the descriptions in the PD.
i. Land containing organic soils.	
ii. Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 of the methodology.	

- Applicability of the tools

Tool	Applicability condition	Compliance
Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (Version 01)	- Forestation of the land within the proposed project boundary performed with or without being registered as the A/R CDM project activity shall not lead to violation of any applicable law even if the law is not enforced. - This tool is not applicable to small – scale afforestation and reforestation project activities.	- The forestation activity is not violating any applicable law as described in Section 1.14 of this PD - The project is not a small-scale project, according to AR-ACM0003. This was confirmed through the review of the evidence provided, including the descriptions in the PD.
Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities (Version 04.2)	This tool has no internal applicability conditions	N/A
Estimation of change in soil organic carbon stocks due to the implementation of	(a) The areas of land to which this tool is applied: (i) Do not fall into wetland1	The first project instance does not include wetlands or organic soils. Forest management

Tool	Applicability condition	Compliance
A/R CDM project activities v01.1.0	category; or (ii) Do not contain organic soils as defined in Annex A: glossary” of the IPCC GPG LULUCF 2003; (iii) Are not subject to any of the land management practices and application of inputs as listed in the Tables 1 and 2; (b) The A/R CDM project activity meets the following conditions: (i) Litter remains on site and is not removed in the A/R CDM project activity; and (ii) Soil disturbance attributable to the A/R CDM project activity, if any, is: • In accordance with appropriate soil conservation practices, e.g. follows the land contours; • Limited to soil disturbance for site preparation before planting and such disturbance is not repeated in less than twenty years.	activities are not subject to any of the land management practices and application of inputs as listed in the Tables 1 and 2. This was confirmed during the remote site visit and other supported documents, including the descriptions in the PD. Litter is not removed from the project site, and tillage is done in accordance with applicability conditions for accounting soil organic carbon. Soil disturbance is in accordance with appropriate conservation practices, limited to site preparation and not repeated within 20 years. This was confirmed during the remote site visit and other supported documents, including the descriptions in the PD.
Estimation of carbon stocks and change in carbon stocks in deadwood and litter in A/R CDM project activity v03.1	This tool has no internal applicability conditions.	N/A
Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity (Version 02.0)	This tool is not applicable if the displacement of agricultural activities is expected to cause, directly or indirectly, any drainage of wetlands or peat lands.	The project activity is not expected to cause, directly or indirectly, any drainage of wetlands or peatland. In fact, the project area was abandoned currently cattle ranching grassland (as described in Section 1.10) and thus there is no displacement of any

Tool	Applicability condition	Compliance
		agricultural activities. This was confirmed through the review of the evidence provided, including the descriptions in the PD.
Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity (Version 04.0.0)	- The tool is applicable to all occurrence of fire within the project boundary. - Non-CO₂ GHG emissions resulting from any occurrence of fire within the project boundary shall be accounted for each incidence of fire which affects an area greater than the minimum threshold area reported by the host Party for the purpose of defining forest, provided that the accumulated area affected by such fires in a given year is $\geq 5\%$ of the project area.	Project lifetime will not consider activities such as burning of harvest residue and use of fire to prepare the land. The project will consider any occurrence of fire within the project boundary per year, regardless the size. This was confirmed through the review of the evidence provided, including the descriptions in the PD, as well as interviews with PP.
Calculation of the number of sample plots for measurements within A/R CDM project activities (Version 02.1.0)	This tool has no internal applicability conditions.	N/A
Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities v01.0.0	This tool has no internal applicability conditions.	N/A

AENOR, based on records provided including spreadsheets calculations of the emissions reductions, has verified that applicability conditions of the different tools are complied. In conclusion, the project activity complies with the applicability conditions of the methodology, and any tools or modules selected by the PP.

3.4.3 Project Boundary

Regarding the Carbon Stock Changes and considering the applicable methodology, the chosen carbon pools and GHG accounted are the following:

Carbon pools		Selected?	Justification/Explanation
Baseline and Project scenario	Above-ground tree biomass	Yes	This is the major carbon pool subjected to project activity.
	Below-ground tree biomass	Yes	Carbon stock in this pool is expected to increase due to the implementation of the project activity.
	Dead wood and Litter	Yes	It is expected its increase by the implementation of the proposed project activity, since these pools do not exist in the pre-project situation and will appear with the plantation establishment.
	Soil organic carbon	Yes	It is expected its increase by the implementation of the proposed project activity. Even though soils are degraded, there still may be a mild, transient reduction in soil organic carbon due to site preparation (e.g., tillage). However, the establishment of forest is expected to cause an increase in net primary productivity and, therefore, in the turnover of plant residues into the soil. This would lead to a long-term increase in the soil organic carbon pool.

Source		Gas	Included?	Justification/Explanation
Baseline and Project scenario	Burning of woody biomass	CO ₂	Yes	Burning of woody biomass for site preparation is not part of forest management. Despite there were not forest fires since the beginning of the project, the occurrence of such event would be accounted indirectly as a change in the carbon stock.
		CH ₄ N ₂ O	No	Burning of woody biomass for site preparation is not part of forest management. Forest fires are considered under applicability conditions of the tool “Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity” (Version 04.0.0).
	Harvested wood products	CO ₂	No	This carbon pool in not eligible under selected methodology.
	Combustion in fossil fuel	CO ₂ CH ₄	No	Potential emissions are negligibly small and are not included as a source of GHG emissions

	in vehicles and machinery	N ₂ O		
	Nitrogen based fertilizers	N ₂ O	No	Potential emissions are negligibly small and are not included as a source of GHG emissions

According to the VCS requirements, sources of emissions that are expected to increase in the project scenario compared to the baseline case must be included if the exclusion would lead to a significant overestimation of the total net anthropogenic GHG emission reductions generated during the fixed baseline period. Furthermore, that sources considered insignificant according to the latest VCS Methodology Requirements can always be neglected. In this regard, the following GHG sources may be deemed insignificant and need not to be accounted for in the case of ARR projects, in accordance with Section 3.3.6 of the VCS Methodology Requirements:

- N₂O emissions from project activities that apply nitrogen containing soil amendments and N₂O emissions caused by microbial decomposition of plant materials that fixes nitrogen.
- GHG emissions from the removal or burning of herbaceous vegetation and collection of non-renewable wood sources for fencing of the project area.
- Fossil fuel combustion from transport and machinery use in project activities.

Taking into account the justifications, assumptions and supporting information provided and the design of the project, AENOR deems that project boundary is correctly defined and in compliance with the applicable methodology and VCS requirements.

3.4.4 Baseline Scenario

The baseline scenario and demonstration of additionality (see section 3.4.5) follows the Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (version 01). Based on the combined tool, the following steps were applied and appropriately developed and justified in the PD/MR to identify the baseline scenario:

Step 0. Preliminary screening based on the starting date of the A/R project activity

The PP provided evidence that the starting date of the A/R project activity was after 31 December 1999; indeed, according to above 3.1.5 Project start date it was on 1 November 2016. On the other hand, the baseline scenario and the additionality for the potential instances to join in Meta and Vichada departments is the same, since the geographical conditions of both departments are similar both for type of soil, productive activities, amongst others. Both conditions were verified by AENOR during the validation process.

Step 1. Identification of alternative scenarios

Sub-step 1a: Identify credible alternative land use scenarios to the proposed CDM project activity

Realistic and credible alternatives scenarios for the current land area that would have occurred on the land within the proposed project boundary in the absence of the afforestation project activity under the VCS are:

- Scenario 1: Continuation of the pre-project activity: cattle ranching in unmanaged grasslands. This alternative is credible as it has been the historical activity performed in the project area. The soils in farms on this region are very poor and livestock production does not require large investments to make the cattle farmer survive precariously.
- Scenario 2: Forest plantation without being registered for carbon credits generation. AENOR could checked on site that no foresting activities were carried out in the nearby areas of the project and, based on the evidence provided, there is no legal requirement for foresting.

The local generality of livestock activity and the relative absence of commercial forest plantations were cross-checked by AENOR against independent sources⁴.

- There is no evidence of other possible scenarios, so for the analysis only two potential baseline scenarios determined by the Tool 'Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities v01' were considered.

Sub-step 1b. Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations

All land use alternatives identified above comply with all mandatory regulations in the country. Livestock activity is commonly conducted in Colombia, and there is no law or regulation that prevents the realization of afforestation activities; thus, no alternatives are eliminated based on this criterion.

Outcome of step 1 is the list of plausible alternative land use scenarios to the A/R project activity that are in compliance with mandatory legislation and regulations taking into account their enforcement in the region or country on national and/or sectoral policies and regulations. The proposed project activity

⁴ - Universidad de Bogotá (2013). Characterization of the Orinoquía Region. [Available here](#).

- García, E. (2000). Evolution of cattle ranching in the department of Meta. [Available here](#).

- Velasco, Alvaro. (2017). Análisis Situacional de la Ganadería en el departamento del Meta. [Available here](#).

- Unidad de Planificación Rural Agropecuaria (UPRA) Ministerio de Agricultura y Desarrollo Rural (MADR). 2015. Zoning for Forest Plantations for Commercial Purposes Scale 1:100.000. Bogotá (Colombia). [Available here](#).

- Méndez Salinas (2015). Potential for commercial reforestation in Colombia: Diagnosis. [Available here](#).

- PROFOR (2017). Current situation and potential for promoting commercial plantations for commercial purposes in Colombia. [Available here](#).

complies with the applicable laws as identified in section 1.14 of the P.D. Also, both alternative 1 (continuation of the pre-project baseline scenario) and alternative 2 (forestation without being registered under VCS) comply with mandatory applicable laws and regulations.

Step 2. Barrier analysis

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios.

For the continuation of pre-project activity (cattle ranching in unmanaged grasslands), which corresponds to scenario 1 listed above, no barriers are identified. This activity has been practiced for a long time and its continuation is not prevented by any barrier. The UPRA (Unidad de Planificación Rural Agropecuaria) established that the area of the grouped project has a medium to high aptitude for cattle raising activity.

In case of the afforestation without carbon credit incentive alternative (Scenario 2 listed above), the following barriers were identified:

- Investment barriers. Afforestation with fast-growing *Eucalyptus* species for timber production is not economically proven to be feasible. The current project Internal Rate of Return is circa 2%, and the benchmark IRR for a financially feasible afforestation activity without carbon finance in the project area is estimated to be 9.89% (2014) and 9.84% (2015). Thus, the afforestation project of Reforestadora Cumare S.A.S. is far from being an interesting profitable project for any investor without the carbon incentive.
- Market barriers: the forest market in Colombia in general and in the departments of the project in particular, is not developed.
- Institutional barriers. This risk is associated to changes in government policies/law or lack of enforcement of land-use-related legislation, precariousness in the institutionalism, lack of inter-institutional coordination, environmental permits, and lack of research on commercial forest plantations.
- Technological barriers. Since commercial forest plantations have not been given great importance in the formal agricultural economy of the country, advances in technology packages and research have been developed mainly by medium and large-scale reforestation companies.
- Local tradition barriers. There is no sufficient local tradition to implement and manage highly productive exotic species for timber production.
- Prevailing practice barriers. Afforestation with *Eucalyptus* species is not commonly practiced, and the proposed project activity is the first of its kind in terms of geography, technology, size, and investor, causing to exist barriers related to prevailing practice.

- Local ecological barriers. *Eucalyptus* and *Pinus* plantations are not known to be entirely suitable for this area.
- Social conditions barriers. There is a lack of skilled and/or properly trained labor force in the project surroundings.
- Communication barriers. There are also barriers related to remoteness of land area and undeveloped road and infrastructure incur large transportation expenditures, thus eroding the competitiveness and profitability of products from the project.

Barriers related to land tenure, ownership, inheritance, and property rights do not apply as an obstacle for the Project implementation, since the farm El Porvenir and Caricare are owned by REFORESTADORA CUMARE SAS, and no land conflicts are identified.

Through the evidence Cash flows 18062021.xlsx provided by the PP, complemented by the interview with the General manager and Director of operations, AENOR was shown that the forestry project (without carbon revenues) has an Internal Rate of Return of circa 2.3% , which means that the project is not profitable at the time of doing the investment. If the sale of carbon credits is considered, the IRR amounts to at least 8.4% for the minimum carbon credit price expected in the credit period of the project considering the LTA.

The independent sources⁵ consulted by AENOR corroborate the investment and market barriers referred to by the PP, which cannot be overcome without the incentive of the carbon market, and which in summary are: 1) high production costs due to the low development of the market, infrastructure and

5 - Prieto Mejía, John Jairo (2021). The main problems of the Colombian forestry sector and opportunities for improvement. Bucaramanga, Colombia. Available here.

- PROFOR (2017). Analysis of the legal and institutional framework and financial instruments for commercial forest plantations in Colombia. Bogotá, Colombia. Available here.

- PROFOR (2017). Analysis of value chains and logistics of forest plantations for commercial purposes in Colombia. Bogotá Colombia. Available here.

- Méndez Salinas (2015). Potential for commercial reforestation in Colombia: Diagnosis. Available here.

- PROFOR (2017). Current situation and potential for promoting commercial plantations for commercial purposes in Colombia. Available here.

- Rivera, H. F. (2021). Commercial reforestation in Colombia, is it necessary a new regulation for promoting the development of this sector? Available here.

- PROFOR (2017). Plan of recommended actions – Promotion of forest plantations for commercial purposes in Colombia. Bogotá, Colombia. Available here.

- Marin y García (2019). Commercial plantations in Colombia: Beyond traditional financing methods. Available here.

- Ministerio del Medio Ambiente (2000). National Forest Development Plan. Colombia. Available here.

technology, 2) low internal rates of return for commercial forest plantations in the country, 3) low competitiveness of the plantation timber sector in the context of the countries of the region, 4) poor access to public and private finance.

On the other hand, the cartographic information of the Agricultural Rural Planning Unit (UPRA) through the Agricultural Rural Planning System (SIPRA) (available at: <https://sipra.upra.gov.co/>)⁶ shows the average or medium-low suitability of the eastern plains of Colombia (where the Cumare Carbon Project is located), for the establishment of commercial forest plantations, given that its yield is low.

AENOR validated the analysis of barriers (financial and market) based on the accuracy, applicability and reliability of the sources provided by the PP, which were aligned with the listed independent sources cross-checked by AENOR. Sources include Government, Academia and international NGOs of accredited prestige. Although other barriers are considered, those of the market and investment are, by far, the most decisive, according to the same bibliography listed and which was reviewed by AENOR. On the other hand, the other barriers are somehow related to market and investment barriers, for example: technological and communication/infrastructures barrier leading to low profitability and investment difficulty and uncompetitive access to the market.

Sub-step 2b. Elimination of land use scenarios that are prevented by the identified barriers.

Afforestation project presents many barriers that prevent its implementation, while cattle ranching in unmanaged grassland is not prevented by any barrier. Therefore, the most likely baseline scenario is the continuation of the pre-project activity: cattle ranching in unmanaged grasslands.

AENOR deems that assumptions, justifications and data used in the identification of the baseline scenario are appropriately justified and can be deemed reasonable. Documentary evidence used in determining the baseline scenario is relevant, and correctly quoted and interpreted in the joint PD/MR; as matches the information provided onsite by stakeholders and remote inspections. Relevant national and/or sectoral policies and circumstances have been considered and are listed in the PD/MR. The procedures for identifying the baseline scenario have been correctly followed according to the steps in the combined tool and the identified scenarios reasonably represents what would have occurred in the absence of the project. Thus, AENOR considers that the identified baseline scenario is correctly justified.

3.4.5 Additionality

According to the “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities”, the previous steps shall be complemented with an analysis of the extent to which forestation activity has already diffused in the geographical area of the proposed VCS project

⁶ Unidad de Planificación Rural Agropecuaria (UPRA) Ministerio de Agricultura y Desarrollo Rural (MADR). 2015. Zoning for Forest Plantations for Commercial Purposes Scale 1:100.000. Bogotá (Colombia). Available here.

activity. This test is a credibility check to demonstrate additionality which complements the barrier analysis (Step 2) above conducted.

Step 4. Common practice analysis

The PP identified as common practice in the area the cattle ranching. Commercial forest plantations in the department of Meta are only 62,500 ha, which represents 0.72% of the area of the department, as was crosschecked by AENOR against independent sources⁷. Each of the properties that make up these hectares present the same limitations as El Porvenir since Colombia has favorable climatic conditions for forest production, however it has not been able to expand its productive capacity, which leads to few investments forestry sector in the country. Furthermore, the timber industry remains underdeveloped. On the other hand, it was crosschecked by AENOR the scarce presence of other commercial forest plantations under the carbon market incentive through official registries (RENARE, Verra Registry, EcoRegistry, Biocarbon Registry).

Hence, after the assessment of the explanations and justifications in the PD/MR and the review of the submitted evidence, AENOR deems credible and reliable the supported documents provided. The information described in the PD/MR is consistent with them. Thus, it can conclude that there are several characteristics that make each activity different from activities developed in the surrounding area. Thus, the project activity is not the baseline scenario, it is not the common practice and hence, it is additional.

3.4.6 Quantification of GHG Emission Reductions and Removals

Procedures for quantifying the GHG emission reductions and removals generated by the project during the project crediting period were conducted in accordance with the methodology “AR-ACM0003: Afforestation and reforestation of lands except wetlands v02.0”. The validation team performed an intensive quantification review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS documentation, methodology modules, and the joint PD/MR.

Furthermore, the validation team reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by the PP in spreadsheet format to ensure all formulas were accessible for review. The validation/verification team recalculated subsets of the analysis to confirm correctness. Where applicable, references for analysis methods or default values were checked against relevant scientific literature for best practice.

⁷ - Unidad de Planificación Rural Agropecuaria (UPRA) Ministerio de Agricultura y Desarrollo Rural (MADR). 2015. Zoning for Forest Plantations for Commercial Purposes Scale 1:100.000. Bogotá (Colombia). Available [here](#).

- Méndez Salinas (2015). Potential for commercial reforestation in Colombia: Diagnosis. Available [here](#).

- PROFOR (2017). Current situation and potential for promoting commercial plantations for commercial purposes in Colombia. Available [here](#).

It is important to clarify that the ex ante estimation considers a single instance initially (El Porvenir) and two instances (El Porvenir and Caricare) from 2022, when the Caricare farm will join the group. Note that this second instance is not yet validated, but it will be in the next –second- monitoring period. On the other hand, the ex post estimates (01-November-2016 to 25-November-2020) will only claim VCUs for the single instance -El Porvenir- within the group in this period.

Baseline net GHG removals by sinks

Procedures to be used for calculation of *ex-ante* baseline net GHG removals by sinks are detailed in the “AR-ACM0003 methodology v02.0” under the section 5.4 “Baseline net GHG removals by sinks”. According the methodology baseline net GHG removals by sinks are calculated with the following equation:

$$\Delta C_{BSL,t} = \Delta C_{TREE_BSL,t} + \Delta C_{SHRUB_BSL,t} + \Delta C_{DW_BSL,t} + \Delta C_{LI_BSL,t}$$

Where:

$\Delta C_{BSL,t}$ = Baseline net GHG removals by sinks in year t ; t CO₂-e

$\Delta C_{TREE_BSL,t}$ = Change in carbon stock in baseline tree biomass within the project boundary in year t , as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂-e

$\Delta C_{SHRUB_BSL,t}$ = Change in carbon stock in baseline shrub biomass within the project boundary, in year t , as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂-e

$\Delta C_{DW_BSL,t}$ = Change in carbon stock in baseline dead wood biomass within the project boundary, in year t , as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

$\Delta C_{LI_BSL,t}$ = Change in carbon stock in baseline litter biomass within the project boundary, in year t , as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

Carbon stock in trees: According to the Section 5 of the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”, the carbon stock and change in carbon stock in trees in the baseline can be accounted as zero, since the pre-project scenario do not

include trees to be harvested, cleared, or removed throughout the crediting period of the project activity.

Carbon stock in shrubs: According to point 12 of the conditions under which carbon stock and change in carbon stock may be estimated as zero, the tool establishes that trees and shrubs in the baseline may be accounted as zero if conditions (a), (b) and (c) under paragraph 11 are satisfied. Moreover, the degraded lands of the baseline scenario were subjected to slash and burn. On this basis, the carbon stock and change in carbon stock in shrubs in the baseline can be accounted as zero.

Carbon stocks in dead wood and litter: Baseline scenario does not include forested land, but unmanaged grasslands for cattle ranching. Therefore, dead wood and litter are not present in the continuation of the pre-project activities and are accounted as zero.

Therefore, the total baseline net GHG removals by sinks are considered as zero. AENOR deems that this assumption is correct and in accordance with the methodology, tools, the VCS requirements and the IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (2003).

Project net GHG removals by sinks

Procedure to be used for calculation of *ex-ante* actual net GHG removals by sinks is detailed in the “AR-ACM0003 methodology v02.0” under the section 5.5 “Actual net GHG removals by sinks”.

The actual net GHG removals by sinks are calculated as follows:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

Where:

$\Delta C_{ACTUAL,t}$	=	Actual net GHG removals by sinks, in year t; t CO ₂ -e
$\Delta C_{P,t}$	=	Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO ₂ -e
$GHG_{E,t}$	=	Increase in non-CO ₂ GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool “Estimation of non-CO ₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity”; t CO ₂ -e

The tool for “Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity v04.0.0” has been considered. The impact of wild fires is estimated to be insignificant for *ex-ante* calculations. The use of fire for site preparation and/or to clear the land of harvest residue prior to replanting is specifically excluded from the project management and therefore project emissions are estimated as zero at this regard.

Carbon stock changes are the sum of the changes in above-ground and below-ground tree biomass, dead wood, litter, and soil organic carbon stocks in the project scenario. Changes in the carbon stocks in project were estimated using the following equation described in the methodology:

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + \Delta C_{SHRUB_PROJ,t} + \Delta C_{DW_PROJ,t} + \Delta C_{LI_PROJ,t} + \Delta SOC_{AL,t}$$

Where:

- $\Delta C_{P,t}$ = Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; tCO2-e
- $\Delta C_{TREE_PROJ,t}$ = Change in carbon stock in tree biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; tCO2e
- $\Delta C_{SHRUB_PROJ,t}$ = Change in carbon stock in shrub biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; tCO2e
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- $\Delta C_{DW_PROJ,t}$ = Change in carbon stock in dead wood in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; tCO2e
- $\Delta C_{LI_PROJ,t}$ = Change in carbon stock in litter in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; tCO2e
- $\Delta SOC_{AL,t}$ = Change in carbon stock in SOC in project, in year t, in areas of land meeting the applicability conditions of the tool “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”, as estimated in the same tool; tCO2e

Biomass carbon pools

The process to calculate ex-ante carbon stocks started with the delimitation of the forest area in a GIS. This was done by the PP’ GIS experts, who measured the net forest area with GPS instruments. This information was transferred to the offices and together with another set of information, a complete geodatabase.

The project currently contemplates two instances: El Porvenir farm for the first monitoring period (up to 5,526.6 ha of plantations) and the Caricare farm, which will be incorporated into the monitoring from

2022 (10,536.6 ha of plantations established until 2025 between both farms). In addition to Reforestadora Cumare S.A.S.' two properties, other instances may be included in the future, but are not currently included for the ex-ante estimations. The number of hectares planted per year and per farm is detailed below:

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
El Porvenir	1,746.7	1,886.8	1,074.2	692.1	126.8	-	-	-	-	-	5,526.6
El Porvenir / Caricare	-	-	-	-	-	0	530.0	1,000.0	1,740.0	1,740.0	5,010.0

Project boundaries were defined at the beginning of project activity and the same geographic boundary was maintained, according to VCS AFOLU requirements. However, the project area will be permanently monitored along the crediting period, since new strata may be created due to new plantations in the coming years, and after potential disturbances effects (pests, droughts, fire).

Above and below ground biomass was estimated according to the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activity". A summary of the main factors used, and each source of data is presented in the table below. Estimations are archived as part of the project documentation.

Through the growth curves obtained following the application of the Gompertz model for every specie (*E. pellita*, *E. urograndis urophylla*, *P. caribaea*) is estimated the under-bark volume of trees. The growths obtained and assumed values used to get them are as follows:

Data/Parameter available at validation	Value		Assessment procedure and result
Growth curves obtained by Gompertz model for ex ante under-bark trees volume estimation	<i>Eucalyptus pellita</i> $y = -1,047x^2 + 38,655x - 29,085$		Growth curves obtained by Gompertz model for ex ante under-bark trees volume estimation. Where: x = age (years) y = volume (m ³ /ha)
	<i>Eucalyptus urograndis</i> $y = -0,7177x^2 + 34,641x - 23,526$		
	<i>Eucalyptus urophylla</i> $y = -0,7177x^2 + 34,641x - 23,526$		
	<i>Pinus caribaea</i> $y = 0,392x^2 + 19,194x - 24,199$		
MAIj (m ³ .ha ¹ .yr ¹) Mean Annual Increment	<i>Eucalyptus pellita</i>	24,7	Project design assumption based on real data.
	<i>Eucalyptus urograndis</i> <i>Eucalyptus urophylla</i>	27,5	
	<i>Pinus caribaea</i>	20,0	
CF _{TREE} (dimensionless) Carbon fraction of tree biomass	0.47		Value is consistent with validated source: AR-TOOL14 <i>Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities</i>
Dj (tt/m ³)	<i>Eucalyptus pellita</i>	0.53	Values are consistent with validated sources:

Data/Parameter available at validation	Value		Assessment procedure and result
Wood density	<i>Eucalyptus urograndis</i>	0.495	MADR (2010) and Arango, B. et al (2001) and Giraldo, D. et al (2014). Proyectos sectoriales de mitigación de GEI sector AFOLU, Proclima (2001).
	<i>Eucalyptus urophylla</i>	0.495	
	<i>Pinus caribaea</i>	0.48	
Bark (%)	<i>Eucalyptus pellita</i>	9.00	Growth Responses of <i>Eucalyptus pellita</i> F. Muell. Plantations in South Sumatra to Macronutrient. Fertilisers Following Several Rotations of <i>Acacia mangium</i> Willd. Alen. M et al 2019
	<i>Eucalyptus urograndis</i>	7.30	Study Quantification of forestry and carbonization waste. Neves A et al. 2016.
	<i>Eucalyptus urophylla</i>	10.20	Wood and pulping properties of <i>Eucalyptus urophylla</i> and its hybrid grown by silvopastoral and conventional forest production models. Mendes, A. et al. 2016.
	<i>Pinus caribaea</i>	20.0	Lamprecht 1990. Obtained from FAO repository.
Rj (dimensionless) Root-to-shoot ratio	0.22 - 0.43		Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs" (Version 04.2), depending on tree age.
BEF2j (dimensionless) Biomass expansion factor	1.15		Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs" (Version 04.2)
CO ₂ -e/CO ₂ Carbon stock in trees in the tree biomass estimation strata	3.667 (44/12)		IPCC default value. The factor of 3.667 (44/12) is applied to convert the tree carbon sequestered to tree CO ₂ -e sequestered.

Growth curves represent a model that predicts the volume -aboveground and belowground biomass- at each year during the rotation length, not the real values measured on the field.

Soil organic carbon

Estimations of soil organic carbon (SOC) stocks were done in accordance with the "Tool for the estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activity v01.1.0". As suggested by the tool, it is assumed that the implementation of the project activity increases the SOC content of the lands from the pre-project level to the level that is equal to the steady-state SOC content under native vegetation. The increase in SOC content in the project scenario takes place at a constant rate over a period of 20 years from the year of planting.

SOC at the beginning of the project (SOC_{INITIAL,i}) is estimated by multiplying the factors in Table 5 of the tool (Relative stock change factors for different levels of nutrient input on cropland net effect over a period of 20 years) by the reference SOC. As per the tool, a loss in SOC (SOC_{LOSS,i}) is applied in the case

that soil disturbance occurs on more than 10 per cent of the land area, which is the case of this Project. The following methodological formula is used for calculating the annual change in SOC stock:

$$dSOC_{t,i} = \frac{SOC_{REF,i} - (SOC_{INITIAL,i} - SOC_{LOSS,i})}{20}$$

Where:

$dSOC_{t,i}$	=	The rate of change in SOC stock in stratum i of the area of land, in year t; t C/ha/yr
$SOC_{REF,i}$	=	Reference SOC stock corresponding to the reference condition in native lands by climate region and soil types applicable to stratum i of the area of land; tC/ha
$SOC_{INITIAL,i}$	=	SOC stock at the beginning of the A/R CDM project activity in stratum i of the areas of land
$SOC_{LOSS,i}$	=	Loss of SOC caused by soil disturbance attributable the A/R CDM project activity, in stratum I of the areas of land; tC/ha

The parameters used for estimation of SOC were:

Data/Parameter available al validation	Value	Assessment procedure and result
$SOC_{REF,i}$ (tC/ha) Reference SOC stock corresponding to the reference by climate region and soil type applicable to stratum i of the areas of land	47	Default reference for tropical, moist climate region and soils with low activity clay (LAC), according to Table 3 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”
$f_{LU,i}$ (dimensionless) Land use factor	1	Default reference for all permanent grassland, according to Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”
$f_{MG,i}$ (dimensionless) Management factor	0.97	Default reference for “moderately degraded grassland Overgrazed or moderately degraded grassland, with somewhat reduced productivity (relative to the native or nominally managed grassland) and receiving no management inputs”, according to Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”.
$f_{IN,i}$ (dimensionless)	1	Default reference for grassland management (net effect

Data/Parameter available al validation	Value	Assessment procedure and result
Input factor		over a period of 20 years) for grassland without input of fertilizer, according to Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”.

Application of the equation results in an estimated increase of 0.64 t C/ha/year in soil organic carbon.

Litter and Dead Wood

Estimations were done in accordance with the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities v 03.1”. The conservative default-factors with reference to the carbon stock in living trees were used for estimating both pools. Default values are 6% in the case of dead wood and 1% for litter, as follows:

Data/Parameter available al validation	Value	Assessment procedure and result
Deadwood (%) Conservative default factor expressing carbon stock in dead wood as a percentage of carbon stock in tree biomass	6	Default value for biome tropical, elevation <2.000 m and precipitation >1.600 m per year in Tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”
Litter (%) Conservative default factor expressing carbon stock in litter as a percentage of carbon stock in tree biomass	1	Default value for biome tropical, elevation <2.000 m and precipitation >1.600 m per year in Tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”

Ex post long-term average

Since this ARR project includes harvesting it shall include the loss of carbon due to it in the quantification of project emissions, as set out in the VCS Standard.

As the project is undertaking an even-aged plantation management, the time period over the long-term GHG benefit is calculated including the last harvest/cut in the cycle. With a project crediting period of 100 years and a harvest cycle of 10-12 years, the long-term average GHG benefit is determined for a period of 105 years. The Long Term Average is estimated using the 100 years crediting period plus 5 years to consider the entire rotation length of the plantations done in 2025. Since this is an ex ante estimation, LTA is calculated considering the ex ante GHG removals generated in the project scenario, this means, considering the stock valued obtained from the application of the growth curve model mentioned above for the period (2016-2020).

Firstly, the expected total GHG benefit of the project for each year of the established time period is calculated as GHG removals from the project scenario minus baseline scenario. Then the sum of the

total GHG benefit of each year over the established time period. Afterwards, the average GHG benefit of the project was calculated over the established time period using the following equation:

$$LA = \frac{\sum_{t=0}^n PE_t - BE_t}{n}$$

Where:

- LA = The long-term average GHG benefit
- PE_t = The total to-date GHG emission reductions and removals generated in the project scenario (tCO₂e). Project scenario emission reductions and removals shall also consider project emissions of CO₂, N₂O, CH₄ and leakage.
- BE_t = The total to-date GHG emission reductions and removals projected for the baseline scenario (tCO₂e)
- t = Year
- n = Total number of years in the established time period

AENOR assessed the calculation of the project net GHG removals and considers it is corrected.

Project Emissions

Biomass burning

Estimations were estimated in accordance with the tool A/R Methodological Tool “Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity”. Non-CO₂ GHG emissions resulting from any occurrence of fire within the project boundary shall be accounted for each incidence of fire which affects an area defined as forest, provided that the accumulated area affected by such fires in a given year is ≥5% of the project area. For the ex-ante estimations, this forest fires are considered as zero, considering the history of absence of fires since the first plantations established in the farm in 2013.

Other project emissions

As per the methodology AR ACM 0003 section 5.5 “GHG emissions resulting from removal of herbaceous vegetation, combustion of fossil fuel, fertilizer application, use of wood, decomposition of litter and fine roots of N-fixing trees, construction of access roads within the project boundary, and transportation attributable to the project activity shall be considered insignificant and therefore accounted as zero”.

Therefore, the ex-ante project emissions are considered as zero. AENOR deems that this assumption is correct and in accordance with the methodology, tools, the VCS requirements and the IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (2003).

Leakage

According to the methodology AR-ACM003 v.2.0, section 5.6, leakage emissions shall be estimated as follows:

$$LK_t = LK_{AGRIC,t}$$

Where:

LK_t = GHG emissions due to leakage, in year t ; t CO₂-e

$LK_{AGRIC,t}$ = Leakage due to the displacement of agricultural activities in year t , as estimated in the tool “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity”; t CO₂-e

According the applied methodology the only leakage emissions that can occur are the GHG emissions due to displacement of pre-project agricultural activities. As described in the PD/MR, and confirmed during the remote visit, no agricultural activities were displaced due to the project activities. Therefore, leakage is considered to be 0.

Based on the site visit and the evidence provided, AENOR deems this consideration as credible.

Uncertainty

According to Appendix 2 of the methodology tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”, there is a procedure to apply an uncertainty discount if estimates have high uncertainty. Since uncertainty is not needed to estimate for baseline emissions, application of uncertainty discount is not requested for ex ante project emissions.

Estimated Net GHG Emission Reductions and Removals

According the applied methodology the net anthropogenic GHG removals by sinks were calculated as follows:

$$\Delta C_{AR-CDM,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t} - LK_t$$

Where:

$\Delta C_{AR-CDM,t}$ = Net anthropogenic GHG removals by sinks, in year t ; tCO₂-e

$\Delta C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t ; tCO₂-e

$\Delta C_{BSL,t}$ = Baseline net GHG removals by sinks, in year t ; tCO₂-e

LK_t = GHG emissions due to leakage, in year t ; tCO₂-e

The following table shows ante the ex-ante calculations for the net GHG removals:

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG removals (tCO ₂ e)	Net GHG removals accumulated (tCO ₂ e)	Number of instances
2016	0	0	0	0	0	1
2017	0	109,921	0	109,921	109,921	1

2018	0	248,749	0	248,749	358,670	1
2019	0	340,267	0	340,267	698,937	1
2020	0	364,694	0	364,694	1,063,632	1
2021	0	319,063	0	319,063	1,382,695	1
2022	0	250,023	0	250,023	1,632,719	2
2023	0	211,737	0	211,737	1,844,456	2
2024	0	223,826	0	223,826	2,068,282	2
2025	0	297,107	0	297,107	2,365,389	2
2026	0	393,764	0	393,764	2,759,154	2
2027	0	-193,785	0	-193,785	2,565,368	2
2028	0	-163,013	0	-163,013	2,402,356	2
2029	0	161,230	0	161,230	2,563,586	2
2030	0	280,202	0	280,202	2,843,788	2
2031	0	392,387	0	392,387	3,236,175	2
2032	0	326,450	0	326,450	3,562,625	2
2033	0	78,484	0	78,484	3,641,109	2
2034	0	-125,885	0	-125,885	3,515,225	2
2035	0	-359,154	0	-359,154	3,156,071	2
2036	0	-292,369	0	-292,369	2,863,702	2
2037	0	-184,477	0	-184,477	2,679,225	2
2038	0	-167,544	0	-167,544	2,511,681	2
2039	0	156,194	0	156,194	2,667,875	2
2040	0	274,448	0	274,448	2,942,323	2
2041	0	386,495	0	386,495	3,328,818	2
2042	0	320,525	0	320,525	3,649,343	2
2043	0	72,012	0	72,012	3,721,355	2
2044	0	-133,451	0	-133,451	3,587,904	2
2045	0	-379,400	0	-379,400	3,208,504	2
2046	0	-292,589	0	-292,589	2,915,915	2
2047	0	-194,645	0	-194,645	2,721,269	2
2048	0	-175,028	0	-175,028	2,546,241	2
2049	0	149,886	0	149,886	2,696,127	2
2050	0	268,860	0	268,860	2,964,987	2
2051	0	381,046	0	381,046	3,346,034	2
2052	0	315,110	0	315,110	3,661,143	2

2053	0	67,144	0	67,144	3,728,287	2
2054	0	-148,000	0	-148,000	3,580,287	2
2055	0	-370,117	0	-370,117	3,210,169	2
2056	0	-293,229	0	-293,229	2,916,941	2
2057	0	-194,615	0	-194,615	2,722,326	2
2058	0	-174,996	0	-174,996	2,547,330	2
2059	0	149,919	0	149,919	2,697,249	2
2060	0	268,893	0	268,893	2,966,142	2
2061	0	381,080	0	381,080	3,347,221	2
2062	0	315,143	0	315,143	3,662,365	2
2063	0	56,402	0	56,402	3,718,766	2
2064	0	-136,814	0	-136,814	3,581,952	2
2065	0	-370,757	0	-370,757	3,211,195	2
2066	0	-293,198	0	-293,198	2,917,997	2
2067	0	-194,583	0	-194,583	2,723,415	2
2068	0	-174,963	0	-174,963	2,548,451	2
2069	0	149,952	0	149,952	2,698,403	2
2070	0	268,927	0	268,927	2,967,330	2
2071	0	381,113	0	381,113	3,348,443	2
2072	0	304,401	0	304,401	3,652,843	2
2073	0	67,588	0	67,588	3,720,431	2
2074	0	-137,454	0	-137,454	3,582,978	2
2075	0	-370,726	0	-370,726	3,212,252	2
2076	0	-293,166	0	-293,166	2,919,086	2
2077	0	-194,550	0	-194,550	2,724,536	2
2078	0	-174,930	0	-174,930	2,549,605	2
2079	0	149,986	0	149,986	2,699,591	2
2080	0	268,960	0	268,960	2,968,551	2
2081	0	370,371	0	370,371	3,338,922	2
2082	0	315,587	0	315,587	3,654,509	2
2083	0	66,949	0	66,949	3,721,457	2
2084	0	-137,423	0	-137,423	3,584,034	2
2085	0	-370,694	0	-370,694	3,213,340	2
2086	0	-293,133	0	-293,133	2,920,207	2
2087	0	-194,517	0	-194,517	2,725,690	2

2088	0	-174,897	0	-174,897	2,550,793	2
2089	0	150,019	0	150,019	2,700,812	2
2090	0	258,218	0	258,218	2,959,030	2
2091	0	381,557	0	381,557	3,340,587	2
2092	0	314,948	0	314,948	3,655,535	2
2093	0	66,979	0	66,979	3,722,514	2
2094	0	-137,391	0	-137,391	3,585,123	2
2095	0	-370,661	0	-370,661	3,214,462	2
2096	0	-293,100	0	-293,100	2,921,361	2
2097	0	-194,483	0	-194,483	2,726,878	2
2098	0	-174,863	0	-174,863	2,552,015	2
2099	0	139,277	0	139,277	2,691,291	2
2100	0	269,404	0	269,404	2,960,695	2
2101	0	380,918	0	380,918	3,341,613	2
2102	0	314,978	0	314,978	3,656,591	2
2103	0	67,011	0	67,011	3,723,602	2
2104	0	-137,358	0	-137,358	3,586,244	2
2105	0	-370,628	0	-370,628	3,215,616	2
2106	0	-293,067	0	-293,067	2,922,549	2
2107	0	-194,450	0	-194,450	2,728,100	2
2108	0	-185,606	0	-185,606	2,542,494	2
2109	0	150,463	0	150,463	2,692,957	2
2110	0	268,764	0	268,764	2,961,721	2
2111	0	380,948	0	380,948	3,342,669	2
2112	0	315,010	0	315,010	3,657,680	2
2113	0	67,044	0	67,044	3,724,724	2
2114	0	-137,325	0	-137,325	3,587,399	2
2115	0	-370,595	0	-370,595	3,216,804	2
2116	0	-293,033	0	-293,033	2,923,771	2
2117	0	-205,192	0	-205,192	2,718,578	2
2118	0	-174,420	0	-174,420	2,544,159	2
2119	0	149,823	0	149,823	2,693,982	2
2120	0	268,795	0	268,795	2,962,778	2

Total (long-term average)	-	-	-	-	2.918.000	-
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For the purpose of clarification, (+) values mean an increase in carbon stocks and (–) values represents a decrease in carbon stocks due to harvest activities.

The long-term average is the mean value of all the carbon stocks in a period of time defined by the VCS Standard. It represents the maximum amount of carbon credits (VCUs) that the project can claim, and for this project, the ex ante value, is 2.918.000 tCO₂e (prior to non-permanence risk buffer discount).

AENOR deems that values are correct and consistent with the sources.

The values and estimates presented in the PD/MR are considered reasonable based on the documentation reviewed, further references and the result of the interviews during the remote visit.

The PD/MR describes in an appropriate way with evidence and justifications how the project activity fulfills with the applicability conditions of the tools.

Based on the information reviewed, it can also be confirmed that the sources used are correctly quoted and interpreted in the PD/MR and supporting documents. All assumptions and data indicated in the PD/MR and all relevant sources were checked and confirmed.

In essence, the methodology was correctly applied following the requirements. All values in the PD/MR are considered reasonable in the context of the proposed VCS project activity. Data sources are quoted correctly. Hence, the calculation of baseline emissions, project emissions and removals, leakages and the estimated net GHG removals are considered correct.

3.4.7 Methodology Deviations

No deviations were detected from the applicable methodology.

3.4.8 Monitoring Plan

The monitoring plan presented in the PD/MR complies with the requirement of the methodology. The assessment team checked all parameters presented in the monitoring plan against the requirements of the methodology. For the monitoring of carbon stock changes, the requirements and parameter list as per methodology and associated tools were followed.

Monitoring stage comprised gathering information, performing calculations, estimations of GHG removals, data management system, data quality and organizational structure. In this monitoring event, it is ensured that commonly established principles of forest inventory and management were put into practice with the elaboration of the Monitoring Plan.

The list of parameters available at validation and verification and the values used was also checked by AENOR and it is deemed complete and consistent with calculations and assumptions considered. The data/parameters available at validation and verification are included in sections 3.4.6 and 4.1.

GHG information system

As this is a grouped project that will be implemented in several instances in departments of Meta and Vichada, the controls associated with the multiple project instances and their monitoring is ensured with a central GHG information system. This centralized GHG information system is directly linked to the forest monitoring plan, as it is the basis for the measurement, registration, calculation and quality control of the standing volume in trees. It also includes the means to translate volume in standing trees to carbon stocks in aboveground biomass, belowground biomass, deadwood and litter.

The forest monitoring plan, the core element of the GHG information system is managed and maintained by Campo Forestal, the forest management operator.

Methods and process

According to the methodology applied, monitoring covered carbon stock changes for living above-ground. Below ground biomass was estimated indirectly based on above-ground biomass measurements and litter and dead wood were estimated as a percentage of carbon stock in tree biomass.

Project boundaries are defined at the beginning of monitoring period and the same geographic boundaries will be maintained, according to VCS AFOLU requirements. However, the project area will be permanently monitored along the crediting period, since new strata may be created due to new plantations in the coming years, and after potential disturbances effects (pests, droughts, fire). Geographic coordinates are established recorded and archived. A Geographic Information System was implemented for the validation and verification.

The number of plots measured were estimated according to A/R Methodological Tool “Calculation of the number of sample plots for measurements within A/R CDM project activities” (see details in section 4.2 of this report). Stratification was done considering age class (plantation date); and species planted. Parameters to be monitored are the following:

- A_i ; Area of stratum i (ha)
- $V_{TREE\ j\ p\ i}$; Stem volume of trees of species or group of species j in plot p in stratum i (m³)
- DBH; Diameter at breast height of tree (cm)
- H ; Height of trees (m)
- T ; Time period elapsed between two successive estimations of carbon stock in trees and shrubs (Year)
- $A_{p,i}$; Area of sample plot (ha)
- n_i ; Number of sample plots in stratum i .
- N ; Number of plots to be established in the project area
- s_i ; Estimated standard deviation of biomass stock in stratum i ; t d.m. ha⁻¹.

Procedures to establish plots in field are described in section 5.3 Monitoring plan in PD/MR. New plots are installed when reaching the minimum monitoring age (one year), with an intensity of 1 plot every 25

ha (each with a total area of 500 m² - radius of 12.62 m). The re measuring process of the established plots continues until the end of the plantation rotation age. Prior to the start of the inventory all equipment used during the field work was checked and calibrated.

Monitoring measurements are carried out annually during September – October, in order to match with the annual growth cycles of the plantations. Each plot is geo-referenced. Each tree is identified either with paint or nameplate. Procedures for measuring the plots are described in 5.3 Monitoring plan in PD/MR and follow IPCC Good Practice Guidance for LULUCF (2003) and the methodology, and were described in detail in a comprehensive explanatory video provided by the PP during the remote validation/verification.

The processing and analysis of the information is done through databases in Microsoft Excel. The synthesis of the collected information is presented in dynamic tables and graphs that associate frequency distributions of the variables of interest (volume without bark, basal area, number of individuals, diameter - average height). Most of the variables of interest are taken directly in the field, and further analysis corresponds to the application of inferential statistics (volume). All data gathered as part of the monitoring plan was archived electronically and will be kept at least for two years after the end of the crediting period.

Data quality

Data quality procedures implemented are described in section 4.2 of this report.

Organizational structure

The compliance with the monitoring guidelines is oversee by Campo Forestal S.A.S., forest management operator and inventory responsible, under the coordination with the technical and planning team of an independent third party (Cambium S.A.). On the other hand, proper implementation of the monitoring plan in the field is the obligation of the technical team of the contractor, which is under control of Campo Forestal S.A.S. Carbon estimations and general calculations are developed by CAIA and CLIMIT.

Data archiving

Campo Forestal has a Standard Operational Procedure to archive the data collected. The document specifies the person in charge of archiving, the place the information is kept, and the procedures followed to transfer, archive, and manage all the information obtained in the monitoring events.

The procedures described in section 5 of the PD/MR were reviewed by the AENOR team and cross-checked against the applicable methodology and associated tools and were reproduced by the monitoring team on the field during the remote visit. The audit team found to be in compliance with methodological requirements, and good practice as defined.

In the opinion of the AENOR team, all necessary parameters required by the selected methodology are contained in the monitoring plan. They are clearly described, and the means of monitoring detailed in the plan comply with the requirements of the methodology. Tables in section 5 of the PD/MR detail the

different data variable to monitor along with the data unit, recording frequency, purpose of data, QA/QC, etc. Thus, the monitoring plan is in compliance with the applicable methodology

The sampling design and stratification is also detailed in section 5 of the PD. Equations for the estimation of the sample size have been checked by the audit team. Permanent sampling plots will be used for sampling over time to measure and monitor changes in carbon stocks of tree biomass.

The number of plots required for measuring the variation within the project boundary and strata were estimated by using the CDM A/R Methodological Tool Calculation of the number of sample plots for measurements within A/R CDM project activities (see section 4.2 of this report for more details).

In opinion of the AENOR assumptions considered for sampling design are reasonable and credible and consistent with calculation. Thus, AENOR deems the sampling plan correct.

After the review of evidence provided by the PP, the interview and communications with PP, AENOR confirms that monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for the implementation, including data management, quality and assurance control procedures, are sufficient to ensure that the GHG net anthropogenic removals achieved resulting from the proposed VCS project activity can be reported ex-post and verified. Therefore, in opinion of the AENOR team, the PP will be able to implement the monitoring plan.

3.5 Non-Permanence Risk Analysis

PP has elaborated VCS Non permanence Risk Report for the validation process according to the AFOLU Non-Permanence Risk Tool v4.0.

Below, it is explained the assessment and the issues raised on regard the non-permanence risk rating determined by the PP in the report dated on 26th November 2021 version 03.

Risk factor	Risk Rating	Findings and mitigation activities
Project Management: It is assessed using table 1 of the VCS AFOLU Risk Tool.	-2 (total may be less than zero)	a) All the trees species used in the project activities are non-native, however, it is proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located. The PP has provided documental evidence. Risk rating=0 is justified. b) Land tenure is clear, and there are no land use rights disputes or encroachments risks. The PP has provided documental evidence. Risk rating=0 is justified. c) In accordance with the evidence provided, Management team includes individuals with significant experience in all skills necessary to successfully undertake all project activities. The PP has provided documental evidence. Risk rating=0 is justified. d) The PP has a contractual agreement with Campo Forestal for the administration and management of the project. Management team

Risk factor	Risk Rating	Findings and mitigation activities
		maintains permanent present in the project area offices. The PP has provided evidences. Risk rating=0 is justified. e) Management team (Campo Forestal) includes individuals with significant experience in forest management, while CAIA Ingeniería S.A.S. and CLIMIT have significant experience in AFOLU project design and implementation, carbon accounting and reporting. The PP has provided documental evidence. Risk rating=-2 is justified. f) There is no adaptive management plan in place. Risk rating=0 is justified.
Financial viability: It is assessed using table 2 of the VCS AFOLU Risk Tool.	3 (total may not be less than zero)	a) Project cash flow breakeven point is greater than 10 years from the current risk assessment. The PP has provided documental evidence. Risk rating=3 is justified. b-d) Not applicable, see above. e-g) Not applicable, see below. h) Project has secured 80% or more of funding needed to cover the total cash out required before the project reaches breakeven. The PP has provided documental evidence. Risk rating=0 is justified. i) Project has not available as callable financial resources at least 50% of total cash out before project reaches breakeven. Risk rating=0 is justified.
Opportunity Cost: It is assessed using table 3 of the VCS AFOLU Risk Tool.	-4 (total may be less than zero)	a-e) Not applicable, see below. f) NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity. The PP has provided documental evidence. Risk rating=-4 is justified. g) Not applicable. h) Not applicable. i) Not applicable.
Project Longevity: It is assessed using table 4 of the VCS AFOLU Risk Tool.	4 (total may not be less than zero)	a) Without legal agreement or requirement to continue the management practice. Project longevity is 100 years. The PP has provided documental evidence. Risk rating=-4 is justified (24-100/5). b) Not applicable, see above.

Risk factor	Risk Rating	Findings and mitigation activities
Land Tenure and resources access/impact: It shall be assessed using table 6 of the Risk Tool.	0 (total may not be less than zero)	a) Ownership and resource access/use rights are held by same entity(s). The PP has provided documental evidence. Risk rating=0 is justified. b) Not applicable, see above. c)-d) There are no disputes over land tenure or ownership of the project area in more than 5 % of the project area nor disputes over access/use rights (or overlapping rights). The PP has provided documental evidence. Risk rating=0 is justified. e) Not applicable. f) Not applicable. g) Not applicable.
Community engagement: It shall be assessed using table 7 of the Risk Tool.	0 (total may be less than zero)	a) The project area consists of the plantation areas and therefore no one lives in the project area. On the other hand, the communities in the area of influence do not depend on the services or goods of the plantations. The PP has provided documental evidence. Risk rating=0 is justified. c) Not applicable.
Political Risks: It shall be assessed using table 8 of the Risk Tool.	0 (total may not be less than zero)	a-b) Not applicable, see below. c) a-e) Colombia presents -0.173 according to the World Bank Institute's Worldwide Governance Indicators. AENOR verified the value and reliability of source. Risk rating=2 is justified. d-e) Not applicable, see above. f) Colombia is implementing REDD+ Readiness or other activities. The PP has provided documental evidence. Risk rating=-2 is justified.
Fire Risk: It shall be assessed using table 10 of the Risk Tool.	LS*M=0.5	Insignificant. Less than every 10 years likelihood. Thus LS= 2 is reasonable. Mitigation (M) measures: Prevention measures applicable to the risk factor are implemented, and PP has proven history of effectively containing natural risk. Then, M=0.25 is reasonable.
Pest and disease outbreaks: It	LS*M=2	Insignificant. Less than every 10 years likelihood. Thus LS= 2 is reasonable.

Risk factor	Risk Rating	Findings and mitigation activities
shall be assessed using table 10 of the Risk tool.		Mitigation (M) measures: None. Then, M=1 is reasonable.
Extreme weather: It shall be assessed using table 10 of the Risk tool.	LS*M=1	Insignificant. Less than every 10 years likelihood. Thus LS= 1 is reasonable. Mitigation (M) measures: None. Then, M=1 is reasonable.
Geological risks: It shall be assessed using table 10 of the Risk Tool.	LS*M=0	No carbon stock losses expected to be cause by geological risks. Thus LS= 0 is reasonable. Mitigation (M) measures: none. Then, M=1 is reasonable.

The total final non-permanence risk is 3.5%; however, the minimum to be applied according to VCS standard is 10%.

AENOR has checked that information provided in the Non-Permanence Risk Report is consistent with the support documents provided, and each risk factor was thoroughly assessed for conformance against proper rationale, assumptions and justifications. AENOR deems that information provided is reliable and appropriate. Thus, the overall risk rating is credible and realistic and a 10% buffer was applied.

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

All calculations of greenhouse gas emission reductions and removals were checked by the audit team. No errors were discovered that materially affect the stated greenhouse gas emission reductions and removals of the project during the monitoring period. The methods used to estimate greenhouse gas benefits of the project were consistent with the methodology and the validated part of the project.

It is important to clarify that the ex ante estimation considers a single instance initially (El Porvenir) and two instances (El Porvenir and Caricare) from 2022, when the Caricare farm will join the group. Note that this second instance is not yet validated, but it will be in the next –second- monitoring period. On the other hand, the ex post estimates (01-November-2016 to 25-November-2020) will only claim VCU for the single instance -El Porvenir- within the group in this period.

Baseline net GHG removals by sinks

The continuation of pre project activity has been selected as the baseline scenario, and it does not include trees, shrubs, deadwood, or litter (cattle grazing), it is assumed, in agreement with IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (2003) that the net GHG removals by sinks in the baseline equals zero.

AENOR has checked and confirmed that this amount of baseline removals are zero and are in conformance and have followed the methodology of the PD.

Project net GHG removals by sinks

The actual net GHG removals by sinks are calculated as follows:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

Where:

$\Delta C_{ACTUAL,t}$	=	Actual net GHG removals by sinks, in year t; t CO ₂ -e
$\Delta C_{P,t}$	=	Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO ₂ -e
$GHG_{E,t}$	=	Increase in non-CO ₂ GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool "Estimation of non-CO ₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity"; t CO ₂ -e

The planted area of the first instance of the project during the monitoring period is summarized in the following table (number of hectares planted per year in instance 1 El Porvenir):

	2016	2017	2018	2019	2020
El Porvenir	1,746.7	1,886.8	1,074.2	692.1	126.8

Carbon stock changes are the sum of the changes in above-ground and below-ground tree biomass, dead wood, litter, and soil organic carbon stocks in the project scenario. Changes in the carbon stocks in project were estimated using the following equation described in the methodology:

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + \Delta C_{SHRUB_PROJ,t} + \Delta C_{DW_PROJ,t} + \Delta C_{LI_PROJ,t} + \Delta SOC_{AL,t}$$

Where:

$\Delta C_{P,t}$	=	Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; tCO ₂ -e
$\Delta C_{TREE_PROJ,t}$	=	Change in carbon stock in tree biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; tCO ₂ e
$\Delta C_{SHRUB_PROJ,t}$	=	Change in carbon stock in shrub biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; tCO ₂ e Error! Marcador no definido.”
$\Delta C_{DW_PROJ,t}$	=	Change in carbon stock in dead wood in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO ₂ e
$\Delta C_{LI_PROJ,t}$	=	Change in carbon stock in litter in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO ₂ e
$\Delta SOC_{AL,t}$	=	Change in carbon stock in SOC in project, in year t, in areas of land meeting the applicability conditions of the tool “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”, as estimated in the same tool; t CO ₂ e

Biomass carbon pools

Above and below ground biomass were estimated according to the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activity”. Carbon estimations in trees were based on field measurements of monitored parameters (see section 3.4.8 and 4.2 in this report). Estimations are archived as part of the project verification.

Although the ex ante removal estimates are based on the growth curves of the forest mass, the ex post estimates are based on the actual removals obtained in the surveyed monitoring plots (see section 4.2 of this report). The aboveground biomass corresponds to tree biomass, no shrubs are considered for estimation. The method used for estimating change in carbon stock in trees is the “stock change method”. Change in carbon stock in trees in two successive points in time is calculated as the difference between the two estimated stocks. Carbon values in every pool is estimated as the sum for

the period, and the starting point of the crediting period is zero carbon, since this is the first monitoring report.

According to the chapter “Estimating carbon stock in trees at a point of time” of the above mentioned tool, the following equation is used in order to estimate ex-post above and below ground biomass:

$$C_{TREE} = \frac{44}{12} \times CF_{TREE} \times B_{TREE}$$

Where:

- CTREE = Carbon stock in trees in the tree biomass estimation strata; t CO₂e
- CFTREE = Carbon fraction of tree biomass; t C (t d.m.)⁻¹. A default value of 0.47 is used
- BTREE = Tree biomass in the tree biomass estimation strata; t d.m.

For above ground and below ground biomass, measurement of fixed area plots of the tool (Appendix 1 - Methods of plot biomass measurement) was applied in order to estimate de biomass of trees:

$$B_{TREE,l,j,p,i} = V_{TREE,j}(x_{1,l}, x_{2,l}, x_{3,l}, \dots) \times D_j \times BEF_{2,j} \times (1 + R_j)$$

Where:

- BTREE j,p,l,t = Biomass of trees of species j in sample plot p of stratum i at late 2019 – early 2020.
- VTREE j, = Stem volume of tree species using field measurements of tree parameters (DBH and height), default values (allometric equation); m³.

For ex-post estimation, the allometric equation used derived from the paper by Nieto et al., 2016 “Effects of provenance and genetic variation on the growth and stem formation of eucalyptus pellita in Colombia”. The applied allometric equation is $0,000051265 \times (DBH^{1,8753}) \times (H^{0,9888})$. The equation predicts under-bark volume. As suggested by the tool, suitable correction was applied to estimate the over-bark volume.

- D_j = Basic wood density of tree species j. The species j corresponds to the species used in this project: *E. pellita*, *E. urograndis*, *E. urophylla*, *P. caribea*, with a basic density varying from 0.48 to 0.53 t.d.m./m³. This parameter was established as “available at validation” in the

Project Design, thus it was not measured or monitored. The value was obtained and corresponds to default value from the local source: MADR (2010) and Arango, B. et al (2001) and Giraldo, D. et al (2014). Proyectos sectoriales de mitigación de GEI sector AFOLU, Proclima (2001).

BEF_{2,j} = Biomass expansion factor for conversion of stem biomass to above-ground tree biomass, for tree species j; dimensionless. According to the methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs", for ex-post estimation the conservative default value of 1.15 is used.

R_j = Root-shoot ratio for tree species j; dimensionless. The values applied were taken from the suggested equation from the methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs". The value of R_j is estimated as:

$$R_j = \frac{e^{(-1.085+0.9256 \times \ln b)}}{b}$$

where b is the above-ground tree biomass per hectare (in t d.m. ha⁻¹).

Soil organic carbon

Estimations of soil organic carbon (SOC) stocks were done in accordance with the "Tool for the estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activity v01.1.0". As suggested by the tool, it is assumed that the implementation of the project activity firstly decreases the SOC content of the lands from pre-project level, due to the site preparation.

Afterwards, the SOC increases to the level that is equal to the steady-state SOC content under native vegetation. The increase in SOC content in the project scenario takes place at a constant rate over a period of 20 years from the year of planting.

SOC at the beginning of the project (SOC_{INITIAL,i}) is estimated by multiplying the factors in Table 5 of the tool (Relative stock change factors for different levels of nutrient input on cropland net effect over a period of 20 years) by the reference SOC. As per the tool, a loss in SOC (SOC_{LOSS,i}) is applied in the case that soil disturbance occurs on more than 10 per cent of the land area, which is the case of this Project. The following methodological formula is used for calculating the annual change in SOC stock:

$$dSOC_{t,i} = \frac{SOC_{REF,i} - (SOC_{INITIAL,i} - SOC_{LOSS,i})}{20}$$

Where:

dSOC_{t,i} = The rate of change in SOC stock in stratum i of the area of land, in year t; t C/ha/yr

$SOC_{REF,i}$	=	Reference SOC stock corresponding to the reference condition in native lands by climate region and soil types applicable to stratum i of the area of land; tC/ha
$SOC_{INITIAL,i}$	=	SOC stock at the beginning of the A/R CDM project activity in stratum i of the areas of land
$SOC_{LOSS,i}$	=	Loss of SOC caused by soil disturbance attributable the A/R CDM project activity, in stratum i of the areas of land; tC/ha

The parameters used for estimation of SOC were the same as in the ex ante calculations:

Data/Parameter available at validation	Value	Assessment procedure and result
$SOC_{REF,i}$ (tC/ha) Reference SOC stock corresponding to the reference by climate region and soil type applicable to stratum i of the areas of land	47	Default reference for tropical, moist climate region and soils with low activity clay (LAC), according to Table 3 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”
$f_{LU,i}$ (dimensionless) Land use factor	1	Default reference for all permanent grassland, according to Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”
$f_{MG,i}$ (dimensionless) Management factor	0.97	Default reference for “moderately degraded grassland Overgrazed or moderately degraded grassland, with somewhat reduced productivity (relative to the native or nominally managed grassland) and receiving no management inputs”, according to Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”.
$f_{IN,i}$ (dimensionless) Input factor	1	Default reference for grassland management (net effect over a period of 20 years) for grassland without input of fertilizer, according to Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”.

Application of the equation results in an estimated increase of 0.64 t C/ha/year in soil organic carbon.

Litter and Dead Wood

Estimations were done in accordance with the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities v 03.1”. The conservative default-factors with reference to the carbon stock in living trees were used for estimating both pools. Default values are 6% in the case of dead wood and 1% for litter, as follows:

Data/Parameter available at validation	Value	Assessment procedure and result
Deadwood (%) Conservative default factor expressing carbon stock in dead wood as a percentage of carbon stock in tree biomass	6	Default value for biome tropical, elevation <2.000 m and precipitation >1.600 m per year in Tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”
Litter (%) Conservative default factor expressing carbon stock in litter as a percentage of carbon stock in tree biomass	1	Default value for biome tropical, elevation <2.000 m and precipitation >1.600 m per year in Tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”

At this regard, the procedure was exactly the same for ex ante and ex post estimations.

GHG removals vintage

Finally, vintages were estimated starting from the total volume and carbon stocks. This total GHG stock corresponds to the amount of timber volume measured from the 1 November 2016 to 25 November 2020, which is the last day of field measurement. To determine the GHG removals per year, with the real data collected on field and considering the different plantation years, a growth curve was modelled. The form of the curve is the basis for the distribution of the total carbon stock into vintages.

Year	Project emissions or removals (tCO ₂ e)
2016	-
2017	30,404
2018	105,521
2019	206,517
2020	160,961

Project Emissions

In accordance to the tool "Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity", the emission of non-CO₂ GHGs resulting from burning of biomass and forest fires within the project boundary are considered zero, as the use of fire for site preparation and/or to clear the land of harvest residue prior to replanting is specifically excluded from the project management and therefore project emissions are estimated as zero. Moreover, there were no forest fires over the monitoring period.

As per the methodology AR ACM 0003 section 5.5 “GHG emissions resulting from removal of herbaceous vegetation, combustion of fossil fuel, fertilizer application, use of wood, decomposition of litter and fine roots of N-fixing trees, construction of access roads within the project boundary, and transportation attributable to the project activity shall be considered insignificant and therefore accounted as zero”.

Therefore, the ex-post project emissions are considered as zero. AENOR deems that this assumption is correct and in accordance with the methodology, tools, the VCS requirements and the IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (2003).

Leakage

According to the methodology AR-ACM003 v.2.0, section 5.6, leakage emissions shall be estimated as follows:

$$LK_t = LK_{AGRIC,t}$$

Where:

LK_t = GHG emissions due to leakage, in year t ; t CO₂-e

$LK_{AGRIC,t}$ = Leakage due to the displacement of agricultural activities in year t , as estimated in the tool “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity”; t CO₂-e

According the applied methodology the only leakage emissions that can occur are the GHG emissions due to displacement of pre-project agricultural activities. As described in the PD/MR, and confirmed during the remote visit, no agricultural activities were displaced due to the project actives. Therefore, leakage is considered to be 0.

Based on the site visit and the evidence provided, AENOR deems this consideration as credible.

Uncertainty

Appendix 2 of the methodology tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” includes a procedure to apply an uncertainty discount if estimates have high uncertainty. Since the uncertainty in the estimated mean value of the average carbon stock in trees is less than 10% (5.36%), no uncertainty discount was applied.

Estimated Net GHG Emission Reductions and Removals

According the applied methodology the net anthropogenic GHG removals by sinks were calculated as follows:

$$\Delta C_{AR-CDM,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t} - LK_t$$

Where:

$\Delta C_{AR-CDM,t}$ = Net anthropogenic GHG removals by sinks, in year t; tCO₂-e

$\Delta C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t; tCO₂-e

$\Delta C_{BSL,t}$ = Baseline net GHG removals by sinks, in year t; tCO₂-e

LK_t = GHG emissions due to leakage, in year t; tCO₂-e

The net GHG removals achieved for this monitoring period (1 November 2016 to 25 November 2020) (for the first and only one instance) are summarized in the table below.

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)	Buffer pool allocation	VCUs eligible for Issuance
2016	0	0	0	0	0	0
2017	0	30,404	0	30,404	3,040	27,364
2018	0	105,521	0	105,521	10,552	94,969
2019	0	206,517	0	206,517	20,652	185,865
2020	0	160,961	0	160,961	16,096	144,865
Total	0	503,404	0	503,404	50,340	453,064

The total GHG benefit calculated as the sum of stock changes along the monitoring period is 503,404 tCO₂e. There is no confidence deduction (see Uncertainty justifications in 3.4.6 and 4.1). The overall non-permanence risk rating was 4.5% (see section 4.5 in this report), however as it is established in the VCS Standard, the minimum percentage is 10%. Therefore, the total number of credits to be deposited in the buffer account is 50,340 VCUs and the total VCUs to be issued are 453,064 VCUs.

Ex post long-term average

The loss of carbon due to harvesting is considered in the quantification of project emissions, as set out in the VCS Standard for ARR project. As well as in the ex ante calculation (see section 3.4.6 of this report), as the project is undertaking an even-aged plantation management, the time period over the long-term GHG benefit is calculated including the last harvest/cut in the cycle. With a project crediting period of 100 years and a harvest cycle of 10-12 years, the long-term average GHG benefit is determined for a period of 105 years. The Long Term Average is estimated using the 100 years crediting period plus 5 years to consider the entire rotation length of the plantations done in 2025, this means a period for the LTA of 105, thus, from 2016 to 2120.

Since this is an ex post estimation, LTA is calculated considering the ex post GHG removals generated in the project scenario for the monitoring period (2016-2020) from the 2020 forest inventory, and the

stocks from the ex ante growth curve model values from 2020 (end of the current monitoring period) onwards.

Firstly, the expected total GHG benefit of the project for each year of the established time period is calculated as GHG removals from the project scenario minus baseline scenario. Then the sum of the total GHG benefit of each year over the established time period. Afterwards, the average GHG benefit of the project was calculated over the established time period using the following equation:

$$LA = \frac{\sum_{t=0}^n PE_t - BE_t}{n}$$

Where:

- LA = The long-term average GHG benefit
- PE_t = The total to-date GHG emission reductions and removals generated in the project scenario (tCO₂e). Project scenario emission reductions and removals shall also consider project emissions of CO₂, N₂O, CH₄ and leakage.
- BE_t = The total to-date GHG emission reductions and removals projected for the baseline scenario (tCO₂e)
- t = Year
- n = Total number of years in the established time period

The long-term average is the mean value of all the carbon stocks in a period of time defined by the VCS Standard. It represents the maximum amount of carbon credits (VCUs) that the project can claim, and for this project, the ex post value, is 2,318,517 tCO₂e (prior to non-permanence risk buffer discount).

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)	Net GHG removals accumulated (tCO ₂ e)	Number of instances
2016	0	0	0	0	0	1
2017	0	29.378	0	29.378	29.378	1
2018	0	125.200	0	125.200	154.578	1
2019	0	240.098	0	240.098	394.675	1
2020	0	244.247	0	244.247	638.922	1
2021	0	249.226	0	249.226	888.149	1
2022	0	228.726	0	228.726	1.116.875	2
2023	0	224.503	0	224.503	1.341.377	2
2024	0	262.579	0	262.579	1.603.956	2
2025	0	333.805	0	333.805	1.937.760	2
2026	0	425.989	0	425.989	2.363.750	2
2027	0	-266.235	0	-266.235	2.097.515	2

2028	0	-320.362	0	-320.362	1.777.153	2
2029	0	42.966	0	42.966	1.820.118	2
2030	0	181.624	0	181.624	2.001.742	2
2031	0	389.159	0	389.159	2.390.901	2
2032	0	405.125	0	405.125	2.796.026	2
2033	0	199.564	0	199.564	2.995.590	2
2034	0	6.106	0	6.106	3.001.696	2
2035	0	-273.255	0	-273.255	2.728.442	2
2036	0	-260.144	0	-260.144	2.468.298	2
2037	0	-256.926	0	-256.926	2.211.372	2
2038	0	-324.893	0	-324.893	1.886.478	2
2039	0	37.929	0	37.929	1.924.408	2
2040	0	175.870	0	175.870	2.100.277	2
2041	0	383.266	0	383.266	2.483.543	2
2042	0	399.200	0	399.200	2.882.743	2
2043	0	193.092	0	193.092	3.075.835	2
2044	0	-1.460	0	-1.460	3.074.376	2
2045	0	-293.501	0	-293.501	2.780.875	2
2046	0	-260.364	0	-260.364	2.520.511	2
2047	0	-267.095	0	-267.095	2.253.416	2
2048	0	-332.378	0	-332.378	1.921.038	2
2049	0	31.622	0	31.622	1.952.660	2
2050	0	170.282	0	170.282	2.122.942	2
2051	0	377.818	0	377.818	2.500.759	2
2052	0	393.785	0	393.785	2.894.544	2
2053	0	188.224	0	188.224	3.082.768	2
2054	0	-16.009	0	-16.009	3.066.758	2
2055	0	-284.218	0	-284.218	2.782.541	2
2056	0	-261.004	0	-261.004	2.521.537	2
2057	0	-267.064	0	-267.064	2.254.473	2
2058	0	-332.346	0	-332.346	1.922.127	2
2059	0	31.654	0	31.654	1.953.781	2
2060	0	170.315	0	170.315	2.124.096	2

2061	0	377.851	0	377.851	2.501.947	2
2062	0	393.818	0	393.818	2.895.765	2
2063	0	177.481	0	177.481	3.073.247	2
2064	0	-4.823	0	-4.823	3.068.424	2
2065	0	-284.857	0	-284.857	2.783.566	2
2066	0	-260.973	0	-260.973	2.522.593	2
2067	0	-267.032	0	-267.032	2.255.561	2
2068	0	-332.313	0	-332.313	1.923.248	2
2069	0	31.688	0	31.688	1.954.936	2
2070	0	170.348	0	170.348	2.125.284	2
2071	0	377.885	0	377.885	2.503.169	2
2072	0	383.076	0	383.076	2.886.244	2
2073	0	188.668	0	188.668	3.074.912	2
2074	0	-5.463	0	-5.463	3.069.450	2
2075	0	-284.827	0	-284.827	2.784.623	2
2076	0	-260.941	0	-260.941	2.523.682	2
2077	0	-266.999	0	-266.999	2.256.682	2
2078	0	-332.280	0	-332.280	1.924.402	2
2079	0	31.721	0	31.721	1.956.123	2
2080	0	170.382	0	170.382	2.126.505	2
2081	0	367.142	0	367.142	2.493.648	2
2082	0	394.262	0	394.262	2.887.909	2
2083	0	188.028	0	188.028	3.075.938	2
2084	0	-5.432	0	-5.432	3.070.506	2
2085	0	-284.795	0	-284.795	2.785.711	2
2086	0	-260.908	0	-260.908	2.524.803	2
2087	0	-266.966	0	-266.966	2.257.837	2
2088	0	-332.247	0	-332.247	1.925.590	2
2089	0	31.755	0	31.755	1.957.345	2
2090	0	159.639	0	159.639	2.116.984	2
2091	0	378.328	0	378.328	2.495.313	2
2092	0	393.623	0	393.623	2.888.935	2
2093	0	188.059	0	188.059	3.076.994	2

2094	0	-5.400	0	-5.400	3.071.595	2
2095	0	-284.762	0	-284.762	2.786.833	2
2096	0	-260.875	0	-260.875	2.525.958	2
2097	0	-266.933	0	-266.933	2.259.025	2
2098	0	-332.213	0	-332.213	1.926.812	2
2099	0	21.012	0	21.012	1.947.824	2
2100	0	170.826	0	170.826	2.118.650	2
2101	0	377.689	0	377.689	2.496.339	2
2102	0	393.653	0	393.653	2.889.992	2
2103	0	188.091	0	188.091	3.078.083	2
2104	0	-5.367	0	-5.367	3.072.716	2
2105	0	-284.729	0	-284.729	2.787.987	2
2106	0	-260.842	0	-260.842	2.527.145	2
2107	0	-266.899	0	-266.899	2.260.246	2
2108	0	-342.956	0	-342.956	1.917.291	2
2109	0	32.198	0	32.198	1.949.489	2
2110	0	170.186	0	170.186	2.119.675	2
2111	0	377.720	0	377.720	2.497.395	2
2112	0	393.685	0	393.685	2.891.080	2
2113	0	188.124	0	188.124	3.079.204	2
2114	0	-5.334	0	-5.334	3.073.870	2
2115	0	-284.695	0	-284.695	2.789.175	2
2116	0	-260.808	0	-260.808	2.528.367	2
2117	0	-277.642	0	-277.642	2.250.725	2
2118	0	-331.769	0	-331.769	1.918.956	2
2119	0	31.559	0	31.559	1.950.515	2
2120	0	170.217	0	170.217	2.120.732	2
Total (long-term average)	-	-	-	-	2.318.517	-

This value will be updated during each verification event considering the monitored data until the long-term average GHG benefit is reached. Once the total number of GHG credits issued has reached this average, the project will no longer issue further GHG credits.

In order to verify the accuracy and consistency of parameters monitored and used to calculate the removals achieved for the monitoring period, AENOR team reproduced the calculations checking the correctness of the formulae applied and assumptions used, when applicable and that values used matched with data sources.

AENOR checked that the list of parameters to be monitored was complete and consistent with information in the monitoring plan. Moreover, AENOR also verified a complete GIS package provided to cross check the information with data values used in calculations and monitoring report. Other default values used are from sources well accredited and validated at validation stage.

After a deep and thorough review and reproduction of calculations and the corresponding tracks to the other spreadsheets, AENOR deems the parameters monitored are correct, reliable and consistent. Then, the results showed in the joint PD/MR are reliable, consistent and accurate regarding the carbon accounting estimates, including baseline, project, and leakage emissions, and buffer pool allocation and total VCUs by vintage year.

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

The actual GHG removals were calculated by applying Standard Operation Procedures in measuring the sample plots selected. Monitoring crew members were trained before the monitoring event. The implementation of the monitoring SOP is part of the training sessions. Prior to the start of the inventory, all equipment used during the field work was checked and calibrated.

With the purpose of developing the monitoring plan, the property was stratified into 10 strata, and 219 plots were installed. Stratification was done considering age class (plantation date); and species planted. Based on previous technical experience, it was not considered as a variable to stratify the genetic provenance of the seedlings (clones vs seeds).

The location of the plots followed the guidance given by the corresponding methodological tool, as well as IPCC Good Practice Guidance for LULUCF (2002), chapter 4.3, and described in the Work Manual – permanent plots (2018). Permanent sampling plot's location is systematic, with random start. The number of plots was estimated according to "A/R Methodological Tool for Calculation of the number of sample plots for measurements within A/R CDM project activities". In the following table is shown the methodological tool estimation results and the number of plots finally installed for the measurement of forest stands.

Stratum		Strata area (ha)	N° Plots/stratum - Tool estimation	N° Plots/stratum - plots finally installed
<i>E. pellita</i>	2016	1,673.9	10	49
	2017	1,383.7	22	43
	2018	944.0	42	51
	2019	539.0	17	28
	2020	43.1	Not estimated (NE)	NE
<i>E. urograndis</i>	2016	42.1	2	3

Stratum		Strata area (ha)	N°Plots/stratum - Tool estimation	N°Plots/stratum - plots finally installed
<i>E. urophylla</i>	2017	450.1	13	21
	2018	92.6	4	6
	2019	118.5	6	9
	2020	37.8	NE	NE
	2016	0	NE	NE
	2017	6.5	3	3
	2018	37.6	5	6
	2019	34.7	NE	NE
	2020	46.0	NE	NE
	2016	30.8	NE	NE
<i>P. caribea</i>	2017	46.6	NE	NE
TOTAL area included in this monitoring event (ha)		5,287.8	124	219
TOTAL area planted (ha)		5,526.6	124	219

The total planted area in the monitoring period was 5,526.6 ha but considering the recent COVID-19 pandemic it was not possible to install all needed plots in each stratum. Thus, the area considered for this first monitoring event was lower than the total area planted. The carbon credits claimed were only applicable to the area measured (5,287.8 ha).

AENOR verified that monitoring crews implemented the monitoring plan as it is established in the PD/MR. AENOR also could evidence during the remote site visit that key workers are fully involved in monitoring events (training, measuring, archiving, reporting, quality control, etc.). QA/QC procedures are considered strict at identifying, reviewing, and handling inconsistencies found, and roles and responsibilities are clearly identified.

QA/QC procedures are implemented, and the use of these procedures ensure that net anthropogenic GHG removals by sinks are measured and monitored precisely, and are credible, verifiable, and transparent. Training is held for all relevant personnel on all data collection and analysis procedures.

First, a Quality Control System is implemented for routinely checking for data consistency, correctness, and completeness; for identifying and correcting errors and omissions; and for properly documenting and archiving data and documentation related with the monitoring activities as described in PD/MR. Quality Assurance measures are implemented in order to verify that data quality objectives are met, and in general, to support the effectiveness of the QC system.

Measuring crew from a different contractor is responsible for cross-checking over 20% of the installed plots. The selection of re-measured plots prioritizes following criteria: 1) plots near roads, native forest, water courses, 2) Accessibility and proximity to operations center, 3) Sector with the highest plot intensity.

Also, cross-checking of data is done following these two parameters:

1. Differential between years: it applies to those plots that have two measurements, where the measurement of the dendrometer parameters cannot be less than the data of the previous year.
2. Outliers: based on the diameter-height relationship, those data that do not represent the trend are tracked (e.g., thick, or tall trees with respect to their age).

Once this information is traced, it is delivered to the measuring crew for the cross-check. Checking is done firstly at a digital level, and then proceeds to verify directly in the field. The following items are cross-checked in the field: 1) plot location, 2) compliance with radius and area, 3) plot center and number, 4) clockwise numbering, 5) all individuals are numbered, 6) missing trees identified with a plate, 7) forked trees marked separately, 8) DBH mark located at 1.3 m, and finally DBH of all trees.

Finally, according to a tolerance range depending on the potential mistake, plots are considered valid or not (and re measured again).

In this regard, during the remote verification, AENOR team witnessed the documentary implementation of quality control when the PP cross-checked the accuracy of the data collected in the field and also when the data was translated to the spreadsheets. The monitoring report described the QC/QA for data entry. Original data sheets were provided to the verification team of AENOR. A random sample of these were selected and traced through to the corresponding excel spreadsheets with no errors observed.

Finally, data management and archival system is also detailed in the monitoring report. Roles and responsibilities along with data management and archival system are also detailed in the monitoring report and other supported documents.

Interviews with the PP and inspection of data and results demonstrated that the PP possess all of the competencies required for reporting of GHG emissions reductions on accurate way.

Data presented to the audit team were clear and coherent and processing steps could be traced to the corresponding sections of the methodology and monitoring plan with transparency.

The monitoring plan provides means for internal data review and quality control, and the data presented by the project proponent included the results of these internal assessments. AENOR reviewed the different procedures applied by the PP, helped by the consultancy firms and forest management operators, and AENOR considers that information provided is sufficiency and the quality of that information is appropriate to determine the GHG removals.

During the interviews visit, AENOR verified the enforcement of the quality assurance and quality protocols and checked that all instruments used for the whole monitoring period were checked and in good conditions to be used. Furthermore, AENOR performed a consistency check in order to verify the consistency of the previous measurement and the re-measurement, and to verify the correctness of the reported results.

5 VALIDATION AND VERIFICATION CONCLUSION

AENOR performed the validation and the verification of Cumare Carbon Project and has verified that the project is in compliance with the Verified Carbon Standard version 4.2 without qualifications or limitations.

The validation and verification process was performed on the basis of all issues and criteria of VCS. The conclusions of this report show that the project, as it was described in the joint project documentation and monitoring report, is in line with all criteria applicable for the validation and verification.

The verification assessment covered the first monitoring period from 01-November-2016 to 25-November-2020 and verified that calculated emission reductions were achieved during the monitoring period with a reasonable level of assurance.

AENOR is able to issue a positive verification opinion for the 503,404 tonnes CO₂e as reported in the joint project description and monitoring report for the reporting period above. The overall non-permanence risk rating was 10%. Therefore, the total number of credits to be deposited in the buffer account is 50,340 VCUs and the total VCUs to be issued are 453,064 VCUs.

Verification period: 01-November-2016 to 25-November-2020

Verified GHG emission reductions 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)	Buffer pool allocation	VCUs eligible for Issuance
2016	0	0	0	0	0	0
2017	0	30,404	0	30,404	3,040	27,364
2018	0	105,521	0	105,521	10,552	94,969
2019	0	206,517	0	206,517	20,652	185,865
2020	0	160,961	0	160,961	16,096	144,865
Total	0	503,404	0	503,404	50,340	453,064

Net change in carbon stocks: 503,404 tCO₂e.

Overall non-permanence risk rating: 10%

VCUs buffer to be deposited: 50,340 tCO₂e.

Total VCUs to be issued: 453,064 tCO₂e.

Date: 08 July 2022

A handwritten signature in black ink, appearing to read 'Carlos JP', is written over a long, thin horizontal line.

Carlos Jiménez

Validation and Verification Leader

APPENDIX I: List of evidence provided

Main documents:

- PD/Monitoring report: VCS PD-MR
- GIS Database
- Carbon calculations: Carbon stocks - VCS Grouped project
- VCS-Non-Permanence-Risk Report

Legal:

- Deed of purchase-sale of El Porvenir farm, Certificate of Tradition and Freedom.
- Certificate of existence and legal representation of Cumare S.A.S.
- Registration of plantations with the Colombian Agricultural Institute (ICA)

Procedures:

- FSC Forest Management Plan – Campo Forestal
- Operations Procedures Manual
- Data management standard operational procedure
- Permanent plots procedure.

Annexes:

- Field data collection forms in monitoring plots
- Evidence of the start of the project activity: establishment of plantations in October/2016
- Fire statistics in El Porvenir
- El Porvenir soils technical report
- Proclima: absence of overlapping projects.
- RENARE: absence of overlapping projects.
- EcoRegistry: absence of overlapping projects.
- COLCX: absence of overlapping projects.
- Growth Responses of Eucalyptus pellita F.Muell Pla
- Comparison of models – Volumen.xlsx
- Characterization_of_the_Orinoquia

- Analysis of non-conversion of native forest_El Porvenir-2021”
- Wildlife identification manual – EL PORVENIR 2020 CAMPO FORESTAL
- Cash flows 18062021
- Modelo linealizado Crecimiento
- Political risk.xlsx analysis for NPR

Social management strategy and records:

- Stakeholder_List_Campo Forestal_2021
- Communications and Complaints Register Campo Forestal.xlsx
- Environmental Education Report 2016-2017
- Socio-environmental diagnosis.
- Social Strategy
- Social Strategy Implementation Reports 2015-2016-2017-2018-2019-2020
- Productive Projects Report 2018-2019-2020
- Public summary of environmental and social monitoring 2016-2017-2018-2019-2020
- REFORESTADORA CUMARE SAS Management Summary 2014-2015-2016-2017-2018-2019-2020
- FSC annual audit report since 2016 to date.
- Dissemination of the forest management program summary to institutional stakeholders (ICA, ASORINOQUÍA, CORMACARENA, Ministry of Environment and Rural Development) in 2021.
- Reports of labor audits in the field for workers, and inspection reports on compliance with labor law for contractors 2016-2020.

Articles:

- Castro, Ana Flávia & Castro, Renato & Carneiro, Angélica & Márcia, Ana & Ferreira da Silva, Cláudio Homero & Cândido, Welliton & Santos, Rosemeire. (2016). Quantification of Forestry and Carbonization Waste. Renewable Energy (2016).
- Hardiyanto, Eko & Mendham, D.s. (2019). Growth Responses of Eucalyptus pellita F. Muell Plantations in South Sumatra to Macronutrient Fertilisers Following Several Rotations of Acacia mangium Willd.. Forests.
- Nieto, Victor & Giraldo Charria, Diana & Oviedo, Monica & Borralho, Nuno. (2016). Effects of provenance and genetic variation on the growth and stem formation of eucalyptus pellita in Colombia. Journal of Tropical Forest Science.

- Souza, F. M. L. et al. WOOD AND PULPING PROPERTIES OF EUCALYPTUS UROPHYLLA AND ITS HYBRID GROWN BY SILVOPASTORAL AND CONVENTIONAL FOREST PRODUCTION MODELS. Cellulose Chemistry And Technology. Bucuresti: Editura Acad Romane. 2017.
- PROFOR (2017). Current situation and future potentials of commercial forest plantations in Colombia: English Summary. Bogotá, Colombia.

APPENDIX II: Findings

VCS Corrective action requests (CARs)

CAR ID	01	Date: 15/07/2021
Description		
1.2 Sectoral Scope and Project Type Additional evidences to demonstrate that the project is eligible under the definition of ARR: "A1.1 Eligible ARR activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing or restoring vegetative cover (forest or non-forest) through the planting, sowing or human-assisted natural regeneration of woody vegetation. Eligible ARR projects may include timber harvesting in their management plan. The project area shall not be cleared of native ecosystems within the 10 year period prior to the project start date, as set out in Section 3.2.4."; and according to ARR definition in VCS standard. Particularly, demonstrate the non-conversion of remaining native forest after 01/November/2016.		
Project proponent response		Date: 18/10/2021
We have included additional evidence in chapter 1.2 to demonstrate the Cumare project activity is a ARR in scope 14. The text in section 1.2 refers to information contained in section 1.14. We are also sending complementary information as an annex.		
Documentation provided by Project proponent		
See complementary documentation "ANÁLISIS DE NO CONVERSIÓN DE BOSQUE NATIVO_EI Porvenir-2021 (002).pdf"		
VVB Assessment		Date: 01/11/2021
Not closed. Proof of non-conversion is now clear in section 1.13 Conditions Prior to Project Initiation. However, current section 1.2 seems not to be finished/reviewed ('SPECIES', footnote 1 'PONER NOMBRE DEL DOCUMENTO', 'Particularly, demonstrate the non-conversion of remaining native forest after 01/November/2016' directly copied). Please, 1) rephrase, 2) include a short summary of the non-conversion conclusion, 3) refer in the text the evidences provided, and the section in which the proofs are included for both periods (10 years prior to project start date, and after 01/Nov/2016).		
Project proponent response		Date: 10/11/2021
The non-conversion of native forests was summarized through the satellite images of chapter 1.13, demonstrating that native forests related to watercourses are maintained from 2016 onwards.		
Documentation provided by Project proponent		
PD/MR v3 10/11/2021		
VVB Assessment		Date: 16/12/2021
Closed. The information has been provided. Observation: 'El Porvenir farm where you it can be seen'. Please, correct.		
RESPONSE: The observation has been corrected. Closed.		

CAR ID	02	Date: 15/07/2021
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Description		
1.5 Eligibility Criteria: According to 3.5.15 of VSC 4.0, the following eligibility criteria are missing or not clear: 1) Meet the applicability conditions set out in the methodology applied to the project. 2) Use the technologies or measures specified in the project description. 3) Apply the technologies or measures in the same manner as specified in the project description. 4) Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area. 5) Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area. For example, the new project activity instances have financial, technical and/or other parameters (such as the size/scale of the instances) consistent with the initial instances, or face the same investment, technological and/or other barriers as the initial instances.		
Project proponent response		Date: 18/10/2021
We acknowledge that the “eligibility criteria” needed more clearance. This section in the PD has been improved to contain all the necessary applicability conditions set out in the finding.		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
Not closed. Applicability conditions regarding methodology and tools are not mentioned (1). On the other hand, ‘eligibility, baseline scenario and additionality’ is repeated three times. Please consider if you mean different concepts. Regarding 2) and 3), please define what kind of ARR projects would eligible. It seems that it would be eligible any ARR project regardless the specie, the project location (Department, Municipality), type of management, plantation objective, etc.		
Project proponent response		Date: 10/11/2021
The wording of the eligibility criteria to be part of the group project was corrected, including all the recommendations above.		
Documentation provided by Project proponent		
PD/MR v3 10/11/2021		
VVB Assessment		Date: 26/12/2021
Closed. Observation: ‘5. Systems implemented comply with the national definition of forest have a commercial purpose, a short rotation length and the timber produced delivered to the market.’ 1) Definition of ‘plantation’, instead of forest? 2) Indicate the eligible area (Meta and Vichada Departments) for the geographical area for the new members.		
RESPONSE: The definition of forest plantation has been added in the eligibility criteria (bullet point 4). Also, it has been indicated that the eligible area are the departments of Meta and Vichada (Bullet point 5). Closed.		

CAR ID	03	Date: 15/07/2021
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Description	
1.8 Ownership: - Include mention of the documents that prove Cumare's ownership of El Porvenir (type of document and document number, and indicate in which annex they are): - Escritura compraventa El Porvenir comp.pdf" - Matricula inmobiliaria El Porvenir - PHR-_7494571_V_1_REFORESTADORA CUMARE SAS 02 de marzo de 2021.PDF - Registro de cultivos forestales con fin comercial 2018.pdf" 2 - Indicate that El Porvenir will be the first instance. That is why Ownership is only explained for this one. 3- Indicate that in addition to the property that Cumare has, it has a contract with Campo Capital, which is the one who implements forest management, which is the program activity (this according to Ownership definition: The legal right to control and operate the program activities. Distinct from proof of right.).	
Project proponent response	Date: 18/10/2021
1- The documents for the purchase of El Porvenir, certification of existence and legal representation of Cumare, the ICA registry of the plantations and the company's real estate registration are included in the Annexes I to IV.. 2- It was clarified in chapter 1.8 that El Porvenir is the first farm to participate in the grouped Project 3- It was clarified in chapter 1.8 that Cumare has a legal agreement with Campo Forestal for the management of the company as well as the forest plantations.	
Documentation provided by Project proponent	
• The document of purchase of El Porvenir is in the document "Escritura compraventa El Porvenir comp.pdf" • The document of certificate of existence and legal representation of the Cumare company is "PHR-_7494571_V_1_REFORESTADORA CUMARE SAS 02 de marzo de 2021.pdf" • The document of ICA registry of forest plantations is "Actualización Registro de cultivos forestales con fin comercial 2018.pdf" • The document of real estate registration of the farm is "PHR-_7494582_V_1_21-03 CTL 236-20543.pdf" All these documents are delivered to the auditor in a dropbox folder.	
VVB Assessment	Date: 01/11/2021
Not closed. Requests in 1), 2) and 3) are now attended. - do not substitute REFORESTADORA CUMARE SAS instead of "Cumare", "the Cumare company", etc., since it is the official name of the Project Proponent. - delete mentions such as "For the validation and verification, the complete documents of the afore mentioned will be presented"	
Project proponent response	Date: 10/11/2021
Corrections in the PD has been made to explain the relation between REFORESTADORA CUMARE SAS and CUMARE. Just for clarification, CUMARE is the owner of the project (project proponent) and Campo Forestal acts as an independent forest operator, managing CUMARE forest assets. Also were deleted the mentions related to verification and validation. Finally, include update documents that support the El Porvenir ownership such as "Certificado de Existencia y Representación Legal "and "Certificado de Tradición y Libertad El Porvenir"	
Documentation provided by Project proponent	
Certificado de Existencia y Representación Legal Certificado de Tradición y Libertad El Porvenir"	
VVB Assessment	Date: 17/11/2021
Closed.	

CAR ID	04	Date: 15/07/2021
Description		
1.9 Project Start Date: Objective evidence of the project start date (01/Nov/2016) is needed: Indicate the type of document, explain it and mention in which annex it is found. Clarify that the first plantations were established in 2013, so the date of establishment is different than the retroactive period that is being used (4-5 years).		
Project proponent response		Date: 18/10/2021
Section 1.8 "Project start date" has been amended accordingly. Project start date has been set up as in 1 Nov 2016. A satellite analysis has been performed to demonstrate this date. The analysis is provided as an independent documentation.		
Documentation provided by Project proponent		
• Analisis fecha de inicio proyecto.pdf		
VVB Assessment		Date: 01/10/2021
Not closed. According to this conclusion: "De acuerdo al análisis realizado con la metodología propuesta, se puede concluir que el inicio de las plantaciones forestales realizadas por CUMARÉ para el proyecto VCS "Grouped Forestry Project in Colombia" han sido realizadas entre 2016 y 2017. Según la imagen de enero de 2016, se puede interpretar que el área de proyecto estaba bajo un uso de suelo de vegetación de porte bajo, mientras que en enero de 2017 se puede apreciar que la tierra ha sido preparada para la plantación"; the project start date would not be 01/11/2016. In other words, there is no clear evidence that the 2016 plantations were fully established right before 01/11/2016, but after 01/01/2017. Further than this, the following items are not attended: - In section 1.9, include an explanation of the objective evidence of the project start date (01/Nov/2016) provided (Annex 9). - Clarify that the first plantations were established in 2013, so the date of establishment is different than the retroactive period that is being used (4-5 years), only including plantations established from 01/11/2021 onwards.		
Project proponent response		Date: 10/11/2021
To justify the start of the Cumare forest plantations in 2016 a new document has been prepared containing information of the plantation activities in 2016 (annex 10 of the PD). Also, it is included a set of invoices for products and services purchased by Campo Forestal from third-party companies that performed the plantations.		
Documentation provided by Project proponent		
Carta a Aenor 09-11-2021.pdf Dropbox folder: "facturas servicios plantacion"		
VVB Assessment		Date: 17/11/2021
Closed. The project start date has been confirmed.		

CAR ID	05	Date: 15/07/2021
Description		

1.13 Project Location: - The map in Figure 4 is not readable. - Put maps of the instances where you can see what the zoning is inside the plots (forest, plantation, etc.), in order to clarify which is the project area (PA). A general one with both areas and a specific one in El Porvenir. Indicate the breakdown of the areas in figures (plantation, native forest, etc.).	
Project proponent response	Date: 18/10/2021
Figure 4 has been corrected to make it more clear for readers. Figure 5 to 7 has been added to shown in detail the project boundaries.	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 01/11/2021
Closed. The information has been completed in sections 1.12 and 1.13 as requested.	

CAR ID	06	Date: 15/07/2021
Description		
1.16.1 Projects Registered (or seeking registration) under Other GHG Program(s): - It is not mentioned whether it has been considered that there is no overlap with other projects in the country in databases (e.g. Verra, Ecoregistry, COLCX, etc.), and in RENARE. - Indicate whether the project has been registered in the past under any other GHG programs.		
Project proponent response		Date: 18/10/2021
- As mentioned in the PD, this is the first time that Cumare has applied to a GHG program. To respond to this CAR, we reviewed GHG programs to show that this is the first carbon project for Cumare. In the document " <i>Inicio – Proclima.pdf</i> " it is described the different projects registered in the Proclima GHG program. As it can be seen, these projects correspond to Colombian projects in which Cumare does not appear. In addition, EcoRegistry, which is a very well known and commonly used platform for Colombian projects, has delivered a letter stating that Cumare has never been registered in their platform.		
Documentation provided by Project proponent		
- See complementary documentation in "<i>Inicio – Proclima.pdf</i>" - Certificación de registro EcoRegistry - Reforestadora Cumare SAS.pdf		
VVB Assessment		Date: 01/11/2021
It was cleared that the project has not been registered in the past under any other GHG program. However, it was not confirmed that the project does no overlap with other projects in the country in databases (e.g. Verra, Ecoregistry, COLCX, etc.), and in RENARE . Not closed.		
Project proponent response		Date: 10/11/2021
The overlap project (cartographic information) was verified in RENARE, and the platform showed that the overlap doesn't exist. Also, we share the link to COLCX where appear all the current projects in Colombia and The Cumare Project doesn't appear: https://colcx.com/Iniciativas . For the case of RENARE, the registration started in 2021 only.		
Documentation provided by Project proponent		
Screenshot of RENARE.pdf (platform with the cartographic information)		

VVB Assessment	Date: 17/11/2021
Not closed. Please, the information of these responses (2) has to be included in section 1.16.1. Otherwise, the information is correct.	
Project proponent response	Date: 26/11/2021
The information has been added in the document.	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 06/12/2021
Not closed. No changes have been done.	
Project proponent response	Date: 10/12/2021
Changes have been done in the previous version when adding the text: "However, the project does not overlap with other carbon projects. Using cartographic information, it is verified on the RENARE platform El Porvenir does not overlap with other carbon projects. In addition, we share the link to COLCX where all current projects in Colombia appear. The group forestry project does not appear in the link: https://colcx.com/Iniciativas .", attending to the response provided by AENOR on the 17/11/2021	
Documentation provided by Project proponent	
VVB Assessment	Date: 17/12/2021
Closed.	

CAR ID	07	Date: 15/07/2021
Description		
1.16.2 Projects Rejected by Other GHG Programs: Response is not according to the requested information.		
Project proponent response	Date: 18/10/2021	
As mentioned in the PD, this is the first time that Cumare is presented to a GHG program and it has never been presented to any other GHG Program.		
Documentation provided by Project proponent		
N/A		
VVB Assessment	Date: 01/11/2021	
Closed. The information was completed.		

CAR ID	08	Date: 15/07/2021
Description		
1.18.1 Leakage Management: Justify.		

Project proponent response	Date: 18/10/2021
Project activity does not generate leakage emissions as described in section 4.3 of the PD. Section 1.18.1 the PD has been improved to explain the fact that pre-existing activity on the project site does not generate leakage. Thus, there is no need to elaborate a leakage management plan and/or leakage and risk mitigation measures.	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 01/11/2021
Closed. The absence of leakage management and risk mitigation area is now properly justified in PD/MR.	

CAR ID	09	Date: 15/07/2021
Description		
2.4 Public Comments: Not yet provided.		
Project proponent response	Date: 18/10/2021	
Chapter 2.4 “Public comments” has been updated to reflect and demonstrate the public comments received by different stakeholders and how the project proponent is managing and responding to them. We understand that the chapter is now following the VCS PD template.		
Documentation provided by Project proponent		
- Stakeholder_List_Campo Forestal_2021.xlsx - Registro Comunicaciones - Campo Forestal.xlsx		
VVB Assessment	Date: 01/11/2021	
Not closed. The information recently included matches only with the section 2.2 Local Stakeholder Consultation, please, move it there. On the other hand, the request of section 2.4 Public Comments is <u>only</u> regarding the comments received during the ‘public comment period’ through Verra registry (“Demonstrate how due account of all and any comments received during the public comment period has been taken. Include details on any updates to the project design or demonstrate the insignificance or irrelevance of comments.”). On August 3 rd , 2021 you received and email from Verra with the file. This file can also be downloaded on: https://registry.verra.org/app/projectDetail/VCS/2532		
Project proponent response	Date: 10/11/2021	
The comments review was performed, so the answer relate to the financial support was included in the PD document (point 2.4). For the second comment about the error in the table (Net GHG emission reductions or removals after year 2024), the correction was made too in the PD document		
Documentation provided by Project proponent		
PD/MR v3 10/11/2021		
VVB Assessment	Date: 17/11/2021	
Not closed. - The three first paragraphs correspond to section 2.2 Local Stakeholder Consultation, please, move it		

there. This section is only for the comments from the public consultation on Verra Registry.	
- To attend this section: "Demonstrate how due account of all and any comments received during the public comment period has been taken. Include details on any updates to the project design or demonstrate the insignificance or irrelevance of comments."). Thus, please, indicate: 1) Comments received (one by one), 2) How it has been addressed, particularly indicate specifically in any information of the PD/MR has been affected/modified.	
Project proponent response	Date: 26/11/2021
The three first paragraphs have been changed from section 2.4 to 2.2 In relation to the second bullet point, the PD/MR has included what is suggested by the auditor	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 06/12/2021
Closed.	

CAR ID	10	Date: 15/07/2021
Description		
3.3 Project Boundary: - The map is not readable. - Include a map of the Project Area (property and Carbon Accounting Area within the property, with the zoning of plantations, native forest, etc.). - Indicate that the delimitation of other areas is not required, such as leakage belt or reference area. - Remove template instruction. - In table 7, Burning of woody biomass, for CH 4 and N 2 O, would be NO.		
Project proponent response		Date: 18/10/2021
- The map has been changed to make it more readable. We have very clearly stated the property limits, however we prefer not to mention or zone the areas outside the project (carbon accounting) limits, to avoid any misinterpretation from the reader about the project limits. - Template instructions have been removed - In relation to "burning of woody biomass" we have changed from YES to NO.		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
Not closed. - "No visible landmarks have been established on the field. Map with project boundaries of the property are shown in Figure 10". Reference is not correct. - 'Figure 37. Project boundaries in "El Porvenir" farm in green (red contour is the property limit)'. Indicate green area as the Carbon Accounting Area (not as project boundaries). - "For an increased transparency and better understanding of the project, the project proponent clarifies there are no other areas to report, such as leakage management". Mention as not applicable 'leakage management <u>area</u> (not 'leakage management') or 'leakage belt' and reference area.		
Project proponent response		Date: 10/11/2021
Recommendation have been applied to section 3.3		

Documentation provided by Project proponent	
PD/MR v3 10/11/2021	
VVB Assessment	Date: 06/12/2021
Closed. Observation: "the project proponent clarifies there are no other areas to report, such as leakage management areas". Add "or reference areas".	
RESPONSE: It has been added " <i>or reference areas</i> " Closed.	

CAR ID	11	Date: 15/07/2021
Description		
3.4. Baseline scenario: A. Remove from this section what is actually 'additionality' (leave only a definition of the baseline scenario from step 1) and move the rest to additionality. ----- B. Justify second bullet of step 0 of the EB-35 methodology: "Provide evidence that the incentive from the planned sale of CERS was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and / or other corporate) documentation that was available to third parties at, or prior to, the start of the project activity." ----- C. Step 3: Barrier analysis. Page 57: "Despite this project does not need to go for step 3, investment analysis, the project proponent has elaborated an economic analysis of the project. As it can be seen in the Non-permanence risk assessment, the project Internal Rate of Return is circa 2%." Page: 58 "In conclusion, the benchmark IRR for an afforestation activity without carbon finance in the project area is estimated to be 9.89% (2014) and 9.84% (2015)." 1) The IRR value does not match, in any case, it is low. 2) Move this justification to financial barriers. ----- D. If there are other similar activities ("Commercial forest plantations in Meta department is only 44,486 ha, which is 0.52% of the department area"), it would be necessary to analyze: - Analysis of the other plantations, justify similarities and differences. - If they are similar, "explain why the similar forestation activities did not face barriers to which the proposed A / R CDM project activity is subject." -----		

E.

According to VCS std 4.0:

“3.5.11. The baseline scenario for a project activity shall be determined for each designated geographic area, in accordance with the methodology applied to the project. Where a single baseline scenario cannot be determined for a project activity over the entirety of a geographic area, the geographic area shall be redefined or divided such that a single baseline scenario can be determined for the revised geographic area or areas.”

Then, clarify that Meta and Vichada are included as a single geographic area, and that the baseline conditions are common for the entire geographic area (due to soils, productive activities, etc.) since the conditions are similar.

F.

According to VCS std 4.0:

“3.5.12. The additionality of the initial project activity instances shall be demonstrated for each designated geographic area, in accordance with the methodology applied to the project. Where the additionality of the initial project activity instances within a particular geographic area cannot be demonstrated for the entirety of that geographic area, the geographic area shall be redefined or divided such that the additionality of the instances occurring in the revised geographic area or areas can be demonstrated.” Same as in previous point E.

Project proponent response

Date: 18/10/2021

A.

'Additionality' has been removed from this section and it has been left only a definition of the baseline scenario from step 1

B.

Second bullet point in step 0 (early consideration of sale of VERs) is demonstrated with information that can only be shared under an NDA. Notwithstanding, it must be noted that this requirement is only applicable to CDM projects. Verra or the VCS standard does not require this demonstration.

As per the Validation and Verification Manual, chapter 3.2.4 “additionality”: *“specific requirements and criteria for demonstrating additionality are specified in methodologies. VVBs must assess project additionality against these criteria in full. Methodologies may reference additionality tools from the VCS or approved GHG programs such as CDM. When a methodology references a tool such as the CDM Combined tool to identify the baseline scenario and demonstrate additionality, VVBs need to assess additionality in accordance with the tool. VVBs must take account of relevant guidance issued in respect of the tool except where such guidance conflicts with VCS rules. For example, when projects apply the CDM tools for additionality. **VVBs must refer to the decisions and guidelines issued by the CDM Executive Board on assessment of barriers, investment analysis and common practice analysis, though they can disregard the CDM requirement for prior consideration of carbon finance (the latter being addressed by the VCS requirement to have projects validated within fixed times of the project start date)**”*

C.

What we have tried to demonstrate is that the IRR for this project activity is lower (2%) than the IRR that any investor would expect in those years for such activity (circa 9.8%). This is another way to demonstrate that the carbon credits are needed to leverage the IRR of the project, thus the additionality is demonstrated. The text has been moved to the financial barrier.

D.

This point was justified with more information in “step 4. Common practice”, that brings information from the document “PROFOR Commercial plantations in Colombia_Sintesis_Calidad”. The document will be shared in the second instalment. In it, a study of commercial afforestation in Colombia is made and through that to justify why El Porvenir faces huge barriers and needs the sale of carbon credits to lift them.

E. Different documentation such as • "PROFOR Commercial plantations in Colombia_Sintesis_Calidad and • Analysis of the legal and institutional framework and financial instruments for commercial forest plantations in Colombia" (Producto del programa "Colombia: Reforestación Comercial Potencial del Banco Mundial / PROFOR (P148233 have been used to determine that the minimum area of analysis of this type of activity is considered as "Orinoquia". Commercial forests in Colombia and in the documents mentioned, regions are considered with a regional approach taking into account three strategic areas: the Coffee Region and Suroccidente, the Caribbean, and the Orinoquia. El Provenir is in Meta department and together with Vichada and other department, they form the Orinoquia. Thus, the analysis done for the baseline is the same for Meta and Vichada department. F. Same explanation as in E.	
Documentation provided by Project proponent	
• "2017 PROFOR Commercial plantations in Colombia_Sintesis_Calidad.pdf" • Análisis del marco legal e institucional y de instrumentos financieros para plantaciones forestales con fines comerciales en Colombia.pdf	
VVB Assessment	Date: 01/11/2021
A, B, C, D. Closed. E, F. Not Closed. Include the explanation and evidences in 3.4 Baseline Scenario to justify that Meta and Vichada are included as a single geographic area, and that the baseline conditions and additionality are common for the entire geographic area (due to soils, productive activities, etc.) since the conditions are similar according to the rationale above. Observation: In step 4, review the phrasing ('in included'; 'crecimineto'; 'El Porvenir as the other forest estates, present'; 'presented in ES-I-CC-002 of 5 March 2018, see figure below' –no figure-).	
Project proponent response	Date: 10/11/2021
For points E and F, information was added to explain the evidence by which Meta and Vichada are considered as a single geographic area. Spelling adjustments will be made in the document indicated by the auditor with change control for the observation of step 4, only need to include the image that is mentioned in the text.	
Documentation provided by Project proponent	
PD/MR v3 10/11/2021	
VVB Assessment	Date: 17/11/2021
Observation. Closed. E, F. Not Closed. Include the explanation and evidences in 3.4 Baseline Scenario to justify that Meta and Vichada are included as a single geographic area, and that the BASELINE CONDITIONS and ADDITIONALITY are common for the entire geographic area (due to soils, productive activities, etc.) since the conditions are similar according to the rationale above. Please, remove the new information included in the version 3 10/11/2021 to attend this request since is not related. G. Figure 39 is no legible.	
Project proponent response	Date: 26/11/2021
The figure 39 is now legible. For E and F, we explain in greater detail why Meta and Vichada will be considered within the same area.	
Documentation provided by Project proponent	

N/A	
VVB Assessment	Date: 06/12/2021
Closed.	

CAR ID	12	Date: 15/07/2021
Description		
4.2 Project Emissions: 1. Clarify that according to AR-ACM0003 v2 "GHG emissions resulting from removal of herbaceous vegetation, combustion of fossil fuel, fertilizer application, use of wood, decomposition of litter and fine roots of N-fixing trees, construction of access roads within the project boundary, and transportation attributable to the project activity shall be considered insignificant and therefore accounted as zero.", as it has been considered. 2. Further detail the calculation process (information flow): starting data (GIS, plots -> inventory), stratification (age and species/area), assumptions/hypotheses (e.g. there is no difference between clones and seed), growth curves, long term average, etc. 3. Indicate source of Bark (%) and Basic density (t/m³) in PD/MR for each of the 4 species. 4. Excel: Volume of column K of the 'BD plot –tree level tab'. The source of the allometric equation is missing (from a pdf noto provided): $0.000051265 * (DBH ^ 1.8753) * * (H ^ 0.9888)$. 5. Table 8 of the PD/MR in indicates that the Root-to-shoot ratio (dimensionless) Rj From 0.2 to 0.3, but it goes from 0.22 to 0.43 (change also in 5.1 of the PD/MR). 6. The concept of long term average is not explained. 7. The long term average in Excel (Tab DB, cell DB5) considers 2015-2114, instead of 2017-2016. Verify also final net removals for, not including year (cell) 2116. 8. Clarify in the document that the project begins with one instance (indicate area established each year) and that for the calculations a second instance is incorporated as an assumption from 2022 onwards (and also indicate area established each year).		
Project proponent response		Date: 18/10/2021
1- The PD has been corrected in section 4.2 Project emissions, by including the text quoted in the finding extracted from the methodology. 2- A general overview of the process has been included in chapter 4.2 3- Sources of Bark (%) from de 4 species is indicated in the PD. In addition, the documents are attached in the folder for the second delivery. These documents are: <i>ArtigoPublicado</i> <i>Growth Responses of Eucalyptus pellita F. Muell Plap.</i> The source for Pinus Caribea is a link cited in the PD 4- In the excel, the source of the allometric equation is added. In addition, for the second round of responses to auditor, the document "CONIF 2015" will be provided, which is the source of the allometric equation and also the Excel "003. Comparacion modelos - Volumen" will be added in which Campo Forestal explains why they choose this formula. 5- The changes have been made 6- The concept of Long-term average has been explained in section 4.4 7- According to the VCS Standard, v 4.0, in section 3.2.21, the long-term average for "ARR or IFM projects undertaking even-aged management, the time period over which the long-term GHG benefit is calculated shall include at minimum one full harvest/cutting cycle, including the last harvest/cut in the cycle. For example, where a project crediting period is 40 years and has a harvest cycle of 12 years, the long-term average GHG benefit will be determined for a period of 48 years." Cumare credit period has been set in 100 years, applying the concept above the long-term average is considered until 2120 which is the last harvesting cycle of the planting regime. The Excel sheet has been		

amended accordingly. 8- In sections 1.1 and 1.11 the number of hectares that are part of the group project by El Porvenir is added and it is also clarified that from 2022 the Caricare farm will be part of the group project	
Documentation provided by Project proponent	
Documents provided for this CAR are: • ArtigoPublicado.pdf • Growth_Responses_of_Eucalyptus_pellita_F_Muell_Pla.pdf • 003. Comparacion modelos – Volumen.xlsx • Wood and Pulping properties.pdf	
VVB Assessment	Date: 01/11/2021
1. Closed. 2. Not closed. The section does not detail, step by step, the process followed to calculate ex ante removals, so that the calculations (Carbon stocks - VCS Grouped project 18102021) are traceable from beginning to end. For example, the starting data, the inventory process, IMAs obtained and how it was used, theoretical curves, allometric equations, volume to carbon stocks, etc. are not detailed. 3. Not closed. Include adequate references to scientific articles (author, etc.). 4. Not closed. Source CONIF 2015 not provided. 5. Not closed. Update in 5.1 Data and Parameters Available at Validation (0.23 instead of 0.2). 6. Not closed. There is no explanation on how LTA has been calculated (related to the request nº 2 above). 7. Closed. 8. Not closed. In section '1.1 Summary Description of the Project, table in page 6' (as well as in 1.11 Description of the Project Activity, table in page 17) the explanation regarding the table is confusing: Indicate in the text and in the title of the table that the data refer to the new hectares planted per year, not to the total area of plantation each year. On the other hand, the figures reported as slightly different to the ones reported in Excel 'Carbon stocks - VCS Grouped project 18102021' tabs 'Expost accurate' and 'SOC (expost)'. 9. Not closed. In 'Table 12. Net GHG emission reduction or removals' Long Term Average is not properly indicated. 10. New. What is 'Wood and Pulping properties.pdf' used for? Is mentioned nowhere in the PD/MR.	
Project proponent response	Date: 10/11/2021
Points 2/3/4/5/6/8/9/10 were answered in the PD in chapter 4.2 ("Change in the carbon stocks in project: general overview") 9. ok, changed 10. Wood and Pulping properties.pdf is not used, the text has been deleted and the correct document mentioned: Wood and Pulping properties.pdf	
Documentation provided by Project proponent	
PD/MR v3 10/11/2021 Quantification of forestry and carbonization waste.pdf	
VVB Assessment	Date: 17/11/2021
2. Closed. 3. Closed. References are clearer now. 4. Not closed. Source not provided (Only CONIF 2015). The explanation is neither included in PD/MR. 5. Closed. Updated. 6. No closed. The explanation mentions that the LTA is 110 years, however, in 'Ex ante' tab of 'Carbon	

stocks - VCS Grouped project 18102021' is calculated for 105 years. If the cycle is 12 years, the LTA is 108 years; and if it is 10, the LTA is 100 years. Please clarify the criteria.

8. Not closed. Not clarified in sections mentioned. 1) In section '1.1 Summary Description of the Project, table in page 6' (as well as in 1.11 Description of the Project Activity, table in page 17) the explanation regarding the table is confusing: Indicate in the text and in the title of the table that the data refer to the new hectares planted per year, not to the total area of plantation each year. On the other hand, the figures reported as slightly different to the ones reported in Excel 'Carbon stocks - VCS Grouped project 18102021' tabs 'Expost accurate' and 'SOC (expost)'.

9. Closed.

10. Closed.

Project proponent response

Date: 26/11/2021

4. There was an error in the citing of CONIF 2015, the source used was Nieto et. Al "Effects of provenance and genetic variation on the growth and stem formation of eucalyptus pellita in Colombia"

6. Thanks to the comments, we found that there was an error in the projection of the Pinus species, so the LTA has been corrected from 2.918.708 to 2.918.000 tCO₂. The LTA is not calculated for 110 years. In the section 4.2 of the PD it is clarified that the LTA is 105 years, 100 crediting of the crediting period plus 5 years to include the last harvest/cut in the cycle of the 2020 plantations.

8. It was clarified that the plantations from 2021 to 2025 are new areas that by 2020 were not planted.

Documentation provided by Project proponent

N/A

VVB Assessment

Date: 06/12/2021

4. Closed.

6. Not closed. It is ok if you determine an LTA of 105 years (100 crediting of the crediting period plus 5 years to include the last harvest/cut in the cycle of the 2020 plantations). **A) Update and justify the Forest Management Plan accordingly,** were the following is stated:

Page 16.

7. Cosecha: a la edad de rotación definida para cada especie. Para *Eucalyptus sp* se estima una rotación de 8 años para clones y 10 años para semilla.

Page 21

8 FUNDAMENTOS PARA LA TASA DE COSECHA ANUAL

Se estima una edad de rotación de 8 a 10 años según especie y tipo de planta (originada de semilla o clones), con lo cual las primeras plantaciones establecidas el año 2014, serán cosechadas a partir del año 2022.

Por lo tanto, los siguientes criterios son supuestos que se deben ir validando en la medida que se tenga mejor información.

La tasa de cosecha está dada por los siguientes criterios:

1. Volumen de oferta no decreciente en el largo plazo (5 años, con una variación de más o menos 10%) para el abastecimiento de alguna industria.
2. Volumen anual (superficie de cosecha), que genere economía de escala asociado a costos viables con los objetivos y la rentabilidad esperada.
3. Para definir la tasa de cosecha se usan además los siguientes supuestos:

ESPECIE	IMA* (m3/ha/año)	Rotación* (años)	Volumen esperado de cosecha (m3/ha)
<i>Eucalyptus urograndis</i> , <i>Eucalyptus urophylla</i>	35 – 40	8 – 10	280
<i>Eucalyptus pellita</i>	30 – 35	8 – 10	240
<i>Pinus caribaea</i>	20	20	400

- Los valores varían según si es planta de semilla o clon

Desde agosto 2016 se cuenta con una red de parcelas permanentes instaladas en plantaciones establecidas los años 2014 y 2015, las que serán complementadas con más parcelas en las siguientes plantaciones. Estas parcelas se medirán anualmente e

B) Indicate in the PD/MR/section 2.4/Long-term average why LTA is 105 years in 2.4 (100+5).

8. No closed. The figures reported as slightly different to the ones reported in Excel 'Carbon stocks - VCS Grouped project 18102021' tabs 'Expost accurate' and 'SOC (expost)'. **Justify the correct one (change it as applicable in section 1.1 and section 1.11), and confirm if year 2020 has been included for the ex post calculations in Excel.**

Table 1. Hectares planted per year and per farm

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	TOTAL
El Porvenir	1.746	1.886	1.074	692	126	-	-	-	-	-	5.526
El Porvenir / Caricare	-	-	-	-	-	30	500	1.000	1.740	1.740	5.010

YR	2016	2017	2018	2019	Total
HA pellita	1,674	1,384	944	539	4,541
HA urograndis	42	450	93	118	703
HA urophylla	0	6	38	0	44
HA caribea	0	0	0	0	0
Total	1,716	1,840	1,074	657	5,288

Project proponent response

Date: 10/12/2021

6.A Changes will be discussed with the project developer and introduced to the Management plan, if applicable

6.B. The text has been included

8. The difference between tables is justified in the through the PD/MR when explaining that we are only claiming carbon credits from a percentage of the total planted area: there are some stratas that do not have sample plots measured. Of the total areas considered for the group project, in the first instance only the hectares planted on the El Porvenir farm will be considered. El Porvenir has 5,526.59 hectares planted by 2020 of different species, however, for the quantification of GHG emissions, only 5,288 hectares will be considered. It is for this reason that in the Excel Carbon stocks, in the Expost accurate

and SOC (expost) sheets, only the hectares that will be part of the GHG quantification are considered and not the total number of plant hectares of the El Porvenir farm.

Documentation provided by Project proponent

Updated PD/MR

VVB Assessment

Date: 17/12/2021

6. Closed.

8- Closed.

CAR ID	13	Date: 15/07/2021
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Description

5.3 Monitoring Plan:

1. According to VCS std 4.0:

"3.5.19 A grouped project shall be described in a single project description, which shall contain the following (in addition to the content required for non-grouped projects):

5) A description of the central GHG information system and controls associated with the project and its monitoring."

Document this.

.....

2. PD/MR mentions:

"Campo Forestal has a Standard Operational Procedure to archive the data collected. The document specifies the person in charge of archiving, the place the information is kept, and the procedures followed to transfer, archive, and manage all the information obtained in the monitoring events."

Provide the procedure and reference it as an annex.

Project proponent response

Date: 18/10/2021

1. Section 5.3 of the PD has been corrected to respond to the VCS standard point 3.5.19
2. The SOP has been added as an Annex to the PD/MR

Documentation provided by Project proponent

- Protocolo respaldo parcelas permanentes.pdf

VVB Assessment

Date: 01/11/2021

1. Closed.

2. Closed. Observation. Refer in the text to Annex 8.

3. New. "Organizational structure. Monitoring event took place during October 2019 and June 2020". It does not match with the end of monitoring period.

Project proponent response

Date: 10/11/2021

In annex 9 you will find the information regarding the monitoring period. Annex 9 is the field working sheet with the last day of measurement 25/11/2020. The proper adjustment of the data on the monitoring period has been made to the PD/MR.

Documentation provided by Project proponent

VVB Assessment

Date: 17/11/2021

2. Observation. Not closed. Refer in the text to Annex 8.

3. Observation. It is not October 2020 to November 2020	
Project proponent response	Date: 26/11/2021
Annex 8 and 9, have been refer in the PD section 5.3. The second observation has been corrected	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 06/12/2021
Closed.	

CAR ID	14	Date: 15/07/2021
Description		
6.3 Project Emissions: In PD/MR, further detail the calculation process (information flow): considering from the ex ante data: real growth curves, separation of VCUs in vintage, etc. to the final data for the period.		
Project proponent response		Date: 18/10/2021
Chapter 6.3 has been corrected to respond to CAR ID 14		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
Not closed. The brief explanations added do not allow following the flow of calculations step by step, not only considering real growth curves, separation of VCUs in vintage, but also the results of the inventory, error estimated, and definitely all the steps included in 'Carbon stocks - VCS Grouped project 18102021'.		
Project proponent response		Date: 10/11/2021
There a complete new section in 4.2 which explains the calculation procedures, applicable to 4.2 and 6.3 mutatis mutandis “exante” by “expost”.		
Documentation provided by Project proponent		
PD/MR v3 10/11/2021		
VVB Assessment		Date: 17/11/2021
Not closed. Section 4.2 is exclusive for ex ante estimations and 6.3 is exclusive for ex post estimations. Thus, complete section 6.3 with the whole explanation (please do not try to summarize by ignoring relevant steps). Note the differences in procedures in amongst ex ante and ex post calculations. Update section 4.2 accordingly.		
Project proponent response		Date: 26/11/2021
Section 4.2 and 6.3 have been amended accordingly.		
Documentation provided by Project proponent		
N/A		

VVB Assessment	Date: 06/12/2021
Closed.	

CAR ID	15	Date: 15/07/2021
Description		
6.5 Net GHG Emission Reductions and Removals: 1- In the last table, mention the Risk rating % of buffer (real obtained and the minimum applied) and the tool used. Reference the document as an annex. 2- Tables in section 6.5 of the MR, put them by vintage (as in table 13) and indicate the number of instances (only 1 from 2016-2020). 3- The numbers do not match those of Excel. 4. Monitoring period (dd/mm/yyyy) is not indicated in the entire document. The monitoring period should be from 11/01/2016 to the date the inventory was taken (instead of 12/31/2020).		
Project proponent response		Date: 18/10/2021
1- The risk rating was added to the end of the table in the section 6.5 with the marketable tCO2 and the tool used 2- The vintage were added in the tables of the section 6.5, explaining that this is for the first instance 3- The numbers were corrected in all tables and they are now matching with the Excel 4- The monitoring period has been included in the PD (11/01/2016 – 11/25/2020) in section 1.1, 6.1 and 6.3		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 06/12/2021
Closed.		
Observation. Indicate in this section the monitoring period as dd/mm/yyyy.		
RESPONSE: The monitoring period has been added		
Closed.		

CAR ID	16	Date: 15/07/2021
Description		
NPR Report: 1- Correct the monitoring period in its final dated. 2- Indicate correctly Project name. 3- Delete instructions. 4- Tabla 1 Project Management, c). Is not 0? Correct final result. 5- Table 1 e). Justify specifically the experience of Management team regarding AFOLU project design and implementation, carbon accounting and reporting under the VCS Program or other approved GHG programs. 6- Table Financial Viability. A) Refer to evidence and explain. Update carbon credits amount in Excel. 7- Table Financial Viability. H) Refer to evidence and explain. 8- Table Financial Viability. I) Refer to evidence and explain. 9- Opportunity Cost. F) Refer to evidence and explain according to 2.3.3 of the tool.		

10- Opportunity Cost. E) Delete if no applicable. 11- Table Land Tenure and Resource Access/ Impacts; c) and d) Refer to evidence and explain. Assign a "0" in the table if proceeds. 12- Justify why 'Community Engagement' table is not applicable. 13- Natural Risk Fire. 1) Provide stronger evidences regarding Significance and Likelihood factors, 2) LS score is "2", not 0.5, 3) Provide evidences in the report table regarding "Project proponent has proven history of effectively containing natural risk" to justify a 0.25 mitigation score (2x0.25=0.5). 14- Extreme Weather. 1) Provide stronger evidences regarding Significance and Likelihood factors, 2) For mitigation: Has the use of clones more resistant to the wind been considered maybe? 15- Pest and Disease Outbreaks: Provide evidences in the report table regarding "Project proponent has proven history of effectively containing natural risk" to justify a 0.25 mitigation score (e.g.: internal monitoring records, statistics, etc.). 16- Complete section 4.2 in NPR Report.	
Project proponent response	Date: 18/10/2021
1- The monitoring period has been corrected 2- The Project name has been corrected 3- The instructions has been deleted 4- Project management c) is zero. The final result has been corrected 5- It is explained that Cumare has no experience in carbon projects, this it is justified why Cumare contracts CAIA Ingenieria for the development of the carbon project 6- In the document of the non-permanence risk, it is justified from where we get the data 7- The evidence is provided in the NPR Report by modifying the h) point. 8- Despite the Project can demonstrate that it has available as callable financial resources at least 50% of the total cash out, the project proponent prefers not to go for this mitigation reduction in the risk. 9- The NPR report has included more to evidence and explained the opportunity cost analysis according to 2.2.3 of the tool. 10- Section e was removed 11- As explained in the document of non permanence risk, the El Porvenir property does not present land disputes. The paragraph c) and d) from land tenure have been amended. 12- As explained in the non-permanence risk document, the communities near the Project activity are not dependent on the Project, however, Cumare helps and supports the local communities, in section 2.2 of the PD it is described how they help and support them. The NPR report has been corrected in this section. 13- For the risk of natural fire, the significance and likelihood were justified. Evidence of instances where this risk was effectively controlled by the company's firefighters was also provided. The NPR report has been corrected. 14- For the risk of weather conditions, the significance and likelihood were justified. We have analyzed the possibility to argument some mitigation actions, but we cannot provide any justification. 15- Despite there are evidences that the project proponent has proven history of effectively containing natural risks, we will not be claiming any mitigation score for the moment. We have reassessed the evidence we have, contrasting with the NPR tool and we found that the evidence we have is not strong enough. 16- Section completed	
Documentation provided by Project proponent	
"Incendios Meta.xlsx"	
VVB Assessment	Date: 03/11/2021
1, 3-12, 14. Closed. 2. Not closed. In frontpage table is indicated Project Title 'Cumare'. See also CAR ID 17 below. 13. Not closed. "Incendios Meta.xlsx" or any other fire statistics on El Porvenir is not provided. 15. Not closed. Thus, you can leave the explanation in 'Mitigation', but clarify that no risk mitigation points are allocated.	

16. Not closed. Indicate that a final 10% buffer discount is applied.	
Project proponent response	Date: 26/11/2021
3. Project title in the frontpage table has been changed 13. "Incendios Meta.xlsx" is provided in the following link: https://www.dropbox.com/sh/ocbb8cid9a0rkw8/AAAdUWZBvqdAphMbq5YqgcSxa?dl=0 15. We clarify the no risk mitigation points allocated. 16. The 10% buffer discount is indicated in the chapter 4.2	
Documentation provided by Project proponent	
Incendios Meta.xlsx in dropbox	
VVB Assessment	Date: 07/12/2021
2, 13, 15, 16. Closed.	

CAR ID	17	Date: 01/11/2021
Description		
The project name (GROUPED FORESTRY PROJECT IN COLOMBIA) in PD/MR does not match the project name registered in RENARE, Verra Registry, and VCS Listing Representation (CUMARE CARBON PROJECT).		
Project proponent response		Date: 10/11/2021
The new name is GROUPED FORESTRY PROJECT IN COLOMBIA and we are doing the request in RENARE to modify it.		
Documentation provided by Project proponent		
VVB Assessment		Date: 17/11/2021
Not closed.		
The project name has to be updated in Verra Registry and VCS Listing Representation. Otherwise, the project name should be changed in this PD/MR.		
Project proponent response		Date: 26/11/2021
The project name is Cumare Carbon Project, it has been changed in PD and NPR		
Documentation provided by Project proponent		
VVB Assessment		Date: 06/12/2021
Closed.		
Project name matches RENARE, Verra Registry, Representation list, PD/MR and NPR Report.		

CAR ID	18	Date: 01/11/2021
Description		
According to VCS Standard 4.1 “3.7.3 AFOLU projects shall complete validation within five years of the project start date”. However, the project start date is 01/11/2016, but the process of validation is not finished by 01/11/2020.		
Project proponent response		Date: 10/11/2021
We have requested Verra an exemption for this requirement. At the moment of writing this word, the exemption has not arrived yet.		
Documentation provided by Project proponent		
Extension request approval_16 November 2021		
VVB Assessment		Date: 17/11/2021
Closed. The PP requested the exemption from compliance with VCS Standard 4.1, 3.7.3, to Verra. Verra approved the exemption (16 November 2021), granting an extension for which the validation has to be completed before 1 February 2022.		

VCS Clarification requests (CLs)

VCS CL ID	01	Date: 11/05/2021
Description		
1.1 Summary Description of the Project: Indicate: 1- Dates of crediting period dd/mm/yyyy 2- Dates of monitoring period dd/mm/yyyy 3- VCUs figures for the crediting period: indicate the total net removals; indicate what the long term average is and indicate how much it is (the latter is the only thing indicated now). 4- Monitoring figures do not correspond to Excel figures. 5- NPR buffer (% risk rating, real obtained and minimum used) and VCU marketable for monitoring period (net removals less buffer).		
Project proponent response		Date: 18/10/2021
1- The dates of the crediting period have been included in section 1.1 2- The dates of the monitoring period have been included in section 1.1 3- VCUs, net removals, LTA have been included 4- The monitoring figures of the PD now corresponds to the excel figures 5- The NPR was added at the end of the section 1.1		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
1, 2, 4, 5. Closed. 3- Not closed. VCUs figures for the crediting period: indicate the total net removals; indicate what the long term average is. 6. New. 'This means an average of 28,921 tCO ₂ per year'. It does not match Excel figure (2.918.708 tCO ₂ LTA). 7. New. 'As mentioned, in first instance, the grouped project begins with the El Porvenir farm, with a total of 5,556 hectares.' The first PAI begins with 5,526 ha planted (5,556 ha is including 2021), ~~and 5,288 under the first monitoring period.~~		
Project proponent response		Date: 10/11/2021
The total net removals in long term, tCO ₂ and the hectares errors were corrected		
Documentation provided by Project proponent		
PD/MR v3 10/11/2021		
VVB Assessment		Date: 17/11/2021
3- Not closed. VCUs figures for the crediting period: indicate the total net removals (2,955,385); indicate what the long term average is (years). 6. Closed. 7. Closed.		
Project proponent response		Date: dd/mm/yyyy
3. The long-term net removals is 2.918.000 tCO ₂ . The chapter has been improved to reflect the comments received.		
Documentation provided by Project proponent		
N/A		

VVB Assessment	Date: 07/12/2021
3. Closed.	

VCS CL ID	02	Date: 11/05/2021
Description		
1.12 Description of the Project Activity:		
1. Clarify that the cycle in the Pine is 15-16 years, not 10 as in the Eucalyptus (third paragraph of the section)		
2. Indicate, according to the template For AFOLU projects:		
- For all measures listed, include information on any conservation, management or planting activities, including a description of how the various organizations, communities and other entities are involved. In other words, who will implement the activities.		
- In the description of the project activity, state if the project is located within a jurisdiction covered by a jurisdictional REDD + program.		
Project proponent response		Date: 18/10/2021
1- The Pinus rotation length has been modified in the document.		
2- The measures of the management, planting, conservation, among others, has been included in the document. Also for the validation the Manual of Operational Procedures will be available. It has been explicitly said in chapter 1.11 that Cumare is not within a jurisdiction covered by a jurisdictional REDD + program		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
Closed.		
The information requested has been appointed in current section 1.11.		

VCS CL ID	03	Date: 11/05/2021
Description		
1.14 Conditions Prior to Project Initiation:		
- Maps not readable. - Expand information on hydrology, topography, soils, vegetation and ecosystems (biome).		
Project proponent response		Date: 18/10/2021
New maps were introduced to the PD, information was expanded in the section 1.14 and also it was added detailed information in the appendix		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
Not closed.		
Regarding the maps:		

- Figure 9: missing legend - Figure 13. Legend not legible. – COPIAR LINK DE SIPRE UPRA SOBRE LA LEYENDA - Figures 15, 16, 17. Enlarge. ~~- Figures 18, 19. Missing 'clear' legend. – PREGUNTAR A CARLOS A QUE SE REFIERE~~ Regarding the content: - Information on hydrology and natural ecosystems (biome, bio region) is missing.	
Project proponent response	Date: 10/11/2021
Information on hydrology and natural ecosystems was added both for the El Porvenir farm and for the departments of Meta and Vichada, which belong to the Orinoquia region.	
Documentation provided by Project proponent	
Updated PD/MR	
VVB Assessment	Date: 17/11/2021
Not closed: - Figure 9: missing legend - Figure 13. Legend not legible. – COPIAR LINK DE SIPRE UPRA SOBRE LA LEYENDA	
Project proponent response	Date: 26/11/2021
Figure 13 has been enlarged and link attached. Also, we attach the original photo of the legend. Figure 9 is now including the legend.	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 06/12/2021
Closed.	

VCS CL ID	04	Date: 11/05/2021
Description		
1.17.1 Emissions Trading Programs and Other Binding Limits: Mention the domestic market case for Colombia (so that it is not confused with an emission trading program)-		
Project proponent response		Date: 18/10/2021
The chapter has been corrected to avoid any confusion.		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 11/05/2021
Closed.		
The clarification has been appointed in current section 1.16.1.		

VCS CL ID	05	Date: 11/05/2021
Description		
2.5 AFOLU-Specific Safeguards: According to VCS, it is requested to explain: - Processes to ensure ongoing communication and consultation with local stakeholders, including a grievance redress procedure to resolve any conflicts which may arise between the project proponent and local stakeholders. - For AFOLU projects with no impacts on local stakeholders, provide evidence of such. - If due to the nature of the project (private property, absence of third parties with land rights) the stakeholders are limited, a list of SH can be put together and justified. - You can mention the complaints mechanism, public information on forest management on the website, FSC annual audits (indigenous, labor, community, HCV, legality compliance, etc).		
Project proponent response		Date: 18/10/2021
Chapter 2.5 AFOLU-specific safeguards has been improved to demonstrate the open and continue communication with local stakeholders, with a procedure to receive, record and manage any conflict. The project has no impact on local stakeholders, and it has been proved by the distance to the closest neighbours. A list of SH is presented as an annex to the validation/verification process.		
Documentation provided by Project proponent		
N/A		
VVB Assessment		Date: 01/11/2021
Closed. The information requested has been reference to other sections that have been completed now.		

VCS CL ID	06	Date: 11/05/2021
Description		
3.2 Applicability of Methodology: 1. Methodology applicability conditions: (a): include a map of officially registered ecosystems. (b): Check: "Soil disturbance attributable to the project activity does not cover more than 10 per cent of area". (b) (i): "Informe Técnico Suelo El Porvenir" is mentioned but not provided. 2. Of the tools, it is necessary to specify applicability conditions for: - EB-35 Tool 2, baseline and additionality (currently are in section 3.4, move them here). - EB 65 tool 8 - AR-TOOL15 3. Mention that there are no applicability conditions in: - AR-TOOL14 - EB 58 tool 3 - AR-TOOL12 - EB 65 tool 17 4. Eliminate template instructions.		

Project proponent response	Date: 18/10/2021
1.a The Colombian officially registered map for ecosystems could not be included given the size of the country or department, which could not serve to visualize the project boundaries. However, a link to a GIS web platform is included. 1b.i The “Informe Técnico Suelo El Porvenir” is attached as an annex to the PD/MR 2.Applicability conditions of mentioned tools are now included. 3.Applicability condition of that tools are now included. 4. Template instructions have been deleted	
Documentation provided by Project proponent	
Informe Técnico Suelos El Porvenir final.pdf	
VVB Assessment	Date: 03/11/2021
Not closed. 1. Methodology applicability conditions: (a): Thus, provide a map of the wetlands in the department/municipality according the source it is mentioned (http://sig.anla.gov.co:8083/) or provide the study mentioned (Identification and preliminary characterization of wetland-type slow ecosystems located in the municipality of Puerto López, Meta). (b): "Soil disturbance attributable to the project activity does not cover more than 10 per cent of area" is not checked yet. 2, 3, 4. Closed.	
Project proponent response	Date: 26/11/2021
1. a). In section 3.2. a map of the wetlands in the municipality of San Martin has been added. 1. b) We are ready to show more evidence about this. What would you like to see?	
Documentation provided by Project proponent	
N/A	
VVB Assessment	Date: 06/12/2021
Closed.	

VCS CL ID	07	Date: 11/05/2021
Description		
4.4 Estimated Net GHG Emission Reductions and Removals: In table 10: 1- Indicate in an additional column the number of instances considered (Caricare from 2022). 2- Put a column with the net removals accumulated. 3- Remove the row for 2015. 4- The figures do not match with those of Excel, neither in the total removals nor in the Long Term Average.		
Project proponent response		Date: 18/10/2021
- We have included in the table the number of instances - A column with the net removals accumulated has been added - The row for 2015 has been removed. - The figures now coincide with the Excel		
Documentation provided by Project proponent		
N/A		

VVB Assessment	Date: 03/11/2021
1, 2, 3. Closed. 4. Not closed. Total (long-term average) is indicated as 2.955.385, however, that is Net GHG Removals accumulated (tCO ₂ e), while LTA is 2,918,708.	
Project proponent response	Date: 26/11/2021
Documentation provided by Project proponent	
The long-term average has been corrected	
VVB Assessment	Date: 06/12/2021
4. Not closed. Additional to LTA (105) and its value (2.918.000), indicate the total net removals for the 100 year crediting period.	
Project proponent response	Date: 10/12/2021
The referred text has been added.	
Documentation provided by Project proponent	
Updated PD/MR	
VVB Assessment	Date: 17/12/2021
Closed.	

VCS CL ID	08	Date: 11/05/2021
Description		
Appendix: Complete the section of the appendix indicating all the evidence provided Reference them in the PD/MR document.		
Project proponent response		Date: 18/10/2021
Information was added in the annexes related to the PD and the PD/MR document is citing the annexes now.		
Documentation provided by Project proponent		
Updated PD/MR		
VVB Assessment		Date: 03/11/2021
Not closed. Include in an Annex a list of all external evidences provided (e.g. NPR report, GIS data base, etc., articles, etc).		
Project proponent response		Date: 26/11/2021
Annex 11 has a list of all the external evidence provided		
Documentation provided by Project proponent		
VVB Assessment		Date: 06/12/2021
Not closed. The list is not complete:		

- Some of the documents provided are not mentioned (Example, AMONGST OTHERS: Carbon stocks - VCS Grouped project 26112021, VCS-Non-Permanence-Risk 26112021_final, ANÁLISIS DE NO CONVERSIÓN DE BOSQUE NATIVO_El Porvenir-2021, GIS Data Base, etc). Please, list all the documents provided. - Some mentions are not explicative: 'Inicio – Proclima', 'ArtigoPublicado', etc. Please, provide a name or explanation that allows someone reading it to understand what was provided as evidence.	
Project proponent response	Date: 10/12/2021
Documents which are not explicative, we provided a brief explanation. Also we added documentes such as Carbon stock, VCS Non permanence risk, among others.	
Documentation provided by Project proponent	
Updated PD/MR	
VVB Assessment	Date: 10/12/2021
Closed.	